SIEMENS



SED2 variable speed drives

Operating instructions

Siemens Building Technologies HVAC Products

Table of contents

1	Introduction	7
1.1	Purpose of this document	7
1.2	Validity	7
1.3	Target audience	7
1.4	Document structure	7
1.5	Referenced documents	7
1.6	Document conventions	8
1.7	Environmental compatibility and disposal	9
2	Safety instructions	11
2.1	General	11
2.2	Commissioning	11
2.3	Operation	12
2.4	Repairs	12
3	Mechanical installation	13
3.1	Installing the SED2 after extended storage	13
3.2	Ambient conditions	13
3.3	Mounting	14
3.3.1	Dimensions of SED2 drives with IP20/NEMA 0 rating	14
3.3.1.1	Dimensions of SED2 frame sizes A to C	14
3.3.1.2	Dimensions of SED2 footprint filters for frame sizes A to C	15
3.3.1.3	Dimensions of SED2 frame sizes D to F	15
3.3.2	Dimensions of SED2 drives with IP54/NEMA 12 rating	16
3.3.2.1	Dimensions of SED2 frame sizes B and C	
3.3.2.2	Dimensions of SED2 frame sizes D to F	
3.3.3	Mounting SED2 drives with IP20/NEMA 0 rating	17
3.3.4	Mounting SED2 drives with IP54 / NEMA 12 rating	18
4	Electrical installation	19
4.1	General	19
4.1.1	Maximum length of motor cables	19
4.1.2	Operation with ungrounded systems	19
4.1.2.1	Precautions for ungrounded systems (IT protective systems)	19
4.1.3	Operation with a residual current device (RCD)	22
4.2	EMC-compatible installation	23
4.2.1	EMC-compatible wiring	23
4.3	Mains and motor connections	25
4.3.1	Access to connection terminals: Frame size A	26
4.3.2	Access to connection terminals: Frame sizes B and C	27
4.3.3	Access to connection terminals: Frame sizes D to F IP20	28
4.3.4	Power and motor terminals: Frame sizes A to F	30

4.3.5	Power connection for drives with a built-in EMC filter	31
4.3.6	Tightening torque for connection terminals	34
4.3.7	Cross-sections for power and motor cables	34
4.3.8	Block diagram showing typical installation	36
4.3.9	Direction of rotation	36
4.3.10	Star or delta connection	37
4.3.11	Connecting several motors	37
4.3.12	External motor overload protection	37
4.4	Control terminals	38
4.5	SED2 block diagram	39
5	Commissioning	41
5.1.1	DIP switch settings	
5.1.1.1	Setting the DIP switches on the I/O module	
5.1.1.2	DIP switch settings on the control board	
5.2	Checklist prior to start	43
5.3	Operator panels for the SED2	43
5.3.1	Description of the basic operator panel (BOP)	43
5.3.2	Description of the advanced operator panel (AOP)	44
5.3.3	Exchanging the operator panels	44
5.3.4	Buttons and their functions on the operator panel (BOP and AOP)	45
5.4	Commissioning modes	46
5.4.1	Overview of commissioning with the BOP or AOP	46
5.4.2	Quick commissioning	46
5.4.3	Motor data for parameterization	48
5.4.4	Commissioning with the BOP or AOP	48
5.4.4.1	Country-specific default settings for operation with the BOP	48
5.4.4.2	Setting parameters with the BOP or AOP	49
5.4.5	Resetting SED2 parameters to the factory settings	50
5.4.6	Basic operation with the BOP	50
5.4.7	10 Hz test	50
5.4.8	General operation	51
6	Programming	53
6.1	Introduction to the SED2 system parameters	53
6.1.1	General notes	53
6.2	Access to parameters	53
6.2.1	Parameter access levels (P0003)	53
6.2.2	Parameter filter (P004)	53
6.2.3	Diagram for a parameter overview	54
6.3	Basic functions of the SED2	55
6.3.1	Digital inputs	55

6.3.3	Analog outputs	60
6.3.4	Frequency setpoint (P1000)	62
6.3.5	Selecting the command source (P0700)	62
6.3.6	OFF functions	63
6.3.7	Control types	63
6.3.8	Communication	63
6.4	HVAC functions of the SED2	64
6.4.1	PID controller	64
6.4.2	Belt failure detection without sensor (P2181)	65
6.4.3	Belt failure detection with sensor (P0400)	67
6.4.4	Staging pumps or fans	68
6.4.5	Temperature control with LG-Ni 1000 sensor	72
6.4.6	Bypassing the VSD	73
6.4.7	Hibernation mode	75
6.5	System parameter list for levels 1 to 3	77
6.6	Overview of factory and user parameter settings	105
7	Troubleshooting	107
7 7.1	Troubleshooting	
		107
7.1	Troubleshooting using the operator panel	107 108
7.1 7.2	Troubleshooting using the operator panel Error messages	107 108 108
7.1 7.2 7.2.1	Troubleshooting using the operator panel Error messages Error code list	107 108 108 111
7.1 7.2 7.2.1 7.2.2	Troubleshooting using the operator panel Error messages Error code list Warning code lists	107 108 108 111
7.1 7.2 7.2.1 7.2.2 8	Troubleshooting using the operator panel Error messages Error code list Warning code lists Technical data for the SED2	107 108 108 111 113 113
7.1 7.2 7.2.1 7.2.2 8 8.1	Troubleshooting using the operator panel Error messages Error code list Warning code lists Technical data for the SED2 General technical data	107 108 118 113 113 113 115
7.1 7.2 7.2.1 7.2.2 8 8.1 8.2	Troubleshooting using the operator panel Error messages Error code list Warning code lists Technical data for the SED2 General technical data Type-specific data	107 108 118 113 113 113 115 119
 7.1 7.2 7.2.1 7.2.2 8 8.1 8.2 9 	Troubleshooting using the operator panel Error messages Error code list Warning code lists Technical data for the SED2 General technical data Type-specific data Appendix	107 108 108 111 113 113 115 119 119
7.1 7.2 7.2.1 7.2.2 8 8.1 8.2 9 9.1	Troubleshooting using the operator panel Error messages Error code list Warning code lists Technical data for the SED2 General technical data Type-specific data Appendix Options	107 108 118 113 113 113 115 119 119 120
7.1 7.2 7.2.1 7.2.2 8 8.1 8.2 9 9.1 9.1.1	Troubleshooting using the operator panel Error messages Error code list Warning code lists Technical data for the SED2 General technical data Type-specific data Appendix Options Retrofitting EMC filters for VSD frame sizes A to C	107 108 118 113 113 113 115 119 120 120

1 Introduction

1.1 Purpose of this document

These operating instructions contain all the information necessary to correctly mount, install, commission, and parameterize (programming) SED2 variable speed drives (VSD) as well as for effective and troublefree operation.

1.2 Validity

The operating instructions apply to all SED2 variable speed drives, frame sizes A to F. They are supplied with the product, and are part of the full range of SED2 VSD literature.

1.3 Target audience

This document is primarily intended for installers, electrical installers, service technicians, and operators or end users of HVAC plants (Heating, Ventilating, and Air Conditioning).

1.4 Document structure

	5
Chapter 1	Introduction
Chapter 2	Safety instructions
Chapter 3	Mechanical installation
Chapter 4	Electrical installation and wiring of the motor and VSD
Chapter 5	Commissioning
	Description of basic and advanced operator panels
	Quick commissioning
Chapter 6	Programming (parameterization)
	Description of functions
	System parameter list
Chapter 7	Troubleshooting, warning and error code lists
Chapter 8	Technical data
Chapter 9	Appendix:
	Applicable standards and declarations of conformity
	List of abbreviations, index

The document is divided into the following sections:

1.5 Referenced documents

CM1G5192X Getting Started Guide: The Getting started guide is a brief multilingual guide to provide users fast access to all the basic information necessary to install, set up, and operate the VSD. Target audience: Installers, installing engineers, and commissioning engineers. CM1J5192en Engineering manual: Documentation on basics. This manual contains in-depth information on all technical matters relating to the SED2 VSD. Target audience: Project design engineers, planners, users of the product, technical staff, and service.

CM1N5192en

Data sheet

The data sheet contains a brief description of functions, notes on use, type codes, accessories, ordering information, technical data, and a range overview. **Target audience**: Project design engineers, planners, purchasing and sales staff, and service.

1.6 Document conventions

•		
4	Danger	Information pointing at immediate danger is printed under the heading "Danger" with the symbol shown in the left margin. Failure to observe this information may result in severe physical injury or death or severe property damage.
	Warning	Information under the heading "Warning" is shown with the symbol in the left margin. Failure to observe this category of information may result in physical injury and/or property damage.
STOP	Caution	Information under the heading "Caution" is shown with the symbol in the left margin. Failure to observe this type of information may result in property damage and/or loss of data.
Û	Important	Other important information (headed "Important" or "Note") is shown on a gray background. Failure to observe this information will not result in any damage.
Note	Ē	This relates to additional information important for the safety of personnel and equipment, or provides details of additional options or technical requirements.
Tips	\bigcirc	Helpful information to simplify the use of the product for the user.
Authori	zed personnel	 "Authorized personnel" are persons familiar with installing, mounting, commissioning, and operating the equipment, and aware of the associated hazards. Authorized personnel must satisfy the following requirements: They must be trained and authorized to switch on, switch off, disconnect, and ground electric circuits, and to attach warning labels in accordance with the established safety instructions. They must have training in the proper care and use of protective devices in

accordance with all prevailing safety regulations.They must be trained in and capable of administering first aid.

1.7 Environmental compatibility and disposal

General notes

This product was developed and manufactured using materials and processes which take full account of environmental issues and which comply with our environmental standards.

Please not the following for disposal at the end of the product life, or in the event of its replacement:

- For disposal, this product is defined as waste from electrical and electronic equipment ("electronic waste"); do not dispose of it as household waste. This applies particularly to the PCB assembly.
- Always use the most environmentally compatible method of disposal, in line with the state-of-the-art technology in environmental protection, recycling, and waste management.

Observe all local and applicable laws.

- Always aim for maximum re-use of the basic materials at minimum environmental stress. Observe any notes on materials and disposal that may be attached to individual components.
- Use local depots and waste management companies, or refer to your supplier or manufacturer to return used products or to obtain further information on environmental compatibility and waste disposal.

Special electronicThe law may mandate special handling of components such as electrolyticcomponentscapacitors and LCD panels, or it may be environmentally desirable.

PackagingThe variable speed drive is delivered in re-usable packaging. Please retain the
packaging for later use or in case you need to return the product to the manufacturer.



2 Safety instructions

The following warnings and notes on danger are provided for your safety and as a means of preventing damage to the product or to any components of the connected machinery. This section contains general warnings, preventive measures, and danger warnings, which apply to all work on the SED2 variable speed drives. Specific warnings applicable to particular tasks are summarized at the beginning of each chapter and repeated throughout the chapter as necessary at the relevant points.

Please read this information carefully, as it is provided for your personal safety, and to help extend the life of the SED2 variable speed drive and any equipment connected to it.

Format of warnings Refer to section 1.6 Document conventions for information on the format of warning notes and associated symbols.

2.1 General

- This equipment uses hazardous voltages and drives potentially dangerous rotating mechanical parts. Non-compliance with warnings or failure to follow the instructions in this manual may put lives at risk, or result in severe physical injury, or serious damage to property/equipment.
 - Only authorized personnel may work on this equipment. They must first acquaint themselves with all the safety instructions, and installation and operating instructions in this manual. Successful and safe operation of this device depends on its proper handling, installation, commissioning, and operation.
 - Prevent children and other unauthorized persons from accessing the equipment.

The DC link capacitors remain charged with dangerous voltages for five minutes after power has been switched off.

Do not open the device for five minutes after switching off the supply voltage.

Use the equipment only for purposes as specified by the manufacturer. Unauthorized modifications and use of spare parts or accessories not supplied or recommended by the manufacturer of this equipment may cause fires, electric shock, and physical injury.

Keep these operating instructions within easy reach of the equipment and make them available to all users.

2.2 Commissioning

- Only authorized personnel trained in the setup, installation, commissioning, and operation of the product may work on the product and plant.
- Only hard-wired mains connections are permissible. Ground the VSD (IEC 536, Class 1, NEC and other relevant industry standards).
- If a residual current device (RCD) is to be used, it must be a type B device.
- Do not connect machines with a 3-phase power supply fitted with EMC filters to the mains via an earth leakage current circuit breaker (ELCB) (see *DIN VDE 0160*, *section 6.5*).



Risk of electric shock



Purpose

Availability of the operating instructions



Danger

The following terminals may carry dangerous voltages even when the variable speed drive is not running:

- Power supply terminals L1, L2, L3.
- Motor terminals U, V, W.
- Link terminals DC-, DC+/B+, DC/R+, B-.

Caution

Danger

To prevent inductive and capacitive interference, connect the power, motor, and control cables to the variable speed drive as illustrated and described in section 4.2.1 "EMC-compatible wiring".

2.3 Operation

- SED2 variable speed drives operate at high voltages.
- Emergency stop facilities in accordance with EN 60204 IEC 204 (VDE 0113) must remain operative in all operating modes of the control equipment. Resetting the emergency stop facility may not cause an uncontrolled or undefined restart.
- In cases where faults in the control equipment could cause significant equipment damage or severe physical injury (e.g., potentially dangerous short circuits), take additional external precautions or provide facilities to ensure or enforce safe operation even in the event of a short circuit (e.g., independent limit switches, mechanical interlocks, etc.).
- Certain parameter settings can cause an automatic restart of the variable speed drive following an fault or supply voltage failure, provided the fault has been eliminated/acknowledged or the supply voltage has been restored.
- The variable speed drive is capable of protecting the motor from overload. (Motor overload protection in accordance with UL 508C, section 42). See P0610 and P0335.
- Protection against motor overload can be instituted via an external PTC thermistors (temperature variable conductor) via a special input (Class 14/15, see also section 4.3.12, page 37).
- Do not use the variable speed drive as an "Emergency Stop" mechanism (see EN60204, 9.2.5.4).

2.4 Repairs

- Only the Siemens service, repair centers authorized by Siemens, or authorized personnel fully acquainted with all the warnings and operating procedures as specified in this manual may repair this equipment.
- Replace defective parts or components using parts from the relevant spare parts list.



Disconnect the power supply before opening the device.

3 Mechanical installation

3.1 Installing the SED2 after extended storage

Recharge the capacitors in the variable speed drive following an extended period of storage. **Remember to calculate the storage time from the date of manufacture, and not from the date of delivery.** The required procedure varies according to the storage period and is described below.

Period of storage	Required action	Preparation time
1 year or less	Recharging not required.	No preparation
1 to 2 years	Before issuing the "Run" command, connect the variable speed drive to the supply voltage for one hour.	1 hour
2 to 3 years	 Use a variable AC power source. Apply 25% of the input voltage for 30 minutes. Increase the voltage to 50% for a further 30 minutes. Increase the voltage to 75% for a further 30 minutes. Increase the voltage to 100% for a further 30 minutes. The variable speed drive is then ready for operation. 	2 hours
3 or more years	 Use a variable AC power source. 1. Apply 25% of the input voltage for 2 hours. 2. Increase the voltage to 50% for a further 2 hours. 3. Increase the voltage to 75% for a further 2 hours. 4. Increase the voltage to 100% for a further 2 hours. The variable speed drive is then ready for operation. 	8 hours

3.2 Ambient conditions

Temperature		IP20	IP54		
	Min. operating temperature	–10 °C	–10 °C		
	Max. operating temperature	+40 °C*	+40 °C		
	* Be aware of the potential increase in temperature inside the control cabinet (derating necessary; refer to the engineering manual).				
Humidity	Max. 95%, non-condensing.				
Height above sea level	If you want to install the VSD at an altitude of more than 1000 m, derating is required. (Refer to the engineering manual).				
Overheating	Install the VSD vertically for optimum cooling. Do not obstruct the vents on the VSD. Additional ventilation may be required if the drive is mounted horizontally. If mounted vertically, VSDs with a protection standard of IP20 may be installed side by side. A minimum clearance of 100 mm is necessary above and below the VSD. VSD of class IP54 require greater clearances. See section 3.3.4 "Mounting SED2 drives with IP54 / NEMA 12 rating".				
Electromagnetic radiation	Do not install the VSD in the vi	cinity of powerful sources for	electromagnetic radiation.		

Atmospheric pollution

Do not install the VSD in an environment containing atmospheric pollutants such as dust, corrosive gases, etc. Devices subject to protection standard IP20 need additional protection from dust, atmospheric pollutants, and water.

Do not install the VSD in a location where it might be exposed to repeated shock or

Shock



The device must be grounded.

Mounting

vibration.

3.3

- Extremely dangerous conditions can arise if you do not correctly ground the ٠ variable speed drive.
- To ensure safe operation of the equipment, authorized persons must install and commission it in full compliance with the notes and warnings set out in these operating instructions.
- Take particular note of general and regional installation and safety regulations ٠ regarding work on sites with dangerous voltages (e.g. EN 50178), and of the relevant regulations for the correct use of tools and personal protective equipment.

Dangerous voltages may occur at the following terminals even when the variable speed drive is not running:

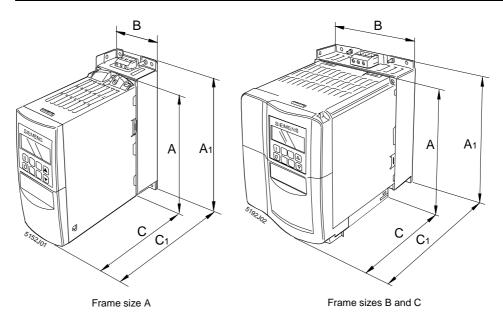
- Power supply terminals L1, L2, L3.
- Motor connection terminals U, V, W, DC-, DC+/B+, DC/R+, B-. -
- Link terminals DC-, DC+/B+, DC/R+, B-. _

Do not open the device for five minutes after switching off the supply voltage.

3.3.1 Dimensions of SED2 drives with IP20/NEMA 0 rating

3.3.1.1 Dimensions of SED2 frame sizes A to C

Frame size			Dimensions		
Frame Size	Α	A ₁	В	С	C ₁
Α	173	200	73	149	192.5
В	202	213	149	172	222.5
С	245	261	185	195	250

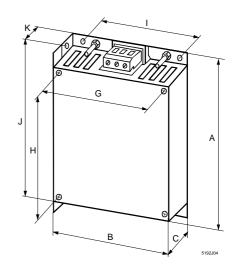




	Dimensions in mm							
Frame size	Α	В	С	G	Н	Ι	J	К
А	200	73	43.5	60	160	56	187	22
В	213	149	50.5	138	174	120	200	24
С	245	185	55	174	204	156	232	35

Dimensions of SED2 footprint filters for frame sizes A to C

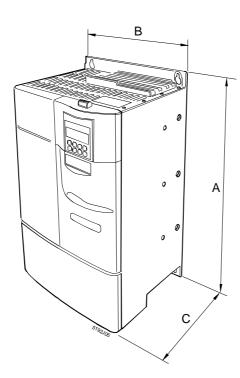
3.3.1.2



Filter for frame size A

Filter for frame sizes B and C

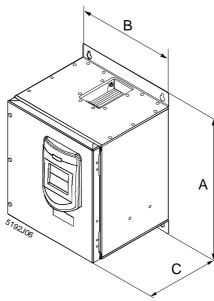
3.3.1.3 Dimensions of SED2 frame sizes D to F



France since	Dimensions in mm			
Frame size	Α	В	С	
D	520	275	245	
E	650	275	245	
F	850 (with filter 1150)	350	320	

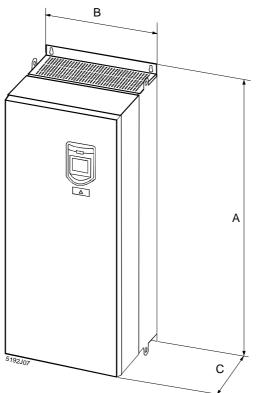
3.3.2 Dimensions of SED2 drives with IP54/NEMA 12 rating

3.3.2.1 Dimensions of SED2 frame sizes B and C



From oine	Dimensions in mm			
Frame size	Α	В	С	
В	385	270	268	
С	606	350	284	

3.3.2.2 Dimensions of SED2 frame sizes D to F

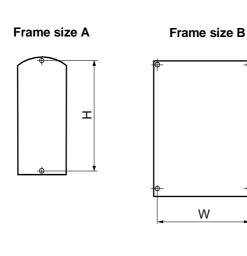


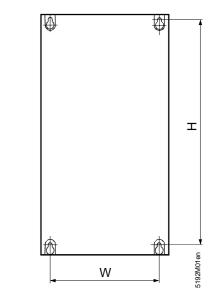
Frome size	Dimensions in mm			
Frame size	Α	В	С	
D	685	360	353	
E	885	360	453	
F	1150	450	473	

3.3.3 Mounting SED2 drives with IP20/NEMA 0 rating

Drilling plan for SED2 IP20

Frame sizes D, E and F





	Hole sp	acing		Tightening
Frame size	H in mm	W in mm	Mounting materials	torque
A	160 * 187	- * 56	2 x M4 bolts 2 x M4 nuts 2 x M4 spring lock washers 2 x M4 washers or mounting on DIN rail	2.5 Nm
В	174 * 200	138 * 120	4 x M4 bolts 4 x M4 nuts 4 x M4 spring lock washers 4 x M4 washers	2.5 Nm
с	204 * 232	174 * 156	4 x M5 bolts 4 x M5 nuts 4 x M5 spring lock washers 4 x M5 washers	3.0 Nm
D	486	235	4 x M8 bolts 4 x M8 nuts 4 x M8 spring lock washers 4 x M8 washers	13 Nm
E	616.4	235	4 x M8 bolts 4 x M8 nuts 4 x M8 spring lock washers 4 x M8 washers	13 Nm
F	810 1110 with filter	300	4 x M8 bolts 4 x M8 nuts 4 x M8 spring lock washers 4 x M8 washers	25 Nm

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* with footprint filter

Note

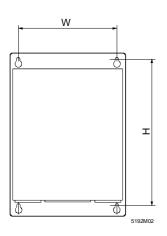


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A minimum clearance of 100 mm is required above and below each variable speed drive.

3.3.4 Mounting SED2 drives with IP54 / NEMA 12 rating

Drilling plan for SED2 IP54



	Hole s	pacing	Cle	arance	(mm)		Tightening
Frame size	H (mm)	W (mm)	Тор	Botto	Side	Mounting materials	torque
				m			
в	342.8	230	150	150	100	4xM6 bolts 4xM6 washers 4xM6 spring lock washers	5 Nm
с	564	312.7	150	150	100	4xM6 bolts 4xM6 washers 4xM6 spring lock washers	5 Nm
D	647	310	200	200	150	4xM8 bolts 4xM8 washers 4xM8 spring lock washers	13 Nm
E	847	310	200	200	150	4xM8 bolts 4xM8 washers 4xM8 spring lock washers	13 Nm
F	1112	400	300	250	150	4xM8 bolts 4xM8 washers 4xM8 spring lock washers	20 Nm

4 Electrical installation



The VSD must be grounded.

- To ensure safe operation of the equipment, authorized persons must install and commission it in full compliance with the notes and warnings set out in these operating instructions.
- Take particular note of general and regional installation and safety regulations regarding work on sites with dangerous voltages (e.g. EN 50178), and of the relevant regulations for the correct use of tools and personal protective equipment.
- The cross-section of the ground bonding conductor must be at least equal to that of the mains connection cables.

Dangerous voltages may occur at the following terminals even when the variable speed drive is not running:

- Power supply terminals L1, L2, L3.
- Motor terminals U, V, W, DC+, DC-.
 Link terminals DC-, DC+/B+, DC/R+, B-.

After switching off the supply voltage, wait at least 5 minutes before starting any installation or service work.

4.1 General

4.1.1 Maximum length of motor cables

The performance data given in the specifications cannot be guaranteed if the motor cables exceed the following lengths: 50 m for shielded cables

100 m for unshielded cables

For devices featuring EMC filters, the maximum cable length is 25 m. For cables shorter than > 25 m, the EMC guideline for filtered devices does not apply.

If you connect several motors to one VSD, the individual motor lines must be added to the total line length.

4.1.2 Operation with ungrounded systems

SED2 variable speed drives with a protection standard of IP20 operate in ungrounded systems, and remain in operation when an input phase connects to ground. In the event of an output phase with a ground fault, the SED2 switches off and displays message F0001.

IP54/NEMA 12 SED2 drives with a protection standard of IP54/NEMA 12 cannot be operated in ungrounded systems.

4.1.2.1 Precautions for ungrounded systems (IT protective systems)

In ungrounded systems, remove the Y capacitor, or break the connections to this capacitor and integrate an output choke. The following procedure shows how to remove or disconnect the capacitor.

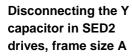
Important Operation in ungrounded systems is possible only using the SED2, IP20, without filter.

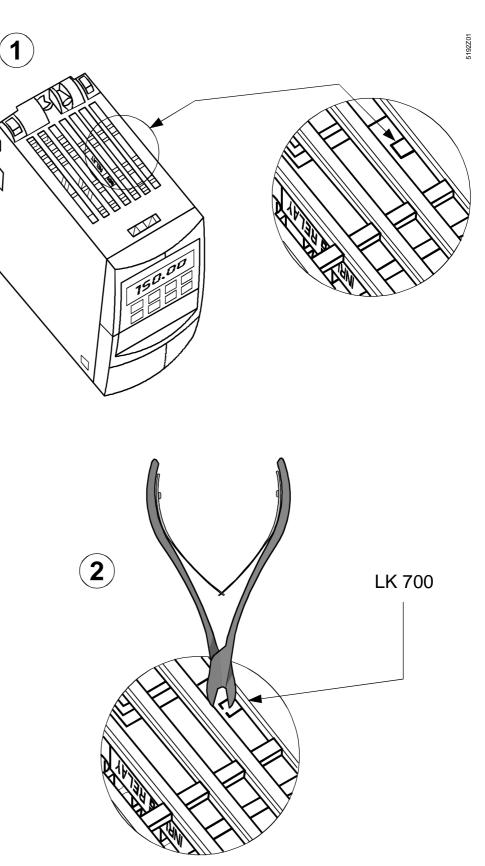


Note

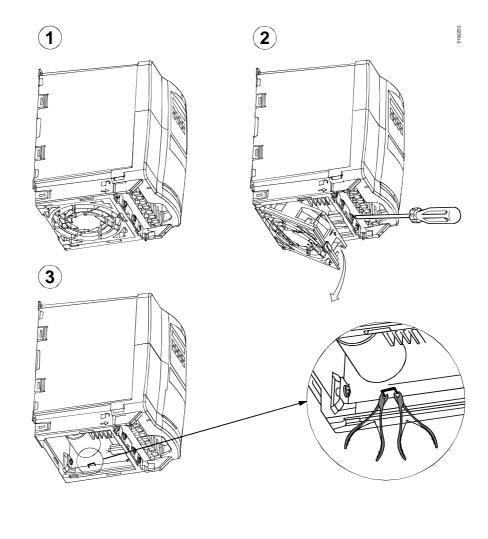
IP20/NEMA 0

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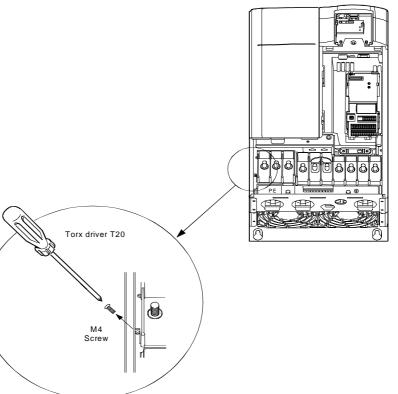




Disconnecting the Y capacitor in SED2 drives, frame sizes B and C



Disconnecting the Y capacitor in SED2 drives, frame sizes D and E

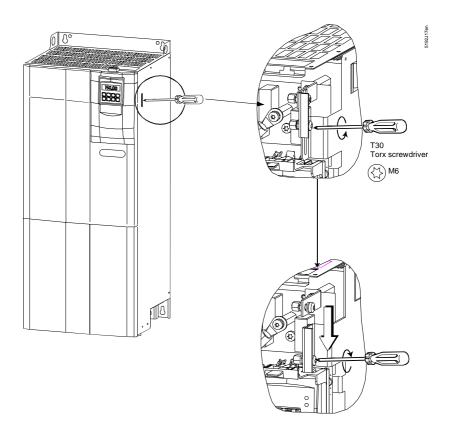


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SED2 variable speed drives Electrical installation

4.1.3 Operation with a residual current device (RCD)

Disconnecting the Y capacitor in SED2 drives, frame size F



If a residual current device (also referred to as a GLCI or RCCB) is connected, the VSD operates without unwanted interruptions under the following conditions:

- An RCD type B must be used.
- \checkmark The RCD must have a threshold current of 300 mA.
- \blacksquare The neutral conductor in the system must be grounded.
- \blacksquare Each RCD supplies only one VSD and no other consumers.
- The output cables must not exceed 50 m in length (shielded) or 100 m (unshielded).

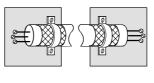
4.2 EMC-compatible installation

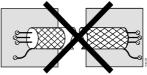
The SED2 VSDs operate in environments where they may be exposed to high levels of electromagnetic interference (EMI). Normally, good installation practices ensure safe and interference-free operation. However, should problems associated with EMI occur, follow the guidelines below:

- Ensure good electrical contact between the mounting plate and the metal housing of the VSD via the mounting screws.
- > Use serrated lock washers and electrically conductive mounting plates.
- If a footprint EMC filter is used, fit it under the VSD and ground it via the metal backplate. When connecting the EMC filter to the inputs of the VSD, use shielded cables and make sure that they are correctly grounded using cable clamps.

4.2.1 EMC-compatible wiring

- > Use shielded cables also inside control cabinets.
- Ensure that all equipment in the control cabinet is properly grounded. Thus, make sure that all equipment is connected by short, thick grounding conductors to a common grounding point (flat ribbon lines are best) or bus bar.
- Ensure that any control equipment (e.g. PLC or BACS¹) connected to a VSD is connected with a short, thick cable to the same ground or grounding point as the variable speed drive itself.
- > Use only shielded motor and control cables. The shielding must be continuous.
- > Connect motor and control cables to ground at both ends.
- Lay control, mains, and motor cables separately by routing them in separate cable ducts and maintaining a minimum clearance of at least 200 mm (see diagram below). If you must cross cables, run them at an angle of 90° if possible.
- Motor cables should be as short as possible and should not exceed 25 m.
- Connect the neutral conductor for the motors controlled by the variable speed drives directly to the ground connection (PE) of the associated VSD.
- > Use flat ribbon cables, as they have a lower impedance at high frequencies.
- > Avoid pigtails. Use only grounding clamps to bond the screen (see diagram below).

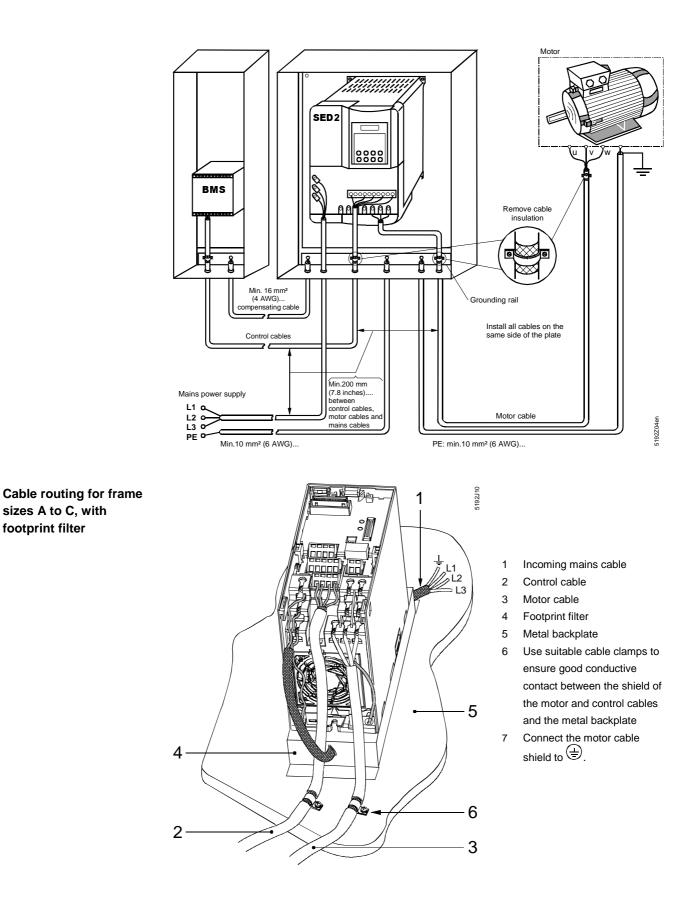




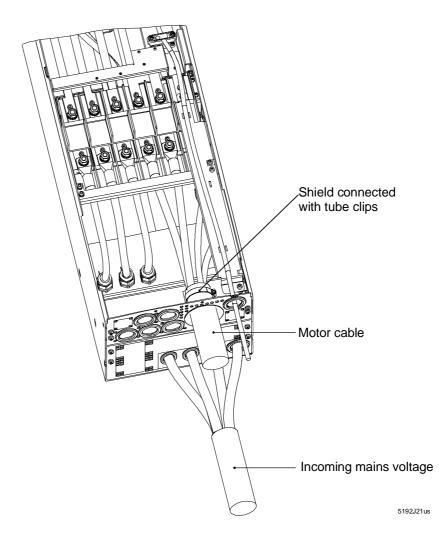
Check that the contactors in the control cabinet are suppressed—either with RC circuits for AC contactors, or flywheel diodes for DC contactors—and fit the suppressors to the coils. Varistor surge voltage protectors are also effective. This is important if the contactors are controlled by the variable speed drive relay.

¹ SPS: Programmable controllers

BACS: Building automation and control system; sometimes incorrectly referred to as BMS (building management system)



Cable routing for frame sizes D to F, IP20 with EMC filter



4.3 Mains and motor connections



Caution

Warning

Warning and safety instructions

- Check that the VSD and motor are correctly sized for the supply voltage. Check that the VSD corresponds to at least the motor output.
- Check that the mains cables are correctly sized for the anticipated use.
- Check that appropriate circuit breakers or fuses exist between the mains and the variable speed drive.

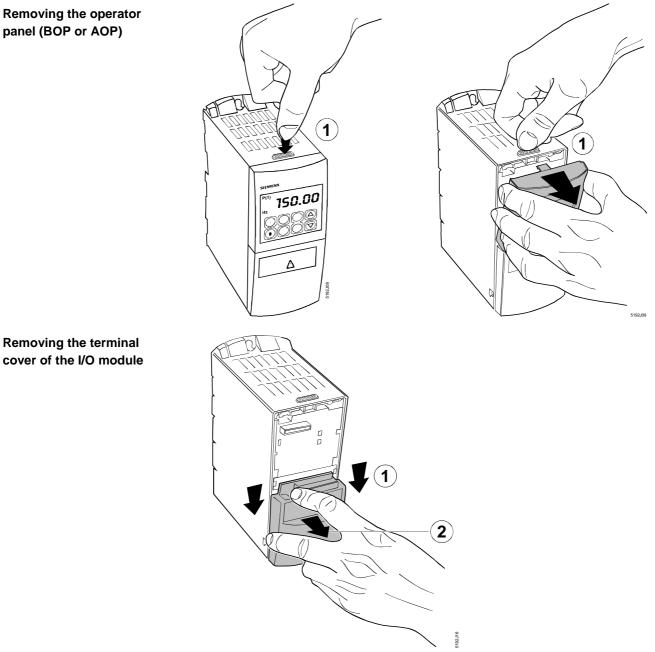
Never use high voltage insulation test equipment on any cables connected to the variable speed drive.



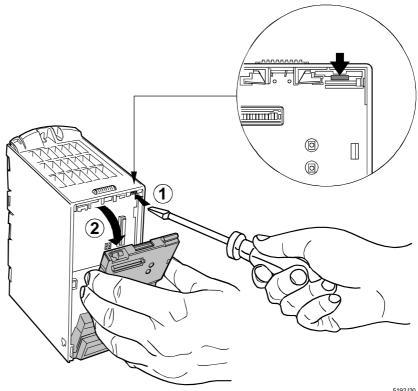
- Always isolate the power cables before connecting them to the VSD.
- Check that the terminal cover was replaced properly after connecting the power and motor cables.
- Never switch on the VSD with the cover open.
- Always use insulated tools when working on the incoming power supply and the motor terminals.

4.3.1 Access to connection terminals: Frame size A

To access the mains and motor terminals, first remove the operator panel, cover, and I/O module as illustrated below.

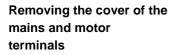


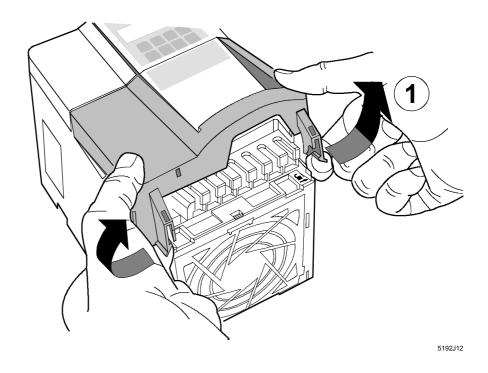
Removing the terminal cover of the I/O module









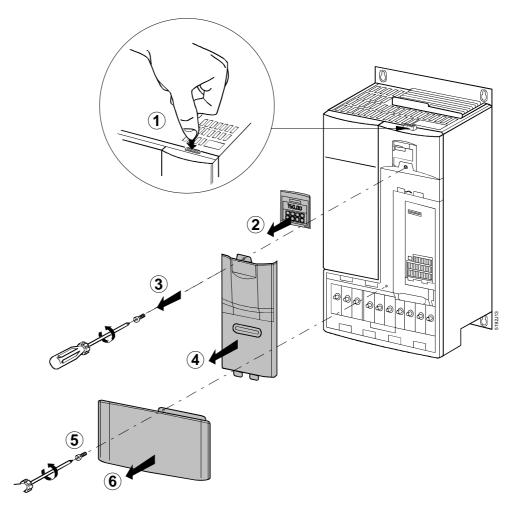


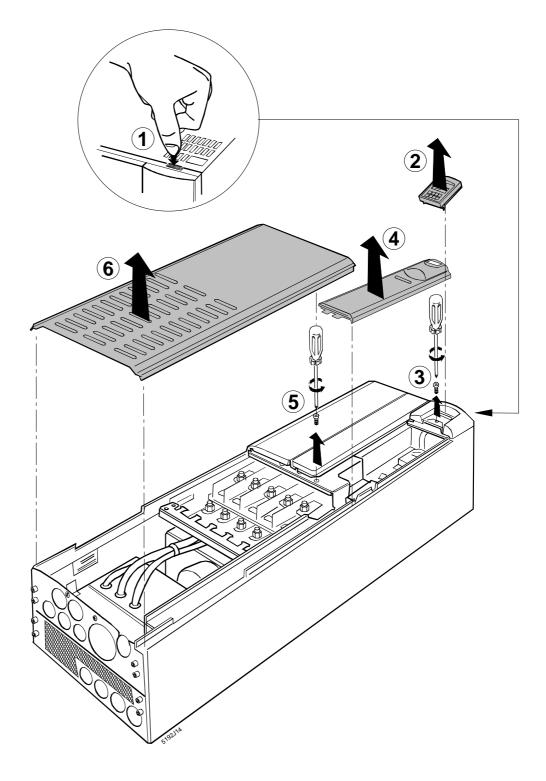
4.3.3 Access to connection terminals: Frame sizes D to F IP20

Removing the operator panel (BOP or AOP)

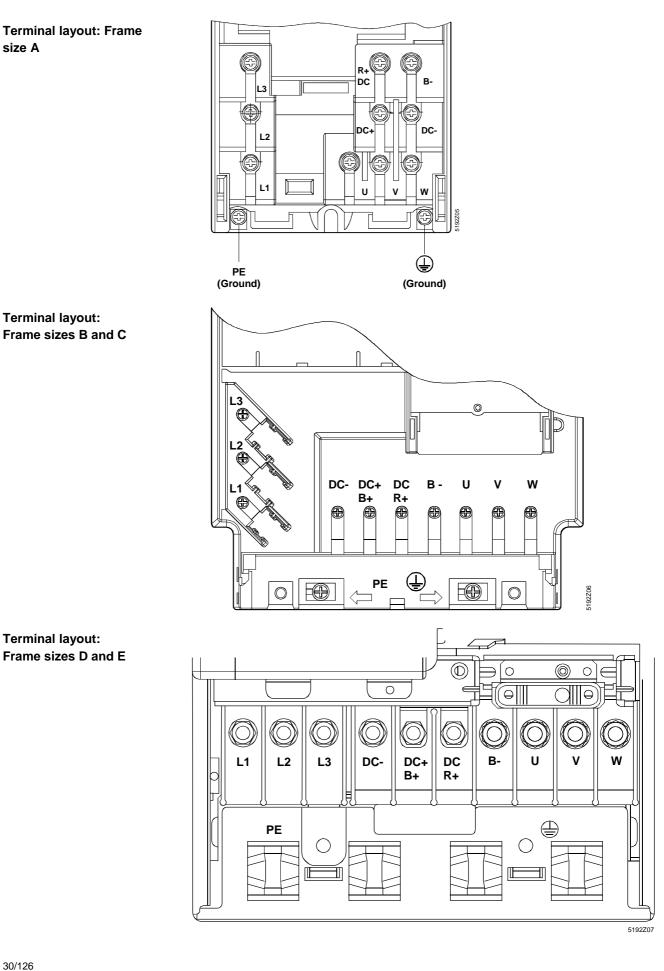
Refer to the relevant paragraph in Access to connection terminals: Frame size A.

Opening the housing: Frame sizes D and E

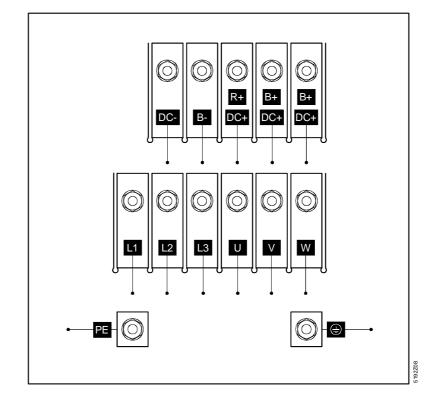




4.3.4 Power and motor terminals: Frame sizes A to F



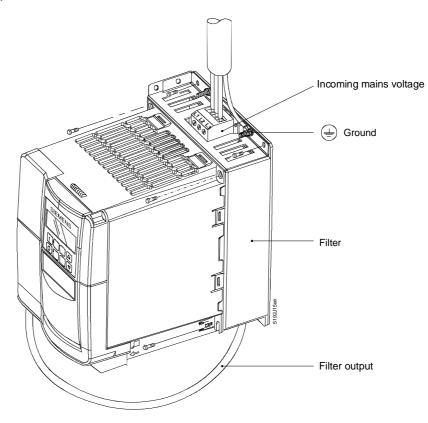
Terminal layout: Frame size F



4.3.5 Power connection for drives with a built-in EMC filter

Power connection to the footprint filter for frame sizes A to C

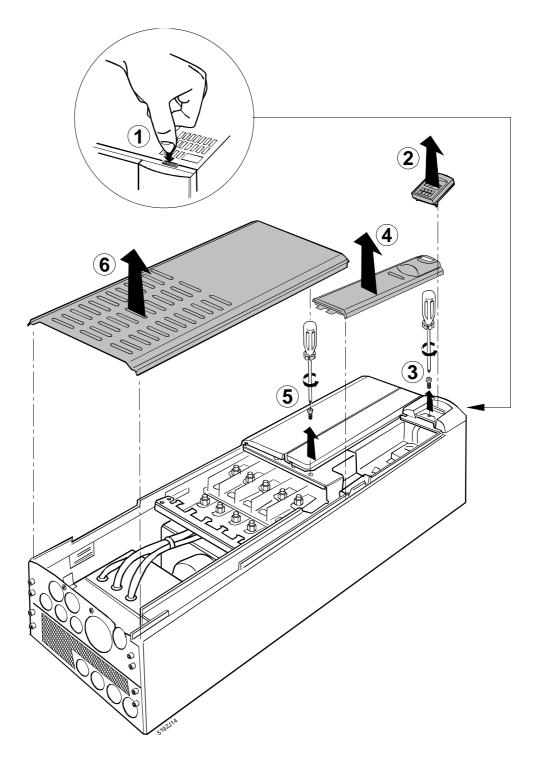
The SED2 drives with frame sizes A, B, and C are delivered with built-in ready-wired EMC footprint filters. Route the power supply to the terminals of the pre-installed footprint filter.

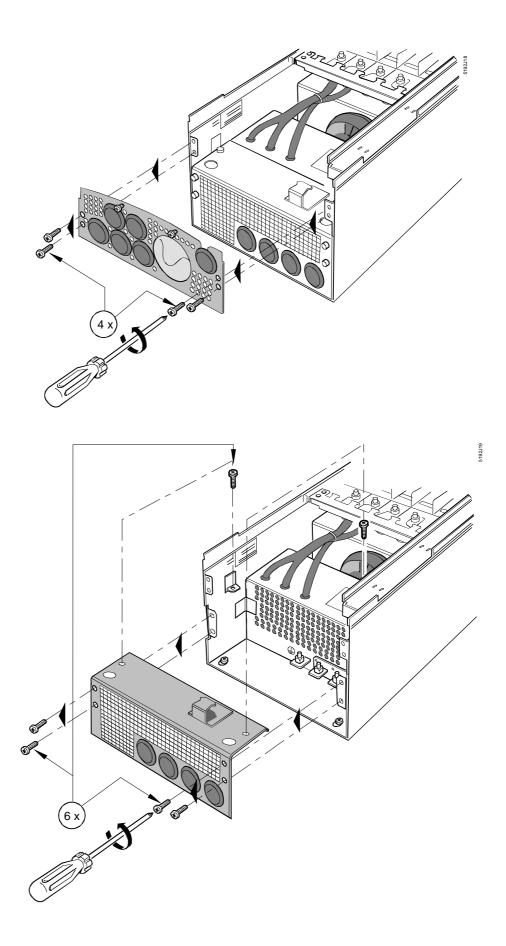


Power connection at the integrated EMC filter for frame sizes D to F

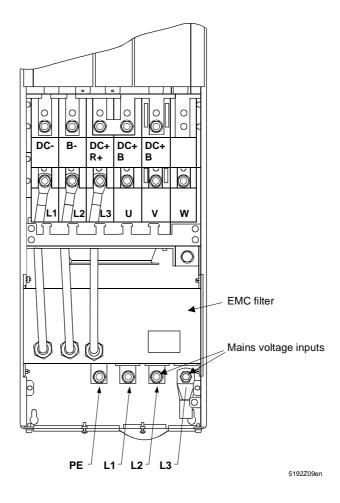
The SED2 drives with frame sizes D, E, and F are delivered with built-in ready-wired EMC filters. Wire the power supply to the connections of the built-in filter. The diagrams below show how to access the mains connections of the built-in filter.

Access to the mains connection of the EMC filter for frame sizes D to F





Connection terminals of SED2 frame size F, IP20, with built-in EMC filter View without cable entry guide and without lower terminal connection plate



4.3.6 Tightening torque for connection terminals

Frame size		Α	В	С	D	E	F
Tightening torque	Nm	1.1	1.5	2.25	10 (max.)	10 (max.)	50

4.3.7 Cross-sections for power and motor cables

Input voltage range 200 V – 240 VAC, 3-phase							
Output rating kW (hp)	Min. cross- section of supply cable mm ² (AWG)	Max. cross- section of supply cable mm ² (AWG)	Min. cross- section of motor cable mm ² (AWG)	Max. cross- section of motor cable mm ² (AWG)			
0.37 (0.5)	1 (17)	2.5 (13)	1 (17)	2.5 (13)			
0.55 (0.75)	1 (17)	2.5 (13)	1 (17)	2.5 (13)			
0.75 (1)	1 (17)	2.5 (13)	1 (17)	2.5 (13)			
1.1 (1.5)	1 (17)	6 (9)	1 (17)	6 (9)			
1.5 (2)	1.5 (15)	6 (9)	1 (17)	6 (9)			
2.2 (3)	2.5 (13)	6 (9)	1 (17)	6 (9)			
3 (4)	4 (11)	10 (7)	1.5 (15)	10 (7)			
4 (5)	4 (11)	10 (7)	4 (11)	10 (7)			
5.5 (7.5)	4 (11)	10 (7)	4 (11)	10 (7)			
7.5 (10)	10 (7)	35 (2)	10 (7)	35 (2)			

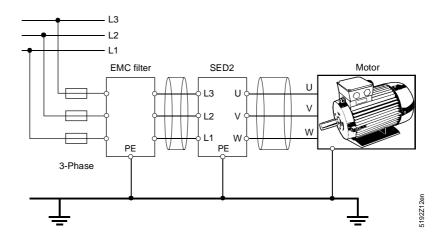
Input voltage range 200 V – 240 VAC, 3-phase							
Output rating kW (hp)	Min. cross- section of supply cable mm ² (AWG)	Max. cross- section of supply cable mm ² (AWG)	Min. cross- section of motor cable mm ² (AWG)	Max. cross- section of motor cable mm ² (AWG)			
11 (15)	16 (5)	35 (2)	16 (5)	35 (2)			
15 (20)	16 (5)	35 (2)	16 (5)	35 (2)			
18.5 (25)	25 (3)	35 (2)	25 (3)	35 (2)			
22 (30)	35 (2)	35 (2)	35 (2)	35 (2)			
30 (40)	50 (0)	150 (-5)	50 (0)	150 (-5)			
37 (50)	70 (-2)	150 (-5)	70 (-2)	150 (-5)			
45 (60)	70 (-2)	150 (-5)	95 (-3)	150 (-5)			

Input voltage range 380 V – 480 VAC, 3-phase							
Output rating kW (hp)	Min. cross- section of supply cable mm ² (AWG)	Max. cross- section of supply cable mm ² (AWG)	Min. cross- section of motor cable mm ² (AWG)	Max. cross- section of motor cable mm ² (AWG)			
0.37 (0.5)	1 (17)	2.5 (13)	1 (17)	2.5 (13)			
0.55 (0.75)	1 (17)	2.5 (13)	1 (17)	2.5 (13)			
0.75 (1)	1 (17)	2.5 (13)	1 (17)	2.5 (13)			
1.1 (1.5)	1 (17)	2.5 (13)	1 (17)	2.5 (13)			
1.5 (2)	1 (17)	2.5 (13)	1 (17)	2.5 (13)			
2.2 (3)	1 (17)	6 (9)	1 (17)	6 (9)			
3 (4)	1 (17)	6 (9)	1 (17)	6 (9)			
4 (5)	1 (17)	6 (9)	1 (17)	6 (9)			
5.5 (7.5)	2.5 (13)	10 (7)	2.5 (13)	10 (7)			
7.5 (10)	4 (11)	10 (7)	4 (11)	10 (7)			
11 (15)	6 (9)	10 (7)	6 (9)	10 (7)			
15 (20)	10 (7)	35 (2)	10 (7)	35 (2)			
18.5 (25)	10 (7)	35 (2)	10 (7)	35 (2)			
22 (30)	16 (5)	35 (2)	16 (5)	35 (2)			
30 (40)	25 (3)	35 (2)	25 (3)	35 (2)			
37 (50)	25 (3)	35 (2)	35 (2)	35 (2)			
45 (60)	35 (2)	150 (-5)	35 (2)	150 (-5)			
55 (75)	70 (-2)	150 (-5)	70 (-2)	150 (-5)			
75 (100)	70 (-2)	150 (-5)	95 (-3)	150 (-5)			
90 (125)	70 (-2)	150 (-5)	95 (-3)	150 (-5)			

Input voltage range 500 V – 600 VAC, 3-phase							
Output rating kW (hp)	Min. cross- section of supply cable mm ² (AWG)	Max. cross- section of supply cable mm ² (AWG)	Min. cross- section of motor cable mm ² (AWG)	Max. cross- section of motor cable mm ² (AWG)			
0.75 (1)	1 (17)	10 (7)	1 (17)	10 (7)			
1.1 (1.5)	1 (17)	10 (7)	1 (17)	10 (7)			
1.5 (2)	1 (17)	10 (7)	1 (17)	10 (7)			
2.2 (3)	1 (17)	10 (7)	1 (17)	10 (7)			
3 (4)	1 (17)	10 (7)	1 (17)	10 (7)			

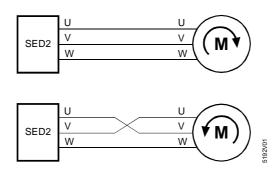
	Input voltage range 500 V – 600 VAC, 3-phase							
Output rating	Min. cross- section of	Max. cross- section of supply	Min. cross- section of motor	Max. cross- section of motor				
kW (hp)	supply cable mm ² (AWG)	cable mm ² (AWG)	cable mm ² (AWG)	cable mm ² (AWG)				
4 (5)	1 (17)	10 (7)	1 (17)	10 (7)				
5.5 (7.5)	1.5 (15)	10 (7)	1.5 (17)	10 (7)				
7.5 (10)	2.5 (13)	10 (7)	2.5 (13)	10 (7)				
11 (15)	4 (11)	10 (7)	4 (11)	10 (7)				
15 (20)	6 (9)	35 (2)	6 (9)	35 (2)				
18.5 (25)	6 (9)	35 (2)	6 (9)	35 (2)				
22 (30)	10 (7)	35 (2)	10 (7)	35 (2)				
30 (40)	16 (5)	35 (2)	16 (5)	35 (2)				
37 (50)	25 (3)	35 (2)	16 (5)	35 (2)				
45 (60)	25 (3)	150 (-5)	25 (3)	150 (-5)				
55 (75)	50 (0)	150 (-5)	35 (2)	150 (-5)				
75 (100)	70 (-2)	150 (-5)	50 (0)	150 (-5)				
90 (125)	70 (-2)	150 (-5)	50 (0)	150 (-5)				

4.3.8 Block diagram showing typical installation



4.3.9 Direction of rotation

You can change the direction of rotation of the motor by cross-connecting two of the output conductors at the VSD or the motor.





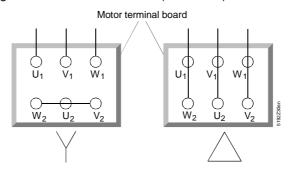
The direction of rotation can also be reversed via parameter P1820. See system parameter list.

36/126

Tip

4.3.10 Star or delta connection

The required supply voltage and method of connection are indicated on the motor rating plate. In general, larger motors (400/690 V) are connected in a delta configuration and smaller motors (230/400 V) in a star configuration.

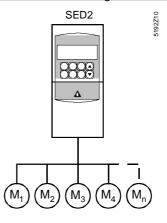


4.3.11 Connecting several motors

You can use the SED2 to control several motors in parallel. Make sure, however, that all motors have the same rating. When multiple motors are connected, the motors connected in parallel cannot be operated individually.

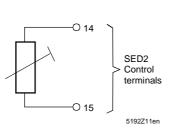
When determining the required power, remember to take account of the **total current** from all the motors, i.e., the sum total of all ratings.

Note the recommended length of the motor connection cable. The sum of all connection cables represents the total cable length.



$$\begin{split} &\sum \ I_{M_1..M_n} \leq I_{SED2,max.} \\ &\sum \ P_{M_1..M_n} \leq P_{SED2,max.} \end{split}$$

4.3.12 External motor overload protection



During operation below nominal speed, the cooling effect of the fans fitted to the motor shaft is reduced. For this reason, most motors require de-rating if operated continuously at low frequencies. To ensure that motors are protected from overheating under these conditions, mount a PTC temperature sensor to the motor and connect it to the control terminals of the variable speed drive.



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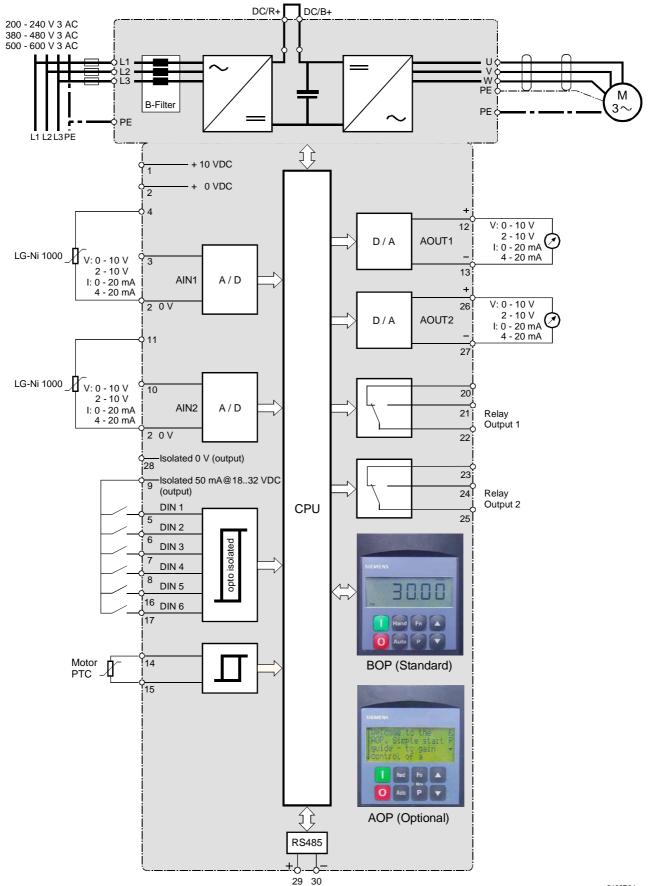
To activate the switch-off function, set parameter P0601 to 1.

Important

4.4 Control terminals

General information	Use only shielded cables for control cables. Route control cables in separate cable trunks at least 20 cm away from motor and power cables.
Location of the control terminals	The control terminals are located on the I/O module. The I/O module is identical for all models. It is located under the operator panel.
Access to the control terminals: Frame sizes A to C	To access the control terminals, remove first the relevant terminal covers. For frame size A, see section Access to connection terminals: Frame size A on page 26. For frame sizes B and C, see section Access to connection terminals: Frame sizes B and C on page 27.
Access to the control terminals: Frame sizes D to F, IP20	To access the control terminals, remove the operator panel, the I/O module, and the I/O module terminal cover plate. See section Access to connection terminals: Frame sizes D to F on page 28.

4.5 SED2 block diagram



5192B01en

5 Commissioning

Warnings

Only authorized personnel trained in the setup, installation, commissioning, and operation of the product may work on the product and plant.



• SED2 variable speed drives operate at high voltages.

- Operation of electrical equipment inevitably involves the use of dangerous voltages in some components.
- Emergency stop facilities in accordance with EN 60204 IEC 204 (VDE 0113) must remain operative in all operating modes of the control equipment. Resetting the emergency stop facility must not result in an uncontrolled or undefined restart.
- In cases where faults in the control equipment could cause significant equipment damage or severe physical injury (e.g. potentially dangerous short circuits), take additional external precautions or provide facilities to ensure or enforce safe operation even in the event of a short circuit (e.g. independent limit switches, mechanical interlocks, etc.).
- Certain parameter settings may cause the variable speed drive to restart automatically after a power failure.

For reliable motor overload protection, the motor parameters must be configured accurately.

The equipment incorporates internal motor overload protection in accordance with UL508C, section 42. Refer to P0610; I² t is the default for ON. Motor overload protection can also be provided via an external PTC temperature sensor (disabled by default, P0601).

The equipment is suitable for use in a circuit delivering max. 10,000 symmetrical amps (rms), and is designed for a maximum voltage of 230V/460V/575V when protected by a type H or K fuse.

Do not use the variable speed drive as an "emergency stop facility". (see EN60204, 9.2.5.4)



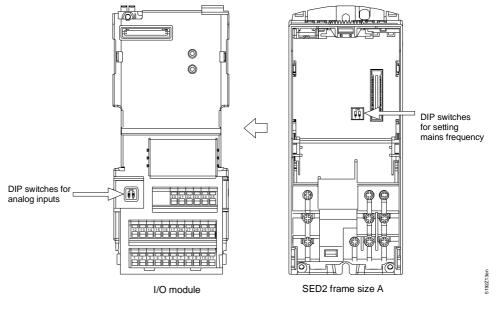
Caution

5.1.1 DIP switch settings

Location of the DIP switches

For all versions of the SED2, the DIP switches used to configure the analog inputs are located on the I/O module. The I/O module is located under the operator panel, to which it is connected either directly (frame sizes A to C, IP20) or via a cable (frame sizes D to E, and all IP54 models).





In all versions of the SED2, the DIP switches for setting the mains frequency and selecting US or European units of measurement are located on the control board under the I/O module.

5.1.1.1 Setting the DIP switches on the I/O module

٠	DIP switch 1	Analog input 1:	OFF position:	Voltage 0 to 10 V
			ON position:	Current 0 to 20 mA
٠	DIP switch 2	Analog input 2:	OFF position:	Voltage 0 to 10 V
			ON position:	Current 0 to 20 mA

Factory setting for both DIP switches: OFF = Voltage 0 to 10 V.

5.1.1.2 DIP switch settings on the control board

- ◆ DIP switch 2: OFF position: European default settings (50 Hz, kW etc.). ON position: North American default settings (60 Hz, hp, etc.). Factory setting: OFF = 50 Hz.
- DIP switch 1 Not for customer use. This switch must be in the OFF position for correct functioning of the VSD.

5.2 Checklist prior to start

What	✓
Is the output of the VSD \geq motor rating?	
Is the operating voltage range ok?	
Is the rated voltage of the SED2 greater than the motor rated voltage?	
Is the cross-section of the mains cable correct?	
Are the cross-section and the length of the motor cables correct, and are they connected properly?	
Are all control lines connected properly?	
Is the motor not blocked mechanically?	
Is the medium (water) available for the pump actuator? (No dry run!)	
Is there no pumping or blowing against still open valves or dampers?	
Is the danger zone free of items or personnel?	

5.3 Operator panels for the SED2

The SED2 comes with the Basic Operator Panel (BOP) mounted as standard. An advanced operator panel (AOP) is available as an option.



5.3.1 Description of the basic operator panel (BOP)

The basic operator panel (BOP) provides access to the parameters of the VSD and allows for application-specific settings of the SED2.

The parameters and measured values are shown in a 5-digit LCD display. The basic operator panel can be mounted directly onto the variable speed drive or, alternatively, it can be mounted into a control cabinet door using a special installation kit.

You cannot store parameter information with the basic operator panel.

For information on setting and changing parameters, refer to section 5.4.4.2 Setting parameters with the BOP or AOP.

5.3.2 Description of the advanced operator panel (AOP)

The advanced operator panel has the following additional functions as compared to the basic operator panel:

- Multilingual and multi-line plain text display.
- Displays units of measurement for speed, frequency, direction of motor rotation, current, etc.
- Comments on current parameters, error messages, etc.
- Diagnostics menu for troubleshooting.
- Main menu can be invoked directly by pressing the Fn and P keys simultaneously.
- Load and store up to 10 parameter sets.
- Communicate via RS232 or RS485 interfaces.
- Programmable with PC without VSD (PC-AOP kit required).
- Multi-drop capability to control up to 31 SED2 variable speed drives.
- 7-day timer with 3 switching operations per day.

For more details, refer to the AOP operating instructions.

5.3.3 Exchanging the operator panels

See illustration in section Removing the operator panel (BOP or AOP) on page 26.



The BOP or AOP can be connected to or disconnected from the variable speed drive without switching off the power supply.

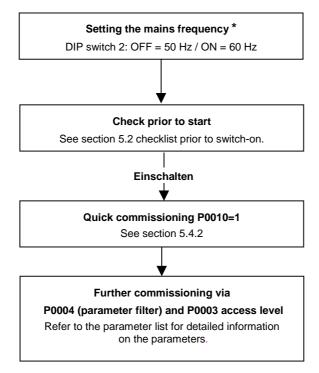
5.3.4 Buttons and their functions on the operator panel

(BOP and AOP)

Operator panel/Button	Function	Effects	
P(1) Hz	Status display	The LCD (five-digit display for BOP, multi-line clear-text display for AOP) shows the settings used presently by the VSD or used to parameterize the VSD).	
	Start motor	Pressing this button starts the variable speed drive. This button is enabled for manual mode as part of the factory setting.	
0	Stop motor	 OFF1 Pressing this button stops the variable speed drive within the selected ramp-down time. This button is enabled for manual mode as part of the factory setting. OFF2 Pressing this button twice (or once with sustained pressure) causes the motor to coast freely to a standstill. This function is enabled in the manual and automatic operating modes. 	
Hand	Changeover to manual control	Pressing this button while the VSD is running sets the input logic so that the operator controls the SED2. In this mode, none of the controlled variables have any influence on the control of the VSD.	
Auto	Changeover to automatic control	In automatic mode, all I/Os are set to represent the system-dependent variables. No manual inputs are accepted. The controller responds to changes depending on its parameter setting. However, it is possible to change system parameters in automatic mode.	
Fn	Functions	 This button allows for displaying additional information. Refer also to the section <i>Buttons with special functions</i> in the AOP operating instructions. Multiple display mode When you press this button for 2 seconds during operation, the following information is displayed regardless of the parameter: DC link voltage (indicated by d – units V). Output current (A). Output frequency (Hz). Output voltage (indicated by o – units V). The value selected in P0005. (If P0005 is configured to display any of the above (1 to 4), the value is not redisplayed). Briefly press the key repeatedly to cycle through the above displays. Pressing again this button for a sustained time exits the multiple display mode. Jump function You can jump from any parameter (rXXXX or PXXXX) directly to r0000 by pressing the Fn button briefly. This allows you to modify another parameter if required. After jumping to r0000, press the Fn button again to return to the starting point. 	
Menu	AOP only	Pressing buttons Fn and P simultaneously opens the main menu.	
Р	Access to parameters	Pressing this button allows you to: 1. Access the parameters, and 2.: Exit the parameter by accepting its value.	
	Increase value	Press this button to increase the value displayed. This button helps increase the current value during parameterization. In manual mode, this button allows for increasing the speed (internal motor potentiometer).	
	Decrease value	Press this button to decrease the value displayed. This button helps decrease the current value during parameterization. In manual mode, this button allows for decreasing the speed (internal motor potentiometer).	

5.4.1 Overview of commissioning with the BOP or AOP

Mechanical and electrical installation must be complete.



* Factory setting: 50 Hz.

We recommend that you commission the VSD as shown in the diagram below. However, experienced users may commission the equipment without the filter functions of P0004.

5.4.2 Quick commissioning

To achieve a structured procedure, it is **important** to use parameter P0010 for commissioning, and P0003 to select the number of parameters to be accessed. Parameter P0010 allows you to select a group of parameters that can be used for quick commissioning. These include parameters for the motor data and for the motor ramp-up and ramp-down settings (ramp settings).

At the end of the quick commissioning procedure, select P3900. When set to 1, this parameter performs the necessary motor calculations and sets all remaining parameters (those not included under P0010 = 1) to the default values, including P0010=0 (if P0010 is set to 1, the VSD cannot start). This process is only possible in "quick commissioning" mode.

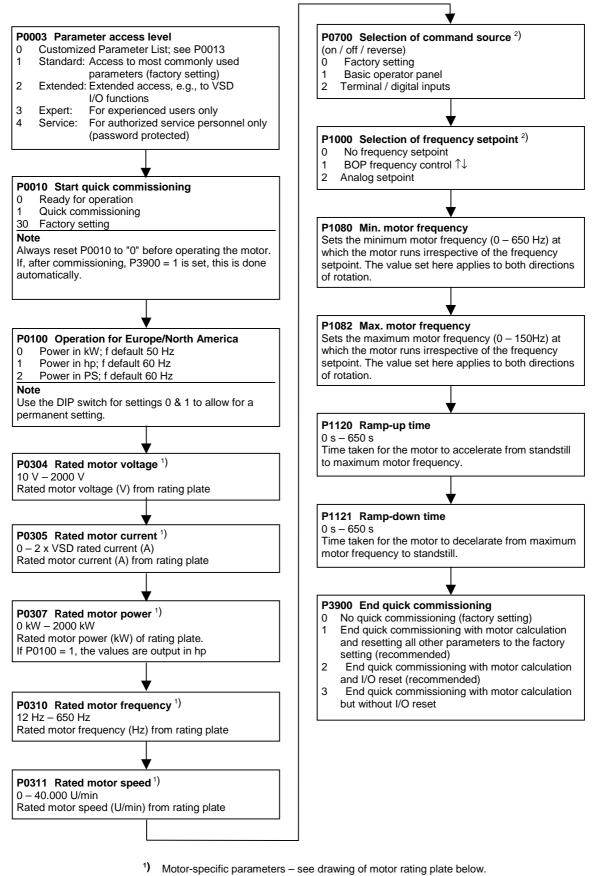


46/126

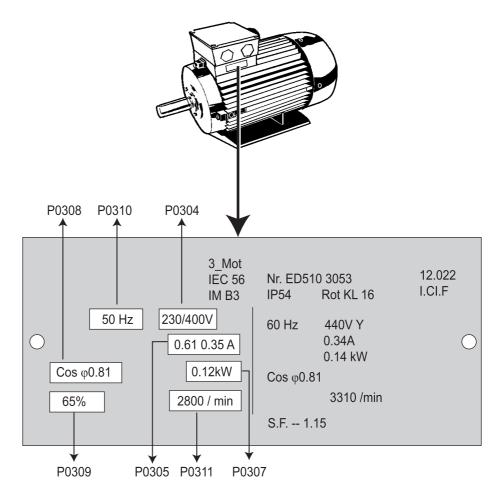
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Note

Quick commissioning flow chart



2) Indicates parameters incorporating detailed lists of possible settings for use in special site applications. Refer to the engineering manual and operating instructions.



5.4.4 Commissioning with the BOP or AOP

5.4.4.1	Country-specific default settings for operation with the BOP
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Parameter	Description	Default setting for Europe (North America)
P0100	European or US op mode	0 = 50 Hz, kW $ (1 = 60$ Hz, hp) $ (2 = 60$ Hz, kW) ^{1,2} .
P0307	Nominal motor power	Value in kW (hp) Unit depends on the setting in P0100 ² .
P0310	Nominal motor frequency	50 Hz (60 Hz).
P0311	Nominal motor speed	1395 (1680) U/min (depends on model) ³ .
P1082	Max. motor frequency	50 Hz (60 Hz).

¹ Use DIP switch 2 under the BOP/AOP. This overwrites the above parameter settings.

 2 This parameter can only be modified if P00010 = 1 (commissioning mode).

³ This parameter can only be modified if P00010 = 1 or 3.

5.4.4.2 Setting parameters with the BOP or AOP

The following describes how to change parameter P1082. Use this description as a guide to setting all other parameters with the BOP.

Changing P0004 –
parameter filter function

Step	Action	Resulting display
1	Press P to access the parameters.	P(1) Hz
2	Press 🔼 until P0004 is displayed.	P(1) POOOY
3	Press P to access the parameter value level.	P(1) Hz
4	Press Or to display the required value.	P(1) Hz
5	Press P to confirm and save the value.	P(1) Hz
6	Only the motor parameters are now visible for the user.	

Changing an indexed value under P1082 – setting the maximum motor frequency

Step	Action	Resulting display
1	Press P to access the parameters.	P(1) Hz
2	Press 🛆 until P1082 is displayed.	P(1) Hz P 1082
3	Press P to access the parameter value level.	P(1) 50.00
4	Press or to display the required value.	P(1) Hz 75.00
5	Press P to confirm and save the value.	P(1) P 1082
6	Press 🔽 to return to P0010.	P(1) Hz
7	Press P to access the parameter value level P0010.	P(1) Hz
8	Press \Box to restore the value to P0010 = 0.	P(1) Hz
9	Press P to save the parameter and exit the parameter value level.	P(1) Hz
10	Press 🔽 until r0000 is displayed.	P(1) Hz
11	Press P to revert to the standard motor display (as defined by the customer).	

Notes	"Busy" signal
	In some cases, the BOP displays for a maximum of 5 seconds while parameters are being changed. This means that the variable speed drive is busy with higher-priority activities.
	You can change motor parameters only if P0010 = 1.
Changing individual digits of the parameters	 You can adjust individual digits in the display to quickly change a parameter value as follows: Make sure that you are at the level that allows for changing parameter values (see section 5.4.4.2 Setting parameters with the BOP or AOP). Press a (function button) – the rightmost digit starts to flash. Change the value of this digit by pressing the for buttons. Pressing the for button again causes the next digit to start flashing. Repeat steps 2 to 4 until the required value is displayed. Press a to exit the parameter change level.
	5.4.5 Resetting SED2 parameters to the factory settings
	 Parameter P0010 = 30 Parameter P0970 = 1 Now press P to restore the factory settings of the VSD. The reset process takes approximately 10 seconds.
Note 🥵	Refer to the default values in the system parameter list for the factory settings of the parameters.
Prerequisites	 5.4.6 Basic operation with the BOP P0010 = 0 to ensure the correct initialization of the RUN command. P0700[1] = 1 to enable the start/stop button on the BOP (factory setting). P1000[1] = 1 to enable the motor potentiometer setpoints (factory setting).
	 Press the green button 1 to start the motor. With the motor running, press . The motor speed increases to 50 Hz. When the variable speed drive reaches 50 Hz, press . The motor speed and the value displayed now decrease. Use P1820 to change the direction of rotation. Note: You can also change the direction of rotation via an appropriately configured digital input. To stop the motor, press the red "STOP" button 0.
	5.4.7 10 Hz test
	The 10 Hz test helps check the installation of both motor and VSD. It helps verify the direction of rotation and the basic functions of the VSD. This ensures that a possible faulty installation of the power section is detected early on.
	 Testing with the BOP Restore the factory settings in the SED2. Refer to section 5.4.5. Press rest to switch to manual operation. Press 1 to switch the device on.

Testing with the AOP

- 1. Restore the factory settings in the SED2.
- 2. Set parameter P700.1 from 1 to 4.
- 3. Press 🧕.
- 4. Press Hand to switch to manual operation.
- 5. Press **I** to switch the device on.

5.4.8 General operation

The SED2 engineering manual contains a full description of the standard and extended parameters.

Important

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- You can change motor parameters only if P0010 = 1.
- To start the motor, reset P0010 to 0.
- The variable speed drive has no mains isolating switch and is live as soon as supply voltage is connected. It remains with the output disabled until you press
 or until it receives a digital ON signal.

Note

If a BOP or AOP is used and the display of the output frequency is selected (P0005 = 21), the value on the display shows the setpoint and the actual value (0 Hz) alternating for the stopped VSD.

6 Programming

6.1 Introduction to the SED2 system parameters



You can change the parameters only via the basic operator panel (BOP), the advanced operator panel (AOP), or the serial interface.

The BOP or AOP can be used to enter and change parameters to define the required characteristics of the variable speed drive, such as motor data, ramp times, maximum and minimum frequency, etc.

- > Read-only parameters are identified by the letter "r" in place of the "P".
- > P0010 = 1 initiates the "Quick commissioning" procedure.
- The variable speed drive runs only if P0010 is set to 0 after access. This function is automatic if P3900 is greater than 0.
- P0004 operates as a filter and allows access to the parameters according to their functionality.
- If you attempt to change a parameter that cannot be changed under the current conditions (e.g., because it cannot be changed during operation or can only be

changed in the "quick commissioning" mode), ---- is displayed.

Busy signal

In some cases, the BOP displays for a maximum of 5 seconds while parameters are being changed. This means that the variable speed drive is busy with higher-priority activities.

6.2 Access to parameters

6.2.1 Parameter access levels (P0003)

In total, there are four access levels. The three access levels available to the user are **Standard, Extended,** and **Expert**. Set the required access level with parameter P0003. For most applications, the Standard and Extended levels are sufficient.

The number of parameters displayed within each function group depends on the access level set in parameter P0003. The factory setting is P0003 = 1 (Standard). Refer to the engineering manual for detailed information about the parameters.

6.2.2 Parameter filter (P004)

You can further limit the selection of available parameters with parameter filter P0004. This filters the available parameters by their functionality. For example, if P0004 = 3, only the motor parameters are visible.

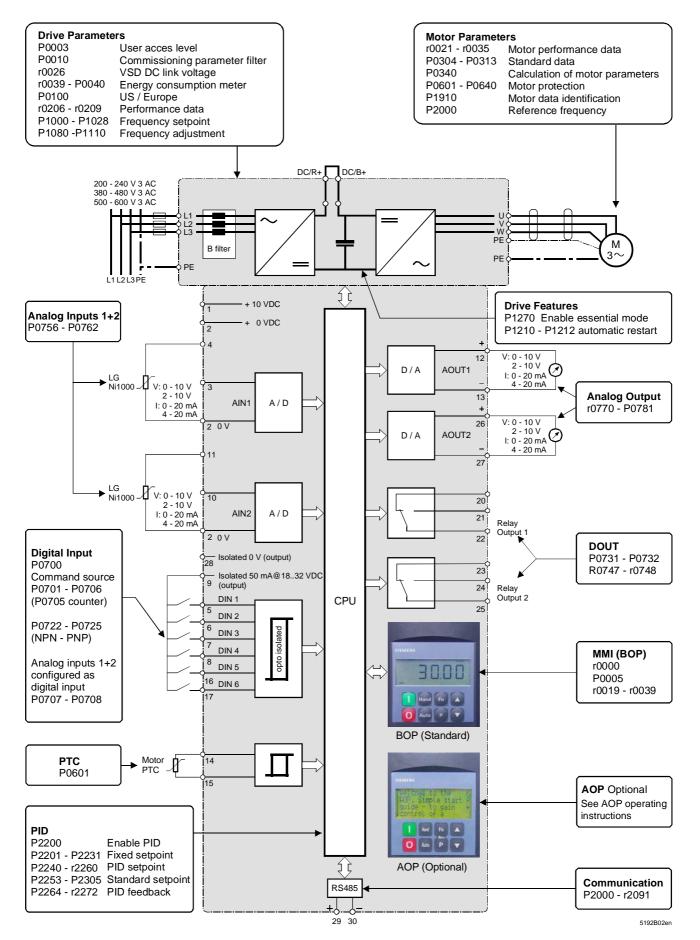
Some parameters are intended *for commissioning only* and can be viewed as a function of this filter. However, in order to set these parameters, set P0010 to 1 (quick commissioning).



Important

Note

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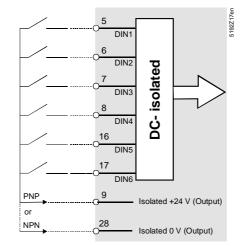


6.2.3 Diagram for a parameter overview

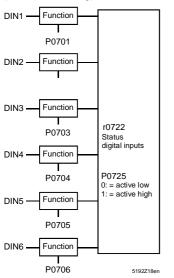
6.3.1 Digital inputs

External switch-on and switch-off arrangements are required for stand-alone operation of variable speed drives. The digital input port provides six channels, which can be extended to eight by use of the two analog inputs.

You can program the function of the digital inputs as required.



Setting parameters for DIN1 to 6 (or DIN1...8) (commissioning)



P0701 to P0706 Digital inputs 1 to 6

The available settings for each of the input channels are listed below:

- 0 Digital input disabled.
- 1 ON / OFF1 OFF as per the ramp-down time defined in P1121.
- 2 ON + change direction of rotation / OFF1.
- 3 OFF2 coast to standstill.
- 4 OFF3 faster ramp-down (quick stop = ramp-down at power limit).
- 9 Error acknowledgement.
- 10 JOG right.
- 11 JOG left.
- 12 Reverse direction of rotation.
- 13 Motor potentiometer (MOP) higher (increased frequency).
- 14 Motor potentiometer (MOP) lower (reduced frequency).
- 15 Fixed setpoint (binary coded).
- 16 Fixed setpoint (binary coded + ON).
- 17 Fixed setpoint (binary-coded decimal + ON).
- 25 Enable DC braking.
- 26 Enable Essential Service.
- 27 Enable PID controller.
- 28 Bypass command input (in bypass mode).
- 29 External fault.
- 33 Disable additional frequency setpoint.
- 99 Enable BICO parameter-setting.

Index: Example for P0701, applies also to parameters P0702 to P0708.

- P0701[0]: 1. command data set (CDS).
- P0701[1]: 2. command data set (CDS).
- P0701[2]: 3. command data set (CDS).

Note

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Setting 99 (BICO) is intended for experienced users only. For more detailed information, refer to the SED2 engineering manual. Factory settings:

P0701	1	ON / OFF1.
P0702	12	Reverse (change dir. of rotation).
P0703	9	Error acknowledgement.
P0704	15	Fixed setpoint (binary coded).
P0705	15	Fixed setpoint (binary coded).
P0706	3	OFF2 – coast to standstill.

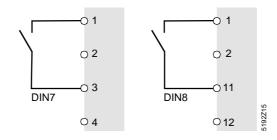
P0707 to P0708

Analog inputs 1 and 2 can be reconfigured with parameters P0707 and P0708 as digital inputs if required.

The following limit values apply to analog inputs configured as digital inputs:

 \leq 1.6 VDC = Off. \geq 4.0 VDC = On.

Factory setting: 0



Connection of the two analog inputs for use as additional digital inputs DIN7 and DIN8.

P0725

Operating mode for the digital inputs NPN or PNP

This parameter determines whether the digital inputs DIN1 to 6 are to be enabled by "logic 0" or "logic 1".

Possible settings:

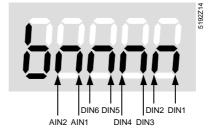
- $0 \qquad \mathsf{NPN} \ \mathsf{mode} \Rightarrow \mathsf{active} \ \mathsf{low}.$
- 1 PNP mode \Rightarrow active high (factory setting).

r0722

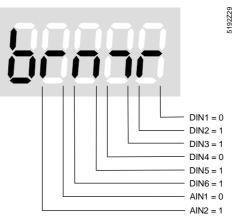
Check of the digital and analog inputs

This parameter can be used to check the functions of the digital and analog inputs. You can check the presence of a signal at the channel.

When an active signal is present, the associated segment of the display lights up. The allocation of each of the inputs to a specific segment is illustrated below.

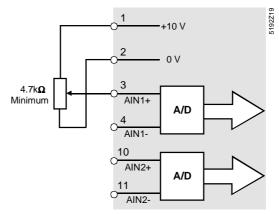


Example of the display while testing the input signals:



6.3.2 Analog inputs

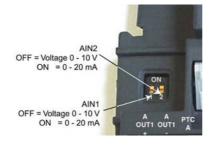
The analog inputs are used to send positioning, control, and feedback signals to the VSD and convert them to digital signals via A/D converters.



The analog inputs AIN1 and AIN2 are specified as follows:

Input level:	0 to 10 V or
	0 to 20 mA
Resolution:	10 bit
Read cycle:	10 ms

Set the analog inputs to 0 to 10 V or 0 to 20 mA via the 2 DIP switches on the I/O module.



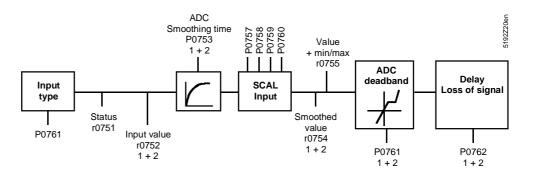
Setting the DIP switches on the I/O module

Position	DIP switch 1	DIP switch 2
ON	mA	mA
OFF	V	V

Factory setting for both DIP switches: OFF.

Refer to section 5.1.1.1, Setting the DIP switches on the I/O module.

Parameter setting for AIN1 and AIN2 (commissioning)



P0756

Defines the type of analog input and enables analog input monitoring.

Possible settings:

- 0 Unipolar voltage input (0 to 10 V) (factory setting).
- 1 Unipolar voltage input with monitoring (0 to 10 V).
- 2 Unipolar current input (0 to 20 mA).
- 3 Unipolar current input with monitoring (0 to 20 mA).
- 5 LG-Ni 1000 sensor input (-10 to +10 V).
- **Important:** The parameter setting must match the setting of the 2 DIP switches on the I/O module.

Index:

P0756[0] : Analog input 1 (ADC 1). P0756[1] : Analog input 2 (ADC 2).

Note on dependency:

This function is disabled if the analog scaling block is programmed to negative output setpoints (see P0757 to P0760).

Note on the monitoring function

If monitoring is enabled and the dead zone is defined (P0761), an error message appears (F0080) as soon as the analog input voltage drops below 50% of the dead zone voltage.

P0753

Defines the filter time in ms for the analog input.

Setting range: 0 to 10,000 ms Factory setting: 100 ms

Index:

P0753[0] : Analog input 1 (ADC 1). P0753[1] : Analog input 2 (ADC 2).

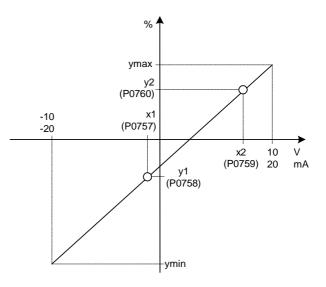
Note:

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Increasing this time reduces (smoothes) the ripples but also slows down the response to the analog input.

P0757 - P0760

Parameters P0757 to P0760 are used to configure the **input scaling for the analog inputs** according to the following curve:



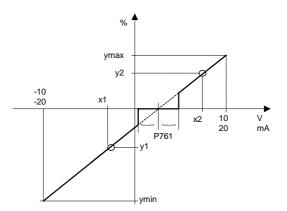
Deremeter	Unit	Point on Setting range		Factory acting	
Parameter		x/y-axis	Min.	Max.	Factory setting
P0757	V or mA	x1 value	-20.0	20	0
P0758	%	y1 value	-999999.9	99999.9	0.0
P0759	V or mA	x2 value	-20	20	10
P0760	%	y2 value	-999999.9	-999999.9	100

The factory setting of the input scaling corresponds to 0 V = 0% and 10 V = 100%.

P0761

Defines the ADC dead zone for the analog inputs.

Setting range: 0 to 20 V or mA Factory setting: 0



Note: P0761[x] = 0: No enabled dead zone.

The dead zone runs from 0 V(mA) to the value of P0761, if the values of P0758 and P0760 (y-coordinate for ADC scaling) have the same sign. The dead zone is enabled from the intersecting point (x-axis with ADC scaling curve) in both directions, if P0758 and P0760 have different signs.

When using a configuration with neutral point in the center, Fmin (P1080) should be zero. There is no hysteresis at the end of the dead zone.

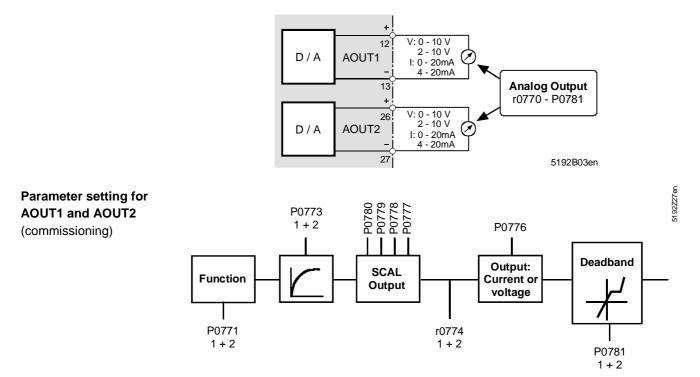
P0762

Defines the delay time in ms between the drop-off of the analog setpoint and the display of error message F0080.

Setting range:0 to 10,000 msFactory setting:1000 ms

6.3.3 Analog outputs

The analog outputs primarily help display status variables such as output frequency, motor voltage, or present motor current within the scaleable range.



r0770

Shows the number of available analog outputs.

P0771

Defines the physical status variable to be displayed as an analog signal.

Possible settings:

- 21 Present output frequency (scaled to P2000), (factory setting).
- 24 Present VSD output frequency (scaled to P2000).
- 25 Present output voltage (scaled to P2001).
- 26 Present link voltage (scaled to P2001).
- 27 Present output current (scaled to P2002).

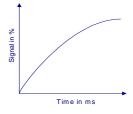
Index:

P0771[0]: Analog output 1 (DAC 1). P0771[1]: Analog output 2 (DAC 2).

P0773

This parameter enables smoothing for the DAC input with a PT1 filter and determines the **smoothing time** in ms for the **analog output signals**.

Setting range: 0 to 1000 ms Recommended setting: 100 ms (factory setting)



Index:

P0773[0]: Analog output 1 (DAC 1). P0773[1]: Analog output 2 (DAC 2). **Note:** The filter is disabled for P0773 = 0.

r0774

Shows the analog output value (in V or mA) after filtering and scaling.

Index:

P0774[0]: Analog output 1 (DAC 1). P0774[1]: Analog output 2 (DAC 2).

P0776

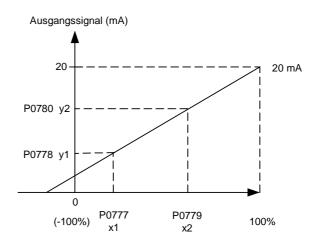
Defines the type of analog output.

Possible settings:

- 0 Current output 0 to 20 mA (factory setting)
- 1 Voltage output 0 to 10 V
- **Note:** The analog outputs are designed as current outputs within 0 to 20 mA. Both analog outputs must be configured as the same type. Both channels are configured, e.g., as either current outputs with range 0 to 20 mA, or as voltage outputs with range 0 to 10 V.

P0777 to P0780:

Define the output characteristic in %. The DAC scaling parameters (P0777 to P0781) are used to set the output characteristics. They are configured according to the following curve.



Points P1 (x1, y1) and P2 (x2, y2) are freely selectable.

Example:

The factory-set scaling is as follows: P1: 0.0 % = 0 mA or 0 V andP2: 100.0 % = 20 mA or 10 V.

Index:

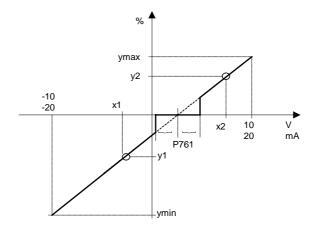
P0777[0]: Analog output 1 (DAC 1). P0777[1]: Analog output 2 (DAC 2).

P0777:	Defines x1 of the output characteristics	(factory setting = 0.0).
P0778:	Defines y1 of the output characteristics	(factory setting = 0).
P0779:	Defines x2 of the output characteristics	(factory setting = 100).
P0780:	Defines y1 of the output characteristics	(factory setting = 10).

P0781

Defines the DAC dead zone for the analog inputs.

Setting range: 0 to 20 mA or 0 to10 V Factory setting: 0



Index:

P0781[0]: Analog output 1 (DAC 1). P0781[1]: Analog output 2 (DAC 2).

Frequency setpoint (P1000) 6.3.4

- ≻ Default setting: Terminal 3/2 (AIN+/ AIN-, 0 to 10 V corresponds to 0 to 50/60 Hz).
- ≻ Additional settings: See P1000.

Selecting the command source (P0700) 6.3.5

Possible settings for P0700:

	 Factory setting (BICO reset), resets all digital inputs to the factory settings (possible only if P0701=99). Operator panel BOP or AOP. Control terminal bar (factory setting). USS on BOP link. USS on COM link. CB on COM link.
Start motor	 Default setting: Terminal 5 (DIN 1, high). Additional settings: See P0700 to P0708.
Notes 🥳	The ramp-up and ramp-down smoothing times influence the motor's start and stop behavior. Refer to the engineering manual, parameter list, parameters P1120, P1121 for more information on these functions.
Stop motor	 There are several ways to stop the motor: Default setting: OFF1 Terminal 5 (DIN 1, low). OFF2 OFF button on BOP/AOP; sustained pressing of the OFF button (2 seconds) or repeated pressing of the button (in case of default settings not possible without BOP/AOP).
	Additional settings: See P0700 to P0708.
Reversal of the motor's direction of rotation	 Default setting: Terminal 6 (DIN 2, high). Additional settings: See P0700 to P0708.

OFF1	6.3.6 OFF functionsThis command (by eliminating the ON command) stops the variable speed drive within the selected ramp-down time.Parameters to change the ramp-down time: See P1121.
Notes 🧟	 The ON and the consecutive OFF1 command must have the same source. If the ON/OFF1 command is set for more than one digital input, only the last set digital input is valid, e.g., DIN3 is enabled.
OFF2	This command causes a free coasting of the motor to standstill (impulses for the power section of the VSD are disabled).
Note 🥳	The OFF2 command may have one or several sources. By default, the OFF2 command is set to BOP/AOP. This source remains even if other sources are defined by one of the parameters P0700 to P0708.
	6.3.7 Control types
	The different control types of the SED2 control the relationship between the motor speed and the voltage supplied by the VSD. Below is a summary of the available control types.
Linear V/f control P1300 = 0	Can be used for variable or constant torque applications such as delivery systems and positive displacer pumps.
Linear V/f control with flow control (FCC) P1300 = 1	This factory-set control mode can be used to improve performance and dynamic behavior of the motor.
Parabolic V/f control P1300 = 2	This factory-set control mode can be used for variable torque load such as fans and pumps.
Multi-point V/F control P1300 = 3	Refer to the engineering manual for information on this control mode.
Linear V/f control with energy saving mode P1300 = 4	This function automatically increases or decreases the motor voltage to locate the lowest possible energy consumption. This control mode is enabled as soon as the default setpoint speed is reached.
V/f control for textile applications P1300 = 5	There is no slip compensation or resonance smoothing. The Imax controller relates to voltage instead of frequency.
V/f control with FCC for textile applications P1300 = 6	A combination of P1300 = 1 and P1300 = 5.
	6.3.8 Communication

A serial interface RS485 is integrated. A RS232 interface is integrated in the optional door mounting set for BOP/AOP.

See section 9.1 Options.

USS, P1, and N2 protocols are implemented as part of the series. For detailed information, refer to the engineering manual.

6.4 HVAC functions of the SED2

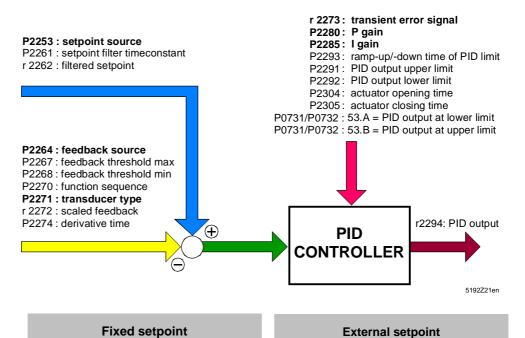
The functions listed below were implemented specifically in the SED2 for HVAC applications.

6.4.1 PID controller

In order to achieve independent control within a stand-alone application by means of the SED2 VSD, Siemens SBT implemented a proven PID controller. This controller allows for temperature (LG-Ni 1000), pressure, and speed control.

The factory settings for the implemented PID parameters are designed for pressure control.

For temperature or speed control, the controller's time constants must be adjusted to the new control loop. See "Parameterizing the PID controller" below.



Parameterizing the PID controller (commissioning)

Note:

The setpoint and the actual value signal are to be displayed as a percentage (%) or absolute value. Make sure, however, that the two signals match each other.

P2201

Enter fixed setpoint (or absolute value in %). The setpoint is active if switching command "ON" is sent to DIN1.

P2253

Set to value **2224** (fixed PI setpoint). **P0701[0]** Enter value **16** (sets DIN1 to ON with fixed setpoint; see section 6.3.1 Digital inputs).

Analog input

See the section on analog inputs for the parameter settings.

P2253[0]

Set to **755** (setpoint is configured to AIN 1).

P0756[0]

Select the type of analog input 1 for the setpoint. See section Analog inputs. **P0757[0] to P0760[0]**

Set scaling of AIN 1.

P0756[1]

Define the type of analog input 2 for the actual value signal (see section 6.3.2 Analog inputs).

Continued: Parameterizing the PID controller

P0757[1] to P0760[1]

Set the scaling of the actual value for analog input 2 (see section 6.3.2 Analog inputs).

P2264

Set to 755[1] (defines AIN2as actual value).

P2271

Define the reaction of the PID controller to the actual values (0=heating, 1=cooling).

P2200

Enable the PID controller (0=disable, 1=enable).

r2262

Check for setpoint (scaled PID setpoint in %). Note: VSD must be set to automatic control. DIN1 must be set to ON.

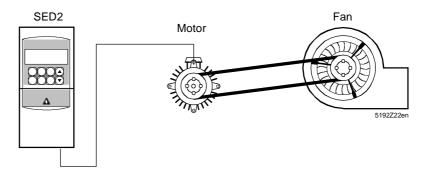
r2272

Check for actual value (scaled PID actual value in %).

Set and optimize P2280 PID proportional gain and P2285 PID integration time.

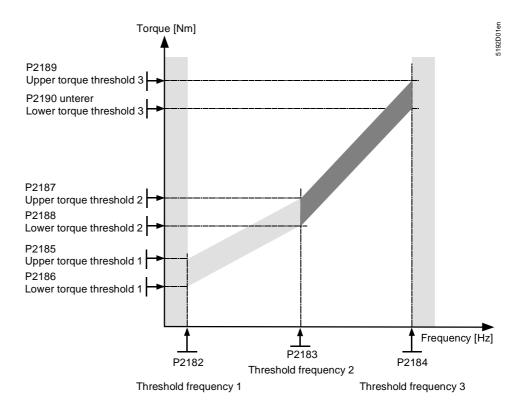
Changeover to automatic control.

6.4.2 Belt failure detection without sensor (P2181)



This function allows for monitoring power transmission components such as drive belts. The function can also detect motor overload, e.g. in the case of jam. The actual frequency / torque curve is compared to a preprogrammed tolerance band (see P2182 to P2190) as part of this function. If the actual curve is outside the tolerance band, a warning or error message is generated.

Frequency / torque curve



The permissible frequency/torque area is defined by the zone shaded gray. The frequency limit values 1 to 3 define the areas used to compare the actual torque to the preset torque. Nine parameters define torque monitoring. Parameters (P2182 to P2184) define the frequency limit values to be set. Parameters (P2185 to P2190) limit the tolerance band compared to the present torque curve.

1. Frequency limit value parameter P2182 to P2184.

Setting the three frequency limit values:

The 3 frequency limit values F1;F2;F3 determine a reasonable division across the required torque area. Set the values desired in the manual mode by pressing buttons and read and write down the corresponding torque values via parameter r0031.

Factory setting: 5;30;50 Hz.

- 2. Set the desired **reaction of drive belt failure detection** via parameter **P2181**. Possible settings for P2181:
 - 0 Belt failure detection disabled (factory setting).
 - 1 Warn low torque/speed.
 - 2 Warn high torque/speed.
 - 3 Warn high/low torque/speed.
 - 4 Trip low torque/speed.
 - 5 Trip high torque/speed.
 - 6 Trip high/low torque/speed.

P2181 must be set before P2185 to P2190 (not to 0).

 Set the torque limit value parameters P2185 to P2190 as follows: Add ±15% to the torque derived from the setting of the frequency limit values to define a permissible tolerance band for the torque values. For allocation of variables, refer to the frequency/torque curve.

Factory setting: 99999.0.

Parameterizing belt failure detection without sensor (commissioning)

Note

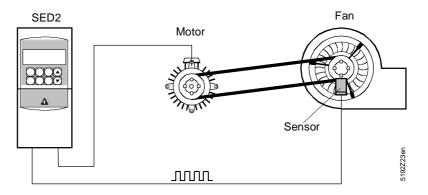
4. Set the alarm delay parameter P2192:

P2192 allows for setting a delay (between 0 to 65 sec) before a warning or error message is generated. The parameter helps avoid false alarms caused by temporary transition states. This delay can also be used for belt failure detection via sensor.

Factory setting: 10 s.

- 5. In manual mode, vary the torque frequency in the selected range to check the function.
- 6. Changeover to automatic control.

6.4.3 Belt failure detection with sensor (P0400)



A simple sensor (inductive sensor) mounted to the drive unit (e.g. for a fan) supplies one pulse for each rotation. The pulse train generated this way—which can vary from 1 to 20,000 pulses per minute—is sent to the digital input DIN5 of the VSD. The frequency resulting from the pulse train is compared to the present output frequency of the VSD.

Parameter P0400 defines the encoder type.

If parameter P0400 = 0 (factory setting), this type of belt failure detection is disabled and the variant "belt failure detection without sensor (P2182)" is used instead.

Only digital input DIN5 works with a counter signal!

- 1. Determine the speed transformation ratio between the motor and the shaft driven by the belt.
- 2. Define the **encoder type** using parameter **P0400**.

Possible settings for P0400:

- 0 Disabled (factory setting).
- 1 Single channel encoder.
- 2 Quadrature encoder without zero pulse.
- 3 External pulse train.
- 12 Quadrature encoder with zero pulse.
- 3. Use parameter **P0409** to set the **pulse rate** (number of pulses/sec) generated by the **sensor** at **nominal frequency** (nominal speed) by including the transmission ratio determined in point 1.

Setting range:1 to 500Factory setting:25

Parameterizing belt failure detection with sensor (commissioning)

(F

- 4. Set the desired **reaction of drive belt failure detection** via parameter **P2181**. Possible settings for P2181:
 - 0 Belt failure detection disabled (factory setting).
 - 1 Warn low torque/speed.
 - 2 Warn high torque/speed.
 - 3 Warn high/low torque/speed.
 - 4 Trip low torque/speed.
 - 5 Trip high torque/speed.
 - 6 Trip high/low torque/speed.

Suggested setting: 1 Warn low torque/speed.

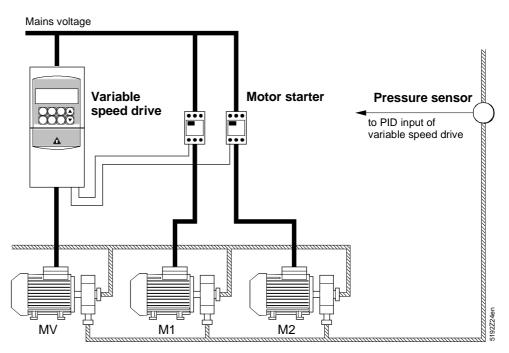
5. Use parameter **P2191** to set the **maximum permissible deviation** of the pulse train frequency (actual value) generated by the sensor from the VSD output frequency (setpoint). If the tolerance band for frequency is exceeded, a warning or trip is generated.

Setting range: 0 to 20 Hz. Factory setting: 3 Hz.

- 6. In manual mode, vary the torque frequency in the selected range to check the function.
- 7. Changeover to automatic control.

6.4.4 Staging pumps or fans

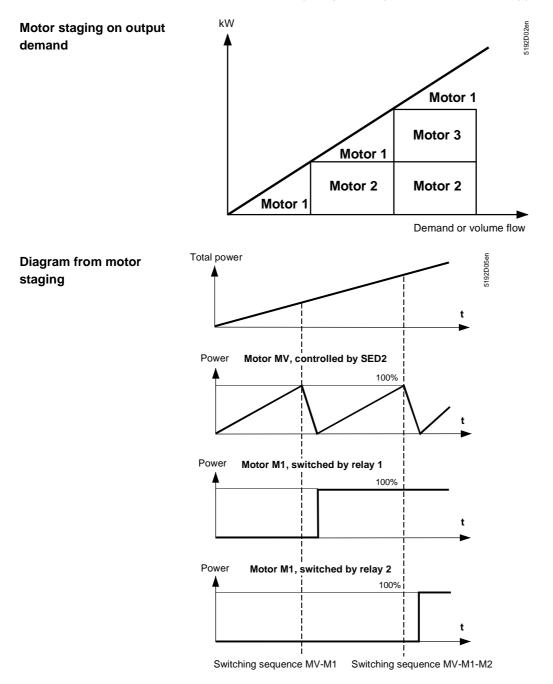
The motor control staging allows to control up to two additional pumps or fans based on the integrated PID control system. The complete system comprises a pump (fan) controlled by the VSD, and up to two additional pumps (fans) switched by contactors or motor starters. The contactors or motor starters are controlled by relay switching contacts integrated in the VSD. The diagram below shows a typical pump system. A similar system comprising fans could be used for ventilating systems.



- MV: Motor, speed-controlled by SED2.
- M1: Motor, controlled by relay 1 DOUT1.
- M2: Motor, controlled by relay 2 DOUT2.

If MV runs at maximum frequency and the PID feedback shows that a higher speed is demanded in accordance with the staging, the VSD switches on one of the relay-controlled motors M1 or M2 (staging). To keep the controlled variable as constant as possible, and to compensate for the difference in output, the VSD must be decreased to minimum frequency. See the illustration below. During the staging process, PID control is suppressed.

If MV runs in parallel to M1 and M2 at a minimum frequency, and if the PID feedback demands an even lower speed, the VSD switches off one of the relay-controlled motors M1 or M2 (destaging). In this case, the VSD must increase the ramp from the minimum to the maximum frequency. In this phase, PID control is suppressed.



As a rule, the factory settings can be used.

Parameterizing motor staging (commissioning)

P2371

Defines the **configuration of additional pumps** or **fans**. Max. 2 pumps can be added. Factory setting: 0 Maximum setting: 2

P2372

Enable motor cycling

If this parameter is enabled, one or two motors are switched on or off—during staging, in addition to the speed-controlled motor—in a specified sequence based on the motor operating hours (parameter 2380). During staging, the motor having the lowest number of operating hours is first switched on. During destaging, the motor having the highest number of operating hours is first switched off.

In the case of different output of the motors to be switched on, the motor promising to best satisfy the demanded output is switched on first, regardless of its operating hours.

Factory setting: 0 (disabled).

P2373

Defines the staging hysteresis: Value in % of the PID setpoint.

Setting range: 0 to 200 % Factory setting: 20 %

P2374

Delay on staging

Setting range: 0 to 650 s Factory setting: 30 s

P2375

Delay on destaging

Setting range: 0 to 650 s Factory setting: 30 s

P2376

Overriding the delay on staging/destaging

The value of P2376 is set as a percentage of the PID setpoint. If the PID fault (P2273) exceeds this value, a motor is switched on or off, regardless of the delay time set in P2374 and P2375.

Setting range:0 to 200 %Factory setting:25 %

P2377

This parameter is used to lock the **delay override (P2376)** after staging or destaging for a specified period of time. This prevents a second staging immediately following the first staging, that, for example, could have been triggered by the first staging.

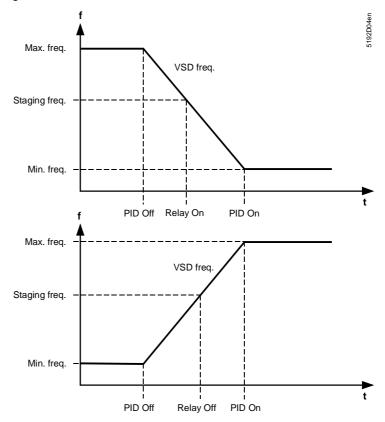
Setting range:0 to 650 sFactory setting:30 s

P2378

Staging frequency

This parameter is defined as a particular percentage of the maximum output frequency. This determines the frequency used to switch on or off the relay (DOUT1 or DOUT2) during staging or destaging.

See the diagram below.



Factory setting: = 50 % (defined as a percentage = 100%, at fmax = 50 Hz).

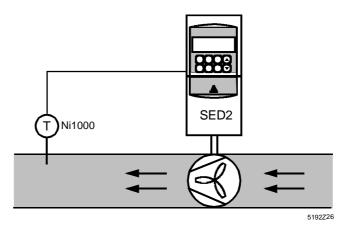
P0731 (DOUT1)

Function of the digital output 1 (relay 1) Set parameter to **2379[0]** (relay 1 to motor 1). Factory setting: 52.3 = VSD fault enabled.

P0732 (DOUT2) Function of the digital output 2 (relay 2) Set parameter to 2379[1] (relay 2 to motor 2). Factory setting: 52.2 = VSD in operation.

Complete parameter setting by changing over to automatic control.

6.4.5 Temperature control with LG-Ni 1000 sensor



Use the SED2 to directly measure the temperature by means of a passive temperature sensor of type LG-Ni 1000. Simple temperature control is possible accordingly. The sensor is connected to the VSD. The signal can be scaled according to requirements.

Same procedure as for commissioning analog inputs. The temperature sensor can be connected as follows to the analog inputs:

LG-Ni 1000 on AIN 1

Connection terminals: 2/4

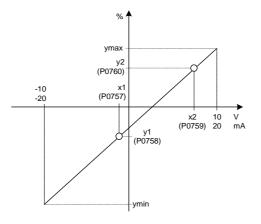
LG-Ni 1000 on AIN 2

Connection terminals: 2/11

Note: When connecting a LG-Ni 1000 sensor, no other input signal can be processed on the same channel, even if terminals 3 / 10 for an analog signal of 0 to 10 V are free.

P0757 to P0760, scaling

During scaling, the LG-Ni 1000 sensor's temperature range of –50 to 150 $^\circ\text{C}$ can be converted to %.



Example: LG-Ni 1000 on AIN1:

P0757[0] = -50 °C P0758[0] = -50% P0759[0] = 150 °C P0760[0] = 150%

Factory settings: P0757 = 0P0758 = 0.0P0759 = 10P0760 = 100

72/126

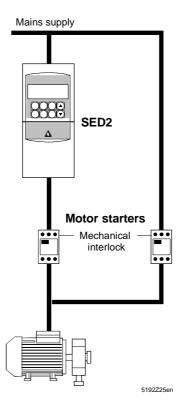
Parameterization

temperature control

(Commissioning notes)

6.4.6 Bypassing the VSD

There are applications demanding maximum motor output. Additionally, there are applications requiring a VSD bypass system for safety reasons. For these cases, the SED2 has an integrated bypass function.



 Parameterizing the bypass function
 P1260

 (commissioning)
 Defines the possible triggers for changing over to bypass operating mode.

 The following settings are possible:
 0

 Bypass disabled (factory setting).

- 1 Controlled by VSD trip.
- 2 Controlled by DIN, see P1266.
- 3 Controlled by DIN and VSD trip.
- 4 Controlled by VSD frequency.
- 5 Controlled by VSD frequency and VSD trip.
- 6 Controlled by VSD frequency and DIN.
- 7 Controlled by VSD frequency and DIN and VSD trip.

r1261

Read parameter for the bypass function showing how the motor is driven: The following states are possible:

Bit 00	Motor supplied by drive	0 1	Yes No
Bit 01	Motor supplied by mains	0 1	Yes No

P1262

Defines the time delay between changing over the VSD to bypass and vice-versa to demagnetize the motor. See bypass diagram below.

Setting range:	0 to 20 s
Recommended setting:	1 s (factory setting).

P1263

Defines the time delay between the bypass alarm OFF and the bypass switching contactor OFF. See bypass diagram below.

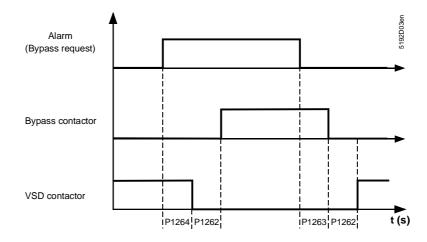
Setting range:0 to 300 sRecommended setting:1 s (factory setting).

P1264

Defines the time delay between the bypass alarm ON and the VSD switching contactor OFF. See bypass diagram below.

Setting range: 0 to 300 s Recommended setting: 1 s (factory setting).

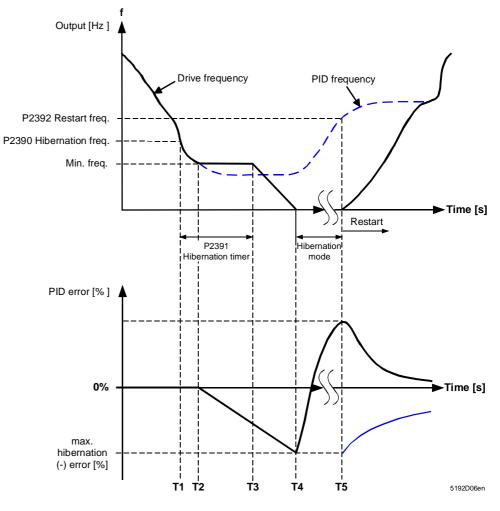
Bypass time diagram



Complete parameter setting by changing over to automatic control.

6.4.7 Hibernation mode

If the VSD reaches the hibernation setpoint in PID operating mode, the hibernation timer **P2391** starts. After the timer has expired, the VSD drives the output frequency of the ramp to 0 Hz. See illustration below.



T1	 Hibernation frequency reached.
	 Start of hibernation timer.
T2	Minimum output frequency reached.
Т3	 Output frequency decreased in accordance with the set ramp.
	 PID control of the output frequency is interrupted.
T4	Output frequency = zero (motor standstill).
T3 to	The PID fault signal [%] is monitored.
T5	Note:
	 The polarity of the PID fault signal.
	 The polarity of the PID fault signal must match the sequence of the
	controlled functions (cooling/heating or vice-versa).
	 The temperature setpoint can be below 0 °C.
	 The PID fault signal can be positive or negative.
T5	 The VSD output frequency is again increased.
	 The PID control of the output frequency is again enabled.

Parameterizing the hibernation function	P2390 Hibernation frequency s	setpoint [%]
(commissioning)	Setting range:	± 200 %
	Recommended setting:	Value 15 to 20% greater than the minimum frequency.
	Note: The hibernation fun (corresponds to the	nction is disabled if the hibernation setpoint is set to 0 e factory setting).
	P2391 Hibernation timer [s]	
	Set the desired time T1 to Setting range: 0 to 254	o T3 (before hibernation mode kicks in) (see diagram above). s
	P2392	
	Restart PID controller de	eviation [%]
	This parameter defines the	e PID controller deviation at which the motor is to restart.
	Setting range: \pm 200 %	
Note	Note the signs according	to the application (heating or cooling sequence).
	Complete parameter settin	ng by changing over to automatic control.

6.5 System parameter list for levels 1 to 3

r0000	Drive display							Level 1
	Displays the user selecte		in P0005.					
Unit: - Note:	Min: - Pressing the "Fn" button	for 2 seconds allow	e the user to		ax: -	link voltage		output
Note.	frequency, and chosen r					link voltage, t	aiput current,	output
r0002	Drive state							Level 3
11	Displays actual drive stat				1		_	
Unit: - Settings:	Min: - 0=Commissioning mode	(P0010-0)	3-Drive sta	rting (DC link	Max: -	na)		
Settings.	1=Drive ready	(1 0010=0)	4=Drive run		precharge	ng)		
	2=Drive fault active		5=Stopping	(ramping dov				
Dependency:	State 3 visible only while	precharging DC link	k, and when	externally por	wered cor	nmunications	board is fitted.	
P0003	User access level							Level 1
	Defines user access leve	el to parameter sets.	The default	setting (stand	dard) is su	ifficient for mo	st	
Unit:	simple applications.	Def: 1			lax: 4		_	
Settings:	0=User defined parameter		or details		-	enced users of	only	
U	1=Standard: Access into	frequently used par	ameters.				ized service p	ersonal -
	2=Extended: Access to e	e.g. variable speed d	Irive I/O					
	functions.							
P0004	Parameter filter				-			Level 1
	Filters available parameter commissioning.	ers according to fun	ctionality to	enable a mor	e tocusse	a approach to		
Unit: -	Min: 0	Def: 0			Max: 22		-	
Example:	P0004=22 specifies that		s will be visit					
Settings:	0=All parameters	5=Technol. applica	ation/units	12 =Drive fe	atures		/ warnings / m	
	2=Variable speed drive	7=Commands, bin	ary I/O	13 =Motor c		22 =Techno	ogy controller	(e.g. PID)
	3=Motor 4=Speed sensor	8=ADC and DAC 10 =Setpoint chan	nol / PEC	20 =Commu	inication			
	Parameters marked "Qui	ick Comm. Yes" in th	ne paramete	r header can	only be se	t when P001)=1 (Quick	
Dependency:	Commissioning).		ie paramete		only be o			
Note:	The variable speed drive	will start with any se	etting of P00	04.				
P0005	Display selection							Level 2
	Selects display for param	neter r0000 (drive di	splay).					
Unit: -	Min: 2	Def: 21			lax: 2294			
Settings:			altaga		link volta			
	21=Actual frequency	25=Output vo		26=DC		ge	27=Output	current
Note:	These settings refer to re	ad only parameter r				ge	27=Output	current
Note: Details:	These settings refer to re See relevant "rxxxx" para	ad only parameter r				ge	27=Output	current
Details:	These settings refer to re See relevant "rxxxx" para Display mode	ead only parameter r ameter descriptions.	numbers ("rx			ge		Level 3
Details: P0006	These settings refer to re See relevant "rxxxx" para Display mode Defines mode of display	ead only parameter r ameter descriptions. for r0000 (drive disp	numbers ("rx	xxx").		ge		
Details: P0006 Unit: -	These settings refer to re See relevant "rxxxx" para Display mode Defines mode of display Min: 0	ead only parameter r ameter descriptions. for r0000 (drive disp Def: 2	numbers ("rx play).	xxx").	lax: 4			Level 3
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Details: P0006 Unit: - Settings: Note: P0010 Unit: - Settings: Dependency: Note:	These settings refer to re See relevant "rxxxx" para Display mode Defines mode of display Min: 0 0=In Ready state alternat frequency. During run, 1=In Ready state alternat value. In run display P When variable speed driv Per default, the setpoint a Filters parameters so tha Min: 0 0=Ready 1=Quick commissioning 2=Variable speed drive Reset to 0 for variable sp P0003 (user access leve	ad only parameter r ameter descriptions. for r0000 (drive disp Def: 2 te between setpoint display output frequ setpoint. In run disp te between P0005 v 20005 value ve is not running, the and actual frequenc eter filter tt only those related Def: 0	numbers ("rx play). and output uency. play output fr alue and r00 e display alte y values are to a particula	xxx"). xxx"). xxx"). xxx"). x xx"). x xx" x xx"). x xx x xx"). x xx x xx"). x xx x xx"). x xx x xx xx x xx xx x xx xx x xx xx x xx xx xx x xx xx xx xx xx x xx x	lax: 4 Ready st 0020 value all states een the va ernately. group are lax: 30 ownload actory set	ate alternate t ate alternate t in run display P lues for "Not f selected. ting 0.	petween r0002 ay r0002 value 0005	Level 3 value and Running". Level 1
Details: P0006 Unit: - Settings: Note: P0010 Unit: - Settings: Dependency: Note: P0011	These settings refer to re See relevant "rxxxx" para Display mode Defines mode of display Min: 0 0=In Ready state alternat frequency. During run, 1=In Ready state display 2=In Ready state display Public Network of the set value. In run display P When variable speed drive Per default, the setpoint of Commissioning parame Filters parameters so tha Min: 0 0=Ready 1=Quick commissioning 2=Variable speed drive Reset to 0 for variable sp P0003 (user access leve If P3900 is not 0 (0 is the	ad only parameter r ameter descriptions. for r0000 (drive disp Def: 2 te between setpoint display output frequ setpoint. In run disp te between P0005 v 20005 value ve is not running, the and actual frequence eter filter tt only those related Def: 0	numbers ("rx play). and output uency. play output fr alue and r00 e display alte y values are to a particula	xxx"). xxx"). xxx"). xxx"). x xx"). x xx" x xx"). x xx x xx"). x xx x xx"). x xx x xx"). x xx x xx xx x xx xx x xx xx x xx xx x xx xx xx x xx xx xx xx xx x xx x	lax: 4 Ready st DO20 value all states een the va ernately. group are lax: 30 ownload actory set y reset to	ate alternate t ate alternate t in run display P lues for "Not f selected. ting 0.	petween r0002 ay r0002 value 0005	Level 3 value and Running". Level 1
Details: P0006 Unit: - Settings: Note: P0010 Unit: - Settings: Dependency: Note: P0011 Unit: - Details:	These settings refer to re See relevant "rxxxx" para Display mode Defines mode of display Min: 0 0=In Ready state alternat frequency. During run, 1=In Ready state alterna value. In run display P When variable speed drive Per default, the setpoint a Commissioning parame Filters parameters so tha Min: 0 0=Ready 1=Quick commissioning 2=Variable speed drive Reset to 0 for variable sp P0003 (user access leve If P3900 is not 0 (0 is the Lock for user-defined p Min: 0	and only parameter r ameter descriptions. for r0000 (drive disp Def: 2 te between setpoint setpoint. In run disp te between P0005 v 20005 value ve is not running, the and actual frequence eter filter tt only those related Def: 0 beeed drive to run. I) also determines a default value), this barameter Def: 0	numbers ("rx play). and output uency. play output fr alue and r00 e display alte y values are to a particula	xxx"). xxx"). xxx"). xxx"). x xx"). x xx" x xx"). x xx x xx"). x xx x xx"). x xx x xx"). x xx x xx xx x xx xx x xx xx x xx xx x xx xx xx x xx xx xx xx xx x xx x	lax: 4 Ready st DO20 value all states een the va ernately. group are lax: 30 ownload actory set y reset to	ate alternate t ate alternate t in run display P lues for "Not f selected. ting 0.	petween r0002 ay r0002 value 0005	Level 3 value and Running". Level 1 Level 3
Details: P0006 Unit: - Settings: Note: P0010 Unit: - Settings: Dependency: Note: P0011 Unit: - Details: P0012	These settings refer to re See relevant "rxxxx" para Display mode Defines mode of display Min: 0 0=In Ready state alternat frequency. During run, 1=In Ready state display 2=In Ready state display PWhen variable speed driv Per default, the setpoint a Commissioning parame Filters parameters so tha Min: 0 0=Ready 1=Quick commissioning 2=Variable speed drive Reset to 0 for variable sp P0003 (user access leve If P3900 is not 0 (0 is the Lock for user-defined p	and only parameter r ameter descriptions. for r0000 (drive disp Def: 2 te between setpoint setpoint. In run disp te between P0005 v 20005 value ve is not running, the and actual frequence eter filter tt only those related Def: 0 beeed drive to run. I) also determines a default value), this barameter Def: 0	numbers ("rx play). and output uency. play output fr alue and r00 e display alte y values are to a particula	xxx"). xxx"). xxx"). xxx"). xxx"). xxx" xxx"). xxx" xxx"). xxx" xxx"). xxx" xxx"). xxx" xxx" xxx"). xxx xxx" xxx xxx" xxxx xxxxx xxxxxx	lax: 4 Ready st DO20 value all states een the va ernately. group are lax: 30 ownload actory set y reset to	ate alternate t e. In run displa just display P lues for "Not f selected. ting 0.	petween r0002 ay r0002 value 0005	Level 3 value and Running". Level 1
Details: P0006 Unit: - Settings: Note: P0010 Unit: - Settings: Dependency: Note: P0011 Unit: - Details:	These settings refer to re See relevant "rxxxx" para Display mode Defines mode of display Min: 0 0=In Ready state alternat frequency. During run, 1=In Ready state alternat value. In run display P When variable speed driv Per default, the setpoint a Commissioning parame Filters parameters so tha Min: 0 0=Ready 1=Quick commissioning 2=Variable speed drive Reset to 0 for variable sp P0003 (user access leve If P3900 is not 0 (0 is the Lock for user-defined parameters See P0013 (user-defined parameters)	and only parameter r ameter descriptions. for r0000 (drive disp Def: 2 te between setpoint setpoint. In run disp te between P0005 v 20005 value ve is not running, the and actual frequence eter filter tt only those related Def: 0 beeed drive to run. I) also determines a default value), this barameter Def: 0 arameter Def: 0	numbers ("rx play). and output uency. play output fr alue and r00 e display alte y values are to a particula	xxx"). xxx"). xxx"). xxx"). xxx"). xxx" xxx"). xxx" xxx"). xxx" xxx"). xxx" xxx"). xxx" xxx" xxx"). xxx xxx" xxx xxx" xxxx xxxxx xxxxxx	lax: 4 Ready st 0020 value all states een the va ernately. group are lax: 30 ownload actory set y reset to lax: 6553	ate alternate t e. In run displa just display P lues for "Not f selected. ting 0.	petween r0002 ay r0002 value 0005	Level 3 value and Running". Level 1 Level 3 Level 3
Details: P0006 Unit: - Settings: Note: P0010 Unit: - Settings: Dependency: Note: P0011 Unit: - Details: P0012 Unit: - Details:	These settings refer to re See relevant "rxxxx" para Display mode Defines mode of display Min: 0 0=In Ready state alternat frequency. During run, 1=In Ready state display 2=In Ready state alternar value. In run display P When variable speed driv Per default, the setpoint a Commissioning parame Filters parameters so tha Min: 0 0=Ready 1=Quick commissioning 2=Variable speed drive Reset to 0 for variable sp P0003 (user access leve If P3900 is not 0 (0 is the Lock for user-defined pa Min: 0 See P0013 (user-defined pa Min: 0	and only parameter r ameter descriptions. for r0000 (drive disp Def: 2 te between setpoint display output frequ setpoint. In run disp te between P0005 v 20005 value ve is not running, the and actual frequence eter filter to only those related Def: 0 beed drive to run. 1) also determines a e default value), this barameter Def: 0 d parameter).	numbers ("rx play). and output uency. play output fr alue and r00 e display alte y values are to a particula	xxx"). xxx"). xxx"). xxx"). xxx"). xxx" xxx"). xxx" xxx"). xxx" xxx"). xxx" xxx"). xxx" xxx" xxx"). xxx xxx" xxx xxx" xxxx xxxxx xxxxxx	lax: 4 Ready st 0020 value all states een the va ernately. group are lax: 30 ownload actory set y reset to lax: 6553	ate alternate t e. In run displa just display P lues for "Not f selected. ting 0.	petween r0002 ay r0002 value 0005	Level 3 Value and Running". Level 1 Level 3 Level 3 Level 3
Details: P0006 Unit: - Settings: Note: P0010 Unit: - Settings: Dependency: Note: P0011 Unit: - Details: P0012 Unit: -	These settings refer to re See relevant "rxxxx" para Display mode Defines mode of display Min: 0 0=In Ready state alternat frequency. During run, 1=In Ready state alternat value. In run display P When variable speed driv Per default, the setpoint a Commissioning parame Filters parameters so tha Min: 0 0=Ready 1=Quick commissioning 2=Variable speed drive Reset to 0 for variable sp P0003 (user access leve If P3900 is not 0 (0 is the Lock for user-defined pa Min: 0 See P0013 (user-defined pa Min: 0	and only parameter r ameter descriptions. for r0000 (drive disp Def: 2 te between setpoint display output frequ setpoint. In run disp te between P0005 v 20005 value ve is not running, the and actual frequence eter filter tt only those related Def: 0 beed drive to run. 1) also determines a e default value), this parameter Def: 0 d parameter). r	numbers ("rx play). and output jency. blay output fr value and r00 e display alte y values are to a particula ccess to par parameter is	xxx"). xxx"). xxx"). xxx"). xxx"). xxx" xxx"). xxx" xxx"). xxx" xxx"). xxx" xxx"). xxx" xxxx" xxx" xxxx" xxxx" xxxx xxx xxxx xxxx xxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxxx	lax: 4 Ready st D020 value all states een the va ernately. group are lax: 30 ownload actory set y reset to lax: 6553	ate alternate t e. In run displa just display P lues for "Not f selected. ting 0.	petween r0002 ay r0002 value 0005	Level 3 value and Running". Level 1 Level 3 Level 3

Instructions:	 Step 2: Go to P0013 indices 0 t Step 3: Enter into P0013 index values are fixed and cannot be - P0013 index 19=12 (key for us - P0013 index 18=10 (commiss 	o 16 (user list) 0 to 16 the parameters requ changed: ser defined parameter) ioning parameter filter)	uired to be visible in the use	r-defined list. The following
	- P0013 index 17= 3 (user acce			
Dependency:	4. Step 4: Set P0003=0 to activate First, set P0011 ("lock") to a differe P0003 to 0 to activate the user-def	ent value than P0012 ("key") ined list.) to prevent changes to user	
	When locked and the user-defined other parameters) is to set P0012 (("key") to the value in P001	1 ("lock").	
Note:	Alternatively, set P0010=30 (comm complete factory reset. The default			
r0018	Firmware version	. ,		Level 3
Unit: -	Displays version number of installe Min: -	ed firmware. Def: -	Max: -	
			max.	Laval 2
r0019	CO/BO: BOP control word Displays status of operator panel c	commands		Level 3
	The settings below are used as the BICO input parameters.	e "source" codes for keypad		
Unit: - Bit fields:	Min:- Bit00 ON/OFF1	Def: - 0 NC	Max: -	
Bit fields:	Bit00 ON/OFF1 Bit01 OFF2: Electrical s		D, 1 YES ES, 1 NO	
	Bit08 not used		D, 1 YES	
	Bitll not used Bitl2 Hand Operation	0 NC 0 NC		
	Bitl3 Motor potentiomete		•	
	Bit14 Motor potentiomete			
Note:	Bit15 Auto Operation When BICO technology is used to	0 NC		love the estual status of the
r0020	relevant command. The following functions can be "con - ON/OFF1 - JOG - OFF2 - REVERSE CO: Act frequency actinging	nnected" to individual buttor - INCREASE - DECREASE		
10020	CO: Act. frequency setpoint Displays actual frequency setpoint	(output from ramp function	generator).	Level 3
Unit: Hz	Min: -	Def: -	Max: -	
r0021	CO: Act. frequency			Level 3
	Displays actual variable speed driv		excluding slip compensation	n,
Unit: Hz	resonance damping and frequency Min: -	Def: -	Max: -	-
	-	<u></u>		Level 3
r0022	Act. rotor speed Displays calculated rotor speed bas number of poles.	ed on variable speed drive o	putput frequency [Hz] x 120 /	Level 3
Unit: 1/min	Min: -	Def: -	Max: -	
Note:	This calculation makes no allowand	ce for load-dependent slip.		
r0024	CO: Act. output frequency Displays actual output frequency (s	slip compensation, resonan	ce damping and frequency	Level 3
Unit: Hz	limitation are included). Min: -	Def: -	Max: -	
r0025	CO: Act. output voltage			Level 3
	Displays [rms] voltage applied to m			
Unit: V	Min: -	Def: -	Max: -	
r0026[2]	CO: Act. DC-link voltage Displays DC-link voltage.			Level 3
		Def	Max: -	
Unit: V	Min: -	Def: -		
		Der: -		Level 3
Unit: V r0027 Unit: A	Min: - CO: Act. output current Displays [rms] value of motor curre Min: -		Max: -	Level 3
r0027	CO: Act. output current Displays [rms] value of motor curre Min: - CO: Act. torque	ent [A].	·	Level 3
r0027 Unit: A	CO: Act. output current Displays [rms] value of motor curre Min: -	ent [A].	·	
r0027 Unit: A r0031	CO: Act. output current Displays [rms] value of motor current Min: - CO: Act. torque Displays motor torque. Min: -	ent [A]. Def: -	Max: -	
r0027 Unit: A r0031 Unit: Nm	CO: Act. output current Displays [rms] value of motor curre Min: - CO: Act. torque Displays motor torque.	ent [A]. Def: -	Max: -	Level 3

r0035	CO: Act. motor temperature			Level 3
	Displays measured motor temperatur		1	
Unit: °C	Min: -	Def: -	Max: -	
r0039	CO: Energy consumption meter [k]			Level 3
	Displays electrical energy used by va P0040 - reset energy consumption m		splay was last reset (see	
Unit: kWh		Def: -	Max: -	
Dependency:	Value is reset when P3900=1 (end qu	ick commissioning), P097		reset energy
	consumption meter).			
P0040	Reset energy consumption meter			Level 3
	Resets value of parameter r0039 (end			
Unit: - Settings:	Min: 0 I 0=No reset	Def: 0	Max: 1 Reset r0039 to 0.	
Dependency:	No reset until "P" is pressed.	1=1	Reset 10039 to 0.	
	· · ·			Lavel 2
r0052	CO/BO: Act. status word 1 Displays first active status word of va	riable speed drive (bit form	pat) and can be used to	Level 3
	diagnose variable speed drive status.			
Unit: -		Def: -	Max: -	
Bit fields:	Bit00 Drive ready	0 NO, 1	YES	
	Bit01 Drive ready to run Bit02 Drive running	0 NO, 1 0 NO, 1	YES YES	
	Bit03 Drive fault active	0 NO, 1	YES	
	Bit04 OFF2 active	0 YES, 1	NO	
	Bit05 OFF3 active Bit06 ON inhibit active	0 YES, 1 0 NO, 1	NO YES	
	Bit07 Drive warning active	0 NO, 1	YES	
	Bit08 Deviation setp/act val		NO	
	Bit09 PZD control Bit10 Maximum frequency read	0 NO, 1 ched 0 NO, 1	YES YES	
	Bitll Warning: Motor current		NO	
	Bit12 Motor holding brake ad		YES	
	Bitl3 Motor overload	0 YES, 1	NO	
	Bit14 Motor runs direction a Bit15 VSD drive overload	right 0 NO, 1 0 YES, 1	YES NO	
Note:	Output of Bit3 (Fault) will be inverted			
r0053	CO/BO: Act. status word 2			Level 3
10000	Displays second status word of variat	ole speed drive (in bit form	at).	Levero
Unit: -	Min: -	Def: -	Max: -	
Bit fields:	Bit00 DC brake active Bit01 Act. freq. r0024	0 NO, > P2167 0 NO,		
	· · · · · · · · · · · · · · · · · · ·	> P2107 0 NO, > P1080 0 NO,		
	Bit03 Act. current r0027 >	>= P2170 0 NO,		
	-	> P2155 0 NO, <= P2155 0 NO.		
	Bit05 Act. freq. r0024 < Bit06 Act. freq. r0024 >=	,		
	Bit07 Act. Vdc r0026 < P2	_		
	Bit08 Act. Vdc r0026 > P2			
	Bit09 Ramping finished Bit10 PID output r2294 <	0 NO, P2291 0 NO,		
	Bitll PID output r2294 >=			
	Bit14 Download data set 0			
	Bit15 Download data set 1	from AOP 0 NO,	1 YES	
r0054	CO/BO: Act. control word 1			Level 3
	Displays first control word of variable commands are active.	speed drive and can be us	sed to diagnose which	
Unit: -		Def: -	Max: -	
Bit fields:	Bit00 ON/OFF1	0	NO, 1 YES	
	Bit01 OFF2: Electrical sto	-	YES, 1 NO	
	Bit02 OFF3: Fast stop Bit03 Pulse enable	0 0	YES, 1 NO NO, 1 YES	
	Bit04 RFG enable	0	NO, 1 YES	
	Bit05 RFG start	0	NO, 1 YES	
	Bit06 Setpoint enable Bit07 Fault acknowledge	0 0	NO, 1 YES NO, 1 YES	
	Bit08 JOG right	0	NO, 1 YES	
	Bit09 JOG left	0	NO, 1 YES	
	Bit10 Control from PLC	0 version) 0	NO, 1 YES	
	Bit11 Reverse (setpoint in Bit13 Motor potentiometer		NO, 1 YES NO, 1 YES	
	Bitl4 Motor potentiometer	-	NO, 1 YES	
	Bit15 CDS Bit 0 (Local/Ren		NO, 1 YES	
r 0055	CO/BO: Add. act. control word			Level 3
	Displays additional control word of va	riable speed drive and car	h be used to diagnose which	
	commands are active.			

Unite	Min	¢.		Movi	
Unit: - Bit fields:	Min: - De Bit00 Fixed frequency Bit 0	r: - 0	NO, 1	Max: - YES	
Dit fields.	Bit01 Fixed frequency Bit 0	0	NO, 1 NO, 1	YES	
	Bit02 Fixed frequency Bit 2	0	NO, 1	YES	
	Bit03 Fixed frequency Bit 3	0	NO, 1	YES	
	Bit08 PID enabled	0	NO, 1	YES	
	Bit09 DC brake enabled	0	NO, 1	YES	
	Bitll Droop Bitl2 Not Used	0	NO, 1 NO, 1	YES YES	
	Bitl3 External fault 1	0	YES, C		
		<u> </u>	120, 0		r
r0056	CO/BO: Status of motor control	<u> </u>			Level 3
	Displays status of motor control (V/f stat drive status.	us), which can	be used to d	lagnose variable sp	eed
Unit: -	Min: - De	f• -		Max: -	
Bit fields:	Bit00 Init. control finished		NO, 1	YES	
	Bit01 Motor demagnetizing f:		NO, 1	YES	
	Bit02 Pulses enabled	0	NO, 1	YES	
	Bit03 Voltage soft start se		NO, 1	YES	
	Bit04 Motor excitation finis		NO, 1	YES	
	Bit05 Starting boost active Bit06 Acceleration boost act	0 tive 0	NO, 1 NO, 1	YES YES	
	Bit07 Frequency is negative		NO, 1	YES	
	Bit08 Field weakening active		NO, 1	YES	
	Bit09 Volts setpoint limited		NO, 1	YES	
	Bit10 Slip frequency limited		NO, 1	YES	
	Bit11 F_out > F_max Freq.		NO, 1	YES	
	Bit12 Phase reversal selecters Bit13 I-max controller activ		NO, 1 NO, 1	YES YES	
	Bit14 Vdc-max controller act		NO, 1 NO, 1	YES	
	Bit15 Vdc-min controller act		NO, 1	YES	
-0064	CO: Act reter aread				
r0061	CO: Act. rotor speed Displays current speed detected by enc	oder			Level 3
Unit: Hz	Min: - De			Max: -	
r0086	CO: Act. active current				Level 3
Unit: A	Displays active (real part) of motor curre Min: -				
				May.	
			node): otherv	Max: - wise, the display sho	ws the value zero.
Dependency:	Applies when V/f control is selected in P		node); otherv		
	Applies when V/f control is selected in P Europe / North America	1300 (control n		wise, the display sho	Level 1
Dependency:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g	1300 (control n		wise, the display sho	Level 1
Dependency:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g [kW] or [hp].	1300 (control n	g plate power	wise, the display sho r - P0307) are expre	Level 1 ssed in
Dependency:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g	1300 (control n . nominal rating ng plate frequer	g plate power ncy (P0310) a	wise, the display sho r - P0307) are expre and maximum moto	Level 1 ssed in
Dependency: P0100 Unit: -	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratir frequency (P1082) are also set automat Min: 0 De	1300 (control n nominal rating ng plate frequer ically here, in a f: 0	g plate power ncy (P0310) a	wise, the display sho r - P0307) are expre and maximum moto	Level 1 ssed in
Dependency: P0100	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratir frequency (P1082) are also set automat Min: 0 De 0=Europe [kW], frequency default 50 Hz	1300 (control n nominal rating ng plate frequer ically here, in a f: 0	g plate power ncy (P0310) a	wise, the display sho r - P0307) are expre and maximum moto erence frequency (F	Level 1 ssed in
Dependency: P0100 Unit: -	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratir frequency (P1082) are also set automat Min: 0 De 0=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default	1300 (control n . nominal rating ng plate frequer ically here, in a f: 0 2 5 60 Hz	g plate power ncy (P0310) a	wise, the display sho r - P0307) are expre and maximum moto erence frequency (F	Level 1 ssed in
Dependency: P0100 Unit: - Settings:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratir frequency (P1082) are also set automat Min: 0 Default settings for the nominal ratir frequency (P1082) are also set automat 0=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 2=North America [kW], frequency default	1300 (control n . nominal rating ng plate frequer ically here, in a f: 0 c : 60 Hz It 60 Hz	g plate power ncy (P0310) a ddition to ref	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2	Level 1 ssed in
Dependency: P0100 Unit: -	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratir frequency (P1082) are also set automat Min: 0 Determines whether power settings (b) (P1082) are also set automat 0=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 7he setting of DIP switch 2 under the I/C	1300 (control n . nominal rating ng plate frequer ically here, in a f: 0 c : 60 Hz It 60 Hz	g plate power ncy (P0310) a ddition to ref	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2	Level 1 ssed in
Dependency: P0100 Unit: - Settings:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings [begin{tabular}{lllllllllllllllllllllllllllllllllll	1300 (control n nominal rating ng plate frequer ically here, in a f: 0 (c) i 60 Hz it 60 Hz D board determ	g plate power ncy (P0310) a ddition to ref	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2	Level 1 ssed in 2000).
Dependency: P0100 Unit: - Settings:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (e.g. [kW], frequency default 50 Hz 1=North America [hp], frequency default 50 Hz 1=North America [kW], frequency default 50 Hz 2=North America [kW], frequency default 50 Hz 0Hz 2=North America [kW], frequency default 50 Hz 0Hz 0Hz 0Hz 0Hz 0Hz 0Hz 0Hz 0Hz 0Hz	1300 (control n nominal rating ng plate frequer ically here, in a f: 0 i 60 Hz i 60 Hz board determ it 50 [Hz] C	g plate power ncy (P0310) a ddition to ref	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1	Level 1 ssed in 2000). 1 for P0100 according to the Meaning [hp], frequency default 60 [Hz]
Dependency: P0100 Unit: - Settings:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (e.g. [kW], frequency default 50 Hz 1=North America [hp], frequency default 50 Hz 1=North America [kW], frequency default 50 Hz 2=North America [kW], frequency default 50 Hz 0=Etting of DIP switch 2 under the I/C following table: DIP 2 Setting Meaning Off [kW], frequency default 50 Hz 0	1300 (control n nominal rating ng plate frequer ically here, in a f: 0 (c) 60 Hz (c) 60 Hz (c) 160 Hz (c) 160 Hz (c) 160 [Hz] (c) 170 C (c) 170	g plate power ncy (P0310) a ddition to ref ines the valid Overwrites	r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1	Level 1 ssed in 2000).
Dependency: P0100 Unit: - Settings:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (e.g. [kW], frequency default 50 Hz 1=North America [hp], frequency default 50 Hz 1=North America [kW], frequency default 50 Hz 2=North America [kW], frequency default 50 Hz 00	1300 (control n nominal rating ng plate frequer ically here, in a f: 0 (c) 60 Hz (c) 60 Hz (c) 160 Hz (c) 160 Hz (c) 170 [Hz] (c) 170	g plate power hcy (P0310) a ddition to ref ines the valid Overwrites Overwrites ge this param	r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1	Level 1 ssed in 2000). 1 for P0100 according to the Meaning [hp], frequency default 60 [Hz]
Dependency: P0100 Unit: - Settings:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings for the nominal ratin frequency (P1082) are also set automat 0=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 50 Hz 1=North America [hp], frequency default 1=North America [kW], frequency default The setting of DIP switch 2 under the I/O following table: DIP 2 Setting Off [kW], frequency default On [hp], frequency default Stop drive first (i.e. disable all pulses) be P0010=1 (commissioning mode) enable	1300 (control n nominal rating ng plate frequer ically here, in a f: 0 2 60 Hz 160 Hz D board determ 1t 50 [Hz] C t 60 [Hz] C efore you chang s changes to bo	g plate power acy (P0310) a ddition to ref ines the valid overwrites overwrites ge this param e made.	r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter.	Level 1 ssed in 2000). 1 for P0100 according to the Meaning [hp], frequency default 60 [Hz] [kW], frequency default 50 [Hz]
Dependency: P0100 Unit: - Settings:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (e.g. [kW], frequency default 50 Hz 1=North America [hp], frequency default 50 Hz 1=North America [kW], frequency default 50 Hz 2=North America [kW], frequency default 50 Hz 00	1300 (control n nominal rating ng plate frequer ically here, in a f: 0 2 60 Hz 160 Hz D board determ 1t 50 [Hz] C t 60 [Hz] C efore you chang s changes to bo parameters as to	g plate power hcy (P0310) a ddition to ref ines the valid verwrites Dverwrites ge this param e made. well as other	r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter.	Level 1 ssed in 2000). 1 for P0100 according to the Meaning [hp], frequency default 60 [Hz] [kW], frequency default 50 [Hz]
Dependency: P0100 Unit: - Settings:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines 0=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 50 Hz 2=North America [kW], frequency default 50 Hz 2=North America [kW], frequency default 50 Hz 0ff [kW], frequency default 50 Hz 0n [hp], frequency default 50 Hz	1300 (control n nominal rating ng plate frequer ically here, in a f: 0 2 60 Hz board determ 1t 50 [Hz] C efore you chang s changes to bo parameters as v motor parameter	g plate power acy (P0310) a ddition to ref ines the valid overwrites ge this param e made. well as other ers).	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter. parameters that dep	Level 1 ssed in 2000). 1 for P0100 according to the Meaning [hp], frequency default 60 [Hz] [kW], frequency default 50 [Hz] beend on the rated motor
Dependency: P0100 Unit: - Settings: Dependency: Note:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (b) Hz 0=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 50 Hz 2=North America [hp], frequency default 50 Hz 2=North America [kW], frequency default 50 Hz 0IP 2 Setting Meaning Off [kW], frequency default 50 Hz 50 P010=1 (commissioning mode) enable Changing P0100 resets all rated motor parameters (see P0340 - calculation of P0100 setting 2 (==> [kW], frequency default 50 Hz	1300 (control n nominal rating ng plate frequer ically here, in a f: 0 2 60 Hz board determ 1t 50 [Hz] C efore you chang s changes to bo parameters as v motor parameter	g plate power acy (P0310) a ddition to ref ines the valid overwrites ge this param e made. well as other ers).	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter. parameters that dep	Level 1 Ssed in
Dependency: P0100 Unit: - Settings: Dependency:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (b.g. groups) are also set automat Min: 0 Determines whether power settings (b.g. groups) are also set automat Min: 0 Determines whether power settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings for the nominal ratin frequency (P1082) are also set automat 1=North America [hp], frequency default 50 Hz 1=North America [hp], frequency default 2=North America [kW], frequency default 1=North America [kW], frequency default 2=North America [kW], frequency default 1 0ff [kW], frequency default 0ff [kW], frequency default 0n [hp], frequency default 0n [hp], frequency default Stop drive first (i.e. disable all pulses) br P0101=1 (commissioning mode) enable Changing P0100 resets all rated motor parameters (see P0340 - calculation of policy parameters (see P0340 - calculation of policy parameters (see P0340 - calculation of policy paramet	1300 (control n nominal rating ng plate frequer ically here, in a f: 0 2 60 Hz board determ 1t 50 [Hz] C efore you chang s changes to bo parameters as v motor parameter	g plate power acy (P0310) a ddition to ref ines the valid overwrites ge this param e made. well as other ers).	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter. parameters that dep	Level 1 ssed in 2000). 1 for P0100 according to the Meaning [hp], frequency default 60 [Hz] [kW], frequency default 50 [Hz] beend on the rated motor
Dependency: P0100 Unit: - Settings: Dependency: Note:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (b) Hz 0=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 50 Hz 2=North America [hp], frequency default 50 Hz 2=North America [kW], frequency default 50 Hz 0IP 2 Setting Meaning Off [kW], frequency default 50 Hz 50 P010=1 (commissioning mode) enable Changing P0100 resets all rated motor parameters (see P0340 - calculation of P0100 setting 2 (==> [kW], frequency default 50 Hz	1300 (control n nominal rating ng plate frequer ically here, in a f: 0 2 60 Hz 160 Hz D board determ 150 [Hz] C afore you chang s changes to b parameters as to motor parameter afault 60 [Hz]) is	g plate power acy (P0310) a ddition to ref ines the valid overwrites ge this param e made. well as other ers).	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter. parameters that dep	Level 1 Ssed in
Dependency: P0100 Unit: - Settings: Dependency: Note: r0200	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (b.g. [kW], frequency default 50 Hz] 0=Europe [kW], frequency default 50 Hz] 1=North America [hp], frequency default 2=North America [hV], frequency default 2=North America [kW], frequency default 70 Hz DIP 2 Setting Meaning Off [kW], frequency default 50 Hz On [hp], frequency default 50 Hz On [hp], frequency default 50 Hz Off [kW], frequency default 50 Hz Off [kW], frequency default 50 Hz On [hp], frequency default 50 Hz On	1300 (control n nominal rating ng plate frequer ically here, in a f: 0 c c 60 Hz board determ 150 [Hz] C c c fore you changes s changes to be parameters as to motor parameters af ault 60 [Hz]) is f: -	g plate power acy (P0310) a ddition to ref ines the valid Dverwrites ge this param e made. well as other ers). s not overwrit	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter. parameters that dep tten by the setting o Max: -	Level 1 Ssed in
Dependency: P0100 Unit: - Settings: Dependency: Note: r0200 Unit: - Note:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (e.g. [kW], or [hp]. Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power setting for the nominal ratin frequency (P1082) are also set automat 9=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 0IP 2 Setting Meaning Off [kW], frequency default Other (is to it, i.e. disable all pulses) be P0010=1 (commissioning mode) enables Changing P0100 resets all rated motor parameters (see P0340 - calculation of parameters (see posed - calculation of parameters (see pos	1300 (control n a nominal rating ng plate frequer ically here, in a f: 0 2 60 Hz board determ 1t 50 [Hz] C c t 60 [Hz] C efore you chang s changes to bo parameters as v motor parameter efault 60 [Hz]) is f: - wer stack has b	g plate power acy (P0310) a ddition to ref ines the valid Dverwrites ge this param e made. well as other ers). s not overwrit	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter. parameters that dep tten by the setting o Max: -	Level 1 Ssed in Level 1 Level 3 Level 4 Level
Dependency: P0100 Unit: - Settings: Dependency: Note: r0200 Unit: -	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (e.g. [kW], or [hp]. 0=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 50 Hz 1=North America [hp], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 70 Hz 0IP 2 Setting Meaning Off [kW], frequency default 50 Hz 5top drive first (i.e. disable all pulses) be P0010=1 (commissioning mode) enable be P0340 - calculation of P1000 setting 2 (==> [kW], frequency default 50 Hz Menting P0100 resets all rated motor parameters (see P0340 - calculation of P0100 setting 2 (==> [kW], frequency default 50 Hz be P0340 - calculation of P10100 setting 2 (==> [kW], frequency default 50 Hz Min: - De Parameter r0200=0 indicates that no p0 De Rated variable speed drive power [kW]	1300 (control n nominal rating ng plate frequer ically here, in a f: 0 2 60 Hz 60 Hz board determ 1t 50 [Hz] C cfore you chang s changes to boarameters as y motor parameter efault 60 [Hz]) is f: - wer stack has b	g plate power acy (P0310) a ddition to ref ines the valid overwrites ge this param e made. well as other ers). s not overwrites s not overwrites been identifie	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter. parameters that dep tten by the setting o Max: -	Level 1 Ssed in
Dependency: P0100 Unit: - Settings: Dependency: Note: r0200 Unit: - Note:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (e.g. [kW], or [hp]. Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power setting for the nominal ratin frequency (P1082) are also set automat 9=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 0IP 2 Setting Meaning Off [kW], frequency default Other (is to it, i.e. disable all pulses) be P0010=1 (commissioning mode) enables Changing P0100 resets all rated motor parameters (see P0340 - calculation of parameters (see posed - calculation of parameters (see pos	1300 (control n nominal rating ng plate frequer ically here, in a f: 0 2 60 Hz board determ board determ lt 50 [Hz] C cfore you chang s changes to bo carameters as v motor parameter efault 60 [Hz]) is f: - wer stack has b	g plate power acy (P0310) a ddition to ref ines the valid overwrites ge this param e made. well as other ers). s not overwrites s not overwrites been identifie	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter. parameters that dep tten by the setting o Max: -	Level 1 Ssed in Level 1 Level 3 Level 4 Level
Dependency: P0100 Unit: - Settings: Dependency: Note: r0200 Unit: - Note: r0206	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (e.g. [kW], or [hp]. 0=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 50 Hz 1=North America [kW], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 70 Hz 0IP 2 Setting Meaning Off [kW], frequency default 50 Hz 5top drive first (i.e. disable all pulses) be P0010=1 (commissioning mode) enable be P0010=1 (commissioning mode) enable Changing P0100 resets all rated motor parameters (see P0340 - calculation of P0100 setting 2 (==> [kW], frequency default 100 for the parameter (see P0340 - calculation of P0100 setting 2 (==> [kW], frequency default 100 for the parameter r0200=0 indicates that no point 100 for the parameter r0200=0 indicates that no point 100 for the parameter r0200=0 indicates that no point 100 for the parameter r0200=0 indicates that no point 100 for the parameter r0200=0 indicates that no point 100 for the parameter r0200=0 indicates that no point 100 for the parameter r0200=0 indicates that no point 100 for the parameter r0200=0 indicates that no point 100 power for the parameter r0200=0 indicates that no power for the parameter r0200=0 indic	1300 (control n a nominal rating ng plate frequer ically here, in a f: 0 f: 0 f: 0 f: 0 f: 0 f: - wer stack has t y] / [hp] n the variable s f: -	g plate power acy (P0310) a ddition to ref ines the valid overwrites overwrites ge this param e made. well as other ers). s not overwrites s not overwrites been identifie	vise, the display sho r - P0307) are expre- and maximum moto- erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter. parameters that dep tten by the setting o Max: - ed. Max: -	Level 1 Ssed in Level 1 Ssed in Level 1 Ssed in Level 1 Level
Dependency: P0100 Unit: - Settings: Dependency: Dependency: r0200 Unit: - Note: r0206 Unit: - Dependency:	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (b.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines [kW], frequency default 50 Hz 0=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 7he setting of DIP switch 2 under the I/C following table: DIP 2 Setting Meaning Off [kW], frequency default 50 Hz On [hp], frequency default 50 Hz P010=1 (commissioning mode) enable Changing P0100 resets all rated motor parameters (see P0340 - calculation of P0	1300 (control n a nominal rating ng plate frequer ically here, in a f: 0 f: 0 f: 0 f: 0 f: 0 f: - wer stack has t y] / [hp] n the variable s f: -	g plate power acy (P0310) a ddition to ref ines the valid overwrites overwrites ge this param e made. well as other ers). s not overwrites s not overwrites been identifie	vise, the display sho r - P0307) are expre- and maximum motor erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter. parameters that dep tten by the setting o Max: - ed. Max: -	Level 1 ssed in . 2000). 1 for P0100 according to the Meaning [hp], frequency default 60 [Hz] [kW], frequency default 50 [Hz] bend on the rated motor f DIP switch 2 (see table above). Level 3 Level 3 Level 3 Level 3
Dependency: P0100 Unit: - Settings: Dependency: Comparison Note: r0200 Unit: - Note: r0206 Unit: -	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal rating frequency (P1082) are also set automated in the end of the nominal rating frequency (P1082) are also set automated in the end of the nominal rating frequency (P1082) are also set automated in the end of the nominal rating frequency (P1082) are also set automated in the end of the nominal rating frequency (P1082) are also set automated in the end of the nominal rating frequency (P1082) are also set automated in the end of the nominal rating frequency (P1082) are also set automated in the end of the end of the end of the nominal rating frequency default 2=North America [hp], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 0n DIP 2 Setting Meaning Off [kW], frequency default 0n Stop drive first (i.e. disable all pulses) be P0010=1 (commissioning mode) enable Changing P0100 resets all rated motor parameters (see P0340 - calculation of P0100 setting 2 (==> [kW], frequency default 0n P0100 setting 2 (==> [kW], frequency default 0n P0100 setting 2 (==> [kW], frequency default 0n P0100 setting 2 (==> [kW], frequency default 0n P0100 setting 2 (==> [kW], frequency default 0n Parameter r0200=0 indicates that no power from Min: - Define Parameter rozoo=0 indicates that no power from Min: - Define Value is displayed in [kW] or [hp] dependent of the parameter set all parameter set all parameter current 0n Define Parameter current 0n <th>1300 (control n a. nominal rating hg plate frequer ically here, in a f: 0 a 60 Hz b 60 Hz b board determ It 50 [Hz] C a fore you changes s changes to b b boarameters as to b boarameters</th> <th>g plate power addition to ref ddition to ref ines the valid Dverwrites Dverwrites ge this param e made. well as other ers). s not overwrit peen identifie speed drive. for P0100 (o</th> <th>vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter. parameters that dep tten by the setting o Max: - ed. Max: - peration for Europe</th> <th>Level 1 Ssed in Level 1 Ssed in Level 1 Ssed in Level 1 Level</th>	1300 (control n a. nominal rating hg plate frequer ically here, in a f: 0 a 60 Hz b 60 Hz b board determ It 50 [Hz] C a fore you changes s changes to b b boarameters as to b boarameters	g plate power addition to ref ddition to ref ines the valid Dverwrites Dverwrites ge this param e made. well as other ers). s not overwrit peen identifie speed drive. for P0100 (o	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter. parameters that dep tten by the setting o Max: - ed. Max: - peration for Europe	Level 1 Ssed in Level 1 Ssed in Level 1 Ssed in Level 1 Level
Dependency: P0100 Unit: - Settings: Dependency: Dependency: r0200 Unit: - Note: r0206 Unit: - Dependency: r0207	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (e.g. [kW], or [hp]. 0=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 50 Hz 1=North America [hp], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 76 following table: DIP 2 Setting Meaning Off [kW], frequency default 70 Hz Stop drive first (i.e. disable all pulses) br P0010=1 (commissioning mode) enable Changing P0100 resets all rated motor parameters (see P0340 - calculation of 10 P0100 setting 2 (==> [kW], frequency default 70 P0100 setting 2 (==	1300 (control n a. nominal rating hg plate frequer ically here, in a f: 0 c 60 Hz board determ 150 [Hz] C c fore you changes s changes to be boarameters as to boarameters	g plate power addition to ref ddition to ref ines the valid Dverwrites Dverwrites ge this param e made. well as other ers). s not overwrit peen identifie speed drive. for P0100 (o	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter. parameters that dep tten by the setting o Max: - ed. Max: - peration for Europe drive.	Level 1 ssed in . 2000). 1 for P0100 according to the Meaning [hp], frequency default 60 [Hz] [kW], frequency default 50 [Hz] bend on the rated motor f DIP switch 2 (see table above). Level 3 Level 3 Level 3 Level 3
Dependency: P0100 Unit: - Settings: Dependency: r0200 Unit: - Note: r0206 Unit: - Dependency: r0207 Unit: A	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (e.g. [kW], or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (e.g. [kW], or [hp]. 0=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 50 Hz 2=North America [kW], frequency default 50 Hz 0hr bestting of DIP switch 2 under the I/C following table: DIP 2 Setting Meaning Off [kW], frequency default 50 Hz Stop drive first (i.e. disable all pulses) be P0010=1 (commissioning mode) enable Changing P0100 resets all rated motor parameters (see P0340 - calculation of P0100 setting 2 (==> [kW], frequency default 50 Hz Min: - Determines beed drive power [kW] Parameter r0200=0 indicates that no power from Min: - Determines beed drive current Displays nominal rated motor power from Min: - Determines beed drive current Displays maximum continuous output continuo	1300 (control n a. nominal rating hg plate frequer ically here, in a f: 0 c 60 Hz board determ 150 [Hz] C c fore you changes s changes to be boarameters as to boarameters	g plate power addition to ref ddition to ref ines the valid Dverwrites Dverwrites ge this param e made. well as other ers). s not overwrit peen identifie speed drive. for P0100 (o	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter. parameters that dep tten by the setting o Max: - ed. Max: - peration for Europe	Level 1 Seed in Level 1 Seed in Level 1 Level 1 Level 1 Level 1 Level 1 Level 1 Level 3 Level
Dependency: P0100 Unit: - Settings: Dependency: Dependency: r0200 Unit: - Note: r0206 Unit: - Dependency: r0207	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (e.g. [kW], or [hp]. Deteurope (kW], frequency default 50 Hz 0=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 7h setting of DIP switch 2 under the I/C following table: DIP 2 Setting Meaning Off [kW], frequency default 7h setting of DIP switch 2 under the I/C following table: DIP 2 Setting Meaning Off [kW], frequency default 7h setting of DIP switch 2 under the I/C following table: DIP 2 Setting Meaning Off [kW], frequency default 7h setting of DIP switch 2 under the I/C following table: Dip 1 (commissioning mode) enable Changing P0100 resets all rated motor parameters (see P0340 - calculation of P0100 setting 2 (==> [kW], frequency default 7h setting 2 (==> [kW], frequency default 7	1300 (control n nominal rating ng plate frequer ically here, in a f: 0 c 60 Hz board determ 150 [Hz] C c fore you changes c hanges to by carameters as we motor parameter arameters as we f: - wer stack has the V] / [hp] m the variable s f: - ding on setting urrent of the variants f: -	g plate power acy (P0310) a ddition to ref ines the valid Dverwrites ge this param e made. well as other ers). s not overwrit been identifie speed drive. for P0100 (o	vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2 dity of settings 0 and P0100 Setting 1 0 neter. parameters that dep tten by the setting o Max: - ed. Max: - peration for Europe drive.	Level 1 ssed in . 2000). 1 for P0100 according to the Meaning [hp], frequency default 60 [Hz] [kW], frequency default 50 [Hz] bend on the rated motor f DIP switch 2 (see table above). Level 3 Level 3 Level 3 Level 3
Dependency: P0100 Unit: - Settings: Dependency: r0200 Unit: - Note: r0206 Unit: - Dependency: r0207 Unit: A r0208	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (e.g. [kW], or [hp]. Deteurope (kW], frequency default 50 Hz D=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 7h setting of DIP switch 2 under the I/C following table: DIP 2 Setting Meaning Off [kW], frequency default 7h setting of DIP switch 2 under the I/C following table: DIP 2 Setting Meaning Off [kW], frequency default 7h setting of DIP switch 2 under the I/C following table: DIP 2 Setting Meaning Off [kW], frequency default 7h setting of DIP switch 2 under the I/C following table: Don [hp], frequency default 7h setting 7	1300 (control n i. nominal rating ing plate frequer ically here, in a f: 0 f: 0 f: 0 f: 0 f: 0 f: 0 f: 0 f: - wer stack has t V] / [hp] m the variable spe he variable spe	g plate power acy (P0310) a ddition to ref ines the valid Dverwrites ge this param e made. well as other ers). s not overwrit been identifie speed drive. for P0100 (o	<pre>vise, the display sho vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2</pre> dity of settings 0 and 1 0 etter. parameters that dep tten by the setting o max: - peration for Europe drive. Max: -	Level 1 Seed in Level 1 Seed in Level 1 Level 1 Level 1 Level 1 Level 1 Level 1 Level 3 Level
Dependency: P0100 Unit: - Settings: Dependency: r0200 Unit: - Note: r0206 Unit: - Dependency: r0207 Unit: A	Applies when V/f control is selected in P Europe / North America Determines whether power settings (e.g. [kW] or [hp]. The default settings for the nominal ratin frequency (P1082) are also set automat Min: 0 Determines whether power settings (e.g. [kW], or [hp]. Deteurope (kW], frequency default 50 Hz D=Europe [kW], frequency default 50 Hz 1=North America [hp], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 2=North America [kW], frequency default 7h setting of DIP switch 2 under the I/C following table: DIP 2 Setting Meaning Off [kW], frequency default 7h setting of DIP switch 2 under the I/C following table: DIP 2 Setting Meaning Off [kW], frequency default 7h setting of DIP switch 2 under the I/C following table: DIP 2 Setting Meaning Off [kW], frequency default 7h setting of DIP switch 2 under the I/C following table: Don [hp], frequency default 7h setting 7	1300 (control n nominal rating ng plate frequer ically here, in a f: 0 c 60 Hz board determ 150 [Hz] C c fore you changes c hanges to by carameters as we motor parameter arameters as we f: - wer stack has the V] / [hp] m the variable s f: - ding on setting urrent of the variants f: -	g plate power acy (P0310) a ddition to ref ines the valid Dverwrites ge this pararr e made. well as other ers). s not overwrit been identifie speed drive. for P0100 (o riable speed eed drive.	<pre>vise, the display sho vise, the display sho r - P0307) are expre and maximum moto erence frequency (F Max: 2</pre> dity of settings 0 and 1 0 etter. parameters that dep tten by the setting o max: - peration for Europe drive. Max: - Max: - Max: -	Level 1 Seed in Level 1 Seed in Level 1 Level 1 Level 1 Level 1 Level 1 Level 1 Level 3 Level

-0200	Merimum unichle anadalaine ann			
r0209	Maximum variable speed drive current of the Displays maximum output current of displays maximum output current output			Level 3
Unit: A	· · · ·	Def: -	Max: -	
P0304	Deted meter veltere			Level 1
P0304	Rated motor voltage Nominal motor voltage [V] from rating	plate. The following diagram	shows a typical rating plate	Lever
	with the locations of the relevant moto		i shows a typical rating plate	
Unit: V	Min: 10 D	Def: 230	Max: 2000	
Dependency:	Changeable only when P0010=1 (quic	ck commissioning).		
P0305	Rated motor current			Level 1
1 0000	Nominal motor current [A] from rating	plate.		Loverr
Unit: A		Def: 3.25	Max: 10000.00	
Dependency:	Changeable only when P0010=1 (quid			
	Depends also on P0320 (motor magne			
Note:	For asynchronous motors, the maximum For synchronous motors, the maximum			
	The minimum value is defined as 1/32			ve current (10209).
P0307	Rated motor power			Level 1
Unit: -	Nominal motor power [kW/hp] from rat	ting plate. Def: 0.75	Max: 2000.00	
Dependency:	If P0100=1 ([kW], frequency default 50		Max: 2000.00	
Dependency.	Changeable only when P0010=1 (quic			
		/·		
P0308	Rated motor cosPhi	from roting relate		Level 3
Unit: -	Nominal motor power factor (cosPhi) f Min: 0.000	from rating plate.	Max: 1.000	
Dependency:	Changeable only when P0010=1 (quic		Max. 1.000	
	Visible only when P0100=0 or 2, (moto			
	Setting 0 causes internal calculation o			
P0309	Rated motor efficiency			Level 3
F0303	Nominal motor efficiency in [%] from ra	ating plate		Lever 5
Unit: %		Def: 0.0	Max: 99.9	
Dependency:	Changeable only when P0010=1 (quid	ck commissioning).		
	Visible only when P0100=1, (i.e. moto			
N. (Setting 0 causes internal calculation o			
Note:	P0309=100 % corresponds to superco	onducting		
P0310	Rated motor frequency			Level 1
	Nominal motor frequency [Hz] from rate			
Unit: Hz		Def: 50.00	Max: 650.00	
Dependency:	Changeable only when P0010=1 (quid The pole pair number is recalculated a		changed	
			changed.	
P0311	Rated motor speed			Level 1
	Nominal motor speed [rpm] from rating		Mars 40000	
Unit: 1/min Dependency:	Min: 0 D Changeable only when P0010=1 (quid	Def: 0	Max: 40000	
Dependency.	Setting 0 causes an internal calculatio			
	Required for V/f control with speed con			
	Slip compensation in V/f control requir			
	The pole pair number is recalculated a	automatically if the paramete	er is changed.	
r0313	Motor pole pairs			Level 3
	Displays the number of motor pole pai	irs that the variable speed dr	rive is currently using for	
	internal calculations.	•		
Unit: -		Def: -	Max: -	
Value:	r0313=1 : 2-pole motor	r0313=2 : 4-pole	e motor, etc.	- hard and a
Dependency:	Deceloulated cutometic-line base		DO211 (rotal material and the second second	
	Recalculated automatically when P03		or P0311 (rated motor speed) is	changed.
P0340	Recalculated automatically when P03 Calculation of motor parameters		or P0311 (rated motor speed) is	changed. Level 3
	Calculation of motor parameters Calculates various motor parameters,	10 (rated motor frequency) o including:		R
Unit: -	Calculation of motor parameters Calculates various motor parameters, Min: 0	10 (rated motor frequency) o including: Def: 0	or P0311 (rated motor speed) is Max: 4	
	Calculation of motor parameters Calculates various motor parameters, Min: 0 Calculates various motor parameters,	10 (rated motor frequency) o including: Def: 0 including:	Max: 4	
Unit: -	Calculation of motor parameters Calculates various motor parameters, Min: 0 Calculates various motor parameters, Calculates various motor parameters, • Motor weight P0344 (Lev	10 (rated motor frequency) o including: Def: 0 including: vel 3) • Stator re	Max: 4 esistance P0350 (Level 2)	
Unit: -	Calculation of motor parameters Calculates various motor parameters, Min: 0 Calculates various motor parameters, Calculates various motor parameters, Motor weight P0344 (Lew • Magnetization time P0346 (Lew	10 (rated motor frequency) o including: Def: 0 including: vel 3) • Stator re vel 3) • Referen	Max: 4 esistance P0350 (Level 2) nce frequency P2000 (Level 2)	
Unit: - Data:	Calculation of motor parameters Calculates various motor parameters, Min: 0 Calculates various motor parameters, Calculates various motor parameters, Motor weight P0344 (Lew Magnetization time P0346 (Lew Demagnetization time P0347 (Lew	10 (rated motor frequency) of including: Def: 0 including: vel 3) • Stator revel 3) vel 3) • Referent evel 3)	Max: 4 esistance P0350 (Level 2) nce frequency P2000 (Level 2) nce current P2002 (Level 3).	
Unit: -	Calculation of motor parameters Calculates various motor parameters, Min: 0 Calculates various motor parameters, Motor weight P0344 (Lev Magnetization time P0346 (Lev Demagnetization time P0347 (Lev 0=No calculation	10 (rated motor frequency) o including: Def: 0 including: vel 3) • Stator revel 3) • Referent evel 3) • Referent avel 3)	Max: 4 esistance P0350 (Level 2) nce frequency P2000 (Level 2)	A
Unit: - Data:	Calculation of motor parameters Calculates various motor parameters, Min: 0 C Calculates various motor parameters, • Motor weight P0344 (Lew • Magnetization time P0346 (Lew • Demagnetization time P0347 (Lew 0=No calculation 1=Complete parameterization 2=Calc. equivalent circuit data	10 (rated motor frequency) o including: Def: 0 including: vel 3) • Stator ra vel 3) • Referen svel 3) • Referen 3= 4=	Max: 4 esistance P0350 (Level 2) nee frequency P2000 (Level 2) nee current P2002 (Level 3). :Calc. V/f :Calc. only controller setting	Level 3
Unit: - Data:	Calculation of motor parameters Calculates various motor parameters, Min: 0 I Calculates various motor parameters, Motor weight P0344 (Lew Magnetization time P0346 (Lew Demagnetization time P0347 (Lew 0=No calculation 1=Complete parameterization	10 (rated motor frequency) o including: Def: 0 including: vel 3) • Stator ra vel 3) • Referen svel 3) • Referen 3= 4=	Max: 4 esistance P0350 (Level 2) nee frequency P2000 (Level 2) nee current P2002 (Level 3). :Calc. V/f :Calc. only controller setting	Level 3
Unit: - Data: Settings: Note:	Calculation of motor parameters Calculates various motor parameters, Min: 0 C Calculates various motor parameters, C Calculates various motor parameters, Motor weight P0344 (Lew • Magnetization time P0346 (Lew • Demagnetization time P0347 (Lew 0=No calculation 1 1=Complete parameterization 2 2=Calc. equivalent circuit data This parameter is required during com 1	10 (rated motor frequency) o including: Def: 0 including: vel 3) • Stator ra vel 3) • Referen svel 3) • Referen 3= 4=	Max: 4 esistance P0350 (Level 2) nee frequency P2000 (Level 2) nee current P2002 (Level 3). :Calc. V/f :Calc. only controller setting	e.
Unit: - Data: Settings:	Calculation of motor parameters Calculates various motor parameters, Min: 0 C Calculates various motor parameters, C Calculates various motor parameters, Motor weight P0344 (Lew • Magnetization time P0346 (Lew • Demagnetization time P0347 (Lew • Demagnetization time P0347 (Lew • Demagnetization Calculation 1=Complete parameterization 2=Calc. equivalent circuit data This parameter is required during com Stator resistance (line-to-line)	10 (rated motor frequency) of including: Def: 0 including: vel 3) • Stator revel 3) vel 3) • Referen evel 3) evel 3) • Referen 3= amissioning to optimize the vel 4	Max: 4 esistance P0350 (Level 2) nce frequency P2000 (Level 2) nce current P2002 (Level 3). Calc. V/f Calc. only controller setting rariable speed drive performanc	Level 3
Unit: - Data: Settings: Note:	Calculation of motor parameters Calculates various motor parameters, Min: 0 C Calculates various motor parameters, C Calculates various motor parameters, Motor weight P0344 (Lew • Magnetization time P0346 (Lew • Demagnetization time P0347 (Lew 0=No calculation 1 1=Complete parameterization 2 2=Calc. equivalent circuit data This parameter is required during com 1	10 (rated motor frequency) of including: Def: 0 including: vel 3) • Stator revel 3) vel 3) • Referen evel 3) evel 3) • Referen 3= amissioning to optimize the vel 4	Max: 4 esistance P0350 (Level 2) nce frequency P2000 (Level 2) nce current P2002 (Level 3). Calc. V/f Calc. only controller setting rariable speed drive performanc	e.

Deta: Extor resistance value in [Ohms] for the connected motor (from line-b-line). The parameter value includes the coble estation. There are infree ways to define the table of the connected in the parameter. The parameter value includes the coble estation. There are infree ways to define the table of the connected is volumed. 8. Measure manually using an Ohmmeter. To be cable of the coble estation. The value entered in the value of the cohe in the value of the cohe in the value entered in the value entevalue entered in the value e	Data:	Stator resistance value in [Ohms] f	or the connected motor (f	rom line-to-line)	The parameter valu	e includes the cable
1. Calculate using P0340 (faite a intern grape or P3000-1.2 or 3 (end of quick commissioning). 3. Measure using P10340 (faite a intern grape of the brighter (up to 2 times higher) than expected. The value entered in P0350 (alter resistance) is in one datated by the method last used. To solve entered in P0350 (alter resistance) is in one datated by the method last used. To solve entered in P0350 (alter resistance) is in one datated by the method last used. To solve entered in P0350 (alter resistance) is of combined stator/cable resistance. To solve entered in P0350 (alter resistance) is of combined stator/cable resistance. To solve entered in P0350 (alter resistance) is of combined stator cable resistance. To solve entered in P0350 (alter resistance) is of combined stator cable resistance. To solve entered in P0350 (alter resistance) is of combined stator cable resistance) To solve entered in P0350 (alter resistance) is of combined stator cable resistance) To solve entered in P0350 (alter resistance	Data.					
3. Measure manually using an Ohmmeter. Note: The value entered in PO350 (stator resistance) is the one obtained by the method less used. r035 O: Total stator resistance Pig Level 3 Unit: 5: Min: Defa. Defa. Max Note: Note: PO306 (rated motor voltage) PO305 (rated motor voltage) PO306 (rated motor voltage) PO306 (rated motor voltage) PO306 (rated motor voltage) PO306 (rated motor voltage) PO307 PO408		1. Calculate using P0340=1 (data d	entered from rating plate)	or P3900=1,2 o		
Note: Since measured line-to-line, this value may appear to be higher (up to 2 times higher) than expected. ri335 CO: Total stater resistance (I motor as [%] of combined stater/cable resistance. Level 3 Unit: 5: Min:				for stator resist	ance is overwritten).	
The value entered in PCSD (stator resistance) is the one obtained by the method tast used. r0396 Colspan="2">Colspan="2">Level 3 Displays stator resistance of motor as (%) of combined stator/collar resistance. Level 3 Outlet, %, Min : Displays stator resistance of motor as (%) of combined stator/collar resistance. Level 3 PO300 (rated motor voltage) PO300 (rated motor voltage) Bate: encoder type Level 3 Setting: Level 3 Setting: Level 3 Setting: Level 3 Displays stator residence of the text in rate in provide the DP witches on the text in rate in provide the DP witches on the text in rate in provide the DP witches on the text in rate in provide the DP witches on the text in rate in provide the DP witches on the text in the second the DP witches on the text in the second the DP witches on the text in the second the DP witches on the text in the second the DP witches on the text in the DP to PS in the second the DP witches on the text in the second the DP witches on the text in the second type OT 10 INCH WC 12+Second type O	Neter			han (un ta O tim		atad
r0395 CO: Total stator resistance [%] Level 3 Unit:::Min:: Displays stator resistance of motor as [%] of combined stator/cable resistance. Max: - Note: Displays stator resistance of motor as [%] of combined stator/cable resistance. Max: - Note: Displays stator resistance of motor as [%] Max: - P0400 Select encoder type Level 3 Staticts encoder type. Level 3 Vinit:- Min: 0 Def: 0 Max: 12 Unit:- Min: 0 Level 3 Staticts encoder unit zero pulse 2-External pulse train 12-Cuadature encoder with zero pulse Level 3 Vinit:- Min: 1 Def: 25 Max: 50 Level 3 P0501[2] Upte of sensor Def: 25 Max: 50 Level 3 Vinit:: Min: 0 Def: 0 Max: 50 Level 2 Sets number of pulses parametery link is the sensor that each analog input mode). To switch between voltage and current analog input nod). To switch between voltage and current analog input nod). To switch between voltage and current analog input nod). To switch between volt 0 10 NCH WC 22-Sensor type 0 TO 16 PSI Unit:: Min: 0 Def: 61 Ma	Note:					cted.
Objects stator resistance of motor as [%] of combined stator/cable resistance. Outrit : % Mint : Defr : Max : M						
Unit: % Min:	r0395		on [9/1 of combined state	r/achla register		Level 3
Note: 100% means: Z rated motor P0305 (rated motor current) P0400 Select encoder type Level 3 Unit:: Min: 0 Def: 0 Max: 12 Selects encoder type Level 3 Out:: Min: 0 Def: 0 Max: 12 Settings C-disabled Inclustes per second at rated frequency Level 3 Mote: The term 'quadrature' in settings 2 and 12 refors to 2 periodic functions separated by a quarter cycle or 90 dogrees. Level 3 P059121 Type of sensor Level 3 Unit:: Min: 1 Def: 2 Max: 500 Level 3 P059123 Type of sensor Level 3 Max: 500 Level 3 Unit:: Min: 0 Def: 0 Max: 500 Level 2 Min: 0 Def: 0 Max: 500 Za-Sensor type 0 TO 10 INCH WC Level 3 Setting: Setting: Setting: Za-Sensor type 0 TO 2 INCH WC Za-Sensor type 0 TO 2 INCH WC Setting: Setting: Setting: Za-Sensor type 0 TO 2 INCH WC Za-Sensor type 0 TO 2 INCH WC <thsa-sensor 0="" 2="" inch="" th="" to="" type="" wc<=""> Za-Sens</thsa-sensor>	Unit: %	· · ·				
P000 Select ancoder type Level 3 90400 Selects encoder type. Level 3 90410 Selects encoder type. Level 3 90410 Selects encoder type. Level 3 90410 Selects encoder up to compare the train the select encoder with zero pulse conderative in encoder with zero pulse conderative in encoder with zero pulse conderative in the term in quadrature in selfings 2 and 12 roles to 2 periode functions separated by a quarter cycle or 90 degrees. P0499 Pulses per second at rated requency Level 3 9051[2] Type of sensor Level 3 9051[2] Type of sensor the description for P0756 (analog input is to be configured for. Note that setting this parameter will in turn set P0756 (analog input is to be configured for. Note that setting this parameter will in turn set P0756 (analog input is to be configured for Note that setting the DEP settices on the terminal board to be set correctly. See description for P0756. Level 2 90411 Settings On-No sensor selected 10-sensor type 0EE63 DP01 22-Sensor type 0 TO 10 INCH WC 2-Sensor type 0 DEE620 P10 12-Sensor type 0 DEE620 P10 23-Sensor type 0 TO 10 SP3 23-Sensor type 0 DT 0 10 SP3 4-Sensor type 0 DEE620 P15 13-Sensor type 0 DT 0 10 SP3 23-Sensor type 0 DT 0 10 SP3 23-Sensor type 0 DT 0 10 SP3 5-Sensor type 0 DEE620 P5 14-					•	
P0400 Select encoder type Level 3 Unit: Min: 0 Def: 0 Max: 12 Settings 0-disabled 3=External puise train 12=Cudature encoder with zero puise 12-00 datature encoder 12=Cudature encoder with zero puise 12=Cudature encoder with zero puise 2000 Puises per second at rated frequency Level 3 Settings Out; Min: 1 Def: 2 Max: 500 Unit: Min: 1 Def: 2 Max: 500 Level 3 Unit: Min: 1 Def: 3 Max: 500 Level 3 Unit: Min: 1 Def: 3 Max: 500 Level 2 Defines type of sensor Defines type of process writeble sensor type 0E653 DP0: 2 12=Sensor type 0T 10 INCH WC 23=Sensor type 0T 10 INCH WC Settings O=No sensor selected 10=Sensor type 0E653 DP1 23=Sensor type 0T 10 INCH WC 23=Sensor type 0T 10 INCH WC 3=Sensor type 0E620 P1 13=Sensor type 0E653 DP1 23=Sensor type 0T 0 2 SP1 24=Sensor type 0T 0 2 SP1 4=Sensor type 0E620 P1 13=Sensor type 0T 0 2 SINCH WC 23=Sensor type 0 D 0 2 SP1 5=Sensor		100% means: Z rated motor =		<u> </u>		
Selects encoder type. Def: 0 Max: 12 Settings: 0-disabled 3=External pulse train 1=Single channel encoder 12=Quadrature encoder with zero pulse Note: The term "quadrature" in sotings 2 and 12 refers to 2 periodic functions separated by a quarter cycle or 90 degrees. P0409 Pulses per second at rated frequency Level 3 Unit: - Min: 1 Defr.es type of process variable sensor that each analog input is to be configured for. Note that setting this parameter will in turn set P0756 (analog input mode). To switch between videag and current analog input modes also requires the DIP switchs on the terminal board to be set correctly. See description for P0756. Level 2 Unit: - Min: 0 Defr.es type 0 BEES0 P01 12=Sensor type 0 T0 10 10 PS1 23=Sensor type 0 T0 10 10 PS1 -Sensor type 0 BEES0 P1 12=Sensor type 0 BEES0 P01 12=Sensor type 0 T0 25 PS1 23=Sensor type 0 T0 25 PS1 -Sensor type 0 DEES0 P16 13=Sensor type 0 T0 10 INCH WC 23=Sensor type 0 T0 10 0 PS1 23=Sensor type 0 T0 10 0 PS1 -Sensor type 0 DEES0 P16 13=Sensor type 0 T0 10 INCH WC 23=Sensor type 0 T0 10 PS1 23=Sensor type 0 T0 10 PS1 -Sensor type 0 DEES0 P16 13=Sensor type 0 T0 10 INCH WC 23=Sensor type 0 T0 10 D PS1 23=Sensor type 0 T0 10 D PS1	D0400		`	,		
Unit: Nm: 0 Def: 0 Max: 12 Settings:	P0400	Selects encoder type				Level 3
1-Single channel encoder 12=Cluadrature encoder with zero pulse Pote3 The term "quadrature" in settings 2 and 12 refers to 2 periodic functions separated by a quarter cycle of 90 degrees. Pote4 Sets number of pulses per second at rated frequency Level 3 Unit: Min: 1 Defines type of second at rated frequency Level 3 Defines type of process variable sensor that each analog input is to be configured for. Note that setting this parameter will turn set POTS (analog input mode). To switch between voltage and current analog input modes also requires the DIP switches on the terminal board to be set correctly. See description for POT6. Max: 51 Level 2 Unit: Min: 0 Define type of POT (DI INCH WC 12-Sensor type 0E620 PD1 12-Sensor type 0E620 PD1 12-Sensor type 0T 10 10 PS1 22-Sensor type 0T 10 25 PS1 32-Sensor type 0T 20 E620 PD1 12-Sensor type 0T 20 E620 PD1 12-Sensor type 0T 20 E610 POT 12 PS1 23-Sensor type 0T 20 E610 PD1 12-Sensor	Unit: -		Def: 0	Max: 1	2	
Note: The term quadrature in settings 2 and 12 refers to 2 periodic functions separated by a quarter cycle or 90 degrees. P0409 Pulses per second at rated frequency Level 3 Sets number of pulses per second at rated speed. Level 3 P0501[2] Type of sensor Defr.25 Max: 500 P0501[2] Type of sensor Defr.25 Max: 500 Level 3 P0501[2] Type of sensor Defr.26 Max: 50 Level 2 Unit: Min: 0 Defr.26 Max: 50 Level 2 Unit: Min: 0 Defr.20 Max: 51 Level 2 Settings: O-No sensor selected 10-Sensor type 010 10 10 NCH WC 22-Sensor type 010 10 10 NCH WC 1-Sensor type 02E620 P10 3-Sensor type 010 10 10 NCH WC 22-Sensor type 010 10 10 PSI 22-Sensor type 010 10 10 NCH WC 2-Sensor type 02E620 P25 14-Sensor type 00 TO 10 NCH WC 22-Sensor type 010 20 NCH WC 22-Sensor type 010 10 NCH WC 22-Sensor ty		0=disabled		3=External pul	se train	
Note: The term "quadrature" in settings 2 and 12 refers to 2 periodic functions separated by a quarter cycle or 90 degrees. P0409 Puisses per second at rated frequency Level 3 Unit: - Min: 1 Def 25 Max: 500 P0500[2] Type of sensor Level 3 P0501[2] Type of sensor Level 3 Defines type of process variable sensor that each analog input mode; To switch batween to large and current analog input modes also requires the DIP switches on the terminal board to be set correctly. See description for PD756 (analog ngurt mode). To switch batween to be set correctly. See description for PD766 (analog ngurt mode). To switch batween to be set correctly. See description for PD766 (analog ngurt mode). To switch batween to be set correctly. See description for PD766 (brock max: 51 Settings: GeNs sensor selected 10-Sensor type 0EE630 PI0 (brock max: 51) 2-Sensor type 0EE620 PI1 13-Sensor type 0EE630 PI0 (brock max: 51) 22-Sensor type 0 TO 10 NCH WC 2-Sensor type 0EE620 PI3 13-Sensor type 0 TO 10 NCH WC 25-Sensor type 0 TO 20 SPI3 5-Sensor type 0EE620 PI4 15-Sensor type 0 TO 20 NCH WC 25-Sensor type 0 TO 20 SPI3 5-Sensor type 0EE620 PI5 15-Sensor type 0 TO 20 NCH WC 25-Sensor type 0 TO 20 SPI3 5-Sensor type 0EE620 PI5 15-Sensor type 0 TO 20 NCH WCH WC 25-S				12=Quadrature	e encoder with zero	pulse
P0409 Puises per second at rated frequency Level 3 Sets number of puises per second at rated speed. Unit: 1 Def: 25 Max: 500 P0501[2] Type of sensor Level 3 Max: 500 Level 3 P0501[2] Type of sensor Level 3 Max: 500 Level 2 Unit: - Min: 0 Defines type of process variable sensor that each analog input is to be configured for. Note that setting this parameter will in turn set P0756 (analog input mode). To switch between voltage and current analog input modes also requires the DIP switches on the terminal board to be set correctly. See description for P0756. Max: 51 Unit: - Min: 0 Def: 0 Max: 51 20-Sensor type 0 TO 10 INCH WC 1-Sensor type 0BE630 P10 13-Sensor type 0 DE610 P1 23-Sensor type 0 TO 20 SPI 23-Sensor type 0 TO 20 SPI 3-Sensor type 0BE630 P25 14-Sensor type 0 TO 20 SPI 23-Sensor type 0 TO 20 SPI 23-Sensor type 0 TO 20 SPI 3-Sensor type 0BE630 P24 13-Sensor type 0 TO 20 SPI 23-Sensor type 0 TO 20 SPI 23-Sensor type 0 TO 20 SPI 3-Sensor type 0BE630 P24 13-Sensor type 0 TO 20 SPI 23-Sensor type 0 TO 20 SPI 23-Sensor type 0 TO 20 SPI 3-Sensor type 0BE630 P24 13-Sensor type 0 TO 20 SPI 23-Sensor type	Notor			ia functiona con	arated by a guartar	avela ar 00 dagrada
Sets number of pulses per second at rated speed. Unit: - Min: 1 Def: 25 Max: 50 P0501[2] Type of sensor Level 2 Defines type of process variable sensor that each analog input is to be configured for. Note that setting this parameter valie in turn set PO756 (analog input mode). To switch between voltage and current analog input modes also requires the DP switches on the terminal board to be set correctly. See description for PO756. Max: 51 Unit: - Min: 0 Def: 0 Max: 51 20=Sensor type 0 TO 10 INCH WC 2-Sensor type 0BE620 P1 12=Sensor type 0BE620 P1 12=Sensor type 0 TO 10 INCH WC 21=Sensor type 0 TO 10 PSI 22=Sensor type 0 TO 10 PSI 22=Sensor type 0 TO 2 10 PSI 22=Sensor type 0 TO 10 PSI 22=Sensor type 0 TO 2 10 PSI <th>Note.</th> <th>· · · · ·</th> <th>•</th> <th>ic functions sep</th> <th>araleu by a quarter</th> <th>cycle of 90 degrees.</th>	Note.	· · · · ·	•	ic functions sep	araleu by a quarter	cycle of 90 degrees.
Unit: Min: 1 Def: 25 Max: 500 P0501(2) Type of sensor Defines type of process variable sensor that each analog input is to be configured for. Note that setting this parameter will in turn set P0756 (analog input modes). To switch between voltage and current analog input modes also requires the DIP switches on the terminal board to be set correctly. See description for P0756. Max: 51 Settings: 0=No sensor selected 10=Sensor type OBE63 DP01 21=Sensor type OD 10 10 NCH WC 1=Sensor type QBE520 P1 11=Sensor type OBE63 DP12 21=Sensor type OD 10 10 NCH WC 2=Sensor type QBE520 P1 11=Sensor type OBE63 DP1 22=Sensor type OD 10 10 NCH WC 3=Sensor type QBE520 P1 11=Sensor type OBE53 DP1 22=Sensor type OD 10 25 PS1 3=Sensor type QBE520 P2 11=Sensor type OD 10 NCH WC 23=Sensor type OD 10 50 PS1 3=Sensor type QBE520 P4 15=Sensor type OD 10 NCH WC 23=Sensor type OD 10 50 PS1 3=Sensor type QBE520 P5 17=Sensor type OD 10 NCH WC 23=Sensor type OD 10 10 NCH WC 3=Sensor type QBE520 P4 18=Sensor type OD 10 NCH WC 23=Sensor type OD 10 10 NCH WC 3=Sensor type QBE520 P5 17=Sensor type OD 10 NCH WC 23=Sensor type OD 10 10 NCH WC 3=Sensor type QBE521 P1010 18=Sensor type QBE521 P250	P0409					Level 3
P0501[2] Type of sensor Level 2 Defines type of process variable sensor that each analog input is to be configured for. Note that setting this parameter will har models also requires the DIP switches on the terminal board to be set correctly. See description for P0756. Level 2 Unit: - Min: 0 Defi. 0 Max: 51 Settings: OeNo sensor selected 10=Sensor type QBE63 DP01 21=Sensor type 0 TO 10 INCH WC 2=Sensor type QBE620 P1 12=Sensor type QBE63 DP02 22=Sensor type 0 TO 10 PS1 23=Sensor type QBE620 P16 12=Sensor type QBE620 P16 23=Sensor type 0 TO 25 PS1 3=Sensor type QBE620 P16 13=Sensor type 0 TO 10 INCH WC 23=Sensor type 0 TO 30 PS1 23=Sensor type 0 TO 50 PS1 3=Sensor type QBE620 P16 15=Sensor type 0 TO 2 INCH WC 23=Sensor type 0 TO 10 PS1 23=Sensor type 0 TO 10 PS1 3=Sensor type QBE620 P16 18=Sensor type 0 TO 3 INCH WC 23=Sensor type 0 TO 10 PS1 23=Sensor type 0 TO 10 PS1 3=Sensor type QBE621 P10U 18=Sensor type 0 TO 3 INCH WC 23=Sensor type 0 TO 10 PS1 23=Sensor type 0 TO 10 PS1 3=Sensor type QBE621 P25U 18=Sensor type 0 TO 3 INCH WC 28=Sensor type 0 TO 10 PS1 28=Sensor type 0 TO 10 PS1 3=Sensor type QBE621 P25U 18=Sensor type 0 TO 50 PS1	1114				~~	-
Defines type of process variable sensor that each analog input is to be configured for. Note that setting this parameter will in turn set PO756 (analog input mode). To suitch between voltage and current analog input modes also requires the DIP switches on the terminal board to be set correctly. See description for PO756. Unit: - Min: 0 Definition Max: 51 Settings: O=No sensor selected 10=Sensor type ORE620 P10 21=Sensor type OT 10 10 NCH WC 2=Sensor type ORE620 P1 12=Sensor type ORE620 P1 23=Sensor type OT 10 10 SPSI 23=Sensor type ORE620 P1 23=Sensor type ORE620 P1 23=Sensor type OT 0 10 SP SI 3=Sensor type ORE620 P2 14=Sensor type ORE640 P14 23=Sensor type OT 0 10 SP SI 25=Sensor type ORE620 P25 14=Sensor type OT 0 10 NCH WC 25=Sensor type OT 0 10 FSI 3=Sensor type ORE620 P4 16=Sensor type 0 TO 2 LINCH WC 25=Sensor type OT 0 10 FSI 25=Sensor type ORE620 P5 14=Sensor type 0 TO 10 SP SI 3=Sensor type ORE620 P5 14=Sensor type 0 TO 2 LINCH WC 25=Sensor type ORE620 P5 12=Sensor type 0 TO 10 FSI 3=Sensor type ORE620 P5 14=Sensor type 0 TO 3 INCH WC 25=Sensor type ORE621 P25U 18=Sensor type ORE621 P25U 25=Sensor type 0 TO 10 FSI 3=Sensor type ORE621 P25U 18=Sensor type ORE621 P25U 18=Sensor type ORE622 P5 18=Se	Unit: -		Det: 25	Max: 5	00	
what setting this parameter will in turn set P0756 (analog input mode). To switch between voltage and current analog input modes also requires the DIP switches on the terminal board to be set correctly. See description for P0756. Min: 0 Def: 0 Max: 51 Settings: 0=No sensor selected 10=Sensor type QEE620 P1 11=Sensor type QEE620 P2 21=Sensor type 0TO 10 INCH WC 2=Sensor type QEE620 P1 12=Sensor type QEE620 P4 23=Sensor type 0TO 15 PSI 23=Sensor type 0TO 15 PSI 3=Sensor type QEE620 P4 14=Sensor type QEE620 P4 23=Sensor type 0TO 25 PSI 23=Sensor type 0TO 50 PSI 4=Sensor type QEE620 P4 14=Sensor type 0TO 10 INCH WC 25=Sensor type 0TO 50 PSI 25=Sensor type 0TO 50 PSI 5=Sensor type QEE620 P4 14=Sensor type 0TO 2 INCH WC 25=Sensor type 0TO 50 PSI 25=Sensor type 0TO 50 PSI 6=Sensor type QEE621 P25U 18=Sensor type 0TO 3 INCH WC 28=Sensor type 0TO 10 PSI 28=Sensor type 0TO 10 PSI 8=Sensor type QEE621 P25U 18=Sensor type 0TO 3 INCH WC 28=Sensor type 0TO 10 PSI 28=Sensor type 0TO 10 PSI 9=Sensor type QEE621 P25U 18=Sensor type 0TO 3 INCH WC 28=Sensor type 0TO 10 PSI 28=Sensor type 0TO 10 PSI 9=Sensor type QEE621 P25U 18=Sensor type 0TO 3 INCH WC 28=Sensor type 0TO 10 PSI 28=Sensor type 0TO 10 PSI 10 <th>P0501[2]</th> <th></th> <th></th> <th></th> <th></th> <th>Level 2</th>	P0501[2]					Level 2
voltage and current analog input modes also requires the DIP switches on the terminal board to be set correctly. See description for PO756. Max: 51 Unit: Min: 0 Def: 0 Max: 51 Settings: 0-No sensor selected 10-Sensor type OBE63 DP02 22-Sensor type 0 TO 10 INCH WC 2-Sensor type OBE620 P10 12-Sensor type 0 TO 10 PSI 22-Sensor type 0 TO 10 PSI 22-Sensor type 0 TO 30 PSI 3-Sensor type OBE620 P16 13-Sensor type 0 DE630 PD1 22-Sensor type 0 TO 30 PSI 22-Sensor type 0 TO 30 PSI 5-Sensor type OBE620 P40 15-Sensor type 0 TO 10 INCH WC 22-Sensor type 0 TO 30 PSI 22-Sensor type 0 TO 30 PSI 7-Sensor type OBE620 P40 15-Sensor type 0 TO 3 INCH WC 22-Sensor type 0 TO 30 PSI 22-Sensor type 0 TO 10 PSI 8-Sensor type OBE621 P101 18-Sensor type 0 TO 3 INCH WC 22-Sensor type 0 TO 100 PSI 22-Sensor type 0 TO 100 PSI 8-Sensor type OBE621 P101 18-Sensor type 0 TO 3 INCH WC 22-Sensor type 0 TO 100 PSI 22-Sensor type 0 TO 100 PSI 9-Sensor type OBE621 P101 18-Sensor type 0 TO 3 INCH WC 22-Sensor type 0 TO 100 PSI 22-Sensor type 0 TO 100 PSI 9-Sensor type OBE621 P101 18-Sensor type 0 TO 10 SINCH WC 22-Sensor type 0 TO 100 PSI 22-Sensor type 0 TO						
Int: Min: Def: Max: Still Unit: Min: 0 Def: 0 Max: Still Settings: 0 Nos sensor selected 11=Sensor type QBE630 P10 22=Sensor type 0TO 10 PS1 22=Sensor type 0TO 10 PS1 3=Sensor type QBE620 P1 12=Sensor type QBE630 P1 22=Sensor type 0TO 25 PS1 22=Sensor type 0TO 25 PS1 4=Sensor type QBE620 P4 15=Sensor type 0TO 10 NCH WC 24=Sensor type 0TO 30 PS1 23=Sensor type 0TO 30 PS1 5=Sensor type QBE620 P4 16=Sensor type 0TO 3 NCH WC 22=Sensor type 0TO 50 PS1 23=Sensor type 0TO 50 PS1 8=Sensor type QBE621 P10U 18=Sensor type 0TO 50 NCH WC 28=Sensor type 0TO 50 PS1 23=Sensor type 0TO 50 PS1 9=Sensor type QBE621 P25U 19=Sensor type 0TO 50 NCH WC 28=Sensor type 0TO 50 PS1 23=Sensor type 0TO 50 PS1 0 9=Sensor type QBE621 P25U 19=Sensor type 0TO 50 NCH WC 28=Sensor type 0TO 50 PS1 28=Sensor type 0TO 50 PS1 0 9=Sof6[0] Parameter Ist Min: 0 Def: 754 Max: 4000 PD506[0] Parameter Parameter 3 PD506[0] Parameter 10 PD506[1] PD506[1]						
Unit: Min: 0 Def: 0 Max: 51 Settings: 0-No sensor selected 10-Sensor type 0E63 DP02 20-Sensor type 0 TO 10 INCH WC 2-Sensor type 0BE620 P1 11-Sensor type 0E653 DP01 22-Sensor type 0 TO 10 PSI 22-Sensor type 0 TO 25 PSI 3-Sensor type 0BE620 P1 13-Sensor type 0BE63 DP02 22-Sensor type 0 TO 30 PSI 22-Sensor type 0 TO 30 PSI 3-Sensor type 0BE620 P4 14-Sensor type 0E663 DP03 22-Sensor type 0 TO 30 PSI 22-Sensor type 0 TO 30 PSI 5-Sensor type 0BE620 P4 15-Sensor type 0 TO 3 INCH WC 22-Sensor type 0 TO 50 PSI 22-Sensor type 0 TO 50 PSI 7-Sensor type 0BE621 P101 18-Sensor type 0 TO 3 INCH WC 22-Sensor type 0 TO 10 PSI 22-Sensor type 0 TO 10 PSI 8-Sensor type 0BE621 P201 18-Sensor type 0 TO 3 INCH WC 22-Sensor type 0 TO 10 PSI 22-Sensor type 0 TO 10 PSI 9-Sensor type 0BE621 P201 18-Sensor type 0 TO 3 INCH WC 22-Sensor type 0 TO 100 PSI 22-Sensor type 0 TO 100 PSI 9-Sensor type 0BE621 P201 18-Sensor type 0 TO 3 INCH WC 22-Sensor type 0 TO 100 PSI 22-Sensor type 0 TO 100 PSI 9-Sensor type 0BE621 P201 18-Sensor type 0 TO 3 INCH WC 22-Sensor type 0 TO 100 PSI 22-Sensor type 0 TO 100 PSI </th <th></th> <th></th> <th></th> <th>i switches on a</th> <th></th> <th></th>				i switches on a		
1 =Sensor type 0BE620 P1 11=Sensor type 0BE63 DP02 21=Sensor type 0 TO 10 PS1 2=Sensor type 0BE620 P10 13=Sensor type 0BE63 DP1 22=Sensor type 0 TO 25 PS1 4=Sensor type 0BE620 P10 13=Sensor type 0BE63 DP1 22=Sensor type 0 TO 30 PS1 5=Sensor type 0BE620 P10 15=Sensor type 0 TO 1 INCH WC 23=Sensor type 0 TO 30 PS1 5=Sensor type 0BE620 P2 15=Sensor type 0 TO 2.5 INCH WC 23=Sensor type 0 TO 60 PS1 7=Sensor type 0BE621 P10U 18=Sensor type 0 TO 31 NCH WC 28=Sensor type 0 TO 10 PS1 8=Sensor type 0BE621 P2U 18=Sensor type 0 TO 31 NCH WC 28=Sensor type 0 TO 10 PS1 9=Sensor type 0BE621 P2U 18=Sensor type 0 TO 31 NCH WC 28=Sensor type 0 TO 10 D PS1 8=Sensor type 0BE621 P2U 18=Sensor type 0 TO 31 NCH WC 28=Sensor type 0 TO 10 D PS1 9=Sensor type 0BE621 P2U 18=Sensor type 0 TO 31 NCH WC 28=Sensor type 0 TO 10 D PS1 9=Sensor type 0 TO 12 Si NCH WC 28=Sensor type 0 TO 10 D PS1 28=Sensor type 0 TO 10 D PS1 1mis parameter performs no function within the variable speed drive. It is a storage place for use with the AOP to as ease particular parameters P0506[3] : Parameter 3 P0506[3] : Parameter 3 P0506[1] Parameter 2 P0506[3] : Parameter 4 P0506[2] : Marameter 3 P0507[2] : Scalar offset<	Unit: -			Max: 5	1	
2=Sensor type 0 DE620 P10 12=Sensor type 0 DE630 P25 12=Sensor type 0 DT 0 15 PS1 3=Sensor type 0 DE620 P25 14=Sensor type 0 DE64 DP4 23=Sensor type 0 T 0 3 DS1 5=Sensor type 0 DE620 P25 14=Sensor type 0 DT 0 10 PS1 23=Sensor type 0 T 0 3 DS1 5=Sensor type 0 DE620 P25 15=Sensor type 0 T 0 10 VLWC 28=Sensor type 0 T 0 50 PS1 5=Sensor type 0 DE620 P4 16=Sensor type 0 T 0 2 INCH WC 28=Sensor type 0 T 0 50 PS1 8=Sensor type 0 DE621 P10U 19=Sensor type 0 T 0 3 INCH WC 28=Sensor type 0 T 0 10 PS1 8=Sensor type 0 DF65 to P0762 (ADC conditioning). 29=Sensor type 10 T 0 10 PS1 28=Sensor type 0 T 0 10 PS1 PosoE(10) Parameter Iist Level 3 This parameter performs no function within the variable speed drive. It is a storage place for use with the AOP for a list of parameters. P0506(6) : Parameter 3 P0506(6) : Parameter 3 P0506(6) : Parameter 3 P0506(6) : Parameter 3 P0506(6) : Posometer 3 P0506(6) : Parameter 3 P0506(6) : Posometer 3 P0506(6) : Parameter 3 P0506(6) : Parameter 3 P0506(6) : Parameter 4 P0506(7) : Parameter 3 P0506(7) : Parameter 3 P0506(7) : Parameter 4 P0506(7) : Parameter 4 P0507(1) : Scalar values Level 3 Unit:< Min: 0 Def : 0 Max: 9999.9<	Settings:					
assensor type QBE620 P16 assensor type QBE62 D25 sester type QBE62 D25 sett D25						
4-Sensor type QBE620 P25 S=Sensor type QBE620 P4 (5=Sensor type QBE620 P4 (5=Sensor type 0 TO 1) NCH WC S=Sensor type QBE620 P5 (5=Sensor type 0 TO 2) NCH WC S=Sensor type QBE621 P25U 24=Sensor type 0 TO 30 PSI 25=Sensor type 0 TO 60 PSI 27=Sensor type 0 TO 10 PSI 28=Sensor type 0 TO 10 PSI 28=Sens						
B-Sensor type QBE620 P4 T-Sensor type QBE621 P10U B-Sensor type QBE621 P10U B-Sensor type QBE621 P20U IB-Sensor type 0 TO 5 INCH WC B-Sensor type QBE621 P20U IB-Sensor type 0 TO 5 INCH WC B-Sensor type QBE621 P20U IB-Sensor type 0 TO 5 INCH WC IB-Sensor type 0 TO 5 INCH WC IF TO SENSOR IN THE WARE THE INFORMATION INFORMAT						
Image: Point Vipe QBE620 P5 (as Sensor type QTO 15 INCH WC (be assensor type QBE621 P10U) (be assensor type QTO 16 INCH WC (be assenso						
B=Sensor type QBE621 P10U 9=Sensor type 0 TO 3 INCH WC See P0753 and P0756 to P0762 (ADC conditioning). 28=Sensor type 0 TO 450 PSI 29=Sensor type AI Ni 1000: -50 to 150 °C 29=Sensor type AI Ni 1000: -50 to 150 °C P0506[10] Parameter list This parameter performs no function within the variable speed drive. It is a storage place for use with the AOP for a list of parameter 1 P0506[1]: Parameter 2 P0506[2]: Parameter 3 P0506[2]: Parameter 3 P0506[5]: Parameter 3 P0506[5]: Parameter 6 P0506[6]: Parameter 9 P0506[6]: Parameter 7 P0506[3]: Parameter 9 P0507[0] P0506[0]: Parameter 1 P0506[3]: Parameter 9 P0506[3]: Parameter 9 P0506[3]: Parameter 9 P0506[3]: Parameter 9 P0506[4]: Parameter 9 P0507[2]: Scalar offset P0507[3] Scalar values This parameter performs no function within the variable speed drive. It is a storage place for use with the AOP to store a string for unit. Max: 65535 Level 3 P0508[2]: Unit character 3 P0508[2]: Unit character 4 P0509[1]: Unit character 1 P0509[1]: Unit character 1 P0509[1]: Unit character 1 P0509[1]: String char 1 P0509[2]: String char 1 P0509[3]: String char 3 P0509[3]: String char 4 P0509[3]: String char 4 P0509[3]: String char 4 P0509[3]: String char 3 P0509[3]: String char 4 P0509[3]: String char 3 P0509[3]: String char 4 P0509[3]: String char 4 P0509[3]: String char 3 P0509[
9=Sensor type QBE621 P25U 19=Sensor type 0 TO 5 INCH WC 29=Sensor type AI Ni 1000: -50 to 150 °C Details: See P0753 and P0756 to P0762 (ADC conditioning). P0506[10] Parameter list This parameter performs no function within the variable speed drive. It is a storage place for use with the AOP for a list of parameters to scale. Max: 4000 Index: P0506[0]: Parameter 1 P0506[3]: Parameter 5 P0506[6]: Parameter 7 P0506[6]: Parameter 7 P0506[1]: Parameter 1 P0506[3]: Parameter 5 P0506[6]: Parameter 7 P0506[6]: Parameter 7 P0506[6]: Parameter 7 P0506[2]: Parameter 1 P0506[3]: Parameter 5 P0506[6]: Parameter 9 P0506[6]: Parameter 7 P0506[6]: Parameter 9 P0507[3] Scalar values Level 3 This parameter performs no function within the variable speed drive. It is a storage place for use with the AOP to scale particular parameters. P0507[1]: Scalar denominator P0507[2]: Scalar offset P0508[4] Unit Min: 0 Def: 0 Max: 65535 Level 3 This parameter performs no function within the variable speed drive. It is a storage place for use with the AOP to store a string for parameter 1 P0508[2]: Unit character 4 P0508[2]: Unit character 4 P0509[12] String Def: 0						
Details: See P0753 and P0756 to P0762 (ADC conditioning). P0506[10] Parameter list Level 3 This parameter performs no function within the variable speed drive. It is a storage place for use with the AOP for a list of parameters to scale. P0506[0]: Parameter 1 P0506[3]: Parameter 7 P0506[3]: Parameter 9 P0507[3] Scalar values Level 3 Unit: Min: 0 Def: 1.0 Max: 9999.9 Index: P0507[0]: Scalar numerator P0508[2]: Scalar offset P0508[4] Unit Min: 0 Def: 0 Max: 6533 P0508[2] Unit character 1 P0508[2]: Unit character 3 P0508[3]: Unit character 4 P0508[4] Unit Min: 0 Def: 0 Max: 6533 Level 3 Level 3 Level 3 Dis parameter performs no function wi		9=Sensor type QBE621 P25U	19=Sensor type 0 TO 5			
This parameter performs no function within the variable speed drive. It is a storage place for use with the AOP for a list of parameters to scale. Unit: - Min: 0 Def: 754 Max: 4000 Index: P0506[0]: Parameter 1 P0506[3]: Parameter 4 P0506[6]: Parameter 7 P0506[6]: Parameter 7 P0506[2]: Parameter 3 P0506[3]: Parameter 6 P0506[8]: Parameter 7 P0506[2]: Parameter 3 P0506[5]: Parameter 6 P0506[8]: Parameter 7 P0506[2]: Parameter 3 P0506[5]: Parameter 6 P0506[8]: Parameter 7 P0506[2]: Parameter 3 P0506[5]: Parameter 6 P0506[8]: Parameter 7 P0506[2]: Parameter 3 P0506[5]: Parameter 6 P0506[8]: Parameter 7 P0506[5]: Parameter 8 P0506[6]: Parameter 8 P0506[5]: Parameter 7 P0506[5]: Parameter 9 P0506[5]: Parameter 6 P0506[8]: Parameter 7 P0506[5]: Parameter 7 P0506[5]: Parameter 7 P0506[5]: Parameter 8 P0506[6]: Parameter 8 P0506[5]: Parameter 8 P0506[5]: Parameter 8 P0506[5]: Parameter 6 P0506[6]: Parameter 8 P0506[5]: Parameter 9 P0507[2]: Scalar offset Level 3 Unit: - Min: 0 Def: 0 Max: 65535 Max: 65535 Index: P0508[0]: Unit character 1 P0509[1]: Unit character 2 P0508[2]: Unit character 3 P0509[6]: String char 7 P0509[9]: String char 10 P0	Details:	See P0753 and P0756 to P0762 (A	ADC conditioning).			
This parameter performs no function within the variable speed drive. It is a storage place for use with the AOP for a list of parameters to scale. Unit: - Min: 0 Def: 754 Max: 4000 Index: P0506[0]: Parameter 1 P0506[3]: Parameter 4 P0506[6]: Parameter 7 P0506[6]: Parameter 7 P0506[2]: Parameter 3 P0506[3]: Parameter 6 P0506[8]: Parameter 7 P0506[2]: Parameter 3 P0506[5]: Parameter 6 P0506[8]: Parameter 7 P0506[2]: Parameter 3 P0506[5]: Parameter 6 P0506[8]: Parameter 7 P0506[2]: Parameter 3 P0506[5]: Parameter 6 P0506[8]: Parameter 7 P0506[2]: Parameter 3 P0506[5]: Parameter 6 P0506[8]: Parameter 7 P0506[5]: Parameter 8 P0506[6]: Parameter 8 P0506[5]: Parameter 7 P0506[5]: Parameter 9 P0506[5]: Parameter 6 P0506[8]: Parameter 7 P0506[5]: Parameter 7 P0506[5]: Parameter 7 P0506[5]: Parameter 8 P0506[6]: Parameter 8 P0506[5]: Parameter 8 P0506[5]: Parameter 8 P0506[5]: Parameter 6 P0506[6]: Parameter 8 P0506[5]: Parameter 9 P0507[2]: Scalar offset Level 3 Unit: - Min: 0 Def: 0 Max: 65535 Max: 65535 Index: P0508[0]: Unit character 1 P0509[1]: Unit character 2 P0508[2]: Unit character 3 P0509[6]: String char 7 P0509[9]: String char 10 P0	P0506[10]	Parameter list				Level 3
Unit: Min: 0 Def: 754 Max: 4000 Index: P0506[0] : Parameter 1 P0506[3] : Parameter 4 P0506[6] : Parameter 7 P0506[6] : Parameter 7 P0506[6] : Parameter 8 P0506[6] : Parameter 9 P0506[6] : Parameter 8 P0506[6] : Parameter 9 Level 3 P0507[3] Scalar values Level 7 Min: 0 Def: 1.0 Max: 9999.9 Level 3 Index: P0507[0] : Scalar numerator P0507[1] : Scalar denominator P0507[2] : Scalar offset Level 3 P0508[4] Unit Min: 0 Def: 0 Max: 65535 Level 3 Index: P0508[0] : Unit character 1 P0508[1] : Unit character 2 P0508[2] : Unit character 3 P0509[3] : Unit character 4 P0509[12] String This parameter performs no function within the variable speed drive. It is a storage place for use with the AOP to store a string for parameter unit description Level 3 Unit - Min: 0 Def: 0 Max: 65535 P0509[1] : String char 1 P0509[1] : String char 1 P0509[1] : String char 4 P05			on within the variable spee	ed drive. It is a s	torage place for	
Index: P0506[0]: Parameter 1 P0506[1]: Parameter 2 P0506[2]: Parameter 2 P0506[2]: Parameter 3 P0506[3]: Parameter 6 P0506[3]: Parameter 7 P0506[7]: Parameter 8 P0506[8]: Parameter 8 P0506[8]: Parameter 8 P0506[8]: Parameter 9 P0506[9]: Parameter 10 P0507[3] Scalar values This parameter performs no function within the variable speed drive. It is a storage place for use with the AOP to scale particular parameters. Level 3 Unit: - Index: Min: 0 Def: 1.0 Max: 9999.9 Index: P0508[4] Unit Level 3 This parameter performs no function within the variable speed drive. It is a storage place for use with the AOP to store a string for unit. Level 3 Unit: - Min: 0 Def: 0 Max: 65535 Level 3 P0509[12] String Def: 0 Max: 65535 Level 3 Unit: - Min: 0 Def: 0 Max: 65535 Level 3 Unit: - Min: 0 Def: 0 Max: 65535 Level 3 Unit: - Min: 0 Def: 0 Max: 65535 P0509[9]: String char 10 P0509[9]: String char 10 P0509[9]: String char 10 P0509[9]: String char 11 P0509[9]: String char 11 P0509[9]: String char 12 P0509[2]: String char 3 P0509[9]: String char 10 P0509[9]: String char 11 P0509[9]: String char 12 P0509[9]: String char 3 P0509[1]: String char 12 P0509[2]: String char 3 P0509[1]: String char 12 P0509[1]: String char 12 P0509[2]: String char 3 P050				1.55		-
P0506[1]: Parameter 2 P0506[2]: Parameter 3 P0506[4]: Parameter 5 P0506[5]: Parameter 6 P0506[7]: Parameter 8 P0506[8]: Parameter 9 P0507[3] Scalar values Level 3 This parameter performs no function within the variable speed drive. It is a storage place for use with the AOP to scale particular parameters. Level 3 Unit:- Min: 0 Def: 1.0 Max: 9999.9 Index: P0507[0]: Scalar numerator P0507[1]: Scalar denominator P0507[2]: Scalar offset P0508[4] Unit Def: 0 Max: 9999.9 Index: P0508[0]: Unit character 1 P0508[1]: Unit character 2 P0508[2]: Unit character 3 P0508[3]: Unit character 4 P0509[12] String Def: 0 Max: 65535 Level 3 This parameter performs no function within the variable speed drive. It is a storage place for use with the AOP to store a string for parameter unit description P0508[2]: Unit character 3 P0508[3]: Unit character 4 P0509[12] String Def: 0 Max: 65535 P0509[9]: String char 10 Index: P0509[0]: String char 1 P0509[3]: String char 5 P0509[6]: String char 7 P0509[9]: String char 10 P0509[2]: String char 3 P0509[3]: String char 5 P0509[6]: String char 5 P0509[6]: String char 11 <th></th> <th></th> <th></th> <th></th> <th></th> <th>DC[0] + Doromotor 10</th>						DC[0] + Doromotor 10
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Unit: -Min: 0Def: 0Max: 65535Index:P0508[0] : Unit character 1P0508[1] : Unit character 2P0508[2] : Unit character 3P0508[3] : Unit character 4P0509[12]StringThis parameter performs no function within the variable speed drive. It is a storage place for use with the AOP to store a string for parameter unit descriptionLevel 3Unit: -Min: 0Def: 0Max: 65535Index:P0509[0] : String char 1 P0509[1] : String char 2 P0509[2] : String char 3P0509[3] : String char 4 P0509[5] : String char 5 P0509[5] : String char 6P0509[6] : String char 7 P0509[8] : String char 8 P0509[8] : String char 9P0509[1] : String char 10 P0509[1] : String char 11 P0509[2] : String char 3P0601Motor temperature sensorEvel 3 P0509[2] : String char 3Level 3 P0509[5] : String char 6Unit: -Min: 0Def: 0Max: 2Selects motor temperature sensor.I=PTC thermistor2=KTY84Dependency:If "no sensor" is selected, motor temperature monitoring occurs based on the estimated value of the thermal motor				ed drive. It is a s	torage place for	
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P0509[12] String Level 3 This parameter performs no function within the variable speed drive. It is a storage place for use with the AOP to store a string for parameter unit description Max: 65535 Unit: - Min: 0 Def: 0 Max: 65535 Index: P0509[0] : String char 1 P0509[3] : String char 4 P0509[6] : String char 7 P0509[9] : String char 10 P0509[1] : String char 2 P0509[2] : String char 3 P0509[5] : String char 5 P0509[7] : String char 8 P0509[10] : String char 11 P0509[2] : String char 3 P0509[5] : String char 6 P0509[8] : String char 9 P0509[11] : String char 12 P0601 Motor temperature sensor Level 3 Selects motor temperature sensor. Level 3 Selects motor temperature sensor. 1=PTC thermistor 2=KTY84 Dependency: If "no sensor" is selected, motor temperature monitoring occurs based on the estimated value of the thermal motor						508[3] · Unit character 4
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Settings: 0=No sensor 1=PTC thermistor 2=KTY84 Dependency: If "no sensor" is selected, motor temperature monitoring occurs based on the estimated value of the thermal motor						
Dependency: If "no sensor" is selected, motor temperature monitoring occurs based on the estimated value of the thermal motor				Max: 2		
				urs hased on th		the thermal motor
	Dependency.				o ostimateu value Ul	

P0610	Motor I2t temperature reaction	าท			Level 3
10010	Defines reaction when motor to	emperature reaches warning	threshold.		Levero
Unit: -	Min: 0	Def: 2	Max: 2		
Settings:	0=No reaction, warning only	1=Warning and Imax reducti	on (results in reduced	d output freq.)	2=Warning and trip (F0010)
P0640	Motor overload factor [%]				Level 3
	Defines reaction when motor to				
Unit: % Dependency:	Min: 10.0 Limited to maximum variable s	Def: 110.0	Max: 400.0	opt (D0205) wh	alabayar ia lawar
				enii (F0303), wi	
P0700[2]	Selection of command source				Level 1
Unit: -	Selects digital command source Min: 0	Def: 2	Max: 6		-
Settings:	0=Factory default setting	2=Terminal	WIAX. U	5=USS on	L COM link
eengei	1=BOP (keypad)	4=USS on BOP I	ink	6=CB on C	
Index:	P0700[0] : 1st command data		P0700[1] : 2nd com		
Note:	Changing this parameter reset digital inputs to default settings		em selected. For exa	mple: Changing	g form 1 to 2 resets all
P0701[2]	Function of digital input 1				Level 2
	Selects function of digital input				-
Unit: -	Min: 0	Def: 1	Max: 99	25 =DC bra	ka anabla
Settings:	0=Digital input disabled 1=ON/OFF1	11 =JOG left 12 =Reverse			e Essential Service
	2=ON reverse /OFF1	13 =MOP up (increase fr	eq.)	27 =Enable	
	3=OFF2 - coast to standstill	14 = MOP down (decrease	freq.)	29 =Extern	
	4=OFF3 - quick ramp-down 9=Fault acknowledge	15 =Fixed setpoint (direct 16 =Fixed setpoint (direct			e additional freq setpoint BICO parameterization
	10 =JOG right	17 =Fixed setpoint (direct			BICO parameterization
Index:	P0701[0] : 1st command data		701[1] : 2nd comma		DS)
Dependency:	Setting 99 (enable BICO parar	neterization) requires P0700	(command source) o		
Nata	commissioning)=1, 2 or P0970		reset.		
Note:	Setting 99 (BICO) for expert us	se only			
P0702[2]	Function of digital input 2				Level 2
	Selects function of digital input				
Unit: - Detail:	Min: 0 See P0701 (function of digital	Def: 12	Max: 99		
	· · · · · · · · · · · · · · · · · · ·	inputt):			
P0703[2]	Function of digital input 3	0			Level 2
Unit: -	Selects function of digital input Min: 0	. 3. Def: 9	Max: 99		
Detail:	See P0701 (function of digital		Mux. 00		
D0704[2]	· · · · · · · · · · · · · · · · · · ·				
P0704[2]	Function of digital input 4 Selects function of digital input	· Δ			Level 2
Unit: -	Min: 0	Def: 15	Max: 99		
Detail:	See P0701 (function of digital	input1).			
P0705[2]	Function of digital input 5				Level 2
[_]	Selects function of digital input	5 (via analog input)			201012
Unit:		Defe 4E	Max: 00		
	Min: 0	Def: 15	Max: 99		
Detail:	Min: 0 See P0701 (function of digital		Wax: 99		
Detail: P0706[2]	See P0701 (function of digital Function of digital input 6	input1).	Max: 99		Level 2
P0706[2]	See P0701 (function of digital Function of digital input 6 Selects function of digital input	input1). 6 (via analog input)			Level 2
P0706[2] Unit: _	See P0701 (function of digital Function of digital input 6 Selects function of digital input Min: 0	input1). 6 (via analog input) Def: 29	Max: 99		Level 2
P0706[2]	See P0701 (function of digital Function of digital input 6 Selects function of digital input	input1). 6 (via analog input) Def: 29			Level 2
P0706[2] Unit: _	See P0701 (function of digital Function of digital input 6 Selects function of digital input Min: 0 See P0701 (function of digital Function of digital input 7	input1). 6 (via analog input) Def: 29 input1).			Level 2
P0706[2] Unit: _ Detail: P0707[2]	See P0701 (function of digital Function of digital input 6 Selects function of digital input Min: 0 See P0701 (function of digital Function of digital input 7 Selects function of digital input	input1). 6 (via analog input) Def: 29 input1). 7 (via analog input)	Max: 99		
P0706[2] Unit: _ Detail: P0707[2] Unit: -	See P0701 (function of digital Function of digital input 6 Selects function of digital input Min: 0 See P0701 (function of digital Function of digital input 7 Selects function of digital input Min: 0	input1). 6 (via analog input) Def: 29 input1). 7 (via analog input) Def: 0		25 -DC brab	Level 3
P0706[2] Unit: _ Detail: P0707[2]	See P0701 (function of digital Function of digital input 6 Selects function of digital input Min: 0 See P0701 (function of digital Function of digital input 7 Selects function of digital input	input1). 6 (via analog input) Def: 29 input1). 7 (via analog input) Def: 0 10 =JOG right 11 =JOG left	Max: 99	25 =DC brake 26 =Enable E	Level 3
P0706[2] Unit: _ Detail: P0707[2] Unit: -	See P0701 (function of digital Function of digital input 6 Selects function of digital input Min: 0 See P0701 (function of digital Function of digital input 7 Selects function of digital input Min: 0 0=Digital input disabled 1=ON/OFF1 2=ON reverse /OFF1	input1). 6 (via analog input) Def: 29 input1). 7 (via analog input) Def: 0 10 =JOG right 11 =JOG left 12 =Reverse	Max: 99 Max: 99	26 =Enable E 29 =External	Level 3 e enable essential Service trip
P0706[2] Unit: _ Detail: P0707[2] Unit: -	See P0701 (function of digital Function of digital input 6 Selects function of digital input Min: 0 See P0701 (function of digital Function of digital input 7 Selects function of digital input Min: 0 0=Digital input disabled 1=ON/OFF1 2=ON reverse /OFF1 3=OFF2 - coast to standstill	input1). 6 (via analog input) Def: 29 input1). 7 (via analog input) Def: 0 10 =JOG right 11 =JOG left 12 =Reverse 13 =MOP up (incre	Max: 99 Max: 99 Max: 99	26 =Enable E 29 =External 33 =Disable a	Level 3 e enable ssential Service trip additional freq setpoint
P0706[2] Unit: _ Detail: P0707[2] Unit: -	See P0701 (function of digital Function of digital input 6 Selects function of digital input Min: 0 See P0701 (function of digital Function of digital input 7 Selects function of digital input Min: 0 0=Digital input disabled 1=ON/OFF1 2=ON reverse /OFF1 3=OFF2 - coast to standstill 4=OFF3 - quick ramp-down	input1). 6 (via analog input) Def: 29 input1). 7 (via analog input) Def: 0 10 =JOG right 11 =JOG left 12 =Reverse	Max: 99 Max: 99 Max: 99	26 =Enable E 29 =External 33 =Disable a	Level 3 e enable essential Service trip
P0706[2] Unit: _ Detail: P0707[2] Unit: -	See P0701 (function of digital Function of digital input 6 Selects function of digital input Min: 0 See P0701 (function of digital Function of digital input 7 Selects function of digital input Min: 0 0=Digital input disabled 1=ON/OFF1 2=ON reverse /OFF1 3=OFF2 - coast to standstill 4=OFF3 - quick ramp-down 9=Fault acknowledge	input1). 6 (via analog input) Def: 29 input1). 7 (via analog input) Def: 0 10 =JOG right 11 =JOG left 12 =Reverse 13 =MOP up (incre 14 =MOP down (d	Max: 99 Max: 99 Max: 99	26 =Enable E 29 =External 33 =Disable a 99 =Enable B	Level 3 e enable issential Service trip additional freq setpoint ICO parameterization
P0706[2] Unit: _ Detail: P0707[2] Unit: - Settings:	See P0701 (function of digital Function of digital input 6 Selects function of digital input Min: 0 See P0701 (function of digital Function of digital input 7 Selects function of digital input Min: 0 0=Digital input disabled 1=ON/OFF1 2=ON reverse /OFF1 3=OFF2 - coast to standstill 4=OFF3 - quick ramp-down 9=Fault acknowledge P0707[0] : 1st command data Signals about 4V are active, si	input1). 6 (via analog input) Def: 29 input1). 7 (via analog input) Def: 0 10 =JOG right 11 =JOG left 12 =Reverse 13 =MOP up (incre 14 =MOP down (d a set (CDS) P0 gnals below 1.6 V are inactiv	Max: 99	26 =Enable E 29 =External 33 =Disable a 99 =Enable B	Level 3 e enable ssential Service trip additional freq setpoint ICO parameterization
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P0706[2] Unit: _ Detail: P0707[2] Unit: - Settings: Index: Dependency:	See P0701 (function of digital Function of digital input 6 Selects function of digital input Min: 0 See P0701 (function of digital Function of digital input 7 Selects function of digital input Min: 0 0=Digital input disabled 1=ON/OFF1 2=ON reverse /OFF1 3=OFF2 - coast to standstill 4=OFF3 - quick ramp-down 9=Fault acknowledge P0707[0] : 1st command data Signals about 4V are active, si	input1). 6 (via analog input) Def: 29 input1). 7 (via analog input) Def: 0 10 =JOG right 11 =JOG left 12 =Reverse 13 =MOP up (increan 14 =MOP down (d) a set (CDS) PO gnals below 1.6 V are inactiv signals below 1.6 V are inactiv	Max: 99	26 =Enable E 29 =External 33 =Disable a 99 =Enable B	Level 3 e enable issential Service trip additional freq setpoint ICO parameterization
P0706[2] Unit: _ Detail: P0707[2] Unit: - Settings: Settings: Index: Dependency: Note:	See P0701 (function of digital Function of digital input 6 Selects function of digital input Min: 0 See P0701 (function of digital Function of digital input 7 Selects function of digital input 7 Selects function of digital input 7 O=Digital input disabled 1=ON/OFF1 2=ON reverse /OFF1 3=OFF2 - coast to standstill 4=OFF3 - quick ramp-down 9=Fault acknowledge P0707[0] : 1st command data Signals above 4 V are active, si Signals above 4 V are active, si See P0701 (function of digital Function of digital input 8	input1). 6 (via analog input) Def: 29 input1). 7 (via analog input) Def: 0 10 =JOG right 11 =JOG left 12 =Reverse 13 =MOP up (increan 14 =MOP down (down (dow	Max: 99	26 =Enable E 29 =External 33 =Disable a 99 =Enable B	Level 3 e enable issential Service trip additional freq setpoint ICO parameterization
P0706[2] Unit: _ Detail: P0707[2] Unit: - Settings: Settings: Dependency: Note: Details: P0708[2]	See P0701 (function of digital Function of digital input 6 Selects function of digital input Min: 0 See P0701 (function of digital Function of digital input 7 Selects function of digital input 7 Selects function of digital input 7 Selects function of digital input 7 0=Digital input disabled 1=ON/OFF1 2=ON reverse /OFF1 3=OFF2 - coast to standstill 4=OFF3 - quick ramp-down 9=Fault acknowledge P0707[0] : 1st command data Signals above 4 V are active, si Signals above 4 V are active, si See P0701 (function of digital Function of digital input 8 Selects function of digital input	input1). 6 (via analog input) Def: 29 input1). 7 (via analog input) Def: 0 10 =JOG right 11 =JOG left 12 =Reverse 13 =MOP up (incre 14 =MOP down (d a set (CDS) PO gnals below 1.6 V are inactiv signals below 1.6 V are inactiv 1.6 V are inactiv	Max: 99 Max: 99 Max: 99 ease freq.) ecrease freq.) 707[1] : 2nd comma e. ve.	26 =Enable E 29 =External 33 =Disable a 99 =Enable B	Level 3 e enable e enable rissential Service trip additional freq setpoint I/CO parameterization DS)
P0706[2] Unit: _ Detail: P0707[2] Unit: - Settings: Settings: Index: Dependency: Note: Details:	See P0701 (function of digital Function of digital input 6 Selects function of digital input Min: 0 See P0701 (function of digital Function of digital input 7 Selects function of digital input 7 Selects function of digital input 7 O=Digital input disabled 1=ON/OFF1 2=ON reverse /OFF1 3=OFF2 - coast to standstill 4=OFF3 - quick ramp-down 9=Fault acknowledge P0707[0] : 1st command data Signals above 4 V are active, si Signals above 4 V are active, si See P0701 (function of digital Function of digital input 8	input1). 6 (via analog input) Def: 29 input1). 7 (via analog input) Def: 0 10 =JOG right 11 =JOG left 12 =Reverse 13 =MOP up (increding the set (CDS) Poils gnals below 1.6 V are inactive signals below 1.6 V are inactive Def: 0	Max: 99	26 =Enable E 29 =External 33 =Disable a 99 =Enable B	Level 3 e enable e ssential Service trip additional freq setpoint I/CO parameterization DS)

P0718	CO/BO: Hand / Auto	Level 3
Unit: -	Selects function of digital input 8 (via analog input) Min: 0 Def: 0 Max: 1	
r0722	CO/BO: Binary input values Displays status of digital inputs.	Level 3
Unit: -	Min: - Def: - Max: -	
Bit fields:	Bit00 Digital input 1 0 OFF, 1 ON	
	Bit01 Digital input 2 0 OFF, 1 ON	
	Bit02 Digital input 3 0 OFF, 1 ON Bit03 Digital input 4 0 OFF, 1 ON	
	Bit04 Digital input 5 0 OFF, 1 ON	
	Bit05 Digital input 6 0 OFF, 1 ON	
	Bit06 Digital input 7 (via ADC 1) 0 OFF, 1 ON	
Note:	Bit07 Digital input 8 (via ADC 2) 0 OFF, 1 ON Segment is lit when signal is active.	
P0725	PNP / NPN digital inputs	Level 3
	Switches between active high (PNP) and active low (NPN). This is valid for all digital inputs simultaneously.	
	The following is valid by using the internal supply:	
Unit: -	Min: 0 Def: 1 Max: 1	
Settings:	0=NPN mode ==> low active 1=PNP mode ==> high active	
P0731[2]	BI: Function of digital output 1	Level 2
	Defines source of digital output 1.	
Unit: -	Min: 0.0 Def: 52.3 Max: 4000.0 Closed Closed C0 Closed C0	
Settings:	52.0Drive ready0Closed52.EMotor running direction rig52.1Drive ready to run0Closed52.FVSD drive overload	ht 0 Closed 1 Closed
	52.2 Drive running 0 Closed 53.0 DC brake active	0 Closed
	52.3 Drive fault active 0 Closed 53.1 VSD frequency less switch	
	52.4 OFF2 active 1 Closed 53.2 VSD frequency less minim	
	52.5OFF3 active1Closed53.3Current greater or equal th52.6Switch on inhibit active0Closed53.4Act. freq. greater comparis	
	52.7 Drive warning active 0 Closed 53.5 Act. freq. less comparison	
	52.8 Deviation setpoint/actual value 1 Closed 53.6 Act. freq. greater/equal set	tpoint 0 Closed
	52.9 PZD control (Process Data Control) 0 Closed 53.7 Voltage less than threshol	
	52.AMaximum frequency reached0Closed53.8Voltage greater than thres52.BWarning: Motor current limit1Closed53.APID output at lower limit (F	
	52.C Motor holding brake (MHB) active 0 Closed 53.B PID output at tower limit (
	52.D Motor overload 1 Closed	,
Index:	P0731[0] : 1st command data set (CDS) P0731[1] : 2nd command data s	et (CDS)
P0732[2]	BI: Function of digital output 2	Level 2
	Defines source of digital output 2.	
Unit: -	Min: 0.0 Def: 52.2 Max: 4000.0	
Details:	See P0731 (function of digital output 1).	
r0747	CO/BO: State of digital outputs	Level 3
L Inside	Displays status of digital outputs (also includes inversion of digital outputs via P0748).	
Unit: - Bit fields:	Min: - Def: - Max: - Bit00 Digital output 1 energized 0 NO, 1 YES	
Dit fields.	Bit01 Digital output 2 energized 0 NO, 1 YES	
Dependency:	Bit 0= Relay de-energized / contacts open	
	Bit 1= Relay energized / contacts closed	
P0748	Invert digital outputs	Level 3
	Defines high and low states of relay for a given function.	
Unit: - Bit fields:	Min: 0 Def: 0 Max: 7 Bit00 Invert digital output 1 0 NO, 1 YES	
bit neius:	Bit00 Invert digital output 1 0 NO, 1 YES Bit01 Invert digital output 2 0 NO, 1 YES	
-0750501		
r0752[2]	Act. input of ADC [V] or [mA] Displays smoothed analog input value in volts before the characteristic block.	Level 2
Unit: -	Min: - Def: - Max: -	
Index:	r0752[0] : Analog input 1 (ADC 1) r0752[1] : Analog input 2 (ADC 2)	
P0753[2]	Smooth time ADC	Level 3
10735[2]	Defines filter time (PT1 filter) in [ms] for analog input.	Level 3
Unit: ms	Min: 0 Def: 100 Max: 10000	
Index:	P0753[0] : Analog input 1 (ADC 1) P0753[1] : Analog input 2 (ADC	
Note:	Increasing this time (smooth) reduces jitter but slows down response to the analog input.	
r0754[2]	Act. ADC value after scaling [%]	Level 2
	Shows smoothed value of analog input in [%] after scaling block.	
Unit: %	Min: - Def: - Max: -	
Index:	r0754[0]: Analog input 1 (ADC 1) r0754[1]: Analog input 2 (ADC 2	2)
Dependency:	P0757 to P0760 define range (ADC scaling)	

	CO: Act. ADC after scaling [4000h]	Level 3
	Displays analog input, scaled using ASPmin and ASPmax.	_
Unit: - Data:	Min: - Def: - Max: - The analog setpoint (ASP) from the analog scaling block can vary from min. analog setpoint (A	Spmin) to a may analog
Dala.	setpoint (ASPmax) as shown in P0757 (ADC scaling).	SPMM) to a max. analog
	The largest magnitude (value without sign) of ASPmin and ASPmax defines the scaling of 1638	84.
Example:	ASPmin=300 %, ASPmax=100 % then 16384 represents 300 %.	•
-	This parameter will vary from 5461 to 16364	
	ASPmin=-200 %, ASPmax=100 % then 16384 represents 200 %.	
	This parameter will vary from –16384 to +8192	
Index:	r0755[0] : Analog input 1 (ADC 1) r0755[1] : Analog input 2 (ADC 2)	
Note:	This value is used as an input to analog BICO connectors. ASPmax represents the highest analog setpoint (this may be at 10 V)	
	ASPmin represents the lowest analog setpoint (this may be at 0 V)	
Details:	See parameters P0757 to P0760 (ADC scaling)	
B0750101		L
P0756[2]	Type of ADC Defines type of analog input and also enables analog input monitoring.	Level 2
Unit: -	Min: 0 Def: 0 Max: 5	-
Data:	Defines type of analog input and also enables analog input monitoring. To switch over from vol	Itage to current analog
Data.	input it is not sufficient to merely modify parameter P0756. Rather, the DIPs on the terminal bo	
	the correct position. The DIP settings are as follows:	
	- OFF=voltage input (10 V)	
	- ON =current input (20 mA)	
	Allocation of DIPs to analog inputs is as follows:	
	 DIP on left (DIP 1)= Analog input 1 DIP on right (DIP 2)= Analog input 2 	
Settings:	OIP of right (DIP 2)= Analog input 2	toring (0 to 20 mA)
Jettings.	1=Unipolar voltage input (0 to +10 V) 1=Unipolar voltage input with monitoring (0 to 10 V) 4=Bipolar voltage input (-10 V to +	
	2=Unipolar current input (0 to 20 mA) 5=LG-Ni 1000 sensor input	
Index:	P0756[0] : Analog input 1 (ADC 1) P0756[1] : Analog input 2 (AD	C 2)
Dependency:	Function disabled if analog scaling block programmed to output negative setpoints (see P0757	
Note:	When monitoring is enabled and a deadband defined (P0761), a fault condition will be generate	ed (F0080) if the analog
D / 11	input voltage falls below 50 % of the deadband voltage.	
Details:	See P0757 to P0760 (ADC scaling).	
P0757[2]	Value x1 of ADC scaling [V / mA]	Level 2
	Parameters P0757 - P0760 configure the input scaling	
Unit: -	Min: -50.0 Def: 0 Max: 150.0	
Data:	Parameters P0757 - P0760 configure the input scaling where:	
	 Analog setpoints represent a [%] of the normalized frequency in P2000. 	
	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % 	
	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). 	
	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). 	
Index:	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. 	
Index:	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 	
Index: P0758[2]	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 	Level 2
P0758[2]	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling)	Level 2
P0758[2] Unit: %	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 	Level 2
P0758[2] Unit: % Index:	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) 	
P0758[2] Unit: %	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s 	
P0758[2] Unit: % Index: Dependency:	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. 	setpoint is to be
P0758[2] Unit: % Index:	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] 	setpoint is to be
P0758[2] Unit: % Index: Dependency: P0759[2]	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) 	setpoint is to be
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: -	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 	setpoint is to be
P0758[2] Unit: % Index: Dependency: P0759[2]	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) 	Level 2
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: -	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[0] : Analog input 2 (ADC 2) 	Level 2
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: - Index: P0760[2]	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 2) 	Level 2
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: - Index: P0760[2] Unit: %	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 2) 	setpoint is to be Level 2 IC 2 Level 2
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: - Index: P0760[2]	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 2) Value y2 of ADC scaling Sets value of Y2 in [%] as described in P0757 (ADC scaling) Min: -9999.9 Def: 10.0 Max: 9999.9 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 1) P0759[1] : Analog input 2 (ADC 1) 	setpoint is to be Level 2 IC 2 Level 2 C 2
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: - Index: P0760[2] Unit: %	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 2) Aflects value of X2 as described in P0757 (ADC scaling) Min: -90.0 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 4) P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 4) P0760[1] : Analog input 2 (ADC 4) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s depending input 2 (ADC 4) P0760[0] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (ADC 4) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s depending on which s dependence frequency. 	setpoint is to be Level 2 IC 2 Level 2 C 2
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: - Index: P0760[2] Unit: % Index:	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 2) Value y2 of ADC scaling Sets value of Y2 in [%] as described in P0757 (ADC scaling) Min: -9999.9 Def: 10.0 Max: 9999.9 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 1) P0759[1] : Analog input 2 (ADC 1) 	setpoint is to be Level 2 IC 2 Level 2 C 2
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: - Index: P0760[2] Unit: % Index:	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (AD Value y2 of ADC scaling Sets value of Y2 in [%] as described in P0757 (ADC scaling) Min: -9999.9 Def: 100.0 Max: 99999.9 P0760[0] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (AD Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Width of ADC deadband [V / mA] 	C 2 C 2 C 2 C 2 C 2) setpoint is to be
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: - Index: P0760[2] Unit: % Index: Dependency: P0761[2]	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 9999.9.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 4) Value y2 of ADC scaling Sets value of Y2 in [%] as described in P0757 (ADC scaling) Min: -9999.9 Def: 10.0 Max: 9000 Max: 9000 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 4) P0760[0] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (ADC 4) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Width of ADC deadband [V / mA] Defines width of deadband on analog input. The diagrams below explain its use 	C 2 C 2 C 2 C 2 C 2) setpoint is to be
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: - Index: P0760[2] Unit: % Index: Dependency: P0761[2] Unit: -	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (AD ADC scaling) Min: -99999.9 Def: 100.0 Max: 9999.9 P0760[1] : Analog input 2 (AD ADC scaling) Min: -9999.9 Def: 100.0 Max: 9999.9 P0760[1] : Analog input 2 (AD ADC scaling) Min: -9999.9 Def: 100.0 Max: 9999.9 P0760[1] : Analog input 2 (AD ADC scaling) Mint of ADC deadband [V / mA] Defines width of deadband on analog input. The diagrams below explain its use Min: 0 Def: 0 	Setpoint is to be Level 2 C 2 C 2 C 2) Setpoint is to be Level 3
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: - Index: P0760[2] Unit: % Index: Dependency: P0761[2] Unit: - Index:	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 4) Value y2 of ADC scaling Sets value of Y2 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 10.0 Max: 9999.9 P0760[0] : Analog input 1 (ADC 1) P0750[1] : Analog input 2 (ADC 4) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Width of ADC deadband [V / mA] Defines width of deadband on analog input. The diagrams below explain its use Min: 0 Def: 0 Max: 150.0 P0761[1] : Analog input 2 (ADC 4) 	Setpoint is to be Level 2 C 2 C 2 C 2) Setpoint is to be Level 3
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: - Index: P0760[2] Unit: % Index: Dependency: P0761[2] Unit: -	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 9000) P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 9000) P0759[0] : Analog input 1 (ADC 1) P0750[1] : Analog input 2 (ADC 9000) P0750[0] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (ADC 9000) P0760[0] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (ADC 9000) P0760[0] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (ADC 9000) P0760[0] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (ADC 9000) P0760[0] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (ADC 9000) P0760[0] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (ADC 9000) P0760[0] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (ADC 9000) P0760[0] : Analog input	Setpoint is to be Level 2 C 2 Level 2 C 2 Level 3 C 2 Level 3 C 2)
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: - Index: P0760[2] Unit: % Index: Dependency: P0761[2] Unit: - Index:	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0750[1] : Analog input 2 (AD Yalue y2 of ADC scaling Min: -99999.9 Def: 10.0 Max: 99999.9 P0760[0] : Analog input 1 (ADC 1) P0750[1] : Analog input 2 (AD Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Width of ADC deadband [V / mA] Def: 0 Max: 150.0 P0761[1] : Analog input 2 (AD P0761[0] : Analog input 1 (ADC 1) P0761[1] : Analog input 2 (AD P0761[0] : Analog input 1 (ADC 1) P0761[1] : Analog input 2 (AD P0761[0] : Analog input 1 (ADC 1) P0761[1] : Analog input 2 (AD P0761[1] : Analog input 2 (AD <	setpoint is to be Level 2 C 2 Level 2 C 2 Level 3 C 2 Level 3 C 2) So of ADC scaling) are
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: - Index: P0760[2] Unit: % Index: Dependency: P0761[2] Unit: - Index:	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 2) Value y2 of ADC scaling Sets value of Y2 in [%] as described in P0757 (ADC scaling) Min: -9999.9 Def: 10.0 Max: 9999.9 P0760[0] : Analog input 1 (ADC 1) P0750[1] : Analog input 2 (AD Yalue y2 of ADC scaling Sets value of Y2 in [%] as described in P0757 (ADC scaling) Min: -9999.9 Def: 100.0 Max: 9999.9 P0760[1] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (AD Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Width of ADC deadband [V / mA] Defines width of deadband on analog input. The diagrams below explain its use Min: 0 Def: 0 Max: 150.0 P0761[1] : Analog input 2 (AD<td>setpoint is to be Level 2 C 2 Level 2 C 2 Level 3 C 2) Setpoint is to be Level 3 C 2) S of ADC scaling) are</td>	setpoint is to be Level 2 C 2 Level 2 C 2 Level 3 C 2) Setpoint is to be Level 3 C 2) S of ADC scaling) are
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: - Index: P0760[2] Unit: % Index: Dependency: P0761[2] Unit: - Index:	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value y2 of ADC scaling Min: -99999.9 Def: 100 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (ADC 4) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Wint of ADC deadband [V / mA] Def: 0 Max: 150.0 P0760[1] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (ADC 4) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Widt of ADC deadband [V / mA] Defines width of deadband on analog input. The diagrams below explain its use Min: 0 Def: 0	setpoint is to be Level 2 C 2 Level 2 C 2 Level 2 C 2 Level 3 C 2 Level 3 C 2 S of ADC scaling) are intersection (x axis with
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: - Index: P0760[2] Unit: % Index: Dependency: P0761[2] Unit: - Index: Note:	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value y2 of ADC scaling Sets value of Y2 in [%] as described in P0757 (ADC scaling) Min: -9999.9 Def: 10.0 Max: 150.0 P0760[0] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (ADC 4) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Width of ADC deadband [V / mA] Defines width of deadband on analog input. The diagrams below explain its use Min: 0 Def: 0 Max: 150.0 P0761[1] : Analog input 2 (AD 2) P0761[1] : Analog input 2 (AD 2) P0761[1] : Analog input 2 (AD 2) P0761[1] : Analog input 1 (ADC 1) P0	Level 2 C 2 C 2 C 2 C 2) Setpoint is to be Level 3 C 2) Setpoint is to be Level 3 C 2) Setpoint is to be Level 3 C 2) Setpoint is to be Level 4 C 2) Setpoint is to be Level 3 C 2) Setpoint is to be Level 4 C 2) Setpoint is to be Level 4 C 2) Setpoint is to be Level 5 C 2) Setpoint is to be Level 4 C 2) Setpoint is to be Level 5 C 2) Setpoint is to be Level 6 C 2) Setpoint is to be Level 7 C 2) Setpoint is to be Level 7 C 2) Setpoint is to be Level 7 C 2) Setpoint is to be C 2) Setpoint is to be C 2) Setpoint is to be C 2) Setpoint is to be Level 3 C 2) Setpoint is to be C 2) Setpoi
P0758[2] Unit: % Index: Dependency: P0759[2] Unit: - Index: P0760[2] Unit: % Index: Dependency: P0761[2] Unit: - Index:	 Analog setpoints represent a [%] of the normalized frequency in P2000. Analog setpoints may be larger than 100 % ASP max represents highest analog setpoint (this may be at 10 V). ASP min represents lowest analog setpoint (this may be at 0 V). Default values provide a scaling of 0 V=0 %, and 10 V=100 %. P0757[0] : Analog input 1 (ADC 1) P0757[1] : Analog input 2 (ADC 2 Value y1 of ADC scaling Sets value of Y1 in [%] as described in P0757 (ADC scaling) Min: -99999.9 Def: 0.0 Max: 99999.9 P0758[0] : Analog input 1 (ADC 1) P0758[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value x2 of ADC scaling [V / mA] Sets value of X2 as described in P0757 (ADC scaling) Min: -50.0 Def: 10 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0759[1] : Analog input 2 (ADC 2) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Value y2 of ADC scaling Min: -99999.9 Def: 100 Max: 150.0 P0759[0] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (ADC 4) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Wint of ADC deadband [V / mA] Def: 0 Max: 150.0 P0760[1] : Analog input 1 (ADC 1) P0760[1] : Analog input 2 (ADC 4) Affects P2000 to P2003 (reference frequency, voltage, current or torque) depending on which s generated. Widt of ADC deadband [V / mA] Defines width of deadband on analog input. The diagrams below explain its use Min: 0 Def: 0	setpoint is to be Level 2 C 2 Level 2 C 2 Level 2 C 2 Level 3 C 2 Level 3 C 2 S of ADC scaling) are intersection (x axis with

Unit: -	Min: 0:0	Def: 21:0	Max: 4000:0	
Settings:		aled to P2000)	26 CO: Act. DC-link voltage	(scaled to P2001)
-	24 CO: Act. output frequency (sca 25 CO: Act. output voltage (scaled	to P2001)	27 CO: Act. output current	(scaled to P2002)
Index:	P0771[0] : Analog output 1 (DAC	1)	P0771[1] : Analog output 2 (DAC 2)
P0773[2]	Smooth time DAC			Level 3
	Defines smoothing time [ms] for an DAC input using a PT1 filter.		-	
Unit: ms	Min: 0	Def: 100	Max: 1000	
Index:	P0773[0] : Analog output 1 (DAC	1)	P0773[1] : Analog output 2 (DAC 2)
Dependency:	P0773=0: Deactivates filter.			
R0774[2]	Act. DAC value [V] or [mA]			Level 3
	Shows value of analog output in [V]			
Unit: -	Min: -	Def: -	Max: -	
Index:	r0774[0] : Analog output 1 (DAC 1)	r0774[1] : Analog output 2 (E	JAC 2)
P0776	Type of DAC			Level 3
	Defines type of analog output.		I	_
Unit: -	Min: 0	Def: 1	Max: 1	
Settings:	0 Current output1 Voltage output			
Note:	The analog output is designed as a	current output with a rar	nge of 020 mA.	
	For the ECB variant, the two analog with a range of 020 mA or both ch			
P0777[2]	Value x1 of DAC scaling			Level 2
	Defines x1 output characteristic in [onsible for adjustment of output	
	value defined in P0771 (DAC conne		followo	
Unit: %	Parameters of DAC scaling block (I Min: -99999.0	Def: 0.0	Max: 99999.0	_
Data:	Defines x1 output characteristic in [alue defined in P0771
	(DAC connector input).			
Index:	P0777[0] : Analog output 1 (DAC		P0777[1] : Analog output 2 (
Dependency:	Affects P2000 to P2003 (reference f	requency, voltage, curren	t or torque) depending on which s	etpoint is to be generated.
P0778[2]	Value y1 of DAC scaling			Level 2
	Defines y1 of output characteristic.			
Unit: -				
	Min: 0	Def: 0	Max: 20	
Index:	Min: 0 P0778[0] : Analog output 1 (DAC		Max: 20 P0778[1] : Analog output 2 (DAC 2)
	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling	1)		DAC 2)
Index: P0779[2]	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i	n [%].	P0778[1] : Analog output 2 (
Index: P0779[2] Unit: %	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0	1) n [%]. Def: 100.0	P0778[1] : Analog output 2 (Level 2
Index: P0779[2] Unit: % Index:	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC	1) n [%]. Def: 100.0 1)	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (Level 2
Index: P0779[2] Unit: %	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0	1) n [%]. Def: 100.0 1)	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (Level 2
Index: P0779[2] Unit: % Index:	P0778[0] : Analog output 1 (DACValue x2 of DAC scalingDefines x2 of output characteristic iMin: -99999.0P0779[0] : Analog output 1 (DACAffects P2000 to P2003 (referencegenerated.Value y2 of DAC scaling	1) n [%]. Def: 100.0 1)	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (Level 2
Index: P0779[2] Unit: % Index: Dependency: P0780[2]	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic.	1) in [%]. [Def: 100.0 1) frequency, voltage, curre	P0778[1] : Analog output 2 (Max: 999999.0 P0779[1] : Analog output 2 (ent or torque) depending on which	Level 2 DAC 2) n setpoint is to be
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: -	P0778[0] : Analog output 1 (DACValue x2 of DAC scalingDefines x2 of output characteristic iMin: -99999.0P0779[0] : Analog output 1 (DACAffects P2000 to P2003 (referencegenerated.Value y2 of DAC scalingDefines y2 of output characteristic.Min: 0	1) n [%]. Def: 100.0 1) frequency, voltage, curre Def: 10	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20	Level 2 DAC 2) n setpoint is to be Level 2
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index:	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic.	1) n [%]. Def: 100.0 1) frequency, voltage, curre Def: 10	P0778[1] : Analog output 2 (Max: 999999.0 P0779[1] : Analog output 2 (ent or torque) depending on which	Level 2 DAC 2) n setpoint is to be Level 2
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: -	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband	1) in [%]. Def: 100.0 1) frequency, voltage, curre Def: 10 1)	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20	Level 2 DAC 2) n setpoint is to be Level 2
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2]	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or	1) in [%]. [Def: 100.0 1) frequency, voltage, curre [Def: 10 1) [V] for analog output.	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Level 2 Level 4 Level
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: -	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0	1) in [%]. Def: 100.0 1) frequency, voltage, curre Def: 10 1) [V] for analog output. Def: 0	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Max: 20 Max: 20 Max: 20 Max: 20	Level 2 Level 2 Level 2 Level 2 Level 2 Level 2 Level 3
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: - Index:	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0 P0781[0] : Analog output 1 (DAC	1) in [%]. Def: 100.0 1) frequency, voltage, curre Def: 10 1) [V] for analog output. Def: 0	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Level 2 DAC 2) DAC 2) Level 2 Level 2 Level 2 Level 3 DAC 2)
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: -	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0 P0781[0] : Analog output 1 (DAC	1) n [%]. Def: 100.0 1) frequency, voltage, curre Def: 10 1) [V] for analog output. Def: 0 1)	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Max: 20 Max: 20 Max: 20 Max: 20	Level 2 Level 2 Level 2 Level 2 Level 2 Level 2 Level 3
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: - Index: P0809[3]	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0 P0781[0] : Analog output 1 (DAC Copy Command Data Set Calls 'Copy command data set' functional communication of the set of	1) n [%]. Def: 100.0 1) frequency, voltage, curre Def: 10 1) [V] for analog output. Def: 0 1) ction.	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Max: 20 P0780[1] : Analog output 2 (Max: 20 P0780[1] : Analog output 2 (Level 2 DAC 2) DAC 2) Level 2 Level 2 Level 2 Level 3 DAC 2)
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: - Index: P0809[3] Unit: -	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0 P0781[0] : Analog output 1 (DAC Copy Command Data Set Calls 'Copy command data set' fund Min: 0	1) n [%]. Def: 100.0 1) frequency, voltage, curre Def: 10 1) [V] for analog output. Def: 0 1) ction. Def: 0	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Max: 20 P0780[1] : Analog output 2 (Max: 20	Level 2 Level 2 Level 2 Level 2 Level 2 Level 2 Level 3 Level 3 Level 3
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: - Index: P0809[3]	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0 P0781[0] : Analog output 1 (DAC Copy Command Data Set Calls 'Copy command data set' functional communication of the set of	1) n [%]. Def: 100.0 1) frequency, voltage, curre Def: 10 1) [V] for analog output. Def: 0 1) ction. Def: 0 P0809[1] : Copy	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (P0781[1] : P080[1] : P080[2]	Level 2 DAC 2) DAC 2) Level 2 Level 2 Level 2 Level 3 DAC 2)
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: - Index: P0809[3] Unit: - Index: Note:	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0 P0781[0] : Analog output 1 (DAC Copy Command Data Set Calls 'Copy command data set' fund Min: 0 P0809[0] : Copy from CDS Start value in index 2 is automatica	1) n [%]. Def: 100.0 1) frequency, voltage, curre Def: 10 1) [V] for analog output. Def: 0 1) ction. Def: 0 P0809[1] : Copy	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (P0781[1] : P080[1] : P080[2]	Level 2 DAC 2) DAC 2) Level 2 DAC 2) Level 3 DAC 2) Level 3 DAC 2) Level 3
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: - Index: P0809[3] Unit: - Index:	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0 P0781[0] : Analog output 1 (DAC Copy Command Data Set Calls 'Copy command data set' fund Min: 0 P0809[0] : Copy from CDS	1) n [%]. Def: 100.0 1) frequency, voltage, curre Def: 10 1) [V] for analog output. Def: 0 1) ction. Def: 0 P0809[1] : Copy Ily reset to '0' after execut	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (P0781[1] : Analog output 2 (Imax: 20 P0781[1] : Analog output 2 (Level 2 Level 2 Level 2 Level 2 Level 2 Level 2 Level 3 Level 3 Level 3
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: - Index: P0809[3] Unit: - Index: Note: P0810	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0 P0781[0] : Analog output 1 (DAC Copy Command Data Set Calls 'Copy command data set' fund Min: 0 P0809[0] : Copy from CDS Start value in index 2 is automatica Bl: CDS bit 0 (Local / Remote) Selects command source from whic word 1, Bit 15).	1) in [%]. [Def: 100.0 1) frequency, voltage, curre [Def: 10 1) [V] for analog output. [Def: 0 1) ction. [Def: 0 [P0809[1] : Copy Ily reset to '0' after executed ch to read Bit 0 for select	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (DDS P0809[2 tion of function ing a BICO data set (see control	Level 2 DAC 2) DAC 2) Level 2 DAC 2) Level 3 DAC 2) Level 3 DAC 2) Level 3
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: - Index: P0809[3] Unit: - Index: Note: P0810 Unit: -	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0 P0781[0] : Analog output 1 (DAC Copy Command Data Set Calls 'Copy command data set' fund Min: 0 P0809[0] : Copy from CDS Start value in index 2 is automatica Bl: CDS bit 0 (Local / Remote) Selects command source from whice word 1, Bit 15).	1) in [%]. [Def: 100.0 1) frequency, voltage, curre [Def: 10 1) [V] for analog output. [Def: 0 [P0809[1] : Copy Ily reset to '0' after execu ch to read Bit 0 for select [Def: 718:0	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (P0781[1] : Analog output 2 (Imax: 20 P0781[1] : Analog output 2 (Level 2 DAC 2) DAC 2) Level 2 DAC 2) Level 3 DAC 2) Level 3 DAC 2) Level 3
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: - Index: P0809[3] Unit: - Index: Note: P0810	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0 P0781[0] : Analog output 1 (DAC Copy Command Data Set Calls 'Copy command data set' fund Min: 0 P0809[0] : Copy from CDS Start value in index 2 is automatica Bl: CDS bit 0 (Local / Remote) Selects command source from whic word 1, Bit 15).	1) in [%]. [Def: 100.0 1) frequency, voltage, curre [Def: 10 1) [V] for analog output. [Def: 0 [P0809[1] : Copy Ily reset to '0' after execu ch to read Bit 0 for select [Def: 718:0	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (DDS P0809[2 tion of function ing a BICO data set (see control	Level 2 DAC 2) DAC 2) Level 2 DAC 2) Level 3 DAC 2) Level 3 DAC 2) Level 3
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: - Index: P0809[3] Unit: - Index: P0810 Unit: - Note: P0810	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0 P0781[0] : Analog output 1 (DAC Copy Command Data Set Calls 'Copy command data set' fund Min: 0 P0809[0] : Copy from CDS Start value in index 2 is automatica Bl: CDS bit 0 (Local / Remote) Selects command source from white word 1, Bit 15). Min: 0:0 Bit 1 is also relevant for BICO data CB address	1) in [%]. Def: 100.0 1) frequency, voltage, curre Def: 10 1) [V] for analog output. Def: 0 1) Ction. Def: 0 [P0809[1] : Copy Ily reset to '0' after execu Ch to read Bit 0 for select Def: 718:0 set selection.	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Max: 20 P0780[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (Max: 2 to DDS P0809[2 tion of function ing a BICO data set (see control Max: 4095:0	Level 2 DAC 2) Characteristic be Level 2 Level 2 Level 2 Level 3 DAC 2) Level 3 Level 3 Level 3
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: - Index: P0809[3] Unit: - Index: Note: P0810 P0918	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0 P0781[0] : Analog output 1 (DAC Copy Command Data Set Calls 'Copy command data set' fund Min: 0 P0809[0] : Copy from CDS Start value in index 2 is automatica Bl: CDS bit 0 (Local / Remote) Selects command source from whith word 1, Bit 15). Min: 0:0 Bit 1 is also relevant for BICO data CB address Defines address of CB (communication)	1) in [%]. Def: 100.0 1) frequency, voltage, curre Def: 10 1) [V] for analog output. Def: 0 1) Ction. Def: 0 [P0809[1] : Copy Ily reset to '0' after execu ch to read Bit 0 for select Def: 718:0 set selection. ation board) or address o	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Max: 20 P0780[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (Max: 2 to DDS P0809[2 tion of function ing a BICO data set (see control Max: 4095:0	Level 2 DAC 2) Characteristic be Level 2 Level 2 Level 2 Level 3 Level 3 Level 3 Level 3
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: - Index: P0809[3] Unit: - Index: P0810 P0810 P0918 Unit: -	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0 P0781[0] : Analog output 1 (DAC Copy Command Data Set Calls 'Copy command data set' funct Min: 0 P0809[0] : Copy from CDS Start value in index 2 is automatica Bl: CDS bit 0 (Local / Remote) Selects command source from whic word 1, Bit 15). Min: 0:0 Bit 1 is also relevant for BICO data CB address Defines address of CB (communication)	1) in [%]. Def: 100.0 1) frequency, voltage, curre Def: 10 1) [V] for analog output. Def: 0 1) Ction. Def: 0 [P0809[1] : Copy Ily reset to '0' after execu Ch to read Bit 0 for select Def: 718:0 set selection. ation board) or address o Def: 3	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Max: 20 P0780[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (Max: 2 to DDS P0809[2 tion of function ing a BICO data set (see control Max: 4095:0 f the other option modules. Max: 65535	Level 2 DAC 2) DAC 2) Level 2 DAC 2) Level 3 DAC 2) Level 3 DAC 2) Level 3
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: - Index: P0809[3] Unit: - Index: Note: P0810 P0918	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0 P0781[0] : Analog output 1 (DAC Copy Command Data Set Calls 'Copy command data set' funct Min: 0 P0809[0] : Copy from CDS Start value in index 2 is automatica BI: CDS bit 0 (Local / Remote) Selects command source from whic word 1, Bit 15). Min: 0:0 Bit 1 is also relevant for BICO data CB address Defines address of CB (communication)	1) in [%]. Def: 100.0 1) frequency, voltage, curre Def: 10 1) [V] for analog output. Def: 0 1) Ction. Def: 0 [P0809[1] : Copy Ily reset to '0' after execu Ch to read Bit 0 for select Def: 718:0 set selection. ation board) or address o Def: 3 ation board) or address o	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Max: 20 P0780[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (Max: 2 to DDS P0809[2 tion of function ing a BICO data set (see control Max: 4095:0 f the other option modules. Max: 65535	Level 2 DAC 2) Level 2 Level 2 Level 2 Level 2 Level 3 Level 3 Level 3 Level 3
Index: P0779[2] Unit: % Index: Dependency: P0780[2] Unit: - Index: P0781[2] Unit: - Index: P0809[3] Unit: - Index: P0810 P0810 P0918 Unit: -	P0778[0] : Analog output 1 (DAC Value x2 of DAC scaling Defines x2 of output characteristic i Min: -99999.0 P0779[0] : Analog output 1 (DAC Affects P2000 to P2003 (reference generated. Value y2 of DAC scaling Defines y2 of output characteristic. Min: 0 P0780[0] : Analog output 1 (DAC Width of DAC deadband Sets width of dead-band in [mA] or Min: 0 P0781[0] : Analog output 1 (DAC Copy Command Data Set Calls 'Copy command data set' funct Min: 0 P0809[0] : Copy from CDS Start value in index 2 is automatica Bl: CDS bit 0 (Local / Remote) Selects command source from whic word 1, Bit 15). Min: 0:0 Bit 1 is also relevant for BICO data CB address Defines address of CB (communication)	1) in [%]. [Def: 100.0 1) frequency, voltage, curre [Def: 10 1) [V] for analog output. [Def: 0 1) ction. [Def: 0 [P0809[1] : Copy Ily reset to '0' after execu ch to read Bit 0 for select [Def: 718:0 set selection. ation board) or address o [Def: 3 ation board) or address o address:	P0778[1] : Analog output 2 (Max: 99999.0 P0779[1] : Analog output 2 (ent or torque) depending on which Max: 20 P0780[1] : Analog output 2 (Max: 20 P0780[1] : Analog output 2 (Max: 20 P0781[1] : Analog output 2 (Max: 2 to DDS P0809[2 tion of function ing a BICO data set (see control Max: 4095:0 f the other option modules. Max: 65535	Level 2 DAC 2) Characteristic be Level 2 Level 2 Level 2 Level 3 DAC 2) Level 3 Level 3 Level 3

Note:	Possible PROFIBUS settings:	
	1 125	
	0, 126, 127 are not allowed The following applies when a PROFIBUS module is used:	
	DIP switch =0 Address defined in P0918 (CB address) is valid	
	DIP switch not=0 DIP switch setting has priority and P0918 indicates DIP switch setting.	
P0927	Parameter changeable via	Level 3
	Specifies the interfaces which can be used to change parameters.	1
Unit: - Example:	Min: 0 Def: 15 Max: 15 b n n" (bits 0, 1, 2 and 3 set) in the default setting means that parameters can be changed via	
	"b r n" (bits 0, 1 and 3 set) would specify that parameters can be changed via PROFIBUS/CB, link (RS485 USS) but not via USS on BOP link (RS232)	
Bit fields:	Bit00PROFIBUS / CB0NO, 1YESBit02USS on BOP linkBit01BOP0NO, 1YESBit03USS on COM link	0 NO, 1 YES 0 NO, 1 YES
r0947[8]	Last fault code	Level 3
Unit: -	Displays fault history according to the diagram below Min: - Def: - Max: -	
	Displays fault history, where:	
	"F1" is the first active fault (not yet acknowledged).	
	"F2" is the second active fault (not yet acknowledged). "F1e" is the occurrence of the fault acknowledgement for F1 & F2.	
	This moves the value in the 2 indices down to the next pair of indices, where they are stored. Ind	lices 0 & 1 contain the
	active faults. When faults are acknowledged, indices 0 & 1 are reset to 0.	
Example:	If the variable speed drive trips on undervoltage and then receives an external trip before the und acknowledged, you will obtain:	dervoltage is
	Index 0=3 Undervoltage	
	Index 1=85 External trip	
Index:	Whenever a fault in index 0 is acknowledged (F1e), the fault history shifts as indicated in the diagram r0947[0] : Recent fault trip, fault 1 r0947[3] : Recent fault trip -1, fault 4 r0947[6] : Recent fault r0947[6] : R	gram above. ecent fault trip -3, fault 7
maex.		ecent fault trip -3, fault 8
Densedance	r0947[2] : Recent fault trip -1, fault 3 r0947[5] : Recent fault trip -2, fault 6	• •
	Index 2 used only if second fault occurs before first fault is acknowledged.	
r0948[12]	Fault time	Level 3
	Time stamp to indicate when the fault has occurred. P2114 (run-time counter) or P2115 (real time clock) are the possible sources of the time stamp.	
Unit: -	Min: - Def: - Max: -	
Data:	Time stamp to indicate when the fault has occurred. P2114 (run-time counter) or P2115 (real time	e clock) are the possible
Example:	sources of the time stamp. The time is taken from P2115 if this parameter has been updated with the real time. If not, P2114	4 is used
	r0948[0] : Recent fault trip, fault time seconds+minutes r0948[6] : Recent fault trip -2, fault	
	r0948[1] : Recent fault trip -, fault time hours+days r0948[7] : Recent fault trip -2, fau	
	r0948[2] : Recent fault trip, fault time month+year r0948[3] : Recent fault trip1, fault time seconds+minutes r0948[9] : Recent fault trip -3, fau	
	r0948[4] : Recent fault trip -1, fault time hours+days r0948[10] : Recent fault trip -3, fault t	
	r0948[5] : Recent fault trip1, fault time month+year r0948[11] : Recent fault trip -3, fault	
Note:	P2115 can be updated via AOP, Starter, Drive Monitor, etc.	
r0949[8]	Fault value	Level 3
	Displays drive fault values. It is for service purposes and indicate the type of fault reported. The	
Unit: -	values are not documented. They are listed in the code where faults are reported. Min: - Def: - Max: -	
	r0949[0] : Recent fault trip, fault value 1 r0949[4] : Recent fault trip -2	, fault value 5
	r0949[1] : Recent fault trip, fault value 2 r0949[5] : Recent fault trip -2	
	r0949[2] : Recent fault trip -1, fault value 3 r0949[6] : Recent fault trip -3 r0949[3] : Recent fault trip -1, fault value 4 r0949[7] : Recent fault trip -3	
DODEO		
P0952	Total number of faults	Level 3
	Displays number of faults stored in P0947 (last fault code)	Levers
Unit: -	Displays number of faults stored in P0947 (last fault code). Min: 0 Def: 0 Max: 8	Levers
	Min: 0 Def: 0 Max: 8	Level 3
Dependency: r0967	Min: 0 Def: 0 Max: 8 Setting 0 resets fault history (changing to 0 also resets parameter P0948 - fault time). Control word 1	
Dependency: r0967 Unit: -	Min: 0 Def: 0 Max: 8 Setting 0 resets fault history (changing to 0 also resets parameter P0948 - fault time). Control word 1 Displays control word 1. Min: - Def: - Max: -	
Dependency: r0967 Unit: -	Min: 0 Def: 0 Max: 8 Setting 0 resets fault history (changing to 0 also resets parameter P0948 - fault time). Control word 1	
Dependency: r0967 Unit: -	Min: 0 Def: 0 Max: 8 Setting 0 resets fault history (changing to 0 also resets parameter P0948 - fault time). Control word 1 Displays control word 1. Min: - Def: - Bit 00 ON/OFF1 0 NO, 1 YES Bit 01 OFF2: Electrical stop 0 YES, 1 NO Bit 02 OFF3: Fast stop 0 YES, 1 NO	
Dependency: r0967 Unit: -	Min: 0 Def: 0 Max: 8 Setting 0 resets fault history (changing to 0 also resets parameter P0948 - fault time). Control word 1 Displays control word 1. Min: - Def: - Bit00 ON/OFF1 Bit01 OFF2: Electrical stop 0 YES, 1 NO YES, 1 Bit02 OFF3: Fast stop 0 NO, 1 YES 0 YES, 1 NO	
Dependency: r0967 Unit: -	Min: 0 Def: 0 Max: 8 Setting 0 resets fault history (changing to 0 also resets parameter P0948 - fault time). Control word 1 Displays control word 1. Min: - Def: - Max: - Bit00 ON/OFF1 0 NO, 1 YES Bit01 OFF2: Electrical stop 0 YES, 1 NO Bit02 OFF3: Fast stop 0 YES, 1 NO Bit03 Pulse enable 0 NO, 1 YES Bit04 RFG enable 0 NO, 1 YES	
Dependency: r0967 Unit: -	Min: 0 Def: 0 Max: 8 Setting 0 resets fault history (changing to 0 also resets parameter P0948 - fault time). Control word 1 Displays control word 1. Min: - Def: - Bit00 ON/OFF1 Bit01 OFF2: Electrical stop 0 YES, 1 NO YES, 1 Bit02 OFF3: Fast stop 0 NO, 1 YES 0 YES, 1 NO	
Dependency: r0967 Unit: -	Min: 0Def: 0Max: 8Setting 0 resets fault history (changing to 0 also resets parameter P0948 - fault time).Control word 1Displays control word 1.Min: -Def: -Max: -Bit00ON/OFF10NO, 1YESBit01OFF2: Electrical stop0YES, 1NOBit02OFF3: Fast stop0YES, 1NOBit03Pulse enable0NO, 1YESBit04RFG enable0NO, 1YESBit05RFG start0NO, 1YESBit06Setpoint enable0NO, 1YESBit07Fault acknowledge0NO, 1YES	
Dependency: r0967 Unit: -	Min: 0Def: 0Max: 8Setting 0 resets fault history (changing to 0 also resets parameter P0948 - fault time).Control word 1Displays control word 1.Min: -Def: -Max: -Bit00ON/OFF10NO, 1YESBit01OFF2: Electrical stop0YES, 1NOBit02OFF3: Fast stop0YES, 1NOBit03Pulse enable0NO, 1YESBit04RFG enable0NO, 1YESBit05RFG start0NO, 1YESBit06Setpoint enable0NO, 1YESBit07Fault acknowledge0NO, 1YESBit08JOG right0NO, 1YES	
Dependency: r0967 Unit: -	Min: 0Def: 0Max: 8Setting 0 resets fault history (changing to 0 also resets parameter P0948 - fault time).Control word 1Displays control word 1.Min: -Def: -Max: -Bit00ON/OFF10NO, 1YESBit01OFF2: Electrical stop0YES, 1NOBit02OFF3: Fast stop0YES, 1NOBit03Pulse enable0NO, 1YESBit04RFG enable0NO, 1YESBit05RFG start0NO, 1YESBit06Setpoint enable0NO, 1YESBit07Fault acknowledge0NO, 1YES	

	Bitl3 Motor potentiometer MOP up	0 NO, 1 YES	
	Bit14 Motor potentiometer MOP down Bit15 CDS Bit 0 (Local/Remote-Hand/A		
r0968	Status word 1		Level 3
	Displays active status word of variable speed drive	in binary) and can be used to diagnose	
Unit: -	which commands are active. Min: - Def: -	Max: -	
Bit fields:	Bit00 Drive ready	0 NO, 1 YES	
	Bit01 Drive ready to run	0 NO, 1 YES	
	Bit02 Drive running Bit03 Drive fault active	0 NO, 1 YES 0 NO, 1 YES	
	Bit04 OFF2 active	0 YES, 1 NO	
	Bit05 OFF3 active	0 YES, 1 NO	
	Bit06 ON inhibit active Bit07 Drive warning active	0 NO, 1 YES 0 NO, 1 YES	
	Bit08 Deviation setp. / act. value	0 YES, 1 NO	
	Bit09 PZD control	0 NO, 1 YES	
	Bit10 Maximum frequency reached	0 NO, 1 YES	
	Bitl1 Warning: Motor current limit Bitl2 Motor holding brake active	0 YES, 1 NO 0 NO, 1 YES	
	Bitl3 Motor overload	0 YES, 1 NO	
	Bit14 Motor runs direction right	0 NO, 1 YES	
	Bit15 VSD drive overload	0 YES, 1 NO	
P0970	Factory reset		Level 1
11	P0970 = 1 resets all parameters to their default value		
Unit: - Settings:		Max: 1	
Dependency:	First set P0010=30 (factory settings)		
	Stop drive (i.e. disable all pulses) before you can re		
Note:	The following parameters retain their values after a	factory reset:	
	P0918 (CB address), P2010 (USS baud rate) and		
	P2011 (USS address)		
P0971	Transfer data from RAM to EEPROM		Level 3
103/1	Transfers values from RAM to EEPROM when set t	o 1.	Level 5
Unit: -	Min: 0 Def: 0	Max: 1	
Settings:			
		1=Start transfer	
Note:	All values in RAM are transferred to EEPROM.		
Note:	All values in RAM are transferred to EEPROM. Parameter is automatically reset to 0 (default) after		
	All values in RAM are transferred to EEPROM. Parameter is automatically reset to 0 (default) after Selection of frequency setpoint	successful transfer.	Level 1
Note:	All values in RAM are transferred to EEPROM. Parameter is automatically reset to 0 (default) after Selection of frequency setpoint Selects frequency setpoint source. In the table of po selected from the least significant digit (i.e., 0 to 6) a	successful transfer.	Level 1
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								equenc	ies according t	o the	following table:
			•	DIN4		DIN3		DIN2		DIN1	
	Diag:	OF		Inactive		Inactive		Inactiv		Inact	
	P1001 P1002	FF FF		Inactive		Inactive		Inactiv Active		Activ	
	P1002 P1003	FF:		Inactive Inactive		Inactive Inactive		Active		Inact Activ	
	P1004	FF4		Inactive		Active		Inactiv		Inact	
	P1005	FF:		Inactive		Active		Inactiv	e	Activ	ve
	P1006	FF		Inactive		Active		Active		Inact	
	P1007	FF		Inactive		Active		Active		Activ	
	P1008 P1009	FF8		Active Active		Inactive Inactive		Inactiv Inactiv		Inact Activ	
	P1010	FF	-	Active		Inactive		Active		Inact	-
	P1011	FF		Active		Inactive		Active		Activ	
	P1012	F F [·]		Active		Active		Inactiv	e	Inact	tive
	P1013	FF		Active		Active		Inactiv		Activ	
	P1014 P1015	FF'		Active Active		Active Active		Active Active		Activ	
Dependency:	Select fixed fre		-		P1000)	Active		ACTIVE	,	ACII	ve
_ openae	Variable speed					rt in the ca	ase of direct s	election	(P0701 to P07	706=1	15).
Note:	Fixed frequence	ies c	an be seleo	cted using	g the digita	l inputs, ai	nd can also b	e combi	ned with an Ol	N con	nmand.
P1002-P1015	Fixed frequen	cy 2	through 1	5							Level 3
	Defines fixed fi			nt 2.						1	
	Min: -650.00				f: See Not	e below	Max	: 650.00			
Details:			1 1 1								
Note:	Default fixed frequer		Default	it values a	Fixed Fre		Default		Fixed Freque	ncv	Default
	1	icy	0.00		6	squency	25.00		11	ncy	50.00
	2		5.00		7		30.00		12		55.00
	3		10.00		8		35.00		13		60.00
	4		15.00		9		40.00		14		65.00
	5		20.00		10		45.00		15		65.00
P1016 to P1019	Fixed frequen	_							<i></i>		Level 3
	Fixed frequence mode of select			tea in thr	ee amerer	n modes.	Parameter P1	1016 de	ines the		
Unit: -	Min: 1		лт 0.	De	f: 1		Max	3		-	
Details:)16 d	efines the r			neter P10			of Bit 1, Param	eter F	P1018 defines the
	mode of Bit 2,	and I	Parameter I	P1019 de	fines the m	node of Bit	: 3.				
Settings:	1=Direct select				lection + C				ded selection +	ON	command
Note:	See table in P1	1001	(iixea frequ	iency 1) f	u a descri	puon of no	JW IO USE TIXE	u ireque	encies.		
P1020[2] to P1023[2]	BI: Fixed freq		·								Level 3
Unit: -	Defines origin of Min: 0:0	UITIX	eu rrequenc		on. f: 0:0 (P10	123 - 722	3) Max.	4000:0			
Settings:	P1020= 722.0	==`	Digital inn				S) Max: > Digital input			2.4 -	==> Digital input 5
connigo.	P1021= 722.1						=> Digital inpu				=> Digital input 6
Index:	P1020[0] : 1s P1021[0] : 1s P1022[0] : 1s P1023[0] : 1s	t com t com t com	nmand data nmand data nmand data	set (CDS set (CDS set (CDS	6) for Bit 0 6) for Bit 1 6) for Bit 2		P1020[1] P1021[1] P1022[1]	: 2nd c : 2nd c : 2nd c	ommand data s ommand data s ommand data s ommand data s	set (C set (C set (C	DS) for Bit 0 DS) for Bit 1 DS) for Bit 2

Dependency:	Accessible only if P0701 - P0706=	99 (function of digital inputs=	BICO)	
r1024	CO: Act. fixed frequency			Level 3
	Displays sum total of selected fixed			
Unit: Hz	Min: -	Def: -	Max: -	
P1025	Fixed frequency mode - Bit 4 Direct selection or direct selection -	LON for bit 4		Level 3
Unit: -	Min: 1	Def: 1	Max: 2	
Settings:		irect selection + ON comma		on + ON command
Details:	See parameter P1001 for description	on of how to use fixed freque	encies.	
P1026[2]	BI: Fixed frequency selection Bit			Level 3
Unit: -	Defines origin of fixed frequency se Min: 0:0	Def: 722:4	Max: 4000:0	
Index:	P1026[0]: 1st command data set	(CDS)	P1026[1] : 2nd command data se	t (CDS)
Dependency:	Accessible only if P0701 - P0706=9	99 (function of digital inputs=	BICO).	
Details:	See P1020 (fixed frequency selection	on Bit 0) for most common s	settings.	
P1027	Fixed frequency mode - Bit 5			Level 3
Unit: -	Direct selection or direct selection · Min: 1	+ ON for bit 5.	Max: 2	
Settings:	1=Direct selection 2=D	irect selection + ON comma	nd 3=Binary coded selection	on + ON command
Details:	See parameter P1001 for description	on of how to use fixed freque	encies.	
P1028[2]	BI: Fixed frequency selection Bit	: 5		Level 3
Unit: -	Defines origin of fixed frequency se Min: 0:0	election. Def: 722:5	Max: 4000:0	
Index:	P1028[0] : 1st command data set		P1028[1] : 2nd command data se	t (CDS)
Dependency:	Accessible only if P0701 - P0706=9	99 (function of digital inputs=	BICO).	· · · /
Details:	See P1020 (fixed frequency selection	on Bit 0) for most common s	settings.	
P1031	Setpoint memory of the MOP			Level 3
	Saves last motor potentiometer set down.	point (MOP) that was active	before OFF command or power	
Unit: -	Min: 0	Def: 1	Max: 1	
Settings:	0=PID-MOP setpoint will not be sto	ored	1=PID-MOP setpoint will be stored	I (P2240 is updated)
Note:	On next ON command, motor pote	ntiometer setpoint will be the	e saved value in parameter P1040	(setpoint of the MOP).
P1032	Inhibit reverse direction of MOP			Level 3
Unit: -	Inhibits reverse setpoint selection. Min: 0	Def: 1	Max: 1	
Settings:	0=Reserve direction is allowed		1=Reserve direction inhibited	
Dependency: Note:	Motor potentiometer (P1040) must It is possible to change motor direct	be chosen as main setpoint	or additional setpoint (using P1000)).
Note.	using digital inputs or BOP/AOP ke		Sineler selpoint (increase / decreas	se frequency entries by
P1040	Setpoint of the MOP			Level 2
	Determines setpoint for motor pote	ntiometer control (P1000 = 1).	201012
Unit: Hz	Min: -650.00	Def: 10.00	Max: 650.00	an dharadhara will ba
Note:	If motor potentiometer setpoint is s inhibited by default of P1032 (inhib			
r1050	CO: Act. Output frequency of the	,		Level 3
11050	Display output frequency of motor			Level 5
Unit: Hz	Min: -	Def: -	Max: -	
r1078	CO: Total frequency setpoint			Level 3
11	Displays sum of main and additiona		Marri	
Unit: Hz	Min: -	Def: -	Max: -	
P1080	Min. Frequency	1 at which motor will run im-	enoctive of frequency estaciat	Level 1
Unit: Hz	Sets minimum motor frequency [Hz Min: 0.00	Def: 10.00	Max: 650.00	
Note:	Value set here is valid both for cloc	kwise and for counter-clock	wise rotation.	
	Under certain conditions (e.g. ramp	oing, current limiting), motor	can run below minimum frequency	
P1082	Max. Frequency	-1 at uch also sectors (9)	an active of the forement	Level 1
	Sets maximum motor frequency [H setpoint.	zj at which motor will run irre	espective of the frequency	
Unit: Hz	Min: 0.00	Def: 50.00	Max: 150.00	
Dependency:	Limited internally to 200 Hz or 5 * r		5) when $P1300 \ge 20$ (control mod	e=vector control). The
Note:	value is displayed in r0209 (maxim The value set here is valid for both		wise rotation.	
	The maximum output frequency of	variable speed drive can be		active:
	Slip compensation= $f_{max} + f_{slip}$ con	mp max, or		
	Flying restart= $f_{max} + f_{slip}$ nom Maximum motor speed is subject to	n mechanical limitations		
	Maximum motor speed is subject to	o mechanical limitations.		

Level 3			Skip frequency 1 through 4	P1091 to P1094
	ance and suppresses	ids effects of mechanical resona	Defines skip frequency 1 which avo	
			frequencies within +/- P1101 (skip f	
	Max: 650.00	Def: 0.00	Min: 0.00	Unit: Hz
			Defines the skip frequency which as (skip frequency bandwidth). P1091 defines skip frequency 1, P1	Details:
			skip frequency 4.	
			Stationary operation is not possible w For example, if P1091=10 Hz and F between 8 and 12 Hz)	Note:
Level 3			Skip frequency bandwidth	P1101
			Delivers frequency bandwidth to be	
	Max: 10.00	Def: 2.00	Min: 0.00	Unit: Hz
	[□2]).		Delivers frequency bandwidth to be See P1091 through P1094 (skip fre	Details: Note:
Level 3	aculaing motor from supping	enting a pagative extraint from	BI: Inhibit neg. freq. setpoint	P1110[2]
	normal direction	imum frequency (P1080) in the r	Inhibits direction reversal, thus prev in reverse. Instead, it will run at min	
	Max: 4000:0	Def: 1:0	Min: 0:0	Unit: -
n reverse. Instead, it will		enting a negative setpoint from	Inhibits direction reversal, thus prev	Details:
		in the normal direction	run at minimum frequency (P1080)	
	Enabled		0=Disabled	Settings:
set (CDS)	110[1] : 2nd command data s	CDS) P11	P1110[0] : 1st command data set It is possible to disable all reverse of	Index: Note:
			of command/setpoint source) and d	Note.
ses motor to run in the			This function does not disable the "	
		Э.	normal direction as described above	
Level 1			Ramp-up time	P1120
	motor frequency (P1082)	rom standstill up to maximum m	Time taken for motor to accelerate	
	· · · · ·	-	when no rounding is used.	
	Max: 650.00	Def: 10.00	Min: 0.00	Unit: s
chieve optimum drive	rom a PLC), the best way to a	h set ramp rates is used (e.g. fro	Setting the ramp-up time too short of If an external frequency setpoint with performance is to set ramp times in	Details:
Level 1			Ramp-down time	P1121
	y (P1082) down to standstill	from maximum motor frequency	Time taken for motor to decelerate	
			when no rounding is used.	
	Max: 650.00		Min: 0.00	Unit: s
		Def: 30.00	Setting the ramp-down time too shor	Details:
1) / overvoltage (F0002)).		t can cause the variable speed d		
1) / overvoltage (F0002)).			OFF3 ramp-down time	P1135
	drive to trip (overcurrent (F0001 OFF3 command.	t can cause the variable speed d	Defines ramp-down time from maxing	
	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00	t can cause the variable speed do num frequency to standstill for C Def: 5.00	Defines ramp-down time from maximum Min: 0.00	Unit: s
	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00	t can cause the variable speed d num frequency to standstill for C Def: 5.00 num frequency to standstill for C	Defines ramp-down time from maxi Min: 0.00 Defines ramp-down time from maxi	Unit: s Details:
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00	t can cause the variable speed d num frequency to standstill for C Def: 5.00 num frequency to standstill for C	Defines ramp-down time from maxim Min: 0.00 Defines ramp-down time from maxim This time may be exceeded if the V	Unit: s Details: Note:
	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command.	t can cause the variable speed d num frequency to standstill for C Def: 5.00 num frequency to standstill for C DC_max. level is reached.	Defines ramp-down time from maxim Min: 0.00 Defines ramp-down time from maxim This time may be exceeded if the V BI: RFG enable	Unit: s Details:
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command.	t can cause the variable speed d num frequency to standstill for C Def: 5.00 num frequency to standstill for C DC_max. level is reached. nable command (RFG: ramp fur	Defines ramp-down time from maximum Min: 0.00 Defines ramp-down time from maximum This time may be exceeded if the V BI: RFG enable Defines command source of RFG enable	Unit: s Details: Note: P1140[2]
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command.	t can cause the variable speed d num frequency to standstill for C Def: 5.00 num frequency to standstill for C DC_max. level is reached. nable command (RFG: ramp fur Def: 1.0	Defines ramp-down time from maxim Min: 0.00 Defines ramp-down time from maxim This time may be exceeded if the V BI: RFG enable Defines command source of RFG enable Min: 0.00	Unit: s Details: Note:
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command.	t can cause the variable speed d num frequency to standstill for C Def: 5.00	Defines ramp-down time from maximum Min: 0.00 Defines ramp-down time from maximum This time may be exceeded if the V BI: RFG enable Defines command source of RFG enable	Unit: s Details: Note: P1140[2] Unit: -
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command.	t can cause the variable speed d num frequency to standstill for C Def: 5.00	Defines ramp-down time from maximized maximized maximized maximum from maximized maximum from maximized maximum from maxim	Unit: s Details: Note: P1140[2] Unit: - Index:
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command. OFF3 command.	t can cause the variable speed d num frequency to standstill for C Def: 5.00 num frequency to standstill for C DC_max. level is reached. nable command (RFG: ramp fur Def: 1.0 (CDS) tt (CDS)	Defines ramp-down time from maxim Min: 0.00 Defines ramp-down time from maxim This time may be exceeded if the V BI: RFG enable Defines command source of RFG enable Min: 0.00 . P1140[0] : 1st command data set P1140[1] : 2nd command data set BI: RFG start	Unit: s Details: Note: P1140[2] Unit: -
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command. OFF3 command.	t can cause the variable speed d num frequency to standstill for C Def: 5.00 num frequency to standstill for C DC_max. level is reached. nable command (RFG: ramp fur Def: 1.0 (CDS) tt (CDS)	Defines ramp-down time from maximized maximized maximized maximum from maximized maximum from maximized maximum from maxim	Unit: s Details: Note: P1140[2] Unit: - Index:
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command. OFF3 command. Inction generator). Max: 4000.0	t can cause the variable speed d mum frequency to standstill for C Def: 5.00 num frequency to standstill for C DC_max. level is reached. nable command (RFG: ramp fur Def: 1.0 (CDS) tt (CDS) tart command (RFG: ramp functi Def: 1.0 (CDS)	Defines ramp-down time from maxim Min: 0.00 Defines ramp-down time from maxim This time may be exceeded if the V BI: RFG enable Defines command source of RFG end Min: 0.00 . P1140[0] : 1st command data set P1140[1] : 2nd command data set BI: RFG start Defines command source of RFG s Min: 0.00 . P1141[0] : 1st command data set	Unit: s Details: Note: P1140[2] Unit: - Index: P1141[2]
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command. OFF3 command. Inction generator). Max: 4000.0	t can cause the variable speed d mum frequency to standstill for C Def: 5.00 num frequency to standstill for C DC_max. level is reached. nable command (RFG: ramp fur Def: 1.0 (CDS) tt (CDS) tart command (RFG: ramp functi Def: 1.0 (CDS)	Defines ramp-down time from maxim Min: 0.00 Defines ramp-down time from maxim This time may be exceeded if the V BI: RFG enable Defines command source of RFG end Min: 0.00 . P1140[0] : 1st command data set P1140[1] : 2nd command data set BI: RFG start Defines command source of RFG s Min: 0.00	Unit: s Details: Note: P1140[2] Unit: - Index: P1141[2] Unit: -
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command. OFF3 command. Inction generator). Max: 4000.0	t can cause the variable speed d mum frequency to standstill for C Def: 5.00 num frequency to standstill for C DC_max. level is reached. nable command (RFG: ramp fur Def: 1.0 (CDS) tt (CDS) tart command (RFG: ramp functi Def: 1.0 (CDS)	Defines ramp-down time from maxim Min: 0.00 Defines ramp-down time from maxim This time may be exceeded if the V BI: RFG enable Defines command source of RFG end Min: 0.00 . P1140[0] : 1st command data set P1140[1] : 2nd command data set BI: RFG start Defines command source of RFG s Min: 0.00 . P1141[0] : 1st command data set	Unit: s Details: Note: P1140[2] Unit: - Index: P1141[2] Unit: -
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command. Inction generator). Max: 4000.0 tion generator). Max: 4000.0 : ramp function generator).	t can cause the variable speed d num frequency to standstill for C Def: 5.00 num frequency to standstill for C DC_max. level is reached. nable command (RFG: ramp fur Def: 1.0 (CDS) tart command (RFG: ramp functi Def: 1.0 (CDS) tart command (RFG: ramp functi Def: 1.0	Defines ramp-down time from maximitian in the formation of the second se	Unit: s Details: Note: P1140[2] Unit: - Index: P1141[2] Unit: - Index: P1142[2]
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command. Inction generator). Max: 4000.0 tion generator). Max: 4000.0	t can cause the variable speed de num frequency to standstill for C Def: 5.00 num frequency to standstill for C DC_max. level is reached. nable command (RFG: ramp fur Def: 1.0 (CDS) tart command (RFG: ramp functing) tart command (RFG: ramp functing) t	Defines ramp-down time from maximination of the second sec	Unit: s Details: Note: P1140[2] Unit: - Index: P1141[2] Unit: - Index: P1142[2] Unit: -
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command. Inction generator). Max: 4000.0 tion generator). Max: 4000.0 : ramp function generator).	t can cause the variable speed de mum frequency to standstill for C Def: 5.00 mum frequency to standstill for C DC_max. level is reached. nable command (RFG: ramp fur Def: 1.0 (CDS) tt (CDS) tart command (RFG: ramp functing) (CDS) tt (CDS) tt (CDS)	Defines ramp-down time from maximination of the second sec	Unit: s Details: Note: P1140[2] Unit: - Index: P1141[2] Unit: - Index: P1142[2]
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command. Inction generator). Max: 4000.0 tion generator). Max: 4000.0 : ramp function generator).	t can cause the variable speed de mum frequency to standstill for C Def: 5.00 mum frequency to standstill for C DC_max. level is reached. nable command (RFG: ramp fur Def: 1.0 (CDS) tt (CDS) tart command (RFG: ramp functing) (CDS) tt (CDS) tt (CDS)	Defines ramp-down time from maximination of the second sec	Unit: s Details: Note: P1140[2] Unit: - Index: P1141[2] Unit: - Index: P1142[2] Unit: -
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command. OFF3 command. Inction generator). Max: 4000.0 Ition generator). Max: 4000.0 Ition generator). Max: 4000.0	t can cause the variable speed d num frequency to standstill for C Def: 5.00 num frequency to standstill for C DC_max. level is reached. nable command (RFG: ramp fur Def: 1.0 (CDS) tt (CDS) tart command (RFG: ramp funct Def: 1.0 (CDS) tt (CDS) tt (CDS) tt (CDS) tt (CDS) tt (CDS) tt (CDS) tt (CDS)	Defines ramp-down time from maximination of the second source of RFG emable Defines command source of RFG emains of the second source of RFG second source second s	Unit: s Details: Note: P1140[2] Unit: - Index: P1141[2] Unit: - Index: P1142[2] Unit: -
Level 3 Level 3 Level 3 Level 3 Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command. OFF3 command. Inction generator). Max: 4000.0 Ition generator). Max: 4000.0 Ition generator). Max: 4000.0 Ition generator). Max: 4000.0	t can cause the variable speed d num frequency to standstill for C Def: 5.00 num frequency to standstill for C DC_max. level is reached. nable command (RFG: ramp fur Def: 1.0 (CDS) tart command (RFG: ramp funct Def: 1.0 (CDS) tart command (RFG: ramp funct Def: 1.0 (CDS) tart (CDS) tart (CDS) tart (CDS) tart (CDS) pinning motor by rapidly changir	Defines ramp-down time from maximismination of the second	Unit: s Details: Note: P1140[2] Unit: - Index: P1141[2] Unit: - Index: P1142[2] Unit: - Index:
Level 3 Level 3 Level 3 Level 3 Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command. OFF3 command. Inction generator). Max: 4000.0 Ition generator). Max: 4000.0 Ition generator). Max: 4000.0 Ition generator). Max: 4000.0	t can cause the variable speed d num frequency to standstill for C Def: 5.00	Defines ramp-down time from maximination of the second sec	Unit: s Details: Note: P1140[2] Unit: - Index: P1141[2] Unit: - Index: P1142[2] Unit: - Index:
Level 3 Level 3 Level 3 Level 3 Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command. Inction generator). Max: 4000.0 tion generator). Max: 4000.0 tramp function generator). Max: 4000.0	t can cause the variable speed d num frequency to standstill for C Def: 5.00 [num frequency to standstill for C DC_max. level is reached. nable command (RFG: ramp fur Def: 1.0 [(CDS) tt (CDS) tt (CDS) tt (CDS) tt (CDS) nable setpoint command (RFG: Def: 1.0 [(CDS) tt (CDS) tt (CDS) tt (CDS) nable setpoint command (RFG: Def: 1.0 [(CDS) tt (CDS) tt (CDS) nable setpoint command (RFG: Def: 1.0 [(CDS) tt (CDS) tt (CDS)	Defines ramp-down time from maximination of the second source of RFG emable Defines command source of RFG emains of the second source of the second source of RFG emains of the second source of the s	Unit: s Details: Note: P1140[2] Unit: - Index: P1141[2] Unit: - Index: P1142[2] Unit: - Index: P1142[2]
Level 3	drive to trip (overcurrent (F0001 OFF3 command. Max: 650.00 OFF3 command. Inction generator). Max: 4000.0 tion generator). Max: 4000.0 ramp function generator). Max: 4000.0 ing the output frequency of nd. Then, the motor runs up Max: 6	t can cause the variable speed d mum frequency to standstill for C Def: 5.00 mum frequency to standstill for C DC_max. level is reached. DC_max. level is reached. nable command (RFG: ramp fur Def: 1.0 (CDS) tt (CDS) tt (CDS)	Defines ramp-down time from maximination of the second sec	Unit: s Details: Note: P1140[2] Unit: - Index: P1141[2] Unit: - Index: P1142[2] Unit: - Index:

Settings:				only in direction of setpoint
	1 =Flying start is always active, start		5 =Flying start is active if power	on, fault, OFF2, only in
	2 =Flying start is active if power on, f	ault, OFF2, start in	direction of setpoint	
	direction of setpoint 3 =Flying start is active if fault, OFF2	start in direction of	6 =Flying start is active if fault, 0	JFF2, only in direction of
	setpoint	, start in unection of	setpoint	
Note:	Useful for motors with high inertia lo	ads.		
	Settings 1 to 3 search in both directi			
	Settings 4 to 6 search only in directi	on of setpoint.		
	Flying start must be used in cases v		be turning (e.g. after a short main	s break) or can be driven
	by the load. Otherwise, overcurrent	trips will occur		
P1202	Motor-current: Flying start			Level 3
	Defines search current used for flyir	ng start.		
Unit: %	Min: 10	Def: 100	Max: 200	
Details:	Defines search current used for flyir	ng start.		
	Value is in [%] based on rated moto			
Note:	Reducing the search current may in	prove performance for fl	ying start if the inertia of the syste	m is not very high.
P1203	Search rate: Flying start			Level 3
	Sets factor by which the output frequ	ency changes during flyin	g start to synchronize with turning	_
	motor. This value is entered in [%] re			
	the curve below (and thus influences	the time taken to search	for the motor frequency):	
	fmax + 2 f slip			_
Unit: %	Min: 10	Def: 100	Max: 200	or Enterthic value in 1973
Details:	Sets factor by which output frequency relative to default time factor (which o			
	search time is the time taken to search			
	P1203=100 % is defined as giving a			
	P1203=200 % would result in a rate	of frequency change of 1	% of f_slip,nom / [ms].	
Example:	For a motor with 50 Hz, 1350 rpm, 1		naximum search time of 600 ms. I	f the motor is turning, the
	motor frequency is found in a shorte			
Note:	A higher value produces a flatter gra		search time.	
	A lower value has the opposite effect	ct.		
P1210	Automatic restart			Level 3
	Enables restart after a mains break			
Unit: -	Min: 0	or after a fault. Def: 1	Max: 5	
Unit: - Settings:	Min: 0 0=Disabled	Def: 1	3 =Restart after fault/mains bre	
	Min: 0 0=Disabled 1 =Trip reset after power on:	Def: 1 P1211 disabled	3 =Restart after fault/mains bre 4 =Restart after mains break:	P1211 enabled
Settings:	Min: 0 0=Disabled 1 =Trip reset after power on: 2 =Restart mains break; power on:	Def: 1 P1211 disabled P1211 disabled	3 =Restart after fault/mains bre 4 =Restart after mains break: 5 =Restart mains break/fault/po	P1211 enabled
	Min: 0 0=Disabled 1 =Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON co	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita	3 =Restart after fault/mains bre 4 =Restart after mains break: 5 =Restart mains break/fault/po	P1211 enabled
Settings: Dependency:	Min: 0 0=Disabled 1 =Trip reset after power on: 2 =Restart mains break; power on:	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly	3 =Restart after fault/mains break 4 =Restart after mains break: 5 =Restart mains break/fault/po I input wire link).	P1211 enabled ower on: P1211 disabled
Settings: Dependency: Caution:	Min: 0 0=Disabled 1 =Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON co Settings 2 to 5 can cause the motor	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly	3 =Restart after fault/mains break 4 =Restart after mains break: 5 =Restart mains break/fault/po I input wire link).	P1211 enabled ower on: P1211 disabled
Settings: Dependency: Caution: Note:	Min: 0 0=Disabled 1 =Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON c Settings 2 to 5 can cause the motor Flying start must be used in cases v by the load (P1200).	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly	3 =Restart after fault/mains break 4 =Restart after mains break: 5 =Restart mains break/fault/po I input wire link).	P1211 enabled ower on: P1211 disabled s break) or can be driven
Settings: Dependency: Caution:	Min: 0 0=Disabled 1 =Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON cr Settings 2 to 5 can cause the motor Flying start must be used in cases w by the load (P1200). Number of restart attempts	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still	3 =Restart after fault/mains bre 4 =Restart after mains break: 5 =Restart mains break/fault/po I input wire link). be turning (e.g. after a short main	P1211 enabled ower on: P1211 disabled
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Settings: Dependency: Caution: Note:	Min: 0 0=Disabled 1 =Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON cr Settings 2 to 5 can cause the motor Flying start must be used in cases v by the load (P1200). Number of restart attempts Specifies number of times the varial	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still	3 =Restart after fault/mains bre 4 =Restart after mains break: 5 =Restart mains break/fault/po I input wire link). be turning (e.g. after a short main	P1211 enabled ower on: P1211 disabled s break) or can be driven
Settings: Dependency: Caution: Note: P1211 Unit: -	Min: 0 0=Disabled 1 =Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still ble speed drive will attem	3 =Restart after fault/mains break: 4 =Restart after mains break: 5 =Restart mains break/fault/po I input wire link). be turning (e.g. after a short main pt to restart if P1210 (flying start)	P1211 enabled ower on: P1211 disabled is break) or can be driven Level 3
Settings: Dependency: Caution: Note: P1211	Min: 0 0=Disabled 1 =Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still ble speed drive will attem Def: 3	3 =Restart after fault/mains break 4 =Restart after mains break: 5 =Restart mains break/fault/po I input wire link). be turning (e.g. after a short main pt to restart if P1210 (flying start) Max: 10	P1211 enabled ower on: P1211 disabled s break) or can be driven
Settings: Dependency: Caution: Note: P1211 Unit: -	Min: 0 0=Disabled 1 =Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still ble speed drive will attem Def: 3	3 =Restart after fault/mains break 4 =Restart after mains break: 5 =Restart mains break/fault/po I input wire link). be turning (e.g. after a short main pt to restart if P1210 (flying start) Max: 10	P1211 enabled ower on: P1211 disabled is break) or can be driven Level 3
Settings: Dependency: Caution: Note: P1211 Unit: -	Min: 0 0=Disabled 1 =Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still ble speed drive will attem Def: 3	3 =Restart after fault/mains break 4 =Restart after mains break: 5 =Restart mains break/fault/po 1 input wire link). be turning (e.g. after a short main pt to restart if P1210 (flying start) Max: 10 for the first time if P1210 is	P1211 enabled ower on: P1211 disabled is break) or can be driven Level 3
Settings: Dependency: Caution: Note: P1211 Unit: - P1212 Unit: s	Min: 0 0=Disabled 1 = Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON constant o	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still ble speed drive will attem Def: 3 speed drive is restarted to	3 =Restart after fault/mains break 4 =Restart after mains break: 5 =Restart mains break/fault/po I input wire link). be turning (e.g. after a short main pt to restart if P1210 (flying start) Max: 10	P1211 enabled ower on: P1211 disabled s break) or can be driven Level 3
Settings: Dependency: Caution: Note: P1211 Unit: - P1212	Min: 0 0=Disabled 1 =Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON the set of the	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still ble speed drive will attem Def: 3 speed drive is restarted to Def: 30	3 =Restart after fault/mains break: 4 =Restart after mains break: 5 =Restart mains break/fault/pour i input wire link). be turning (e.g. after a short main pt to restart if P1210 (flying start) Max: 10 for the first time if P1210 is Max: 1000	P1211 enabled ower on: P1211 disabled is break) or can be driven Level 3
Settings: Dependency: Caution: Note: P1211 Unit: - P1212 Unit: s	Min: 0 0=Disabled 1 =Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still ble speed drive will attem Def: 3 speed drive is restarted to Def: 30	3 =Restart after fault/mains break: 4 =Restart after mains break: 5 =Restart mains break/fault/pour i input wire link). be turning (e.g. after a short main pt to restart if P1210 (flying start) Max: 10 for the first time if P1210 is Max: 1000	P1211 enabled ower on: P1211 disabled s break) or can be driven Level 3
Settings: Dependency: Caution: Note: P1211 Unit: - P1212 Unit: s P1213	Min: 0 0=Disabled 1 =Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still ble speed drive will attem Def: 3 speed drive is restarted to Def: 30 is increment for each res	3 =Restart after fault/mains break: 4 =Restart after mains break: 5 =Restart mains break/fault/pound input wire link). be turning (e.g. after a short main pt to restart if P1210 (flying start) Max: 10 for the first time if P1210 is Max: 1000 tart of the variable speed drive if	P1211 enabled ower on: P1211 disabled s break) or can be driven Level 3
Settings: Dependency: Caution: Note: P1211 Unit: - P1212 Unit: s P1213 Unit: s	Min: 0 0=Disabled 1 =Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still ble speed drive will attem Def: 3 speed drive is restarted to Def: 30	3 =Restart after fault/mains break: 4 =Restart after mains break: 5 =Restart mains break/fault/pour i input wire link). be turning (e.g. after a short main pt to restart if P1210 (flying start) Max: 10 for the first time if P1210 is Max: 1000	P1211 enabled ower on: P1211 disabled s break) or can be driven Level 3
Settings: Dependency: Caution: Note: P1211 Unit: - P1212 Unit: s P1213	Min: 0 0=Disabled 1 = Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON cr Settings 2 to 5 can cause the motor Flying start must be used in cases w by the load (P1200). Number of restart attempts Specifies number of times the varial is activated. Min: 0 Time to first restart Selects the time before the variable activated. Min: 0 Restart time increment Selects the amount the restart time P1210 is activated. Min: 0 Bl: Enable DC braking	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still ble speed drive will attem Def: 3 speed drive is restarted to Def: 30 is increment for each res Def: 30	3 =Restart after fault/mains break: 4 =Restart after mains break: 5 =Restart mains break/fault/po I input wire link). be turning (e.g. after a short main pt to restart if P1210 (flying start) Max: 10 for the first time if P1210 is Max: 1000 tart of the variable speed drive if Max: 1000	P1211 enabled ower on: P1211 disabled s break) or can be driven Level 3
Settings: Dependency: Caution: Note: P1211 Unit: - P1212 Unit: s P1213 Unit: s	Min: 0 0=Disabled 1 = Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON cr Settings 2 to 5 can cause the motor Flying start must be used in cases w by the load (P1200). Number of restart attempts Specifies number of times the varial is activated. Min: 0 Time to first restart Selects the time before the variable activated. Min: 0 Restart time increment Selects the amount the restart time P1210 is activated. Min: 0 Bl: Enable DC braking Enables DC braking via a signal approximation	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still ble speed drive will attem Def: 3 speed drive is restarted to Def: 30 is increment for each res Def: 30 pplied from an external s	3 =Restart after fault/mains break: 4 =Restart after mains break: 5 =Restart mains break/fault/po I input wire link). be turning (e.g. after a short main pt to restart if P1210 (flying start) Max: 10 for the first time if P1210 is Max: 1000 tart of the variable speed drive if Max: 1000	P1211 enabled ower on: P1211 disabled s break) or can be driven Level 3 Level 3 Level 3
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Settings: Dependency: Caution: Note: P1211 Unit: - P1212 Unit: s P1213 Unit: s P1230[2]	Min: 0 0=Disabled 1 = Trip reset after power on: 2 = Restart mains break; power on: Auto restart requires constant ON c Settings 2 to 5 can cause the motor Flying start must be used in cases w by the load (P1200). Number of restart attempts Specifies number of times the varial is activated. Min: 0 Time to first restart Selects the time before the variable activated. Min: 0 Restart time increment Selects the amount the restart time P1210 is activated. Min: 0 Bl: Enable DC braking Enables DC braking via a signal ap while external input signal is active DC braking causes the motor to sta applied also holds shaft stationary) When the DC current is not applied us point the DC braking signal is applied us bolds shaft stationary) When the DC braking via a signal applied us point the DC braking signal is applied us point the DC braking signal is applied us point the DC braking signal is applied us point box	Def: 1 P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still ble speed drive will attem Def: 3 speed drive is restarted to Def: 30 ble speed drive is rest	3 =Restart after fault/mains break: 4 =Restart after mains break! 5 =Restart mains break/fault/po l input wire link). be turning (e.g. after a short main pt to restart if P1210 (flying start) Max: 10 Max: 100 ior the first time if P1210 is Max: 1000 tart of the variable speed drive if Max: 1000 tart of the variable speed drive if Max: 1000 cource. Function remains active DC braking current (current drive output pulses are blocked sufficiently demagnetized. Max: 4000:0 ource. Function remains active w	P1211 enabled ower on: P1211 disabled is break) or can be driven Level 3 Level 3 Level 3 Level 3 Level 3 Level 3
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Settings: Dependency: Caution: Note: P1211 Unit: - P1212 Unit: s P1230[2] Unit: -	 Min: 0 0=Disabled 1 = Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON construings 2 to 5 can cause the motor Flying start must be used in cases were by the load (P1200). Number of restart attempts Specifies number of times the varial is activated. Min: 0 Time to first restart Selects the time before the variable activated. Min: 0 Restart time increment Selects the amount the restart time P1210 is activated. Min: 0 Bl: Enable DC braking Enables DC braking via a signal apwhile external input signal is active DC braking causes the motor to stor applied also holds shaft stationary) When the DC braking via a signal applied until the motor has been su 722.0=Digital input 1 (requires P070) 	Def: 1 P1211 disabled P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still ble speed drive will attem Def: 3 speed drive is restarted to Def: 30 is increment for each res Def: 30 bplied from an external s	3 =Restart after fault/mains break: 4 =Restart after mains break!: 5 =Restart mains break/fault/po l input wire link). be turning (e.g. after a short main pt to restart if P1210 (flying start) Max: 10 Max: 100 for the first time if P1210 is Max: 1000 tart of the variable speed drive if Max: 1000 tart of the variable speed drive if DC braking current (current drive output pulses are blocked sufficiently demagnetized. Max: 4000:0 ource. Function remains active wo oplying a DC braking current (cur	P1211 enabled ower on: P1211 disabled s break) or can be driven Level 3 Level 3 Level 3 Level 3 Level 3 Level 3 Level 3
Settings: Dependency: Caution: Note: P1211 Unit: - P1212 Unit: s P1213 Unit: s P1230[2] Unit: - Details:	 Min: 0 0=Disabled 1 = Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON c Settings 2 to 5 can cause the motor Flying start must be used in cases v by the load (P1200). Number of restart attempts Specifies number of times the varial is activated. Min: 0 Time to first restart Selects the time before the variable activated. Min: 0 Restart time increment Selects the amount the restart time P1210 is activated. Min: 0 Bl: Enable DC braking Enables DC braking via a signal ag while external input signal is active DC braking causes the motor to sta applied also holds shaft stationary) When the DC braking via a signal ap is active. DC braking causes the motor to sta applied until the motor has been su 722.0=Digital input 1 (requires P0707 722.1=Digital input 2 (requires P0707 	Def: 1 P1211 disabled P1211 disabled prize of the speed drive will attemport Def: 3 Def: 30 Def:	3 =Restart after fault/mains break: 4 =Restart after mains break!: 5 =Restart mains break/fault/po l input wire link). be turning (e.g. after a short main pt to restart if P1210 (flying start) Max: 10 Max: 100 for the first time if P1210 is Max: 1000 tart of the variable speed drive if Max: 1000 tart of the variable speed drive if DC braking current (current drive output pulses are blocked sufficiently demagnetized. Max: 4000:0 ource. Function remains active wo oplying a DC braking current (cur	P1211 enabled ower on: P1211 disabled s break) or can be driven Level 3 Level 3 Level 3 Level 3 Level 3 Level 3 Level 3
Settings: Dependency: Caution: Note: P1211 Unit: - P1212 Unit: s P1213 Unit: s P1230[2] Unit: - Details:	 Min: 0 0=Disabled 1 = Trip reset after power on: 2 =Restart mains break; power on: Auto restart requires constant ON construings 2 to 5 can cause the motor Flying start must be used in cases were by the load (P1200). Number of restart attempts Specifies number of times the varial is activated. Min: 0 Time to first restart Selects the time before the variable activated. Min: 0 Restart time increment Selects the amount the restart time P1210 is activated. Min: 0 Bl: Enable DC braking Enables DC braking via a signal apwhile external input signal is active DC braking causes the motor to stor applied also holds shaft stationary) When the DC braking via a signal applied until the motor has been su 722.0=Digital input 1 (requires P070) 	Def: 1 P1211 disabled P1211 disabled P1211 disabled ommand (e.g. via a digita to restart unexpectedly where the motor may still ble speed drive will attem Def: 3 speed drive is restarted to Def: 30	3 =Restart after fault/mains break: 4 =Restart after mains break!: 5 =Restart mains break/fault/po l input wire link). be turning (e.g. after a short main pt to restart if P1210 (flying start) Max: 10 Max: 100 for the first time if P1210 is Max: 1000 tart of the variable speed drive if Max: 1000 tart of the variable speed drive if DC braking current (current drive output pulses are blocked sufficiently demagnetized. Max: 4000:0 ource. Function remains active wo oplying a DC braking current (cur	P1211 enabled ower on: P1211 disabled s break) or can be driven Level 3 Level 3 Level 3 Level 3 Level 3 Level 3 Level 3

	722 E-Digital input 6 (requires D0706 or			
1	722.5=Digital input 6 (requires P0706 se 722.6=Digital input 7 (via analog input 1			
	722.7=Digital input 8 (via analog input 2	2, requires P0708 set to 99)		
Index:	P1230[0] : 1st command data set (CDS	S) P12	30[1] : 2nd command data se	et (CDS)
Caution2:	Frequent use of long periods of DC brak			· · ·
Note:	This delay time is set in P0347 (demagn	netization time). If this delay	is too short, overcurrent trips	can occur.
P1232	DC braking current			Level 3
	Defines the level of DC current in [%] re	elative to the rated motor cur	rent (P0305).	
Unit: %		f: 100	Max: 250	
P1233	Duration of DC braking			Level 3
F1233	Defines duration for which DC injection	braking is to be active follow	ving an OEE1 command	Level 5
Unit: s		f: 0	Max: 250	
Value:	P1233=0 : Not active following OFF1.		33=1 - 250 : Active for the sp	ecified duration.
Caution	Frequent use of long periods of DC brak	king can cause the motor to	overheat.	
Note:	The DC braking function causes the mo			
	holds the shaft stationary). When the DC			
	and the DC current not applied until the	motor has been sufficiently	demagnetized (demagnetizati	on time is calculated
	automatically from motor data).			
P1236	Compound braking current			Level 3
	Defines DC level superimposed on AC v	waveform. The value is ente	ered in [%] relative to rated	
	motor current (P0305)			
Unit: %		f: 0	Max: 250	
Value:	P1236=0 : Compound braking disa		ted motor current (D0205)	
Dependency:	P1236=1 - 250 : Level of DC braking c Active after OFF1 / OFF3 command.	unent uenneu as a [%] UI la		
Note:	Increasing the value will generally impro	ove braking performance: ho	wever, if you set the value too	high, an overcurrent
	trip may result.			
Diata			Ĩ	
P1240	Configuration of Vdc controller Enables / disables Vdc controller.			Level 3
Unit: -		f: 0	Max: 3	
Details:	The Vdc controller dynamically controls	-		ertia systems
Settings:	0 =Vdc controller disabled		/dc-min controller (Kinetic buff	
Jerniger	1 =Vdc-max controller enabled	3 =\	/dc-max and Vdc-min controlle	er enabled
Note:	Vdc max automatically increases ramp-			
	Vdc min is activated if DC-link voltage fa		ne kinetic energy of the motor	is then used to buffer
	the DC-link voltage, thus causing decele	eration of the drive.		
P1260	Source of changeover control			Level 2
	Selects the possible sources for contact	tor changeover control		
Unit: -		f: 0	Max: 7	
Settings:	0 Bypass disabled			
	 Controlled by variable speed drive t Controlled by DIN - see P1266 	trip		
	2 CONTINUED BY DIN - SEE F 1200	l drive trip		
	3 Controlled by DIN & variable speed			
1	3 Controlled by DIN & variable speed	frequency	drive trip	
	 Controlled by DIN & variable speed Controlled by variable speed drive f Controlled by variable speed drive f Controlled by variable speed drive f 	frequency frequency & variable speed frequency & DIN		
	 Controlled by DIN & variable speed Controlled by variable speed drive f Controlled by variable speed drive f 	frequency frequency & variable speed frequency & DIN		
r1261	 Controlled by DIN & variable speed Controlled by variable speed drive f 	frequency frequency & variable speed frequency & DIN		Level 2
r1261	 Controlled by DIN & variable speed Controlled by variable speed drive f BO: Contactor control word 	frequency frequency & variable speed frequency & DIN frequency & DIN & variable s	speed drive trip	Level 2
r1261 Unit: -	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def	frequency frequency & variable speed frequency & DIN frequency & DIN & variable at allows external connection f: -	speed drive trip	Level 2
	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def Bit00 Motor supplied by drived	frequency frequency & variable speed frequency & DIN frequency & DIN & variable at allows external connection ft - ve 0 YES,	speed drive trip	Level 2
Unit: -	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def	frequency frequency & variable speed frequency & DIN frequency & DIN & variable at allows external connection ft - ve 0 YES,	speed drive trip ns to be made. Max: -	Level 2
Unit: -	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def Bit00 Motor supplied by drive	frequency frequency & variable speed frequency & DIN frequency & DIN & variable at allows external connection ft - ve 0 YES,	speed drive trip	Level 2
Unit: - Bit fields:	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def Bit00 Motor supplied by drive Bit01 Motor supplied by main	frequency frequency & variable speed frequency & DIN frequency & DIN & variable s at allows external connection f: - ve 0 YES, ns 0 YES,	speed drive trip	
Unit: - Bit fields:	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def Bit00 Motor supplied by drive Bit01 Motor supplied by main Bypass dead time Time delay between switching contactor	frequency frequency & variable speed frequency & DIN frequency & DIN & variable s at allows external connection f: - ve 0 YES, ns 0 YES,	speed drive trip	
Unit: - Bit fields: P1262 Unit: s	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def Bit00 Motor supplied by drive Bit01 Motor supplied by main Bypass dead time Time delay between switching contactor Min: 0 Def	frequency frequency & variable speed frequency & DIN frequency & DIN & variable at allows external connection f: - ve 0 YES, ns 0 YES, rs to allow motor to allow motor	speed drive trip	Level 2
Unit: - Bit fields: P1262	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def Bit00 Motor supplied by drive Bit01 Motor supplied by main Bypass dead time Time delay between switching contactor Min: 0 Def De-Bypass time Def	frequency frequency & variable speed frequency & DIN frequency & DIN & variable s at allows external connection f: - ve 0 YES, ns 0 YES, rs to allow motor to allow motor f: 1.000	speed drive trip	
Unit: - Bit fields: P1262 Unit: s P1263	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Det Det Bit00 Motor supplied by drive for the delay between switching contactor Min: 0 Det De-Bypass time Time delay before a request to switch by base for the state of the delay before a request to switch base for the delay before a request to switch base for the delay before a request to switch base for the delay before a request to switch base for the delay before a request to switch base for the delay before a request to switch base for the delay before a request to switch base for the delay before a request to switch base for the delay before a request to switch base for the delay before a request to switch base for the delay base f	frequency frequency & variable speed frequency & DIN frequency & DIN & variable s at allows external connection ff: - ve 0 YES, ns 0 YES, rs to allow motor to allow mo ff: 1.000	speed drive trip	Level 2
Unit: - Bit fields: P1262 Unit: s P1263 Unit: s	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: Def Bit00 Motor supplied by driv Bit01 Motor supplied by main Bypass dead time Time delay between switching contactor Min: 0 Def De-Bypass time Time delay before a request to switch ba Min: 0 Def	frequency frequency & variable speed frequency & DIN frequency & DIN & variable s at allows external connection f: - ve 0 YES, ns 0 YES, rs to allow motor to allow motor f: 1.000	speed drive trip	Level 2 Level 2
Unit: - Bit fields: P1262 Unit: s P1263	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def Bit00 Motor supplied by drive Bit01 Motor supplied by main Bypass dead time Time delay between switching contactor Min: 0 Def De-Bypass time Time delay before a request to switch back Min: 0 Def Bypass time Def	frequency & variable speed frequency & DIN frequency & DIN & variable s at allows external connection f:	speed drive trip	Level 2
Unit: - Bit fields: P1262 Unit: s P1263 Unit: s P1264	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def Bit00 Motor supplied by drive Bit01 Motor supplied by main Bypass dead time Time delay between switching contactor Min: 0 Def De-Bypass time Time delay before a request to switch back Min: 0 Def Bypass time Time delay before a request to switch to the formation of the state of th	frequency frequency & variable speed frequency & DIN frequency & DIN & variable at allows external connection f: - ve 0 YES, ns 0 YES, rs to allow motor to allow mo f: 1.000 ack to the variable speed dr f: 1.0	speed drive trip	Level 2 Level 2
Unit: - Bit fields: P1262 Unit: s P1263 Unit: s	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def Bit00 Motor supplied by drive Bit01 Motor supplied by main Bypass dead time Time delay between switching contactor Min: 0 Def De-Bypass time Time delay before a request to switch back Min: 0 Def Bypass time Time delay before a request to switch to the formation of the state of th	frequency & variable speed frequency & DIN frequency & DIN & variable s at allows external connection f:	speed drive trip	Level 2 Level 2
Unit: - Bit fields: P1262 Unit: s P1263 Unit: s P1264	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def Bit00 Motor supplied by drive Bit01 Motor supplied by main Bypass dead time Time delay between switching contactor Min: 0 Def De-Bypass time Time delay before a request to switch back Min: 0 Def Bypass time Time delay before a request to switch to the formation of the state of th	frequency frequency & variable speed frequency & DIN frequency & DIN & variable at allows external connection f: - ve 0 YES, ns 0 YES, rs to allow motor to allow mo f: 1.000 ack to the variable speed dr f: 1.0	speed drive trip	Level 2 Level 2
Unit: - Bit fields: P1262 Unit: s P1263 Unit: s P1264 Unit: s P1265	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def Bit00 Motor supplied by drive Bit01 Motor supplied by main Bypass dead time Time delay between switching contactor Min: 0 Def De-Bypass time Time delay before a request to switch back Min: 0 Def Bypass time Time delay before a request to switch to the swi	frequency & variable speed frequency & DIN frequency & DIN & variable s at allows external connection fr	speed drive trip	Level 2 Level 2 Level 2
Unit: - Bit fields: P1262 Unit: s P1263 Unit: s P1264 Unit: s	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def Bit00 Motor supplied by drive Bit01 Motor supplied by main Bypass dead time Time delay between switching contactor Min: 0 Def De-Bypass time Time delay before a request to switch back Min: 0 Def Bypass time Time delay before a request to switch to the swi	frequency frequency & variable speed frequency & DIN frequency & DIN & variable at allows external connection f: - ve 0 YES, ns 0 YES, rs to allow motor to allow mo f: 1.000 ack to the variable speed dr f: 1.0	speed drive trip	Level 2 Level 2 Level 2
Unit: - Bit fields: P1262 Unit: s P1263 Unit: s P1264 Unit: s P1265 Unit: Hz	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - 9 Details 9 Motor supplied by drive fit by drive fit by main 8 Motor supplied by main 9 Bypass dead time 7 Time delay between switching contactor Min: 0 Details 9 Details </td <td>frequency & variable speed frequency & DIN frequency & DIN & variable s at allows external connection fr</td> <td>speed drive trip</td> <td>Level 2 Level 2 Level 2 Level 2</td>	frequency & variable speed frequency & DIN frequency & DIN & variable s at allows external connection fr	speed drive trip	Level 2 Level 2 Level 2 Level 2
Unit: - Bit fields: P1262 Unit: s P1263 Unit: s P1264 Unit: s P1265	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def Bit00 Motor supplied by drive for supplied by main Bypass dead time Time delay between switching contactor Min: 0 Def De-Bypass time Def Time delay before a request to switch be Min: 0 Min: 0 Def Bypass time Def Min: 0 Def Mains frequency Mains frequency. Min: 12.00 Def Bl: Bypass command Def	frequency & variable speed frequency & DIN frequency & DIN & variable s at allows external connection fr	speed drive trip	Level 2 Level 2 Level 2
Unit: - Bit fields: P1262 Unit: s P1263 Unit: s P1264 Unit: s P1265 Unit: Hz	3 Controlled by DIN & variable speed 4 Controlled by variable speed drive f 5 Controlled by variable speed drive f 6 Controlled by variable speed drive f 7 Controlled by variable speed drive f 80: Contactor control word Output word from the bypass feature that Min: - Def Bit00 Motor supplied by drive for supplied by main Bypass dead time Time delay between switching contactor Min: 0 Def De-Bypass time Def Time delay before a request to switch be Min: 0 Min: 0 Def Bypass time Time delay before a request to switch to Min: 0 Def Mains frequency Mains frequency. Min: 12.00 Def Bl: Bypass command Mains frequency.	frequency & variable speed frequency & DIN frequency & DIN & variable s at allows external connection fr	speed drive trip	Level 2 Level 2 Level 2 Level 2 Level 2

P1270[2]	BI: Enable essential service	Def: 0.0		May: 4000.0		Level 3
Unit: -	Min: 0:0	Def: 0:0		Max: 4000:0		
P1300	Control mode					Level 3
	Controls relationship between spe as illustrated in the diagram below		ind voltage supplied	d by the variable	speed drive	
Unit: -	Min: 0	Def: 1		Max: 23		
Details:	Controls relationship between spe	eed of motor a	nd voltage supplied	d by variable spe	ed drive.	
Settings:	0 = V/f with linear charac.		/f with ECO mode		20 =not used	
	1 =V/f with FCC 2 =V/f with parabolic charac.	5 =V	/f for textile applicat /f with FCC for texti	lions le applications	21 =not used 22 =not used	
	3 = V/f with programmable charac		V/f control with ind		23 =not used	
			voltage setpoint	•		
Dependency:	The value is displayed in r0209 (r P1300=1 : V/f with FCC	maximum freq	uency).			
Note:	* Maintains motor flux current for	improved effic	iency			
	* If FCC is chosen, linear V/f is ac	ctive at low fre				
	P1300=2 : V/f with a quadratic cu					
	* Suitable for centrifugal fans / pu	imps				
P1310	Continuous boost					Level 3
	Defines the boost level in [%] related and another boost level in [%]			nt) applicable to b	ooth linear	
Unit: %	and quadratic V/f curves accordin Min: 0.0	Def: 50.0	am below.	Max: 250.0		
Details:	Defines boost level in [%] relative	to P0305 (rat	ed motor current) a		linear and qua	adratic V/f curves.
Dependency:	Setting in P0640 (motor overload	factor [%]) lim	its the boost.			
Note:	The boost values are combined w					
	(acceleration boost P1311 and st $P1310 > P1311 > P1312$	arung DOOSt P	isiz). nowever pri	unites are allocat	ieu io inese pa	arameters as follows:
	Increasing the boost levels increa	ases motor hea	ating (especially at	standstill).		
P1311	Acceleration boost					Level 3
1 1011	Applies boost in [%] relative to PC	0305 (rated mo	otor current) followi	ng a positive setp	ooint	Levere
	change and drops back out once					
Unit: %	Min: 0.0	Def: 0.0	· · · · · · · · · · · · · · · · · · ·	Max: 250.0		ad door a baab and a sa
Details:	Applies boost in [%] relative to PC the setpoint is reached.	0305 (rated mo	otor current) followi	ng a positive setp	oint change a	nd drops back out once
Dependency:	Setting in P0640 (motor overload	factor [%]) lim	nite hoost			
Note:	Acceleration boost can help to im		113 00031.			
	Acceleration boost can help to im	prove respons		setpoint changes	3.	
P1312		prove respons		setpoint changes	S.	Level 3
P1312	Starting boost Applies a constant linear offset (ir	n [%] relative t	se to small positive o P0305 (rated mot	tor current)) to ac	tive V/f	Level 3
P1312	Starting boost Applies a constant linear offset (in curve (either linear or quadratic) a	n [%] relative t after an ON cc	se to small positive o P0305 (rated mot ormand and is activ	tor current)) to ac	tive V/f	Level 3
	Starting boost Applies a constant linear offset (in curve (either linear or quadratic) a for the first time. This is useful for	n [%] relative t after an ON co r starting loads	se to small positive o P0305 (rated mot ormand and is activ	tor current)) to ac ve until setpoint is	tive V/f	Level 3
P1312 Unit: % Details:	Starting boost Applies a constant linear offset (in curve (either linear or quadratic) a for the first time. This is useful for Min: 0.0 Applies a constant linear offset (in	n [%] relative t after an ON co r starting loads Def: 0.0 n [%] relative t	se to small positive o P0305 (rated mor mmand and is active with high inertia. o P0305 (rated more	tor current)) to ac ve until setpoint is Max: 250.0 tor current)) to ac	tive V/f s reached tive V/f curve	(either linear or
Unit: %	Starting boost Applies a constant linear offset (in curve (either linear or quadratic) a for the first time. This is useful for Min: 0.0 Applies a constant linear offset (in quadratic) after an ON command	n [%] relative t after an ON co r starting loads Def: 0.0 n [%] relative t	se to small positive o P0305 (rated mor mmand and is active with high inertia. o P0305 (rated more	tor current)) to ac ve until setpoint is Max: 250.0 tor current)) to ac	tive V/f s reached tive V/f curve	(either linear or
Unit: %	Starting boost Applies a constant linear offset (ir curve (either linear or quadratic) a for the first time. This is useful for Min: 0.0 Applies a constant linear offset (ir quadratic) after an ON command with high inertia.	n [%] relative t after an ON cc r starting loads Def: 0.0 n [%] relative t and is active t	se to small positive o P0305 (rated mot mmand and is active with high inertia. o P0305 (rated mot until setpoint is read	tor current)) to ac ve until setpoint is Max: 250.0 tor current)) to ac ched for the first t	tive V/f s reached tive V/f curve ime. This is us	(either linear or seful for starting loads
Unit: %	Starting boost Applies a constant linear offset (in curve (either linear or quadratic) a for the first time. This is useful for Min: 0.0 Applies a constant linear offset (in quadratic) after an ON command	n [%] relative t after an ON cc r starting loads Def: 0.0 n [%] relative t and is active i) too high will 0	se to small positive o P0305 (rated mot mmand and is active with high inertia. o P0305 (rated mot until setpoint is read cause the variable s	tor current)) to ac ve until setpoint is Max: 250.0 tor current)) to ac ched for the first t	tive V/f s reached tive V/f curve ime. This is us	(either linear or seful for starting loads
Unit: % Details: Dependency:	Starting boost Applies a constant linear offset (ir curve (either linear or quadratic) a for the first time. This is useful for Min: 0.0 Applies a constant linear offset (ir quadratic) after an ON command with high inertia. Setting the starting boost (P1312) restrict the output frequency to be Setting in P0640 (motor overload	n [%] relative t after an ON cc r starting loads Def: 0.0 n [%] relative t and is active t) too high will elow the setpo factor [%]) lim	se to small positive o P0305 (rated mol ommand and is active with high inertia. o P0305 (rated mol until setpoint is read cause the variable s int frequency. hits boost.	tor current)) to ac ve until setpoint is Max: 250.0 tor current)) to ac ched for the first t	tive V/f s reached tive V/f curve ime. This is us	(either linear or seful for starting loads
Unit: % Details:	Starting boost Applies a constant linear offset (in curve (either linear or quadratic) a for the first time. This is useful for Min: 0.0 Applies a constant linear offset (in quadratic) after an ON command with high inertia. Setting the starting boost (P1312) restrict the output frequency to be Setting in P0640 (motor overload Increasing the boost levels increased	n [%] relative t after an ON cc r starting loads Def: 0.0 n [%] relative t and is active t) too high will elow the setpo factor [%]) lim	se to small positive o P0305 (rated mol ommand and is active with high inertia. o P0305 (rated mol until setpoint is read cause the variable s int frequency. hits boost.	tor current)) to ac ve until setpoint is Max: 250.0 tor current)) to ac ched for the first t	tive V/f s reached tive V/f curve ime. This is us	(either linear or seful for starting loads
Unit: % Details: Dependency:	Starting boost Applies a constant linear offset (in curve (either linear or quadratic) a for the first time. This is useful for Min: 0.0 Applies a constant linear offset (in quadratic) after an ON command with high inertia. Setting the starting boost (P1312) restrict the output frequency to be Setting in P0640 (motor overload Increasing the boost levels increas Σ Boosts = 300 / Imot * Rs	n [%] relative t after an ON cc r starting loads Def: 0.0 n [%] relative t and is active t) too high will elow the setpo factor [%]) lim ases motor hea	se to small positive o P0305 (rated mol ommand and is active with high inertia. o P0305 (rated mol until setpoint is read cause the variable st int frequency. hits boost. ating.	tor current)) to ac ve until setpoint is Max: 250.0 tor current)) to ac ched for the first t	tive V/f s reached tive V/f curve ime. This is us	(either linear or seful for starting loads
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Unit: % Details: Dependency: Note: P1335 Unit: % Details: Value: P1336 P1336 Unit: % Details: Dependency:	Starting boost Applies a constant linear offset (ir curve (either linear or quadratic) a for the first time. This is useful for Min: 0.0 Applies a constant linear offset (ir quadratic) after an ON command with high inertia. Setting the starting boost (P1312) restrict the output frequency to be Setting in P0640 (motor overload) Increasing the boost levels increas Σ Boosts = 300 / Imot * Rs Priorities are allocated to the boo P1310 > P1311 > P1312 Slip compensation Dynamically adjusts output freque constant independent of motor load Min: 0.0 Dynamically adjusts output freque load. P1335= 0 % : Slip compensation P1335=100 % : This uses the momon current. Gain adjustment enables fine-tun 100%=standard setting for warm Slip limit Compensation slip limit in [%] relates setpoint. Min: 0 Compensation slip limit in [%] relates Slip compensation slip limit in [%] relates Slip compensation slip limit in [%] relates Slip c	n [%] relative t after an ON cc r starting loads Def: 0.0 n [%] relative t and is active i) too high will o elow the setpo factor [%]) lim ases motor hea st parameters ency of variabl ad. Def: 0.0 ency of variabl ad. Def: 0.0 ency of variabl ad. Def: 0.0 ency of the actu stator ative to r0330 Def: 250 ative to r0330	se to small positive o P0305 (rated mor mmand and is active with high inertia. o P0305 (rated mor until setpoint is read cause the variable s int frequency. hits boost. ating. s as follows: e speed drive so the notor model to add set al motor speed (set (rated motor slip), w	tor current)) to ac ve until setpoint is Max: 250.0 tor current)) to ac ched for the first t speed drive to lim at motor speed is Max: 600.0 the rated slip freq e P1460 - gain sp which is added to Max: 600	tive V/f s reached tive V/f curve ime. This is us nit the current, s kept s kept s kept constar quency rated n peed control).	seful for starting loads which will in turn Level 3 it independent of motor notor speed and rated Level 3

Details:	Displays actual compensated	motor clip ac [%		
Dependency:	Slip compensation (P1335) action			
P1499				Level 3
P1499	Scaling acceleration torque		control (SLVC) at low frequencies.	Levers
Unit: %	Min: 0.0	Def: 100.0	Max: 400.0	
Details:	Enters scaling of acceleration	in [%] for sensorless torque	control (SLVC) at low frequencies.	
P1800	Pulse frequency			Level 2
		r switches in the variable sp	eed drive. The frequency can be	
	changed in steps of 2 kHz.			
	Pulse frequencies > 4 kHz sele current.	ected on 380-480 V units re	duce the maximum continuous motor	
Unit: kHz	Min: 2	Def: 4	Max: 16	
Details:			drive. The frequency can be changed	
_			duce the maximum continuous motor of	
Dependency: Note:			frequency) and P0310 (rated motor free C (CT mode);over 50 degrees C, full ou	
	8 kHz.		. , _	
			frequencies may be selected to reduc	e variable speed drive
	losses and radio-frequency em		ly reduce the switching frequency to pro	ovide protection against
	over-temperature (see P0290,			orido protocion againer
r1801	CO: Act. switching frequenc	٧		Level 3
	Actual pulse frequency of power	er switches in variable spee	ed drive.	
Unit: kHz	Min: -	Def: -	Max: -	
Note:			ed drive. Under certain conditions (variations selected in P1800 (pulse frequency	
P1820	· · · · · · · · · · · · · · · · · · ·		(F	Level 3
P1020	Reverse output phase seque Changes direction of motor rot			Levers
Unit: -	Min: 0	Def: 0	Max: 1	
Settings:	0=OFF			
	1=ON			
Dependency:	If positive and negative revolut If both positive and negative re			
Details:	See P1000 (select frequency s			
				L aval 0
P1910	Select motor data identificat Performs stator resistance mea			Level 3
Unit: -	Min: 0	Def: 0	Max: 20	•
Settings:				
	0=Disabled	1	2=Identification of all parameters w	I ithout parameter change
	1=Identification of all parameter	ers with parameter change		ithout parameter change
Dependency:	1=Identification of all parameter N o measurement if motor data	ers with parameter change a incorrect.	2=Identification of all parameters w 20=Set voltage vector	ithout parameter change
Dependency:	1=Identification of all paramete N o measurement if motor data P1910=1 : Calculated value for	ers with parameter change a incorrect. r stator resistance (see P03	2=Identification of all parameters w 20=Set voltage vector	ithout parameter change
Dependency: Note:	1=Identification of all parameter N o measurement if motor data P1910=1 : Calculated value for P1910=2 : Values already calc	ers with parameter change a incorrect. r stator resistance (see P03 culated are not overwritten.	2=Identification of all parameters w 20=Set voltage vector	
	1=Identification of all parameter N o measurement if motor data P1910=1 : Calculated value for P1910=2 : Values already calc Before selecting motor data ide Once enabled (P1910=1), A05	ers with parameter change a incorrect. In stator resistance (see P03 culated are not overwritten. entification, "Quick commis	2=Identification of all parameters w 20=Set voltage vector 350) is overwritten.	ce.
	1=Identification of all parameter N o measurement if motor data P1910=1 : Calculated value for P1910=2 : Values already calc Before selecting motor data ide Once enabled (P1910=1), A05 parameters.	ers with parameter change a incorrect. In stator resistance (see P03 culated are not overwritten. entification, "Quick commis 541 generates a warning that	2=Identification of all parameters w 20=Set voltage vector 350) is overwritten. ssioning" has to be performed in advance at the next ON command will initiate me	ce.
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Note: r1912[3] Unit: Ohm Index: Note: P2000	1=Identification of all parameter N o measurement if motor data P1910=1 : Calculated value for P1910=2 : Values already calco Before selecting motor data idd Once enabled (P1910=1), A05 parameters. When choosing the setting for 1. "With parameter change" control as well as being si 2. "Without parameter change" control as well as being si 2. "Uithout parameter change" Full-scale frequency setting us controller. Min: 1.00 Reference voltage	ers with parameter change a incorrect. In stator resistance (see POS culated are not overwritten. entification, "Quick commis 541 generates a warning that measurement, observe the means that the value is ac hown in the read-only paran ge" means that the value is entified stator resistance). T stance value (line-to-line) in Def: - [r1912[1] : V_p P1910=1 or 2 , i.e., identific sed by serial link (correspon Def: 50.00	2=Identification of all parameters w 20=Set voltage vector 350) is overwritten. asioning" has to be performed in advantation at the next ON command will initiate meters below. following: tually adopted as P0350 parameter set meters below. only displayed, i.e. shown for checking hase r1912[2] : V ation of all parameters with/without chat ds to 4000H), analog I/O and P/D Max: 650.00	ce. easurement of motor ting and applied to the g purposes in the read- Level 3 W_phase ange.
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Note: r1912[3] Unit: Ohm Index: Note: P2000 Unit: Hz P2001 Unit: V Example: P2002	1=Identification of all parameter N o measurement if motor data P1910=1 : Calculated value for P1910=2 : Values already calco Before selecting motor data ide Once enabled (P1910=1), A05 parameters. When choosing the setting for 1. "With parameter change" control as well as being si 2. "Without parameter change" control as well as being si 2. "Without parameter change" isplays measured stator resistance Displays measured stator resistance Displays measured stator resistance This value is measured using F Reference frequency Full-scale frequency setting us controller. Min: 10 P0201=230 specifies that 4000 Reference current Full-scale output current used	ers with parameter change a incorrect. In stator resistance (see POS culated are not overwritten. entification, "Quick commis 541 generates a warning that measurement, observe the means that the value is ac- hown in the read-only paral- ge" means that the value is ac- hown in the read-only paral- ge" means that the value is ac- hown in the read-only paral- ge" means that the value is entified stator resistance). T stance value (line-to-line) in Def: - [r1912[1] : V_p P1910=1 or 2 , i.e., identific sed by serial link (correspond 100 %) used over serial link Def: 1000 OH received via USS denoted over serial link (correspond	2=Identification of all parameters w 20=Set voltage vector 350) is overwritten. asioning" has to be performed in advantation at the next ON command will initiate meters below. following: tually adopted as P0350 parameter set meters below. only displayed, i.e. shown for checking he value is not applied to the control. [ohm]. Max: - whase r1912[2] : Y ation of all parameters with/without cha ds to 4000H), analog I/O and P/D Max: 650.00 x (corresponds to 4000H). Max: 2000 es 230 V.	ce. easurement of motor ting and applied to the g purposes in the read- Level 3 W_phase ange. Level 2
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Note: r1912[3] Unit: Ohm Index: Note: P2000 Unit: Hz P2001 Unit: V Example: P2002	1=Identification of all parameter N o measurement if motor data P1910=1 : Calculated value for P1910=2 : Values already calco Before selecting motor data idd Once enabled (P1910=1), A05 parameters. When choosing the setting for 1. "With parameter change" control as well as being si 2. "Without parameter change" control as well as being si 2. "Uphase This value is measured using for Reference frequency Full-scale frequency setting us controller. Min: 1.00 Reference voltage Full-scale output voltage (i.e. 1 Min: 10 P0201=230 specifies that 4000 Reference current Full-scale output current used Min: 0.10 Reference power	ers with parameter change a incorrect. In stator resistance (see POS culated are not overwritten. entification, "Quick commis 541 generates a warning that measurement, observe the means that the value is ac hown in the read-only paran- ge" means that the value is entified stator resistance). T stance value (line-to-line) in Def: - [r1912[1] : V_p P1910=1 or 2 , i.e., identific sed by serial link (correspond Def: 50.00 100 %) used over serial link Def: 1000 OH received via USS denoted over serial link (correspond Def: 0.10	2=Identification of all parameters w 20=Set voltage vector 350) is overwritten. asioning" has to be performed in advantation at the next ON command will initiate meters below. only displayed, i.e. shown for checking he value is not applied to the control. [ohm]. Max: - whase r1912[2] : v ation of all parameters with/without chat ds to 4000H), analog I/O and P/D Max: 650.00 x (corresponds to 4000H). Max: 2000 es 230 V.	ce. easurement of motor ting and applied to the g purposes in the read- Level 3 W_phase ange. Level 2
Note: r1912[3] Unit: Ohm Index: Note: P2000 P2000 Unit: Hz P2001 Example: P2002 Unit: A r2004	1=Identification of all parameter N o measurement if motor data P1910=1 : Calculated value for P1910=2 : Values already calco Before selecting motor data idd Once enabled (P1910=1), A05 parameters. When choosing the setting for 1. "With parameter change" control as well as being si 2. "Without parameter change" full-scale stator resistance Displays measured stator resist Min: - r1912[0] : U_phase This value is measured using fi Reference frequency Full-scale frequency setting us controller. Min: 1.00 Reference current Full-scale output voltage (i.e. 1 Min: 10 P0201=230 specifies that 4000 Reference power Full-scale reference power use	ers with parameter change a incorrect. In stator resistance (see POS culated are not overwritten. entification, "Quick commis 541 generates a warning that measurement, observe the means that the value is ac hown in the read-only paran- ge" means that the value is entified stator resistance). T stance value (line-to-line) in Def: - [1912[1] : V_p P1910=1 or 2 , i.e., identified sed by serial link (correspond Def: 50.00 Def: 50.00 Def: 1000 OH received via USS denoted over serial link (correspond Def: 0.10 ed over the serial link (correspond Def: 0.10	2=Identification of all parameters w 20=Set voltage vector 350) is overwritten. assioning" has to be performed in advantation at the next ON command will initiate meters below. only displayed, i.e. shown for checking he value is not applied to the control. [ohm]. Max: - whase r1912[2] : v ation of all parameters with/without chat dds to 4000H), analog I/O and P/D Max: 650.00 x (corresponds to 4000H). Max: 2000 es 230 V. st to 4000H). Max: 10000.00	ce. easurement of motor ting and applied to the g purposes in the read- Level 3 W_phase ange. Level 2 Level 3
Note: r1912[3] Unit: Ohm Index: Note: P2000 Unit: Hz P2001 Unit: V Example: P2002 Unit: A	1=Identification of all parameter N o measurement if motor data P1910=1 : Calculated value for P1910=2 : Values already calco Before selecting motor data idd Once enabled (P1910=1), A05 parameters. When choosing the setting for 1. "With parameter change" control as well as being si 2. "Without parameter change" control as well as being si 2. "Uphase This value is measured using for Reference frequency Full-scale frequency setting us controller. Min: 1.00 Reference voltage Full-scale output voltage (i.e. 1 Min: 10 P0201=230 specifies that 4000 Reference current Full-scale output current used Min: 0.10 Reference power	ers with parameter change a incorrect. In stator resistance (see POS culated are not overwritten. entification, "Quick commis 541 generates a warning that measurement, observe the means that the value is ac hown in the read-only paran- ge" means that the value is entified stator resistance). T stance value (line-to-line) in Def: - [r1912[1] : V_p P1910=1 or 2 , i.e., identific sed by serial link (correspond Def: 50.00 100 %) used over serial link Def: 1000 OH received via USS denoted over serial link (correspond Def: 0.10	2=Identification of all parameters w 20=Set voltage vector 350) is overwritten. asioning" has to be performed in advantation at the next ON command will initiate meters below. only displayed, i.e. shown for checking he value is not applied to the control. [ohm]. Max: - whase r1912[2] : v ation of all parameters with/without chat ds to 4000H), analog I/O and P/D Max: 650.00 x (corresponds to 4000H). Max: 2000 es 230 V.	ce. easurement of motor ting and applied to the g purposes in the read- Level W_phase ange. Level Level

P2009[2]	USS normalization				Level 3
[_]	Min: 0	Def: 0	Max: 1		
Settings:	0=Disabled	I	1=Enabled		
Index:	P2009[0] : Serial interface	COM link	P2009[1] : Serial		
Note:	If enabled, the main setpoin 4000H=16384 means 163.8		terpreted as 100 %=4000H,	but as "absolu	te" instead (e.g.
P2010[2]	USS baudrate Sets baud rate for USS com	nmunication.			Level 3
Unit: -	Min: 4	Def: 6	Max: 12		
Settings:	4= 2400 baud	7= 19200 baud	9= 57600 baud		11= 93750 baud
	5= 4800 baud 6= 9600 baud	8= 38400 baud	10=76800 baud		12= 115200 baud
Index:	P2010[0] : Serial interface	COM link	P2010[1] : Seri	al interface BO	P link
P2011[2]	USS address				Level 3
	Sets a unique address for va	ariable speed drive.			Level o
Unit: -	Min: 0	Def: 0	Max: 31		
Index:	P2011[0] : Serial interface	COM link	P2011[1] : Serial		
Note:	You can connect up to a fur control them with the USS s		ves via the serial link (i.e. 31	variable speed	d drives in total) and
P2014[2]	USS telegram off time				Level 3
	Defines a time T_off after w	hich a fault will be generat	ted (F0070) if no telegram is	received via	
	the USS channels.		· · · ·		
Unit: ms	Min: 0	Def: 0	Max: 65535		
Index:	P2014[0] : Serial interface		P2014[1] : Serial	interface BOP	link
Note:	By default (time set to 0), no	o fault is generated (i.e. wa	atchdog disabled).		
P2040	CB telegram off time				Level 3
	Defines time after which a fau			he link (SOL).	
Unit: ms	Min: 0	Def: 20	Max: 65535		
Dependency:	Setting 0=watchdog disable	iQ			
P2041[5]	CB parameter Configures a communication	n board (CB).			Level 3
Unit: -	Min: 0	Def: 0	Max: 65535		
Index:	P2041[0] : CB parameter 0 P2041[1] : CB parameter 1) P2041[2] : 1 P2041[3] :	CB parameter 2 CB parameter 3	P2041[4] :	CB parameter 4
Note:	See relevant communication	n board manual for protoco	ol definition and appropriate	settings	
r2050[8]	CO: PZD from CB				Level 3
	Displays PZD received from	n communication board (Cl	B).		
Unit: -	Min: -	Def: -	Max: -		
Index:					
	r2050[0] : Received word (Received word 3		Received word 6
	r2050[1]: Received word 1	1 r2050[4] :	Received word 4		Received word 6 Received word 7
Note:	r2050[1] : Received word 1 r2050[2] : Received word 2	1 r2050[4] : 2 r2050[5] :	Received word 4 Received word 5		
	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi	1 r2050[4] : 2 r2050[5] :	Received word 4 Received word 5		Received word 7
Note: P2051[8]	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB	1 r2050[4] : 2 r2050[5] :	Received word 4 Received word 5		
	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB.	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2	Received word 4 Received word 5 2032 and r2033.	r2050[7] :	Received word 7
	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2	Received word 4 Received word 5 2032 and r2033.	r2050[7] :	Received word 7
	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2	Received word 4 Received word 5 2032 and r2033.	r2050[7] :	Received word 7
P2051[8]	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0	Received word 4 Received word 5 2032 and r2033. f status words and actual va	r2050[7] :	Received word 7
P2051[8] Unit: -	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0 (see r0052)	Received word 4 Received word 5 2032 and r2033. f status words and actual va Max: 4000:0	r2050[7] :	Received word 7
P2051[8] Unit: -	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0 (see r0052) speed drive output freque	Received word 4 Received word 5 2032 and r2033. f status words and actual va Max: 4000:0	r2050[7] :	Received word 7
P2051[8] Unit: -	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] :	Received word 4 Received word 5 2032 and r2033. f status words and actual va Max: 4000:0 ncy (see r0021) Transmitted word 3	r2050[7] :	Received word 7
P2051[8] Unit: - Settings:	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable Other BICO settings are pos P2051[0] : Transmitted wo P2051[1] : Transmitted wo	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] : ord 1 P2051[4] :	Received word 4 Received word 5 2032 and r2033. f status words and actual va Max: 4000:0 ncy (see r0021) Transmitted word 3 Transmitted word 4	r2050[7] : 1	Received word 7
P2051[8] Unit: - Settings:	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable Other BICO settings are pos P2051[0] : Transmitted wo	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] : ord 1 P2051[4] :	Received word 4 Received word 5 2032 and r2033. f status words and actual va Max: 4000:0 ncy (see r0021) Transmitted word 3	r2050[7] : 1	Received word 7 Level 3
P2051[8] Unit: - Settings:	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable Other BICO settings are pos P2051[0] : Transmitted wo P2051[1] : Transmitted wo	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] : ord 1 P2051[4] :	Received word 4 Received word 5 2032 and r2033. f status words and actual va Max: 4000:0 ncy (see r0021) Transmitted word 3 Transmitted word 4	r2050[7] : 1	Received word 7 Level 3
P2051[8] Unit: - Settings: Index:	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable Other BICO settings are pos P2051[0] : Transmitted wo P2051[1] : Transmitted wo P2051[2] : Transmitted wo P2051[2] : Transmitted wo P2051[2] : Transmitted wo	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] : ord 1 P2051[4] : ord 2 P2051[5] : of the communication board	Received word 4 Received word 5 2032 and r2033. f status words and actual va Max: 4000:0 ncy (see r0021) Transmitted word 3 Transmitted word 4 Transmitted word 5	r2050[7] : 1	Received word 7 Level 3 Transmitted word 6 Transmitted word 7
P2051[8] Unit: - Settings: Index: r2053[5]	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable Other BICO settings are pos P2051[0] : Transmitted wo P2051[1] : Transmitted wo P2051[2] : Transmitted wo P2051[2] : Transmitted wo P2051[2] : Transmitted wo	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] : ord 1 P2051[4] : ord 2 P2051[5] : of the communication boar aration.	Received word 4 Received word 5 2032 and r2033. f status words and actual va Max: 4000:0 Max: 4000:0 Transmitted word 3 Transmitted word 3 Transmitted word 4 Transmitted word 5 rd (CB). The different CB typ	r2050[7] : 1	Received word 7 Level 3 Transmitted word 6 Transmitted word 7
P2051[8] Unit: - Settings: Index: r2053[5] Unit: -	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable Other BICO settings are pos P2051[0] : Transmitted wo P2051[1] : Transmitted wo P2051[2] : Transmitted wo	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] : ord 1 P2051[4] : ord 2 P2051[5] : of the communication board	Received word 4 Received word 5 2032 and r2033. f status words and actual va Max: 4000:0 Max: 4000:0 Transmitted word 3 Transmitted word 4 Transmitted word 5 rd (CB). The different CB typ Max: -	r2050[7] : 1	Received word 7 Level 3 Transmitted word 6 Transmitted word 7
P2051[8] Unit: - Settings: Index: r2053[5]	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable Other BICO settings are pos P2051[0] : Transmitted wo P2051[0] : Transmitted wo P2051[2] : Transmitted wo	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] : ord 1 P2051[4] : ord 2 P2051[5] : of the communication boar aration.	Received word 4 <u>Received word 5</u> 2032 and r2033. f status words and actual va Max: 4000:0 ncy (see r0021) Transmitted word 3 Transmitted word 4 Transmitted word 5 rd (CB). The different CB typ Max: - 2=DeviceNet	r2050[7] : 1	Received word 7 Level 3 Transmitted word 6 Transmitted word 7
P2051[8] Unit: - Settings: Index: r2053[5] Unit: -	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable Other BICO settings are pos P2051[0] : Transmitted wo P2051[0] : Transmitted wo P2051[2] : Transmitted wo	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] : ord 1 P2051[3] : of the communication boar aration. Def: -	Received word 4 Received word 5 2032 and r2033. f status words and actual va Max: 4000:0 Max: 4000:0 Transmitted word 3 Transmitted word 4 Transmitted word 5 rd (CB). The different CB typ Max: -	r2050[7] : lues for the P2051[6] : P2051[7] : pes (r2053[0])	Received word 7 Level 3 Transmitted word 6 Transmitted word 7
P2051[8] Unit: - Settings: Index: r2053[5] Unit: - Settings:	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable Other BICO settings are pos P2051[0] : Transmitted wo P2051[0] : Transmitted wo P2051[1] : Transmitted wo P2051[2] : Transmitted wo CB identification Displays identification data of are given in the Enum decla Min: - 0=No CB option board 1=PROFIBUS DP r2053[0] : CB type (PROFI r2053[1] : Firmware version	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] : ord 1 P2051[3] : ord 2 P2051[5] : of the communication boar aration. Def: - IBUS=1)	Received word 4 Received word 5 2032 and r2033. f status words and actual va Max: 4000:0 ncy (see r0021) Transmitted word 3 Transmitted word 3 Transmitted word 4 Transmitted word 5 rd (CB). The different CB typ	r2050[7] : lues for the P2051[6] : P2051[7] : pes (r2053[0]) are date (year)	Received word 7 Level 3 Transmitted word 6 Transmitted word 7 Level 3
P2051[8] Unit: - Settings: Index: r2053[5] Unit: - Settings:	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable Other BICO settings are pos P2051[0] : Transmitted wo P2051[0] : Transmitted wo P2051[2] : Transmitted wo	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] : ord 1 P2051[3] : ord 2 P2051[5] : of the communication boar aration. Def: - IBUS=1)	Received word 4 Received word 5 2032 and r2033. f status words and actual va Max: 4000:0 ncy (see r0021) Transmitted word 3 Transmitted word 3 Transmitted word 4 Transmitted word 5 rd (CB). The different CB typ	r2050[7] : lues for the P2051[6] : P2051[7] : pes (r2053[0]) are date (year)	Received word 7 Level 3 Transmitted word 6 Transmitted word 7 Level 3
P2051[8] Unit: - Settings: Index: r2053[5] Unit: - Settings: Index:	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable Other BICO settings are pos P2051[0] : Transmitted wo P2051[0] : Transmitted wo P2051[1] : Transmitted wo P2051[2] : Transmitted wo CB identification Displays identification data of are given in the Enum decla Min: - 0=No CB option board 1=PROFIBUS DP r2053[0] : CB type (PROFI r2053[1] : Firmware version	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] : ord 1 P2051[3] : ord 2 P2051[5] : of the communication boar aration. Def: - IBUS=1)	Received word 4 Received word 5 2032 and r2033. f status words and actual va Max: 4000:0 ncy (see r0021) Transmitted word 3 Transmitted word 3 Transmitted word 4 Transmitted word 5 rd (CB). The different CB typ	r2050[7] : lues for the P2051[6] : P2051[7] : pes (r2053[0]) are date (year)	Received word 7 Level 3 Transmitted word 6 Transmitted word 7 Level 3
P2051[8] Unit: - Settings: Index: r2053[5] Unit: - Settings:	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable Other BICO settings are pos P2051[0] : Transmitted wo P2051[1] : Transmitted wo P2051[2] : Cransmitted wo P2051[2] : Transmitted wo	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 user to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] : ord 1 P2051[4] : ord 2 P2051[5] : of the communication boar aration. Def: - IBUS=1) in in detail	Received word 4 Received word 5 2032 and r2033. f status words and actual va f status words and actual va Max: 4000:0 ncy (see r0021) Transmitted word 3 Transmitted word 3 Transmitted word 4 Transmitted word 5 rd (CB). The different CB typ Max: - 2=DeviceNet 56 not defined r2053[3] : Firmwa r2053[4] : Firmwa	r2050[7] : lues for the P2051[6] : P2051[7] : pes (r2053[0]) are date (year)	Received word 7 Level 3 Transmitted word 6 Transmitted word 7 Level 3 honth)
P2051[8] Unit: - Settings: Index: r2053[5] Unit: - Settings: Index: r2054[7] Unit: -	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable Other BICO settings are pos P2051[0] : Transmitted wo P2051[1] : Transmitted wo P2051[2]	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 isser to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] : ord 1 P2051[4] : ord 2 P2051[5] : of the communication boar aration. Def: - IBUS=1) in in detail	Received word 4 Received word 5 2032 and r2033. f status words and actual va f status words and actual va Max: 4000:0 ncy (see r0021) Transmitted word 3 Transmitted word 3 Transmitted word 4 Transmitted word 5 rd (CB). The different CB typ Max: - 2=DeviceNet 56 not defined r2053[3] : Firmwa r2053[4] : Firmwa ard (CB). Max: -	r2050[7] : lues for the P2051[6] : P2051[7] : pes (r2053[0]) are date (year) are date (day/m	Received word 7 Level 3 Transmitted word 6 Transmitted word 7 Level 3 nonth) Level 3
P2051[8] Unit: - Settings: Index: r2053[5] Unit: - Settings: Index: Index:	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable Other BICO settings are pos P2051[0] : Transmitted wo P2051[1] : Transmitted wo P2051[2]	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 isser to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] : ord 1 P2051[4] : ord 2 P2051[5] : of the communication boar aration. Def: - IBUS=1) in in detail ttion of communication boar Def: - r2054[3] :	Received word 4 Received word 5 2032 and r2033. f status words and actual va f status words and actual va Max: 4000:0 ncy (see r0021) Transmitted word 3 Transmitted word 3 Transmitted word 4 Transmitted word 5 rd (CB). The different CB typ Max: - 2=DeviceNet 56 not defined r2053[3] : Firmwa r2053[4] : Firmwa ard (CB). Max: - CB diagnosis 3	r2050[7] : lues for the P2051[6] : P2051[7] : pes (r2053[0]) are date (year) are date (day/m	Received word 7 Level 3 Transmitted word 6 Transmitted word 7 Level 3 nonth) Level 3 CB diagnosis 5
P2051[8] Unit: - Settings: Index: r2053[5] Unit: - Settings: Index: r2054[7] Unit: -	r2050[1] : Received word 1 r2050[2] : Received word 2 The control words can be vi CI: PZD to CB Connects PZD to CB. This parameter allows the u reply PZD. Min: 0:0 Status word 1=52 CO/BO: Act. status word 1 (Actual value 1= 21 variable Other BICO settings are pos P2051[0] : Transmitted wo P2051[1] : Transmitted wo P2051[2]	1 r2050[4] : 2 r2050[5] : iewed as bit parameters r2 isser to define the source of Def: 52:0 (see r0052) speed drive output freque ssible ord 0 P2051[3] : ord 1 P2051[4] : ord 2 P2051[5] : of the communication boar aration. Def: - IBUS=1) in in detail ttion of communication boar Def: - r2054[3] :	Received word 4 Received word 5 2032 and r2033. f status words and actual va f status words and actual va Max: 4000:0 ncy (see r0021) Transmitted word 3 Transmitted word 3 Transmitted word 4 Transmitted word 5 rd (CB). The different CB typ Max: - 2=DeviceNet 56 not defined r2053[3] : Firmwa r2053[4] : Firmwa ard (CB). Max: -	r2050[7] : lues for the P2051[6] : P2051[7] : pes (r2053[0]) are date (year) are date (day/m	Received word 7 Level 3 Transmitted word 6 Transmitted word 7 Level 3 nonth) Level 3

P2100[3]	Alarm number selection				Level 3
[0]	Selects up to 3 faults or warnings	for non-default reaction	IS.		
Unit: -	Min: 0	Def: 0	Max: 65535		
Example:	If you want F0005 to perform an C	OFF3 instead of an OFF	² , set P2100[0]=5, then	select the desire	ed reaction in P2101[0]
Note:	(in this case, set P2101[0]=3). All fault codes have a default reac changed from the default reactions		ult codes caused by hard	dware trips (e.g. o	overcurrent) cannot be
	changed from the default reactions	5.			
P2101[3]	Stop reaction value		- / .		Level 3
	Sets drive stop reaction values for This indexed parameter specifies t indices 0 to 2.				
Unit: -	Min: 0	Def: 0	Max: 5		
Details:	Sets drive stop reaction values for			eaction).	
	This indexed parameter specifies	the special reaction to	the faults/warnings defin	ed in P2100 indi	
Settings:	0=No reaction, no display	2=OFF2 stop			n warning only
Note:	1=OFF1 stop reaction Settings 0 - 3 only are available fo	3=OFF3 stop i	eaction	5=Goto fixed	frequency 15
Note.	Settings 0 and 4 only are available to Settings 0 and 4 only are available Index 0 (P2101) refers to fault/war	e for warnings.)		
0440543			/·		
r2110[4]	Warning number Displays warning information.				Level 3
Unit: -	Min: -	Def: -	Max: -		
Details	Displays warning information.		- max		
2 0 0010	A maximum of 2 active warnings (indices 0 and 1) and 2	historical warnings (indi	<u>ces 2 a</u> nd 3) may	/ be viewed.
Index:	r2110[0] : Recent Warnings, wa	arning 1	r2110[2] : Recer	nt Warnings -1, w	arning 3
	r2110[1] : Recent Warnings, wa	arning 2	r2110[3] : Recer	nt Warnings -1, w	arning 4
Note:	The keypad will flash while a warn	ing is active. The LED	s indicate the warning st	atus in this case.	
	If an AOP is in use, the display wil Indices 0 and 1 are not stored.	snow number and tex	t of the active warning.		
				r.	
P2111	Total number of warnings	<u></u>			Level 3
11-24	Displays number of warning (up to	/		ng history.	
Unit: - Details:	Min: 0 Displays number of warning (up to	Def: 0	Max: 4	a history	
Details.	Displays number of warning (up to	(1 4) Since last reset. Se		ig history.	
r2114[2]	Run time counter				Level 3
	Displays run time counter. It is the				
l Init.	power cycle, it will save the value			g.	
Unit: - Details:	Min: -	Def: -	Max: -		
Detans.	Displays run time counter See Pil				
	Displays run time counter. See P0	1946 (lault tille).			
	AOP real time clock				Level 3
P2115[3]	AOP real time clock Displays AOP real time.		Mov: 65525		Level 3
P2115[3] Unit: -	AOP real time clock Displays AOP real time. Min: 0	Def: 0	Max: 65535		Level 3
P2115[3] Unit: - Details:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See P0	Def: 0	Max: 65535		
P2115[3] Unit: -	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See P0 Belt failure detection mode	Def: 0 1948 (fault time).			Level 3 Level 3
P2115[3] Unit: - Details:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See P0 Belt failure detection mode Sets belt failure detection mode. T	Def: 0 1948 (fault time).	ection of mechanical fail		
P2115[3] Unit: - Details:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt	Def: 0 1948 (fault time).	ection of mechanical fail		
P2115[3] Unit: - Details:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See P0 Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0	Def: 0 1948 (fault time). This function allows det t. It can also detect cor Def: 0	ection of mechanical fail ditions which cause an o Max: 6	overload, such	Level 3
P2115[3] Unit: - Details: P2181	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam.	Def: 0 1948 (fault time). This function allows det t. It can also detect cor Def: 0	ection of mechanical fail ditions which cause an o Max: 6	overload, such	Level 3
P2115[3] Unit: - Details: P2181 Unit: - Details:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode. Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions	Def: 0 1948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam.	overload, such ure of the drive tr	Level 3 rain, e.g. a broken drive
P2115[3] Unit: - Details: P2181 Unit: -	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode. Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions 0=Belt failure detection disabled	Def: 0 1948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/l	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. bw torque/speed	ure of the drive to 5=Trip high to	Level 3 rain, e.g. a broken drive orque/speed
P2115[3] Unit: - Details: P2181 Unit: - Details:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions 0=Belt failure detection disabled 1=Warn low torque/speed	Def: 0 1948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. bw torque/speed	ure of the drive to 5=Trip high to	Level 3 rain, e.g. a broken drive
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode. Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed	Def: 0 1948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/l	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. bw torque/speed	ure of the drive to 5=Trip high to	Level 3 rain, e.g. a broken drive orque/speed
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode. Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions v 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed Belt threshold frequency 1	Def: 0 1948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/i 4=Trip low tore	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. Dw torque/speed que/speed	overload, such ure of the drive to 5=Trip high to 6=Trip high/to	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for co	Def: 0 1948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/i 4=Trip low tore	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. Dw torque/speed que/speed	overload, such ure of the drive to 5=Trip high to 6=Trip high/to	Level 3 rain, e.g. a broken drive orque/speed
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings: P2182	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for co detection.	Def: 0 1948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/li 4=Trip low tord	ection of mechanical fail ditions which cause an of Max: 6 ection of mechanical fail ad, such as a jam. Dow torque/speed que/speed	overload, such ure of the drive to 5=Trip high to 6=Trip high/lo for belt failure	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings: P2182 Unit: Hz	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions v 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for co detection. Min: 0.00	Def: 0 1948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/li 4=Trip low tord omparing actual torque	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. bw torque/speed que/speed to torque the envelope Max: 650.00	overload, such ure of the drive to 5=Trip high to 6=Trip high/to for belt failure	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed Level 3
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings: P2182	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions to 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for co detection. Min: 0.00 Sets a frequency threshold F1 for	Def: 0 1948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/li 4=Trip low tord omparing actual torque Def: 5.00 comparing actual torque	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. bw torque/speed que/speed to torque the envelope Max: 650.00 le to torque the envelope	overload, such ure of the drive to 5=Trip high/d 6=Trip high/d for belt failure	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed Level 3 detection.
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings: P2182 Unit: Hz	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions to 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for c detection. Min: 0.00 Sets a frequency torque envelope is 6 define the low and high torque ling Sets a frequency lo	Def: 0 948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/l 4=Trip low tord omparing actual torque Def: 5.00 comparing actual torque defined by 9 paramete mits (P2185 - P2190) f	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. bow torque/speed que/speed to torque the envelope Max: 650.00 le to torque the envelope rs - 3 are frequency para or each frequency.	overload, such ure of the drive to 5=Trip high to 6=Trip high/lo for belt failure o e for belt failure c ameters (P2182 -	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed Level 3 Jetection. - P2184), and the other
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings: P2182 Unit: Hz	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions to 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for c detection. Min: 0.00 Sets a frequency torque envelope is 6 define the low and high torque lii The torque is unlimited below P21	Def: 0 948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/l 4=Trip low tord omparing actual torque Def: 5.00 comparing actual torque defined by 9 paramete mits (P2185 - P2190) f	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. bow torque/speed que/speed to torque the envelope Max: 650.00 le to torque the envelope rs - 3 are frequency para or each frequency.	overload, such ure of the drive to 5=Trip high to 6=Trip high/lo for belt failure o e for belt failure c ameters (P2182 -	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed Level 3 Jetection. - P2184), and the other
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings: P2182 Unit: Hz Details:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions to 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for c detection. Min: 0.00 Sets a frequency torque envelope is 6 define the low and high torque ling Sets a frequency lo	Def: 0 948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/l 4=Trip low tord omparing actual torque Def: 5.00 comparing actual torque defined by 9 paramete mits (P2185 - P2190) f	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. bow torque/speed que/speed to torque the envelope Max: 650.00 le to torque the envelope rs - 3 are frequency para or each frequency.	overload, such ure of the drive to 5=Trip high to 6=Trip high/lo for belt failure o e for belt failure c ameters (P2182 -	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed Level 3 Jetection. - P2184), and the other
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings: P2182 Unit: Hz Details: Note:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions to 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for c detection. Min: 0.00 Sets a frequency torque envelope is 6 define the low and high torque lii The torque is unlimited below P21	Def: 0 948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/l 4=Trip low tord omparing actual torque Def: 5.00 comparing actual torque defined by 9 paramete mits (P2185 - P2190) f	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. bow torque/speed que/speed to torque the envelope Max: 650.00 le to torque the envelope rs - 3 are frequency para or each frequency.	overload, such ure of the drive to 5=Trip high to 6=Trip high/lo for belt failure o e for belt failure c ameters (P2182 -	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed Level 3 Jetection. - P2184), and the other
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings: P2182 Unit: Hz Details: Note:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions of 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for co detection. Min: 0.00 Sets a frequency threshold F1 for The frequency torque envelope is 6 define the low and high torque lin The torque is unlimited below P21 >=upper torque limit (P1520).	Def: 0 1948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/l 4=Trip low tord omparing actual torque Def: 5.00 comparing actual torque mits (P2185 - P2190) f 82, and above P2184.	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. bw torque/speed que/speed to torque the envelope Max: 650.00 is to torque the envelope rs - 3 are frequency para or each frequency. Normally P2182 <= lowe	overload, such ure of the drive to 5=Trip high to 6=Trip high/lo for belt failure e for belt failure o ameters (P2182 - er torque limit (P	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed Level 3 detection P2184), and the other 1521), and P2184
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings: P2182 Unit: Hz Details: Note: P2183	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions of 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for c detection. Min: 0.00 Sets a frequency threshold F1 for The frequency torque envelope is 6 define the low and high torque lin The torque is unlimited below P21 >=upper torque limit (P1520). Belt threshold frequency 2 Sets a threshold F2 for comparing detection.	Def: 0 948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/l 4=Trip low tord omparing actual torque torque defined by 9 paramete mits (P2185 - P2190) f 82, and above P2184. actual torque to torque	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. bw torque/speed que/speed be to torque the envelope Max: 650.00 rs - 3 are frequency para or each frequency. Normally P2182 <= lowe	overload, such ure of the drive to 5=Trip high to 6=Trip high/lo for belt failure e for belt failure of ameters (P2182 - er torque limit (P ailure	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed Level 3 Level 3 Level 3 Level 3 Level 3
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings: P2182 Unit: Hz Details: Note: P2183 Unit: Hz	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions to 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for c detection. Min: 0.00 Sets a frequency threshold F1 for The frequency torque envelope is 6 define the low and high torque lin The torque is unlimited below P21 >=upper torque limit (P1520). Belt threshold frequency 2 Sets a threshold F2 for comparing detection. Min: 0.00	Def: 0 948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/l 4=Trip low tord omparing actual torque omparing actual torque defined by 9 paramete mits (P2185 - P2190) f 82, and above P2184. actual torque to torque Def: 30.00	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. bw torque/speed que/speed to to torque the envelope Max: 650.00 e to torque the envelope rs - 3 are frequency para or each frequency. Normally P2182 <= lowe the envelope for belt fail Max: 650.00	overload, such ure of the drive to 5=Trip high to 6=Trip high/to for belt failure o e for belt failure o ameters (P2182 - er torque limit (P ailure	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed Level 3 detection P2184), and the other 1521), and P2184
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings: P2182 Unit: Hz Details: Note: P2183 Unit: Hz Details:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions to 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for c detection. Min: 0.00 Sets a frequency threshold F1 for The frequency torque envelope is 6 define the low and high torque lin The torque is unlimited below P21 >=upper torque limit (P1520). Belt threshold frequency 2 Sets a threshold F2 for comparing detection. Min: 0.00 Sets a threshold F2 for comparing	Def: 0 948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/l 4=Trip low tord omparing actual torque omparing actual torque defined by 9 paramete mits (P2185 - P2190) f 82, and above P2184. actual torque to torque Def: 30.00 actual torque to torque	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. bw torque/speed que/speed to to torque the envelope Max: 650.00 e to torque the envelope rs - 3 are frequency para or each frequency. Normally P2182 <= lowe the envelope for belt fail Max: 650.00	overload, such ure of the drive to 5=Trip high to 6=Trip high/to for belt failure o e for belt failure o ameters (P2182 - er torque limit (P ailure	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed Level 3 detection P2184), and the other 1521), and P2184
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings: P2182 Unit: Hz Details: Note: P2183 Unit: Hz	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions to 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for c detection. Min: 0.00 Sets a frequency threshold F1 for The frequency torque envelope is 6 define the low and high torque lin The torque is unlimited below P21 >=upper torque limit (P1520). Belt threshold frequency 2 Sets a threshold F2 for comparing detection. Min: 0.00	Def: 0 948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/l 4=Trip low tord omparing actual torque omparing actual torque defined by 9 paramete mits (P2185 - P2190) f 82, and above P2184. actual torque to torque Def: 30.00 actual torque to torque	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. bw torque/speed que/speed to to torque the envelope Max: 650.00 e to torque the envelope rs - 3 are frequency para or each frequency. Normally P2182 <= lowe the envelope for belt fail Max: 650.00	overload, such ure of the drive to 5=Trip high to 6=Trip high/to for belt failure o e for belt failure o ameters (P2182 - er torque limit (P ailure	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed Level 3 Level 3 Level 3 Level 3 Level 3
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings: P2182 Unit: Hz Details: Note: P2183 Unit: Hz Details:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions of 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for co detection. Min: 0.00 Sets a frequency threshold F1 for The frequency torque envelope is 6 define the low and high torque ling The torque is unlimited below P21 >=upper torque limit (P1520). Belt threshold F2 for comparing detection. Min: 0.00 Sets a threshold F2 for comparing See P2182 (belt threshold frequency 3	Def: 0 19948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/l 4=Trip low tord omparing actual torque Def: 5.00 comparing actual torque mits (P2185 - P2190) f 82, and above P2184. actual torque to torque Def: 30.00 actual torque to torque Def: 30.00 actual torque to torque	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. Dow torque/speed que/speed Max: 650.00 e to torque the envelope rs - 3 are frequency para or each frequency. Normally P2182 <= lowe a the envelope for belt fa	overload, such ure of the drive to 5=Trip high to 6=Trip high/to for belt failure o e for belt failure ameters (P2182 er torque limit (P illure illure	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed Level 3 detection P2184), and the other 1521), and P2184
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings: P2182 Unit: Hz Details: Note: P2183 Unit: Hz Details: Note:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions to 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for co detection. Min: 0.00 Sets a frequency threshold F1 for The frequency torque envelope is 6 define the low and high torque ling The torque is unlimited below P21 >=upper torque limit (P1520). Belt threshold F2 for comparing detection. Min: 0.00 Sets a threshold F2 for comparing Set a threshold F2 for comparing Set a threshold F3 for comparing Sets a threshold F3 for comparing Sets a threshold F3 for comparing	Def: 0 19948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/l 4=Trip low tord omparing actual torque Def: 5.00 comparing actual torque mits (P2185 - P2190) f 82, and above P2184. actual torque to torque Def: 30.00 actual torque to torque Def: 30.00 actual torque to torque	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. Dow torque/speed que/speed Max: 650.00 e to torque the envelope rs - 3 are frequency para or each frequency. Normally P2182 <= lowe a the envelope for belt fa	overload, such ure of the drive to 5=Trip high to 6=Trip high/to for belt failure o e for belt failure ameters (P2182 er torque limit (P illure illure	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed Level 3 detection P2184), and the other 1521), and P2184 Level 3
P2115[3] Unit: - Details: P2181 Unit: - Details: Settings: P2182 Unit: Hz Details: Note: P2183 Unit: Hz Details: Note:	AOP real time clock Displays AOP real time. Min: 0 Displays run time counter. See PO Belt failure detection mode Sets belt failure detection mode. T drive train, e.g. a broken drive belt as a jam. Min: 0 Sets belt failure detection mode. T belt. It can also detect conditions of 0=Belt failure detection disabled 1=Warn low torque/speed 2=Warn high torque/speed 2=Warn high torque/speed Belt threshold frequency 1 Sets a frequency threshold 1 for co detection. Min: 0.00 Sets a frequency threshold F1 for The frequency torque envelope is 6 define the low and high torque ling The torque is unlimited below P21 >=upper torque limit (P1520). Belt threshold F2 for comparing detection. Min: 0.00 Sets a threshold F2 for comparing See P2182 (belt threshold frequency 3	Def: 0 19948 (fault time). This function allows det t. It can also detect cor Def: 0 This function allows det which cause an overloa 3=Warn high/l 4=Trip low tord omparing actual torque Def: 5.00 comparing actual torque mits (P2185 - P2190) f 82, and above P2184. actual torque to torque Def: 30.00 actual torque to torque Def: 30.00 actual torque to torque	ection of mechanical fail ditions which cause an o Max: 6 ection of mechanical fail ad, such as a jam. Dow torque/speed que/speed Max: 650.00 e to torque the envelope rs - 3 are frequency para or each frequency. Normally P2182 <= lowe a the envelope for belt fa	overload, such ure of the drive to 5=Trip high to 6=Trip high/to for belt failure o e for belt failure ameters (P2182 er torque limit (P illure illure	Level 3 rain, e.g. a broken drive orque/speed ow torque/speed Level 3 detection P2184), and the other 1521), and P2184 Level 3 Level 3

Unit: Hz	Min: 0.00 Def: 50.00	Max: 650.00	[
Details:	Min: 0.00 Def: 50.00 Sets a threshold F3 for comparing actual torque to torque		
Note:	See P2182 (belt threshold frequency 1).		
P2185, P2187, P2189	Upper torque threshold 1, 2, and 3		Level 3
Linite Nim	Upper limit threshold value 1 for comparing actual torque. Min: 0.0 Def: 99999.0	Max: 99999.0	
Unit: Nm Details:	Upper limit threshold value for comparing actual torque.	Max: 99999.0	
Note:	See P2182 (belt threshold frequency).		
D2196			
P2186, P2188, P2190	Lower torque threshold 1, 2, and 3 Lower limit threshold value 1 for comparing actual torque.		Level 3
Unit: Nm	Min: 0.0 Def: 0.0	Max: 99999.0	
Details:	Lower limit threshold value for comparing actual torque.		
Note:	See P2182 (belt threshold frequency).		
P2191	Belt failure speed tolerance		Level 3
	P2191 defines the allowed speed variation bandwidth bet		
	frequency, and the speed reference from the pulse train.		
Unit: Hz	machine varies by more than this amount, a trip or warnin Min: 0.00 Def: 3.00	Max: 20.00	
Details:	P2191 defines the allowed speed variation bandwidth bet		cy, and the speed
	reference from the pulse train. When the speed of the driving given.	ven machine varies by more than this a	mount, a trip or warning
P2192	Time delay for belt failure		Level 3
	P2192 defines a delay before warning/trip becomes active		
	caused by transient conditions. It is used for both method		
Unit: s Details:	Min: 0 Def: 10 P2192 defines a delay before warning/trip becomes active	Max: 65	by transient conditions
Details.	It is used for both methods of fault detection.		by transient conditions.
r2197	CO/BO: Monitoring word 1		Level 3
	Monitoring word 1 which indicates the state of monitor fur	nctions. Each bit represents one	
Unit: -	monitor function. Min: - Def: -	Max: -	
Bit fields:	Bit00 Act. freq. r0024 <= P1080 0	NO, 1 YES	
	Bit01 Act. freq. r0024 <= P2155 0	NO, 1 YES	
	Bit02 Act. freq. r0024 > P2155 0 Bit03 Act. freq. r0024 > zero 0	NO, 1 YES NO, 1 YES	
	Bit03 Act. freq. r0024 >= setp. 0	NO, 1 YES NO, 1 YES	
	Bit05 Act. freq. r0024 <= P2167 0	NO, 1 YES	
	Bit06 Act. freq. r0024 >= P1082 0	NO, 1 YES	
	Bit07 Act. freq. r0024 == setp. 0 Bit08 Act. current r0068 >= P2170 0	NO, 1 YES NO, 1 YES	
	Bit09 Act. unfilt. Vdc < P2172 0	NO, 1 YES	
	Bit10 Act. unfilt. Vdc > P2172 0	NO, 1 YES	
	Bit11 No load condition 0	NO, 1 YES	
r2198	CO/BO: Monitoring word 2		Level 3
	Monitoring word 2 which indicates the state of monitor fur	nctions. Each bit represents one	
Unit: -	monitor function. Min: - Def: -	Max: -	
Bit fields:	Bit00 n,filtered r2169 < P2157	0 NO, 1 YES	
	Bit01 n,filtered r2169 > P2157	0 NO, 1 YES	
	Bit02 n,filtered r2169 < P2159 Bit03 n,filtered r2169 > P2159	0 NO, 1 YES 0 NO, 1 YES	
	Bit03 n,set < P2161	0 NO, 1 YES	
	Bit05 n,set > 0	0 NO, 1 YES	
	Bit06 Motor blocked	0 NO, 1 YES 0 NO, 1 YES	
	Bit07 Motor stalled Bit08 I,act r0068 < P2170	0 NO, 1 YES 0 NO, 1 YES	
	Bit09 T,act > P2174 & setpoint reached		
	Bit10 T,act > P2174	0 NO, 1 YES	
	Bitl1 Belt failure warning Bitl2 Belt failure trip	0 NO, 1 YES 0 NO, 1 YES	
	-		
P2200[2]	BI: Enable PID controller	pontrollor Cotting to 1 another the	Level 2
	The PID mode allows the user to enable/disable the PID of PID closed-loop controller.	controller. Setting to 1 enables the	
Unit: -	Min: 0:0 Def: 0:0	Max: 4000:0	
Details:	PID mode Allows user to enable/disable the PID controlle	r. Setting to 1 enables the PID closed-le	
Index:	P2200[0] : 1st command data set (CDS)	P2200[1]: 2nd command data s	
Dependency:	Setting 1 automatically disables normal ramp times set in Following an OEE1 or OEE2 command however the vari		
	Following an OFF1 or OFF3 command, however, the vari ramp time set in P1121 (P1135 for OFF3).	able speed unvertiequency will ramp do	own to zero using the
L			

Note: P2201 through P2215 Unit: % Details:	values (not [Hz]) (reference freque inputs in settings The minimum an remain active on instabilities. Fixed PID setpo Defines fixed PID Min: -200.00 Defines fixed PID digital inputs (PO	. The output of the ency) when PID is s 722.0 to 722.2 for ad maximum motor the variable speed bint 1 through 15 D setpoint 1 D setpoint 1. In add 0701 - P0706).	d using P2253. The PI PID controller is displ enabled. In level 3, th DIN1 to DIN3 or from frequencies (P1080 a d drive output. Howeve Def: See Note Belo dition, you can set any or the PID fixed setpoin	ayed as [%] and then e PID controller sourc any other BiCo sourc and P1082) as well as er, enabling skip frequ w Max: 200 of the digital input pa	normalized into [H e enable can also ce. the skip frequencia encies with PID co	z] through P2000 come from the digital es (P1091 to P1094) ontrol can produce Level 3	
	 In this mode Direct select Description Binary Code Using this r 	ction with ON comr as for 1), except th ed Decimal selection nethod to select th	gital input selects one nand (P0701=16 or P	0702=16, etc.) i issues an ON comma (P0701 - P0706=17) allows you to choose i		any setpoint selection. ID setpoints. The DIN1	
		OFF	Inactive	Inactive	Inactive	Inactive	
	P2201	FF1	Inactive	Inactive	Inactive	Active	
	P2202	FF2	Inactive	Inactive	Active	Inactive	
	P2203	FF3	Inactive	Inactive	Active	Active	
	P2204	FF4	Inactive	Active	Inactive	Inactive	
	P2205	FF5	Inactive	Active	Inactive	Active	
	P2206	FF6	Inactive	Active	Active	Inactive	
	P2207	FF7	Inactive	Active	Active	Active	
	P2208	FF8	Active	Inactive	Inactive	Inactive	
	P2209	FF9	Active	Inactive	Inactive	Active	
	P2210	FF10	Active	Inactive	Active	Inactive	
	P2211	FF11	Active	Inactive	Active	Active	
	P2212	FF12	Active	Active	Inactive	Inactive	
	P2213	FF13	Active	Active	Inactive	Active	
	P2214	FF14	Active	Active	Active	Active	
	P2215	FF15	Active	Active	Active	Active	
Dependency: Note:	In mode 1 (abov ON command re In mode 2 (abov If inputs program You may mix diff P2201=100 % co	e): equired to start mot e): nmed to PID fixed s		ogether, the selected			
	Fixed PID	Default	Fixed PID	Default	Fixed PID	Default	
	1	0.00	6	50.00	11	100.00	
	2	10.00	7	60.00	12	110.00	
	3	20.00	8	70.00	13	120.00	
	4	30.00	9	80.00	14	130.00	
	5	40.00	10	90.00	15	130.00	
P2216, P2217, P2218, P2219			Bit 1, Bit 2, and Bit 3			Level 3	
Unit: -	Fixed frequencies for PID setpoint can be selected in three different modes. Parameter P1016 defines the mode of selection bit 0.						
Settings:	Min: 1 1=Direct selection	n (*	Def: 1 2=Direct selection + C	Max: 3	-Binary coded colo	ction + ON command	
P2220[2]	BI: Fixed PID se	etpoint select Bit	0			Level 3	
		nd source of fixed F	PID setpoint selection				
Unit: -	Min: 0:0	out 1 (requires P07	Def: 0:0 01 set to 99, BICO)	Max: 400	0:0		
Settings:	722.1=Digital inp 722.2=Digital inp 722.3=Digital inp 722.4=Digital inp 722.5=Digital inp 722.6=Digital inp	but 4 (requires P07 but 5 (requires P07 but 6 (requires P07 but 7 (via analog in	03 set to 99, BICO) 04 set to 99, BICO) 05 set to 99, BICO) 06 set to 99, BICO) put 1, requires P0707				
	722.1=Digital inp 722.2=Digital inp 722.3=Digital inp 722.4=Digital inp 722.5=Digital inp 722.6=Digital inp	but 3 (requires P07 but 4 (requires P07 but 5 (requires P07 but 6 (requires P07 but 7 (via analog in	03 set to 99, BICO) 04 set to 99, BICO) 05 set to 99, BICO) 06 set to 99, BICO)				

P2221[2]. P2222[2], P2223[2]	BI: Fixed PID setpoint select Bit 1	I, Bit 2, and Bit 3			Level 3
	Defines command source of fixed P	PID setpoint selection bit 1.			
Unit: -	Min: 0:0	Def: 0:0 (P2223[2]:722.3	Max: 4000:0		
Settings:	722.0=Digital input 1 (requires P070	01 set to 99, BICO)			
-	722.1=Digital input 2 (requires P070				
	722.2=Digital input 3 (requires P070	03 set to 99, BICO)			
	722.3=Digital input 4 (requires P070				
	722.4=Digital input 5 (requires P070				
	722.5=Digital input 6 (requires P070				
Index:	For P2221:	For P2222:		For P2223:	
	P2221[0]: 1st command data set (CD		(200) too set b	P2223[0]: 1st comm	and data set (CDS)
	P2221[1]: 2nd command data set (CD		nd data set (CDS)	P2223[1]: 2nd comm	
r2224	CO: Act. fixed PID setpoint				Level 3
	Displays total output of PID fixed se	etpoint selection.			
Unit: %	Min: -	Def: -	Max: -		
Note:	r2224=100 % corresponds to 4000	hex			
Heter					
P2225, P2227	Fixed PID setpoint mode - Bit 4 a	nd Bit 5			Level 3
	Direct selection or direct selection +	- ON Bit 4 for PID setpoint			
Unit: -	Min: 1	Def: 1	Max: 2		
Settings:		Period Pe		ary coded selection	+ ON command
Jettings.					
P2226[2]-	BI: Fixed PID setpoint select Bit 4	4 and Bit 5			Level 3
P2228[2]					
P2226[2]	Min: 0:0	Def: 722:4	Max: 4000:0		
P2227	Min: 0.0	Def: 1	Max: 4000.0		
P2228[2]	Min: 0	Def: 722:5	Max: 2 Max: 4000:0		
	-		Wax. 4000:0		
Settings:	722.0=Digital input 1 (requires P070				
	722.1=Digital input 2 (requires P070				
	722.2=Digital input 3 (requires P070				
	722.3=Digital input 4 (requires P070				
	722.4=Digital input 5 (requires P070				
	722.5=Digital input 6 (requires P070	16 cot to 00 RICO			
Index:	For P2226:	50 Set to 99, BICO)	For P2228:		
Index:	For P2226:			mand data set (CDS	5)
Index:		:DS)	P2228[0]: 1st com	mand data set (CDS mand data set (CD	
	For P2226: P2226[0]: 1st command data set (C P2226[1]: 2nd command data set (C	:DS)	P2228[0]: 1st com		Ś)
Index:	For P2226: P2226[0]: 1st command data set (C P2226[1]: 2nd command data set (C Setpoint memory of PID-MOP	:DS)	P2228[0]: 1st com		Ś)
	For P2226: P2226[0]: 1st command data set (C P2226[1]: 2nd command data set (C	:DS)	P2228[0]: 1st com		Ś)
	For P2226: P2226[0]: 1st command data set (C P2226[1]: 2nd command data set (C Setpoint memory of PID-MOP	:DS)	P2228[0]: 1st com		Ś)
P2231	For P2226: P2226[0]: 1st command data set (C P2226[1]: 2nd command data set (C Setpoint memory of PID-MOP Setpoint memory. Min: 0 0=PID-MOP setpoint will not be stored	DS) CDS) Def: 1 red	P2228[0]: 1st comr P2228[1]: 2nd com Max: 1 1=PID-MOP setpoi	int will be stored (P2	S) Level :
P2231 Unit: -	For P2226: P2226[0]: 1st command data set (C P2226[1]: 2nd command data set (C Setpoint memory of PID-MOP Setpoint memory. Min: 0 0=PID-MOP setpoint will not be stored	DS) CDS) Def: 1 red	P2228[0]: 1st comr P2228[1]: 2nd com Max: 1 1=PID-MOP setpoi	int will be stored (P2	S) Level :
P2231 Unit: - Settings:	For P2226: P2226[0]: 1st command data set (C P2226[1]: 2nd command data set (C Setpoint memory of PID-MOP Setpoint memory. Min: 0 0=PID-MOP setpoint will not be stor If 0 selected, setpoint returns to value	DS) CDS) Def: 1 red ue set in P2240 (setpoint of	P2228[0]: 1st comr P2228[1]: 2nd com Max: 1 1=PID-MOP setpoi PID-MOP) after an	int will be stored (P2	S) Level :
P2231 Unit: - Settings: Dependency:	For P2226: P2226[0]: 1st command data set (C P2226[1]: 2nd command data set (C Setpoint memory of PID-MOP Setpoint memory. Min: 0 0=PID-MOP setpoint will not be stor If 0 selected, setpoint returns to value If 1 is selected, active setpoint is 're	DS) CDS) Def: 1 red ue set in P2240 (setpoint of	P2228[0]: 1st comr P2228[1]: 2nd com Max: 1 1=PID-MOP setpoi PID-MOP) after an	int will be stored (P2	S) Level :
P2231 Unit: - Settings: Dependency: Note:	For P2226: P2226[0]: 1st command data set (C P2226[1]: 2nd command data set (C Setpoint memory of PID-MOP Setpoint memory. Min: 0 0=PID-MOP setpoint will not be stor If 0 selected, setpoint returns to value	DS) CDS) Def: 1 red ue set in P2240 (setpoint of	P2228[0]: 1st comr P2228[1]: 2nd com Max: 1 1=PID-MOP setpoi PID-MOP) after an	int will be stored (P2	S) Level :
P2231 Unit: - Settings: Dependency:	For P2226: P2226[0]: 1st command data set (C P2226[1]: 2nd command data set (C Setpoint memory of PID-MOP Setpoint memory. Min: 0 0=PID-MOP setpoint will not be sto If 0 selected, setpoint returns to value If 1 is selected, active setpoint is 'ree See P2240 (setpoint of PID-MOP).	DS) CDS) Def: 1 red ue set in P2240 (setpoint of	P2228[0]: 1st comr P2228[1]: 2nd com Max: 1 1=PID-MOP setpoi PID-MOP) after an	int will be stored (P2	Ś) Level : 2240 is updated)
P2231 Unit: - Settings: Dependency: Note:	For P2226: P2226[0]: 1st command data set (C P2226[1]: 2nd command data set (C Setpoint memory of PID-MOP Setpoint memory. Min: 0 0=PID-MOP setpoint will not be sto If 0 selected, setpoint returns to value If 1 is selected, active setpoint is 're See P2240 (setpoint of PID-MOP). Inhibit rev. direct. of PID-MOP	Def: 1 red ue set in P2240 (setpoint of membered' and P2240 upc	P2228[0]: 1st comr P2228[1]: 2nd com P2228[1]: 2nd com PID-MOP setpoi PID-MOP after an lated with current va	int will be stored (P2 OFF command alue.	Ś) Level : 2240 is updated)
P2231 Unit: - Settings: Dependency: Note:	For P2226: P2226[0]: 1st command data set (C P2226[1]: 2nd command data set (C Setpoint memory of PID-MOP Setpoint memory. Min: 0 0=PID-MOP setpoint will not be sto If 0 selected, setpoint returns to value If 1 is selected, active setpoint is 'ree See P2240 (setpoint of PID-MOP).	Def: 1 red ue set in P2240 (setpoint of membered' and P2240 upc	P2228[0]: 1st comr P2228[1]: 2nd com P2228[1]: 2nd com PID-MOP setpoi PID-MOP after an lated with current va	int will be stored (P2 OFF command alue.	Ś) Level : 2240 is updated)
P2231 Unit: - Settings: Dependency: Note: P2232	For P2226: P2226[0]: 1st command data set (C P2226[1]: 2nd command data set (C Setpoint memory of PID-MOP Setpoint memory. Min: 0 0=PID-MOP setpoint will not be stoo If 0 selected, setpoint returns to value If 1 is selected, active setpoint is 're See P2240 (setpoint of PID-MOP). Inhibit rev. direct. of PID-MOP Inhibits reverse setpoint selection w	Def: 1 red ue set in P2240 (setpoint of membered' and P2240 upo /hen PID motor potentiome g P1000).	P2228[0]: 1st com P2228[1]: 2nd com Max: 1 1=PID-MOP setpoi PID-MOP) after an lated with current va	int will be stored (P2 OFF command alue.	Ś) Level : 2240 is updated)
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P2231 Unit: - Settings: Dependency: Note: P2232 Unit: - Details: Settings: Note: P2240[2] Unit: % Settings:	For P2226: P2226[0]: 1st command data set (C P2226[1]: 2nd command data set (C Setpoint memory of PID-MOP Setpoint memory. Min: 0 0=PID-MOP setpoint will not be stoo If 0 selected, setpoint returns to valu If 1 is selected, active setpoint is 're See P2240 (setpoint of PID-MOP). Inhibit rev. direct. of PID-MOP Inhibits reverse setpoint selection w setpoint of additional setpoint (using Min: 0 Inhibits reverse setpoint selection w setpoint (using P1000) 0=Reserve direction is allowed Setting 0 enables a change of moto either by using digital inputs or moto Setpoint of the motor potentiometer Allows user to set a digital PID setp Min: -200.00 722.0=Digital input 1 (requires P070 722.3=Digital input 3 (requires P070 722.4=Digital input 4 (requires P070 722.5=Digital input 5 (requires P070 722.5=Digital input 6 (requires P070 722.5=Digital input 7 (via analog inp 722.7=Digital input 8 (via analog inp 723.7=Digital input 8 (via analog inp 724.7=Digital i	Def: 1 red ue set in P2240 (setpoint of membered' and P2240 upo then PID motor potentiome g P1000). Def: 1 then PID motor potentiome or direction using the motor or potentiometer up/down b c. in of digital inputs 2 and 3)	P2228[0]: 1st com P2228[1]: 2nd com Max: 1 1=PID-MOP setpoi PID-MOP) after an lated with current va ter is chosen either 1=Reserve directic potentiometer setpo uttons. Max: 200.00	amand data set (CD int will be stored (P2 OFF command alue. as a main as a main setpoint of on inhibited	S) Level 2240 is updated) Level of additional ase frequency
22231 Unit: - Settings: Dependency: Note: 22232 Unit: - Details: Settings: Note: 22240[2] Unit: % Settings:	For P2226: P2226[0]: 1st command data set (C P2226[1]: 2nd command data set (C Setpoint memory of PID-MOP Setpoint memory. Min: 0 0=PID-MOP setpoint will not be stor If 0 selected, setpoint returns to value If 1 is selected, active setpoint is 're See P2240 (setpoint of PID-MOP). Inhibit rev. direct. of PID-MOP Inhibits reverse setpoint selection w setpoint of additional setpoint (using Min: 0 Inhibits reverse setpoint selection w setpoint (using P1000) 0=Reserve direction is allowed Setting 0 enables a change of moto either by using digital inputs or moto Setpoint of the motor potentiometer Allows user to set a digital PID setp Min: -200.00 722.0=Digital input 1 (requires P070 722.1=Digital input 3 (requires P070 722.3=Digital input 4 (requires P070 722.5=Digital input 5 (requires P070 722.5=Digital input 5 (requires P070 722.6=Digital input 6 (requires P070 722.6=Digital input 8 (via analog inp 722.7=Digital i	Def: 1 red ue set in P2240 (setpoint of membered' and P2240 upon when PID motor potentiomer g P1000). Def: 1 when PID motor potentiomer or direction using the motor or potentiometer up/down b discrete to g9, BICO) D1 set to 99, BICO) D2 set to 99, BICO) D2 set to 99, BICO) D3 set to 99, BICO) D3 set to 99, BICO) D4 set to 99, BICO) D5 set to 99, BICO) D6 set to 99, BICO) D7 set to 99, BICO) D7 set to 99, BICO) D8 set to 99, BICO) D9 set to 99, BICO) D9 set to 99, BICO) D1 set to 99, BICO) D1 set to 99, BICO) D2 set to 99, BICO) D3 set to 99, BICO) D4 set to 99, BICO) D5 set to 99, BICO) D4 set to 99, BICO) D5 set to 99, BICO) D5 set to 99, BICO) D6 set to 99, BICO) D6 set to 99, BICO) D7 set to 99, BICO) D6 set to 99, BICO) D7 set to 99, BICO) D7 set to 99, BICO) D7 set to 99, BICO) D8 set to 99, BICO) D9 set to 99, BICO set to 90, BICO set t	P2228[0]: 1st com P2228[1]: 2nd com Max: 1 1=PID-MOP setpoi PID-MOP) after an lated with current va ter is chosen either 1=Reserve directic potentiometer setpo uttons. Max: 200.00	amand data set (CD int will be stored (P2 OFF command alue. as a main as a main setpoint of on inhibited	S) Level 2240 is updated) Level of additional ase frequency Level

linit, 9/	Min	Dof	Maxi	
Unit: % Note:	Min: - r2250=100 % corresponds to 4000	Def: -	Max: -	
				ſ
P2253[2]	CI: PID setpoint Defines setpoint source for PID set	tooint input		Level 2
	This parameter allows the user to	select the source of the PID s	etpoint. Normally, a digital	
	setpoint is selected either using a			
Unit: -	Min: 0:0	Def: 2250:0	Max: 4000:0	
Details:	This parameter allows the user to		etpoint. Normally, a digital set	point is selected either
0.44	using a fixed PID setpoint or an ac			
Settings:	755= Analog input 1 2224 =F P2253[0] : 1st command data set	ixed PI setpoint (see P2201 to		setpoint (see P2240)
Index;	P2253[0] : 1st command data set		P2253[1]: 2nd command dat	a set (CDS)
P2254[2]	CI: PID trim source			Level 3
	Selects trim source for PID setpoir	nt. This signal is multiplied by	the trim gain and added to the	
11-14	PID setpoint.		Mar. 1000.0	_
Unit: - Details:	Min: 0:0 This parameter allows the user to	Def: 0:0	Max: 4000:0	agint is calented aither
Details.	using a fixed PID setpoint or an ac		elpoint. Normany, a digital seq	
Settings:		ixed PI setpoint (see P2201 to	o P2207) 2250 =Active PI	setpoint (see P2240)
Index;	P2254[0] : 1st command data set		P2254[1]: 2nd command dat	
D0064	DID connected filter time constant			
P2261	PID setpoint filter time constant Sets a time constant for smoothing			Level 3
Unit: s	Min: 0.00	Def: 0.00	Max: 60.00	
Note:	0 = no smoothing.			
r2262	CO: Filtered PID setp. after RFG			Level 3
Unit: %	Displays filtered PID setpoint after Min: -	Def: -	Max: -	-
Details:	Displays filtered PID setpoint after		Max	
Note:	r2262=100 % corresponds to 4000			
	•			
P2264[2]	CI: PID feedback			Level 2
Unit: -	Selects the source of the PID feed Min: 0:0	Dack signal.	Max: 4000:0	_
Settings:	755= Analog input 1 setpoint	2224 =Fixed PID setp		utput setpoint of PID-MOP
Index:	P2264[0] : 1st command data set		P2264[1] : 2nd command dat	
Note:	When analog input is selected, off			
D0005		- ·	¥.	
P2265	PID feedback filter time constant Defines time constant for PID feed			Level 3
Unit: s		Def: 0.00	Max: 60.00	
P2267	Max. value for PID feedback Sets the upper limit for the value of			Level 3
Unit: %		Def: 100.00	Max: 200.00	-
Note:			Max. 200.00	
	When PID is enabled (P2200=1) a		value, the variable speed driv	e will trip with P0222.
Baaca		-	·	Level (
P2268	Min. value for PID feedback Sets lower limit for value of feedba	ock signal in [%]		Level 3
Unit: %	Min: -200.00	Def: 0.00	Max: 200.00	
Note:	P2268=100 % corresponds to 400		Max. 200.00	
	When PID is enabled (P2200=1) a		value, the variable speed driv	e will trip with P0221.
P2269	Cain applied to PID feedback			Level
F2209	Gain applied to PID feedback Allows the user to scale the PID feedback	edback as a percentage value	e [%]	Levers
	A gain of 100 % means that the fe			
Unit: -	Min: 0.00	Def: 100.00	Max: 500.00	
Note:	Allows the user to scale the PID fe			
	A gain of 100.0 % means that feed	back signal has not changed	from its default value.	
P2270	PID feedback function selector			Level
	Applies mathematical functions to	the PID feedback signal, allow	wing multiplication of the result	
	by P2269 (gain applied to PID fee			
Unit: -	Min: 0	Def: 0	Max: 3	
Details:	Applies mathematical functions to	the PID feedback signal, allow	wing multiplication of the result	by P2269 (gain applied to
Cottinge	PID feedback).	Squara root (root(v))	Ω_{-} Square (v*v)	2_Cuba (v*v*v)
Settings:	0=Disabled 1=	Square root (root(x))	2=Square (x*x)	3=Cube (x*x*x)
P2271	PID transducer type			Level
	Allows the user to select the transd			
	Min: 0	Def: 0	Max: 1	
Unit: -				
Unit: - Value:	0 : [default] If the feedback signal is	less than the PID setpoint, the		
		less than the PID setpoint, the than the PID setpoint, the PID setpoint, the PID		ed to correct this.

	It is essential that you select the		ing the compatibility of follows.	
	If you are unsure whether 0 or 1 1 Disable the PID function (P22		line the correct type as follows:	
	2 Increase the motor frequency		signal.	
	3 If the feedback signal increase	es with an increase in motor fr	equency, the PID transducer type shou	uld be 0.
	4 If the feedback signal decrease	ses with an increase in motor f	requency the PID transducer type show	uld be set to 1.
r2272	CO: PID scaled feedback			Level 3
	Displays PID scaled feedback s	signal in [%].		Level o
Unit: %	Min: -	Def: -	Max: -	
Note:	r2272=100 % corresponds to 40	000 hex.		
r2273	CO: PID error			Level 3
-	Displays PID error (difference) s	signal between setpoint and fe	edback signals in [%].	Levers
Unit: %	Min: -	Def: -	Max: -	
Note:	r2273=100 % corresponds to 40	000 hex.	· · · ·	
P2274	PID derivative time			Level 2
F2214	Sets PID derivative time.			Level 2
Unit: s	Min: 0	Def: 0	Max: 65535	
Note:	Set PID derivative time	1		
D 2070	DID Neutral series			Laval 0
P2279	PID Neutral zone Sets PID derivative time.			Level 3
Unit: %	Min: 0.00	Def: 0.00	Max: 100.00	
Note:	Set PID derivative time	Dei: 0.00	Max. 100.00	
P2280	PID proportional gain			Level 2
	Allows user to set proportional of The PID controller is implement			
Unit:	Min: 0.000	Def: 1.200	Max: 65.000	
			r. For best results, enable both P and I	I terms.
	If P term=0, I term acts on the s			
	If the system is prone to sudder	step changes in the feedback	k signal, P term should normally be set	t to a small value
	(0.5) with a faster I term for opti			
			sent and previous feedback signal thus	s accelerating the
	controller reaction to an error th		ontroller output to fluctuate as every ch	ange in the
	feedback signal is amplified by			
Basas				
P2285	PID integral time			Level 2
Unit: s	Sets integral time constant for F Min: 0.000	Def: 30	Max: 65535	
	See P2280 (PID proportional ga		Max. 05555	
		2		
P2291	PID output upper limit			
				Level 2
I Init: 9/	Sets the upper limit for PID cont		Max: 100.00	Level 2
Unit: %	Min: 0.00	Def: 100.00	Max: 100.00	
	Min: 0.00 If F max (P1082) is greater than	Def: 100.00	Max: 100.00 , either P2000 or P2291 (PID output up	
Dependency:	Min: 0.00	Def: 100.00 n P2000 (reference frequency)	, either P2000 or P2291 (PID output up	
Dependency: Note:	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4	Def: 100.00 n P2000 (reference frequency)	, either P2000 or P2291 (PID output up	pper limit) must be
Dependency:	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit	Def: 100.00 P2000 (reference frequency)	, either P2000 or P2291 (PID output up	
Dependency: Note: P2292	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of	Def: 100.00 P2000 (reference frequency) 000 hex (as defined by P2000 controller output in [%].	, either P2000 or P2291 (PID output up) [reference frequency]).	pper limit) must be
Dependency: Note: P2292 Unit: %	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00	Def: 100.00 P2000 (reference frequency) 1000 hex (as defined by P2000 controller output in [%]. Def: 0.00	, either P2000 or P2291 (PID output up	pper limit) must be
Dependency: Note: P2292 Unit: % Dependency:	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of	Def: 100.00 P2000 (reference frequency) 1000 hex (as defined by P2000 controller output in [%]. Def: 0.00 operation of PID controller.	, either P2000 or P2291 (PID output up) [reference frequency]).	pper limit) must be
Dependency: Note: P2292 Unit: % Dependency: Note:	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4	Def: 100.00 Def: 100.00 Def: 0.00 Def: 0.00 Def: 0.00 Operation of PID controller. 1000 hex.	, either P2000 or P2291 (PID output up) [reference frequency]).	pper limit) must be Level 2
Dependency: Note: P2292 Unit: % Dependency:	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I	Def: 100.00 Def: 100.00 Def: 000 hex (as defined by P2000 controller output in [%]. Def: 0.00 operation of PID controller. 1000 hex. imit	, either P2000 or P2291 (PID output up) [reference frequency]).	pper limit) must be Level 2
Dependency: Note: P2292 Unit: % Dependency: Note:	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I Sets maximum ramp rate on ou	Def: 100.00 P2000 (reference frequency) 1000 hex (as defined by P2000 controller output in [%]. Def: 0.00 operation of PID controller. 1000 hex. imit ttput of PID.	, either P2000 or P2291 (PID output up) [reference frequency]). Max: 100.00	pper limit) must be Level 2
Dependency: Note: P2292 Unit: % Dependency: Note:	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I	Def: 100.00 P2000 (reference frequency) 1000 hex (as defined by P2000 controller output in [%]. Def: 0.00 operation of PID controller. 1000 hex. imit ttput of PID.	, either P2000 or P2291 (PID output up) [reference frequency]). Max: 100.00	pper limit) must be Level 2
Dependency: Note: P2292 Unit: % Dependency: Note:	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I Sets maximum ramp rate on ou When PI is enabled, the output	Def: 100.00 Def: 100.00 Def: 0.00 De	, either P2000 or P2291 (PID output up) [reference frequency]). Max: 100.00) the limits set in P2291 (PID	pper limit) must be Level 2
Dependency: Note: P2292 Unit: % Dependency: Note: P2293	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I Sets maximum ramp rate on out When PI is enabled, the output output upper limit) and P2292 (PID output low output of the PID when the varia	Def: 100.00 Def: 100.00 Def: 100.00 Def: 0.00 Def: 0.00 Def: 0.00 Operation of PID controller. Doto hex. Def: Def: 0.00 Def: Def: 0.00 Def: Def: 0.00 Def: 0	, either P2000 or P2291 (PID output up) [reference frequency]). Max: 100.00) the limits set in P2291 (PID	pper limit) must be Level 2
Dependency: Note: P2292 Unit: % Dependency: Note: P2293	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I Sets maximum ramp rate on ou When PI is enabled, the output output upper limit) and P2292 (PID output low output of the PID when the variat the PID controller output is insta	Def: 100.00 Def: 100.00 Def: 100.00 Def: 0.00 Def: 0.00 Def: 0.00 Operation of PID controller. Doto hex. Def: Def: Def: Def: Def: Def: Def: Def:	, either P2000 or P2291 (PID output up) [reference frequency]). Max: 100.00 b the limits set in P2291 (PID step changes appearing on the ince the limits have been reached,	pper limit) must be Level 2
Dependency: Note: P2292 Unit: % Dependency: Note: P2293	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I Sets maximum ramp rate on ou When PI is enabled, the output output upper limit) and P2292 (PID output low output of the PID when the variat the PID controller output is instat These ramp times are used when	Def: 100.00 Def: 100.00 Def: 100.00 Def: 0.00 Def: 0.00 Def: 0.00 Operation of PID controller. Dot hex. Dot PID. Def: Def: Def: Def: Def: Def: Def: Def:	either P2000 or P2291 (PID output up [reference frequency]). Max: 100.00 the limits set in P2291 (PID step changes appearing on the ice the limits have been reached, sued.	pper limit) must be Level 2
Dependency: Note: P2292 Unit: % Dependency: Note: P2293 Unit: s	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I Sets maximum ramp rate on ou When PI is enabled, the output output upper limit) and P2292 (PID output low output of the PID when the variat the PID controller output is instat These ramp times are used whe Min: 0.00	Def: 100.00 Def: 100.00 Def: 100.00 Def: 0.00 Def: 0.00 Def: 0.00 Operation of PID controller. Dot PID. Def: Def: Def: 0.00 Def: Def: 0.00 Def: Def: 0.00 De	either P2000 or P2291 (PID output up [reference frequency]). Max: 100.00 the limits set in P2291 (PID step changes appearing on the ince the limits have been reached, sued. Max: 100.00	pper limit) must be Level 2 Level 3
Dependency: Note: P2292 Unit: % Dependency: Note: P2293 P2293	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I Sets maximum ramp rate on ou When PI is enabled, the output output upper limit) and P2292 (PID output low output of the PID when the varia the PID controller output is inste These ramp times are used whe Min: 0.00 If an OFF1 or OFF3 are issued,	Def: 100.00 Def: 100.00 Def: 100.00 Def: 0.00 Def: 0.00 Operation of PID controller. Dot PID. Def: 0.00 De	either P2000 or P2291 (PID output up [reference frequency]). Max: 100.00 the limits set in P2291 (PID step changes appearing on the ice the limits have been reached, sued.	pper limit) must be Level 2 Level 3
Dependency: Note: P2292 Unit: % Dependency: Note: P2293 Unit: s Note:	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I Sets maximum ramp rate on ou When PI is enabled, the output output upper limit) and P2292 (PID output low output of the PID when the varia the PID controller output is instat These ramp times are used whe Min: 0.00 If an OFF1 or OFF3 are issued, (ramp-down time) or P1135 (OF	Def: 100.00 Def: 100.00 Def: 100.00 Def: 0.00 Def: 0.00 Operation of PID controller. Dot PID. Def: 0.00 De	either P2000 or P2291 (PID output up [reference frequency]). Max: 100.00 the limits set in P2291 (PID step changes appearing on the ince the limits have been reached, sued. Max: 100.00	pper limit) must be Level 2 Level 3
Dependency: Note: P2292 Unit: % Dependency: Note: P2293 P2293	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I Sets maximum ramp rate on ou When PI is enabled, the output output upper limit) and P2292 (PID output low output of the PID when the varia the PID controller output is insta These ramp times are used whe Min: 0.00 If an OFF1 or OFF3 are issued, (ramp-down time) or P1135 (OF	Def: 100.00 Def: 100.00 Def: 100.00 Def: 0.00 Def: 0.00 Operation of PID controller. Dot PID. Def: 0.00 De	either P2000 or P2291 (PID output up [reference frequency]). Max: 100.00 the limits set in P2291 (PID step changes appearing on the ince the limits have been reached, sued. Max: 100.00	pper limit) must be Level 2 Level 3
Dependency: Note: P2292 Unit: % Dependency: Note: P2293 P2293 Vote: r2294	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I Sets maximum ramp rate on ou When PI is enabled, the output output upper limit) and P2292 (PID output low output of the PID when the varia the PID controller output is insta These ramp times are used whe Min: 0.00 If an OFF1 or OFF3 are issued, (ramp-down time) or P1135 (OF CO: Act. PID output in [%].	Def: 100.00 Def: 100.00 Def: 100.00 Def: 0.00	either P2000 or P2291 (PID output up [reference frequency]). Max: 100.00 Max: 100.00 the limits set in P2291 (PID step changes appearing on the nce the limits have been reached, sued. Max: 100.00 ut frequency ramps down as set in P11	pper limit) must be Level 2 Level 3
Dependency: Note: P2292 Unit: % Dependency: Note: P2293 P2293 Vote: r2294 Unit: %	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I Sets maximum ramp rate on ou When PI is enabled, the output output upper limit) and P2292 (PID output low output of the PID when the varia the PID controller output is insta These ramp times are used whe Min: 0.00 If an OFF1 or OFF3 are issued, (ramp-down time) or P1135 (OF CO: Act. PID output in [%]. Min: -	Def: 100.00 Def: 100.00 Def: 0.00 Def: -	, either P2000 or P2291 (PID output up) [reference frequency]). Max: 100.00 Max: 100.00 the limits set in P2291 (PID step changes appearing on the loce the limits have been reached, Max: 100.00 Max: 100.00 Max: 100.00 Max: -	Level 2 Level 2 Level 3
Dependency: Note: P2292 Unit: % Dependency: Note: P2293 P2293 Vote: r2294 Unit: %	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I Sets maximum ramp rate on ou When PI is enabled, the output output upper limit) and P2292 (PID output low output of the PID when the variat the PID controller output is instat These ramp times are used whe Min: 0.00 If an OFF1 or OFF3 are issued, (ramp-down time) or P1135 (OF CO: Act. PID output Displays the PID output in [%]. Min: - When PI is enabled, the output	Def: 100.00 Def: 100.00 Def: 100.00 Def: 0.00	either P2000 or P2291 (PID output up [reference frequency]). Max: 100.00 Max: 100.00 the limits set in P2291 (PID step changes appearing on the ince the limits have been reached, sued. Max: 100.00 ut frequency ramps down as set in P11 Max: - the limits set in P2291 (PID output up	Level 2 Level 2 Level 3 Level 3 Level 3 Level 3 Per limit) and P2292
Dependency: Note: P2292 Unit: % Dependency: Note: P2293 P2293 Vote: r2294 Unit: %	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I Sets maximum ramp rate on ou When PI is enabled, the output output of the PID output low output of the PID when the varia the PID controller output is insta These ramp times are used whe Min: 0.00 If an OFF1 or OFF3 are issued, (ramp-down time) or P1135 (OF CO: Act. PID output Displays the PID output in [%]. Min: - When PI is enabled, the output (PID output lower limit). Limits p	Def: 100.00 Def: 100.00 Def: 100.00 Def: 0.00 Def: 0.00 Operation of PID controller. Dot PID. Def: 0.00 De	either P2000 or P2291 (PID output up) [reference frequency]). Max: 100.00 • the limits set in P2291 (PID step changes appearing on the ince the limits have been reached, sued. Max: 100.00 ut frequency ramps down as set in P11 Max: 100.00 ut frequency ramps down as set in P11 Max: - • the limits set in P2291 (PID output up pearing on the output of the PID when	Level 2 Level 2 Level 3 Level 3 Level 3 Level 3 Per limit) and P2292
Dependency: Note: P2292 Unit: % Dependency: Note: P2293 P2293 P2293 Vote: r2294 Unit: % Details	Min: 0.00 If F max (P1082) is greater than changed to achieve F max. P2291=100 % corresponds to 4 PID output lower limit Sets the lower limit for the PID of Min: -0.00 A negative value allows bipolar P2292=100 % corresponds to 4 Ramp-up /-down time of PID I Sets maximum ramp rate on ou When PI is enabled, the output output of the PID output low output of the PID when the varia the PID controller output is insta These ramp times are used whe Min: 0.00 If an OFF1 or OFF3 are issued, (ramp-down time) or P1135 (OF CO: Act. PID output Displays the PID output in [%]. Min: - When PI is enabled, the output (PID output lower limit). Limits p	Def: 100.00 Def: 100.00 Def: 100.00 Def: 0.00 Def: 0.00 Def: 0.00 Operation of PID controller. Def: 0.00 D	either P2000 or P2291 (PID output up) [reference frequency]). Max: 100.00 • the limits set in P2291 (PID step changes appearing on the ince the limits have been reached, sued. Max: 100.00 ut frequency ramps down as set in P11 Max: 100.00 ut frequency ramps down as set in P11 Max: - • the limits set in P2291 (PID output up pearing on the output of the PID when iontroller output is instantaneous.	Level 2 Level 2 Level 3 Level 3 Level 3 Level 3 Per limit) and P2292

P2303[2]	CI: PID o/p offset			Level 3
1 2303[2]	Selects the source of the PID out	put offset signal.		Lever J
Unit: -	Min: 0:0	Def: 0:0	Max: 4000:0	-
Settings:	755 = Analog input 1 setpoint			Itput setpoint of PID-MOP
Index: Note:	P2303[0] : 1st command data se		P2303[1] : 2nd command data	
Note:	when analog input is selected, o	fiset and gain can be	implemented using parameters P0756 to	P0760 (ADC scaling).
P2304	PID opening time			Level 2
Unite a	Sets actuator opening time const		May CEE25	-
Unit: s Details:	Min: 0 See P2304 (PID actuator closing	Def: 60	Max: 65535	
Details.		une).		-
P2305	PID closing time			Level 2
Unit: s	Sets actuator opening time const Min: 0	Def: 60	Max: 65535	-
Details:	See P2304 (PID actuator closing		Max: 00000	
	r			
P2306	PID Acting Dir		and the line of the stand of the stand of the stand of the	Level 2
	plant output causes decreasing c		controller output Indirect = 1 =increasing	
Unit: -	Min: 0	Def: 1	Max: 1	-
Settings:	0 Indirect Acting (Cooling Seque	ence)		
-	1 Direct Acting (Heating Seque	nce)		
P2370	Motor staging stop mode			Level 3
1 2010	Selects stop mode for external m	otors when motor sta	aina is in use.	Levero
Unit: -	Min: 0	Def: 0	Max: 1	
Settings:	0=Normal stop	1=Sequence	e stop	
P2371	Selection motor configuration			Level 3
120/1	Selects configuration of external	motors used for moto	r staging feature.	
Unit: -	Min: 0	Def: 0	Max: 8	
Settings:	0=Motor staging Disabled	•	2=M1=1X, M2=1X	
	1=M1=1X, M2=		3=M1=1X, M2=2X	
Details			taged pumps or fans, based on a PID co ne variable speed drive with up to 2 furth	
			otor starter are controlled by outputs from	
	drive. The diagram below shows			
			stern. A similar system board be set up a	
	instead of pumps and pipes.			
P2372				Level 3
P2372	instead of pumps and pipes. Enable motor cycling Enables motor cycling for the mo			-
P2372	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selected	tor staging feature.	ng is based on the hours run counter	-
P2372	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor	tor staging feature. d for staging/destagin with the least hours is		-
P2372	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor motor with most hours is switche	tor staging feature. d for staging/destagin with the least hours is d off.	ng is based on the hours run counter s switched on. When destaging, the	-
P2372	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor motor with most hours is switche	tor staging feature. d for staging/destagin with the least hours is d off. es, the choice of moto	ng is based on the hours run counter	-
P2372 Unit: -	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor motor with most hours is switche If staged motors are different size and then if there is still a choice, Min: 0	tor staging feature. d for staging/destagin with the least hours is d off. es, the choice of moto	ng is based on the hours run counter s switched on. When destaging, the	-
	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor motor with most hours is switche If staged motors are different size and then if there is still a choice, Min: 0	tor staging feature. ed for staging/destagin with the least hours is d off. es, the choice of moto on hours run.	ng is based on the hours run counter s switched on. When destaging, the or is first based on required motor size,	-
Unit: - Settings:	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor motor with most hours is switche If staged motors are different size and then if there is still a choice, Min: 0 0=Disabled	tor staging feature. ed for staging/destagin with the least hours is d off. es, the choice of moto on hours run.	ng is based on the hours run counter s switched on. When destaging, the or is first based on required motor size, Max: 1	_ Level 3
Unit: -	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor motor with most hours is switche If staged motors are different size and then if there is still a choice, Min: 0 0=Disabled Motor staging hysteresis	tor staging feature. ed for staging/destaging/	ng is based on the hours run counter s switched on. When destaging, the or is first based on required motor size, Max: 1	-
Unit: - Settings: P2373	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor motor with most hours is switche If staged motors are different size and then if there is still a choice, Min: 0 0=Disabled Motor staging hysteresis P2373 as a percentage of the PII staging delay starts.	tor staging feature. ed for staging/destagin with the least hours is d off. es, the choice of moto on hours run. Def: 0 D setpoint that PID er	ng is based on the hours run counter s switched on. When destaging, the or is first based on required motor size, Max: 1 1=Enabled ror P2294 must exceed before the	_ Level 3
Unit: - Settings: P2373 Unit: %	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor motor with most hours is switche If staged motors are different size and then if there is still a choice, Min: 0 0=Disabled Motor staging hysteresis P2373 as a percentage of the PII staging delay starts. Min: 0.0	tor staging feature. ed for staging/destagin with the least hours is d off. es, the choice of moto on hours run. Def: 0 D setpoint that PID er Def: 20.0	ng is based on the hours run counter s switched on. When destaging, the or is first based on required motor size, Max: 1 1=Enabled ror P2294 must exceed before the Max: 200.0	_ Level 3
Unit: - Settings: P2373	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor motor with most hours is switche If staged motors are different size and then if there is still a choice, Min: 0 0=Disabled Motor staging hysteresis P2373 as a percentage of the PII staging delay starts.	tor staging feature. ed for staging/destagin with the least hours is d off. es, the choice of moto on hours run. Def: 0 D setpoint that PID er Def: 20.0	ng is based on the hours run counter s switched on. When destaging, the or is first based on required motor size, Max: 1 1=Enabled ror P2294 must exceed before the Max: 200.0	_ Level 3
Unit: - Settings: P2373 Unit: %	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor motor with most hours is switche If staged motors are different size and then if there is still a choice, Min: 0 0=Disabled Motor staging hysteresis P2373 as a percentage of the PII staging delay starts. Min: 0.0 Error as a percentage of setpoint Motor staging delay	tor staging feature. ed for staging/destagin with the least hours is d off. es, the choice of moto on hours run. Def: 0 D setpoint that PID er Def: 20.0 that must be exceed	ng is based on the hours run counter is switched on. When destaging, the or is first based on required motor size, Max: 1 1=Enabled ror P2294 must exceed before the Max: 200.0 ed before staging delay starts.	Level 3 Level 3 Level 3 Level 3 Level 3
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Unit: - Settings: P2373 Unit: % Details: P2374 Unit: s Details:	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor motor with most hours is switche If staged motors are different size and then if there is still a choice, Min: 0 0=Disabled Motor staging hysteresis P2373 as a percentage of the PII staging delay starts. Min: 0.0 Error as a percentage of setpoint Motor staging delay Time that PID error P2273 must	tor staging feature. ed for staging/destaging with the least hours is d off. es, the choice of moto on hours run. Def: 0 D setpoint that PID er Def: 20.0 that must be exceed exceed motor staging Def: 30	ng is based on the hours run counter s switched on. When destaging, the or is first based on required motor size, Max: 1 1=Enabled ror P2294 must exceed before the Max: 200.0 ed before staging delay starts. hysteresis P2373 before staging occurs Max: 650	Level 3 Level 3 Level 3 Level 3 Level 3
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Unit: - Settings: P2373 Unit: % Details: P2374 Unit: s Details:	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor motor with most hours is switche If staged motors are different size and then if there is still a choice, Min: 0 0=Disabled Motor staging hysteresis P2373 as a percentage of the PII staging delay starts. Min: 0.0 Error as a percentage of setpoint Motor staging delay Time that PID error P2273 must Motor destaging delay Time that PID error P2273 must	tor staging feature. ed for staging/destagin with the least hours is d off. es, the choice of moto on hours run. Def: 0 D setpoint that PID er Def: 20.0 that must be exceed exceed motor staging Def: 30 teresis before <i>staging</i>	ng is based on the hours run counter s switched on. When destaging, the or is first based on required motor size, Max: 1 1=Enabled ror P2294 must exceed before the Max: 200.0 ed before staging delay starts. hysteresis P2373 before staging occurs Max: 650	Level 3 Level 3 Level 3 Level 3 Level 3
Unit: - Settings: P2373 Unit: % Details: P2374 Unit: s Details: P2375	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor motor with most hours is switche If staged motors are different size and then if there is still a choice, Min: 0 0=Disabled Motor staging hysteresis P2373 as a percentage of the PII staging delay starts. Min: 0.0 Error as a percentage of setpoint Motor staging delay Time that PID error P2273 must Min: 0 Time that error must exceed hyst Motor destaging delay Time that PID error P2273 must occurs.	tor staging feature. ed for staging/destaging with the least hours is d off. es, the choice of moto on hours run. Def: 0 D setpoint that PID er Def: 20.0 that must be exceed exceed motor staging Def: 30 teresis before <i>staging</i> exceed motor staging	ng is based on the hours run counter s switched on. When destaging, the or is first based on required motor size, [Max: 1 1=Enabled ror P2294 must exceed before the [Max: 200.0 ed before staging delay starts. [Max: 650 occurs.] [Max: 650 occurs.]	Level 3
Unit: - Settings: P2373 Unit: % Details: P2374 Unit: s Details: P2375 Unit: s	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor motor with most hours is switche If staged motors are different size and then if there is still a choice, Min: 0 0=Disabled Motor staging hysteresis P2373 as a percentage of the PII staging delay starts. Min: 0.0 Error as a percentage of setpoint Motor staging delay Time that PID error P2273 must Min: 0 Time that error must exceed hyst Motor destaging delay Time that PID error P2273 must occurs. Min: 0	tor staging feature. ed for staging/destagin with the least hours is d off. es, the choice of moto on hours run. Def: 0 D setpoint that PID er Def: 20.0 that must be exceed exceed motor staging Def: 30 teresis before <i>staging</i> exceed motor staging	ng is based on the hours run counter s switched on. When destaging, the or is first based on required motor size, [Max: 1 1=Enabled ror P2294 must exceed before the [Max: 200.0 ed before staging delay starts. [Max: 650 occurs.] [Max: 650 [Max: 650] [Max: 650]	Level 3
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Unit: - Settings: P2373 Unit: % Details: P2374 Unit: s Details: P2375 Unit: s Details: P2375	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selecte P2380. When staging, the motor motor with most hours is switche If staged motors are different size and then if there is still a choice, Min: 0 0=Disabled Motor staging hysteresis P2373 as a percentage of the PII staging delay starts. Min: 0.0 Error as a percentage of setpoint Motor staging delay Time that PID error P2273 must occurs. Min: 0 Time that error must exceed hyst Motor destaging delay Time that PID error P2273 must occurs. Min: 0 Time that error must exceed hyst Delay override P2376 as a percentage of PID set is staged / destaged irrespective	tor staging feature. ed for staging/destagin with the least hours is d off. es, the choice of moto on hours run. Def: 0 Def: 0 Def: 20.0 that must be exceed exceed motor staging Def: 30 teresis before <i>staging</i> exceed motor staging Def: 30 teresis before <i>destagi</i> exceed motor staging	ng is based on the hours run counter is switched on. When destaging, the or is first based on required motor size, Max: 1 1=Enabled Tor P2294 must exceed before the Max: 200.0 ed before staging delay starts. hysteresis P2373 before staging occurs Max: 650 occurs. hysteresis P2373 before destaging Max: 650 ing occurs. error P2273 exceeds this value, a moto	Level 3
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Unit: - Settings: P2373 Unit: % Details: P2374 Unit: s Details: P2375 Unit: s Details: P2376 Unit: % Details:	Enable motor cycling Enables motor cycling for the mo When enabled, the motor selected P2380. When staging, the motor motor with most hours is switche If staged motors are different size and then if there is still a choice, Min: 0 0=Disabled Motor staging hysteresis P2373 as a percentage of the PII staging delay starts. Min: 0.0 Error as a percentage of setpoint Motor staging delay Time that PID error P2273 must occurs. Min: 0 Time that error must exceed hyst Motor destaging delay Time that PID error P2273 must occurs. Min: 0 Time that error must exceed hyst Delay override P2376 as a percentage of PID set is staged / destaged irrespective Min: 0.0 Error as a percentage of setpoint Delay override lockout timer Time for which delay override is	tor staging feature. ed for staging/destagin with the least hours is d off. es, the choice of moto on hours run. Def: 0 Def: 0 Def: 20.0 that must be exceed exceed motor staging Def: 30 teresis before <i>staging</i> exceed motor staging Def: 30 teresis before <i>destag</i> , etpoint. When the PID of the delay timers. Def: 25.0 that if exceeded will prevented after a motor	ng is based on the hours run counter s switched on. When destaging, the or is first based on required motor size, [Max: 1 1=Enabled ror P2294 must exceed before the [Max: 200.0 ed before staging delay starts. [Max: 650 occurs.] [Max: 650 occurs.] [Max: 650 ing occurs.] [Max: 650 ing occurs.] [Max: 650 ing occurs.] [Max: 200.0 [Max: 200.0 [Max: 200.0] [Max: 200.0] [Ma	Level 3
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P2378	Staging frequency f, %fMax				Level 3
	The frequency as a percentage of max. frequency	uency. During a (de) sta	aging event, as t	he variable	
	speed drive ramps from maximum to minimu	um frequency (or vice ve	ersa) this is the f		
	at which the relay (DOUT) is switched. This				-
Unit: %	Min: 0.0 Def: 50		Max: 120.0		
Details:	The frequency as a percentage of fMax at w	hich an external motor	will be started or	rstopped	
r2379	CO/BO: Status of motor staging				Level 3
	Output word from the motor staging feature t	that allows external con	nections to be n	nade.	
Unit: -	Min: - Def: -		Max: -		
Bit fields:		ES,1 NO			
	Bit01 Start motor 2 0 YE	ES,1 NO			
P2380[3]	Motor hours run				Level 3
	Displays hours run for external motors. To re	eset the running hours,	set the value to	zero, any	
	other value is ignored.				-
Unit: h	Min: 0 Def: 0		Max: 100000	Deserved	
Index:		2380[1] : Motor 2 hrs r		P2380[2] :	not used
Note:	To reset the running hours, set the value to a	zero, any other value is	ignorea.		
P2390	Hibernation frequency				Level 3
	When the variable speed drive under PID co				
	hibernation timer P2391 is started. When the			able speed	
Unit: %	drive is ramped down to stop and enters hibe Min: 0 Def: 0	ernation mode (see diag	Max: 200.00		-
Details:	Hibernation frequency setpoint (frequency th	ne motor output will turn			
			011).		
P2391	Hibernation timer				Level 3
	When the hibernation timer P2391 has expire			down to	
Linite o	stop and enters hibernation mode (see desc Min: 0 Def: 0	ription and diagram of F	Max: 254		-
Unit: s Details:			Wax: 254		
		motor output will turn o	20		
	Hibernation restart frequency (frequency the	motor output will turn c	on).		
P2392	Restart PID controller deviation [%]				Level 3
	Restart PID controller deviation [%] While in hibernation mode, the PID controlle	r continues to generate	the error P2294		Level 3
	Restart PID controller deviation [%] While in hibernation mode, the PID controlle reaches the restart point P2392, the variable	r continues to generate speed drive immediate	the error P2294 by ramps to the		Level 3
	Restart PID controller deviation [%] While in hibernation mode, the PID controlle reaches the restart point P2392, the variable calculated by the PID controller (see descrip	r continues to generate speed drive immediate tion and diagram of P23	the error P2294 aly ramps to the 390).	setpoint	Level 3
	Restart PID controller deviation [%] While in hibernation mode, the PID controlle reaches the restart point P2392, the variable calculated by the PID controller (see descrip Once the variable speed drive has left hibern	r continues to generate speed drive immediate tion and diagram of P23 nation mode, it is not po	the error P2294 by ramps to the 390). ssible to go bac	setpoint k into	Level 3
	Restart PID controller deviation [%] While in hibernation mode, the PID controlle reaches the restart point P2392, the variable calculated by the PID controller (see descrip	r continues to generate speed drive immediate tion and diagram of P23 nation mode, it is not po	the error P2294 by ramps to the 390). ssible to go bac	setpoint k into	Level 3
P2392	Restart PID controller deviation [%]While in hibernation mode, the PID controllereaches the restart point P2392, the variablecalculated by the PID controller (see descripOnce the variable speed drive has left hibernhibernation mode, until the variable speed drive setpoint.Min: -200.00Def: 0	r continues to generate speed drive immediate tion and diagram of P2: nation mode, it is not po rive output setpoint has	the error P2294 by ramps to the 390). ssible to go bac reached the res Max: 200.00	setpoint k into	Level 3
P2392	Restart PID controller deviation [%] While in hibernation mode, the PID controlle reaches the restart point P2392, the variable calculated by the PID controller (see descrip Once the variable speed drive has left hibern hibernation mode, until the variable speed du setpoint.	r continues to generate speed drive immediate tion and diagram of P2: nation mode, it is not po rive output setpoint has	the error P2294 by ramps to the 390). ssible to go bac reached the res Max: 200.00	setpoint k into	Level 3
P2392	Restart PID controller deviation [%]While in hibernation mode, the PID controllereaches the restart point P2392, the variablecalculated by the PID controller (see descripOnce the variable speed drive has left hibernhibernation mode, until the variable speed drive has left hibernMin: -200.00Def: 0Hibernation restart frequency (frequency the	r continues to generate speed drive immediate tion and diagram of P2: nation mode, it is not po rive output setpoint has	the error P2294 by ramps to the 390). ssible to go bac reached the res Max: 200.00	setpoint k into	Level 3
P2392 Unit: % Details:	Restart PID controller deviation [%]While in hibernation mode, the PID controllereaches the restart point P2392, the variablecalculated by the PID controller (see descripOnce the variable speed drive has left hibernhibernation mode, until the variable speed drive setpoint.Min: -200.00Def: 0	r continues to generate e speed drive immediate tion and diagram of P2: nation mode, it is not po rive output setpoint has	the error P2294 by ramps to the 390). ssible to go bac reached the res Max: 200.00	setpoint k into	
P2392 Unit: % Details:	Restart PID controller deviation [%] While in hibernation mode, the PID controlle reaches the restart point P2392, the variable calculated by the PID controller (see descrip Once the variable speed drive has left hibern hibernation mode, until the variable speed drive has left hibern hibernation mode, until the variable speed drive has left hibern hibernation mode, until the variable speed drive has left hibern hibernation mode, until the variable speed drive has left hibern hibernation mode, until the variable speed drive has left hibern hibernation mode, until the variable speed drive has left hibern hibernation mode, until the variable speed drive has left hibernation mode. Min: -200.00 Def: 0 Hibernation restart frequency (frequency the distribution mode) End of quick commissioning Performs calculations necessary for optimized after completion of calculation, P3900 and P	er continues to generate e speed drive immediate tion and diagram of P2: nation mode, it is not po rive output setpoint has e motor output will turn of ed motor operation.	the error P2294 ely ramps to the 390). ssible to go bac reached the res Max: 200.00 on).	setpoint k into start	
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P2392 Unit: % Details: P3900 Unit: - Details: Settings: Dependency:	Restart PID controller deviation [%] While in hibernation mode, the PID controller reaches the restart point P2392, the variable calculated by the PID controller (see descrip Once the variable speed drive has left hibern hibernation mode, until the variable speed drive has left hibern hibernation mode, until the variable speed drive has left hibern hibernation mode, until the variable speed drive has left hibern hibernation restart frequency (frequency the End of quick commissioning Min: -200.00 Def: 0 Hibernation restart frequency (frequency the attempt of calculation, P3900 and P automatically reset to their original value 0. Min: 0 Def: 0 Performs calculations necessary for optimize After completion of calculation, P3900 and P automatically reset to their original value 0. Performs calculations necessary for optimize After completion of calculation, P3900 and P original value 0. 0=No quick commissioning 1=Start quick commissioning with factory rest 2=Start quick commissioning only for motor of Changeable only when P0010=1 (quick com When setting 1 is selected, only the parameter are retained; all other parameter changes, in When setting 2 is selected, only those param commissioning" (P0010=1) are calculated.	r continues to generate e speed drive immediate tion and diagram of P2: nation mode, it is not po rive output setpoint has motor output setpoint has motor output will turn of ed motor operation. 20010 (parameter group ed motor operation. 20010 (parameter group cel motor operation. 20010 (parameter group set data missioning) ter settings carried out v coluding the I/O settings neters, which depend of	the error P2294 ely ramps to the 390). ssible to go bac reached the res Max: 200.00 on). s for commission Max: 3 os for commission via the commiss , are lost. Motor n the parameter	setpoint k into start ning) are ning) are aut ning) are aut calculations s in the comr	Level 1 tomatically reset to their "Quick commissioning", are also performed. missioning menu "Quick
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6.6 Overview of factory and user parameter settings

Please enter your parameter settings in the table below.

Parameter number	User settings	Factory settings	Parameter number	User settings	Factory settings	Parameter number	User settings	Factory settings
P0003		1	P0776		1	P1140		1.0
P0004		0	P0773		100	P1141		1.0
P0005		21	P0777		0.0	P1142		1.0
P0006		2	P0778		0	P1200		0
P0010		0	P0779		100.0	P1202		100
P0011		0	P0780		10	P1203		100
P0012		0	P0781		0	P1210		1
P0013		0	P0809		0	P1211		3
P0040		0	P0810		718:0	P1212		30
P0054		-	P0918		3	P1213		30
P0055		-	P0927		15	P1230		0:0
P0056		-	P0952		0	P1232		100
P0086		-	P0970		0	P1233		0
P0100		0	P0971		0	P1236		0
P0304		230	P1000		2	P1240		0
P0305		3.25	P1001		0.00	P1260		0
P0307		0.75	P1002		5.00	P1262		1.000
P0308		0.000	P1003		10.00	P1263	l l	1.0
P0309		0.0	P1004		15.00	P1264		1.0
P0310		50.00	P1005		20.00	P1265		50.00
P0311		0	P1006		25.00	P1266		0:0
P0340		0	P1007		30.00	P1270		0:0
P0350		4.0	P1008		35.00	P1300		2
P0400		0	P1009		40.00	P1310		50.0
P0409		25	P1010		45.00	P1311		0.0
P0501		0	P1011		50.00	P1312		0.0
P0506		754	P1012		55.00	P1335		0.0
P0507		1.0	P1012		60.00	P1336		250
P0508		0	P1014		65.00	P1499		100.0
P0509		0	P1015		65.00	P1800		4
P0601		0	P1016		1	P1820		0
P0610		2	P1017		1	P1910		0
P0640		110.0	P1018		1	P2000		50.00
P0700		2	P1019		1	P2001		1000
P0700 P0701		1	P1019		0:0	P2001 P2002		0.10
P0702		12	P1020		0:0	P2002		0.10
P0703		9	P1021		0:0	P2010		6
P0704		15	P1022		722:3	P2011		0
P0705		15	P1025		1	P2011 P2014		0
P0705		29	P1025		722:4	P2014 P2040		20
P0707		0	P1020		1	P2040		0
P0708		0	P1027		722:5	P2041 P2051		52.0
P0718		0	P1031		1	P2100		0
P0725		1	P1032		1	P2101		0
20731	} }	52:3	P1040		10	P2111		0
		52.2	P1080		10	P2115		0
P0733		0.0	P1082		50	P2181		0
P0748		0	P1091		0.00	P2182		5.00
P0753		100	P1092		0.00	P2183		30.00
P0756		0	P1093		0.00	P2184		50.00
P0757		0	P1094		0.00	P2185		999999.0
P0758		0.0	P1101		2	P2186		0.0
P0759		10	P1110		1:0	P2187		99999.0
P0760		100	P1120		10.00	P2188		0.0
P0761		0	P1121		30.00	P2189		99999.0
P0771		21	P1135		5.00	P2190		0.0

arameter umber	User settings	Factory settings		Parameter number
P2191		3.00		P2374
2191 2192		10		P2375
2200		0.0		P2376
2200		0.00		P2377
2201		10.00		
				P2378
2203		20.00	-	P2380
2204		30.00		P2390
2205		40.00		P2391
2206		50.00		P2392
2207		60.00	-	P3900
2208		70.00		
2209		80.00		
2210		90.00		
2211		100.00	_	
2212		110.00		
2213		120.00		
P2214		230.00		
P2215		130.00		l
P2216		1		Ľ
P2217		1		Γ
P2218		1		
P2219		1		
2220		0.0	1	1
P2221		0.0	1	1
P2222		0.0	1	1
 2223		0.0	1	
P2225		1	1	
P2226		722:4	1	
P2227		1	1	
2227		722.4	1	1
-2220 -22231		1	1	
P2232		1	1	
P2240		10.00	1	
P2253		2250:0	1	
P2254		0.0	1	
P2261		0.00	1	
P2264		755:1	┨ ╞────	<u> </u>
-2265		0.00	┨ ╞────	
			┨ ┣────	
P2267		100.0	┨ ┣────	
P2268		0.00	┨┠────	
P2269		100.0	┨ ╞────	
P2270		0	┨╞────	
P2271		0	┨╞────	
P2274		0	┨╞────	<u> </u>
P2279		0.00	┨╞────	
P2280		1.200	┨╞────	
P2285		30	┨ ╞────	
P2291		100.00		
P2292		0.00		
P2293		0.00		
P2303		0:0		
P2304		60		
P2305		60		
P2306		1		
P2307		0		
P2371		0	1	
	1		1	
P2372		0		

Continued: Overview of factory and user parameter settings

7 Troubleshooting

7.1 Troubleshooting using the operator panel

If a warning or trip code appears on the display, refer to section **7.2.1 Error code list** or section **7.2.2 Warning code lists**.

If the motor does not start with the ON command:

- ➢ Check if P0010 = 0.
- > Check if there is a valid ON signal.
- > Check if P0700 = 2 (for digital input control) or P0700 = 1 (for BOP control).
- Check if the correct setpoint is available (0 to 10 V on terminal 3), or if the setpoint was entered in the correct location in dependence of the setpoint source (P1000). Refer to the parameter list for more detailed information.

If the motor does not start after changing the parameters, set P0010 = 30 and then P0970 = 1, and press P to reset the variable speed drive to the factory-set parameter default values.

Use a switch between terminals 5 and 8 on the control terminal bar. The drive should now run according to the default setpoint at the analog input.

The voltage and current range of the VSD must match the motor data.

Note

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7.2.1 Error code list

Error	Cause	Diagnosis & Remedy	Reaction
F0001 Overcurrent	 Motor power (P0307) is greater than VSD power (P0206). Motor lead short circuit. Earth faults. 	 Check the following: Motor power (P0307) ≤ VSD power (P0206). Cable length limits must not be exceeded. Motor cable and motor must not have short circuits or earth faults. Motor parameters must match the motor in use. Value of stator resistance (P0350) must be correct. The motor must not be obstructed or overloaded. Increase ramp-up time. Reduce boost level. 	Off2
F0002 Overvoltage	 DC link voltage (r0026) exceeds trip level (P2172). Overvoltage can be caused either by too high main supply voltage or if motor is in regenerative mode. Regenerative mode can be caused by fast ramp downs or if the motor is driven from an active load. 	 Check the following: 1. The supply voltage (P0210) must lie within the limits indicated on the rating plate. 2. The DC link voltage controller must be enabled (P1240) and parameterized correctly. 3. The ramp-down time (P1121) must match the inertia of load. 4. The required braking power must lie within the specified limits. Note: Higher inertia requires long ramp-up times; otherwise, apply braking resistor. 	Off2
F0003 Undervoltage	 Mains supply failed. Shock load outside the specified limits. 	 Check the following: The supply voltage (P0210) must lie within the limits indicated on the rating plate. The supply voltage must not be susceptible to temporary failures or voltage reductions outside tolerance. 	Off2
F0004 VSD overtemperature	 Ventilation is inadequate. The fan is inoperative. The ambient temperature is too high. 	 Check the following: 3. The fan must turn when the VSD is running. 4. The pulse frequency must be set to a lower value. 5. The ambient temperature could be higher than specified for the VSD. 	Off2
F0005 VSD I2T	 The VSD is overloaded. The duty cycle is outside the tolerance. The Motor power (P0307) exceeds the VSD power (P0206). 	 Check the following: 1. The load cycle must lie within the limits specified. 2. Motor power (P0307) ≤ VSD power (P0206). 	Off2
F0011 Motor overtemperature	The motor is overloaded.	Check the following: Make sure that the load duty cycles (temporary overload) lie within the limits specified.	Off1
F0012 VSD temperature signal lost	Wire breakage of the VSD temperature sensor (heatsink).		Off2
F0015 Motor temperature signal lost	 Breakage or short-circuit of the motor temperature sensor. If a signal loss is detected, temperature monitoring switches to monitoring the thermic motor image. 		Off2
F0020 1 phase for mains supply missing	One of the 3 phases for the mains supply voltage is missing.	Check the wiring of the 3 phases at the supply voltage input of the VSD.	Off2
F0021 Earth fault	 The fault occurs if the sum of the phase currents is higher than 5% of the nominal VSD current. Note This error message occurs on VSDs with 3 current sensors, i.e., for VSDs of frame sizes D to F. 		Off2

Error	Cause	Diagnosis & Remedy	Reaction
F0022 Power stack fault	 The fault is caused by the following events: (1) dc link overcurrent =short circuit of IGBT. (2) short circuit of dc link chopper. (3) earth fault. Frame sizes A to C (1),(2),(3). Frame sizes D to E (1),(2). Frame size F (2). Since all these faults are assigned to one signal on the power stack, it is not possible to establish which one actually occurred. 		Off2
F0023 Fault at VSD output	The On-phase is interrupted at the VSD output.		Off2
F0024 Rectifier overtemperature	 The ventilation is inadequate. The fan is inoperative. The ambient temperature is too high. 	Check the following:1. The fan must turn when the VSD is running.2. The pulse frequency (P1800) must be set to default value 4 kHz.	
F0030 Fan fault	> The fan no longer works.	The fault cannot be masked while the options module (AOP or BOP) is connected. Replace the fan.	Off2
F0041 Motor data identification failure	 Motor data identification failed. Alarm value = 0: Load is missing. Alarm value = 1: Current limit value reached during identification. Alarm value = 2: Identified stator resistance less than 0.1% or more than 100%. Alarm value = 3: Identified rotor resistance less than 0.1% or more than 100%. Alarm value = 4: Identified stator reactance less than 50% or more than 500%. Alarm value = 5: Identified main reactance less than 50% or more than 500%. Alarm value = 6: Identified rotor time constant less than 10 ms or more than 55. Alarm value = 7: Identified total leakage reactance less than 5% or more than 50%. Alarm value = 8: Identified stator leakage reactance less than 25% or more than 250%. Alarm value = 9: Identified IGBT ON-voltage less than 0.5 or more than 10 V. Alarm value = 40: Inconsistency of identified data set, at least one identification failed. Percentage values based on impedance Zb = Vmot,nom / sqrt(3) / Imot,nom. 	0: Check if the motor is connect to the VSD. 1-40: Check if the motor data in P304-311 are correct. Check the type of motor wiring required (star, delta).	Off2
F0051 Parameter EEPROM fault	Read or write failure while saving non- volatile parameter.	Reset VSD to factory setting and re-parameterize.	Off2
F0052 Power stack fault	Read failure for power stack information or invalid data.	Exchange VSD.	Off2
F0053 I/O EEPROM fault	 Read failure for I/O EEPROM information or invalid data. 	Check the data. Exchange the I/O module.	Off2
F0054 Wrong I/O print	 I/O print is not connected. Wrong I/O print is connected. NO ID found on I/O print, no data. 	Check data flow. Exchange I/O module.	Off2
F0060 ASIC timeout	Internal communication error.	If error reappears, exchange VSD. Contact customer service.	Off2
F0070 CB setpoint fault	No setpoints from CB (communications board) during telegram off time.	Check communications module (CB) and communications partner.	Off2

Error	Cause	Diagnosis & Remedy	Reaction		
F0071 USS (BOP link) setpoint fault	No setpoints from USS during telegram off time.	Check communications to data transmission module. Check USS master.	Off2		
F0072 USS (COM link) setpoint fault	No setpoints from USS during telegram off time.	Check USS master.	Off2		
F0080 ADC input signal lost	 Broken wire at analog input. Signal level outside defined limits. 		Off2		
F0085 External fault	External fault triggered via input terminals.	Disable input terminals for fault trigger, or eliminate external fault.	Off2		
F0101	 Software or processor error 	Check if DIN is set to ON. Run self-test routines.	Off2		
Stack overflow					
F0221 PID feedback below min. value	PID feedback below min. value of P2268.	Change value of P2268. Adjust feedback amplification.	Off2		
F0222 PID feedback below max. value	PID feedback below max. value of P2267.	Change value of P2267. Adjust feedback amplification.			
F0450 BIST tests failure	 Alarm value: Some power section tests have failed. Some control board tests have failed. Some functional test have failed. Some I/O module tests have failed. Internal RAM failed on power-up check. 	The drive may run, but some functions do not work properly. Replace the drive.	Off2		
F0452 Belt failure detected	Load condition changes at the motor indicate a belt failure or mechanical fault.	 Check the following: Drive belt ok. The drive is not obstructed or seized? If external speed sensor is used, check proper function. Check the following parameters: P0409 (impulses/sec on nominal speed) P2191 (belt failure and speed monitoring) P2192 (delay time for P2191). For belt failure detection without sensor, check the following parameters: P2182 (threshold frequency f1) P2183 (threshold frequency f2) P2184 (threshold frequency f3) P2185 (upper torque threshold 1) P2186 (lower torque threshold 1) P2188 (lower torque threshold 2) P2188 (lower torque threshold 2) P2189 (upper torque threshold 3) P2190 (lower torque threshold 3) P2192 (delay for belt failure). 	Off2		

Error	Cause	Diagnosis & Remedy	Reaction	
A0501 Current limit	 Motor power > VSD power. Motor cables are too long. Earth faults. 	 Check the following: Motor power (P0307) ≤ VSD power (P0206). Cable length limits must not be exceeded. Motor cable and motor must not have short circuits or earth faults. Motor parameters must match the motor in use. Value of stator resistance (P0350) must be correct. The motor must not be obstructed or overloaded. Increase ramp-up time. Reduce boost level. 		
A0502 Overvoltage limit	 The overvoltage limit is reached. This warning may appear on ramp-down if the dc link is disabled (P1240 = 0). 	If this warning is displayed permanently, check the drive input voltage or extend the ramp-down time for the drive.		
A0503 Undervoltage limit	 Main power supply failed. The main power supply (P0210) and consequently the DC link voltage (R0026) are below the defined threshold value (P2172). 	Check the main supply voltage (P0210).		
A0504 VSD overtemperature	 The warning level of the VSD heatsink temperature (r0037) is exceeded. This results in a reduced pulse frequency and/or a reduced output frequency (dependent on parameterization in (P0610). 	 Check the following: The ambient temperature must lie within the limits specified. The load conditions and duty cycle must lie within the specified conditions. The fan must turn when the VSD is running. 		
A0505 VSD I ² T	 Warning level exceeded. The current supply is reduced if parameterized (P0610 = 1). Check that the duty cycle lies within the limits specified. Motor power (P0307) > VSD power (P0206). 			
A0506 VSD duty cycle	Difference between the heatsink temperature and the IGBT exceeds the warning levels.	Check the following: Make sure that the load duty cycles (temporary overload) lie within the limits specified.		
A0511 Motor over- temperature I ² T	 The motor is overloaded. The duty cycle is outside the tolerance. 			
A0520 Rectifier overtemperature	The warning level of the rectifier heatsink temperature is exceeded.	 Check the following: The ambient temperature must lie within the limits specified. The load conditions and duty cycle must lie within the specified conditions. The fan must turn when the VSD is running. 		
A0523 VSD output fault	> The On-phase is interrupted at the VSD output.			
A0541 Motor data identification enabled	Motor data identification (P1910) selected or running.			
A0600 RTOS data loss				
A0910 Vdc (max.) controller disabled	 Vdc max controller disabled as not able to keep the DC link voltage (r0026) within threshold limits (P2172). Permanent supply overvoltage. Occurs if the motor is driven by a load forcing the motor to go into energy recovery operation. Occurs during ramp-down of very high duty cycles. 	 Check the following: 1. Input voltage must lie within specified range. 2. The load must be adjusted. 3. In some cases, brake resistance must be applied. 		
A0911 Vdc (max.) controller enabled	 Vdc max controller is enabled. The ramp-down times are increased automatically to keep the DC link voltage (r0026) within the limits specified (P2172). 			

7.2.2 Warning code lists

Error	Cause	Diagnosis & Remedy	Reaction
A0912 Vdc (min) controller enabled	 Vdc min controller enabled if the DC link voltage (r0026) drops below the min. value (P2172). The motor's kinetic energy is used to buffer the DC link voltage and thus slow the drive. 		
	Temporary supply failures do not automatically lead to undervoltage shutdown.		
A0920 ADC parameters	 ADC parameters must not be set to identical values, as illogical values would result. 		
not set properly	Index 0: Parameter settings for output identical.		
	Index 1: Parameter settings for input identical.		
	Index 2: Parameter settings for input do not correspond to ADC type.		
A0921 DAC parameters	 DAC parameters must not be set to identical values, as illogical values would result. 		
not set properly	Index 0: Parameter settings for output identical.		
	Index 1: Parameter settings for input identical.		
	Index 2: Parameter settings for output do not correspond to DAC type.		
A0922	No load is applied to the VSD.		
No load applied to VSD	Some functions may not work as under normal load conditions.		
A0923 Both JOG left and JOG right are requested	Both JOG right and JOG left (P1055/P1056) have been requested. This freezes the RFG output frequency at its current value.		
A0924 Belt failure detected	Load conditions at the motor indicate a belt failure or mechanical fault.	 Check the following: No breakage, seizure, or obstruction of drive train. Correct operation of external speed sensor, if in use. P0402 (pulse/min at rated speed), P2164 (hysteresis frequency deviation) and P2165 (delay time for permissible deviation) must have correct values: P2155 (threshold frequency f1) P2157 (threshold frequency f2) P2159 (threshold frequency f3) P2174 (upper torque threshold 1) P2175 (lower torque threshold 1) P2176 (delay T_Torque) P2183 (lower torque threshold 2) P2184 (upper torque threshold 3) P2185 (lower torque threshold 3) 	

8 Technical data for the SED2

8.1 General technical data

Operating temperature ranges	IP 20: –10 °C to +40 °C. IP 54: –10 °C to +40 °C.
Storage temperature	–40 °C to +70 °C.
Humidity	95% relative humidity — non-condensing.
Altitude	Up to 1000 meters above sea level without performance decrease.
Overload capacity	110 % periodic overload capacity for 60 s within 5 minutes relative to the nominal output current.
Protection functions	Protection against: • Undervoltage • Overvoltage • Earth fault • Short-circuit • Stall • Rotor jam • Motor overtemperature • VSD overtemperature
Electromagnetic compatibility	Integrated EMC filter as per EN 55011 class B (as footprint filter for frame sizes A to C / IP20). The filter is integrated in the VSD for frame sizes D to F/IP20 and for all IP54 devices. Satisfies the requirements of EMC product standard EN 61800-3.
Input frequency	47 to 63 Hz.
Setpoint resolution	0.01 Hz digital, 0.01 Hz serial, 10 bit analog.
Switching frequency	4 kHz to 16 kHz (2 kHz steps).
Fixed frequencies	15 programmable.
Masking frequencies	4 programmable.
Analog inputs	Number: 2 / can be changed over to 0/2 to 10 V (programmable scaling) or 0/4 to 20 mA (programmable scaling). Terminals used: 3, 4, 10, 11 [#] . Resolution: 10 bits. Read cycle: 10 ms. Analog inputs AIN1/2 can be configured for direct connection of an LG-Ni 1000 temperature sensor.
Digital inputs	6 (potential-free) inputs extendable to 8 (see Analog inputs). Freely programmable and possible changeover high-active/ low-active. Terminals used: 5, 6, 7, 8, 16, 17 [#] .

[#] Further information on terminals used: See diagram.

	Min. input current: 6 mA (actual: 8 mA) at ≥15 V. Logical 0 = <3 V, logical 1 = >13 V. Max. input voltage: 33 V.
Analog outputs	Number:2 Can be changed over for 0 to 10 V or 0/4 to 20 mA, (programmable scaling/parameter). Factory setting: 0 to 10 V. Terminals used: 12, 13, 26, $27^{\#}$. Impedance on configuration 0 to 10 V: 1k Ω . Read cycle: 10 ms.
Relay outputs	2 programmable relays, 6 contacts. Terminals used: RL1:18, 19, 20; RL2: 23, 24, 25 [#] . Max. contact rating: DC 30 V / 5 A, (resistive). AC 250 V / 2 A (resistive).
Auxiliary supply 24 V	Galvanically separated, unregulated auxiliary supply (18 to 32 V), 50 mA Terminal 9.
Serial interface	RS 485,(RS 232 optional with converter). Protocols: USS, P1, and N2. Transmission rate: Up to 38.4 kBaud (default 9.6 kBaud).
Power factor	≥0.7
VSD degree of efficiency	96 to 97%.
Switch-on current	Less than nominal input current.
Braking	DC braking, dynamic braking.
CE conformity	Corresponds to the requirements of the low-voltage guideline 73/23/EEC, supplemented by guideline 98/68/EEC and EMC. If installed according to the recommendations issued in this manual, the SED2 satisfies all EMC guideline requirements as defined in the EMC Product Standard for Power Drive Systems EN61800-3.

Dimensions and weight
(frame sizes A to C
IP20 / NEMA 0)

IP20 / NEMA 0							
Frame size	W x H x D (mm)	Weight (kg)					
A without filter	73 x 173 x 149	1.3					
A with filter	73 x 200 x192.5	2					
B without filter	149 x 202 x 172	3.4					
B with filter	149 x 213 x 222.5	4.2					
C without filter	185 x 245 x 195	5.5					
C with filter	185 x 245 x 250	6.7					
D without filter	275 x 520 x 245	16					
D with filter	275 x 520 x 245	17					
E without filter	275 x 650 x 245	20					
E with filter	275 x 650 x 245	22					
F without filter	350 x 850 x 320	56					
F with filter	350 x 1150 x320	75					

Dimensions and weight (frame sizes B to F IP54 / NEMA 12)

IP54 / NEMA 12								
Frame size W x H x D (mm) Weight (kg)								
Frame Size	W x H x D (mm)	with filter	without filter					
В	270 x 385 x 268	11.5	10.3					
С	360 x 606 x 284	21	19.2					
D	360 x 685 x 353	35	35					
E	360 x 885 x 453	48	48					
F	450 x 1150 x 428	99	81					

8.2 Type-specific data

200 V to 240 V, ± 10%, 3 phases							
Output (variable		IP code	Filter class	Max. input current 3 phases	Max. output current	Frame size	Туре (ASN)
kW	hp	IP		Α	Α		
0.37	0.5	20	В	2.4	2.3	А	SED2-0.37/22B
0.55	0.75	20	В	3.1	3	А	SED2-0.55/22B
0.75	1	20	В	4.3	3.9	А	SED2-0.75/22B
1.1	1.5	20	В	6.2	5.5	В	SED2-1.1/22B
1.5	2	20	В	8.3	7.4	В	SED2-1.5/22B
2.2	3	20	В	11.3	10.4	В	SED2-2.2/22B
3	4	20	В	15.6	13.6	С	SED2-3/22B
4	5	20	В	20.1	17.5	С	SED2-4/22B
5.5	7.5	20	В	26.3	22	С	SED2-5.5/22B
7.5	10	20	В	36.4	28	С	SED2-7.5/22B
11	15	20	В	46	42	D	SED2-11/22B
15	20	20	В	60	54	D	SED2-15/22B
18.5	25	20	В	75	68	D	SED2-18.5/22B
22	30	20	В	88	80	E	SED2-22/22B
30	40	20	В	114	104	E	SED2-30/22B
37	50	20	В	143	130	F	SED2-37/22B
45	60	20	В	170	154	F	SED2-45/22B
0.37	0.5	20	unfiltered	2.4	2.3	А	SED2-0.37/22X
0.55	0.75	20	unfiltered	3.1	3	А	SED2-0.55/22X
0.75	1	20	unfiltered	4.3	3.9	А	SED2-0.75/22X
1.1	1.5	20	unfiltered	6.2	5.5	В	SED2-1.1/22X
1.5	2	20	unfiltered	8.3	7.4	В	SED2-1.5/22X
2.2	3	20	unfiltered	11.3	10.4	В	SED2-2.2/22X
3	4	20	unfiltered	15.6	13.6	С	SED2-3/22X
4	5	20	unfiltered	20.1	17.5	С	SED2-4/22X
5.5	7.5	20	unfiltered	26.3	22	С	SED2-5.5/22X
7.5	10	20	unfiltered	36.4	28	С	SED2-7.5/22X
11	15	20	unfiltered	46	42	D	SED2-11/22X
15	20	20	unfiltered	60	54	D	SED2-15/22X
18.5	25	20	unfiltered	75	68	D	SED2-18.5/22X
22	30	20	unfiltered	88	80	E	SED2-22/22X

200 V to 240 V, ± 10%, 3 phases							
Output power (variable torque)IP codeFilter classMax. input current 3 phasesMax. output currentMax. output currentType (ASN)						~ •	
kW	hp	IP		Α	Α		
30	40	20	unfiltered	114	104	E	SED2-30/22X
37	50	20	unfiltered	143	130	F	SED2-37/22X
45	60	20	unfiltered	170	154	F	SED2-45/22X

	380 V to 480 V, ± 10%, 3 phases							
	t power e torque)	IP code	Filter class	Max. input current 3 phases	Max. output current	Frame size	Type (ASN)	
kW	hp	IP		Α	Α			
0.37	0.5	20	В	1.6	1.2	А	SED2-0.37/32B	
0.55	0.75	20	В	2.1	1.6	А	SED2-0.55/32B	
0.75	1	20	В	2.8	2.1	А	SED2-0.75/32B	
1.1	1.5	20	В	4.2	3	А	SED2-1.1/32B	
1.5	2	20	В	5.8	4	А	SED2-1.5/32B	
2.2	3	20	В	7.5	5.9	В	SED2-2.2/32B	
3	4	20	В	10	7.7	В	SED2-3/32B	
4	5	20	В	12.8	10.2	В	SED2-4/32B	
5.5	7.5	20	В	16.6	13.2	С	SED2-5.5/32B	
7.5	10	20	В	24	18.4	С	SED2-7.5/32B	
11	15	20	В	33.8	26	С	SED2-11/32B	
15	20	20	В	42	32	С	SED2-15/32B	
18.5	25	20	В	45.7	38	D	SED2-18.5/32B	
22	30	20	В	50	45	D	SED2-22/32B	
30	40	20	В	68	62	D	SED2-30/32B	
37	50	20	В	83	75	E	SED2-37/32B	
45	60	20	В	99	90	E	SED2-45/32B	
55	75	20	В	121	110	F	SED2-55/32B	
75	100	20	В	160	145	F	SED2-75/32B	
90	125	20	В	196	178	F	SED2-90/32B	
0.37	0.5	20	unfiltered	1.6	1.2	A	SED2-0.37/32X	
0.55	0.75	20	unfiltered	2.1	1.6	A	SED2-0.55/32X	
0.75	1	20	unfiltered	2.8	2.1	A	SED2-0.75/32X	
1.1	1.5	20	unfiltered	4.2	3	A	SED2-1.1/32X	
1.5	2	20	unfiltered	5.8	4	A	SED2-1.5/32X	
2.2	3	20	unfiltered	7.5	5.9	В	SED2-2.2/32X	
3	4	20	unfiltered	10	7.7	В	SED2-3/32X	
4	5	20	unfiltered	12.8	10.2	В	SED2-4/32X	
5.5	7.5	20	unfiltered	16.6	13.2	С	SED2-5.5/32X	
7.5	10	20	unfiltered	24	18.4	С	SED2-7.5/32X	
11	15	20	unfiltered	33.8	26	С	SED2-11/32X	
15	20	20	unfiltered	42	32	С	SED2-15/32X	
18.5	25	20	unfiltered	45.7	38	D	SED2-18.5/32X	
22	30	20	unfiltered	50	45	D	SED2-22/32X	

116/126

		3	80 V to 4	80 V, ± 10%,	3 phases		
	t power e torque)	IP code	Filter class	Max. input current 3 phases	Max. output current	Frame size	Type (ASN)
kW	hp	IP		Α	Α		
30	40	20	unfiltered	68	62	D	SED2-30/32X
37	50	20	unfiltered	83	75	E	SED2-37/32X
45	60	20	unfiltered	99	90	E	SED2-45/32X
55	75	20	unfiltered	121	110	F	SED2-55/32X
75	100	20	unfiltered	160	145	F	SED2-75/32X
90	125	20	unfiltered	196	178	F	SED2-90/32X
1.1	1.5	54	В	4.2	3	В	SED2-1.1/35B
1.5	2	54	В	5.8	4	В	SED2-1.5/35B
2.2	3	54	В	7.5	5.9	В	SED2-2.2/35B
3	4	54	В	10	7.7	В	SED2-3/35B
4	5	54	В	12.8	10.2	В	SED2-4/35B
5.5	7.5	54	В	16.6	13.2	С	SED2-5.5/35B
7.5	10	54	В	24	18.4	С	SED2-7.5/35B
11	15	54	В	33.8	26	С	SED2-11/35B
15	20	54	В	42	32	С	SED2-15/35B
18.5	25	54	В	45.7	38	D	SED2-18.5/35B
22	30	54	В	50	45	D	SED2-22/35B
30	40	54	В	68	62	D	SED2-30/35B
37	50	54	В	83	75	Е	SED2-37/35B
45	60	54	В	99	90	Е	SED2-45/35B
55	75	54	В	121	110	F	SED2-55/35B
75	100	54	В	160	145	F	SED2-75/35B
90	125	54	В	196	178	F	SED2-90/35B
1.1	1.5	54	unfiltered	4.2	3	В	SED2-1.1/35X
1.5	2	54	unfiltered	5.8	4	В	SED2-1.5/35X
2.2	3	54	unfiltered	7.5	5.9	В	SED2-2.2/35X
3	4	54	unfiltered	10	7.7	В	SED2-3/35X
4	5	54	unfiltered	12.8	10.2	В	SED2-4/35X
5.5	7.5	54	unfiltered	16.6	13.2	С	SED2-5.5/35X
7.5	10	54	unfiltered	24	18.4	С	SED2-7.5/35X
11	15	54	unfiltered	33.8	26	С	SED2-11/35X
15	20	54	unfiltered	42	32	С	SED2-15/35X
18.5	25	54	unfiltered	45.7	38	D	SED2-18.5/35X
22	30	54	unfiltered	50	45	D	SED2-22/35X
30	40	54	unfiltered	68	62	D	SED2-30/35X
37	50	54	unfiltered	83	75	E	SED2-37/35X
45	60	54	unfiltered	99	90	E	SED2-45/35X
55	75	54	unfiltered	121	110	F	SED2-55/35X
75	100	54	unfiltered	160	145	F	SED2-75/35X
90	125	54	unfiltered	196	178	F	SED2-90/35X

500 V to 600 V, ± 10%, 3 phases							
Output (variable		IP code	Filter class	Max. input current 3 phases	Max. output current	Frame size	Туре (ASN)
kW	hp	IP		Α	Α		
0.75	1	20	unfiltered	2	1.4	С	SED2-0.75/42X
1.1	1.5	20	unfiltered	2.5	2.1	С	SED2-1.1/42X
1.5	2	20	unfiltered	3.2	2.7	С	SED2-1.5/42X
2.2	3	20	unfiltered	4.4	3.9	С	SED2-2.2/42X
3	4	20	unfiltered	6.3	5.4	С	SED2-3/42X
4	5	20	unfiltered	6.9	6.1	С	SED2-4/42X
5.5	7.5	20	unfiltered	9.4	9	С	SED2-5.5/42X
7.5	10	20	unfiltered	12.6	11	С	SED2-7.5/42X
11	15	20	unfiltered	18.1	17	С	SED2-11/42X
15	20	20	unfiltered	24.9	22	С	SED2-15/42X
18.5	25	20	unfiltered	30	27	D	SED2-18.5/42X
22	30	20	unfiltered	35	32	D	SED2-22/42X
30	40	20	unfiltered	45	41	D	SED2-30/42X
37	50	20	unfiltered	57	52	E	SED2-37/42X
45	60	20	unfiltered	68	62	E	SED2-45/42X
55	75	20	unfiltered	85	77	F	SED2-55/42X
75	100	20	unfiltered	109	99	F	SED2-75/42X
90	125	20	unfiltered	138	125	F	SED2-90/42X
1.1	1.5	54	unfiltered	2.5	2.1	С	SED2-1.1/45X
1.5	2	54	unfiltered	3.2	2.7	С	SED2-1.5/45X
2.2	3	54	unfiltered	4.4	3.9	С	SED2-2.2/45X
3	4	54	unfiltered	6.3	5.4	С	SED2-3/45X
4	5	54	unfiltered	6.9	6.1	С	SED2-4/45X
5.5	7.5	54	unfiltered	9.4	9	С	SED2-5.5/45X
7.5	10	54	unfiltered	12.6	11	С	SED2-7.5/45X
11	15	54	unfiltered	18.1	17	С	SED2-11/45X
15	20	54	unfiltered	24.9	22	С	SED2-15/45X
18.5	25	54	unfiltered	30	27	D	SED2-18.5/45X
22	30	54	unfiltered	35	32	D	SED2-22/45X
30	40	54	unfiltered	45	41	D	SED2-30/45X
37	50	54	unfiltered	57	52	E	SED2-37/45X
45	60	54	unfiltered	68	62	E	SED2-45/45X
55	75	54	unfiltered	85	77	F	SED2-55/45X
75	100	54	unfiltered	109	99	F	SED2-75/45X
90	125	54	unfiltered	138	125	F	SED2-90/45X

9 Appendix

9.1 Options

	Depending on the application, various options are available for the SED2 variable speed drive.
Output chokes	Chokes at the VSD output may be required to compensate for leakage capacitance. Refer to the engineering manual for detailed information on this topic.
Gland plate ASN FS A: SED2-GL-A FS B: SED2-GL-B FS C: SED2-GL-C	The gland plate simplifies and improves connection of shielded motor and control cables. It allows for better contact of the shields and thus optimizes the EMC behavior of the variable speed drive. There are different gland plates depending on the frame size of the VSD.
Advanced operator panel (AOP) ASN: SED2-AOP1	Operator panel with multilingual and multi-line clear-text display that can be used instead of the basic operator panel BOP. The AOP can be inserted on the VSD or integrated in the front plate or the control panel doors by means of a mounting set. For further information, refer to section 5.3.2 Description of the advanced operator panel (AOP) or the AOP user's guide.
BOP/AOP door mounting set for 1 VSD control ASN: SED2-DOOR-KIT1	Used to mount the BOP or AOP operator panel in the control cabinet door. The set contains an AOP/BOP cable adapter print, and an adapter for the VSD which is inserted in the VSD in place of the BOP or AOP. The serial interface RS232 and the power supply are both run to the adapters, which have screwless connection terminals. The 4-core connection cable is not part of the mounting set.
BOP/AOP door mounting set for multiple VSD control ASN: SED2-DOOR-KIT2	The AOP communicates with several SED2 drives via RS485 (USS protocol). This mounting set allows for controlling several VSDs in a control panel by means of one AOP (mounted in the control cabinet door). Thus, up to 31 VSDs can be controlled from one AOP. The AOP interface print also contains a separate RS232 interface. The VSD uses this interface to communicate with a PC. The cables are not included in the set.
PC – SED2 connection set ASN: SED2-PC-KIT	This kit helps control or program the SED2 from a PC via the serial interface RS232 by using a commissioning software. The set contains an RS232 adapter card which is snapped on the VSD in place of the AOP or BOP. The RS485 interface is not used.
PC – AOP kit ASN: SED2-PC-AOP-KIT	Allows for programming the AOP independent of the VSD from a PC, or to download or upload complete sets of parameters. The kit consists of a 3 m long modem cable and a power supply unit (to supply power to the AOP). The kit does not include the AOP.
Communication interface module	The LON module is not yet available. Expect for end of 2002.
Software options	The commissioning software is not yet available.

9.1.1 Retrofitting EMC filters for VSD frame sizes A to C

The SED2 VSDs of frame sizes A to C without filter can be retrofitted with footprint filters as needed. Mounting instructions are included in the filter packing. Below are the order numbers for the voltage ranges and frame sizes:

Frame size	200 V to 240 V, 3 AC	380 V to 480 V, 3 AC	500 V to 575 V, 3 AC
Α	SED2-BFLTR-A	SED2-BFLTR-A	No filter available.
В	SED2-BFLTR-B	SED2-BFLTR-B	No filter available.
С	SED2-BFLTR-C-L	SED2-BFLTR-C-H	No filter available.

9.2 Applicable standards

European low-voltage guideline

The SED2 product range corresponds to the requirements of the low-voltage guideline 73/23/EEC, supplemented by guideline 98/68/EEC. The devices have been certified to the following standards:

EN 60146-1-1 Semiconductor inverters – General requirements and line commutated inverters.

EN 60204-1 Safety of machinery – Electrical equipment of machines.

European guideline for machinery

This guideline does not apply to the SED2 VSD product series. The products were tested comprehensively and evaluated for adherence to important guidelines pertaining to health and safety in a typical application. A declaration of conformity will be provided on request.

European EMC guideline

If installed according to the recommendations issued in this manual, the SED2 satisfies all EMC guideline requirements as defined in the EMC Product Standard for Power Drive Systems EN61800-3.



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Underwriters Laboratories

Frequency inverter devices 5B33 approved by UL and CUL for use in pollution class 2 environments.

ISO 9001

Siemens SBT applies a quality management system according to the requirements of ISO 9001.

9.3 List of abbreviations

AC	Alternating current.
A/D	Analog / digital converter (also called ADC).
AIN	Analog input.
AOP	Advanced operator panel (AOP).
AOUT	Analog output.
BACS	Building automation and control system; do not confuse with building management system BMS.
BI	Binector input, i.e., the parameter selects the source of the binary signal.
во	Binector output, i.e., the parameter connects as a binary signal.
ВОР	Basic operator panel (BOP).
СВ	Communication board.
CDS	Command data set.
CI	Plug input, i.e., the parameter selects the source of the analog signal.
СО	Plug output, i.e., the parameter connects as an analog signal.
CO/BO	Plug/binector output, i.e., the parameter connects as an analog and/or binary signal.
D/A	Digital / analog converter (also called DAC).
DC	Direct current.
Destaging	For pumps (or fans): The process of stopping an additional motor with constant speed to reduce power.
DIN	Digital input.
DOUT	Digital output.
ELCB	Earth leakage circuit breaker.
EMC	Electromagnetic compatibility.
EMI	Electromagnetic interference.
FCC	Flux current control.
FS	Frame size of the SED2 variable speed drives.
IEC	International electrotechnical commission.
IGBT	Insulated gate bipolar transistor.
IPxx	 IP number (ingress protection) for the type of protection afforded to the device. IP20 Device protected against intrusion of items greater >12 mm. No protection against water. (Corresponds to the US standard NEMA 1). IP54 Device protected against dust and spray from all directions. (Corresponds to the US standard NEMA 12).
LCD	Liquid crystal display.
PID	Proportional, integral, differential (controller).
РТС	Positive temperature coefficient.
RCCB	Residual current circuit breaker.

Staging	For pumps (or fans): The process of starting an additional motor with constant speed to increase power.
USS	Universal serial interface protocol.
VSD	Variable speed drive.
Y-condensator	Star condensator.

Α

abbreviations	118
access to connection terminals	
frame sizes B and C	25
frame sizes D to F	26
access to connection terminals for frame size A.	24
advanced operator panel4	1, 116
ambient conditions	11
analog inputs	53
analog outputs	56
applicable standards	117
authorized personnel	7

В

basic functions of the SED2	51
basic operation with the BOP	47
belt failure detection with sensor	63
belt failure detection without sensor	61
block diagram for mains	34
BOP/AOP door mounting set	116
bus bar	21
bypass	
VSD	69
bypassing the VSD	69

С

cable routing for frame size A, with footprint filter22
cable routing for frame size F, IP20 with EMC filter 23
checklist prior to start40
choke116
command source selection58
commissioning38
flow chart for quick commissioning44
overview43
quick commissioning43
types of commissioning43
with BOP or AOP45
communication59
connecting several motors35
contactor21
control terminals
access
control types59
country-specific default settings45

D

dangerous voltages	10
destaging	65
digital inputs	51
dimensions	

SED2 drives with IP54/NEMA 12 rating 14
SED2 footprint filters for frame sizes A to C 13
SED2 frame sizes A to C 12
SED2 frame sizes D to F 13
DIP switch setting
DIP switch settings
direction of rotation
disposal 8
document conventions7
drilling plan
SED2 IP20/NEMA 0 15
SED2 IP54/NEMA 12 16

Ε

electric installation	
mains and motor connections 17,	23
electrical installation	17
electromagnetic interference	21
EMC-compatible installation	21
emergency stop facility 10,	38
EMI	21
environmental compatibility and disposal	8
error code list 1	05
error messages1	05

F

factory and user settings	102
frequency setpoint	58

G

general operation of SED2	48
general technical data	110
getting started guide	6
gland plate	116
grounding conductor	
grounding point	

Н

hibernation mode	71
high voltage insulation test equipment	23
HVAC functions for SED2	60

I

installation after extended storage......11

М

mains and motor connections	23
mains connection with integrated EMC filter	
frame sizes D to F	29
mechanical installation	11
motor cable length 1	7, 21
motor data for parameterization	45

Siemens Building Technologies HVAC Products

motor overload protection	8
mounting	
SED2 IP20/NEMA 0 15	5
SED2 IP54/NEMA 12 16	ô
warnings12	2

Ν

notes on danger	9
-----------------	---

0

OFF functions	59
opening the device	12
opening the housing	
frame size F	27
frame sizes D and E, IP20	26
operation with residual current device (RCD)	20
operation with ungrounded systems	17
operator panel for SED2	
exchange	24
operator panels for SED2	
advanced operator panel	41
basic operator panel	40
operator panels of the SED2	
exchange	41
operator panels SED2	
buttons and function description	42
options	116

Ρ

parameterization	
analog inputs	53
analog outputs	
belt failure detection with sensor	
belt failure detection without sensor	61
bypass function	69
command source selection	58
digital inputs	51
frequency setpoint	58
hibernation function	72
introduction to the SED2 system parameters.	49
overview	50
overview factory settings	102
parameter access levels	49
parameter filter	49
PID controller	60
staging motors	66
temperature control with LG-Ni 1000 sensor	68
PC – AOP kit	116
PC – SED2 connection set	116
PID controller	60
pig tails	21
power and motor cables	
sizing	32
power connection with integrated EMC filter	

frame sizes A to C2	9
programming4	9
PTC thermistor10, 3	5
purpose of the device	9

Q

quick commissioning4	3
----------------------	---

R

remove BOP or AOP	24
remove I/O modules	24
repairs	10
reset parameters to factory settings	47
residual current device (RCD)	20
retrofitting EMC filters	117
risk of electric shock	9

S

•	
safety instructions	9
SED2 block diagram	
setting parameters with BOP or AOP	
shielded cables	21
staging	65
staging pumps or fans	64
standards	
european EMC guideline	117
european EMC guideline european guideline for machinery	
european guideline for machinery	117
	117 117
european guideline for machinery european low-voltage guideline	117 117 117
european guideline for machinery european low-voltage guideline ISO 9001	117 117 117 117
european guideline for machinery european low-voltage guideline ISO 9001 underwriters laboratories	

т

target audience6
temperature control with LG-Ni 1000 sensor68
terminal layout
frame size A28
frame size F29
frame sizes B and C28
frame sizes D and E28
tightening torque for connection terminals
troubleshooting104
type-specific data112

۷

```
validity of operating instructions......6
```

W

warning code list108

Y

Y capacitor17

124/126

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126/126

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