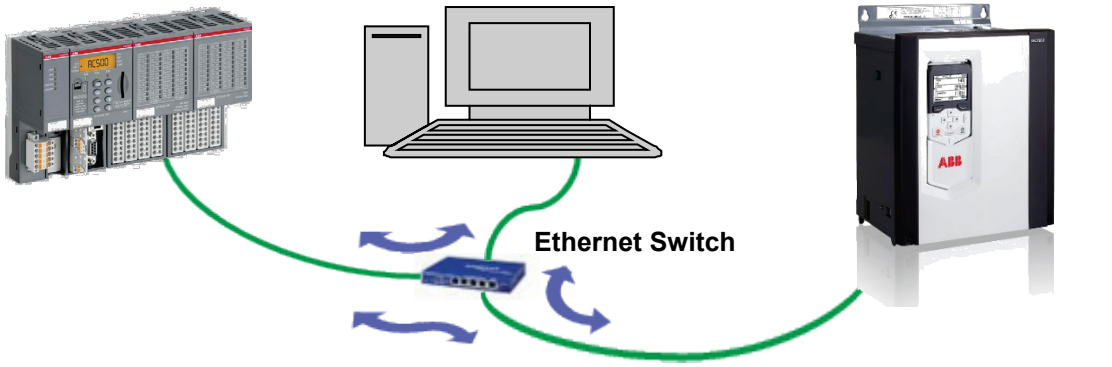
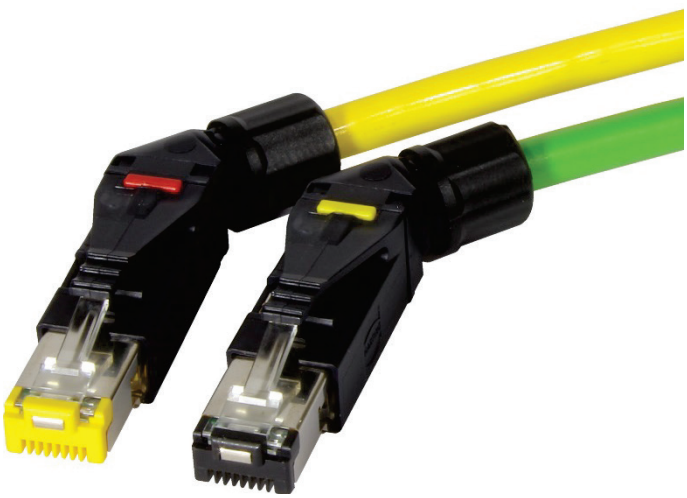
# Product Information
# DCS880 via FENA-11/21

## Connection of DCS880 via FENA-11/21 at Profinet



**Connector:**
RJ45-Plug, Harting RJ Industrial10G.

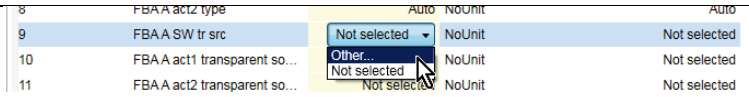
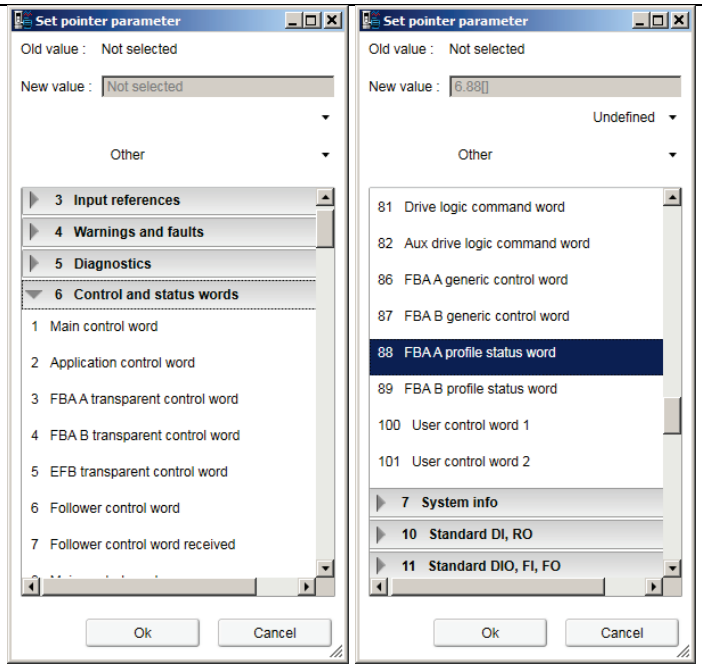
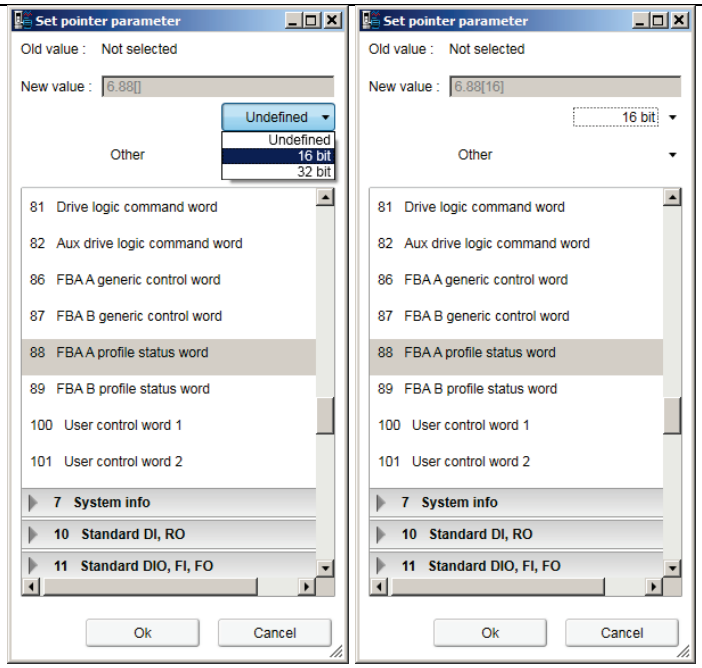
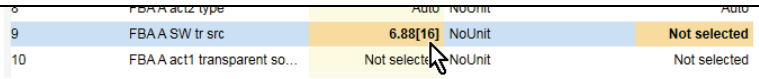
# General information

## Firmware version

2.02.x.x.

## How to use the function Other…

E.g. connect 06.88 FBA A profile status word to 50.09 FBA A SW transparent source.

| | |
|---|---|
| In 50.09 FBA A SW transparent source choose **Other…** |  |
| Open **group 6** and choose parameter **06.88**: |  |
| Choose **16 bit** and press **Ok**: |  |
| Now the connection is done: |  |

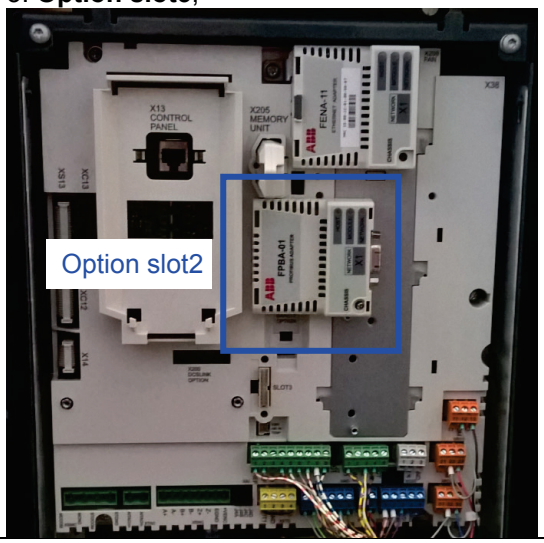
## GSDML-File

The GSDML-file can be found here:
http://new.abb.com/drives/connectivity/fieldbus-connectivity/profinet


# DCS880 Configuration as fieldbus device

## Parameter Group 50

To connect the DCS880 as fieldbus device, following parameters need to be set:

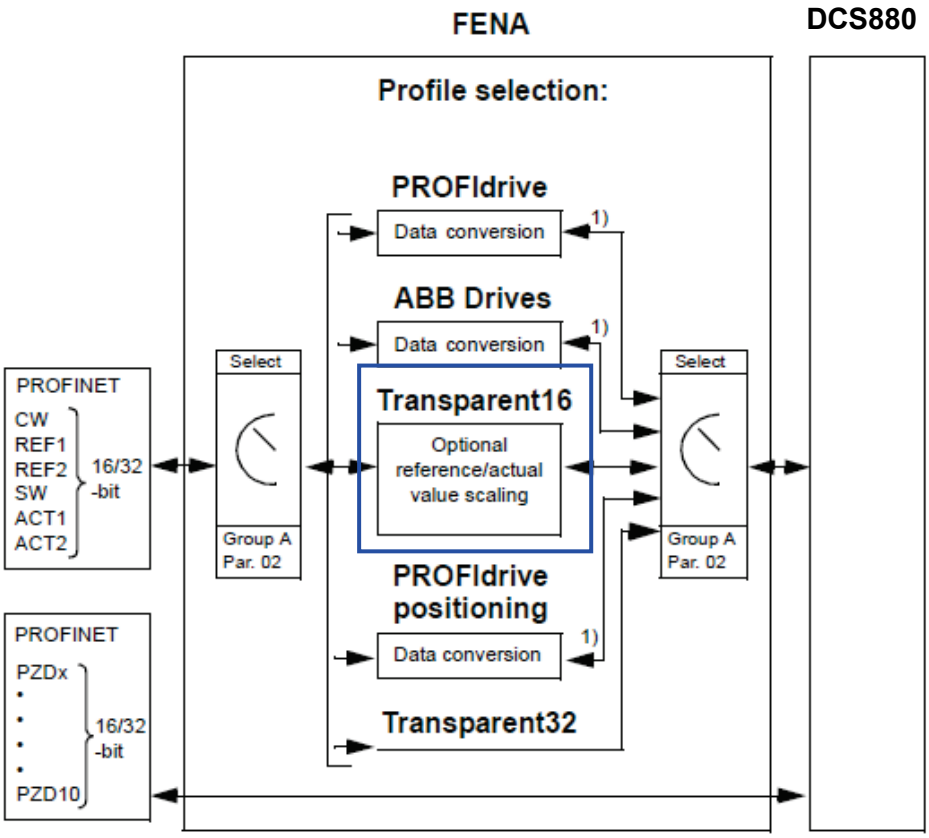
| Parameter | Setting |
|---|---|
| **50.01 FBA A Enable** | 0: **Disable**;<br>1: **Option slot1**;<br>2: **Option slot2**; recommended.<br>3: **Option slot3**;<br>  |
| **50.02 FBA A comm loss func** | 0: **No action**;<br>1: **Fault**; occurs only when the drive is controlled from the fieldbus.<br>2: **Warning**;<br>3: **Last speed**;<br>4: **Speed reference safe**;<br>5: **Fault always**; occurs even though no control is expected from the fieldbus. |
| **50.03 FBA A comm loss timeout** | 300 ms. |
| **50.29 FBA A Profile** | 0: **ABB Drive profile**;<br>4: **DCP**; |
| ⚠ | Each change in parameter groups 50, 51, 52 and 53 must be validated using 51.27 FBA A par refresh = Refresh. |

# Parameter Group 51

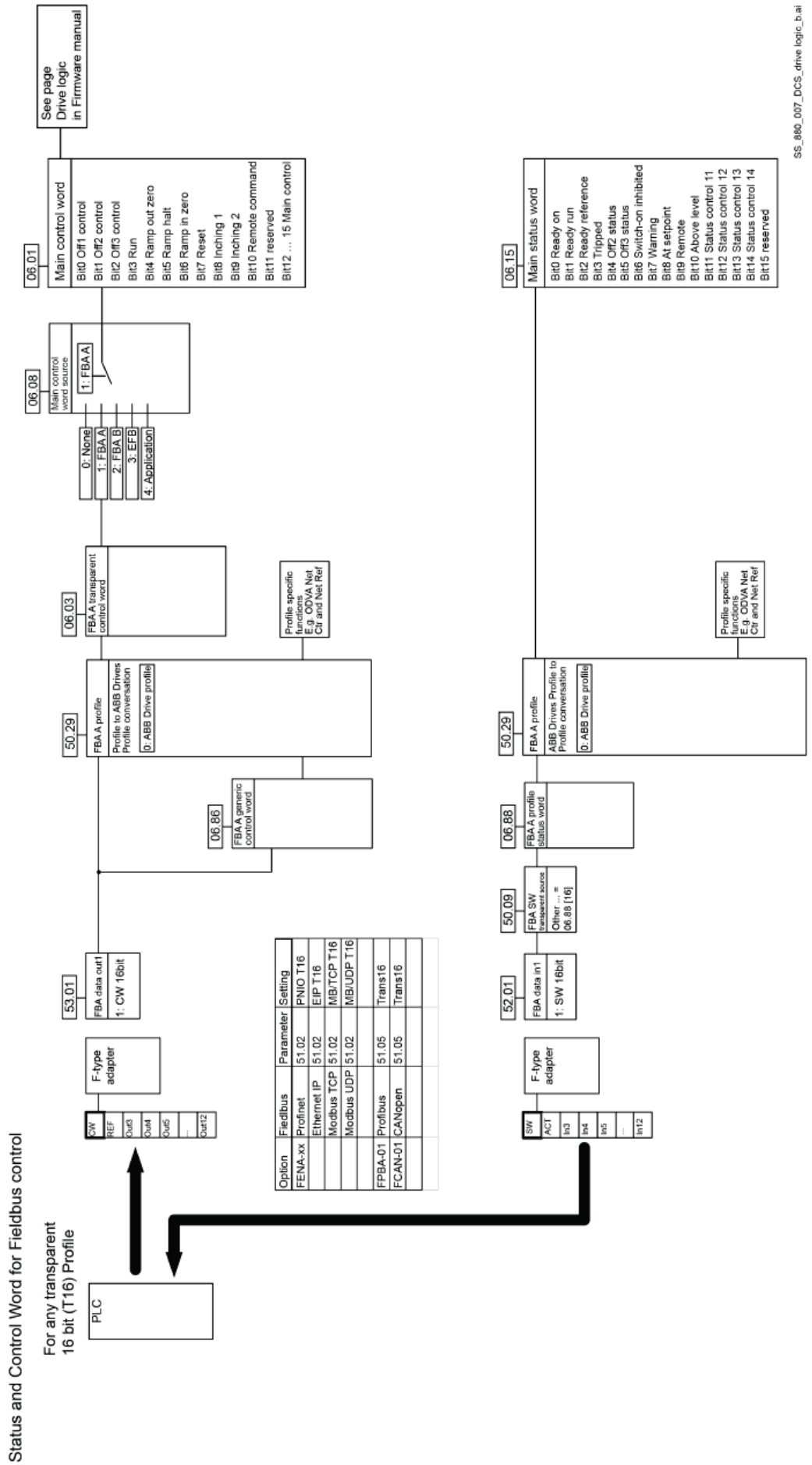
| Parameter | Setting |
|---|---|
| **51.01 FBA A type** | 128: **FENA-11/21**; signal thus, read-only. |
| **51.02 Protocol/Profile** | For PROFINET IO:<br>10: **PNIO Pdrive**; not recommended.<br>11: **PNIO ABB Pro**; not recommended.<br>12: **PNIO T16**; scaling via 50.29 FBA A profile.<br>13: **PNIO T32**;<br>14: **PNIO PdriveM**; **NOT** supported. |
| **51.03 Commrate** | 0: **Auto**; sets the bit rate for the Ethernet interface. |
| **51.04 IP configuration** | 0: **Static IP**; example.<br>1: **Dyn IP DHCP**; |
| **51.05 IP address 1** | **192**; example. |
| **51.06 IP address 2** | **168**; example. |
| **51.07 IP address 3** | **1**; example. |
| **51.08 IP address 4** | **10**; example. |
| **51.08 Subnet CIDR** | **24**; example. |

| Dotted decimal | CIDR |
|---|---|
| 255.255.255.254 | 31 |
| 255.255.255.252 | 30 |
| 255.255.255.248 | 29 |
| 255.255.255.240 | 28 |
| 255.255.255.224 | 27 |
| 255.255.255.192 | 26 |
| 255.255.255.128 | 25 |
| 255.255.255.0 | 24 |
| 255.255.254.0 | 23 |
| 255.255.252.0 | 22 |
| 255.255.248.0 | 21 |
| 255.255.240.0 | 20 |
| 255.255.224.0 | 19 |
| 255.255.192.0 | 18 |
| 255.255.128.0 | 17 |
| 255.255.0.0 | 16 |

# Communication Profiles (51.02 Protocol/Profile)

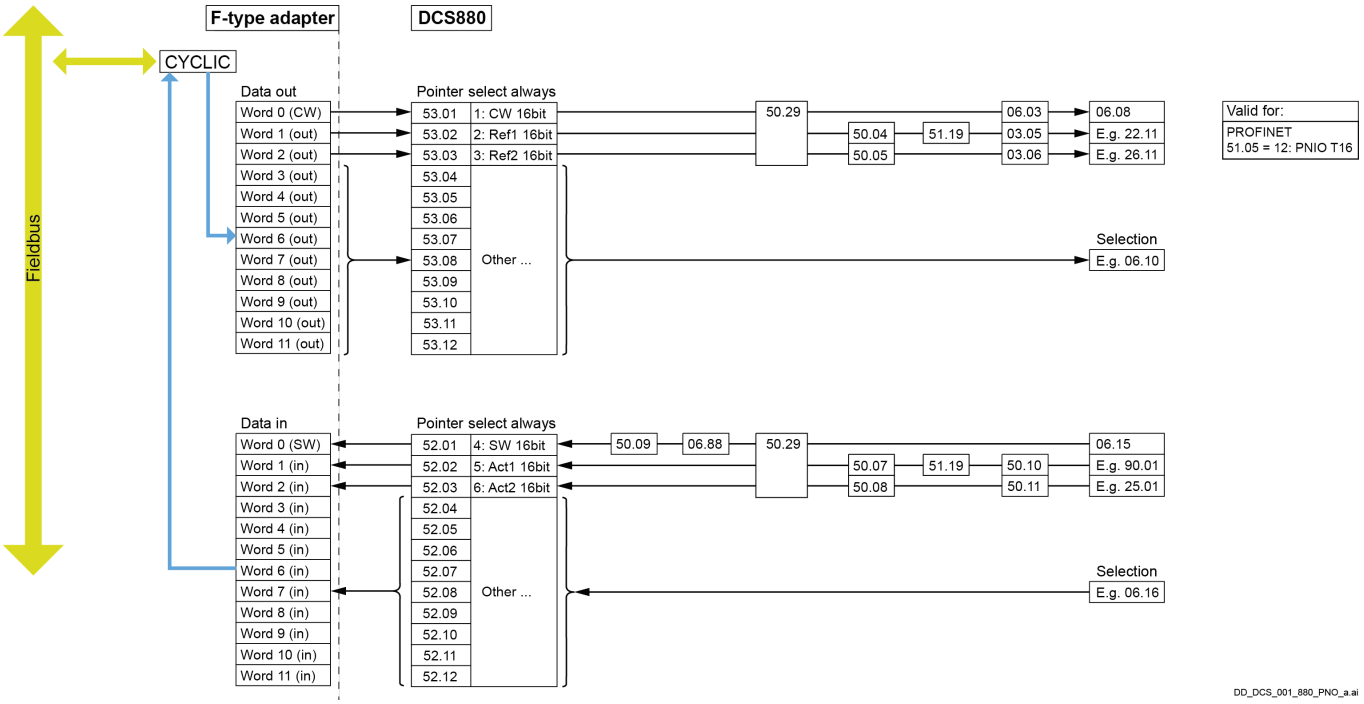


# Profile conversion and SW and CW handling



# Parameter Group 52

Configuration using SW 16bit, Act1 16bit, Act2 16bit and Other...



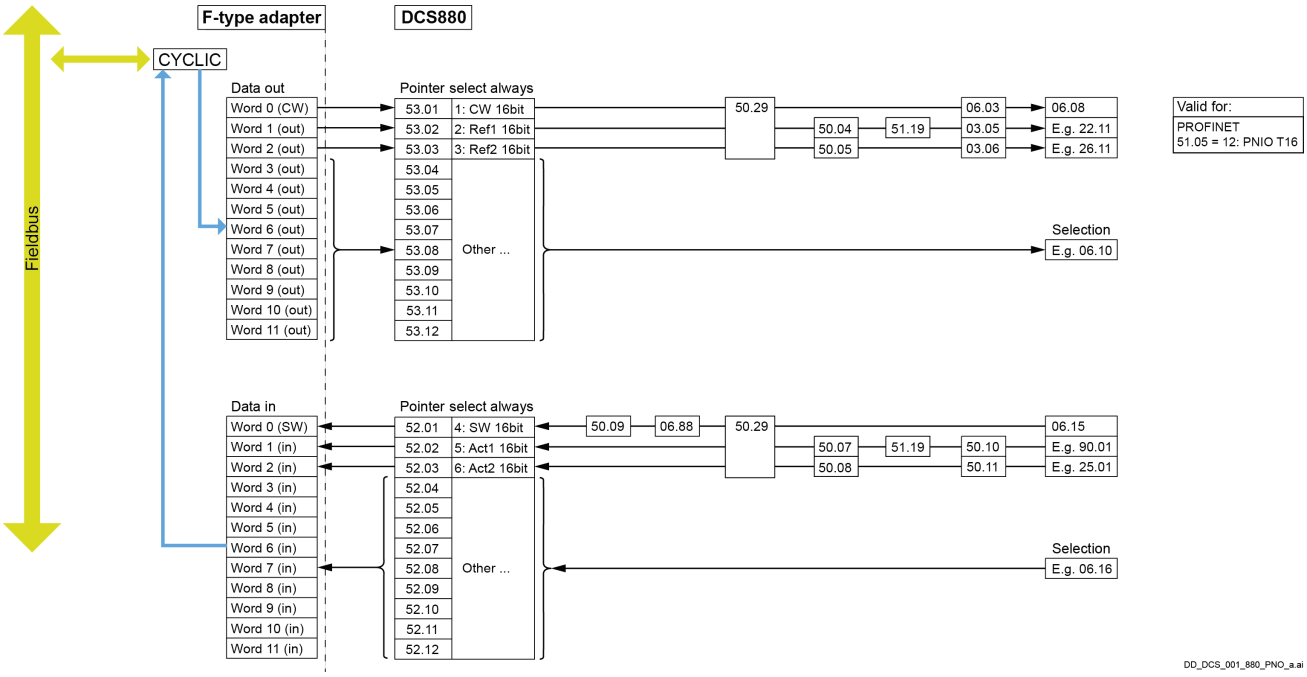

| | |
|---|---|
| ⚠ | Setting of parameters 52.01 ... 52.03 see above drawing. Do **not** use Other…! |
| | For parameters 52.04 … 52.12 only mapping **Other…** is valid.<br>Different mappings like SW 16bit, Act1 16bit or Act2 16bit are not allowed. |

| Defining the actual values in group 52: PLC ⇐ DCS880. | | | |
|---|---|---|---|
| **PZD** | **Pointer** | **Setting** | **Remarks** |
| 1 | **52.01** | 4: **SW 16bit**; | 50.09 FBA A SW transparent source = **Other… = 06.88[16]**, for e.g. 06.88 FBA A profile status word.<br>50.29 FBA A profile = **ABB Drive profile**.<br>06.88 FBA A profile status word. Main Status Word after conversion with FBA A profile. |
| 2 | **52.02** | 5: **ACT1 16bit**; | 50.10 FBA A act1 transparent source = **Other… = 90.01[16]**, for e.g. 90.01 Motor speed for control.<br>51.19 T16 scale = **0**; sets the divisor (divisor = 51.19 + 1).<br>50.07 FBA A actual 1 type = **Speed**.<br>50.29 FBA A profile = **ABB Drive profile**. |
| 3 | **52.03** | 6: **ACT2 16bit**; | 50.11 FBA A act2 transparent source = **Other… = 25.01[16], for** e.g. 25.01 Torque reference speed control.<br>50.08 FBA A actual 2 type = **Torque**.<br>50.29 FBA A profile = **ABB Drive profile**. |
| 4 | **52.04** | **Other…**; | 52.04 FBA data in4 = **Other… = 06.16[16]**, for e.g. 06.16 Drive status word 1 (actual value 4).<br>Scaling depends on signal/parameter. |
| | … | … | … |
| 12 | **52.12** | **Other…**; | 52.12 FBA data in12 (actual value 12).<br>Scaling depends on signal/parameter. |
| ⚠ | Each change in parameter groups 50, 51, 52 and 53 must be validated using 51.27 FBA A par refresh = Refresh. | | |

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | … | … | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Status Word | | Speed feedback | | Torque reference | | Actual value 4 | | … | | Actual value 12 | |

# Parameter Group 53

Configuration using SW 16bit, Act1 16bit, Act2 16bit and Other...




| | |
|---|---|
| ⚠ | Setting of parameters 52.01 ... 52.03 see above drawing. Do **not** use Other…! |
| | For parameters 52.04 … 52.12 only mapping **Other…** is valid.<br>Different mappings like SW 16bit, Act1 16bit or Act2 16bit are not allowed. |

| Defining the reference values in group 53: PLC ⇒ DCS880. | | | |
|---|---|---|---|
| **PZD** | **Pointer** | **Setting** | **Remarks** |
| 1 | **53.01** | 1: **CW 16bit**; | 50.29 FBA A profile = **ABB Drive profile**.<br>Control Word, visible in 06.03 FBA A transparent control word.<br>Select by 06.08 Main control word source = **FBA A**. |
| 2 | **53.02** | 2: **Ref1 16bit**; | 50.29 FBA A profile = **ABB Drive profile**.<br>Scaling by 50.04 FBA A ref1 type = **Speed**.<br>51.19 T16 scale = **0**; sets the multiplier (multiplier = 51.19 + 1).<br>Reference value 1, visible in 03.05 FBA A reference 1.<br>Select e.g. by 22.11 Speed reference 1 source = **FBA A reference 1**. |
| 3 | **53.03** | 3: **Ref2 16bit**; | 50.29 FBA A profile = **ABB Drive profile**.<br>Scaling by 50.05 FBA A ref2 type = **Torque**.<br>Reference value 2; visible in 03.06 FBA A reference 2.<br>Select e.g. by 26.11 Torque reference 1 source = **FBA A reference 2**. |
| 4 | **53.04** | **Other…**; | 53.04 FBA data out4 = **Other… = 06.10[16]**, for, e.g. 06.10 Auxiliary control word 1 (reference value 4).<br>Scaling depends on parameter. |
| … | … | … | … |
| 12 | **53.12** | **Other…**; | 53.12 FBA data out12 (reference value 4).<br>Scaling depends on parameter. |
| ⚠ | Each change in parameter groups 50, 51, 52 and 53 must be validated using 51.27 FBA A par refresh = Refresh. | | |

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | … | … | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Control Word | | Speed reference | | Torque reference | | Reference value 4 | | … | | Reference value 12 | |

# Additional parameters

## Scaling and profile selection

Reference and actual value scaling depends on profile- and parameter selection.
All reference values are scaled to ±10000 (decimal), this equals ±100.00 %. The exception is speed. The scaling value of 46.02 M1 speed scaling actual corresponds to 20000 speed units.

| Parameter | Setting |
|---|---|
| **50.04 FBA A ref1 type** | 0: **Auto**; automatic type and scaling according to which reference chain the incoming reference is connected to. If the reference is not connected to any chain, setting Transparent is applied.<br>1: **Transparent**; no scaling is applied (1 = 1.00).<br>2: **General**; generic reference with a scaling of 100 = 1 (e.g. integer and two decimals).<br>3: **Torque**; the scaling is defined by 46.04 M1 torque scaling actual.<br>4: **Speed**; the scaling is defined by 46.02 M1 speed scaling actual.<br>5: **Current**; the scaling is in percent of 99.11 M1 nominal current: 100 = 1 %. |
| **50.05 FBA A ref2 type** | |
| **50.07 FBA A act1 type** | |
| **50.08 FBA A act2 type** | |

The DCS880 only supports transparent16 profile for the FPBA-01 fieldbus adapter, so profile adaption according to Profidrive, ABB Drive profile or others are handled inside the firmware of the drive.

| Parameter | **Setting** (scaling for Act1/Act2, Ref1/Ref2) | **Remark** |
|---|---|---|
| **50.29 FBA A Profile** | 0: **ABB Drive Profile**;<br>Speed: value in 46.02 == 20000 speed units.<br>Any other: 100.00 % = 10000. | Supported. |
| | 1: **ODVA AC/DC**; | **NOT** yet supported. |
| | 2: **Profidrive**;<br>Speed: value in == 46.02 = 4000h.<br>Any other: 100.00 % = 10000. | **NOT** yet supported. |
| | 3: **CIA 402**; | **NOT** yet supported. |
| | 4: **DCP**; | **NOT** yet supported. |

## Start/Stop

| Parameter | Setting |
|---|---|
| **20.01 Command location** | 0: **Local I/O**;<br>1: **Main control word**;<br>2: **Key**;<br>3: **12-pulse link**;<br>4: **Field exciter link**; |

## Reference Chain

Depending on if speed, torque, current or other reference types are used, for 50.04 FBA A ref1 type/50.05 FBA A ref2 type= **Auto**.

| Parameter | Setting | Auto type and scaling |
|---|---|---|
| **22.11 Speed reference 1 source** | 7: **FBA A reference 1**;<br>8: **FBA A reference 2**; | Speed |
| **22.12 Speed reference 2 source** | | |
| **23.32 Direct speed reference** | | |
| **26.11 Torque reference 1 source** | | Torque |
| **26.12 Torque reference 2 source** | | |
| **27.22 Current reference source** | | Current |
| **28.18 EMF reference source** | | General |
| **28.20 EMF voltage correction source** | | |
| **28.29 Flux correction source** | | |

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