

#### DESCRIPTION

The XLV range of DC servo controllers are designed for use with permanent magnet brushed DC servo motors rated from 4 to 12 amps, offered in a compact easy to use din rail mounting package.

The controllers can be used in either current (torque) or speed control modes. For highly dynamic applications, a shaft-mounted DC tachogenerator is recommended for speed feedback but in less demanding applications, armature voltage feedback (Avf) can be used.

The reference signal for both current and speed control can be either bipolar (10V) or unipolar (0 – 10V). Motor speed can be controlled in both forward and reverse directions. An adjustable current limit and fast-acting current control loop protect the controller and motor from sustained overloads.

#### PRODUCT NAME

# 400XLV

# 800XLV

# 1200XLV

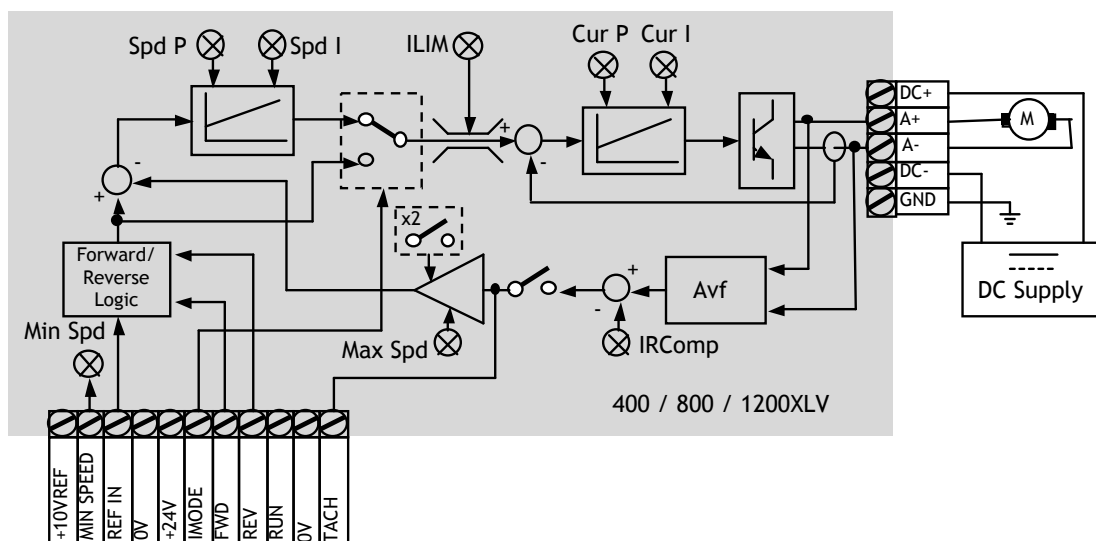
## DC SERVO CONTROLLER



#### Ratings

| Model:   | Motor Current | Overload   | Supply Voltage                          | Operating Temp | Dimensions<br>W x H x D (mm) |
|----------|---------------|--|---|----------------|------------------------------|
| 400 XLV  | 4 amps        | 200% for one sec.<br>(inverse time reduction to 100% in 30 seconds.) | 24 - 48VDC<br>(Tolerance = $\pm 10\%$ ) | 0 to 40°C      | 60 x 105 x 120               |
| 800 XLV  | 8 amps        |  |   |                |                              |
| 1200 XLV | 12 amps       |  |   |                | 69 x 105 x 120               |

#### Block Diagram



**Power Terminals**

|   |      |                                       |
|---|------|---------------------------------------|
| 1 | DC + | DC supply to controller               |
| 2 | A +  | Positive connection to motor armature |
| 3 | A -  | Negative connection to motor armature |
| 4 | DC - | Common for DC supply to controller    |
| 5 | GND  | Earth                                 |

**Control Terminals**

|    |         |  |
|----|---------|--|
| 1  | +10VREF | 10V reference ( $\pm 0.1\%$ ) for terminal 3 (10mA current limit)                      |
| 2  | MIN SPD | Connection for speed demand pot to set minimum speed (input impedance = 5k)            |
| 3  | REF IN  | Reference for speed/current (input impedance = 47k)                                    |
| 4  | 0V      | Common for reference input   |
| 5  | +24V    | Output for driving digital inputs (50mA current limit)                                 |
| 6  | IMODE   | Select current (torque) mode – active high (input impedance = 110k)                    |
| 7  | FWD     | Forward direction select for unipolar reference – active high (input impedance = 110k) |
| 8  | REV     | Reverse direction select for unipolar reference – active high (input impedance = 110k) |
| 9  | RUN     | Electronic enable for controller – active high (input impedance = 110k)                |
| 10 | 0V      | Common for tachometer  |
| 11 | TACH    | DC tachogenerator input ( $\pm 60\text{VDC}$ max) (input impedance = 150k)             |

**Control Terminals**

|         |  |
|---------|--|
| Max Spd | Sets maximum motor speed (in conjunction with speed scaling selection switch)              |
| Min Spd | Sets minimum motor speed (0 to 30% of Max Spd setting)                                     |
| Spd P   | Speed loop proportional gain   |
| Spd I   | Speed loop integral time constant  |
| ILim    | Current limit  |
| Cur P   | Current loop proportional gain   |
| Cur I   | Current loop integral time constant  |
| IRcomp  | Compensation for IR drop in motor when running with Avf (0 to 25% of max armature voltage) |