



## General Description

The D30/5(7.5)/4QP-E2 is a small 4-quadrant digital controller for the control of brushless motor up to 150 W (or 225 W), equipped with digital hall sensors.

Features:

- Digital speed control - operates as «closed loop» speed controller
- Maximum speed 60,000 rpm (motor with 2 poles)
- Set value input through external analogue voltage (0 ... +3.3 V)
- Set value input through external PWM 200 Hz
- SCI protocol available
- Direction of rotation preset by a digital signal
- The output stage can be enabled or disabled
- Motor speed monitoring via «FG» output
- Status indication via «Ready» output
- Motor blocked protection (current limit for blocked motor)
- Protection: over-voltage, under-voltage, motor block, short-circuit
- Standardized connector strip with 2.54 mm and 2 mm pitch
- The built-in shunt regulator is designed to limit the supply voltage of the controller
- Motor and control are powered separately

## Technical Specifications

### Input Specifications

Power Supply Input - Nominal 12 - 50 VDC power supply range, ripple < 5%

Control Power Supply Input - Nominal 12 - 30 VDC power supply range, ripple < 5%

Analogue speed command: 0 - 3.3 VDC

PWM speed command: 200 Hz

Current command: 0 - 2 VDC

Enable signal: +3.3 VDC

Direction signal: +3.3 VDC

Digital input 1 - 4: +3.3 VDC

Position Feedback with Sensor Interfaces to 3 hall effect position sensors integrated into the motor.

Communication Interface Serial communication interface

### Output Specifications

Outputs to one brushless motor:  $0.95 \cdot \text{motor power supply voltage } V_{CC}$

Speed output:  $20 \cdot \text{output frequency}$

Shunt regulator output «PR»: Max.10 A

Operation current: 5 A, peak phase current limit: default at 10 A D30/5/4QP-E2

Operation current: 7.5 A, peak phase current limit: default at 20 A D30/7.5/4QP-E2

PWM Frequency 50 kHz

### Operating Mode

Speed controller Default closed loop.

Current Limiting The drive can safely operate when it exceeds preset current limits.

### General Specifications

Microprocessor STM32F103C8T6

Efficiency 95%

Mounting Plug-in (female headers RM 2.54 mm and RM 2.0 mm)

Dimensions (L x W x H) 48 x 35 x 12.7 mm

Weight 12 g