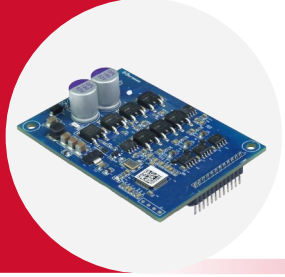

D50/5/4QE-E2

General Description

The D50/5/4QE-E2 is a small 4-quadrant digital controller for the control of brushless motor up to 250 W, equipped with digital hall sensors or incremental encoder.

Features:

- Digital speed control - operates as «closed loop» speed controller
- Maximum speed 60,000 rpm (motor with 2 poles)
- Minimum speed 200 rpm (motor with 2 poles)
- Set value input through external analogue voltage (0 ... +3.3 V)
- Set value input through external PWM 200 Hz
- Modbus 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
- Protection: over-voltage, under-voltage, 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

Technical Specifications

Input Specifications	
Power Supply Input - Nominal	16 - 48 VDC power supply range, ripple < 5%
Control Inputs	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 or incremental encoder integrated into the motor.
Communication Interface	Serial communication interface
Output Specifications	
Drive Output	Outputs to one brushless motor: 0.95 * supply voltage V_{CC} Speed output: 20 * output frequency Shunt regulator output «PR»: Max.3 A Operation current: 5 A, peak phase current limit: default at 15 A
PWM Frequency	50 kHz
Operating Mode	
Speed controller	Closed loop.
Current controller	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)	72.4 x 51.2 x 17 mm
Weight	24 g