D30/15/4Q-E1

General Description

The D30/15/4Q-E1 is a small 4-quadrant digital controller for the control of brushless motor up to 450 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
- 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
- The built-in shunt regulator is designed to limit the supply voltage of the controller
- Compact aluminum housing (110 x 80 x 34 mm) compliant

Technical Specifications

Input Specifications	
Power Supply Input - Nominal	15 - 36 VDC power supply range, ripple < 5%
Control Inputs	Analogue speed command: 0 - 3.3 VDC or 0 - 5 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	
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: 15 A, peak phase current limit: default at 38 A
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	AT32F415CBT7
Efficiency	95%
Mounting	M4 screws
Dimensions (L x W x H)	110 x 80 x 34 mm
Weight	304 g