



General Description

The D30/5/4QF-E2 is a small 4-quadrant digital controller for the control of brushless motor up to 150 W without 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
- FOC with closed-loop torque regulation
- 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)
- Standardized connector strip with 2.54 mm and 2 mm pitch

Technical Specifications

Input Specifications

Power Supply Input - Nominal 12 - 30 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

Communication Interface Serial communication interface

Output Specifications

Drive Output
 Outputs to one brushless motor: $0.95 \cdot \text{supply voltage } V_{CC}$
 Speed output: $20 \cdot \text{output frequency}$
 Operation current: 5 A, peak phase current limit: default at 10 A

PWM Frequency 20 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) 48 x 35 x 12.7 mm
 Weight 12 g