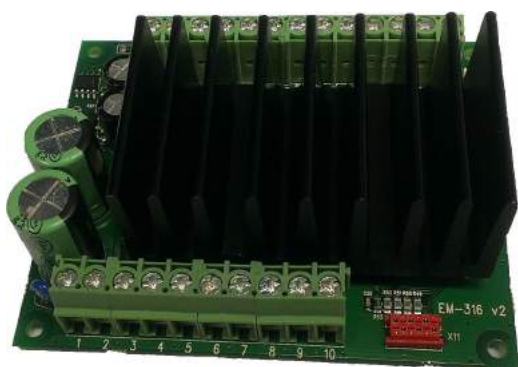


# EM-316A BRUSHLESS DC-MOTOR DRIVER 12-35V 10A



## FEATURES

- Three phase output
- Speed and torque adjustment
- Open/closed loop modes
- Dynamic braking
- Current limit and trip
- Fault and overcurrent outputs
- 60° / 120° commutation options
- Good efficiency
- Low EMC emissions
- DIN-rail mountable
- EM-316A is compatible with EM-316
- Added EM-A1 card slot for  $\pm 10V$  control
- Rpm-pulse output option ( prog v1.5 )

## GENERAL

EM-316A is brushless DC-motor driver with hall sensor feedback. The unit has a mosfet power stage with good efficiency and it meets also today's EMC requirements. The driver can be used with 120° or 60° commutation. The unit has the basic digital command inputs like direction, brake, start/stop, disable and there is analog inputs for speed and current control. One digitally presettable second speed (speed-2) is possible to activate with digital command input. EM-316 has two NPN outputs for fault and overcurrent indication use. Some input and output functions can be modified with parameters. Driver includes overvoltage, undervoltage and overtemperature protections. These fault situations are indicated with fault on-board LED. Overtemperature and current limit situations can be reset with reset input, reset-timer or by setting analog speed control to value to 0.

There are two control options for speed. Direct control ( open loop ) sets motor voltage in proportion to control voltage as with a standard DC-motor. Closed loop uses hall sensor feedback for speed control, this mode offers good speed regulation. Start and stop ramps work in both mode. Speed adjust range, closed loop rpm range and ramps can be set with parameter. Analog input are filtered so that there can also use PWM signal for control speed and current. EM-316A has added card slot for EM-A1 card, which make possible to use symmetric control -5..0..+5V ( rev-stop-fwd ) EM-A1 card generate also -5V auxiliary voltage for local potentiometer control

Setting can be done digitally with EM-236 interface unit or with Emen-Tool lite program installed in PC and EM-268 adapter cable. Parameters stored into nonvolatile memory of device. This interface unit can also be monitored the current and rpm of motor.

Device can be installed in DIN-rail base and some enclosure options are also available.

## TECHNICAL DATA

Supply voltage 12-24V ( 11-35Vdc )  
 Overvoltage shut down 40V  
 Idle current typ. 30mA  
 Max current 10A cont ( Tamb. 40 °C )  
 Max current peak 25A ( max 2s )  
 Pwm frequency typ. 16kHz  
 Overtemperature Temp shut down 90°C  
 Current limit setting 0.1-25A ( step 0.1 A )  
 Current limit analog scale 0-5V = 0-25A  
 Logic level of digital inputs  
 "off" = 0-1V or open / "on" = 4-30V  
 Input impedance of logic inputs 10k  
 Response time of digital input 2ms  
 Analog input range 0-5V up to 0-10V  
 Input impedance of analog inputs 100k  
 Input filter of analog input 100Hz  
 Overcur. and fault outputs NPN max 50mA  
 EMC measured for industrial and household env.  
 PCB material flammability class UL94V-0  
 Dimensions 89x73x32mm  
 Weight 200g

