

PolyGard®2

# Motor Module EP06\_ES\_MOT



Motor control module with four analog inputs (4 to 20 mA), six relay and four analog outputs (4 to 20 mA) for controlling up to four motors (depending on the configuration).

The ES\_MOT module is controlled by the ES\_MCM module. The module can manage either one 2-stage motor with two directions of rotation or two 2-stage motors (star / delta, dahlander, separate winding) or four 1-stage motors.

## APPLICATION

Motor module for controlling motors.

## FEATURES

- Stand-alone operation
- Operation in ES system network
- Activation and control of
  - one 2-stage motor with two direction of rotation or
  - two 2-stage motors:
    - Star / delta
    - Dahlander
    - Separate winding
  - or
  - activation of four 1-stage motors
- Monitoring of the motor protection elements
- Monitoring via pressure cells with delayed triggering
- Feedback / Operation monitoring per drive / stage
- Input for fire detection system with fan / motor management
- Input for smoke extraction ON / OFF (requirement fire brigade tableau)
- Reverse operation mode
- Power failure monitoring
- 24 V DC operating voltage
- Serial RS485 interface with protocol for-ES system
- Connector socket for Service Tool
- Six relay outputs max. 250 V / 3 A (NO), common potential
- One relay output max. 250 V / 3 A (change-over contact), potential-free (fault signal)
- Hardware and software according to SIL2 compliant development process
- Internal function monitoring with integrated hardware watchdog
- Four analog outputs 4-20 mA / 2-10 V for variable frequency drive
- Easy addressing and configuration of the motor operating mode via the service tool
- Comfortable test mode via the service tool
- Manual operation mode (option)
- One integrated PTC thermistor for monitoring (option)
- Conformity to:
  - Low Voltage Directive 2014/35/EU
  - EMC directives 2014/30/EU
  - EN 50271 / IEC 615078
  - EN 61010-1
  - Ansi / UL 61010 1
  - CAN / CSA-C22.2 No 61010-1



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## SPECIFICATIONS

### Electrical

Power supply	24 V DC $\pm$ 20 %
Power consumption	5 W, 200 mA
Digital input (18)	I min 2 mA; (U min ON 11V)
Analog output (2)	Proportional, overload and short-circuit- protected, charge $\leq$ 500 $\Omega$ 4 - 20 mA = measuring range 3.0 < 4 mA = underrange > 20 – 21.2 mA = overrange 2.0 mA = fault
Relay output (6)	250 V AC, 3 A, common potential, NO (SPST NO)
Relay output (1)	250 V AC, 5 A, potential-free, change-over (SPDT)

### Interface motor bus

Transceiver	RS 485 / 19200 Baud, max length per segment 800 m
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### Environmental conditions

Humidity	15 – 95 % RH non-condensing
Working temperature	-10 °C to +40 °C (14 °F to 104 °F)
Storage temperature	0 °C to +40 °C (32 °F to 104 °F)

### Physical

Enclosure	Plastic housing ABS
Colour	RAL 7035
Protection class	IP 40
Weight	0.2 kg (0.5 lb.)
Packaging volumes	Ca. 4.4 l
Mounting	Top hat DIN rail mounting, installation in distribution box
Dimensions	(W x H x D) 106 x 110 x 62 mm (4.2 x 4.3 x 2.4 in.)
Wire connection: Power supply & motor bus	Screw type terminal: 2.5 mm <sup>2</sup> (14 AWG)
Input / output	Spring type: min. 0.5 mm <sup>2</sup> , max. 1.5 mm <sup>2</sup> (22 to 16 AWG)

### Guidelines

EMC Directive 2014/30/EU  
Low voltage directive 2014/35/EU  
EN 50271 / IEC 615078 (pending)  
EN 61010-1:2010 (pending)  
ANSI/UL 61010-1 (pending)  
CAN/CSA-C22.2 No. 61010-1 (pending)

Warranty	2 years on device
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### OPTIONS

Analog input (4)	4 - 20 mA, overload and short-circuit- protected, input resistance 200 $\Omega$
PTC thermistor input (1)	Resistance range according to EN 60947-8
Manual operation mode	On request



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# Motor Module EP06\_ES\_MOT

## ORDER INFORMATION

EP-06\_ES\_MOT XX-XXXX

### OPTIONS

- 1XXX 4 x analog inputs & 4 x analog outputs
- X1XX 1 x thermistor input (on request)
- XX1X 10 x digital inputs (operation feedback and fault messages)
- XXX1 Manual operation mode (on request)

### VERSIONS

- 01 Direct, 1-stage, 1 direction, 4 motors
- 02 Direct, continuous via analog output, 1 direction, 4 motors
- 03 Direct, 1-stage, 1 direction, 2 motors
- 04 Direct, 1-stage, 2 directions, 1 motor
- 05 Direct, inverse, 1-stage, 1 direction, 4 valves
- 06 Dahlander, 2-stage, 1 direction, 2 motors
- 07 Dahlander 2-stage, 2 directions, 1 motor
- 08 Star / delta, 1-2-stage, 1 direction, 2 motors
- 09 Star / delta, 1-2-stage, frequency converter continuous, 2 directions, 1 motor
- 10 Separate windings, 2-stage, 1 direction, 2 motors
- 11 Separate windings, 2-stage, 2 directions, 1 motor

## WIRING CONFIGURATION

