

# Speed switches

## Safety motion monitor with SIL3 and PLe certification

Inputs for 1 SinCos encoder (SIL3/PLe) and 2 HTL/PNP control signals

GMM246S



GMM24xS

### Technical data - electrical ratings

Input voltage	18...30 VDC
Consumption w/o load	~150 mA
Protective circuit input	Reverse polarity protection, external fuse (2.5 A, medium time-lag) necessary
Residual ripple	≤10 % (24 VDC)
Encoder output voltage	~2 VDC less the input voltage
Protective circuit encoder supply	Short-circuit-proof
Encoder output current	≤200 mA each encoder
Inputs	1x SinCos encoder (SIL3/PLe) 2x HTL/PNP control signals
Outputs (safety related)	1x relay output 5...36 VDC (NO) 1x analogue output 4...20 mA 4x control output HTL
Status indicator	LEDs
Control functions	DIL switch: 1 x 3-pin
LED operating status	Green = ready for use "ON" Yellow = "ERROR"
Interference immunity	EN 61000-6-2; EN 61326-3-2
Emitted interference	EN 61000-6-3; EN 61000-6-4
Approvals	CE, SIL3/PLe EN ISO 13849-1, EN 61508, EN 62061

### Features

- SIL3 and PLe certification
- Monitoring of underspeed, overspeed, standstill and rotating direction
- Inputs for 1 SinCos encoder (SIL3/PLe) and 2 HTL/PNP control signals
- Safety related outputs
- Mounting to 35 mm DIN rail (according to EN 60715)
- USB interface for simple parametrization by the OS 6.0 operator surface

### Optional

- GMI230S display and programming unit for parametrization and indication

### Technical data - mechanical design

Dimensions (W x H x D)	50 x 100 (120) x 165 mm With programming unit GMI230S: 50 x 100 (120) x 180 mm
Protection DIN EN 60529	IP 20
Operating temperature	-20...+55 °C (without dew)
Storage temperature	-25...+70 °C (without dew)
Weight approx.	390 g
Mounting type	35 mm DIN rail (according to EN 60715)
Connection	Plug-in screw terminal 1.5 mm <sup>2</sup> Connector D-SUB, female, 9-pin (SinCos input) Connector D-SUB, female, 9-pin (SinCos output) USB 1.0 / type B (female)
Material	Plastic

Version: Baumer\_GMM240S-GMM246S\_01e\_ds\_e

Subject to modification in technic and design. Errors and omissions excepted.

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**GMM246S**

#### Part number

**GMM24** 6 S

| Type

6 1 SinCos input (SIL3/PLe), 2 control inputs, all outputs, but without signal splitter function

#### Accessories

##### Programming accessories

11180618 Display and programming unit GMI230S for GMM2xxS motion monitors

#### Safety-relevant key characteristics

DC <sub>avg</sub> (ISO 13849)	97.95 %
Category (ISO 13849)	3 (HFT = 1)
Classification	SIL3/PLe (depending on the used encoder input signals)
MTTF <sub>d</sub> (ISO 13849)	38.1 years
PFH (IEC 61508 / EN 62061)	$3,76 * 10^{-8} \text{h}^{-1}$
SFF	98.77 %
Safety functions	Equivalent to EN 61800-5-2 for SS1, SS2, SOS, SLS, SDI, SSM, SLI, SBC, STO, SMS (depending on the used encoder input signals)
Structure	Dual-channel
Service interval	Switch on/off for at least 1 times a year (at continuous operation)
$\lambda_{DD} / \lambda_{DU}$	$2,94 * 10^{-6} \text{h}^{-1} / 6,14 * 10^{-8} \text{h}^{-1}$
$\lambda_{SD} / \lambda_{SU}$	$1,93 * 10^{-6} \text{h}^{-1} / 4,64 * 10^{-8} \text{h}^{-1}$

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Safety motion monitor with SIL3 and PLe certification

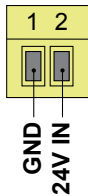
Inputs for 1 SinCos encoder (SIL3/PLe) and 2 HTL/PNP control signals

## GMM246S

### Power supply

[X3]

Pluggable 2-position screw terminal, AWG 16

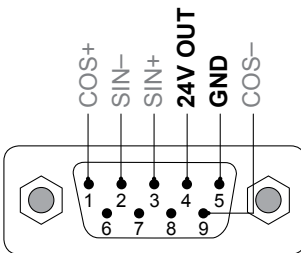


Power supply input 24V IN = 18 ... 30 VDC

### Encoder supply

SinCos input [X6]

D-SUB, 9-pin, male

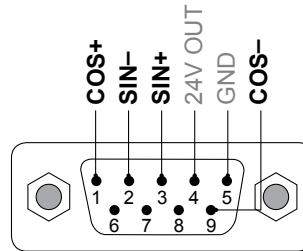


24V OUT = ~2 VDC less the input voltage

### Inputs

SinCos input (SIL3/PLe) [X6]

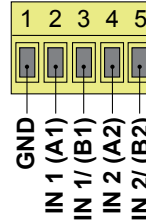
D-SUB, 9-pin, male



Number of inputs	1
24V OUT	~2 VDC less the input voltage
Channels	SIN+, SIN-, COS+, COS- (SIL3/PLe)
Amplitude	0,8...1,2 Vpp
DC Offset	2,4...2,6 VDC
Frequency	≤500 kHz (with Lissajous figure monitoring ≤100 kHz)

HTL/PNP control inputs [X10]

Pluggable 5-position screw terminal, AWG 16



Number of inputs	2 (each complementary)
Application	Control commands
Signal level	HTL PNP (10...30 V)
Load	max. 15 mA
Frequency	≤1 kHz (control)

# Speed switches

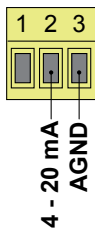
## Safety motion monitor with SIL3 and PLe certification Inputs for 1 SinCos encoder (SIL3/PLe) and 2 HTL/PNP control signals

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### Outputs (safety related)

#### Analogue output [X4]

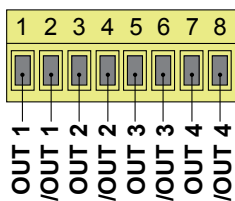
Pluggable 3-pin screw terminal, AWG 16



Number of outputs	1
Current output	4 ... 20 mA (load $\leq 270$ Ohm)
Resolution	14 bits
Accuracy	$\pm 0,1\%$

#### Control outputs [X2]

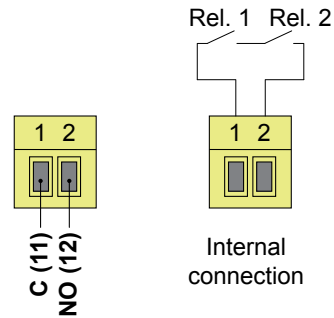
Pluggable 8-pin screw terminal, AWG 16



Number of outputs	4 (each complementary)
Output voltage	$\sim 2$ VDC less the input voltage
Output current	$\leq 30$ mA each output
Output stage	HTL push-pull
Protective circuit	Short-circuit-proof

#### Relay outputs [X1]

Pluggable 2-pin screw terminal, AWG 16



Number of relays	2 relays in series with forced-guided contacts (NO)
Switching capability	5...36 VDC
Switching capacity	5 mA...5 A

#### USB interface

For communication between the unit and a PC or a superordinate controller, a virtual COM port is accessible at the USB connector. A standard USB-cable with a Type B connector is used for connection. This USB cable is available as an option. The USB port serves for PC setup of the GMM246S monitors.



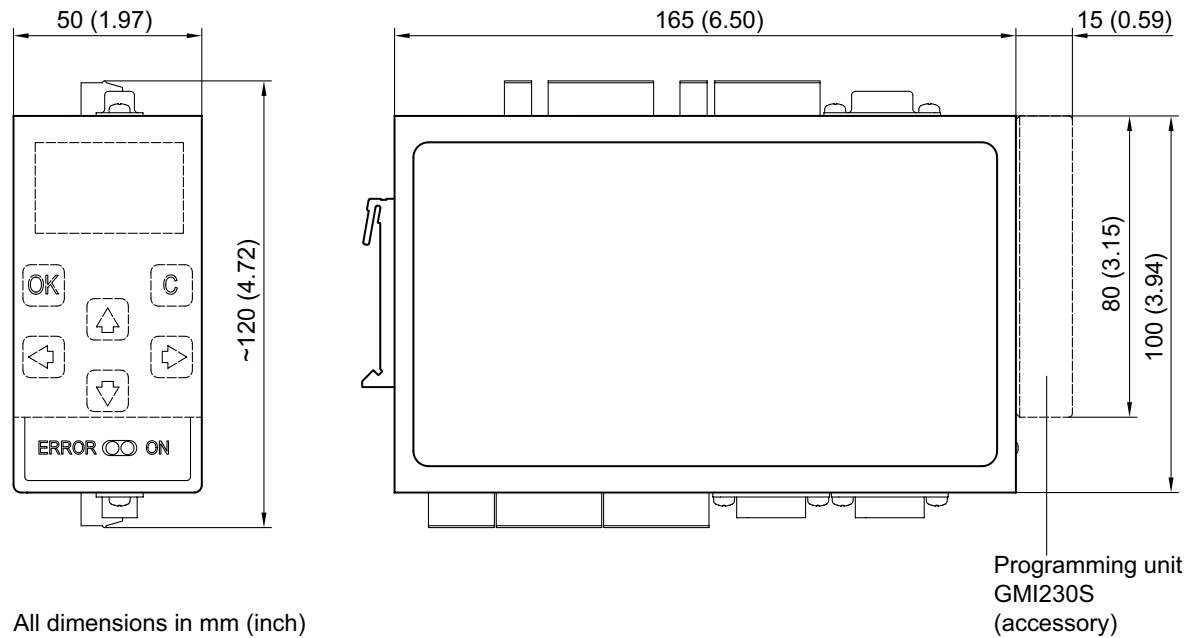
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### Dimensions



All dimensions in mm (inch)