

Safety Motion Monitor DS230

For SinCos and Incremental Encoders / Sensors

SIL III & PLc



Picture: with programming module BG230

Product Features:

- SIL III and PLc certification
- Safety functions equivalent to EN61800-5-2 (SS1, SS2, SOS, SLS, SDI, SSM)
- Two inputs sin+, sin-, cos+, cos-, suitable for SinCos encoder signals
- Two incremental inputs with format RS422 (differential signals A, /A, B, /B)
- 2 x 2 HTL PNP inputs to connect HTL encoders, proximity switches or control commands
- Secure relay output (NO)
- Four inverse redundant control outputs
- Analogue output 4 to 20 mA (depends on device version)
- Splitter function integrated to distribute encoder signals (depends on device version)
- Snap-on module to standard DIN rails (35 mm C-profile)
- Plug on display and control unit (optional)

Technical Specification:

Power supply:	Input voltage: Power consumption: Connection:	18 to 30 VDC with polarity protection approx. 150 mA (unloaded) X3, screw terminal, 2-position, 1.5 mm ²
Encoder supply:	Output voltage: Output current: Protective circuit:	approx. 2 VDC less the input voltage max. 200 mA per encoder short-circuit-proof
SinCos inputs:	Number of inputs: Amplitude: DC offset: Frequency: Connection:	2 min. 0.8 to max. 1.2 Vpp 2.5 V ± 0.1 V max. 500 kHz X6 and X7, Sub-D (male), 9-position
Incremental inputs:	Number of inputs: Format: Frequency: Connection:	2 RS422 (differential signal A, /A, B, /B) max. 500 kHz X8 and X9, screw terminal, 7-position, 1.5 mm ²
Control inputs:	Number of inputs: Application: Signal level: Load: Frequency (HTL signals): Frequency (control inputs): Connection:	2 x 2 Connection of HTL encoders, proximity switches, or control commands PNP HTL (24 VDC) max. 15 mA max. 250 kHz max. 10 kHz X10, screw terminal, 5-position, 1.5 mm ²

Technical Specification:

SinCos output:	Number of outputs: 1 Splitter of input: SinCos 1 or SinCos 2 Amplitude: min. 0.8 to max. 1.2 Vpp DC offset: 2.5 V ± 0.1 V Frequency: max. 500 kHz Connection: X5, Sub-D (female), 9-position
Incremental output:	Number of outputs: 1 Splitter of inputs: SinCos 1, SinCos 2, RS422 1, RS422 2, or PNP HTL proximity switch Format: RS422 (differential signals A, /A, B, /B) Frequency: max. 500 kHz Connection: X4, screw terminal, 7-position, 1.5 mm ²
Analogue output:	Number of outputs: 1 Current output: 4 to 20 mA (load max. 270 Ohm) Resolution: 14 Bit Accuracy: 0.1 % Connection: X4, screw terminal, 7-position, 1.5 mm ²
Control outputs:	Number of outputs: 4 invers redundant outputs Output voltage: approx. 2 VDC less the input voltage Output current: max. 30 mA per output Switching characteristic: Push-Pull Protective circuit: short-circuit-proof Connection: X2, screw terminal, 8-position, 1.5 mm ²
Relay output:	Secure relay output (NO) Number of relays: two relays in series with forced-guided contacts Switching capability (AC and DC): 5 to 36 VDC Switching capacity: 5 mA to 5 A Connection: X1, screw terminal, 2-position, 1.5 mm ²
RS232 interface:	Function: Interface to programming module BG230 Data transmission: asynchron Baudrate: 2400 to 38400 Protocol: Lecom-protocol „Standard“ Connection: X11, socket terminal strip, 2 x 4-position
USB interface:	Version: USB 1.0 Connection: USB-B (female)
Display:	Number of LEDs: 2 Green LED: „ON“ Yellow LED: „ERROR“
Switches:	Number of DIL switches: 1 x 3-position Marking: S1
Conformity and standards:	EMV 2004/108/EG: EN 61000-6-2 EN 61000-6-3 NS 2006/95/EG: EN 61010-1 EN 61508 EN ISO 13849-1 RoHS conform: Guideline 2011/65/EU
Safety characteristic data:	Classification: PLE / SIL3 (depends on the used encoder input signals) System structur: 2-channel (Kat. 3 / HFT = 1) PFH value: 6×10^{-8} h Safety functions: equivalent to EN61800-5-2 für SS1, SS2, SOS, SLS, SDI, SSM (depends on the used encoder input signals)
Enclosure:	Material: Plastic housing Mounting: to standard DIN rails (35 mm C-profile) Dimensions: 50 x 100 x 165 mm (B x H x T) Protection class: IP20
Ambient temperature:	Operation: -20 °C to +55 °C (without condensation) Storage: -25 °C to +70 °C (without condensation)
Weight:	Storage: 390 grams
Programming modul BG230 (optional):	Operation: Touch Screen, 6 buttons Display: OLED-Display Resolution: 128 x 64 Pixel Connection: Plug connector strip, 2 x 4-position, to connect to X11 of DS230 Weight: 50 grams Operation: -20 °C to +55 °C (without condensation) Storage: -25 °C to +70 °C (without condensation)