

Analogue limit monitor for top hat rail mounting



Description

This measurement amplifier with relay outputs works as a direct current amplifier for strain gauges measuring bridges.

Three connected comparators each with a comparison potentiometer enable each of three different switching thresholds to be set, which correspond to a certain loading of the connected strain gauge force transducers. Each comparator output controls a relay and an LED indicator light.

In the switched-off condition or with interruption of the power supply, the three relay contacts on the output terminals 3 to 8 are open. In the switched-on condition and below the respective switching threshold the output relays are in the working condition and the relay contacts are closed. An LED indicator light is connected in parallel to the relay coil. This lights up as long as the output contact is closed.

The measurement amplifier is designed to be installed in a control cubicle and can be put on a carrying rail in a top hat rail housing made of extruded sections.

Features

- Measurement amplifier for strain gauge force transducer
- Three comparator levels with relay output
- Setting device for switching thresholds and
- Various terminals

Applications

- Force monitoring
- Limit value checking on machines and plant

Specific information

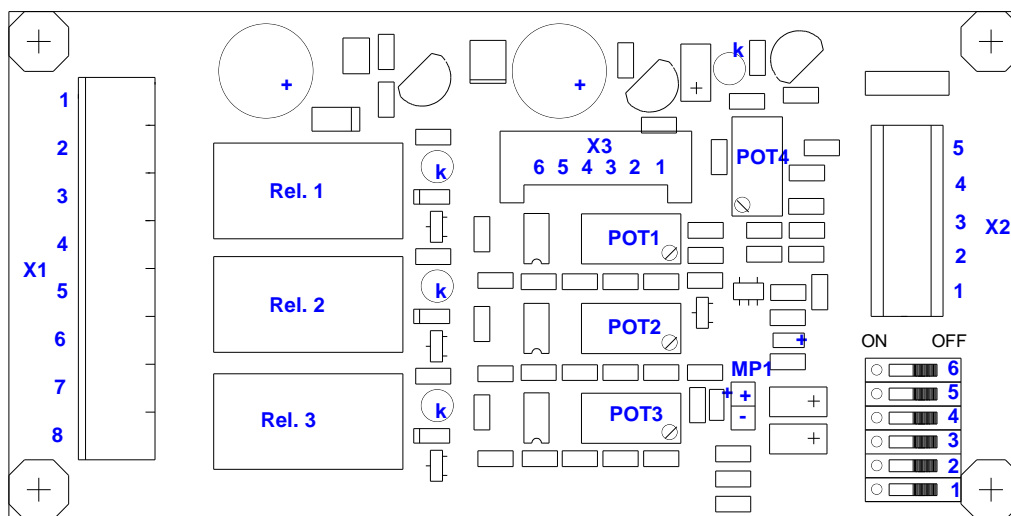
- optional:
All-round housing
AZM45X001007(plastic)
with a clear cover (IP 67)

Model: EGS01

Technical data

Model	EGS01
Output	3
- Relay outputs	0.3%
- Accuracy	
Input	0...15.5 mV
- Signal	5 VDC
- Sensor supply	weak: approx. 1 ms cut-in delay
- Filter setting	medium: approx. 10 ms cut-in delay
	strong: approx. 20 ms cut-in delay
Setting	
- Relay outputs	Continuously adjustable via potentiometer
Power requirement	24 VDC; -10%/+15%, max. 100 mA
Nominal temperature range	+10 ...+40°C
Service temperature range	0 ...+70°C
Storage temperature range	-10 ...+70°C
input to strain gauge bridges	4 wires
Protection type (acc. to EN 60 529/IEC 529)	IP 20
Electrical connection	Screw terminals
Housing	For top hat rails acc. to DIN EN 50 022
- Material	Plastic
- Dimensions (W x H x D)	approx. 54 x 107 x 25 mm

Pin assignment



DIL-switch:

- 1 – Hysteresis comp.3
- 2 – Hysteresis comp.2
- 3 – Hysteresis comp.1
- 4 – attenuation 1
- 5 – attenuation 2
- 6 – amplifier

The assignment drawing shows the position of the terminals of the measurement amplifier and the controller for the comparator settings.

Terminals for outputs X1

Terminal	Designation	Controller
1	+24V dc power supply	
2	-24V dc power supply	
3	Relay 1, Contact 1 - Comparator 1	POT1
4	Relay 1, Contact 2 - Comparator 1	
5	Relay 2, Contact 1 - Comparator 2	POT2
6	Relay 2, Contact 2 - Comparator 2	
7	Relay 3, Contact 1 - Comparator 3	POT3
8	Relay 3, Contact 2 - Comparator 3	

Terminals for force transducer X2

Terminal	Designation	Remarks
1	B+	Bridge voltage PLUS
2	S-	Signal MINUS
3	S+	Signal PLUS
4	B-	Bridge voltage MINUS
5	Screen	Screening of the connection cable for the strain gauge measuring bridge

There is a two pole terminal strip "MP" on the printed circuit board for checking the operation of the force transducer. In addition a voltmeter is connected at this point. The voltage measured there depends on the loading condition of the force transducer. It should be between 0.35V and 4.05V.
The switching thresholds for the individual channels can be set in this range.

Terminals of the service plug X3

Terminal	Designation	Remarks
1	+5V internal operating voltage	
2	Mass	
3	Measured voltage of the sensors	
4	Threshold voltage – comparator 1	POT1
5	Threshold voltage – comparator 2	POT2
6	Threshold voltage – comparator 3	POT3

Specifications of the RD2N-1U relays used:

30 W	1.25A DC (ohmic)
30 W	100V DC (ohmic)
60 VA	1.25A AC (ohmic)
60 VA	125V AC (ohmic)
20 VA	1.25A AC (inductive)
20 VA	125A AC (inductive)

Subject of technical changes