

NAMUR NE43 Single Level Trip Amplifier BM9431

IEC61508: Typically, SIL2. (Please contact Sales Office for details).

Function: The BM9431 is a DIN rail mounting (TS35) Single Level Trip Amplifier monitoring a 4 to 20mA input signal, which can be loop powered from the BM9431. It has one process trip and additional internal alarm relays/LEDs for "Out of Range Input" and "Power OK/Fail".

The process trip can be configured as a Low or High trip, as required. The trip amplifier is compliant with NAMUR NE43, being able to detect faulty transmitters whose outputs are below 3.8mA or above 20.5mA.

Data Sheet Issue 8.0

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SPECIFICATIONS

INPUT:

D C Current

4 to 20mA into internal 10 ohms

Remote Transmitter

Power Supply

Unregulated nominal 24 Volt DC
24mA supply to power input loop

OUTPUTS: Three SPCO relays

Process Trip

One relay (Trip 1) that is configurable as a High or Low Trip, Fail-Safe or Non-Fail Safe

One pre-set relay for "Trip Amplifier Power" alarm (loss of power – fixed fail-safe)

One pre-set relay for "Input Out of Range" (<3.8mA >20.5mA fixed fail-safe)

OUTPUTS (Continued):

Contact Ratings

Maximum current 2A

Maximum voltage 250V AC

Maximum voltage 24 Volt DC

Switching Differential

0.5% of span approx

Switching Mode

(Process Trip)

Relay can be factory set or user configured to energise (Non Fail-Safe) or de-energise (Fail-Safe) on a rising (High Trip) or falling (Low Trip) signal – see ordering details for further explanation

Set Points (Process Trip)

270° screw driver operated potentiometer through front panel

OUTPUTS (Continued):

Relay State Indication

Set-Point Alarm

Bi-colour Red/Green LED

Green = Healthy State

Red = Tripped State

Instrument Power OK

Green LED = Healthy

Out of Range Input Alarm

Red LED = Out of Range

OUTPUT OPTIONS

DPCO contacts on Process Trip

SUPPLY:

Trip Amp Power Supply

12 to 30 Volt DC

Input/Supply Isolation

600 Volts > 20M ohms

Power Required

2.5 Watts Maximum

GENERAL:

Temperature Coefficient

±0.1% of span/Δ10°C

Operating / Storage

Temperature Range

0 to +50°C / -20 to +60°C

Operating / Storage

Humidity Range

0 to 95% RH non-condensing

EMC

EN 61000-6-2:2001 Industrial

EN 61000-6-4:2001 Industrial

Weight

295 gms

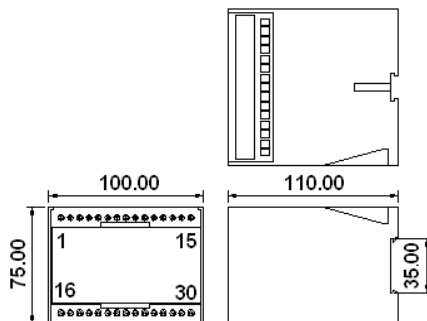
Enclosure IP Rating

IP20

IEC 61508 SIL Rating

Generally, SIL 2 with a Proof Test Interval of 12 months

MECHANICAL DETAILS



TERMINATION DETAILS

Inputs

- 1 Input –ve 4 to 20mA
- 2 Input +ve 4 to 20mA
- 3 Unused
- 4 Tx Power Supply -ve
- 5 Tx Power Supply +ve
- 6 to 15 Unused

Outputs

- 16 Relay N/O
- 17 Common "Trip 1"
- 18 Relay N/C

Outputs

- 19 Relay N/O
- 20 Common "DPCO Option"
- 21 Relay N/C
- 22 Relay N/O
- 23 Common "Power OK"
- 24 Relay N/C
- 25 Relay N/O
- 26 Common "Input Out Of Range"
- 27 Relay N/C
- 28 Trip Amp Power Supply +ve
- 29 Unused
- 30 Trip Amp Power Supply -ve

ORDERING DETAILS

a) Give identification code, i.e. BM9431

b) Give details of trip action required,

For the process set-point:

H = High Trip = Alarm condition above the set point

L = Low Trip = Alarm condition below the set point

Order example: BM9431/HFS

and for the operation of the set-point relays:

FS = Fail Safe = Relays normally energised to de-energise in the alarm condition

NF = Non Fail Safe = Relays normally de-energised to energise in the alarm condition

Give details of options: ie DPCO contacts on Process Trip.

DOCUMENTATION

- a) O & M Manual
- b) Independent EMC Testing Report
- c) FMEDA SIL Rating Report