

# 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

Mar 18



Lee-Dickens Ltd  
Tel: 01536-760156  
email: sales@lee-dickens.co.uk

## 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

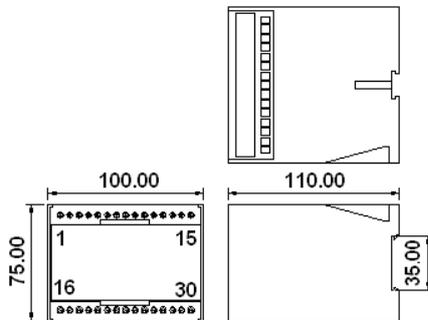
### Enclosure IP Rating

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