

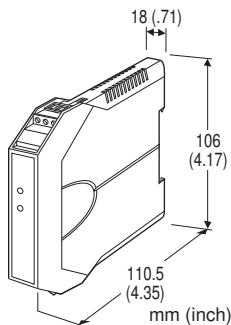
## Space-saving Two-wire Signal Conditioners B3-UNIT

### RTD TRANSMITTER

(field-configurable)

#### Functions & Features

- Converts a RTD input into an isolated, linearized 4 – 20 mA DC signal
- DIP switch configurable input range
- Linearization and burnout
- Monitor terminals
- High-density mounting
- CE marking
- UL approval



### MODEL: B3FR[1]

#### ORDERING INFORMATION

- Code number: B3FR[1]
  - Specify a code from below for [1] (e.g. B3FR/UL)
  - Input range (e.g. Pt 100, 0 – 200°C)
  - If you need the transmitter to be calibrated to a specific range, please specify when ordering.
- Non-specified orders will be shipped at default factory setting (Pt 100, 0 – 100°C).

#### INPUT RTD (2- or 3-wire)

- Pt 100 (JIS '97, IEC)
- Ni 120
- Cu 10 (@25°C)

#### [1] OPTIONS

##### Standards & Approvals

- blank: CE marking
- /UL: UL approval, CE marking

#### GENERAL SPECIFICATIONS

- Construction:** Small-sized front terminal structure
  - Connection:** Euro type connector terminal
  - Housing material:** Flame-resistant resin (gray)
  - Isolation:** Input to output
  - Burnout:** Upscale (default), downscale or no burnout selectable
  - Linearization:** Standard
  - Configuration:** DIP and rotary switches
  - Setting:**
    - Input Type
    - Input Range
    - Burnout
    - Others
- Refer to the instruction manual for details.

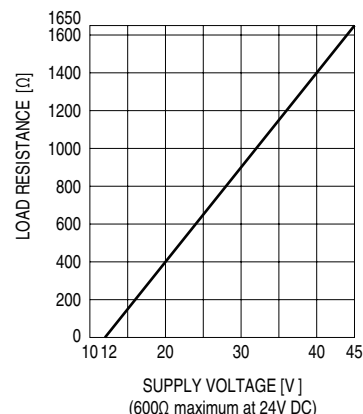
#### INPUT SPECIFICATIONS

- Maximum leadwire resistance:** 20 Ω per wire (3-wire)
- Sensing current:** 1 mA

RTD	USABLE RANGE		MIN. SPAN	
	°C	°F	°C	°F
Pt 100 (JIS '97, IEC)	-50 to +750°C	-58 to +1382°F	300°C	540°F
	-50 to +350°C	-58 to +662°F	100°C	180°F
	-50 to +150°C	-58 to +302°F	50°C	90°F
Ni 120	-50 to +200°C	-58 to +392°F	100°C	180°F
	-50 to +100°C	-58 to +212°F	50°C	90°F
Cu 10 (@25°C)	-50 to +250°C	-58 to +482°F	100°C	180°F

#### OUTPUT SPECIFICATIONS

- **OUTPUT:** 4 – 20 mA DC
  - Load resistance vs. supply voltage:**
- $$\text{Load Resistance } (\Omega) = (\text{Supply Voltage (V)} - 12 \text{ (V)}) \div (0.02 \text{ (A)})$$
- (including leadwire resistance)



#### INSTALLATION

- Supply voltage:** 12 – 45 V DC
- Operating temperature:**



-40 to +85°C (-40 to +185°F)

Max. 55°C (131°F) for UL approval

**Operating humidity:** 0 to 95 %RH (non-condensing)

**Mounting:** DIN rail

**Weight:** 80 g (2.8 oz)

## PERFORMANCE in percentage of span

### Accuracy

Pt 100, Cu 10:  $\pm 0.2\%$

Ni 120:  $\pm 0.3\%$

**Temp. coefficient:**  $\pm 0.02\%/^{\circ}\text{C}$  ( $\pm 0.01\%/^{\circ}\text{F}$ ),

$\pm 0.03\%/^{\circ}\text{C}$  ( $\pm 0.02\%/^{\circ}\text{F}$ ) for Cu 10

**Response time:**  $\leq 0.5$  sec. (0 - 90 %)

**Burnout response:**  $\leq 10$  sec.

**Insulation resistance:**  $\geq 100\text{ M}\Omega$  with 500 V DC

**Dielectric strength:** 2000 V AC @1 minute

(input to output to ground)

## STANDARDS & APPROVALS

### CE conformity:

EMC Directive (2004/108/EC)

EMI EN 61000-6-4: 2007

EMS EN 61000-6-2: 2005

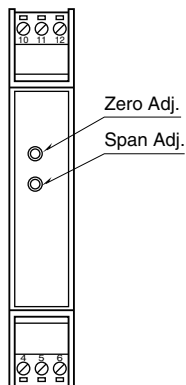
### Approval:

UL/C-UL general safety requirements

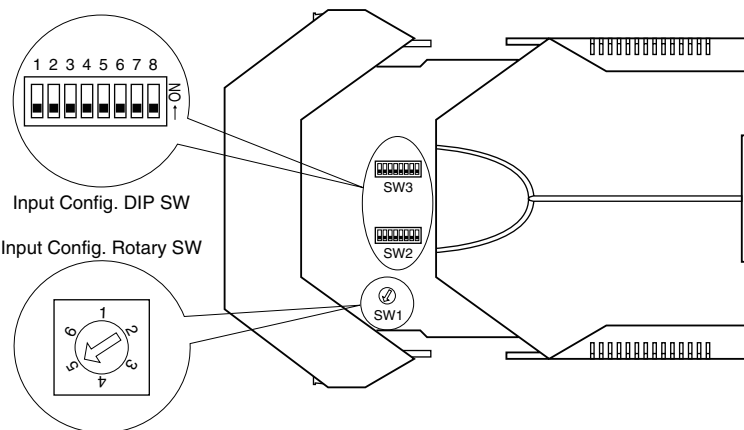
(UL 61010-1, CAN/CSA-C22.2 No.1010-1)

## EXTERNAL VIEW

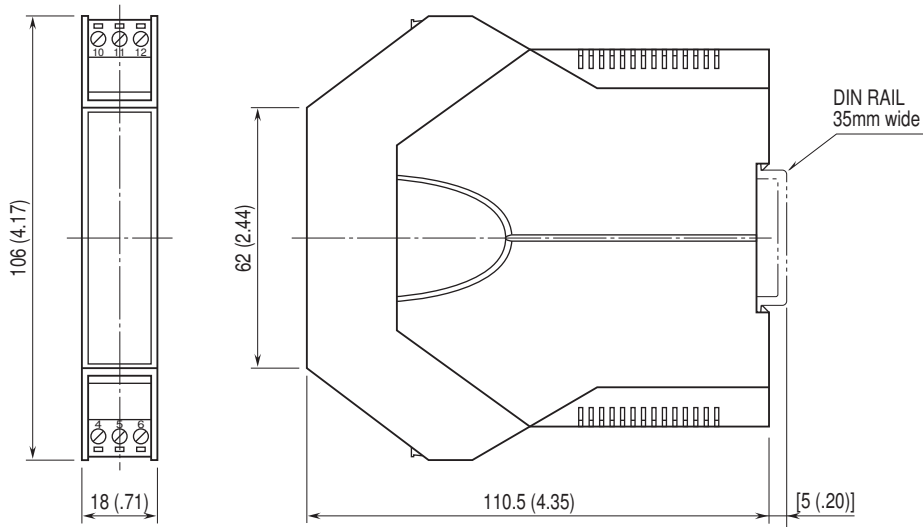
### FRONT VIEW



### SIDE VIEW

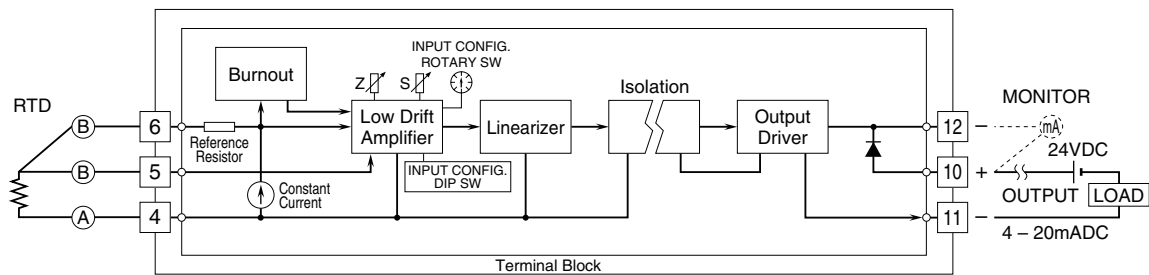


**EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)**



• When mounting, no extra space is needed between units.

**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



Specifications are subject to change without notice.