

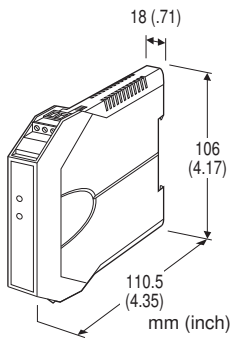
## Space-saving Two-wire Signal Conditioners B3-UNIT

### SIGNAL TRANSMITTER

(field-configurable)

#### Functions & Features

- Converts a DC input into an isolated 4 – 20 mA DC signal
- DIP switch configurable input range
- Monitor terminals
- High-density mounting



### MODEL: B3FV[1]

#### ORDERING INFORMATION

- Code number: B3FV[1]

Specify a code from below for [1].

- (e.g. B3FV/UL/Q)
- Input range (e.g. 0 – 10 V DC)
- 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 (4 – 20 mA input)
- Specify the specification for option code /Q (e.g. /C01)

#### [1] OPTIONS (multiple selections)

##### Standards & Approvals

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

##### Other Options

- blank: none
- /Q: Option other than the above (specify the specification)

#### SPECIFICATIONS OF OPTION: Q

**COATING (For the detail, refer to M-System's web site.)**

- /C01: Silicone coating
- /C02: Polyurethane coating
- /C03: Rubber coating (UL not available)

#### GENERAL SPECIFICATIONS

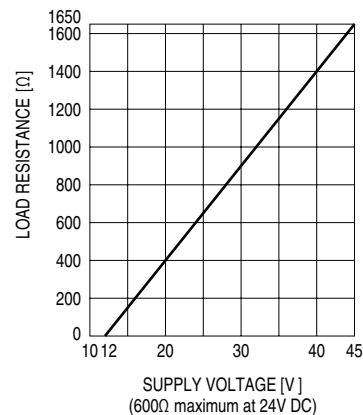
- Construction:** Small-sized front terminal structure
  - Connection:** Euro type connector terminal (applicable wire size: 0.2 to 2.5 mm<sup>2</sup>, stripped length 8 mm)
  - Housing material:** Flame-resistant resin (gray)
  - Isolation:** Input to output
  - Configuration:** DIP switch
  - Setting:**
    - Input Type
    - Input Range
    - Others
- Refer to the instruction manual for details.

#### INPUT SPECIFICATIONS

- **DC Current:** Input resistor incorporated
- Input resistance:** 250 Ω (4 – 20 mA)
- Usable range:**
  - Max. range:** -30 to +30 mA DC
  - Span:** Min. 16 μA, Max. 60 mA
  - Offset:** -100 to +80 % of the selected range
- **DC Voltage**
  - **Input resistance**
    - Span 4 mV – 3 V :** ≥ 1 MΩ (≥ 40 kΩ with no supply voltage)
    - Span ≥ 3 V :** ≥ 1 MΩ
  - **Usable range:**
    - Max. range:** -100 to +100 V DC
    - Span:** Min. 4m V, Max. 100 V
    - Offset:** -100 to +80 % of the selected range (Max. voltage across the input terminals: 70 V for conform with EU Directive; 60 V for UL approval)

#### OUTPUT SPECIFICATIONS

- Output:** 4 – 20 mA DC
- Load resistance vs. supply voltage:** Load Resistance (Ω) = (Supply Voltage (V) – 12 (V)) ÷ 0.02 (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:** ±0.1 %

**Temp. coefficient:** ±0.02 %/°C (±0.01 %/°F)

**Response time:** ≤ 0.5 sec. (0 - 90 %)

**Insulation resistance:** ≥ 100 MΩ with 500 V DC

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

(input to output to ground)

## STANDARDS & APPROVALS

**EU conformity:**

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

RoHS Directive

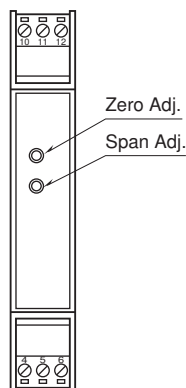
**Approval:**

UL/C-UL general safety requirements

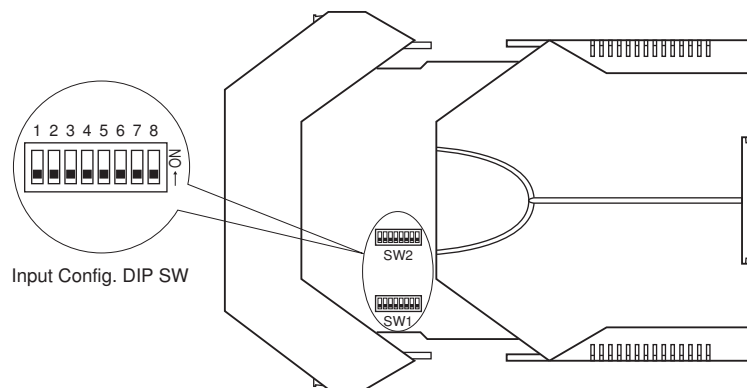
(UL 61010-1, CAN/CSA-C22.2 No.1010-1)

## EXTERNAL VIEW

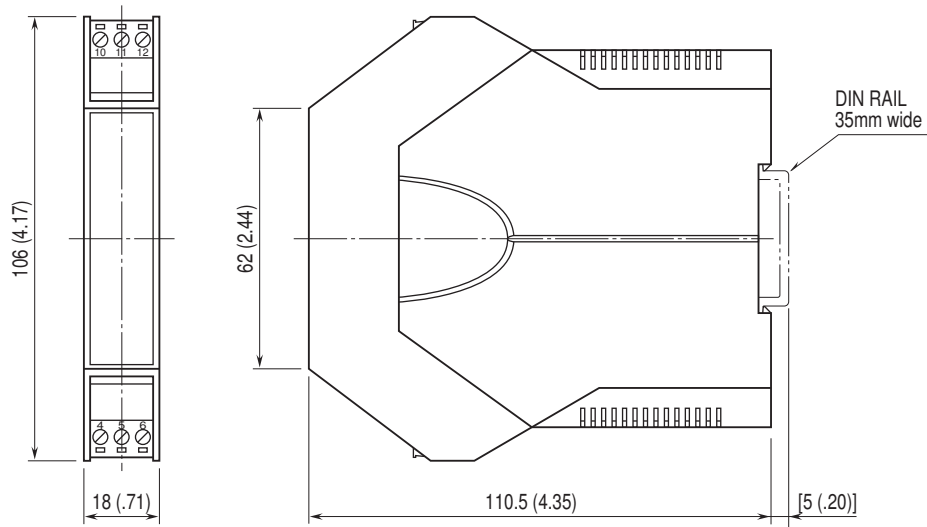
FRONT VIEW



SIDE VIEW

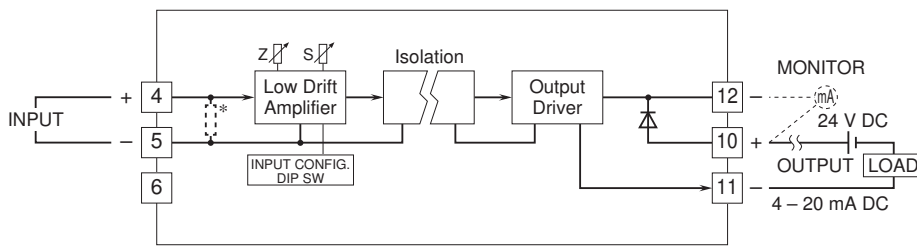


**EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS** unit: mm [inch]



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

**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



\* Input shunt resistor incorporated for current input.



Specifications are subject to change without notice.