Space-saving Plug-in Signal Conditioners F-UNIT

CURRENT LOOP SUPPLY

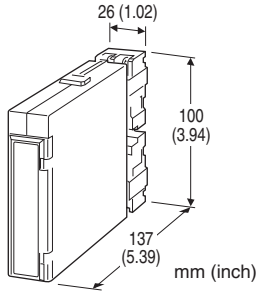
(with square root extractor; non-isolated)

Functions & Features

- Powering a 4 – 20 mA DC current loop
- Square root extraction
- Shortcircuit protection
- Applicable to smart transmitters
- High-density mounting

Typical Applications

- Various 2-wire transmitters



MODEL: FDL–24–[1][2]

ORDERING INFORMATION

- Code number: FDL-24-[1][2]

Specify a code from below for each [1] and [2].
(e.g. FDL-24-L/Q)

- Specify the specification for option code /Q
(e.g. /C01/S01)

SUPPLY OUTPUT

24: 24 V DC

INPUT

Current

4 – 20 mA DC (Input resistance 250 Ω)

OUTPUT

Voltage

1 – 5 V DC (Load resistance 10 kΩ min.)

[1] POWER INPUT

AC Power

K: 85 – 132 V AC
(Operational voltage range 85 – 132 V, 47 – 66 Hz)
L: 170 – 264 V AC
(Operational voltage range 170 – 264 V, 47 – 66 Hz)

DC Power

R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)
P: 110 V DC
(Operational voltage range 85 – 150 V, ripple 10 %p-p max.)

[2] OPTIONS

blank: none
/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q (multiple selections)

COATING (For the detail, refer to M-System's web site.)
/C01: Silicone coating
/C02: Polyurethane coating
/C03: Rubber coating
TERMINAL SCREW MATERIAL
/S01: Stainless steel

GENERAL SPECIFICATIONS

Construction: Plug-in
Connection: M3.5 screw terminals (torque 0.8 N·m)
Screw terminal: Nickel-plated steel (standard) or stainless steel
Housing material: Flame-resistant resin (black)
Isolation: Input or output to power
Overrange output: 0 to 120 % at 1 – 5 V
Zero adjustment: -5 to +5 % (front)
Span adjustment: 95 to 105 % (front)
Low-end cutout: Approx. 5 – 8 % (output)

SUPPLY OUTPUT

Output voltage: 24 – 28 V DC with no load
Current rating: ≤ 22 mA DC
• **Shortcircuit Protection**
Current limited: 30 mA max.
Protected time duration: No limit

INPUT SPECIFICATIONS

■ **DC Current**: Input resistor incorporated

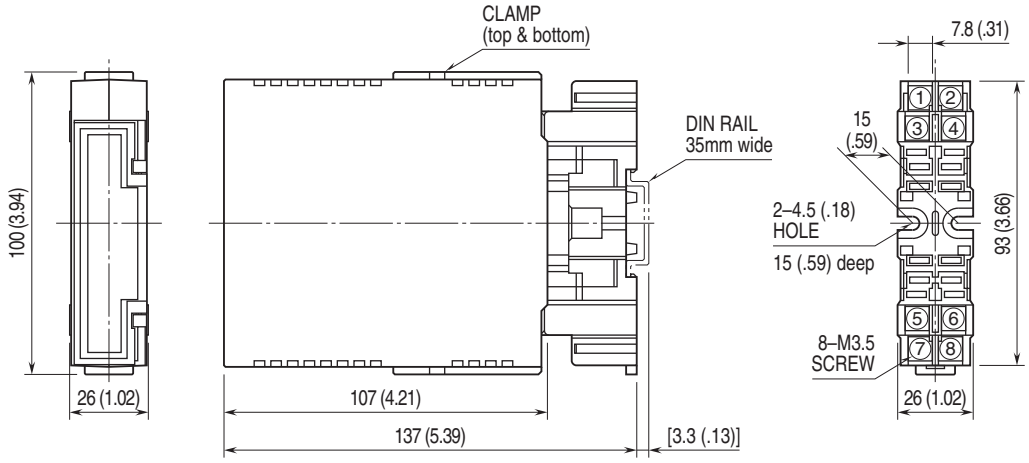
INSTALLATION

Power consumption
•**AC**: Approx. 4.5 VA
•**DC**: 24 V approx. 70 mA
110 V approx. 20 mA
Operating temperature: -5 to +55°C (23 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail; Standard Rack Mounting Frame BX-16H available
Weight: 200 g (0.44 lb)

PERFORMANCE in percentage of span

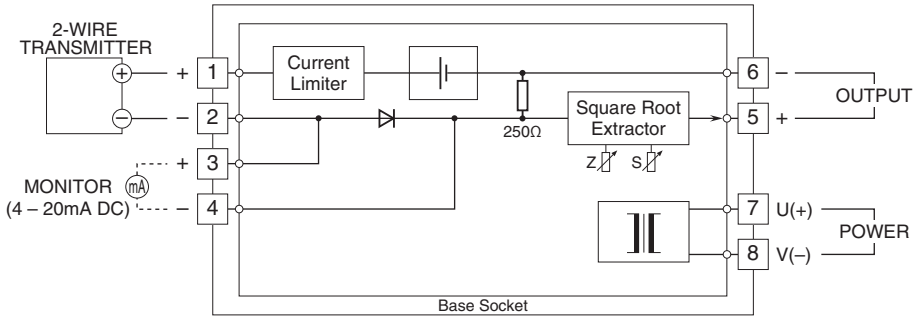
Accuracy: ±0.3 % (input 1 – 100 %)
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)
Response time: ≤ 0.5 sec. (0 – 90 %)
Line voltage effect
Supply output: ±3 % over voltage range
Output signal: ±0.1 % over voltage range
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength
Power input code R:
2000 V AC @ 1 minute (input or output or power to ground)
500 V AC @ 1 minute (I/O to power)
Power input code K, L, P:
2000 V AC @ 1 minute (input or output or power to ground)
1500 V AC @ 1 minute (I/O to power)

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.