

Space-saving Plug-in Signal Conditioners F-UNIT

CURRENT LOOP SUPPLY

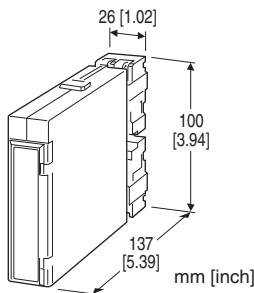
(with square root extractor; non-isolated)

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 of [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 our 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: $\pm 0.3\%$ (input 1 - 100 %)

Temp. coefficient: $\pm 0.015\%/^{\circ}\text{C}$ ($\pm 0.008\%/^{\circ}\text{F}$)

Response time: ≤ 0.5 sec. (0 - 90 %)

Line voltage effect

Supply output: $\pm 3\%$ over voltage range

Output signal: $\pm 0.1\%$ over voltage range

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

Dielectric strength

Power input code R:

2000 V AC @ 1 minute (input or output or power to ground)

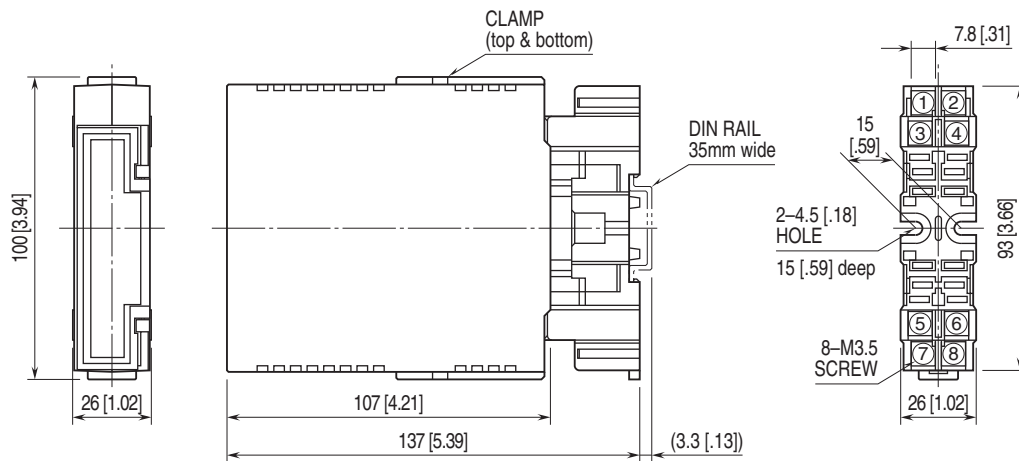
500 V AC @ 1 minute (I/O to power)

Power input code K, L, P:

2000 V AC @ 1 minute (input or output or power to ground)

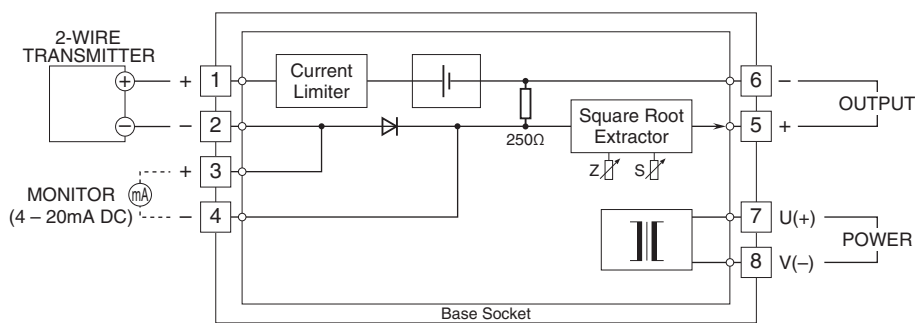
1500 V AC @ 1 minute (I/O to power)

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.