

Space-saving Plug-in Signal Conditioners F-UNIT

STRAIN GAUGE TRANSMITTER

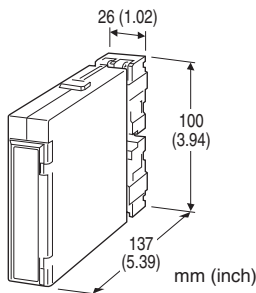
(non-isolated)

Functions & Features

- Providing a DC output signal proportional to a bridge type strain gauge utilized in load cells, pressure transducers
- Supplying required excitation voltage
- Drives bridges of various ratings
- Excitation adjustable from 2 V to 10 V
- Wide-range adjustment: 0 - 80 % for zero, 20 - 100 % for span
- High-density mounting

Typical Applications

- Weighing system for tanks, hoppers, silos
- Weighing system using cranes
- Float level meter utilizing strain gauges



MODEL: FLC-[1][2]-[3]

ORDERING INFORMATION

- Code number: FLC-[1][2]-[3]
- Specify a code from below for each [1] through [3] (e.g. FLC-2A-K)
- Special output range (For codes Z & 0)

[1] INPUT STRAIN GAUGE

- 1: 1 mV/V
- 12: 1.25 mV/V
- 15: 1.5 mV/V
- 2: 2 mV/V
- 3: 3 mV/V
- 4: 4 mV/V
- 5: 5 mV/V
- 6: 10 mV/V
- 7: 20 mV/V
- 0: Specify (strain gauge and excitation)

[2] OUTPUT

Current

- A: 4 - 20 mA DC (Load resistance 750 Ω max.)
- B: 2 - 10 mA DC (Load resistance 1500 Ω max.)
- C: 1 - 5 mA DC (Load resistance 3000 Ω max.)
- D: 0 - 20 mA DC (Load resistance 750 Ω max.)
- E: 0 - 16 mA DC (Load resistance 900 Ω max.)
- F: 0 - 10 mA DC (Load resistance 1500 Ω max.)
- G: 0 - 1 mA DC (Load resistance 15 kΩ max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

- 1: 0 - 10 mV DC (Load resistance 10 kΩ min.)
- 2: 0 - 100 mV DC (Load resistance 100 kΩ min.)
- 3: 0 - 1 V DC (Load resistance 1000 Ω min.)
- 4: 0 - 10 V DC (Load resistance 10 kΩ min.)
- 5: 0 - 5 V DC (Load resistance 5000 Ω min.)
- 6: 1 - 5 V DC (Load resistance 5000 Ω min.)
- 4W: -10 - +10 V DC (Load resistance 10 kΩ min.)
- 5W: -5 - +5 V DC (Load resistance 5000 Ω min.)
- 0: Specify voltage (See OUTPUT SPECIFICATIONS)

[3] 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.)

GENERAL SPECIFICATIONS

- Construction:** Plug-in
- Connection:** M3.5 screw terminals (torque 0.8 N·m)
- Screw terminal:** Nickel-plated steel
- Housing material:** Flame-resistant resin (black)
- Isolation:** Input or output to power
- Overrange output:** Approx. -10 to +120 % at 1 - 5 V
- Excitation adjustment:** 2 - 10 V (front)
- Zero adjustments (tare):** 0 - 80 % (front)
(May not applicable when the excitation voltage is changed after shipment.)
- Span adjustment:** 100 - 20 % (front)
(May not applicable when the excitation voltage is changed after shipment.)



INPUT SPECIFICATIONS

- **Input:** Bridge voltage from load cells
 - **Strain Gauge**
- Rated output from strain gauge: 1 – 20 mV/V;
Input to this module must be over 3 mV.
- **Excitation:** 2 – 10 V adjustable (5 V standard)
- Maximum current: 35 mA

OUTPUT SPECIFICATIONS

- **DC Current:** 0 – 20 mA DC
- Minimum span: 1 mA
Offset: Max. 1.5 times span
Load resistance: Output drive 15 V max.
- **DC Voltage:** -10 – +12 V DC
- Minimum span: 5 mV
Offset: Max. 1.5 times span
Load resistance: Output drive 1 mA max.; at ≥ 0.5 V

INSTALLATION

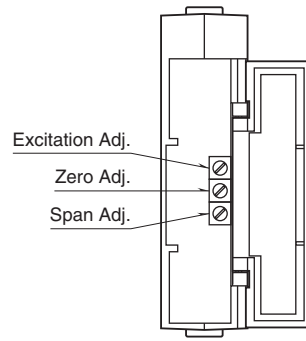
- Power input
- **AC:** Approx. 5 VA
 - **DC:** 24 V approx. 120 mA
110 V approx. 40 mA
- Operating temperature: -5 to +55°C (23 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail; Standard Rack Mounting
Frame BX-16H available
Weight: 200 g (0.44 lbs)

PERFORMANCE in percentage of span

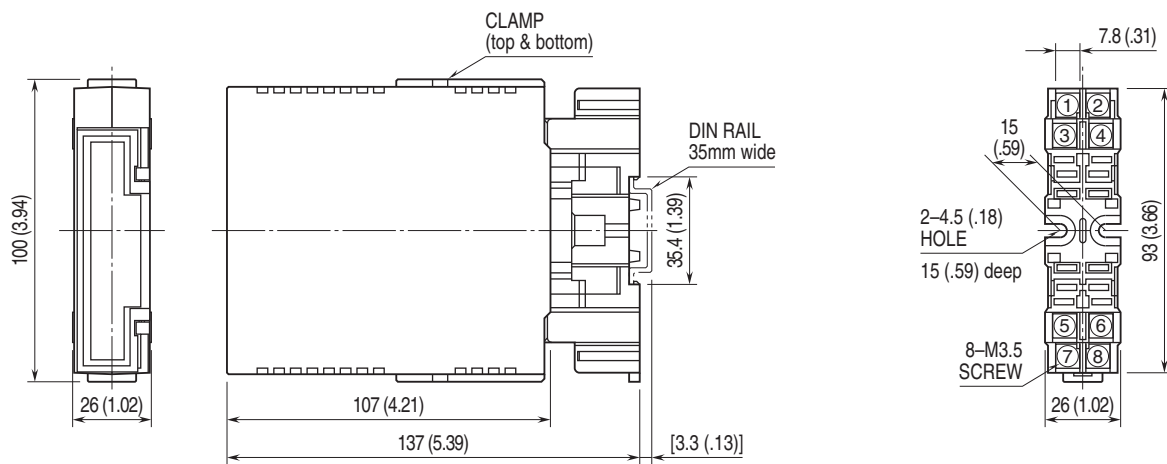
- Accuracy: ± 0.1 % (Input ≥ 3 mV)
Temp. coefficient: ± 0.015 %/°C (± 0.008 %/°F) (Input ≥ 3 mV)
Response time: ≤ 0.5 sec. (0 – 90 %)
Line voltage effect: ± 0.1 % over voltage range
Insulation resistance: ≥ 100 M Ω with 500 V DC
Dielectric strength
- Power input code R:
2000 V AC @ 1 minute (input or 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 VIEW

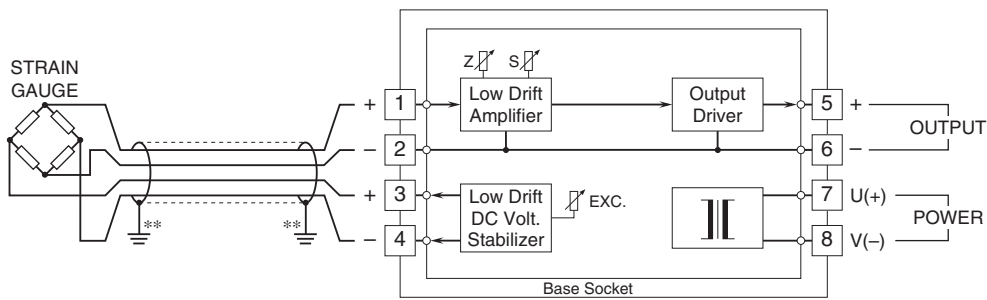


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



**Ground the shield cable at either strain gauge or transmitter side.



Specifications are subject to change without notice.