High-density Signal Conditioners 10-RACK

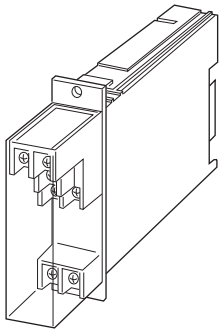
STRAIN GAUGE TRANSMITTER

Functions & Features

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

Typical Applications

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



MODEL: 10LCS-[1][2]0-R[3]

ORDERING INFORMATION

• Code number: 10LCS-[1][2]0-R[3]
Specify a code from below for each of [1] through [3].
(e.g. 10LCS-2A0-R/Q)
• Specify the specification for option code /Q
(e.g. /C01)

[1] INPUT STRAIN GAUGE

2: 2 mV/V
0: Specify (strain gauge and excitation)

[2] OUTPUT 1

Current
A: 4 – 20 mA DC (Load resistance 600 Ω max.)
B: 2 – 10 mA DC (Load resistance 1200 Ω max.)
C: 1 – 5 mA DC (Load resistance 2400 Ω max.)
D: 0 – 20 mA DC (Load resistance 600 Ω max.)
E: 0 – 16 mA DC (Load resistance 750 Ω max.)
F: 0 – 10 mA DC (Load resistance 1200 Ω max.)
G: 0 – 1 mA DC (Load resistance 12 kΩ max.)
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 100 Ω min.)
4: 0 – 10 V DC (Load resistance 1000 Ω min.)
5: 0 – 5 V DC (Load resistance 500 Ω min.)
6: 1 – 5 V DC (Load resistance 500 Ω min.)
4W: -10 – +10 V DC (Load resistance 10 kΩ min.)

OUTPUT 2

0: None

POWER INPUT

DC Power
R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

[3] OPTIONS

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

SPECIFICATIONS OF OPTION: Q

COATING (For the detail, refer to our web site.)
/C01: Silicone coating
/C02: Polyurethane coating
/C03: Rubber coating

GENERAL SPECIFICATIONS

Construction: Rack-mounted; terminal access via screw terminals at the front and via card-edge connector at the rear; terminal cover provided
Connection
Input: M3.5 screw terminals (torque 0.8 N·m)
Output: Card-edge connector and M3.5 screw terminals (torque 0.8 N·m)
Power input: Supplied from card-edge connector
Screw terminal: Nickel-plated steel
Housing material: Flame-resistant resin (black)
Isolation: Input to output to power
Overrange output: Approx. -10 to +120 % at 1 – 5 V
Excitation adjustment: 2 – 10 V (front)
Zero adjustment (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.)

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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

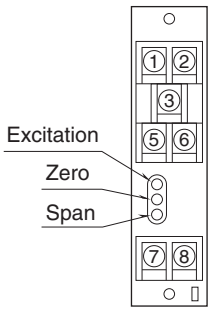
INSTALLATION

Current consumption: Approx. 120 mA
Operating temperature: -5 to +55°C (23 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Standard Rack 10BXx
Weight: 200 g (0.44 lb)

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 MΩ with 500 V DC
Dielectric strength: 500 V AC @ 1 minute
(input to output to power)
1500 V AC @ 1 minute (input or output or power to ground)

EXTERNAL VIEW



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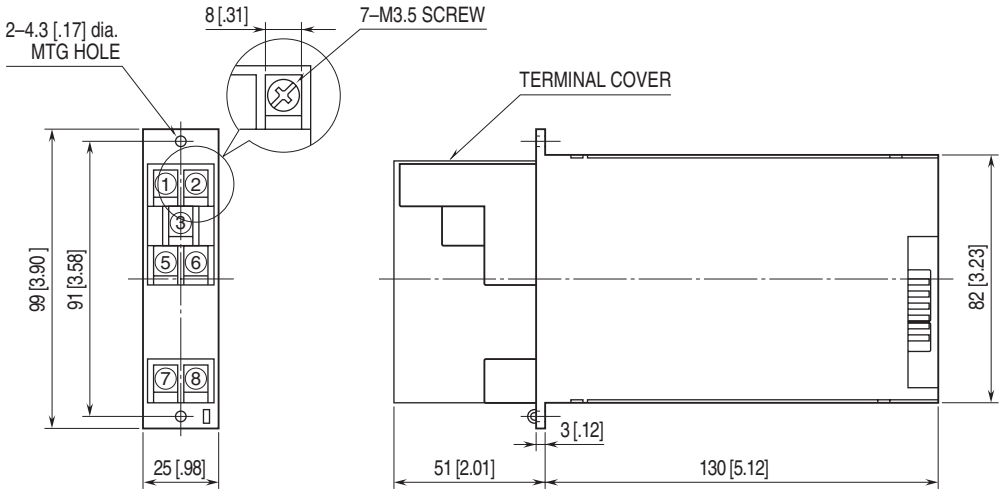
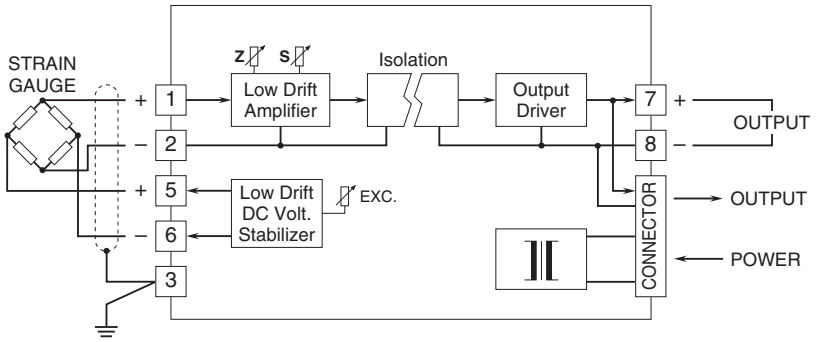
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



⚠ Specifications are subject to change without notice.

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