High-density Signal Conditioners 10-RACK

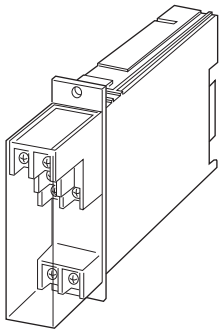
SQUARE ROOT EXTRACTOR

Functions & Features

• Providing two DC outputs proportional to the root of the input signal
• Low-end cutout
• Optional second channel output available at the front terminals and at the Standard Rack connector

Typical Applications

• Converting differential pressure to flow



MODEL: 10FNS–[1][2][3]–R[4]

ORDERING INFORMATION

• Code number: 10FNS-[1][2][3]-R[4]
Specify a code from below for each [1] through [4].
(e.g. 10FNS-6A6-R/Q)
• Specify the specification for option code /Q
(e.g. /C01)

[1] INPUT

Current

A: 4 – 20 mA DC (Input resistance 87.7 Ω)
H: 10 – 50 mA DC (Input resistance 100 Ω)

Voltage

6: 1 – 5 V DC (Input resistance 1 MΩ min.)

[2] OUTPUT 1

Current

A: 4 – 20 mA DC (Load resistance 600 Ω max.)
D: 0 – 20 mA DC (Load resistance 600 Ω max.)
G: 0 – 1 mA DC (Load resistance 12 kΩ max.)

Voltage

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.)

[3] OUTPUT 2

0: None

Voltage

6: 1 – 5 V DC (Load resistance 5000 Ω min.)

POWER INPUT

DC Power

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

[4] OPTIONS

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

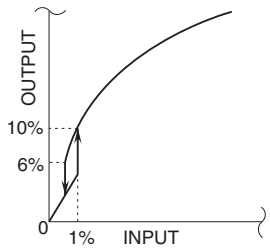
SPECIFICATIONS OF OPTION: Q

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

/C01: Silicone coating
/C02: Polyurethane coating
/C03: Rubber coating

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 1 to output 2 to power
Overrange output: Approx. 0 to 120 % at 1 – 5V
Zero adjustment: -2 to +2 % (front)
Span adjustment: 95 to 105 % (front)
Low-end cutout: Approx. 10 % (output); curve characteristics shown in the figure below



INPUT SPECIFICATIONS

■ **DC Current**: Input resistor incorporated

OUTPUT SPECIFICATIONS

The output turns to 0 % when the input is open.

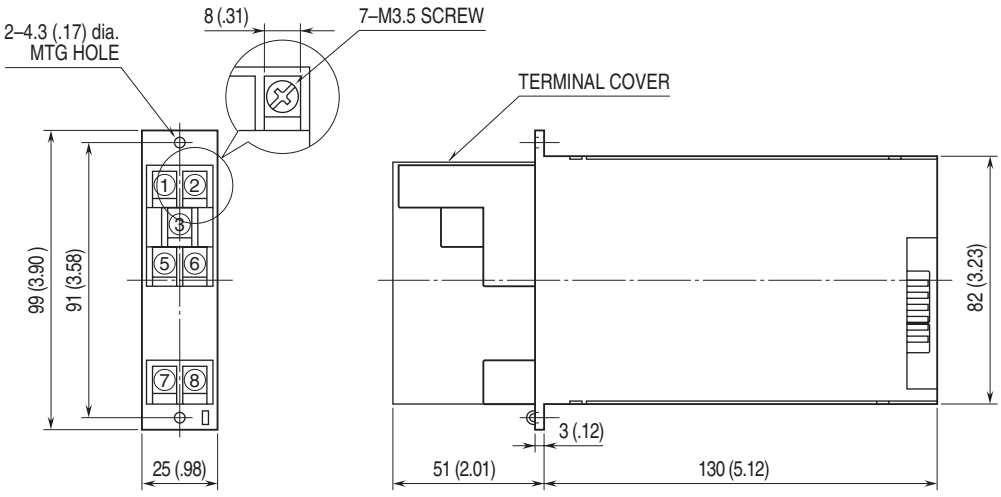
INSTALLATION

Current consumption: Approx. 30 mA with voltage output 1
Approx. 55 mA with current output 1
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)

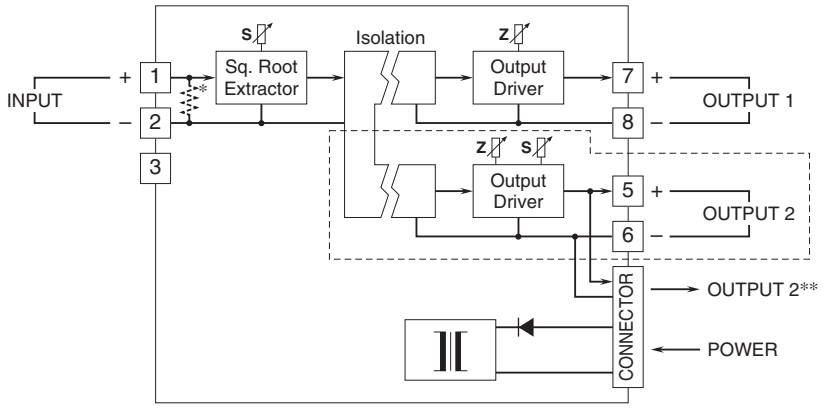
PERFORMANCE in percentage of span

Accuracy: ±0.25 % (input 1 – 100 %)
Temp. coefficient: ±0.03 %/°C (±0.02 %/°F)
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 1 to output 2 to power)
1500 V AC @ 1 minute (input or output or power to ground)

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



* Input shunt resistor incorporated for current input.
**1 output type has the output 1 connected to the card-edge connector in parallel.
Remark 1) The section enclosed by broken line is only for 2nd output channel.

⚠ Specifications are subject to change without notice.