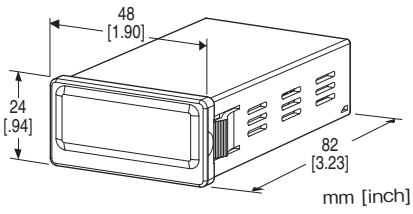
Digital Panel Meters 43E Series

CURRENT LOOP SUPPLY DIGITAL PANEL METER

(sensor excitation, alarm output)

Functions & Features

- -1999 to +9999 digital panel meter
- Screwless spring terminal
- External power supply incorporated
- Linearization and Square root extraction are switchable
- 2 points alarm



CE

MODEL: 43EDY-[1]-[2][3]

ORDERING INFORMATION

- Code number: 43EDY-[1]-[2][3]

Specify a code from below for each of [1] and [3].
(e.g. 43EDY-1-R/Q)

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

INPUT

Current
4 – 20 mA DC (Input resistance 10 Ω)

[1] ALARM OUTPUT

1: N.O. relay contact, 2 points
2: Photo MOSFET relay, N.O., 2 points

[2] POWER INPUT

DC Power
T: 5 V DC
(Operational voltage range 5 V ± 5 %, ripple 10 %p-p max.)
R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

[3] OPTIONS

blank: none
/Q: Options other than the above (specify the specification)

SPECIFICATIONS OF OPTION: Q

EX-FACTORY SETTING
/SET: Preset according to the Ordering Information Sheet (No. ESU-9430)

GENERAL SPECIFICATIONS

Construction: Panel flush mounting
Connection: Screwless spring terminal
Applicable wire size: 1.0 to 1.3 mm^2, stripped length 8 mm
Housing material: Flame-resistant resin (gray)
Isolation: Input to alarm output to power
A/D conversion: Σ – Δ
Sampling rate: 5 times/sec. (200 msec.)
Averaging: None or moving average
Setting: (Front button)

- Scaled range
- Linearization, square root extraction
- Moving average
- Low-end cutout
- Brightness
- Others

DISPLAY

Display: 4 digits of 7.6 mm (.3") height, 7-segment, red LED
Display range: -1999 to 9999
Scaling range for measurement range (conformance range): -1999 to 9999
Decimal point position: 10^{-1}, 10^{-2}, 10^{-3} or none
Zero indication: Higher-digit zeros are suppressed.
Over-range indication: '-1999' or '9999' blinking for display values out of the display range. 'S.ERR' blinks surpassing the permissible range.
Alarm status indication
L1 indicator: Green turns on when the L1 alarm is tripped.
L2 indicator: Red turns on when the L2 alarm is tripped.
Engineering unit indication: Sticker label attached
DC, AC, mV, V, kV, µA, mA, A, kA, mW, W,
kW, var, kvar, Mvar, VA, Hz, Ω, kΩ, MΩ,
cm, mm, m, m/sec, mm/min, cm/min, m/min,
m/h, m/s^2, inch, ℓ, ℓ/s, ℓ/min, ℓ/h, m^3, m^3/sec,
m^3/min, m^3/h, Nm^3/h, N·m, N/m^2, g, kg, kg/h,
N, kN, Pa, kPa, MPa, t, t/h, ℃, °F, %RH, J,
kJ, MJ, rpm, sec, min, pH, %, ppm, etc.

EXCITATION SUPPLY

■ **+24V SENSOR EXCITATION**
Output voltage (across the terminals 3 – 1):
24 V DC @ 20 mA DC

- **Shortcircuit Protection**

Current limited: 40 mA maximum
Protected time duration: No limit

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INPUT SPECIFICATIONS

■ DC CURRENTINPUT

· 4 to 20 mA DC (conformance range)
Input range: 2.4 to 21.6 mA
Input resistance: approx. 10 Ω
Connect terminal 3 to 1

OUTPUT SPECIFICATIONS

■Alarm Output

· Relay contact

Rated load: 30 V AC 0.5 A (cosφ = 1)
30 V DC1A (resistive load)
Minimum load: 10 mV DC 10 μA
Mechanical life: ≥ 5 × 10^7 cycles
For maximum relay life with inductive loads, external protection is recommended.

■Alarm output

· Photo MOSFET relay

Rating: 30 V DC 100 mA (resistive load)
ON resistance: ≤ 0.25 Ω
Permissible: 250 mW

LINEARIZATION

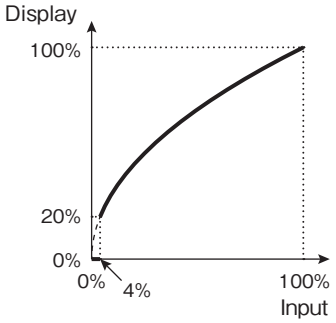
■ Linearization Types

Linear: The output is proportional to the input.
Square root: The input is square root extracted.

■ Low-end Cutout

Set low-end cutout value from 0 to 99.9 % of input singal.
Outputs 0% when under low-end cutout value.

Ex.) When the low-end cutout value is set to "4.0%" for square root computation, an input signal less than 4% (display value less than 20%) is the display value at 0% input signal.



INSTALLATION

Power consumption: 2 W max.
Power supply T: ≤ 380mA @ 5 V DC
R: ≤ 80 mA @ 24 V DC
Operating temperature: 0 to 55°C (32 to 131°F)
Operating humidity: 20 to 90 % RH (non-condensing)
Mounting: Panel flush mounting
Weight: 60 g (2.12 oz)

PERFORMANCE

Accuracy: ±0.1 % rdg ±1 digit× scaling-multiple
(Input within 1 - 100 % for square root extraction)
Temp. coefficient: ±(0.01%rdg + 0.3 digits) × scaling-multiple/°C
(When the scaling-multiple is less than 1, rounded up to 1.)
Scaling-multiple = | (Display Scaling Value B - Display Scaling Value A) ÷ (default Display Scaling Value B - default Display Scaling Value A) |
Response time: ≤ 500 msec.
Line voltage effect: ±1 digit over voltage range
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 1000 V AC @ 1 minute (input to alarm output to power to ground)

STANDARDS & APPROVALS

EU conformity:
EMC Directive
EN 61326-1
RoHS Directive

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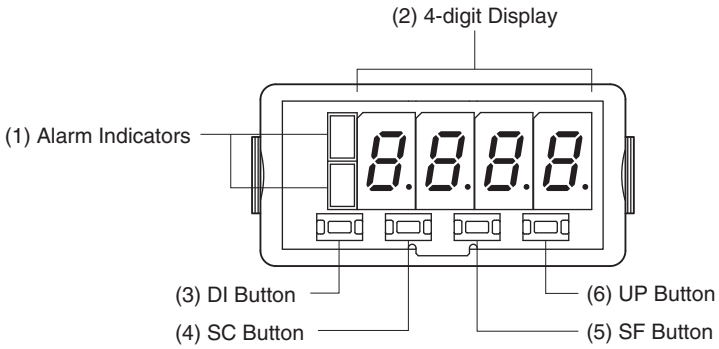
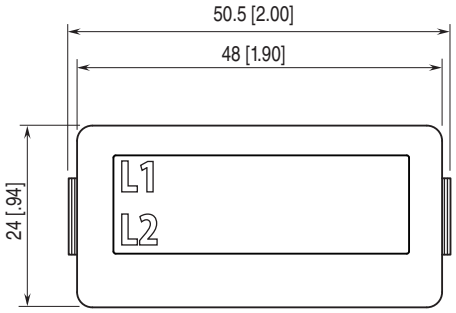
EXTERNAL VIEW

■ **VIEW WITHOUT THE FRONT PANEL**

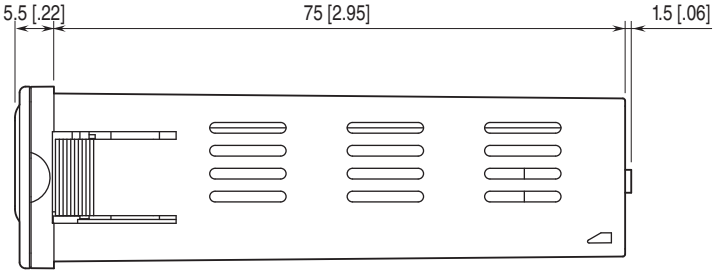


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]

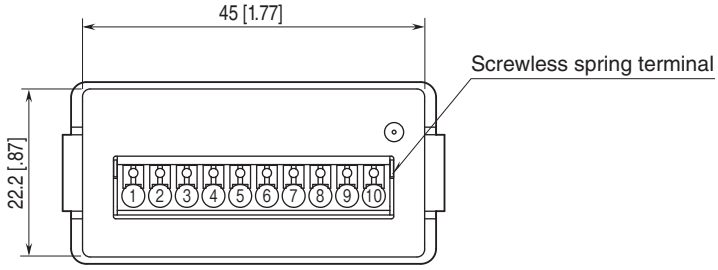
■ **FRONT VIEW**



■ **SIDE VIEW**



■ **REAR VIEW**



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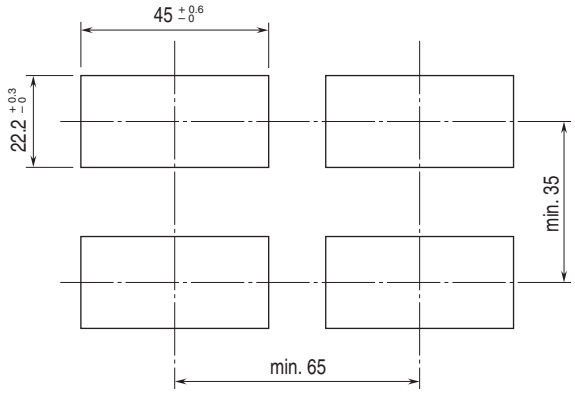
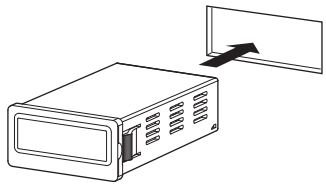
MOUNTING REQUIREMENTS unit: mm

■ **PANEL CUTOUT unit: mm**



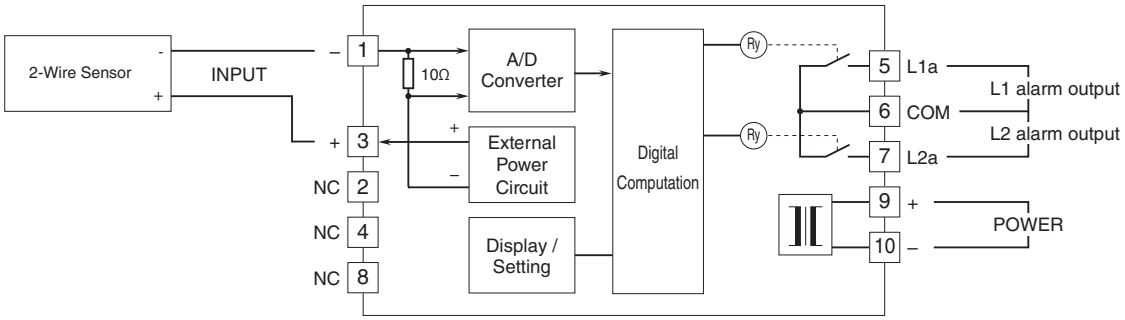
Panel thickness: 0.8 to 3.5 mm

MOUNTING



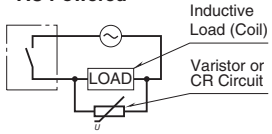
Just insert the meter body (snap-in method)

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

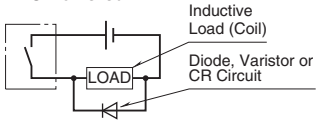


● **Relay Protection**

· **AC Powered**



· **DC Powered**



⚠ Specifications are subject to change without notice.

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