

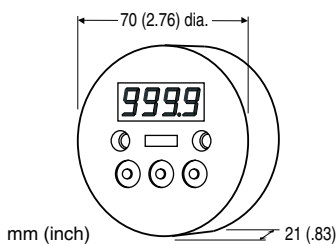
Field-mounted Two-wire Signal Conditioners 6-UNIT

4-DIGIT LOOP POWERED INDICATOR

(intrinsic safety)

Functions & Features

- 4-digit LED display
- No external power source needed
- Scaling, linearization and other configurations selectable via three front control buttons



MODEL: FXE-[1]

ORDERING INFORMATION

- Code number: FXE-[1]

Specify a code from below for [1].

- (e.g. FXE-0)
- Use Ordering Information Sheet (No. ESU-TNFFXE).
Factory standard setting will be used if not otherwise specified.

[1] SAFETY APPROVAL

- 0: None
- 2: ATEX intrinsic safety

GENERAL SPECIFICATIONS

- Connection:** Euro type terminal
- Applicable wire size:** 0.14 - 1.5 mm² (AWG26 - 16), stripped length 6 mm
- Housing material:** Flame-resistant resin (black)
- Linearization:** Proportional, SQRT ($X^{1/2}$), RT32 ($X^{3/2}$), RT52 ($X^{5/2}$), user's linearization table (max. 21 calibration points)
(Default setting: Proportional)
- A/D conversion:** Dual-slope integration
- Security:** Protecting settings
- Scaling:** Programming via the front buttons

DISPLAY

- LED:** 8 mm (.3") 7-segment, red
- Number of display digits:** 4
- Scaling range:** -1999 to 9999
- Offset range:** -1999 to 9999
- Decimal point position:** 10⁻¹, 10⁻², 10⁻³, or no decimal point
- Polarity sign:** Minus (-) sign added automatically according to the computation result
- Read rate:** 2.5/s
- Over-range warning:** All segments dark except the top ones that blink with the input exceeding the display/measurable range; or the bottom ones that blink with the input below the range.
- Engineering unit display:** Unit label included; LED backlight provided

INPUT SPECIFICATIONS

- **DC Current:** 4 - 20 mA DC
- Measurable range:** 3.75 - 23 mA DC
- Maximum input current**
- Non-approved:** 100 mA
- Intrinsically safe:** Refer to 'Safety Parameters.'
- Voltage drop:** Approx. 3.7 V with 4 mA
Approx. 4.0 V with 20 mA
- The minimum required supply voltage to the 2-wire transmitter added with the indicator's voltage drop at the maximum input current must be within the output voltage range of the 2-wire transmitter's excitation supply.

INSTALLATION

- Operating temperature:** -40 to +85°C (-40 to +185°F)
(See Safety Parameters for use in a hazardous location.)
- Operating humidity:** 0 to 95 %RH (non-condensing)
- Weight:** 65 g (2.3 oz)

PERFORMANCE

- Accuracy:** ±0.01 mA
- Temp. coefficient:** ±0.015 %/°C (±0.008 %/°F) at 4 - 20 mA input

HOW TO CALCULATE ACCURACY AGAINST SCALE

- Example 1: 4 - 20 mA input, Scale 0 - 100
Accuracy = 0.01 mA ÷ (20 - 4) mA × 100 = 0.063 %
Display Error = (100 - 0) × 0.063 % = ±0.063 digits
- Example 2: 10 - 20 mA input, Scale 100 - 1000
Accuracy = 0.01 mA ÷ (20 - 10) mA × 100 = 0.1 %
Display Error = (1000 - 100) × 0.1 % = ±0.9 digits

STANDARDS & APPROVALS

Refer to the manuals to comply with the standards.

EU conformity:

ATEX Directive (for ATEX intrinsic safety)

Ex ia EN 60079-11

Cat. 1G EN 60079-26

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

RoHS Directive

Safety approval:

ATEX: Intrinsic safety

⊕ II 1G, Ex ia IIC; T4, T5, Ga

(EN 60079-0)

(EN 60079-11)

SAFETY PARAMETERS

Operating temperature

For ATEX Intrinsic Safety

T4: -40 to +80°C

T5: -40 to +60°C

Ex-data:

Ui (Vmax): 30 V DC

Ii (Imax): 100 mA DC

Pi (Pmax): 0.75 W

Ci: 1.0 nF

Li: 0 mH

DISPLAY DESCRIPTIONS

■ DISPLAY DIGITS

The decimal point position may shift according to the required number of digits for the integer section, even when more than one decimal places have been specified.

However, when the number of decimal places is set to 3, the '0' in the integer section is not shown in order to secure the number of effective digits, as explained in the table below.

The '0' is displayed when the number of decimal places is set to 2, though the number of effective digits in this case is reduced by 1 digit compared from the 3 decimal places.

Select appropriately for the application. Refer to 'Programming Procedure' for how to choose decimal point positions.

DECIMAL	VALUE	DATA DISPLAY
3	-1.000 thr . -1.999	-000 ... -999
	-0.001 thr . -0.999	-001 ... -999
2	-1.00 thr . -1.99	- 000 ... - 999
	-0.01 thr . -0.99	-001 ... -099

■ ERROR INDICATION

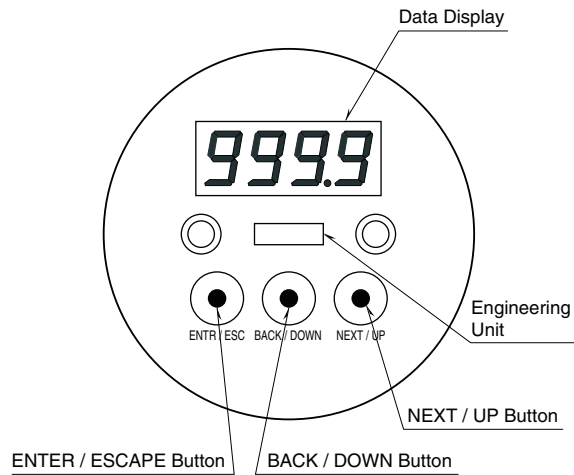
The data display blinks when an abnormality is detected.

The unit display backlight also blinks.

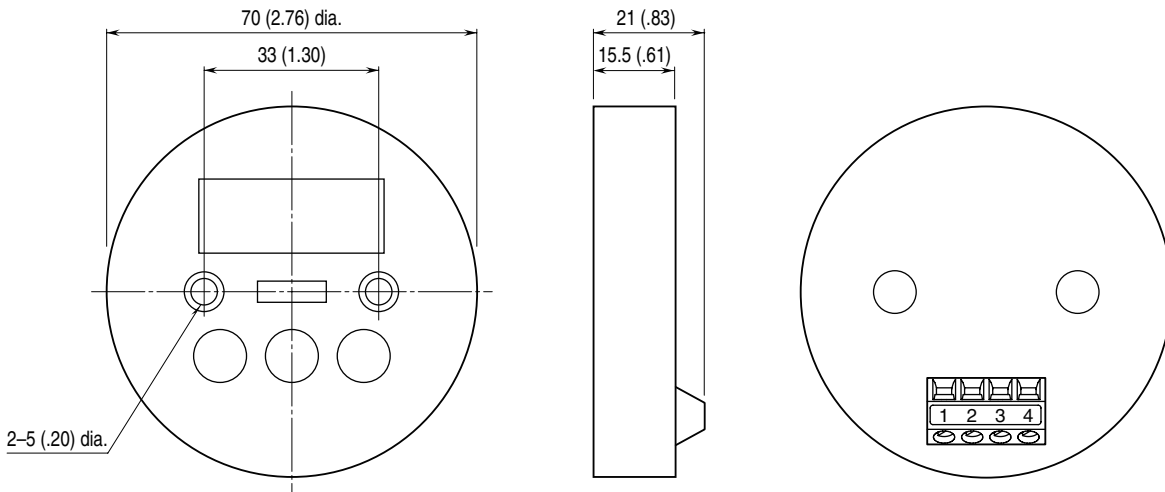
When the setting error or the security code error occurs, press ENTR / ESC button once to cancel the error status and proceed to set again.

ERROR TYPE	DATA DISPLAY
Over-scale	----
Under-scale	----
Setting error	Err
Security code error	Err

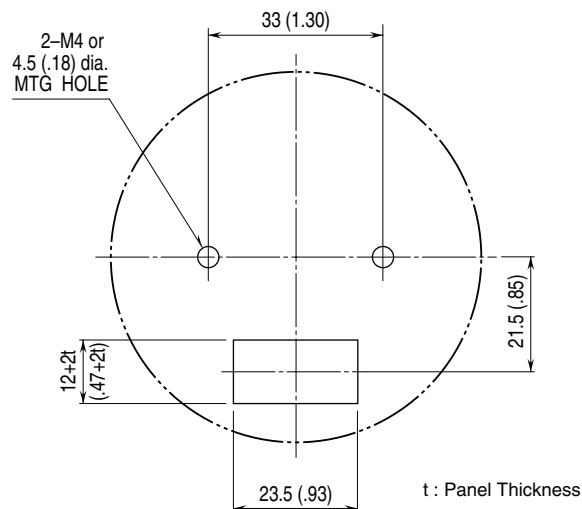
EXTERNAL VIEW



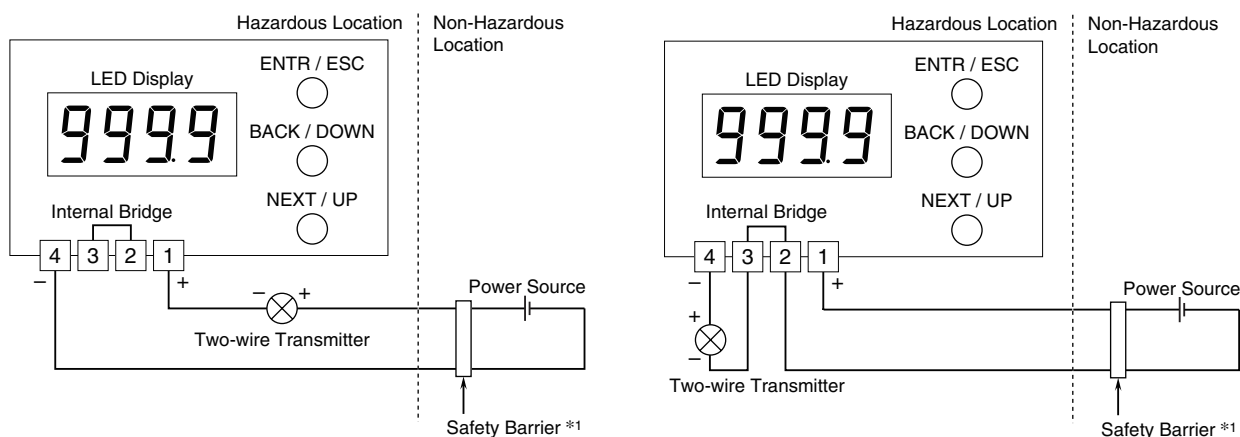
EXTERNAL DIMENSIONS unit: mm (inch)



MOUNTING REQUIREMENTS unit: mm (inch)



CONNECTION DIAGRAM



*1. A safety barrier must be installed for the intrinsic safety.
The safety barrier must meet the Ex-data of this unit and must be approved for the hazardous location.



Specifications are subject to change without notice.