

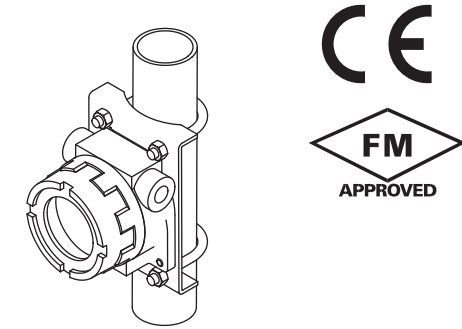
Digital Panel Meters 43 Series

LOOP POWERED DIGITAL METER

(explosion-proof; outdoor enclosure; process meter)

Functions & Features

- Loop powered -1999 to 9999 compact digital meter
- No external power source needed
- Optional stainless steel enclosure



MODEL:43AL1-B-[1][2][3][4][5]

ORDERING INFORMATION

- Code number: 43AL1-B-[1][2][3][4][5]
- Specify a code from below for each of [1] through [5].
(e.g. 43AL1-B-0001/S/Q)
- Specify the specification for option code /Q
(e.g. /SET)

[1] SAFETY APPROVAL

- 0: None
 - 3: FM explosion-proof
 - 8: TIIS flameproof (CE not available)
- Confirm selectable combinations of approval and wiring conduit types in the table.

[2] TERMINAL BLOCK

- 0: None (Connection to the rear of digital meter module)
(TIIS approval not selectable)
- T: Incorporated

[3] WIRING CONDUIT

- 0: G 1/2
 - 1: 1/2 NPT
 - 2: M20 × 1.5
 - 3: PG 13.5
- Confirm selectable combinations of approval and wiring conduit types in the table.

[4] MOUNTING BRACKET

- 0: Without
- 1: With

[5] OPTIONS (multiple selections)

Enclosure Materials

- Blank:** Diecast aluminium enclosure
- /S:** Stainless steel enclosure
(TIIS flameproof approval not selectable)

Other Options

- blank:** none
- /Q:** Option other than the above (specify the specification)

■ SELECTABLE WIRING CONDUITS SPECIFIC TO EACH APPROVAL

'N' marked combinations are not selectable.

WIRING CONDUIT \ APPROVAL	APPROVAL		
	0	3	8
0	Y	N	Y
1	Y	Y	N
2	Y	N	N
3	Y	N	N

SPECIFICATIONS OF OPTION: Q

EX-FACTORY SETTING

- /SET:** Preset according to the Ordering Information Sheet
(No. ESU-9426)

RELATED PRODUCTS

- Cable gland (model: BX-E-EXP)
- Stopping plug (model: BX-E-SBP)

PACKAGE INCLUDES...

- **Cable gland:** Two provided for TIIS flameproof type
Model No.: BX-E-EXP
Cable entries: Elastomeric sealing rings
Wiring conduit size: G 1/2
Material: Chrome-plated brass (entry)
CR (sealing ring)
Applicable wire size: 8 - 12 dia.
- **Stopping plug:** One provided for TIIS flameproof type
Model No.: BX-E-SBP
Wiring conduit size: G 1/2
Material: Diecast aluminium (plug)
NBR (O-ring)
- **Mounting screws**
Bolt (M8 x 15): 4 pcs.
Spring washer for M8: 4 pcs.
Material: Stainless steel 304
- **Mounting bracket assembly (option)**

- Mounting bracket: 1 pcs.
- M10 U-bolt: 2 pcs.
- Nut for M10: 4 pcs.
- Spring washer for M10: 4 pcs.
- Material:** Stainless steel 304
- Applicable pipe:** 1 1/2" min.; 2" max.
- **Engineering unit label (1)**

GENERAL SPECIFICATIONS

- Degree of protection:** NEMA 4X, IP66/IP67
- Wiring conduit:** See 'Ordering information.'
- Connection:**
 - **Without terminal block :** Screwless spring terminal in Digital meter
 - **With Terminal block :** Euro terminal
- Applicable wire size:** 1.0 to 1.3 mm², stripped length 8 mm
- **With Terminal block :** Euro terminal
- Applicable wire size:** 0.2 to 4 mm², stripped length 8 mm
- Materials**
 - **Meter housing:** Flame-resistant resin (gray)
 - **Enclosure:** Diecast aluminium standard; stainless steel casting optional (equivalent to type 316); silver color, epoxy resin coated
 - **Isolation:** Input to FE (Functional Earth) to outdoor enclosure
 - **A/D conversion:** $\Sigma - \Delta$
 - **Sampling rate:** 10 times/sec. (100 msec.)
 - **Averaging:** None or moving average
 - **Setting:** (Front button)
 - Scaled range
 - Moving average

DISPLAY

- Display:** 4 digits of 10.2 mm (.4") height, 7-segment, red LED
- Display range:** -1999 to 9999
- Scaling range for measurement range:** -1999 to 9999 counts
- 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.
- Engineering unit indication:** Sticker label attached
 DC, AC, mV, V, kV, μ A, mA, A, kA, mW, W, kW, var, kvar, Mvar, VA, Hz, Ω , k Ω , M Ω , cm, mm, m, m/sec, mm/min, cm/min, m/min, m/h, m/s², inch, l, l/s, l/min, l/h, m³, m³/sec, m³/min, m³/h, Nm³/h, N·m, N/m², g, kg, kg/h, N, kN, Pa, kPa, MPa, t, t/h, °C, °F, %RH, J, kJ, MJ, rpm, sec, min, pH, %, ppm, etc.

INPUT SPECIFICATIONS

- **DC Current**
- Current range:** 3.75 to 22 mA DC
- Voltage drop:** Approx. 3.5 V with 4 mA; approx. 3.7 V with 20 mA (Equivalent input impedance: Approx. 185 Ω)
 (Use of the unit causes voltage drop. For 2-wire transmitter, be sure that the voltage by which 2-wire transmitter can operate is ensured including the voltage drop by other devices and wiring resistance.)

INSTALLATION

- Operating temperature**
 - **No safety approval:** -40 to +70°C (-40 to +158°F)
 - **FM approval:**
 - 40 to +70°C (T5)
 - 40 to +60°C (T6)
 - **TIIS approval:** -20 to +60°C (T6)
- Weight:**
 - Unit
 - Approx. 1.5 kg (3.3 lb), aluminium
 - Approx. 4.0 kg (8.8 lb), stainless steel
 - Approx. 2.0 kg (4.4 lb), TIIS flameproof
 - Mounting bracket assembly (option)
 - Approx. 0.78 kg (1.72 lb)

PERFORMANCE

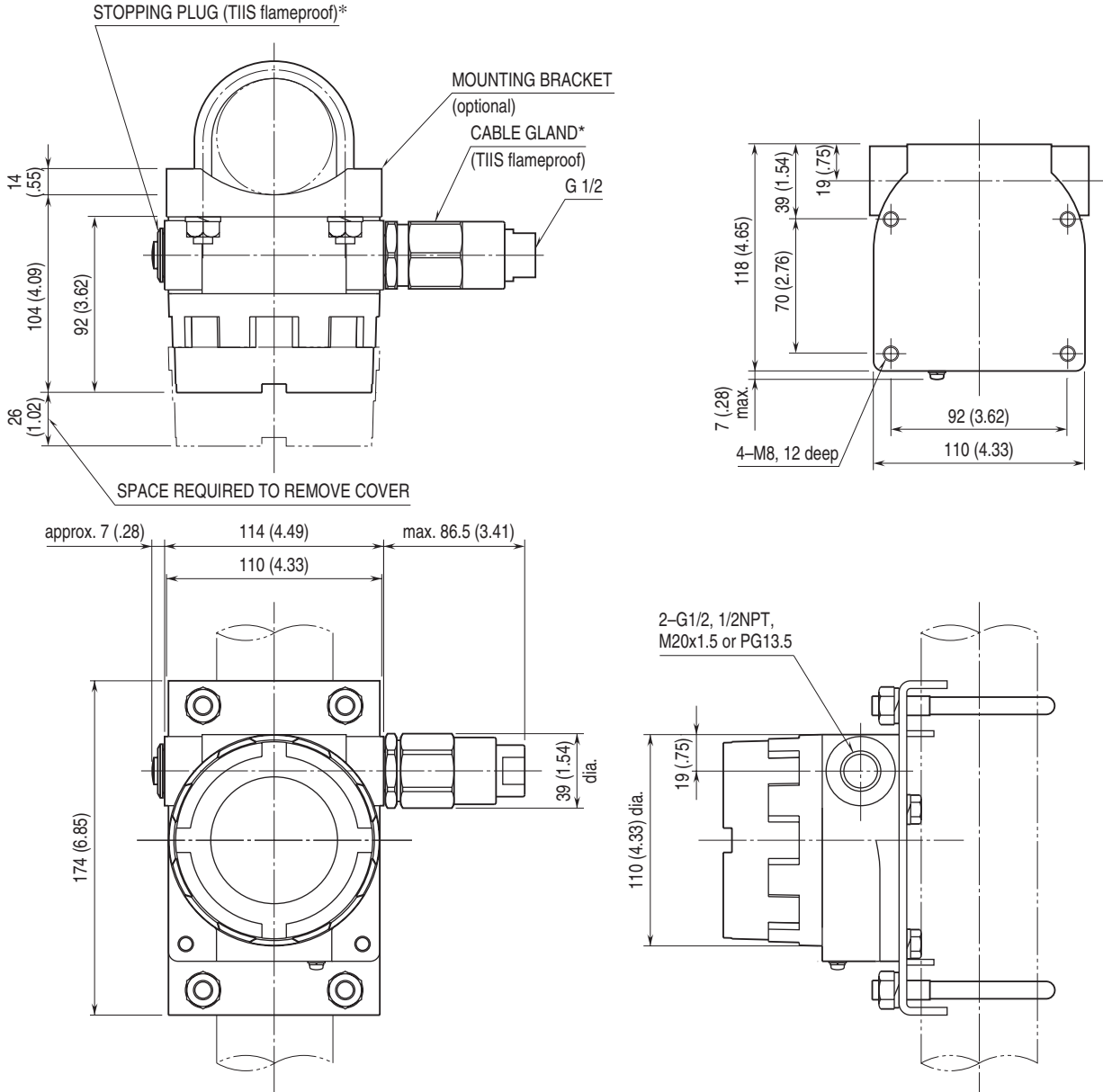
- Accuracy:** $\pm 0.1\%$ rdg ± 1 digit \times scaling-multiple
 (When the scaling-multiple is less than 1, rounded up to 1.)
- Temp. coefficient:** ± 0.3 digits \times scaling-multiple/ $^{\circ}$ C
 (When the scaling-multiple is less than 1, rounded up to 1.)
- Scaling-multiple = | (Display Scaling Value B - Display Scaling Value A) \div (default Display Scaling Value B - default Display Scaling Value A) |
- Dielectric strength:** 1500 V AC @ 1 minute (input to enclosure; when FE (Functional Earth) is not connected to the enclosure.)
 500 V DC @ 1 minute
 (input to FE (Functional Earth))

STANDARDS & APPROVALS

- EU conformity:**
 - EMC Directive
 - EMI EN 61000-6-4
 - EMS EN 61000-6-2
 - RoHS Directive
- Safety approval:**
 - FM: Explosion-proof and Dust-ignition proof
 - Class I, Division 1, Groups B, C and D
 - Class II, Division 1, Groups E, F and G
 - Class III, Division 1
 - T5 and T6

(Class 3615)
 TIIS: Flameproof
 Ex d IIC T6

EXTERNAL DIMENSIONS unit: mm [inch]

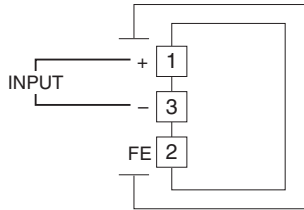


*Two cable glands and one plug are provided with TIIS flameproof type.
 Use them according to the field wiring requirements.

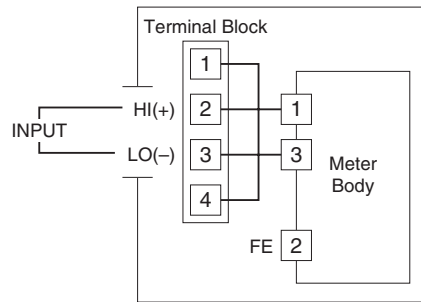
CONNECTION DIAGRAM

■ WITHOUT TERMINAL BLOCK

(Connection to the rear of meter module)



■ TERMINAL BLOCK INCORPORATED



Specifications are subject to change without notice.