Rosemount™ CX1100

In-Situ Oxygen Transmitter

CX1100

O2 **11.00** %

Temp **736** °C

11.04 mA   Normal

MENU

DIAG

ENTER   EXIT

ROSEMOUNT™

EMERSON™

Product benefits

Reliable combustion measurement
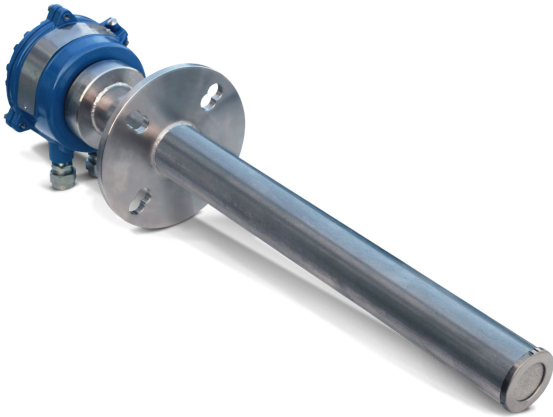
- Robust zirconia oxygen sensor provides measurement of furnace exhaust gas critical for boiler trim applications.
- Good measurement repeatability of 0.1% O2 or 1.0% of reading and multiple probe length options to suit your application needs.
- Optional remote mounted LCD display and interface for easy access to process information and simplified maintenance.

CX1100 remote display

- Remote display and interface for configuration, calibration, and maintenance without the need for additional tools.
- Bright, back-lit display and an easy-to-use keypad.

Contents

Rosemount CX1100 In-Situ Oxygen Transmitter ordering information

Model	Product description
CX1100	In Situ Oxygen Transmitter
Material	
A	304L stainless steel
Probe length	
050	1.64 ft. (0.5 m) oxygen probe
100	3.28 ft. (1.0 m) oxygen probe
200	6.56 ft. (2.0 m) oxygen probe
Probe mounting flange	
F20	ANSI/DIN: 4.75 in. / 5.71 in. bolt circle, 0.75 in. holes
Transmitter	
M7	Remote transmitter with LCD display and interface
M0	Probe only (no transmitter)
Product certification	
G6	CSA ordinary location
Probe mounting hardware	
N1	New installation plate - ANSI pattern
N2	New installation plate - DIN pattern
Transmitter mounting hardware	
T2	Panel mount kit with gasket
T3	2-in. pipe / wall mount kit
Calibration accessories	
F1	Calibration gas flowmeter

Specifications

Table 1:   System Measurement Specifications

Specification	Description
Net O_2 range	0 - 23%
Repeatability	0.1% of O_2 or 1.0% of reading, whichever is lower
Lowest detectable limit	0.05% O_2
Process temperature effect	Less than 0.3% O_2 from 77 to 1292 °F (25 to 700 °C)
System speed of response to calibration gas	Initial response in less than 3 seconds, T90 in 10 seconds. Response to process gas changes will vary depending on process gas velocity and particulate loading of the diffuser.

Environmental specifications

Table 2:   Probe

Specification	Description
Probe	Process wetted materials are 304 stainless steel.
Maximum process temperature	752 °F (400 °C)

Table 3:   Probe Terminations

Specification	Description
Rosemount™ CX1100 probe ambient temperature limits	-4 to 158 °F (-20 to 70 °C)

Table 4:   Remote Display

Specification	Description
Materials	Polycarbonate
Ambient temperature limits	-4 to 122 °F (-20 to 50 °C)

Installation specifications

Table 5:   Probe

Specification	Description
Probe mounting range	Vertical or horizontal: 2-in. 150# (4.75 in. (121 mm) bolt circle) and DIN145 **Note** Flanges are flat-faced and for mounting only. Flanges are not pressure-rated. A 2.5-in. diameter hole in the process is required. Many adapter flanges are available to mate to existing flanges.
Reference air	No instrument air required. Ambient air diffuses into the probe passively. Ensure that ambient air is fresh (20.95% O_2).
Calibration	Semi-automatic manual gas switching. New calibration values are calculated in the remote electronics.
Cal gases	0.4% and 8% O_2, balance N_2 recommended. Instrument air may be used as a high cal gas, but is not recommended. 100% nitrogen cannot be used as a low cal gas.

Table 5: Probe (continued)

Specification	Description
Calibration gas flow	5 scfh (2.5 l/min) at 15 PSI
Heater electrical power	120/240 Vac, 50/60 Hz, 1.8 A Max
Traditional architecture cable	Customer-supplied
Power consumption of probe heater	150 watts max. during initial warm-up

Table 6: Remote Electronics

Specification	Description
Electrical power	120/240 Vac, 50/60 Hz, 1.8 A Max
Power consumption	150 watts during initial warm-up
Analog output	4-20 mA. Max load 550 Ohms
Alarms relays	Two SPDT Form C, epoxy sealed contacts rated 5A, 30 Vdc, 120 Vac, or 230 Vac; user configurable to alarm. Resistive load: 5A at 28 Vdc or 300 Vac Inductive load: 1/8 HP at 120/240 Vac
Probe sensing cable	3 twisted pair conductors, 22 ga overall shielded cable to connect the TC, O_2, and CJC signals
Heater cable	3 multi conductor 18 ga shielded cable to connect the heater control signal

Rosemount CX1100 Probe	Shipping weight	Actual weight
19.68 in. (0.5 m)	19 lb. (8.6 kg)	13.5 lb. (6.1 kg)
39.37 in. (1 m)	23 lb. (10.43 kg)	16.8 lb. (7.6 kg)
78.74 in. (2 m)	30.5 lb. (13.8 kg)	23 lb. (10.43 kg)

Rosemount CX1100 Remote Transmitter dimensions in inches (millimeters)	Shipping weight	Actual weight	Part number
6.10 x 6.10 x 5.15 in. (155 x 155 x 131 mm)	4 lb. (1.8 kg)_	3 lb. (1.4 kg)	24490-00

Accessory	Part number
Calibration flowmeter	771B635H01
Cal gas adaptor kit to mate to existing tubing arrangement	1A98771H07

Product certifications

European Directive information

A copy of the EC Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EC Declaration of Conformity can be found at *Emerson.com/Rosemount*.

Ordinary location certification

As standard, the transmitter has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by a nationally recognized test laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

Installing equipment in North America

The US National Electrical Code (NEC) and the Canadian Electrical Code (CEC) permit the use of Division marked equipment in Zones and Zone marked equipment in Divisions. The marking must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

North America

CSA

Certificate: 70172073

Standards: CAN/CSA C22.2 No. 61010-1-12, CAN/CSA C22.2 No. 61010-2-010:15, UL 61010-1 (3rd Edition), UL 61010-2-10 (3rd Edition), UL 50E (2012), C22.2 No. 94.2-07, IEC 60529:2013 (Edition 2.2)

Markings: Type 4X, IP66

Condition of acceptability:

1. The measuring of net O_2 range is limited 0-23%.

2. The equipment shall be installed in accordance with manufacturer's specification by qualified personnel.

3. This equipment is for permanently connection to power source with approved power cord at end installation in accordance with local codes.

4. The Probe unit of the equipment shall be connected to PE separately at end installation.

5. End installation to provide the means of disconnection from power sources.

6. End installation to comply with the requirement of IP66 and 4X.

Dimensional drawings

Figure 1: Probe Installation Dimensions
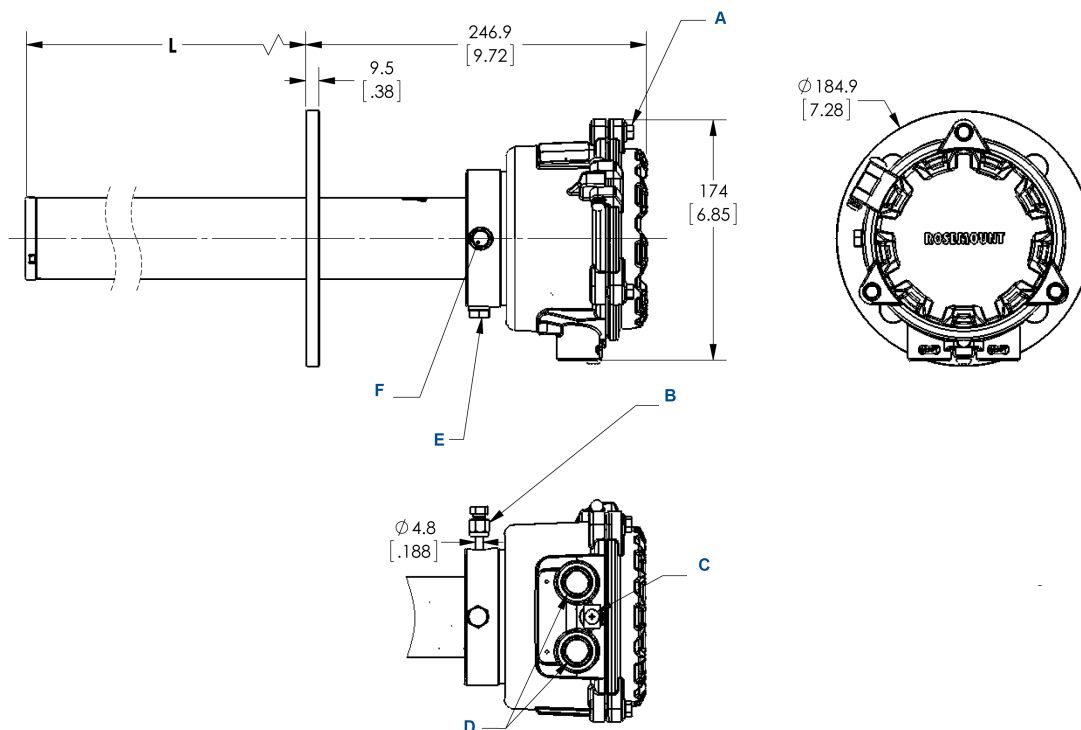
A. M6 x 1 x 25 hex head machine screw (3x)
B. Calibration gas 3/16-in. tube fitting 2.82 liter/min (10 SCFH), 138 kPa (20 psi)
C. M5 x 0.8 x 10 pan head machine screw
D. 1/2 NPT conduit connection (power, signal)
E. Breather port
F. Calibration gas connection

Note

All dimensions are in meters with inches in parentheses.

Table 7: Removal/Installation

Probe length	Removal envelope
.5 m (19.68 in.)	750 mm (30 in.)
1 m (39.37 in.)	1250 mm (49 in.)
3 m (78.74 in.)	2250 mm (89 in.)
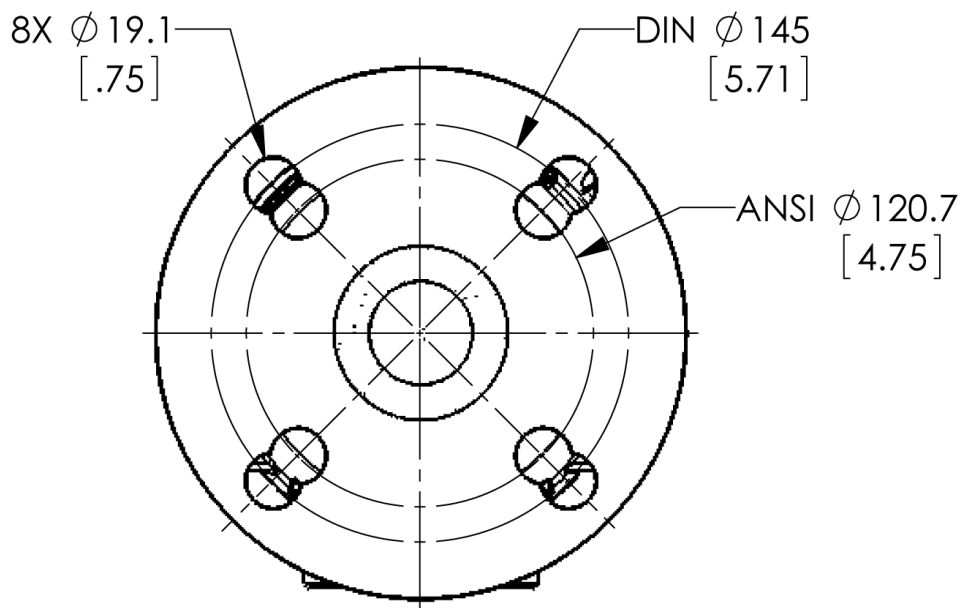
Table 8: Mounting Flange

Diameter	ANSI	DIN
Flange dia	185 mm (7.28 in.)	
Hold dia	19.1 mm (.75 in.)	
(4) holes eq sp on BC	120.7 mm (4.75 in.)	145 mm (5.71 in.)

Figure 2: Square Weld Plate, ANSI Pattern

□ 152.4
[6.00]

53.8
[2.12]

∅ 120.7
[4.75]

∅ 63.5
[2.50]

12.7
[.50]

5/8-11UNC-2A
(4X)
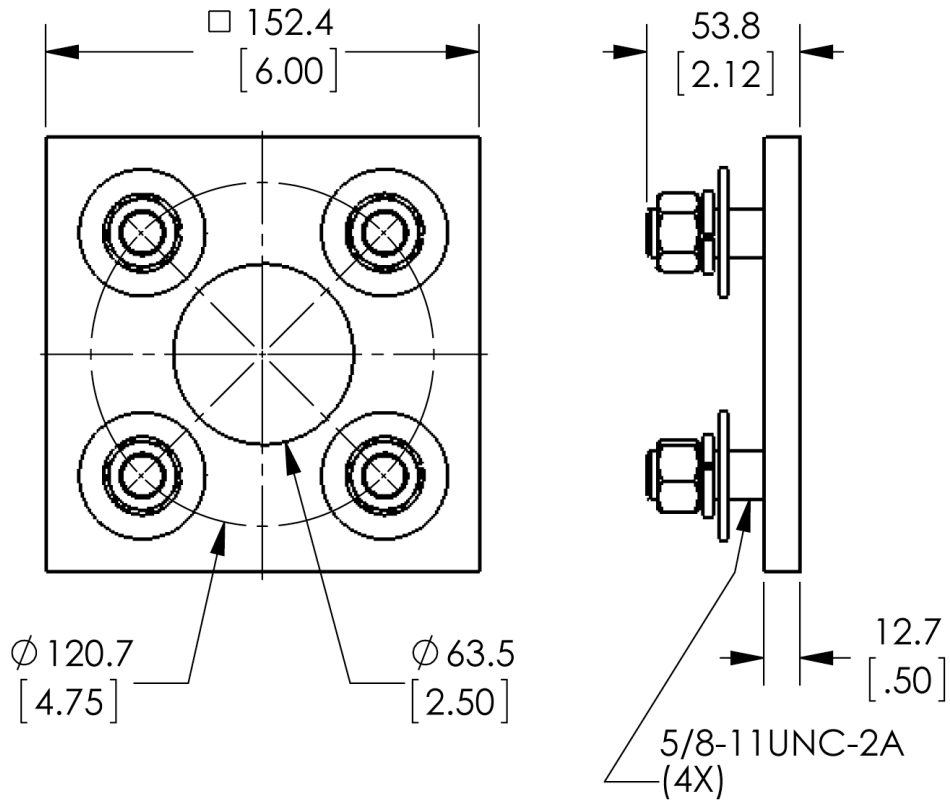
Figure 3: Square Weld Plate, DIN Pattern

7.50
[190,5]

2.12
[53,8]

∅ 5.71
[145,0]

∅ 2.50
[63,5]

M16x2
(4x)

.50
[12,7]
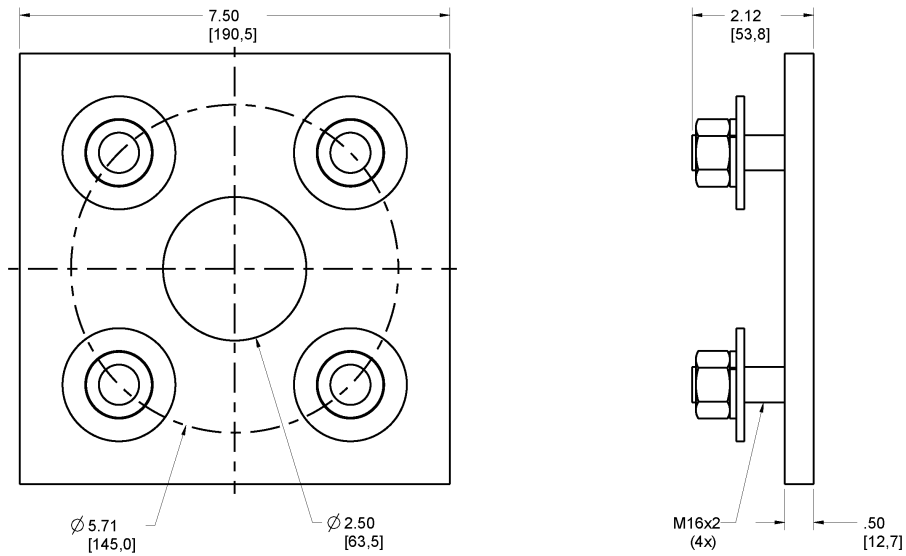
Figure 4:   Panel Mounting Details

Front View

Side View
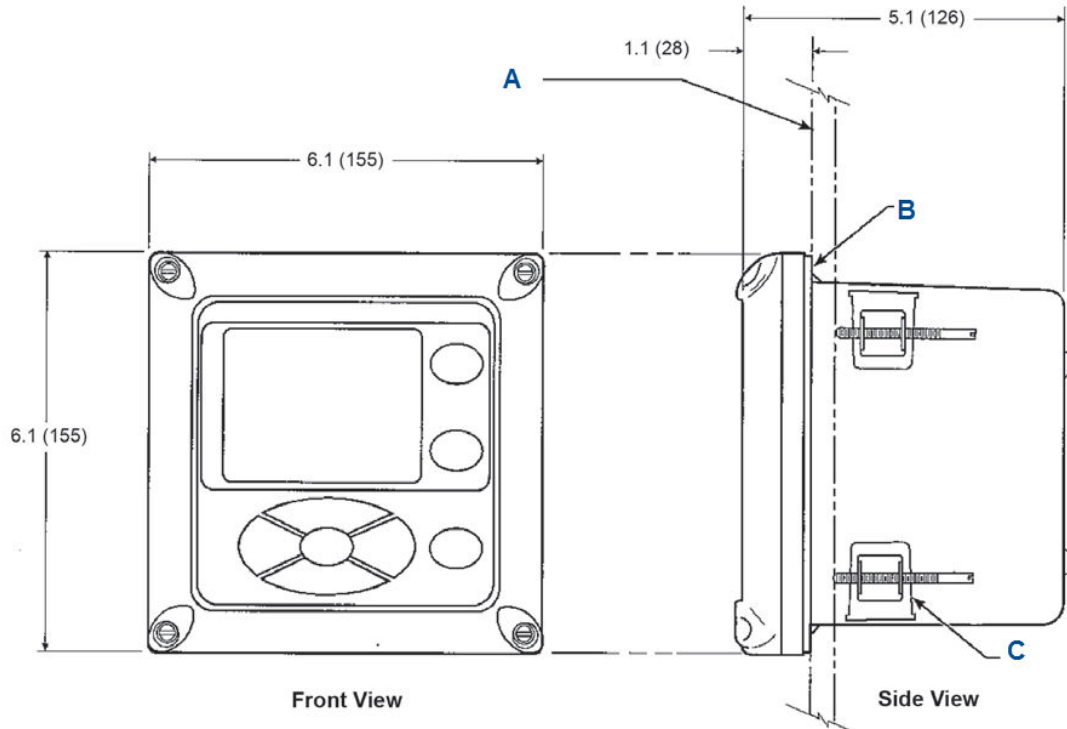
A.   Maximum panel thickness 0.375 (9,52)
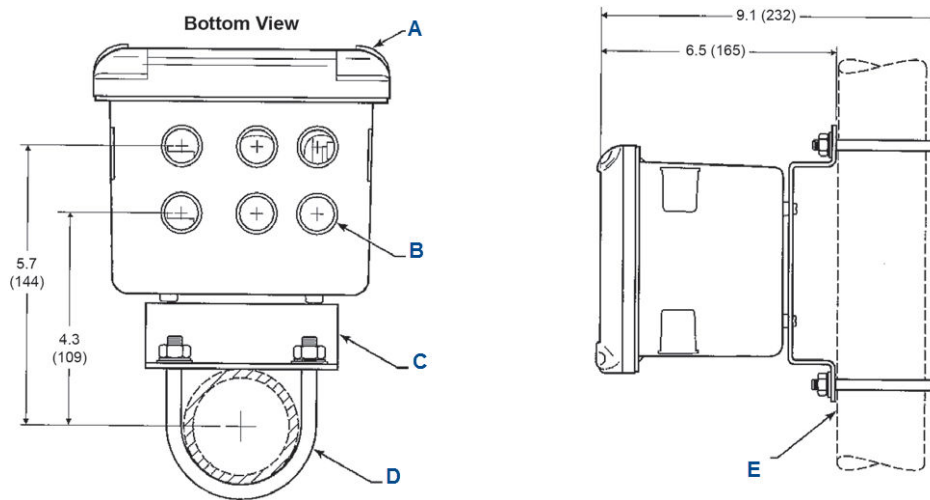B.   Panel mount gasket
C.   4 X mounting brackets and screws provided

Bottom View

Panel Cut-Out
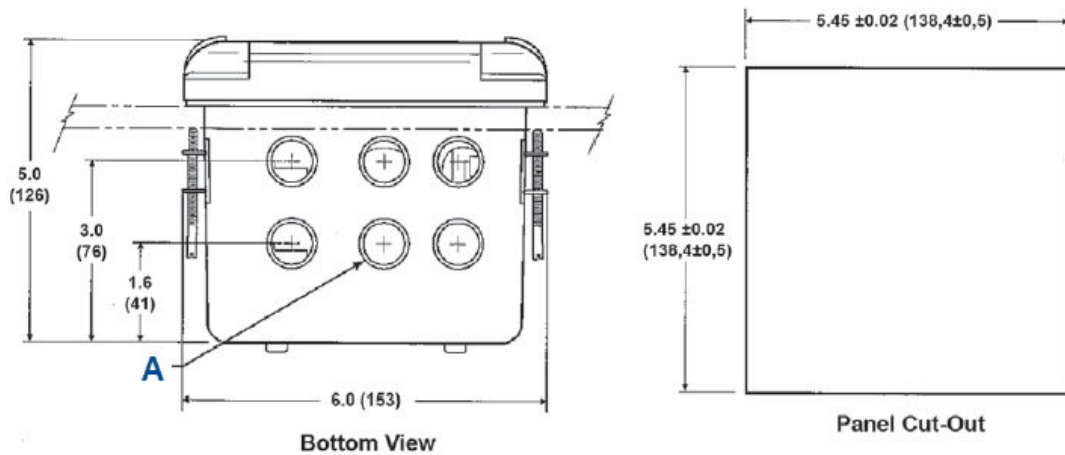
A.   6 x 1/2 in. NPT conduit openings

Figure 5:　Wall/Surface Mounting Details

Front View　　　Side View
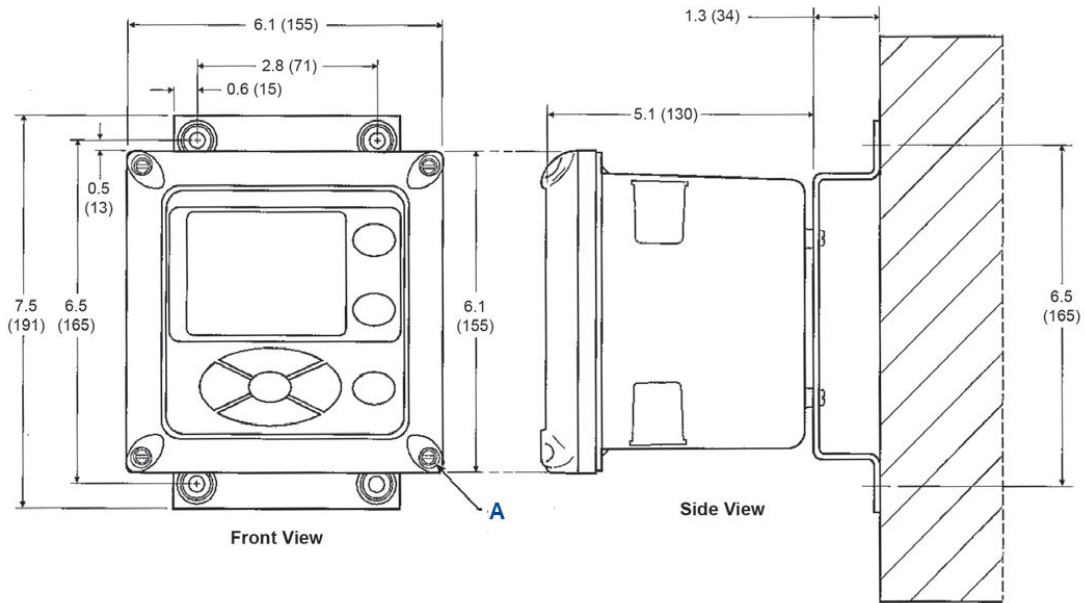
A.　4X cover screw

Figure 6:　Pipe Mounting Details

Bottom View

A.　Front panel
B.　6 x 1/2-in. NPT conduit openings
C.　Mounting bracket
D.　U-bolts
E.　2-in. pipe supplied by customer

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