

Rosemount™ 6888 In-Situ Oxygen Transmitter



The new standard for combustion flue gas analysis

The Rosemount™ 6888 combustion flue gas transmitter provides a continuous, accurate measurement of the oxygen remaining in flue gases coming from any combustion process. Accurate measurements of furnace exhaust excess oxygen are critical for combustion optimization, resulting in reduced energy costs, increased safety, and lower emissions. Reduction of overall downtime and maintenance can be achieved with the Rosemount 6888's robust oxygen sensor and autocalibration capabilities.

Overview



Proven performance and reliability

- Robust zirconia oxygen sensing cell with catalytic platinized beads increases cell lifetime in presence of sulfur and other poisoning agents.
- Outstanding accuracy: $\pm 0.75\%$ of reading or $\pm 0.05\% \text{ O}_2$.
- Rugged explosion-proof design for hazardous area approvals satisfies ATEX/IECEX Ex d and CSA Class 1, Division 1/Zone 1.

Advanced sensor diagnostics

- Calibration recommended diagnostics.
- Plugged diffuser/filter diagnostics.
- Low oxygen diagnostics and O_2 readings during reducing conditions.



Adaptability

- Completely field repairable and adaptable to nearly any existing O_2 probe installation (Westinghouse World Class, Rosemount Oxymitter, and most competitive O_2 probe installations).
- Variable probe insertion options.

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Rosemount™ 6888A In-Situ Oxygen Transmitter for general purpose locations



The Rosemount™ 6888A combustion flue gas transmitter is a solution for optimizing any industrial or large commercial boiler, fired heater, or kiln. The Rosemount 6888A, as part of an oxygen trim system, improves plant energy efficiency and lowers energy costs. It not only meets application requirements but also is simple to install, commission, and operate. The sensor, diffusers, and accessories for the Rosemount 6888A were developed to provide the greatest performance and longevity even in the harshest of process conditions.

- World-class performance and outstanding accuracy: $\pm 0.75\%$ of reading or $\pm 0.05\% \text{ O}_2$
- Digital communications: HART® 5 and FOUNDATION™ Fieldbus
- Resilient sensing cells provide protection to sulfur and other poisoning agents present in flue gas

Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See page 13 for more information on material selection.

Table 1. Rosemount 6888A In-Situ Oxygen Transmitter for General Purpose Locations

Model	Sensor type
6888A	In-Situ Oxygen Transmitter
Measurement	
1OXY ¹	Oxygen - standard sensing cell
2OXY ²	Oxygen - acid resistant sensing cell
Probe length and type/shield	
1	18 in. (457 mm) standard probe tube
2 ³	18 in. (457 mm) probe with abrasive shield accessory package (mounting hardware included)
3	18 in. (457 mm) abrasion-resistant probe tube
4	3 ft (0.91 m) standard probe tube
5 ³	3 ft (0.91 m) probe with abrasive shield accessory package (mounting hardware included)
6	3 ft (0.91 m) abrasion-resistant probe tube
7	6 ft (1.83 m) standard tube
8 ³	6 ft (1.83 m) probe with abrasive shield accessory package (mounting hardware included)
9	6 ft (1.83 m) abrasion-resistant probe tube
A ³	9 ft (2.74 m) probe with abrasion-resistant probe body
AA	9 ft (2.74 m) probe with abrasive shield accessory package (mounting hardware included)
B ³	12 ft (3.66 m) probe with abrasion-resistant probe body
BA	12 ft (3.66 m) probe with abrasive shield accessory package (mounting hardware included)

Diffuser	
1	Snubber diffuser for service to 400 °C (750 °F)
1A	Snubber diffuser for service to 400 °C (750 °F) with dust seal for use with abrasive shield
1F	Snubber diffuser for service to 400 °C (750 °F) with flashback arrestor
2	Ceramic diffuser for service to 825 °C (1517 °F)
2A	Ceramic diffuser for service to 825 °C (1517 °F) with dust seal for use with abrasive shield
2F	Ceramic diffuser for service to 825 °C (1517 °F) with flashback arrestor
3	Hastelloy diffuser for service to 705 °C (1300 °F)
3A	Hastelloy diffuser for service to 705 °C (1300 °F) with dust seal for use with abrasive shield
Housing & electronics	
1HT	Standard housing, digital probe, HART protocol
2HT	Integral autocalibration housing, digital probe, HART protocol
4FF	Integral autocalibration housing, digital probe, FOUNDATION Fieldbus protocol
5DR	Standard housing, direct replacement probe, traditional architecture
6DRY	Standard housing, direct replacement probe, with cold junction for YEW electronics
Mounting plate	
00	No additional mounting hardware
04	New installation - square weld plate, ANSI: 6 x 6 in. (152.4 x 152.4 mm), 2.5 in. (63.5 mm) clearance hole, 4.75 in. (120.65 mm) bolt circle, 5/8-11 studs
05	New installation - square weld plate, DIN 6 x 6 in. (152.4 x 152.4 mm), 2.5 in. (63.5 mm) clearance hole, 4.75 in. (120.65 mm) bolt circle, 5/8-11 studs
06	New installation - variable insertion mount, abrasion-resistant probe only
07	New installation - variable insertion mount, mounted to existing OXT/WC abrasive shield mount; abrasion resistant probe only
08	Adapter plate for existing ANSI 3 in. (76.2 mm) 150# flange
09	Adapter plate for existing ANSI 4 in. (101.6 mm) 150# flange
10	Adapter plate for existing ANSI 6 in. (152.4 mm) 150# flange
11	Adapter plate for existing ANSI 3 in. (76.2 mm) 300# flange
12	Adapter plate for existing ANSI 4 in. (101.6 mm) 300# flange
99	Special adapter -provide existing flange dimensions, including thru-hole diameter
Manual calibration accessories	
00	None
01	Calibration and reference gas flowmeters and reference air filter regulator, provided loose
02	Calibration and reference gas flowmeters and reference air filter regulator, mounted in a panel
Enable: Stochiometer indicator for reducing conditions ⁴	
0	No
1	Yes
Enable: Programmable reference function ⁴	
0	No
1	Yes
Enable: Extended temperature function ⁴	
0	No
1	Yes

Enable: Diffuser warning ⁴	
0	No
1	Yes

1. Standard sensing cell includes catalytic protection beads which protect the sensor from sulfur and other poisoning agents.
2. Acid-resistant sensing cell includes additional catalytic protection beads compared to standard sensing to protect the sensor from sulfur and other poisoning agents.
3. Abrasive shield tube ordered separately.
4. FOUNDATION Fieldbus versions only (for HART versions, order this feature with Rosemount Xi Electronics).

Rosemount™ 6888C In-Situ Oxygen Transmitter for hazardous locations



The Rosemount™ 6888C combustion flue gas transmitter is a solution for optimizing boilers or fired heaters located in areas with hazardous requirements. The Rosemount 6888C's calibration equipment is simplified in hazardous areas with the approved integrated automatic calibration housing option. Maintenance costs are reduced with the redesigned modular diffuser and process flame arrestor assembly.

- Rugged explosion-proof design satisfies ATEX/IECEX Ex d and CSA Class 1, Division/Zone 1 approval requirements.
- Digital communications: HART® 5 standard, FOUNDATION™ Fieldbus, and AMS/PlantWeb®
- Resilient sensing cells provide protection to sulfur and other poisoning agents present in flue gas.

Additional information

Specifications can be found on page 13. Drawings are provided on page 19.

Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See page 13 for more information on material selection.

Table 2. Rosemount 6888C In-Situ Oxygen Transmitter for Hazardous Locations

Model	Product description
6888C	In-Situ Oxygen Transmitter for hazardous locations
Measurement¹	
1OXY	Oxygen - standard sensing cell
2OXY	Oxygen - acid resistant sensing cell
Probe length and mounting flange	
1A	18 in. (457 mm) probe with ANSI flange: 7.5 in (190.5 mm). O.D., 6.00 in. (152.4 mm) bolt hole pattern diameter, 0.75 in. (19.05 mm) bolt hole diameter
1D	18 in. (457 mm) probe with DIN flange: 8.25 in. (209.55 mm) O.D., 6.69 in. (170 mm) bolt hole pattern diameter, .71 in. (18 mm) bolt hole diameter
2A	3 ft (0.91 m) probe with ANSI flange: 7.5 in (190.5 mm). O.D., 6.00 in. (152.4 mm) bolt hole pattern diameter, 0.75 in. (19.05 mm) bolt hole diameter
2D	3 ft (0.91 m) probe with DIN flange: 8.25 in. (209.55 mm) O.D., 6.69 in. (170 mm) bolt hole pattern diameter, .71 in. (18 mm) bolt hole diameter
3A	6 ft (1.83 m) probe with ANSI flange: 7.5 in (190.5 mm). O.D., 6.00 in. (152.4 mm) bolt hole pattern diameter, 0.75 in. (19.05 mm) bolt hole diameter
3D	6 ft (1.83 m) probe with DIN flange: 8.25 in. (209.55 mm) O.D., 6.69 in. (170 mm) bolt hole pattern diameter, .71 in. (18 mm) bolt hole diameter

Diffuser	
1	Snubber diffuser for service to 400 °C (750 °F)
2	Ceramic diffuser for service to 825 °C (1517 °F)
3	Hastelloy diffuser for service to 705 °C (1300 °F)
Housing and electronics	
1HT	Standard housing, digital probe, HART protocol
2HT	Integral autocalibration housing, digital probe, HART protocol
4FF	Integral autocalibration housing, digital probe, FOUNDATION Fieldbus protocol
5DR	Standard housing, direct replacement probe, traditional architecture
6DRY	Standard housing, direct replacement probe, with cold junction for YEW electronics
Certifications	
A	ATEX/IECEX
C	CSA
Mounting plate	
00	No additional mounting hardware
04	New installation plate - 7.75 in. (196.85 mm) square diameter, 3.25 in. (82.55 mm) clearance hole, 6.00 in. (152.4 mm) bolt circle, 5/8-11 UNC studs
05	New installation plate - 8.46 in. (215 mm) square diameter, 3.25 in. (82.5 mm) clearance hole, 6.7 in. (170 mm) bolt circle, M16 x 2 studs
09	Adapter plate for existing ANSI 4 in. (101.6 mm), 150# flange
10	Adapter plate for existing ANSI 6 in. (152.4 mm), 150# flange
11	Adapter plate for existing ANSI 3 in. (76.2 mm), 300# flange
12	Adapter plate for existing ANSI 4 in. (101.6 mm), 300# flange
99	Special adapter - provide existing flange dimensions, including thru-hole diameters
Manual calibration accessories	
00	None
01	Calibration and reference gas flowmeters and reference air filter regulator, provided loose
02	Calibration and reference gas flowmeters and reference air filter regulator, mounted in a panel
Enable: Stoichiometer indicator for reducing conditions ¹	
0	No
1	Yes
Enable: Programmable reference function ¹	
0	No
1	Yes
Enable: Extended temperature function ¹	
0	No
1	Yes
Enable: Diffuser warning ¹	
0	No
1	Yes

1. FOUNDATION Fieldbus versions only (for HART versions, order this feature with Rosemount Xi Electronics).

Rosemount™ 6888 Xi Digital Transmitter for general purpose locations



The Rosemount 6888 Xi brings an at a glance view of pertinent information provided by an easy to use display and interface which effortlessly connects with a PLC or DCS via HART®/4-20 mA. It creates a centralized infrastructure for remote autocalibration devices, diagnostic tools, alarm relay(s), and advanced application features. The Rosemount 6888Xi is configurable to have up to two channels for digital inputs or one channel for supporting traditional architectures.

- Easy to use operator interface and design
- Plugged diffuser diagnostic measures response time and detects a plugged diffuser or empty gas bottle
- Stoichiometer provides an oxygen reading during reducing conditions, indicating extent of O₂ deficiency

Additional information

Specifications can be found on page 13. Drawings are provided on page 19.

Specification and selection of product materials, options, or components must be made by the purchaser or the equipment. See page 13 for more information on material selection.

Table 3. Rosemount 6888 Xi Digital Transmitter for General Purpose Locations

Model	Product description
6888Xi	Digital Transmitter
Measurement	
1OXY	Single digital input (HART)
2OXY	Single digital input (HART) and flame safety interlock for heater
3OXY	Two digital inputs (HART)
4OXY ¹	Single traditional architecture input
Mounting	
00	No hardware
01	Panel mount kit with gasket
02	2 in. pipe/wall mount kit
Cable²	
00	No cable
10	20 ft (6 m) cable, use with traditional architecture probe only
11	40 ft (12 m) cable, use with traditional architecture probe only
12	60 ft (18 m) cable, use with traditional architecture probe only
13	80 ft (24 m) cable, use with traditional architecture probe only
14	100 ft (30 m) cable, use with traditional architecture probe only
15	150 ft (45 m) cable, use with traditional architecture probe only

Enable: Stochiometer indicator for reducing conditions	
00	No
01	Single channel
02	Dual channel
Enable: Programmable reference function	
00	No
01	Single channel
02	Dual channel
Enable: Extended temperature function	
00	No
01	Single channel
02	Dual channel
Enable: Plugged diffuser diagnostics	
00	No
01	Single channel
02	Dual channel

1. Compatible with oxygen probes utilizing a 120 V heater only.
2. Cables are not rated for use in hazardous locations and must be installed in accordance with local and national codes.

Rosemount™ SPS 4001B and Rosemount IMPS 4000 Autocalibration Devices for general purpose locations



The Rosemount SPS 4001B and Rosemount IMPS 4000 are cost-effective calibration systems which conveniently sequence calibration gases without any labor from an operator or maintenance technician. Calibration flowmeter(s) and reference air flowmeter(s)/regulator(s) are included with the autocalibration manifold. The calibration can be initiated by a contact relay or timer or automatically via calibration recommended diagnostic. The Rosemount SPS 4001B is designed to automatically calibrate one oxygen analysis system. The Rosemount IMPS 4000 is configurable to automatically calibrate one to four oxygen analysis systems. Both the Rosemount SPS 4001B and Rosemount IMPS 4000 require a Rosemount 6888 Xi Transmitter or Oxymitter electronics.

- Complete autocalibration assembly: includes calibration flowmeter and reference air flowmeter/regulator and solenoids mounted on a single manifold
- Automatic calibrations reduce operator time to ensure continuously accurate readings
- Rosemount IMPS 4000 enclosure designed to accept a customer's z-purge system to meet hazardous area requirements

Additional information

Specifications can be found on page 13. Drawings can be found on page 19.

Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See page 13 for more information on material selection.

Table 4. Rosemount SPS 4001B and Rosemount IMPS 4000 Autocalibration Devices for General Purpose Locations

Model	Product description
XSO2CAL	Autocalibration accessories
Single probe autocalibration options	
00	None
01	SPS 4001B single probe sequencer
Multiprobe autocalibration options	
00	None
01	Intelligent multiprobe sequencer (IMPS) - 1 probe
02	Intelligent multiprobe sequencer (IMPS) - 2 probes
03	Intelligent multiprobe sequencer (IMPS) - 3 probes
04	Intelligent multiprobe sequencer (IMPS) - 4 probes
05	Intelligent multiprobe sequencer (IMPS) with 115 V heater - 1 probe
06	Intelligent multiprobe sequencer (IMPS) with 115 V heater - 2 probes
07	Intelligent multiprobe sequencer (IMPS) with 115 V heater - 3 probes
08	Intelligent multiprobe sequencer (IMPS) with 115 V heater - 4 probes
09	Intelligent multiprobe sequencer (IMPS) with 220 V heater - 1 probe
10	Intelligent multiprobe sequencer (IMPS) with 220 V heater - 2 probes
11	Intelligent multiprobe sequencer (IMPS) with 220 V heater - 3 probes
12	Intelligent multiprobe sequencer (IMPS) with 220 V heater - 4 probes

How to order: Complete Oxygen Analysis system

The Rosemount™ In-Situ Oxygen Analysis system can be configured as two types of architectures.

Digital: A digital output of either 4-20 mA with digital signal based on HART® or FOUNDATION™ Fieldbus is transmitted directly from the probe.

Traditional: Raw sensor and thermocouple voltages are output from the probe to a remote transmitter. The remote transmitter outputs the 4-20 mA with digital signal based on HART.

How to order:

1. Choose a Rosemount 6888A or Rosemount 6888C model and decide which type of architecture is desired. The architecture type is specified in the *Housing and electronics* code in the model number.
2. Choose a corresponding Rosemount 6888Xi model¹ to match the architecture type of the Rosemount 6888A or Rosemount 6888C. The architecture type is specified by the *Remote Type* code in the model number.
3. Based on the architecture type, choose the appropriate interconnect cable.
4. Rosemount SPS 4001B and Rosemount IMPS 4000 autocalibration devices are optional to include with an oxygen analysis system.

Architecture	Rosemount 6888A/ Rosemount 6888C Housing and electronics code	Rosemount 6888 Xi Remote type code	Interconnect cable
Digital	1HT, 2HT, 4FF	1OXY, 2OXY, 3OXY	18 AWG two wire shielded cable, customer supplied
Traditional	5DR	4OXY	7 conductor cable, available through Rosemount ²

1



2



3



4



1. For digital architecture, Rosemount 6888 Xi, Rosemount Field Communicator, or PLC/DCS required to interface with Rosemount 6888A or 6888C models.

2. 7 conductor cable orderable through Rosemount 6888Xi model matrix or by part number.

Specifications

Table 5. Performance Specifications

Specification	Rosemount™ 6888A, Rosemount 6888C	Rosemount 6888 Xi
Factory calibrated O ₂ range	0-10%	
User configurable O ₂ range	Lower (LRL) O ₂ : 0 - 10% Upper (URL) O ₂ : 0 - 50%	
Repeatability	±0.75% of reading or 0.05% of O ₂ , whichever is greater	
Process temperature effect on repeatability	0.05% O ₂ for 100 to 700 °C (212 to 1292 °F) temperature range	N/A
Lowest detection limit	0.02% O ₂	N/A
Calibration gas repeatability	±0.02% O ₂	N/A
System speed of response to calibration gas ¹	T _{initial} < 3 seconds T90 < 8 seconds	N/A
Accuracy of stoichiometer reducing condition indicator	±0.1% of reading or 0.1% O ₂ , whichever is greater	
Reducing conditions: system response	From oxidizing to reducing - T90 in 120 sec From reducing to oxidizing - T90 in 30 sec	
Calibration gases	Low: 0.4 to 2% O ₂ , balance nitrogen High: 8 to 21% O ₂ , balance nitrogen Regulate to 20 psi (137.9 kPa), 5 scfh (2.36 L/min)	
Reference air (recommended)	Instrument air (clean, dry) Regulate to 5 psi (34 kPa), 2 scfh (0.94 L/min)	N/A

1. Response to process gas changes may vary depending on process conditions and product lifetime.

Table 6. Calibration Modes

Standard housing: Rosemount 6888A, Rosemount 6888C		
Additional devices	Initiation	Gas sequencing
None	DCS or field communicator	Manually
Rosemount 6888Xi	Manually	Manually
Rosemount 6888Xi, Rosemount SP4001B	Manually, timer, or contact relay	Automated
Rosemount 6888Xi, Rosemount IMP54000	Manually, timer, or contact relay	Automated
Integral autocalibration housing: Rosemount 6888A, Rosemount 6888C		
Additional devices	Initiation	Gas sequencing
None	Manually or timer	Automated
Rosemount 6888Xi	Manually, timer, or contact relay	Automated

Functional specifications

Temperature limits

Table 7. Process Temperature Limits

	Process	Process mounting
With snubber diffuser	0 to 400 °C (32 to 750 °F)	200 °C (392 °F) maximum ¹
With ceramic diffuser	0 to 705 °C (32 to 1301 °F)	200 °C (392 °F) maximum ¹
With Hastelloy diffuser	0 to 705 °C (32 to 1301 °F)	200 °C (392 °F) maximum ¹
Bypass accessory	0 to 1050 °C (32 to 1922 °F)	200 °C (392 °F) maximum
Abrasive shield accessory	0 to 705 °C (32 to 1301 °F)	200 °C (392 °F) maximum

1. 190 °C (374 °F) for hazardous locations (only applies to the Rosemount 6888C)

Table 8. Ambient Temperature Limits

Rosemount 6888A	Rosemount 6888C	Rosemount 6888 Xi	Rosemount SPS 4001B	Rosemount IMPS 4000	Rosemount IMPS 4000 with heater
-40 to 70 °C (-40 to 158 °F)	-40 to 70 °C (-40 to 158 °F)	-20 to 50 °C (4 to 122 °F)	-40 to 65 °C (-40 to 149 °F)	0 to 55 °C (32 to 131 °F)	-35 to 55 °C (-31 to 131 °F)

Storage temperature limits

-40 to 70 °C (-40 to 158 °F)

Electrical

Rosemount 6888A/Rosemount 6888C power requirements and consumption

Digital: 120/240 Vac, 50/60 Hz, 260/1020 VA max

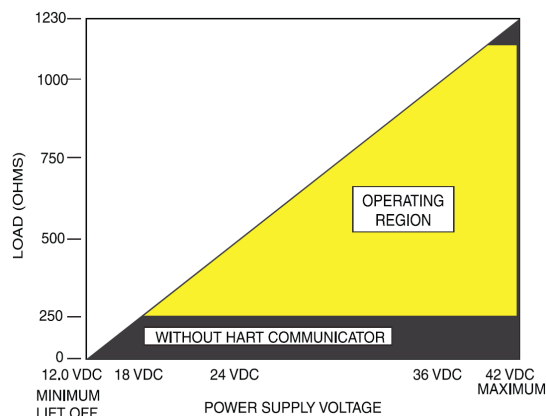
Traditional: 120/240 Vac, 50/60 Hz, 260/1020 VA max

Rosemount 6888Xi power requirements

Digital, single/dual inputs: 120/240 Vac, 50/60 Hz, 12 VA max

Digital, single input with flame safety interlock: 120/240 Vac, 50/60 Hz, 260/1020 VA max¹

Figure 1. Rosemount 6888A/Rosemount 6888C Transmitter Electronics and Rosemount 6888 Xi Maximum Loop Resistance is Determined by the Voltage Level of the External Power Supply, as Described by:



1. Power consumption is primarily driven by the oxygen probe.

Load limitations

The Field Communicator requires a minimum loop resistance of 250 Ω for communication.

Rosemount SPS 4001B

100 to 240 Vac, 50/60 Hz, 15 VA

Rosemount IMPS 4000

85 to 264 Vac, 50/60 Hz, 50 VA

Physical specifications

Process wetted parts: 316L or 304 stainless steel

Process connections: 2 in. 150# (4.75 in. (121 mm) bolt circle) DIN (5.71 in. (145 mm) bolt circle)

Orientation: Vertical or horizontal mount

Table 9. Mounting Hardware and Adapter Plates

	O.D.	Bolt circle	Studs
Square weld plate, ANSI studs	7.75 x 7.75 in. (196.85 x 196.85 mm)	6.00 in. (152.4 mm)	5/8-11 UNC
Square weld plate, DIN studs	8.46 x 8.46 in. (215 x 215 mm)	6.69 in. (170 mm)	M16 x 2
Adapter to existing ANSI 4 in., 150# flange	9.00 in. (228.6 mm)	7.50 in. (190.5 mm)	5/8-11 UNC
Adapter to existing ANSI 6 in., 150# flange	11.00 in. (297.4 mm)	8.50 in. (215.9 mm)	3/4 - 10 UNC
Adapter to existing ANSI 3 in., 300# flange	8.25 in. (209.55 mm)	6.62 in. (166.15 mm)	3/4 - 10 UNC
Adapter to existing ANSI 4 in., 300# flange	10.00 in. (254 mm)	7.88 in. (200.15 mm)	3/4 - 10 UNC

Spool piece P/N is available to offset probe electronics housing from hot duct work.

	ANSI	DIN
A	6.00 (153)	7.50 (1.91)
B thread	0.625 (11)	M-16 x 2
C diameter	4.75 (121)	5.71 (145)

Table 10. Electrical Conduit Size

	Rosemount 6888A	Rosemount 6888C	Rosemount 6888 Xi	Rosemount SPS 4001B	Rosemount IMPS 4000
Conduit fitting	1/2 - 14 NPT	1/2 - 14 NPT	1/2 - 14 NPT	1/2 - 14 NPT	1/2 - 14 NPT
Number of fittings	2	2	6	2	2

Table 11. Shipping Weights

	6888A	6888C
18 in. (457 mm) standard probe tube	16 lb (7.3 kg)	21 lb (9.5 kg)
3 ft (0.91 m) standard probe tube	21 lb (9.5 kg)	26 lb (11.8 kg)
6 ft (1.83 m) standard probe tube	27 lb (12.2 kg)	32 lb (14.5 kg)
9 ft (2.74 m) standard probe tube	33 lb (15.0 kg)	N/A
12 ft (3.66 m) standard probe tube	39 lb (17.7 kg)	N/A

Rosemount™ 6888 product certifications

European Directive information

A copy of the EC Declaration of Conformity can be found at the end of the Rosemount 6888C Quick Start Guide. The most recent version 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 markings must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

Rosemount 6888A In-Situ Oxygen Transmitter for general purpose locations

USA

FM Certificate: 3042889

Standards: FM 3810: 2005, ANSI/IEC 250: 2003, ANSI/IEC 60529: 2004

Markings:  Type 4X, IP66

Special conditions for use

1. Type 4X and IP66 applies to the transmitter portion that is mounted externally to the flue duct.

Canada

CSA Certificate: 1913435

Standards: CAN/CSA C22.2 No. 61010-1-04, UL 61010-1:2004 (2nd Edition), UL 50 (11th Ed.), IEC 60529 (Edition 2.1-2001-02), NEMA 250-2003

Markings:  Type 4X, IP66

Europe

TÜVRheinland

QAL1 Certificate: 0000038506

Standards: EN15267-1:2009, EN15627-2:2009, EN15627-3:2007, EN14181:2004

MCERTS

Certificates: Sira MC140270/00

Standards: EN15267-1:2009, EN15627-2:2009, EN15627-3:2007, EN14181:2004

Rosemount 6888C In-Situ Oxygen Transmitter for hazardous locations

USA/Canada

Model String Option Code: C

CSA Certificate: 70100758

Standards: CAN/CSA Standard C22.2 No.0-10:2015, CAN/CSA C22.2 No.61010-1-12 Harmonized UL 61010-1:2012 (3rd Edition), CAN/CSA Standard C22.2 No. 94.1-15 Harmonized ANSI/UL Standard 50 (2nd Edition), CAN/CSA Standard C22.2 No. 94.2-15 Harmonized ANSI/UL Standard 50 (2nd Edition), CAN/CSA C22.2 No. 60529:16 and ANSI/ISA 60529:04, CAN/CSA Standard C22.2 No. 30-M1986:2016, CAN/CSA-C22.2 No. 60079-0:2015, CAN/CSA-C22.2 No. 60079-1:2016, FM 3600:2011, FM 3615:2006, ANSI/UL-60079-0:2013 (6th Edition), ANSI/UL-60079-1:2015 (7th Edition)

Markings: Ⓔ Type 4X, IP66, Class 1, Division 1, Groups B, C and D; T3, Class 1, Zone 1, AEx db IIB+H2 T3 Gb, Ex db IIB+H2 T3 Gb: $-40^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$ (Autocal Housing and Probe assembly); $-40^{\circ}\text{C} \leq T_a \leq +90^{\circ}\text{C}$ (Standard Housing and Probe assembly eq. "DR Probe")

Conditions of acceptability

1. The unit is to be connected to supply mains by qualified personnel in accordance with national (e.g., CEC, NEC, etc.) and local codes.
2. Suitable APPROVED switch and fuse or a circuit breaker shall be provided to facilitate the disconnection of mains power..
3. The maximum operating ambient is considered as follows: 90°C for 6888C DR Probe, 70°C for 6888C Transmitter.
4. Mounting Flange temperature shall not exceed 190°C during combustion process.
5. Calibration air lines and reference air lines shall not contain pure oxygen or combustible gas other than inert/oxygen gas mixture of which oxygen represents no more than that normally present in air.
6. The pressure within the enclosure and gas lines shall not be higher than 1.1 times the atmospheric pressure during the normal operations of the equipment
7. The 6888C O₂ Analyzers are used with the 6888 Xi Advanced Electronics, which must be installed in a Non-Hazardous Location, per wiring diagram 6R00131.
8. Meets Enclosure Type 4X & IP66 ratings when the reference air vent is routed to a dry area.
9. Units installed with conduit runs must have suitably certified conduit seals installed at the enclosure

10. Units installed with other than conduit runs and conduit seals, must be fitted with certified or listed cable glands for use in "Class I, Zone 1, Ex/AEx d IIB+H2" and "Class I, Division 1, Group B, C and D" or better, suitable for the ambient temperature range.

11. Flameproof joints are not intended to be repaired.

Europe

Model String Option Code: A

ATEX Certificate: Sira 14ATEX1031X

Standards: EN 60079-0:2012/A11:2013, EN 60079-1:2014

Markings: Ⓔ II 2 G Ex db IIB+H2 T3 Gb; IP66;

$-40^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$ (Autocal Housing and Probe assembly);

$-40^{\circ}\text{C} \leq T_a \leq +90^{\circ}\text{C}$ (Standard Housing and Probe assembly eq. "DR Probe")

Special conditions for safe use (X):

1. Mounting Flange temperature shall not exceed 190°C during combustion process.
2. The 6888C O₂ Analyzers are used with the 6888 Xi Advanced Electronics (associated equipment not part of this certification) which must be installed in a Safe Area.
3. Calibration air lines and reference air lines shall not contain pure oxygen or combustible gas other than inert/oxygen gas mixture of which oxygen represents no more than that normally present in air.
4. The pressure within the enclosure and gas lines shall not be higher than 1.1 times the atmospheric pressure during the normal operations of the equipment.
5. Fasteners property class must be A2-70 Stainless Steel.
6. Flameproof joints are not intended to be repaired.

Model String Option Code: A

IECEx Certificate: IECEx CSA 14.0044X

Standards: IEC 60079-0:2012/A11:2013, IEC 60079-1:2014

Markings: Ex db IIB+H2 T3 Gb; IP66; $-40^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$

(Autocal Housing and Probe assembly); $-40^{\circ}\text{C} \leq T_a \leq +90^{\circ}\text{C}$ (Standard Housing and Probe assembly eq. "DR Probe"))

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4. The pressure within the enclosure and gas lines shall not be higher than 1.1 times the atmospheric pressure during the normal operations of the equipment.
5. Fasteners property class must be A2-70 Stainless Steel.
6. Flameproof joints are not intended to be repaired.

Rosemount 6888Xi Digital Transmitter for general purpose locations

USA

FM Certificate: 3042889

Standards: FM 3810:2005, ANSI/IEC:2003, ANSI/EC 60529:2004

Markings:  Type 4X

Special Conditions for Use:

1. Mounting option 01 was not certified to provide Type 4X ingress protection through the panel cut-out opening. The panel mount gasket has not been tested for Type 4X installation.

Canada

CSA Certificate: 1913435

Standards: CAN/CSA C22.2 No. 61010-1-04, UL 61010-1:2004 (2nd Edition), CAN/CSA-C22.2 No.94-M91 (R2001), UL 50 (11th Ed.)

Markings:  Type 4X

Rosemount SPS 4001B and Rosemount IMPS 4000 Autocalibration Devices for general purpose locations

USA/Canada

CSA Certificate: 1640823

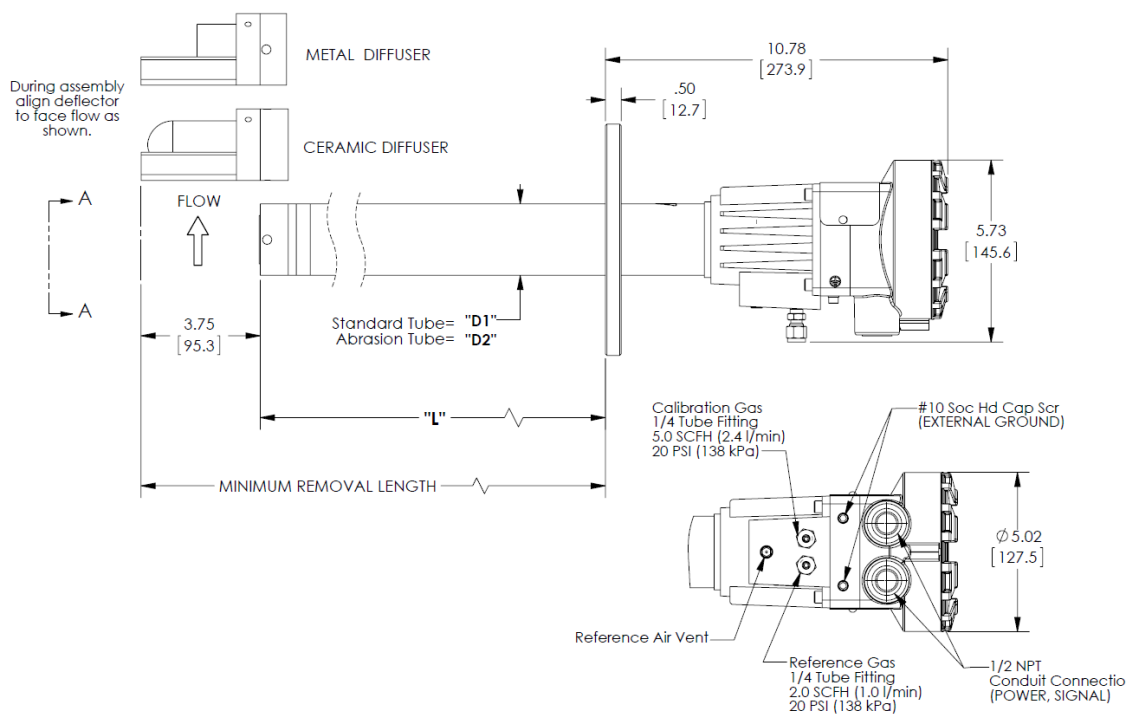
Standards: CAN/CSA C22.2 No. 61010-1-04; ANSI/UL 61010-1:2004, (2nd Edition); CSA C22.2 No. 94.1-07; ANSI/UL 50 (12th Edition); CSA C22.2 No. 94.2 (1st Edition); ANSI/UL 50 E First Edition; CSA C22.2 No. 60529:05 (R2010); ANSI/IEC 60529-2004 (R2011)

Markings: Type 4X, IP66



Dimensions

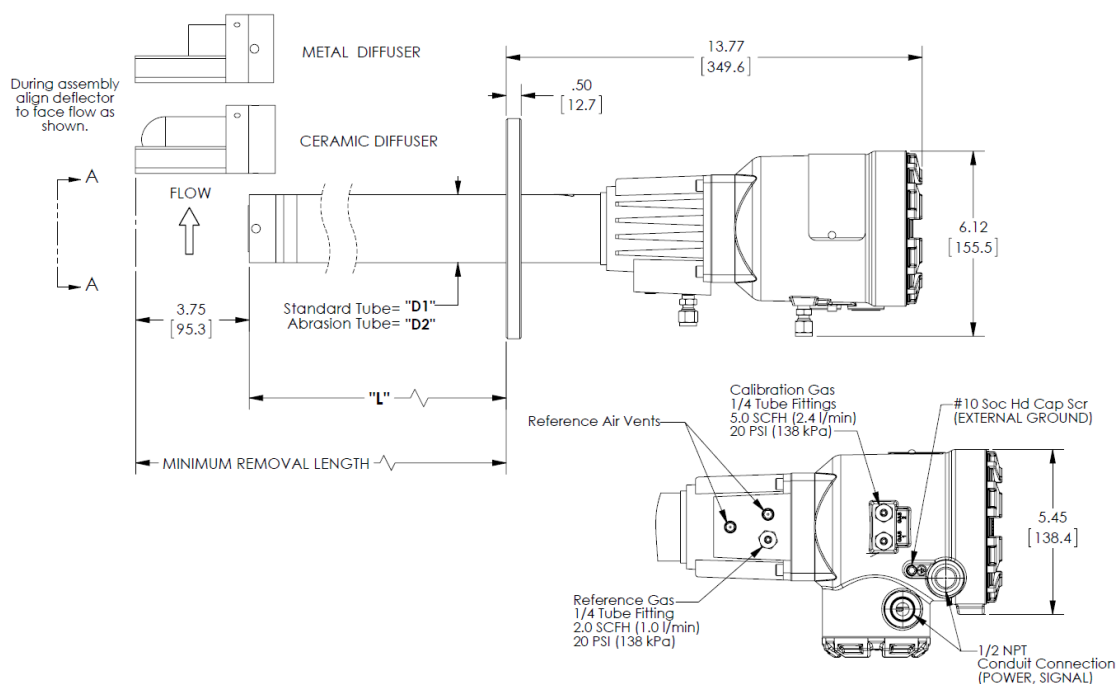
Figure 2. Rosemount™ 6888A with Standard Housing



Dimensions are in inches [millimeters].

Table 12. Rosemount 6888A with Standard Housing - Removal/Installation

Probe length	Insertion depth (L)	Minimum removal length	Standard Tube (D1)	Abrasion Tube (D2)
18 in. (457 mm)	16.10 in. (409 mm)	27 in. (686 mm)	2.25 in. (57.15 mm)	2.38 in. (60.45 mm)
3 ft (0.91 m)	32.52 in. (826 mm)	46.6 in. (1182 mm)	2.25 in. (57.15 mm)	2.38 in. (60.45 mm)
6 ft (1.83 m)	68.52 in. (1740 mm)	82.6 in. (2097 mm)	2.25 in. (57.15 mm)	2.38 in. (60.45 mm)
9 ft (2.74 m)	104.52 in. (2655 mm)	118.6 in. (3011 mm)	N/A	2.38 in. (60.45 mm)
12 ft (3.66 m)	140.52 in. (3569 mm)	154.6 in. (3926 mm)	N/A	2.38 in. (60.45 mm)

Figure 3. Rosemount 6888A with Autocalibration Housing

Dimensions are in inches [millimeters].

Table 13. Rosemount 6888A with Autocalibration Housing - Removal/Installation

Probe length	Insertion depth (L)	Minimum removal length	Standard Tube (D1)	Abrasion Tube (D2)
18 in. (457 mm)	16.10 in. (409 mm)	29.87 in. (759 mm)	2.25 in. (57.15 mm)	2.38 in. (60.45 mm)
3 ft (0.91 m)	32.52 in. (826 mm)	50.1 in. (1271 mm)	2.25 in. (57.15 mm)	2.38 in. (60.45 mm)
6 ft (1.83 m)	68.52 in. (1740 mm)	86.1 in. (2186 mm)	2.25 in. (57.15 mm)	2.38 in. (60.45 mm)
9 ft (2.74 m)	104.52 in. (2655 mm)	122.1 in. (3100 mm)	N/A	2.38 in. (60.45 mm)
12 ft (3.66 m)	140.52 in. (3569 mm)	158.1 in. (4015 mm)	N/A	2.38 in. (60.45 mm)

Figure 4. Rosemount 6888A with Autocalibration Housing Field Connections - HART Output

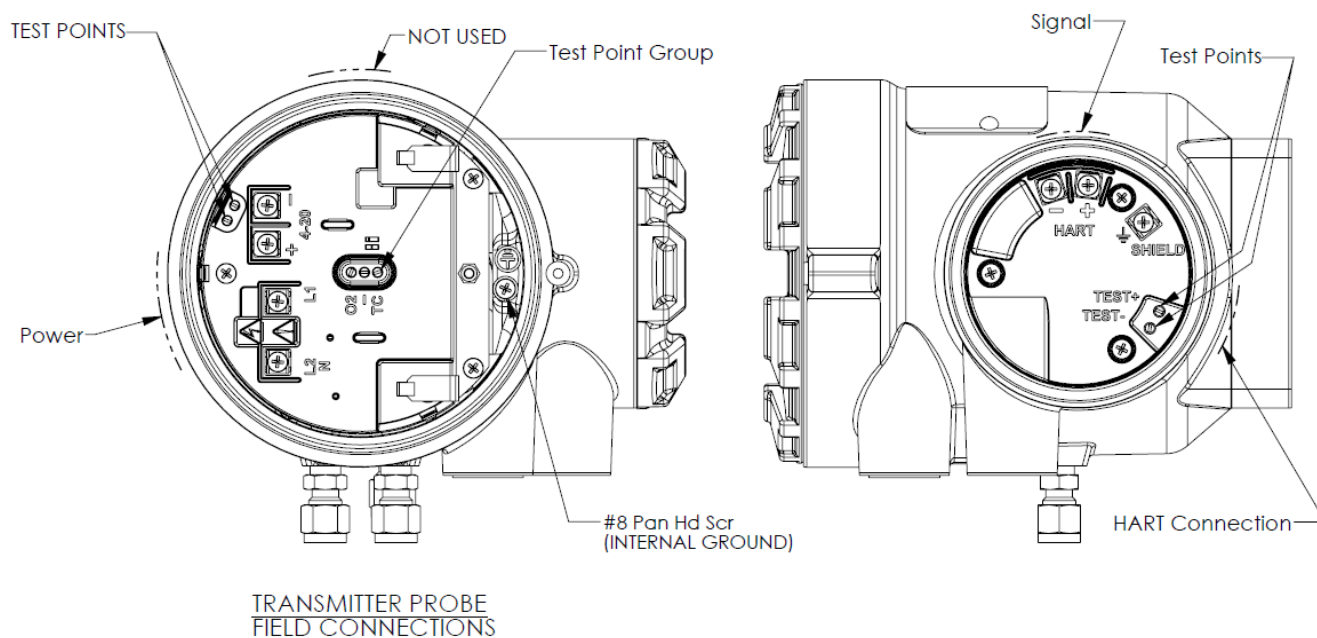
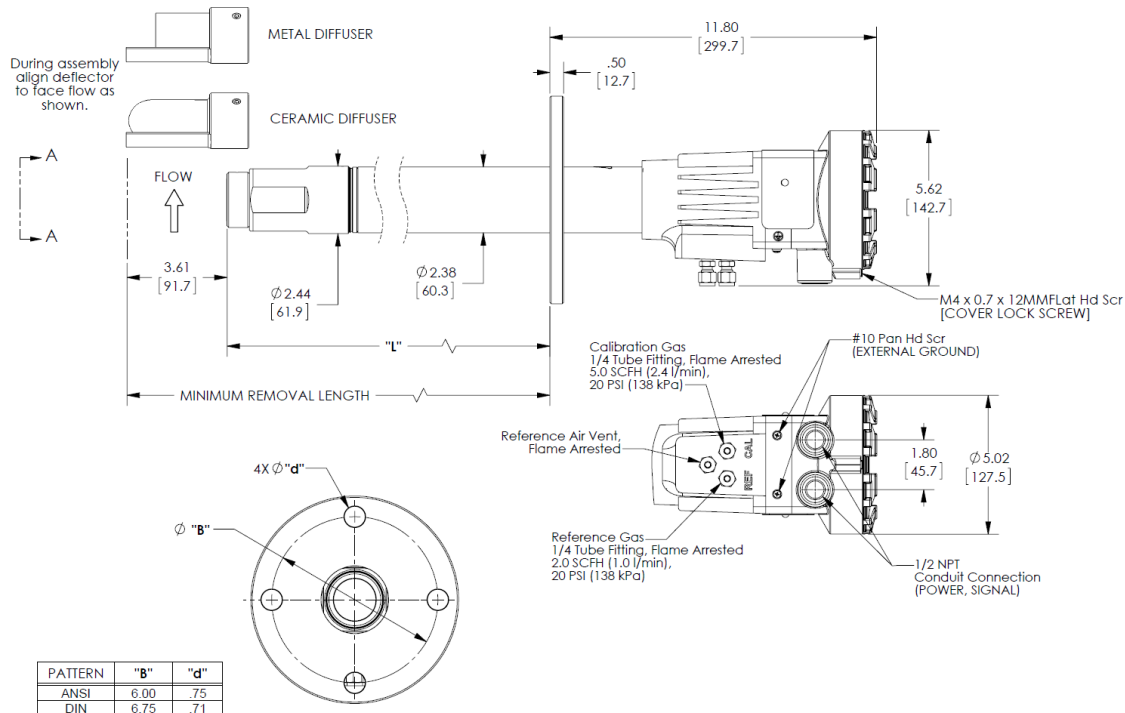


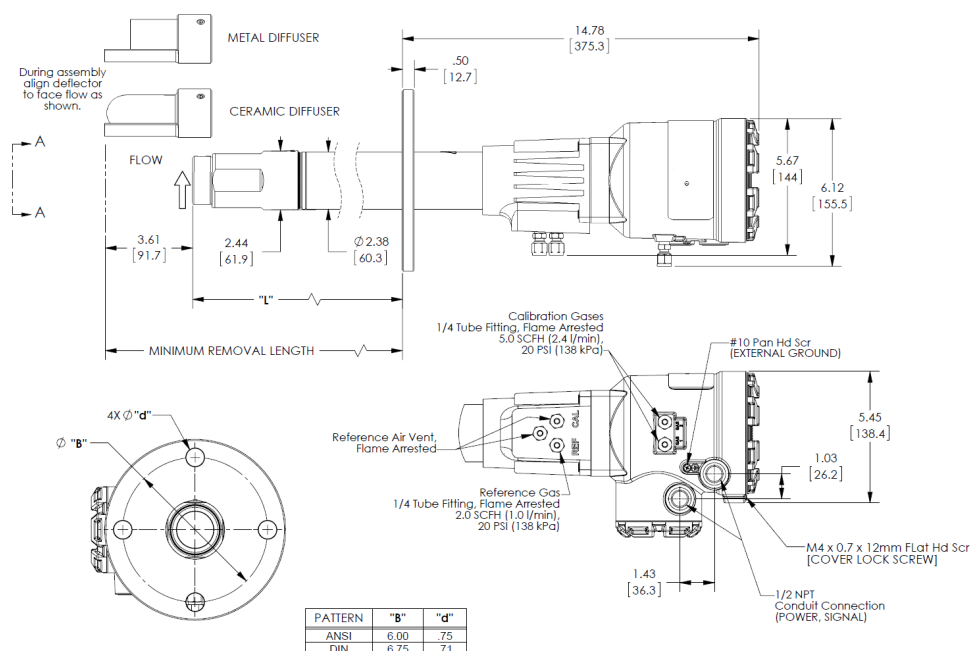
Figure 5. Rosemount 6888C with Standard Housing



Dimensions are in inches [millimeters].

Table 14. Rosemount 6888C with Standard Housing - Removal/Installation

Probe length	Insertion Depth (L)	Overall product length
18 in. (457 mm)	18.86 in. (479 mm)	27 in. (686 mm)
3 ft (0.91 m)	36.86 in. (936 mm)	46.6 in. (1182 mm)
6 ft (1.83 m)	72.86 in. (1851 mm)	82.6 in. (2097 mm)

Figure 6. Rosemount 6888C with autocalibration housing

Dimensions are in inches [millimeters].

Table 15. Rosemount 6888C with Autocalibration Housing - Removal/Installation

Probe length	Insertion depth (L)	Minimum removal length
18 in. (457 mm)	16.10 in. (409 mm)	29.87 in. (759 mm)
3 ft (0.91 m)	32.52 in. (826 mm)	50.1 in. (1271 mm)
6 ft (1.83 m)	68.52 in. (1740 mm)	86.1 in. (2186 mm)

Figure 7. Rosemount 6888C with Standard Housing Field Connections - HART® Output

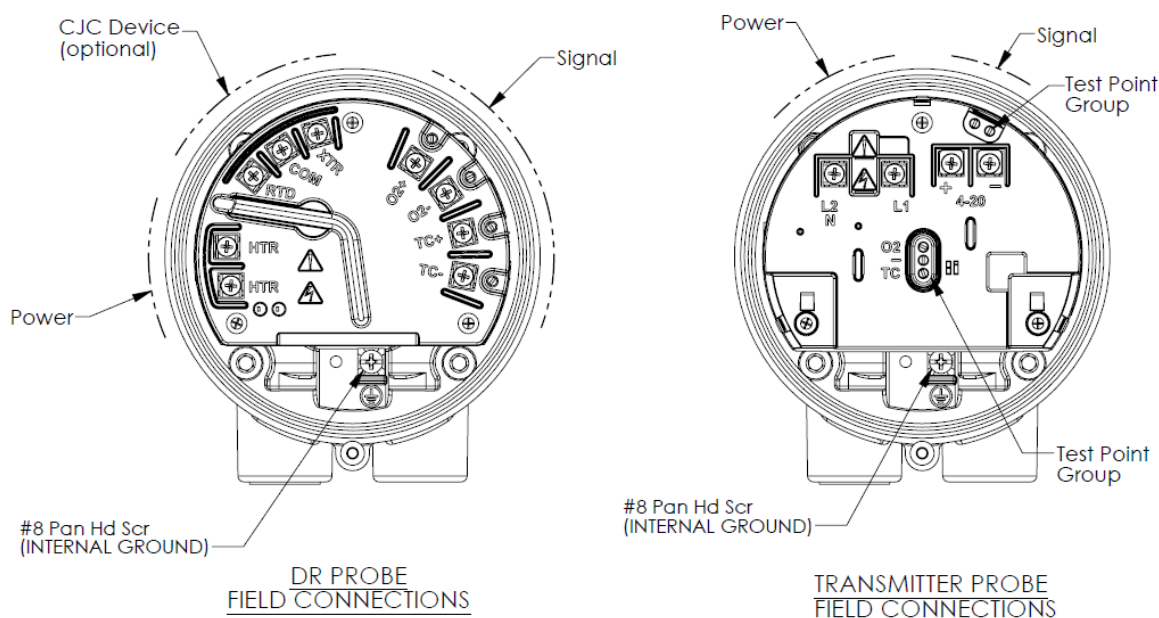


Figure 8. Rosemount 6888A/6888C with Autocalibration Housing Field Connections - HART Output

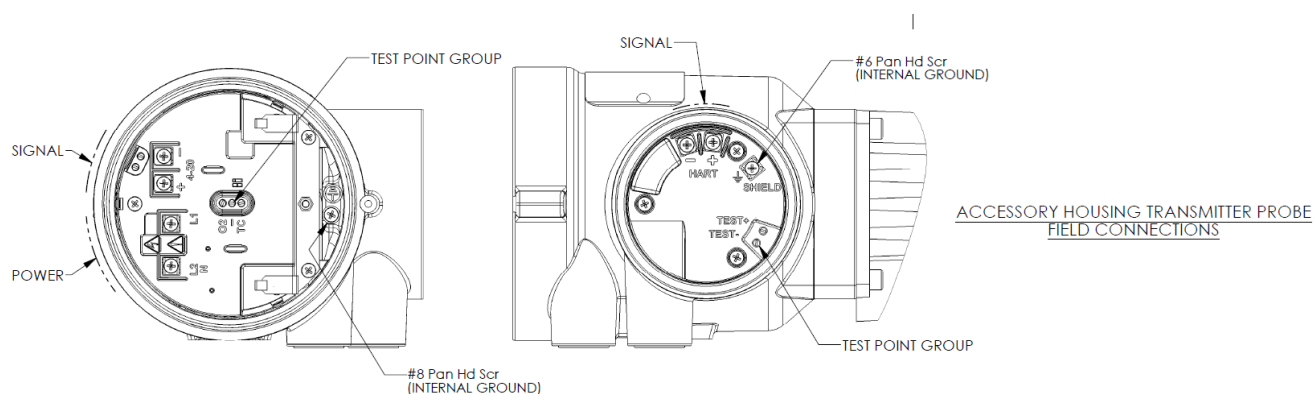


Figure 9. Rosemount 6888A/6888C with Autocalibration Housing Field Connections - FOUNDATION™ Fieldbus Output

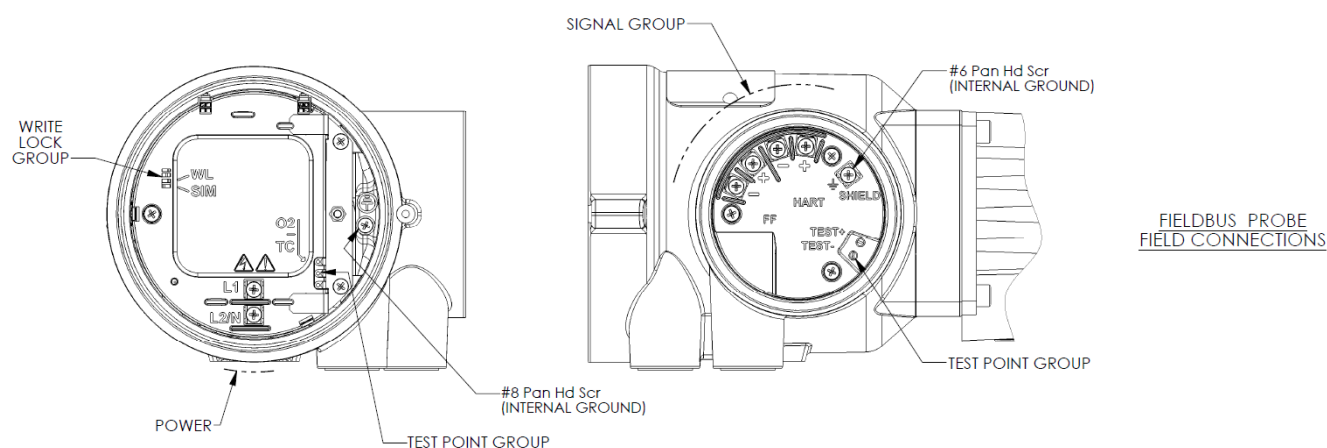
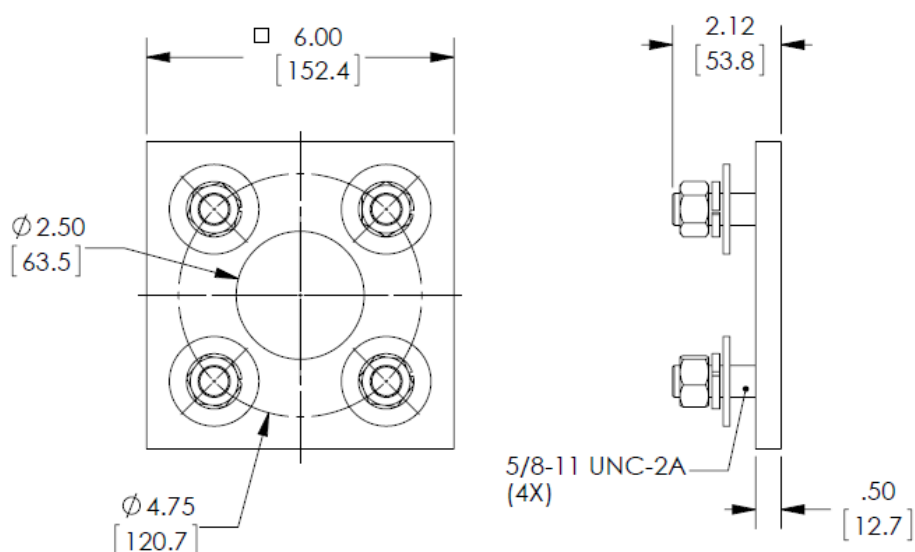
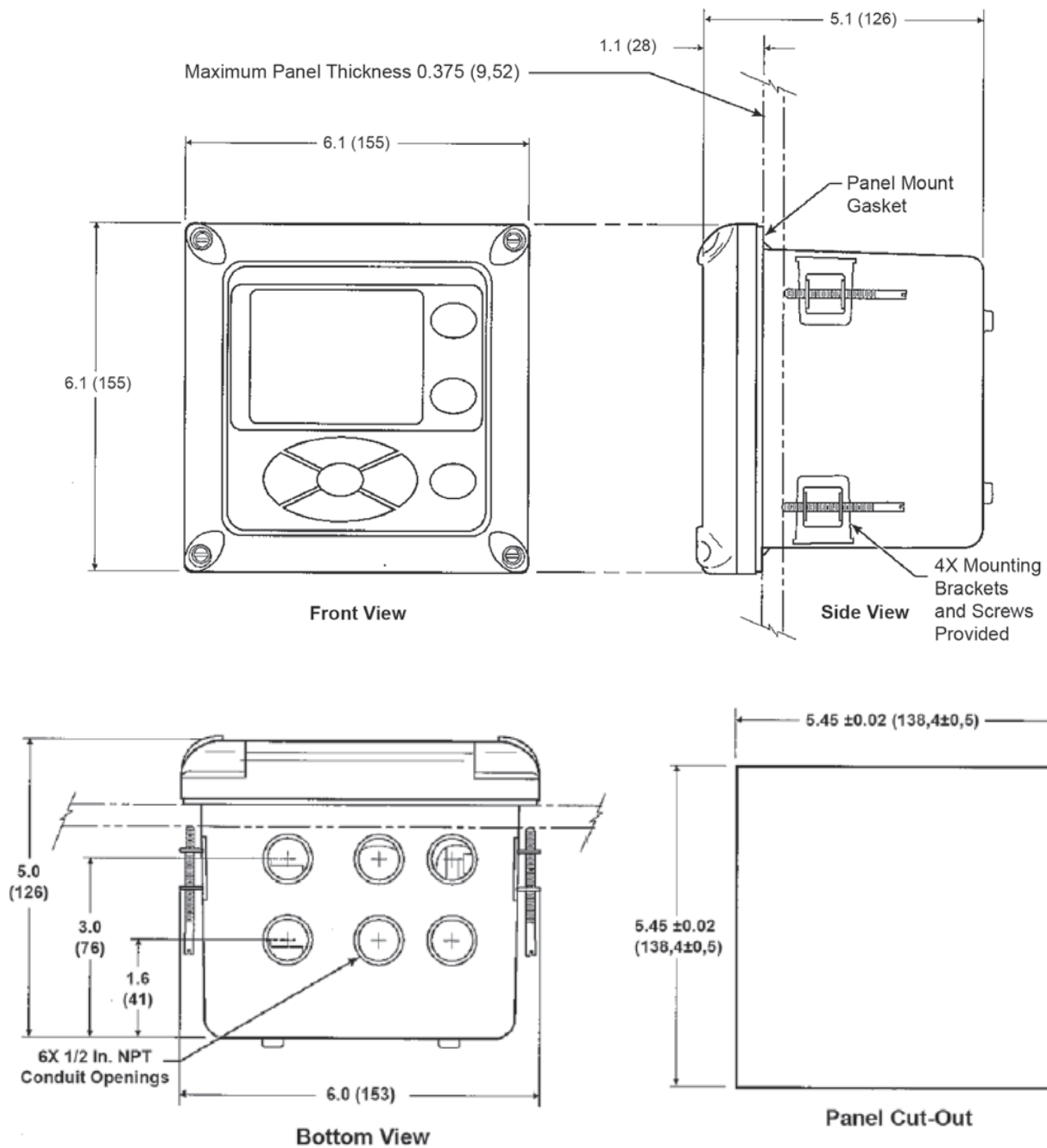


Figure 10. Rosemount 6888A New Installation: Square Weld Plate

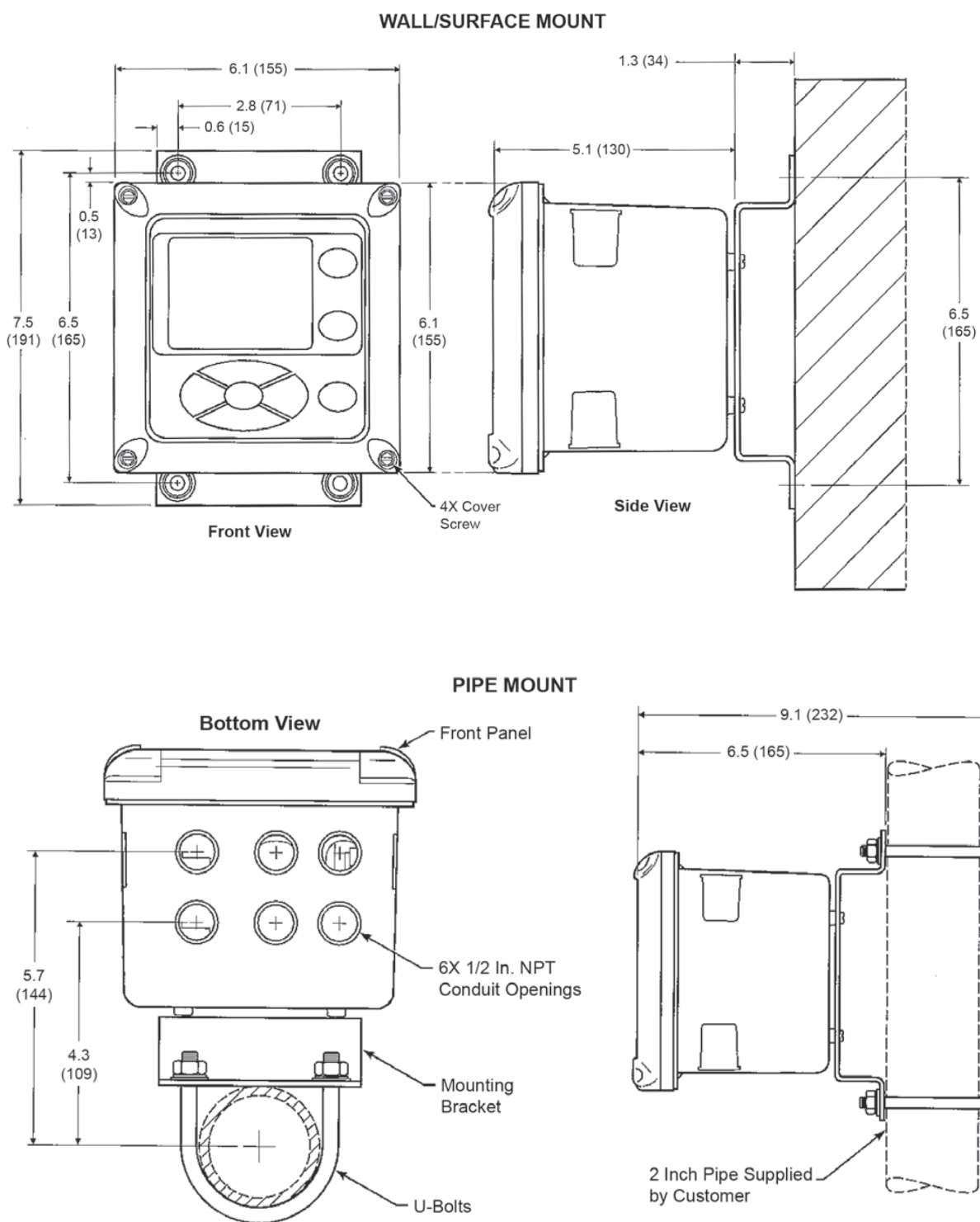


Dimensions are in inches [millimeters].

Figure 11. Rosemount 6888Xi with Panel Mount

Dimensions are in inches [millimeters].

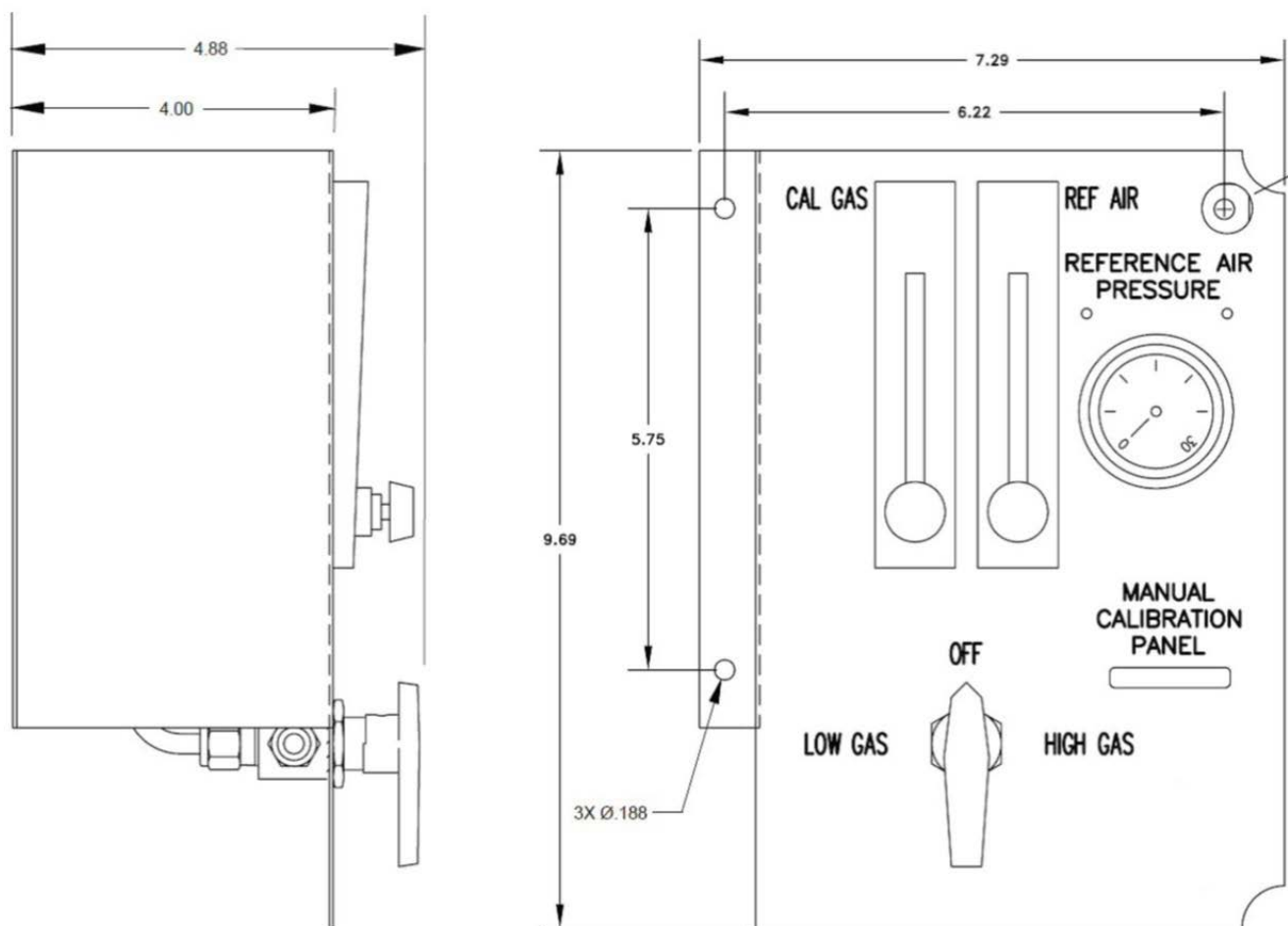
Figure 12. Rosemount 6888 Xi with Wall/Pipe Mount



Dimensions are in inches [millimeters].

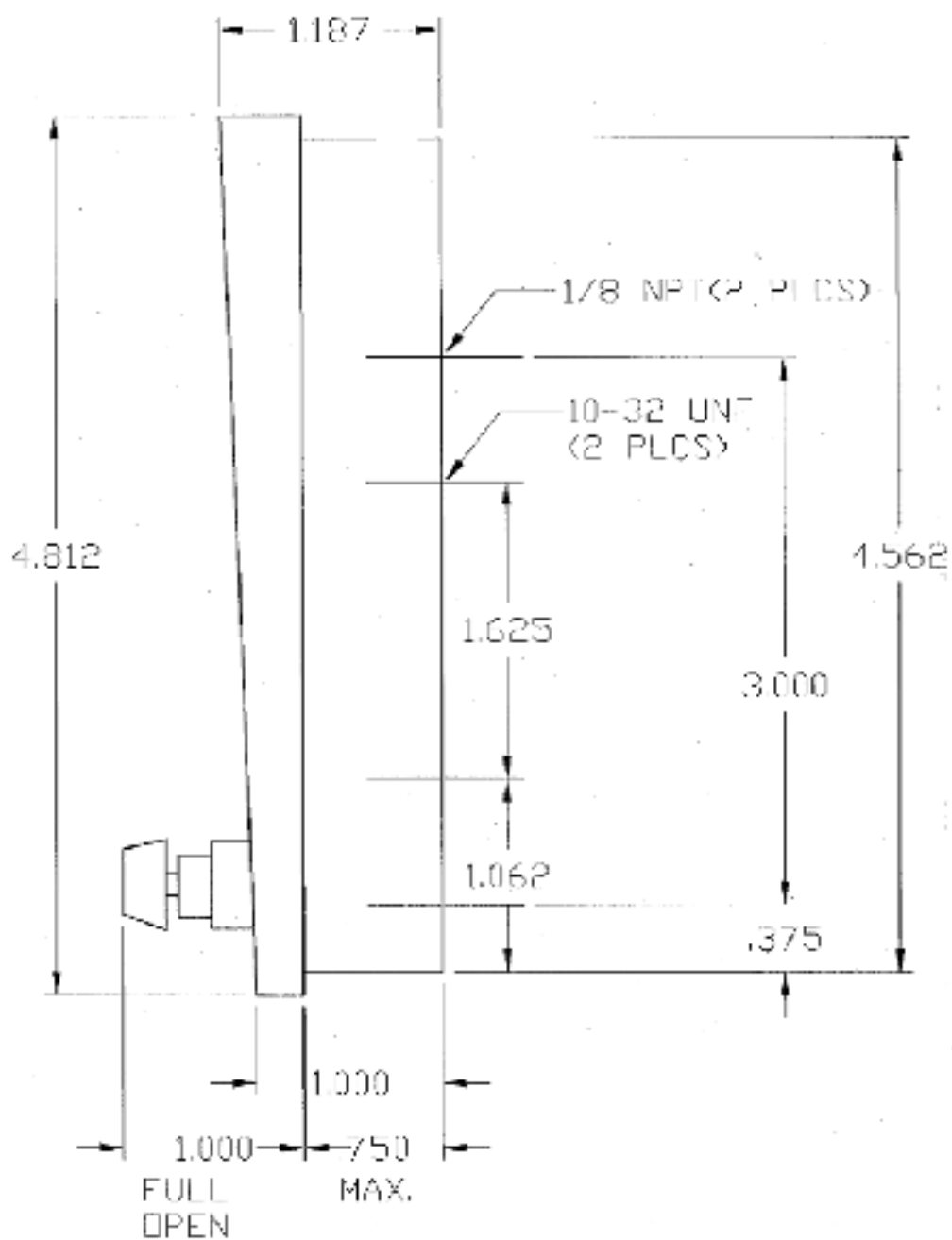
Accessories

Figure 13. Manual Calibration Panel



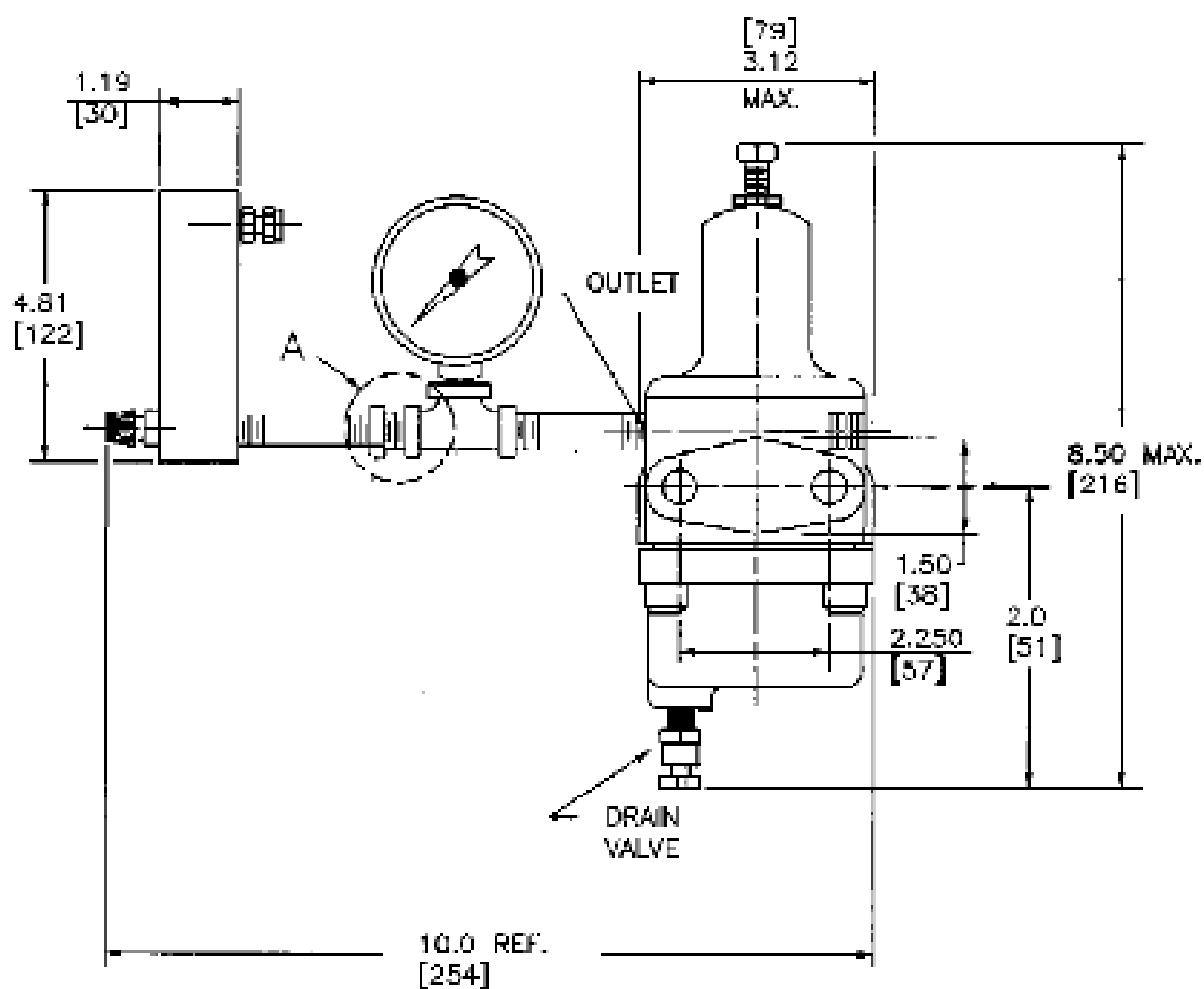
Dimensions are in inches.

Figure 14. Calibration Gas Flowmeter



Dimensions are in inches.

Figure 15. Reference Air Flowmeter and Regulator



Dimensions are in inches [millimeters].

Table 15. Rosemount 6888A and Rosemount 6888C Accessories

Rosemount 6888A part number	Rosemount 6888C part number	Description
6A00444G01 ¹	6A00202G09 ¹	20 ft (6.1 m) cable, traditional architecture, 1/2 NPT / 1/2 NPT
6A00444G02 ¹	6A00202G10 ¹	40 ft (12.2 m) cable, traditional architecture, 1/2 NPT / 1/2 NPT
6A00444G03 ¹	6A00202G11 ¹	60 ft (18.3 m) cable, traditional architecture, 1/2 NPT / 1/2 NPT
6A00444G04 ¹	6A00202G12 ¹	80 ft (24.4 m) cable, traditional architecture, 1/2 NPT / 1/2 NPT
6A00444G05 ¹	6A00202G13 ¹	100 ft (30.5 m) cable, traditional architecture, 1/2 NPT / 1/2 NPT
6A00444G06 ¹	6A00202G14 ¹	150 ft (45.7) cable, traditional architecture, 1/2 NPT / 1/2 NPT
6A00444G07 ¹	6A00202G15 ¹	200 ft (60.1 m) cable, traditional architecture, 1/2 NPT / 1/2 NPT
3D39004G01		3 ft (0.9 m) ANSI bypass and mounting hardware package for use with 18 in. (457.2 mm) ANSI general purpose Rosemount 6888A, OXT4A, WC3000 O ₂ probes
3D39004G02		6 ft (1.8 m) ANSI bypass and mounting hardware package for use with 18 in. (457.2 mm) ANSI general purpose Rosemount 6888A, OXT4A, WC3000 O ₂ probes
3D39004G03		9 ft (2.7 m) ANSI bypass and mounting hardware package for use with 18 in. (457.2 mm) ANSI general purpose 6888A, OXT4A, WC3000 O ₂ probes
3D39004G07		3 ft (0.9 m) DIN bypass and mounting hardware package for use with 18 in. (457.2 mm) DIN general purpose Rosemount 6888A, OXT4A, WC3000 O ₂ probes
3D39004G08		6 ft (1.8 m) DIN bypass and mounting hardware package for use with 18 in. (457.2 mm) DIN general purpose Rosemount 6888A, OXT4A, WC3000, O ₂ probes
3D39004G09		9 ft (2.7 m) DIN bypass and mounting hardware package for use with 18 in. (457.2 mm) DIN general purpose Rosemount 6888A, OXT4A, WC3000, O ₂ probes
3D39003G01		Abrasive shield assembly: ANSI 3 ft (0.9 m)
3D39003G02		Abrasive shield assembly: ANSI 6 ft (1.8 m)
3D39003G05		Abrasive shield assembly: DIN 3 ft (0.9 m)
3D39003G06		Abrasive shield assembly: DIN 6 ft (1.8 m)
3D39003G07		Abrasive shield assembly: ANSI 9 ft (2.7 m)
3D39003G08		Abrasive shield assembly: ANSI 12 ft (3.7 m)
3D39003G11		Abrasive shield assembly: DIN 9 ft (2.7 m)
3D39003G12		Abrasive shield assembly: DIN 12 ft (3.7 m)
3D39003G13		Abrasive shield assembly: ANSI 18 in. (457.2 mm)
3D39003G15		Abrasive shield assembly: DIN 18 in. (457.2 mm)
3D39003G25		Abrasive shield assembly: ANSI 15 ft (4.6 m)
3D39003G27		Abrasive shield assembly: DIN 15 ft (4.6 m)
3D39003G28		Abrasive shield assembly: ANSI 18 ft (5.5 m)
3D39003G30		Abrasive shield assembly: DIN 18 ft (5.5 m)
4512C36G01		New installation square weld plate: 6 in. (152.4 mm) sq., 4.75 in. (120.7) bolt circle, 5/8-11 studs
4512C36G02		New installation, square weld plate: 7.5 in. (190.5 mm) sq., 5.7 in. (145 mm) bolt circle, M16x2 studs
353B30G04		Adapter plate: OXT4A/OCX/6888A ANSI to 3 in. (76.2 mm) 150# ANSI
353B30G01		Adapter plate: OXT4A/OCX/6888A ANSI to 4 in. (101.6 mm) 150# ANSI
353B30G05		Adapter plate: OXT4A/OCX/6888A ANSI to 6 in. (152.4 mm) 150# ANSI
353B30G10		Adapter plate: OXT4A/OCX/6888A ANSI to 3 in. (76.2 mm) 300# ANSI
4851B78G21		Adapter plate: OXT4A/OCX/6888A ANSI to 4 in. (101.6 mm) 300# ANSI
3D39761G02		Spool piece 12 in. (304.8 mm)

1. Cables are supplied with Exd Rated Glands; the cable is not Exd rated, and installation in a hazardous area is the responsibility of the installer/customer. Cables must be installed in accordance with national and local electrical codes.

Table 16. Calibration Gas and Reference Air Accessories

Part number	Description
6A00252G02	Manual calibration panel, includes reference air regulator and flowmeter, calibration gas flowmeter
263C152G01	Reference air regulator and flowmeter set
771B635H01	Calibration gas flowmeter
1A9919G01	O ₂ cal gas kit: contains 0.4% and 8.0% O ₂ bottles, 550 L each (requires two CGA 590 regulators)
1A9919G02	O ₂ cal gas regulators kit: contains two CGA 590 regulators
1A9911G03	Wall bracket kit for two O ₂ gas bottles

Table 17. Rosemount 6888 Xi Accessories

Part number	Description
6P00285H01	Xi/6888Xi panel gasket
6A00237H33	Xi/6888Xi panel mount hardware
6A00237H24	Xi/6888Xi pipe and wall mount hardware

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