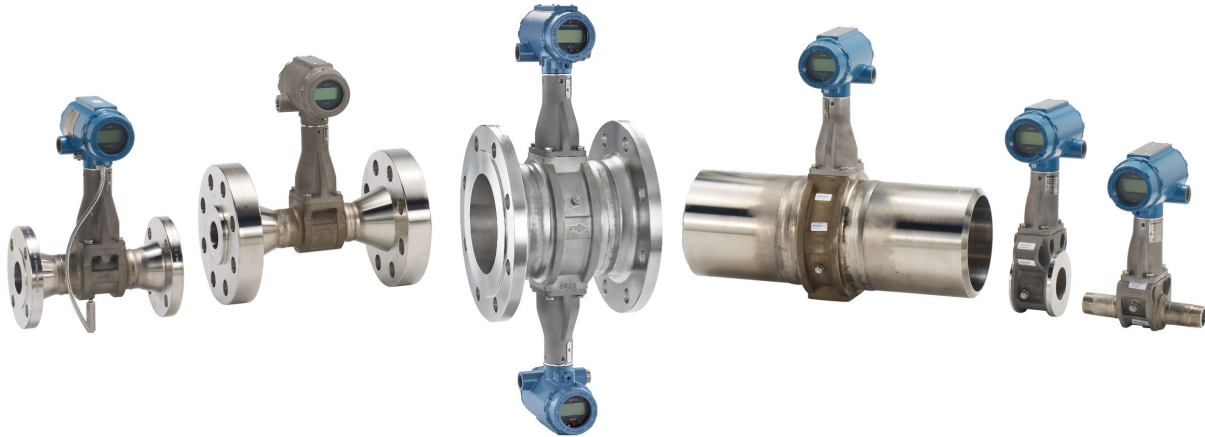


Rosemount™ 8800D Vortex Flowmeter



Industry Leading Vortex

- HART™ and FOUNDATION™ Fieldbus Protocols
- All welded, non-clog design provides maximum performance, reliability and enhanced safety by eliminating ports and gaskets.
- CriticalProcess™ increases process availability and enhances overall safety.
- SIL 2/3 Capable: IEC 61508 certified by an accredited 3rd party agency for use in safety instrumented systems up to SIL 3.
- Available with optional multivariable output. Internal temperature compensation provides cost-effective saturated steam and liquid mass flow measurement.
- Adaptive Digital Signal Processing (ADSP) provides vibration immunity and flow range optimization.
- Reducer™ Vortex extends the measurable flow range, reduces installation costs, and minimizes project risk.
- Simplified troubleshooting through device diagnostics and meter verification.
- Available in wafer, flanged, dual, weld end, and reducer and high pressure designs.

Product Overview

The Rosemount 8800D delivers reliability, safety, and maximum process availability



- **Rosemount Reliability**—The Rosemount 8800D Vortex eliminates impulse lines, ports, and gaskets to improve reliability.
- **Non-clog Design**—Unique all welded, gasket-free construction which has no ports or crevices that can clog.
- **SIL 2/3 Capable** - The Rosemount 8800D Vortex is certified by an accredited 3rd party agency for use in safety instrumented systems up to SIL 3 (minimum requirement of single use [1oo1] for SIL 2 and redundant use [1oo2] for SIL 3).
- **Vibration Immunity**—Mass balancing of the sensor system, and Adaptive Digital Signal Processing (ADSP) provide vibration immunity.
- **Replaceable Sensor**—The sensor is isolated from the process and can be replaced without breaking the process seal. All line sizes use the same sensor design allowing a single spare to serve every meter.
- **Simplified Troubleshooting**—Device Diagnostics enable field verification of meter electronics and sensor without process shutdown.

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The Rosemount 8800D Critical Process Vortex increases process availability and enhances overall safety



Eliminate bypass piping for critical process installations

Traditional vortex installations in critical applications include a bypass line to allow process fluid to be re-directed around the vortex flow meter during routine sensor maintenance. Rosemount's unique non-wetted sensor can be installed without bypass piping, even in the most difficult process environments.

Improve process availability

Eliminate the need to shut down the process during routine maintenance and meter verification.

Enhances safety in hazardous process fluid applications

A Critical Process Valve (CPA option) enables access to the sensor cavity to verify that no process fluid is present.

Reduce installed costs, simplify installation and improve performance in liquid and steam flow applications with the Rosemount 8800D MultiVariable™



Multivariable vortex design

Incorporates temperature sensor into the vortex meter using the shedder bar as a thermowell, which keeps the vortex and temperature sensors isolated from process for easy verification and replacement.

Temperature compensated capability for saturated steam

Calculates density from measured process temperature and uses the calculated density to provide a temperature compensated mass flow. Compensated mass flow using integrated ASME steam tables.

Temperature compensated liquids allows for precision measurement of high temperature liquids by correcting the liquid density as the process temperature changes

- Select from water or enter up to five temperature and density pairs to accommodate any liquid type.
- Water density calculations consistent with IAPWS IF-97.
- New units of measure such as standard barrels, SBBL, are selectable in the corrected volumetric flow measurement mode.

Reduces installation costs

MultiVariable Vortex eliminates the need for an external thermowell and temperature sensor.

Available with integrated thermowell for flanged (1½ inch through 12 inch) and Reducer Vortex (2 inch through 12 inch) meter body sizes

To order meter with temperature compensated liquids or temperature compensated steam, include MTA in the model string. For smaller line sizes, consult your Emerson Flow representative.

Available with flow computer for additional functionality

Integrating the Multivariable vortex flow meter with a pressure transmitter for full pressure and temperature compensation of superheated steam and various gases provides the following additional functionality:

- Remote communications
- Heat flow calculations
- Remote totalization
- Peak demand calculation
- Data logging capabilities



Contact an Emerson Flow representative for more information (see back page).

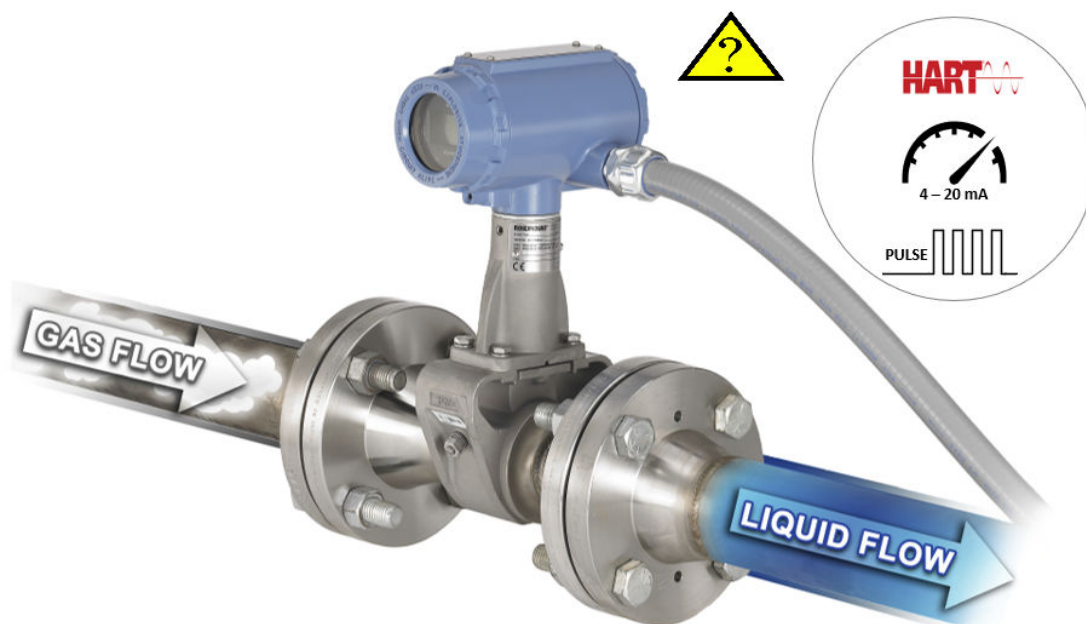
Maximum reliability and reduced installation complexity with the armored remote cable



- Improved protection against abrasion, impact, and moisture.
- Available in 10, 20, 33, 50, and 75 foot (3, 6, 10, 15, and 23 m) lengths.
- Two cable glands are provided to securely connect the remote cable to transmitter and meter body.
- The cable gland material will match the material of construction of the mating parts at both the meter body end and transmitter end. The cable gland that connects to the meter body will utilize a stainless steel gland and the cable gland material

at the electronics end will be either aluminum or stainless steel depending on the material of the electronics housing that is ordered.

Detect process fluid changes with SMART Fluid Diagnostics



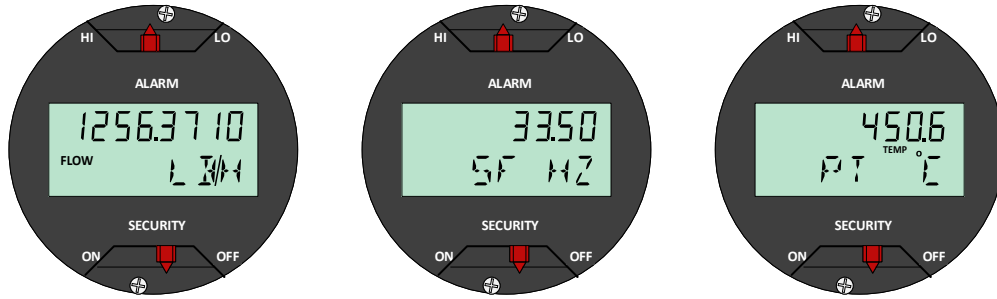
Oil and gas separators

- Remotely detect when your separator dump valve allows gas to pass through your water dump leg.
- Selectable alert modes (digital, analog or pulse) signal when gas flow is detected.

Steam, nitrogen, or air blow down

- Control your clean in place (CIP) or blow down cycles with a single meter that measures the flow rate of your primary process fluid as well as the change from liquid to gas flow.
- Set your control system to control down cycle based on alert from in-line vortex meter.
- Selectable alert modes (digital, analog or pulse) signal when gas flow is detected.

Access process variables and diagnostics locally with the optional LCD Display



The optional 11 digit, two-line integral LCD display can be configured to alternate between selected display options (e.g., flow, totalizer, mA output, and (MTA) temperature). Diagnostics and fault conditions, when present, will also appear on the display for local troubleshooting.

Flow rate sizing

Sizing is critical to select the correct Vortex meter for each application is critical to the performance of the Vortex meter.

- Refer to the product reference manual for typical flow rates for common applications.
- Go to the [Rosemount 8800D Product Page](#), and select **Size** for detailed sizing on most applications, or complete a [Configuration Data Sheet](#) and contact an Emerson Flow representative (see back page).

Ordering Information

Model code structure

In conjunction with a complete model code string, we strongly recommend every meter be configured at the factory for your application. Use the Configuration Data Sheet (00806-0100-4004) to convey your configuration information to the factory.

Example model code with one selection out of each required category:

8800D F 020 S A1 N 1 D 1 M5 MTA Q4 Q8

The starred (★) offerings represent the best delivery options.

Requirements

Table 1: Requirements - select one from each available choice

Code	Description	
Base model		
8800D	Vortex Flow Meter	★
Meter style		
F	Flanged	★
W	Wafer	★
R	Reducer – Meter body is one nominal size smaller than line size selection	★
D	Dual-sensor (flanged-style only)	
Line size		
005 ⁽¹⁾	½ inch (15 mm)	★
010	1 inch (25 mm)	★
015	1½ inch (40 mm)	★
020	2 inch (50 mm)	★
030	3 inch (80 mm)	★
040	4 inch (100 mm)	★
060	6 inch (150 mm)	★
080	8 inch (200 mm)	★
100	10 inch (250 mm)	
120	12 inch (300 mm)	
140 ⁽²⁾	14 inch (350 mm)	
Wetted materials		
S	316 wrought stainless and CF-3M cast stainless; Material of construction is 316/316L.	★
H ⁽³⁾	UNS N06022 wrought nickel alloy; CW2M cast nickel alloy.	
C	A105 forged carbon steel and WCB cast carbon steel	
L	LF2 forged carbon steel and LCC cast carbon steel	
D ⁽⁴⁾	UNS S32760 wrought duplex stainless steel and 6A cast duplex stainless steel	

Table 1: Requirements - select one from each available choice (continued)

Code	Description	
Process connection style and pressure rating		
A1	ASME B16.5 (ANSI) RF Class 150	★
A3	ASME B16.5 RF Class 300	★
A6	ASME B16.5 RF Class 600	
A7 ⁽⁵⁾	ASME B16.5 RF Class 900	
A8 ⁽⁶⁾	ASME B16.5 RF Class 1500	
B1 ⁽⁷⁾	ASME B16.5 RTJ Class 150 for flange-style only	
B3	ASME B16.5 RTJ Class 300 for flange-style only	
B6	ASME B16.5 RTJ Class 600 for flange-style only	
B7 ⁽⁵⁾	ASME B16.5 RTJ Class 900 for flange-style only	
B8 ⁽⁶⁾	ASME B16.5 RTJ Class 1500 for flange-style only	
C1	ASME B16.5 RF Class 150, smooth finish	
C3	ASME B16.5 RF Class 300, smooth finish	
C6	ASME B16.5 RF Class 600, smooth finish	
C7 ⁽⁵⁾	ASME B16.5 RF Class 900, smooth finish	
C8 ⁽⁶⁾	ASME B16.5 RF Class 1500, smooth finish	
K0	EN 1092-1 PN 10 Type B1	
K1	EN 1092-1 PN 16 (PN 10/16 for wafer style) Type B1	★
K2	EN 1092-1 PN 25 Type B1	
K3	EN 1092-1 PN 40 (PN 25/40 for wafer style) Type B1	★
K4	EN 1092-1 PN 63 Type B1	
K6	EN 1092-1 PN 100 Type B1	
K7 ⁽⁵⁾	EN 1092-1 PN 160 Type B1	
L0	EN 1092-1 PN 10 Type B2	
L1	EN 1092-1 PN 16 (PN 10/16 for wafer style) Type B2	
L2	EN 1092-1 PN 25 Type B2	
L3	EN 1092-1 PN 40 (PN 25/40 for wafer style) Type B2	
L4	EN 1092-1 PN 63 Type B2	
L6	EN 1092-1 PN 100 Type B2	
L7 ⁽⁵⁾	EN 1092-1 PN 160 Type B2	
M0	EN 1092-1 PN 10 Type D for flange style only	
M1	EN 1092-1 PN 16 Type D for flange style only	
M2	EN 1092-1 PN 25 Type D for flange style only	
M3	EN 1092-1 PN 40 Type D for flange style only	
M4	EN 1092-1 PN 63 Type D for flange style only	

Table 1: Requirements - select one from each available choice (continued)

Code	Description	
M6	EN 1092-1 PN 100 Type D for flange style only	
M7 ⁽⁵⁾	EN 1092-1 PN 160 Type D for flange style only	
N0	EN 1092-1 PN 10 Type F	
N1	EN 1092-1 PN 16 Type F	
N2	EN 1092-1 PN 25 Type F	
N3	EN 1092-1 PN 40 Type F	
N4	EN 1092-1 PN 63 Type F	
N6	EN 1092-1 PN 100 Type F	
N7	EN 1092-1 PN 160 Type F	
J1	JIS 10K	
J2	JIS 20K	
J4	JIS 40K	
W1 ⁽⁸⁾	Weld-end, Schedule 10S	
W4 ⁽⁸⁾	Weld-end, Schedule 40S	
W8 ⁽⁷⁾⁽⁸⁾	Weld-end, Schedule 80S	
W9 ⁽⁸⁾	Weld-end, Schedule 160S	
Sensor process temperature range		
N	Standard: -40 to +450 °F (-40 to +232 °C)	★
E ⁽⁹⁾	Extended: -330 to +800 °F (-200 to +427 °C)	★
S ⁽⁹⁾	Severe service: -330 to +800 °F (-200 to +427 °C) and nickel alloy construction for increased corrosion resistance	
Housing material and conduit entries		
1	Aluminum housing, two ½-14 NPT conduit entries	★
2 ⁽¹⁰⁾	Aluminum housing, two M20 x 1.5 conduit entries	★
3 ⁽¹⁰⁾	Aluminum housing, two PG 13.5 conduit adapters	★
4	Aluminum housing, one G1/2 conduit adapter (one conduit entry)	★
5	Aluminum housing, two G1/2 conduit adapters (two conduit entries)	★
6	Stainless steel housing, two ½-14 NPT conduit entries	
7 ⁽¹⁰⁾	Stainless steel housing, two M20 x 1.5 conduit entries	
Outputs		
D	4-20 mA digital electronics (HART protocol)	★
P	4-20 mA digital electronics (HART protocol) with scaled pulse	★
F ⁽¹¹⁾	FOUNDATION Fieldbus digital signal	★
Calibration		
1	Flow calibration	★

- (1) Not available for Rosemount 8800DR.
- (2) Code 140 (14 inch [350 mm]) size is only available with reducer.
- (3) See [Table 3](#) for collared vs. weld neck flange configuration.
- (4) Available in Flanged and Dual from 6 inch through 12 inch and Reducer from 8 inch through 12 inch Class 1500 in 6 inch and 8 inch meter body sizes and Class 900 in 10 inch through 12 inch meter body sizes.
- (5) Available on flanged and dual style meters from 1/2- through 8-in. (15–200 mm) and reducer style meters from 1– 8-in. (25–200 mm). Also available in 10- through 12-in. (250-300 mm) flanged and dual meters along with 12-in. (300 mm) reducers when using Super Duplex material of construction.
- (6) Only available for flange and dual style meters from 1 inch through 8 inch (25–200 mm).
- (7) Not available with 1/2 inch line size.
- (8) Only available with Meter Style F.
- (9) The meter body and sensor, in remote mount configurations, is functionally rated to +842 °F process temperature. Process temperature may be further restricted depending on hazardous area options and PED certificates. Consult applicable certificates for particular installation limits. –320 °F to 800 °F (–196 to +427 °C) for European Pressure Equipment Directive (PED), consult factory for lower temperature requirements. The Super Duplex material of construction is limited to use in applications with process temperatures from –40 to +450 °F (–40 to +232 °C).
- (10) No Japan (E4) approval.
- (11) The Safety Certifications SI option code is not available with this option.

Options

Select only as needed.

Table 2: Options

Code	Description	
Hazardous area approvals		
E5	US Approvals Explosion-proof and Dust Ignition-proof	★
I5	US Approvals Intrinsically Safe and Non-Incendive	★
IE ⁽¹⁾	US Approvals FISCO Intrinsically Safe and Non-Incendive	★
K5	US Approvals Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Non-Incendive	★
E6	US/Canadian Approvals Explosion-proof and Dust Ignition-proof	★
I6	US/Canadian Approvals Intrinsically Safe and Division 2	★
IF ⁽¹⁾	US/Canadian Approvals FISCO Intrinsically Safe and Division 2	★
K6	US/Canadian Approvals Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
KB	US/Canadian Approvals Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
E1	ATEX Flameproof	★
I1	ATEX Intrinsic Safety ia; Intrinsic Safety ic	★
IA ⁽¹⁾	ATEX FISCO Intrinsic Safety	★
N1	ATEX Type n	★
ND	ATEX Dust	★
K1	ATEX Flameproof; Intrinsic Safety; Type n; Dust	★
E7	IECEX Flameproof	★
I7	IECEX Intrinsic Safety	★
IG ⁽¹⁾	IECEX FISCO Intrinsic Safety	★
N7	IECEX Type n	★
NF	IECEX Dust	★
K7	IECEX Flameproof; Intrinsic Safety; Type n; Dust	★
E2	INMETRO Flameproof	★

Table 2: Options (continued)

Code	Description	
I2	INMETRO Intrinsic Safety	★
IB ⁽¹⁾	INMETRO FISCO Intrinsic Safety	★
K2	INMETRO Flameproof; Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
N3	China Type n	★
IH ⁽¹⁾	China FISCO/FNICO Intrinsic Safety	★
K3	China Flameproof; Dust; Intrinsic Safety; Type n	★
E4	Japan Flameproof	★
E8	Technical Regulations Customs Union (EAC) Flameproof	★
I8	Technical Regulations Customs Union (EAC) Intrinsic Safety	★
N8	Technical Regulations Customs Union (EAC) Type n	★
K8	Technical Regulations Customs Union (EAC) Flameproof; Intrinsic Safety; Type n	★
G8	Technical Regulations Customs Union (EAC) FISCO Intrinsic Safety	★
MultiVariable		
MTA ⁽²⁾⁽³⁾	MultiVariable output with temperature compensation and integral temperature sensor	★
Display type		
M5	LCD indicator	★
Remote electronics		
R10	Remote electronics with 10 ft (3,0 m) cable	★
R20	Remote electronics with 20 ft (6,1 m) cable	★
R30	Remote electronics with 30 ft (9,1 m) cable	★
R33	Remote electronics with 33 ft (10,1m) cable	★
R50	Remote electronics with 50 ft (15,2 m) cable	★
R75	Remote electronics with 75 ft (22,9 m) cable	★
Rxx	Remote Electronics with customer-specified cable length (xx ft., 1 ft to 75 ft cable in 1 ft increments) Example: R15 = 15 ft, R34 = 34 ft	
A10	Armored remote electronics with 10 ft (3,0 m) cable	
A20	Armored remote electronics with 20 ft (6,1 m) cable	
A33	Armored remote electronics with 33 ft (10,1 m) cable	
A50	Armored remote electronics with 50 ft (15,2 m) cable	
A75	Armored remote electronics with 75 ft (22,9 m) cable	
Transient protection		
T1	Transient Protection terminal block	

Table 2: Options (continued)

Code	Description		
Alarm mode			
C4 ⁽⁴⁾	NAMUR alarm and saturation values, high alarm		★
CN ⁽⁴⁾	NAMUR alarm and saturation values, low alarm		★
Special cleaning			
P2	Cleaning for special services		★
Ground screw assembly			
V5	External ground screw assembly		★
Plantweb™ control functionality			
A01 ⁽⁵⁾	Basic Control: One Proportional/Integral/Derivative (PID) Function Block★		★
ASME B31.1 code compliance			
J2	ASME B31.1 General compliance		
J7	ASME B31.1 Boiler External Piping (BEP) code stamp		
Conduit electrical connectors			
GE ⁽⁶⁾	M12, 4-pin, Male Connector (eurofast™)		
GM ⁽⁶⁾	A size Mini, 4-pin, Male Connector (minifast™)		
GN	ATEX Flameproof A size, Mini 4-pin male connector (minifast)		
HART communication			
HR7 ⁽⁷⁾	HART Revision 7		★
Process diagnostics			
DS3 ⁽⁷⁾	Smart Fluid Diagnostics		★
Safety certifications			
SI	Safety Certification of 4–20 mA Output per IEC 61508		★
Quality certificate			
Q4	Calibration Certification	Certificate of calibration	★
Q5	Hydrostatic Certification	Certificate verifying structural quality	★
Q8	Material Certification	Certificate of material conformance and traceability in accordance with ISO 10474 3.1B and EN 10204 3.1	★
QP	Calibration Certification and Tamper Evident Seal	Certificate of calibration with tamper evident seal	★
Q25	NACE Certification	Certificate verifying MR0175 / ISO15156 and MR0103 requirements	★
Q66	Welding Certification Package	Includes Welding Qualification Record Documentation (PQR), Certificate for Welder Performance Qualification Records (WPQ), and Certification for Welding Procedure Specifications (WPS)	★
Q70	Radiographic, Dye Pen, and Helium Certification	Certificate verifying weld joint integrity	

Table 2: Options (continued)

Code	Description		
Q71	Radiographic, Dye Pen, and Helium Certification with Images	Certificate verifying weld joint integrity with X-ray images	
Q76	PMI Certification	Certificate verifying chemical composition of material	★
Q77	PMI Certification with Carbon Content	Certificate verifying chemical composition of material and carbon content	★
Sensor completion			
WG	Witness General		
Pressure Equipment Directive (PED)			
PD	Pressure Equipment Directive (PED)		★
Shipboard approvals			
SBS	American Bureau of Shipping (ABS) type approval		★
SBV	Bureau Veritas (BV) type approval		★
SDN	Det Norske Veritas (DNV) type approval		★
SLL	Lloyd's Register (LR) type approval		★
Critical process vortex			
CPA ⁽⁸⁾	Critical Process Online Sensor Replacement		
Quick Start Guide language (default is English)			
YF	French		★
YG	German		★
YI	Italian		★
YJ	Japanese		★
YK	Korean		★
YM	Chinese (Mandarin)		★
YP	Portuguese		★
YR	Russian		★
YS	Spanish		★

(1) Fieldbus Intrinsic Safe Concept (FISCO) available with output code F (Foundation Fieldbus digital signal) only.

(2) The Safety Certifications SI option code is not available with this option.

(3) Available with Rosemount 8800DF from 1½ inch through 12 inch (40 mm through 300 mm). Available with 8800DR from 2 inch through 12 inch (50 mm through 300 mm). Not available with 8800DW or 8800DD.

(4) NAMUR compliant operation and the alarm latch options are preset at the factory and can be changed to standard operation in the field.

(5) Requires output code F.

(6) Not available with certain hazardous location certifications. Contact an Emerson Flow representative for details (see back page).

(7) The Safety Certifications SI option code is not available with this option.

(8) The CPA option is not available on wafer, ½ inch flange, or 1 inch reducer units. In addition it is not available on 1 inch flanged and 1½ inch reducer JIS 10K, EN PN40, or EN PN16. Not available with Super Duplex or B31.1 line sizes greater than 6 inch.

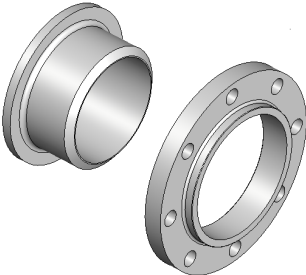
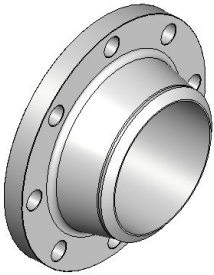
Table 3: Material of construction details for wetted material code H

Line size in. (mm)	Flange rating code								
	A1	A3	A6	A7	K1	K3	K4	K6	K7
½ (15)	C	C	C	W	W	W	NA	W	W
1 (25)	C	C	C	W	W	W	NA	W	W
1½ (40)	C	C	C	W	W	W	NA	W	W
2 (50)	C	C	C	W	C	C	W	W	W
3 (80)	C	C	C	W	C	C	W	W	W
4 (100)	C	C	C	W	C	C	W	W	W
6 (150)	C	C	C	*	W	W	W	W	*
8 (200)	C	C	C	*	W	W	W	W	*
10 (250)	W	W	W	NA	W	W	W	W	NA
12 (300)	W	W	W	NA	W	W	W	W	NA
14 (350) Reducer only	W	W	W	W	W	W	W	W	W

C Nickel alloy collar and 316 SST lap flange (Table 4). If weld neck flange is required, please consult factory.
W Nickel alloy weld neck flange (Table 4).
***** Contact an Emerson Flow representative (see back page).
NA Not Available.

All Rosemount 8800DR Reducer Vortex Meters with nickel alloy materials of construction use weld neck flanges.
 All other listed flange rating codes use weld neck flanges.

Table 4: Flange illustrations

Collar/lap	Weld neck
	

Product Specifications

Physical specifications

Process fluids

Liquid, Gas, and Steam applications. Fluids must be homogeneous and single-phase.

Flow calibration

Every Emerson Vortex flowmeter is water calibrated and given a unique calibration number called a reference K-factor. Emerson flow labs use traceable calibrations that reference internationally recognized standards such as NIST in the United States and Mexico, National Institute of Standards in China, and ISO 10725 in Europe.

Theoretical and experimental data have shown that the K-factor is independent of fluid density and viscosity, proving the K-factor is applicable in all types of fluid—liquid, gas and steam. The K-factor is a function of the shedder bar and meter geometry.

Line sizes and pipe schedules

Table 5: Line sizes by process connection type

Line size		Process connection type (✓ indicates availability)				
Inches	DIN	Flanged			Wafer	Weld-end
		Standard	Dual	Reducer		
0.5	15	✓	✓		✓	✓
1	25	✓	✓	✓	✓	✓
1.5	40	✓	✓	✓	✓	✓
2	50	✓	✓	✓	✓	✓
3	80	✓	✓	✓	✓	✓
4	100	✓	✓	✓	✓	✓
6	150	✓	✓	✓	✓	✓
8	200	✓	✓	✓	✓	✓
10	250	✓	✓	✓		✓
12	300	✓	✓	✓		✓
14	350			✓		

Process pipe schedules

Meters will be shipped from the factory at the Schedule 40 default value unless otherwise specified. The value can be changed in the field if necessary.

For a weld-end style meter, see [Table 11](#).

Table 6: Wetted materials by component

Process wetted materials		
Meter body	Flanges	Collar
CF-3M cast stainless steel	316 / 316 L stainless steel	N06022 nickel alloy ⁽¹⁾
CW2M cast nickel alloy	N06022 nickel alloy weld neck	
N06022 wrought nickel alloy ⁽²⁾		

Table 6: Wetted materials by component (continued)

Process wetted materials		
Meter body	Flanges	Collar
WBB cast carbon steel	A105 forged carbon steel	
LCC cast carbon steel	LF2 forged carbon steel	
6A duplex stainless steel	UNS S32760 wrought duplex stainless steel	

- (1) Mated with 316/316L stainless steel lap flange.
- (2) Applicable to 10 inch and 12 inch meters only.

Surface finish

- Standard surface facing finish meets the requirements of the applicable flange standard.
- Optional smooth facing finish (flange option codes Cx) is 63 to 125 μ inches (1.6 to 3.1 μ meters) Ra roughness.

NACE compliance

- Materials of Construction meet NACE material recommendations per MR0175 / ISO15156 for use in H₂S containing environments in oil field production.
- Materials of Construction also meet NACE recommendations per MR0103-2003 for corrosive petroleum refining environments.
- MR0103/MR0103 compliance requires Q25 option in model code.

Table 7: Non-wetted materials by component

Non-wetted Materials	
Sensor	316 SST or Monel / Inconel
Lap Flange	316 / 316 L SST
Type N Thermocouple	304 Stainless Steel
Transmitter support tube	316 Stainless Steel
Transmitter housing	Aluminum or 316 Stainless Steel

Pressure limits

Table 8: Flanged/Dual style meter

ASME 16.5	EN1092-1	JIS
Class 150	PN 10	10K
Class 300	PN 16	20K
Class 600	PN 25	40K
Class 900	PN 40	
Class 1500	PN 63	
	PN 100	
	PN 160	

Table 9: Reducer style meter

ASME 16.5	EN1092-1
Class 150	PN 10
Class 300	PN 16
Class 600	PN 25
Class 900	PN 40
Class 1500	PN 63
	PN 100
	PN 160

Table 10: Wafer style meter

ASME 16.5	EN1092-1	JIS
Class 150	PN 10	10K
Class 300	PN 16	20K
Class 600	PN 25	40K
	PN 40	
	PN 63	
	PN 100	

Table 11: Weld-end style meter

	W1	W4	W8	W9
Mating pipe schedule:	Schedule 10	Schedule 40	Schedule 80	Schedule 160
Pressure rating for 1 inch to 4 inch sizes:	720 psig (4.96 MPa-g)	1440 psig (9.93 MPa-g)	2160 psig (14.9 MPa-g)	3600 psig (24.8 MPa-g)
Pressure rating for 6 inch to 12 inch sizes:	N/A	720 psig (4.96 MPa-g)	1440 psig (9.93 MPa-g)	2160 psig (14.9 MPa-g)

Temperature limits

Table 12: Vortex sensor temperature limits

Vortex sensor	Temperature limit
Standard	-40 °F to +450 °F (-40 °C to +232 °C)
Extended	-330 °F to +800 °F (-201 °C to +427 °C)
Severe ⁽¹⁾	-330 °F to +800 °F (-201 °C to +427 °C)

(1) The meter body and sensor, in remote mount configurations, is functionally rated to +842 °F process temperature. Process temperature may be further restricted depending on hazardous area options and PED certificates. Consult applicable certificates for particular installation limits.

-320 °F to 800 °F (-196 to +427 °C) for European Pressure Equipment Directive (PED), Contact an Emerson Flow representative (see back page).

The Super Duplex material of construction is limited to use in applications with process temperatures from -40 to +450 °F (-40 to +232 °C). Contact an Emerson Flow representative (see back page).

Table 13: Temperature sensor (MTA option) temperature limits

Temperature sensor	Temperature limit
Type N thermocouple	-40 °F to +800 °F (-40 °C to +427 °C) ⁽¹⁾

(1) Meets ASTM E230/E230M-17 Special Tolerance Standard.

Table 14: Electronics temperature limits (remotely-mounted transmitter)

Ambient operating temperature range	-58 °F to +185 °F (-50 °C to +85 °C)
Ambient operating temperature range with LCD—Local Indicator ⁽¹⁾	-40 °F to +185 °F (-40 °C to +85 °C)
Storage temperature range	-58 °F to +250 °F (-50 °C to +121 °C)
Storage temperature range with LCD	-50 °F to +185 °F (-46 °C to +85 °C)

(1) LCD contrast may be affected below -4 °F (-20 °C).

Table 15: Electronics temperature limits (integrally-mounted transmitter)

Operating and storage temperature range, with and without LCD	Same as remotely-mounted transmitter. See Table 14 . However, high process temperature lowers the maximum allowable ambient temperature. See Figure 1 .
Maximum process temperature	<p>Interdependent with ambient temperature. Figure 1 indicates the combined ambient and process temperature limits under which the electronics temperature can be maintained below the maximum +185 °F (+85 °C).</p> <p>Note The indicated limit is with the integral transmitter directly above a horizontal pipe, and the pipe insulated with three inches of ceramic fiber. Other configurations may affect the actual electronics temperature.</p> <p>Figure 1: Maximum ambient/process temperature limit</p>

EMI/RFI effect

- Meets EMC requirements to Directive 2014/30/EU.
- Output error less than ±0.025% of span with twisted pair from 80-1000 MHz for radiated field strength of 10 V/m.
- 1.4 - 2.0 GHz for radiated field strength of 3 V/m.

- 2.0 - 2.7 GHz for radiated field strength of 1 V/m.
- No effect on the values that are being given if using HART digital signal.
- Tested per EN61326.

Humidity limits

Operates in 0–95% relative humidity under noncondensing conditions (tested to IEC 60770, Section 6.2.11).

Transmitter housing details

Table 16: Transmitter housing (enclosure) physical details

Material of construction	Low-copper aluminum is standard. 316 SST is optional.
Enclosure rating	CSA Type 4X; IP66.
Conduit entry	½–14 NPT or M20 x 1.5 threads
Paint	Polyurethane
Cover O-rings	Buna -N

Remote transmitter mounting hardware and cables

- Mounting hardware is provided.
- The transmitter and meter body are interconnected by a standard or armored signal cable assembly.
 - Cable length is specified when ordered (see [Ordering Information](#)), and it cannot be altered in the field.
 - Standard cable is non-armored and is intended to be run through rigid metal conduit.
 - Armored cable includes glands/adapters to connect the cable to the meter body and transmitter.
 - Both types of cable are flame resistant in accordance with IEC 60322-3.

Tagging

- Standard tags are stainless steel.
- The standard tag is permanently attached to the flowmeter.
- Character height is 1/16 inch (1,6 mm).
- A wired-on tag is available on request.
- Character height on the wire-on tag is 0.236 inch (6 mm).
- Wire on tags can contain five lines with an average of 19 characters per line at standard character height.

Performance specifications

The following performance specifications are for all Rosemount models except where noted. Digital performance specifications applicable to both Digital HART and FOUNDATION Fieldbus output. Unless stated otherwise, all accuracy specifications include linearity, hysteresis, and repeatability.

Volume flow accuracy

Table 17: Volume flow accuracy

Process fluid	Digital and pulse output
Liquids with Reynolds number over 20,000	±0.65% of rate ⁽¹⁾⁽²⁾
Gas and steam with Reynolds number over 15,000	±1.0% of rate ⁽³⁾⁽²⁾

Table 17: Volume flow accuracy (continued)

Process fluid	Digital and pulse output
For all process fluids from stated limit to a Reynolds number of 10,000	From process limit specification to $\pm 2\%$ linear increase
For Reynolds numbers less than 10,000 to 5,000	$\pm 2\%$ to $\pm 6\%$, linear

- (1) 6 inch to 12 inch reducer (150 mm to 300 mm) $\pm 1.0\%$ of rate.
- (2) Analog $\pm 0.025\%$ of span
- (3) 6 inch to 12 inch reducer (150 mm to 300 mm): $\pm 1.35\%$ of rate.

Accuracy limitations for gas and steam:

- For ½ inch and 1 inch (DN 15 and DN 25); max velocity of 220 ft/s (67.06 m/s)
- For all dual shedder bar design meters: max velocity of 100 ft/s (30.5 m/s)
- For dual shedder bar design meters above 100 ft/s (30.5 m/s) contact an Emerson Flow representative (see back page).

Volume flow repeatability

± 0.1 percent of actual flow rate.

Process temperature accuracy

Table 18: Process temperature accuracy by installation type

Installation type	Process temperature accuracy
Integral mount	2.2 °F (1.2 °C) or 0.4% of reading, whichever is greater
Remote mount	Add ± 0.018 °F/ft (± 0.03 °C/m) of uncertainty to measurement

Temperature sensor accuracy meets ASTM E230/E230M-17 Special Tolerance Standard.

Mass flow accuracy

Table 19: Mass flow accuracy by process fluid type

Process fluid type	Accuracy
Temperature compensated Steam	$\pm 2.0\%$ of rate (typical)
Temperature compensated Liquid (water)	$\pm 0.70\%$ of rate up to 500 °F (260 °C) ⁽¹⁾
Temperature compensated liquid (user defined)	Dependent on user inputs

(1) $\pm 0.85\%$ of rate between 500 °F to 600 °F (260 °C to 316 °C)

Process temperature effect on K-factor

The compensated K-factor is based on the reference K-factor as compensated for the given process temperature and wetted materials. Compensated K-factor is calculated by the electronics.

The percentage change in K-factor for all materials is no greater than ± 0.3 per 100 °F (56 °C).

Table 20: Ambient temperature effect

Output type	Ambient temperature effect
Digital and pulse output	No effect
Analog output	$\pm 0.1\%$ of span from -58 °F to 185 °F (-50 to 85 °C)

Measurable flow rates

Capable of processing signals from flow applications which meet the Reynolds number and velocity limitations listed in [Table 21](#), [Table 22](#), and [Table 23](#).

Table 21: Minimum Measurable Meter Reynolds Numbers

Meter sizes	Reynolds number limitations
½ – 4 inch (DN 15 – DN100)	5000 minimum
6 – 12 inch (DN150 – DN300)	

Table 22: Minimum measurable meter velocities

Process	Feet per second ⁽¹⁾	Meters per second ⁽¹⁾
Liquids ⁽²⁾	$\sqrt{36/\rho}$	$\sqrt{54/\rho}$
Gases ⁽²⁾	$\sqrt{36/\rho}$	$\sqrt{54/\rho}$

ρ is the process fluid density at flowing conditions in lb/ft³ for ft/s and kg/m³ for m/s.

(1) Referenced to schedule 40 pipe.

(2) This minimum measurable meter velocity is based on default filter settings.

Table 23: Maximum Measurable Meter Velocities (use the smaller of the two values)

Process	Feet per second ⁽¹⁾		Meters per second ⁽¹⁾	
Liquids	$\sqrt{90,000/\rho}$	or 25	$\sqrt{134,000/\rho}$	or 7.6
Gases ⁽²⁾	$\sqrt{90,000/\rho}$	or 300	$\sqrt{134,000/\rho}$	or 91.4

ρ is the process fluid density at flowing conditions in lb/ft³ for ft/s and kg/m³ for m/s.

(1) Referenced to schedule 40 pipe.

(2) Accuracy limitations for gas and steam for dual-style meters (½ to 4 inch): max velocity of 100 ft/s (30.5 m/s).

Note

Go to the [Rosemount 8800D Product Page](#), and select **Size** for detailed sizing on most applications, or complete a [Configuration Data Sheet](#) and contact an Emerson Flow representative (see back page).

Permanent pressure loss

The approximate permanent pressure loss (PPL) from the flowmeter is calculated for each application in the Vortex sizing software. Go to the [Rosemount 8800D Product Page](#), and select **Size** for detailed sizing on most applications, or complete a [Configuration Data Sheet](#) and contact an Emerson Flow representative (see back page).

The PPL is determined using the equation:

$PPL = \frac{A \times \rho_f \times Q^2}{D^4}$	<p>PPL Permanent pressure loss (psi or kPa)</p> <p>ρ_f Density at operating conditions (lb/ft³ or kg/m³)</p> <p>Q Actual volumetric flow rate (Gas = ft³/min or m³/hr; Liquid = gal/min or l/min)</p> <p>D Flowmeter bore diameter (in. or mm)</p> <p>A Constant depending on meter style, fluid type, and flow units. Determined per:</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th rowspan="2">Meter style</th> <th colspan="2">English units</th> <th colspan="2">SI units</th> </tr> <tr> <th>A_{liquid}</th> <th>A_{gas}</th> <th>A_{liquid}</th> <th>A_{gas}</th> </tr> </thead> <tbody> <tr> <td>8800DF/W</td> <td>3.4 × 10⁻⁵</td> <td>1.9 × 10⁻³</td> <td>0.425</td> <td>118</td> </tr> <tr> <td>8800DR</td> <td>3.91 × 10⁻⁵</td> <td>2.19 × 10⁻³</td> <td>0.489</td> <td>136</td> </tr> <tr> <td>8800DD⁽¹⁾</td> <td>6.12 × 10⁻⁵</td> <td>3.42 × 10⁻³</td> <td>0.765</td> <td>212</td> </tr> </tbody> </table> <p style="margin-left: 20px;">(1) For all 6- through 12-in. line sizes, A is the same for 8800DD and 8800DF</p>	Meter style	English units		SI units		A _{liquid}	A _{gas}	A _{liquid}	A _{gas}	8800DF/W	3.4 × 10 ⁻⁵	1.9 × 10 ⁻³	0.425	118	8800DR	3.91 × 10 ⁻⁵	2.19 × 10 ⁻³	0.489	136	8800DD ⁽¹⁾	6.12 × 10 ⁻⁵	3.42 × 10 ⁻³	0.765	212
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(1) For all 6- through 12-in. line sizes, A is the same for 8800DD and 8800DF

Minimum upstream pressure (liquids)

Flow metering conditions that would allow cavitation, the release of vapor from a liquid, should be avoided. This flow condition can be avoided by remaining within the proper flow range of the meter and by following appropriate system design.

For some liquid applications, incorporation of a back pressure valve should be considered. To prevent cavitation, the minimum upstream pressure should be the smaller result of these two equations:

- $2.9 \times \Delta P + 1.3 \times p_v$
- $2.9 \times \Delta P + p_v + 0.5 \text{ psia (3.45 kPa)}$

Where:

- P** Line pressure five pipe diameters downstream of the meter (psia or kPa abs)
- ΔP** Pressure loss across the meter (psi or kPa)
- p_v** Liquid vapor pressure at operating conditions (psia or kPa abs)

Vibration effect

High vibration may cause a false flow measurement when there is no flow. The meter design will minimize this effect, and the factory settings for signal processing are selected to eliminate these errors for most applications. If an output error at zero flow is still detected, it can be eliminated by adjusting the low flow cutoff, trigger level, or low-pass filter. As the process begins to flow through the meter, most vibration effects are quickly overcome by the flow signal.

Vibration specifications

- Integral aluminum housings, remote aluminum housings, and remote SST housings: At or near the minimum liquid flow rate in a normal pipe mounted installation, the maximum vibration should be 0.087 inch (2,21 mm) double amplitude displacement or 1 g acceleration, whichever is smaller. At or near the minimum gas flow rate in a normal pipe mounted installation, the maximum vibration should be 0.043 inch (1,09 mm) double amplitude displacement or ½ g acceleration, whichever is smaller.
- Integral SST housing: At or near the minimum liquid flow rate in a normal pipe mounted installation, the maximum vibration should be 0.044 inch (1,11 mm) double amplitude displacement or ½ g acceleration, whichever is smaller. At or near the minimum gas flow rate in a normal pipe mounted installation, the maximum vibration should be 0.022 inch (0,55 mm) double amplitude displacement or ¼ g acceleration, whichever is smaller.

Mounting position effect

Meter will meet accuracy specifications when mounted in horizontal, vertical, or inclined pipelines. Best practice for mounting in a horizontal pipe is to orient the shedder bar in the horizontal plane. This will prevent solids in liquid applications and liquid in gas/steam applications from disrupting the shedding frequency.

Pipe length requirements

Rated accuracy is based on the number of pipe diameters from an upstream disturbance. No K-factor correction is required if the meter is installed with 35D upstream and 5D downstream. The value of the K-factor may shift up to 0.5% when the upstream straight pipe length is reduced down to the minimum recommended 10D. Refer to the Rosemount 8800 Vortex Installation Effects Technical Data Sheet for detailed information on K-factor correction.

Flow calibration information

Flowmeter calibration and configuration information is provided with every flowmeter. For a certified copy of flow calibration data, the Q4 option code must be ordered in the model number.

HART specifications

Output signals

Digital HART signal	Bell 202 superimposed on 4–20 mA signal
Optional scalable pulse output	0 to 10000 Hz; transistor switch closure with adjustable scaling via HART communications; capable of switching from 5 to 30 Vdc, 120 mA maximum

Analog output adjustment

Engineering units and lower and upper range values are user-selected. Output is automatically scaled to provide 4 mA at the selected lower range value, 20 mA at the selected upper range value. No frequency input is required to adjust the range values.

Scalable frequency adjustment

The scalable pulse output can be set to a specific velocity, volume, or mass (i.e. 1 pulse = 1 lb). The scalable pulse output can also be scaled to a specific rate of volume, mass, or velocity (i.e. 100 Hz = 500 lb/hr).

Analog 4–20 mA Power supply

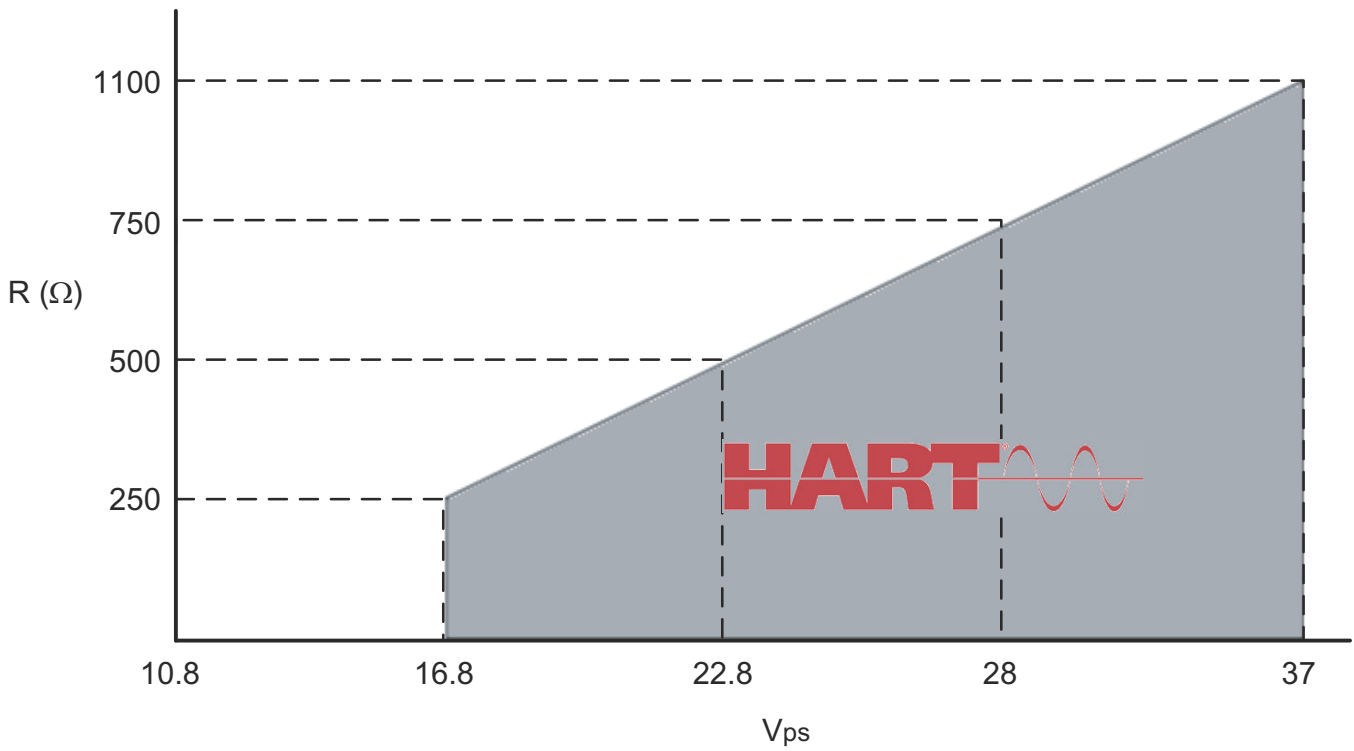
External power supply required. Flowmeter operates on 10.8 VDC to 42 VDC terminal voltage. See [Figure 2](#).

Power consumption

One watt maximum

HART communication

Figure 2: HART communication voltage/resistance requirement



Maximum loop resistance is determined by the voltage level of the external power supply, as described in the graph. Note that HART Communication requires a minimum loop resistance of 250 ohms up to a maximum of 1100 ohms.

- R(Ω)** Load resistor value.
- V_{ps}** Minimum power supply voltage required

$$R(\Omega)_{\max} = 41.7 (V_{ps} - 10.8 \text{ V}).$$

Failure mode alarm levels

If transmitter self-diagnostics detect a fault condition, the analog signal will be driven to the values in [Table 24](#).

Table 24: mA outputs for low and high alarm

Alarm jumper position	mA output by Alarm Type setting ⁽¹⁾	
	Rosemount standard	NAMUR-compliant
Low	3.75	3.60
Hi	21.75	22.6

(1) The Alarm and Saturation Type settings can be pre-configured at the factory (Options C4 and CN for NAMUR-compliance) or user-configured.

Saturation output values

When the operating flow is outside the range points, the analog output continues to track the operating flow until reaching the saturation values in [Table 25](#). The output does not exceed the listed saturation value regardless of the operating flow.

Table 25: mA output saturation values

	mA output saturation value by type ⁽¹⁾	
	Rosemount standard	NAMUR-Compliant
Low	3.9	3.8
Hi	20.8	20.5

(1) The Alarm and Saturation Type settings can be pre-configured at the factory (Options C4 and CN for NAMUR-compliance) or user-specified.

Damping

Flow Damping adjustable between 0.2 and 255 seconds.

Process temperature damping adjustable between 0.4 and 32.0 seconds (MTA Option only).

Response time

Three vortex shedding cycles or 300 ms, whichever is greater, maximum required to reach 63.2% of actual input with the minimum damping (0.2 seconds).

Turn-on time

Less than six seconds plus the response time to rated accuracy from power up (less than eight seconds with the MTA Option).

Transient protection

The optional transient terminal block prevents damage to the flowmeter from transients induced by lightning, welding, heavy electrical equipment, or switch gears. The transient protection electronics are located in the terminal block.

The transient terminal block meets the following specifications:

- IEEE C62.41 - 2002 Category B
- 3 kA crest (8 3 20 ms)
- 6 kV crest (1.2 3 50 ms)
- 6 kV/0.5 kA (0.5 ms, 100 kHz, ring wave)

Security lockout

When the security lockout jumper is enabled, the electronics will not allow you to modify parameters that affect flowmeter output.

Output testing

Analog output Flow meter may be commanded to set the analog output to a specified value between 3.6 mA and 22.6 mA.

Pulse output Flow meter may be commanded to set the pulse output frequency to a specified value between 0 Hz and 10000 Hz.

Low flow cutoff

Adjustable over entire flow range. Below selected value, output is driven to 4 mA and zero pulse output frequency.

Overrange capability

Analog signal output continues to 105 percent of span, then remains constant with increasing flow. The digital and pulse outputs will continue to indicate flow up to the upper sensor limit of the flowmeter and a maximum pulse output frequency of 10400 Hz.

Magnetic-field interference

- Output error less than $\pm 0.025\%$ of span at 30 A/m (rms).
- Tested per EN 61326.

Series mode noise rejection

Output error less than $\pm 0.025\%$ of span at 1 V rms, 60 Hz.

Common mode noise rejection

Output error less than $\pm 0.025\%$ of span at 30 V rms, 60 Hz.

Power supply effect

Less than 0.005% of span per volt

Transmitter electrical connections

Model	Terminal type
Analog 4–20 mA/HART	Compression screw terminal permanently fixed to the terminal block.
Analog 4–20 mA/HART + Pulse	

Field Communicator connections

Communication Terminals	
All models	Clips permanently fixed to the terminal block.

FOUNDATION™ Fieldbus specifications

Transducer block

The transducer block calculates flow from sensor frequency. The calculation includes information about damping, shedding frequency, K-factor, process fluid, pipe ID, and diagnostics.

Resource block

The resource block contains physical transmitter information, including available memory, manufacturer identification, device type, software tag, and unique identification.

Backup Link Active Scheduler (LAS)

The transmitter is classified as a device link master. A device link master can function as an LAS if the current link master device fails or is removed from the segment.

The host or other configuration tool is used to download the schedule for the application to the link master device. In the absence of a primary link master, the transmitter will claim the LAS and provide permanent control for the H1 segment.

Diagnostics

The transmitter automatically performs continuous self-diagnostics. The user can perform on-line testing of the transmitter digital signal. Advanced simulation diagnostics are available. This enables remote verification of the electronics via a flow signal generator built into the electronics. The sensor strength value can be used to view the process flow signal and provide information regarding filter settings.

FOUNDATION Fieldbus function blocks

Analog input

The AI function block processes the measurement and makes it available to other function blocks. The AI function block also allows filtering, alarming, and engineering unit changes.

The Rosemount 8800D Flowmeter with Foundation Fieldbus comes with five AI function blocks. Two of the AI function blocks, flow and signal strength, come as standard. Three additional AI function blocks are available when the MTA option is selected: electronics temperature, process temperature, and process density. Note that process density is only available when the process fluid is configured as temperature compensated saturated steam, shown as TComp Sat Steam in the device.

Proportional/ Integral/ Derivative	The optional PID function block provides a sophisticated implementation of the universal PID algorithm. The PID function block features input for feed forward control, alarms on the process variable, and control deviation. The PID type (series or Instrument Society of America [ISA]) is user-selectable on the derivative filter.
Integrator	The standard integrator block is available for totalization of flow.
Arithmetic	The standard arithmetic block is available for various computations.

Output signal

Completely digital output with Foundation Fieldbus communication (ITK 6.0 compliant).

Power supply

External power supply required. Flowmeter operates on 9 to 32 Vdc, 18 mA maximum.

Power consumption

600 mW maximum

Failure mode alarm

The AI block allows the user to configure the alarm to HI-HI, HI, LO, or LO-LO with a variety of priority levels.

Damping

Flow Damping adjustable between 0.2 and 255 seconds.

Process temperature damping adjustable between 0.4 and 32.0 seconds (MTA Option only).

Response time

Three vortex shedding cycles or 300 ms, whichever is greater, maximum required to reach 63.2% of actual input with the minimum damping (0.2 seconds).

Turn-on time

Performance within specifications no greater than 10.0 seconds after power is applied.

Overrange capability

- For liquid process fluid type, the transducer block digital output will continue to a nominal value of 25 ft/s. After that, the status associated with the transducer block output will go to UNCERTAIN. Above a nominal value of 30 ft/s, the status will go to BAD.
- For gas/steam service, the transducer block digital output will continue to a nominal value of 220 ft/s for 0.5 and 1.0-in. line sizes and a nominal value of 250 ft/s for 1.5–12-in. line sizes. After that, the status associated with the transducer block output will go to UNCERTAIN. Above a nominal value of 300 ft/s for all line sizes, the status will go to BAD.

Status

If self-diagnostics detect a transmitter failure, the status of the measurement will inform the control system. Status may also set the PID output to a safe value.

Schedule entries

Six (6)

Links

Twelve (12)

Virtual communications relationships (VCRs)

- Maximum VCRs: 20
- Number of Permanent Entries: 1

Table 26: Block Information

Block	Base index	Execution time (milliseconds)
Resource (RB)	1000	N/A
Transducer (TB)	1200	N/A
Analog Input 1 (AI 1)	1400	15
Analog Input 2 (AI 2)	1600	15
Proportional/ Integral/ Derivative (PID)	1800	20
Integrator (INTEG)	2000	25
Arithmetic (ARITH)	2200	20
Analog Input 3 (AI 3)	2400	15
Analog Input 4 (AI 4)	2600	15
Analog Input 5 (AI 5)	2800	15

Magnetic-field interference

- No effect on digital output accuracy at 30 A/m (rms).
- Tested per EN 61326.

Series mode noise rejection

No effect on digital output accuracy at 1 V rms, 60 Hz.

Common mode noise rejection

No effect on digital output accuracy at 250 V rms, 60 Hz.

Power supply effect

No effect on accuracy.

Electrical connections

Model	Power terminals
FOUNDATION fieldbus	Compression screw terminal permanently fixed to the terminal block.

LCD indicator functional specifications

Optional LCD indicator

The optional 11 digit, two-decimal, two-line integral LCD display can be configured to alternate between selected display options, which differ depending upon the output type selected.

Table 27: Indicator options

HART	FOUNDATION fieldbus	Examples
<ul style="list-style-type: none"> ■ Primary Variable ■ Velocity Flow ■ Volumetric Flow ■ Corrected Volumetric Flow ■ Mass Flow ■ Signal Strength ■ Percent of Range ■ Analog Output ■ Totalizer ■ Shedding Frequency ■ Pulse Output Frequency ■ Electronics Temperature ■ Process Temperature (MTA only) ■ Calculated Process Density (MTA only) 	<ul style="list-style-type: none"> ■ Primary Variable ■ Percent of Range ■ Shedding Frequency ■ Electronics Temperature (MTA only) ■ Process Temperature (MTA only) ■ Calculated Process Density (MTA only) ■ Totalizer (via Integrator block) 	
<p>When more than one item is selected, the display will scroll through all items selected. In the event of a fault, the display shows the applicable fault code.</p>		

Product certifications

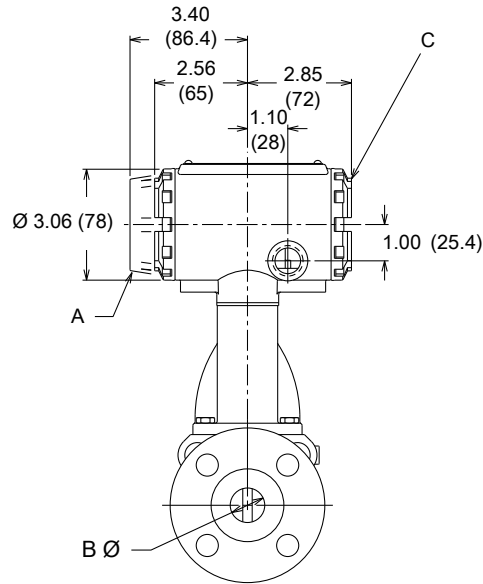
For information about product certifications, refer to *Rosemount™ 8800D Series Vortex Flowmeter Approval Document* (00825-VA00-0001). You can find it at emerson.com or contact an Emerson Flow representative (see back page).

Dimensional drawings

Flanged style flowmeter (1/2-inch through 12-inch/15 mm through 300 mm line sizes)

Dimensions are in inches (millimeters).

Figure 3: Side view

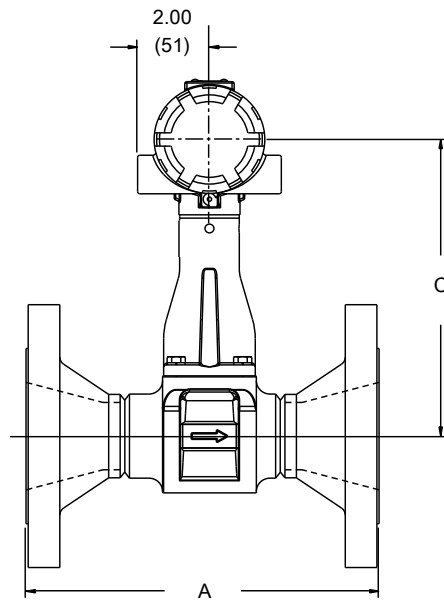


- A Display option
- ØB Diameter B
- C Terminal cover

Note

See Table 28 and Table 29 for dimensions.

Figure 4: Front view – without MTA option

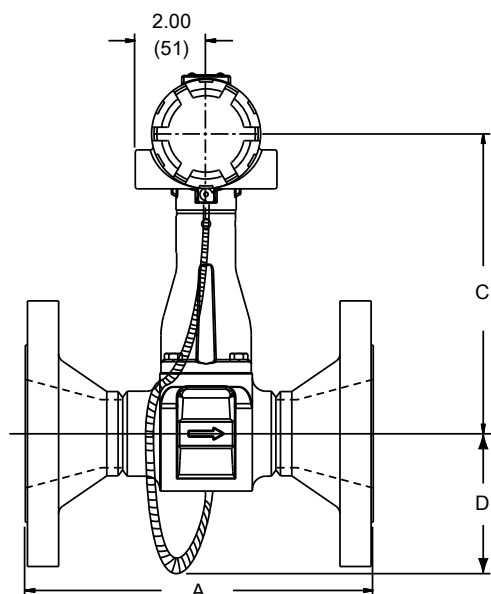


- A Dimension A
- C Dimension C

Note

See Table 28 and Table 29 for dimensions.

Figure 5: Front view – with MTA option



- A Dimension A
 C Dimension C
 D Dimension D

Note

See [Table 28](#) and [Table 29](#) for dimensions.

Table 28: Dimensions and weights for flanged-style flowmeter (½ - inch through 2-inch/15 mm through 50 mm line size)

Nominal size inch (mm)	Flange rating	Face-to-face A inch (mm)	A-ANSI RTJ inch (mm)	Diameter B inch (mm)	Dimension C inch (mm)	Weight lb (kg)
½ (15)	Class 150	6.8 (173)	N/A	0.54 (13,7)	7.6 (193)	9.1 (4,1)
	Class 300	7.2 (183)	7.6 (193)	0.54 (13,7)	7.6 (193)	10.4 (4,7)
	Class 600	7.7 (196)	7.6 (193)	0.54 (13,7)	7.6 (193)	10.8 (4,9)
	Class 900	8.3 (211)	8.3 (211)	0.54 (13,7)	7.6 (193)	15.3 (6,9)
	PN 16/40	6.1 (155)	N/A	0.54 (13,7)	7.6 (193)	10.4 (4,7)
	PN 100	6.6 (168)	N/A	0.54 (13,7)	7.6 (193)	12.4 (5,6)
1 (25)	JIS 10K/20K	6.3 (160)	N/A	0.54 (13,7)	7.6 (193)	10.2 (4,6)
	JIS 40K	7.3 (185)	N/A	0.54 (13,7)	7.6 (193)	13.7 (6,2)
	Class 150	7.5 (191)	8.0 (203)	0.95 (24,1)	7.7 (196)	12.3 (5,6)
	Class 300	8.0 (203)	8.5 (216)	0.95 (24,1)	7.7 (196)	15.0 (6,8)
	Class 600	8.5 (216)	8.5 (216)	0.95 (24,1)	7.7 (196)	15.8 (7,2)
	Class 900	9.4 (239)	9.4 (239)	0.95 (24,1)	7.7 (196)	24.1 (11,1)
	Class 1500	9.4 (239)	9.4 (239)	0.95 (24,1)	7.7 (196)	24.4 (11,1)
	PN 16/40	6.2 (157)	N/A	0.95 (24,1)	7.7 (196)	13.6 (6,2)
PN 100	7.7 (196)	N/A	0.95 (24,1)	7.7 (196)	19.6 (8,9)	
PN 160	7.7 (196)	N/A	0.95 (24,1)	7.7 (196)	19.6 (8,9)	

**Table 28: Dimensions and weights for flanged-style flowmeter (½ - inch through 2-inch/15 mm through 50 mm line size)
(continued)**

Nominal size inch (mm)	Flange rating	Face-to-face A inch (mm)	A-ANSI RTJ inch (mm)	Diameter B inch (mm)	Dimension C inch (mm)	Weight lb (kg)
	JIS 10K/20K	6.5 (165)	N/A	0.95 (24,1)	7.7 (196)	14.0 (6,3)
	JIS 40K	7.8 (198)	N/A	0.95 (24,1)	7.7 (196)	17.7 (7,9)
1½ (40)	Class 150	8.2 (208)	8.7 (221)	1.49 (37,8)	8.1 (206)	17.6 (8,0)
	Class 300	8.7 (221)	9.2 (234)	1.49 (37,8)	8.1 (206)	23.0 (10,4)
	Class 600	9.3 (236)	9.3 (236)	1.49 (37,8)	8.1 (206)	25.5 (11,6)
	Class 900	10.3 (262)	10.3 (262)	1.49 (37,8)	8.1 (206)	36.6 (16,6)
	Class 1500	10.3 (262)	10.3 (262)	1.49 (37,8)	8.1 (206)	36.6 (16,6)
	PN 16/40	6.9 (175)	N/A	1.49 (37,8)	8.1 (206)	19.4 (8,8)
	PN 100	8.2 (208)	N/A	1.49 (37,8)	8.1 (206)	28.0 (12,7)
	PN 160	8.4 (213)	N/A	1.49 (37,8)	8.1 (206)	29.5 (13,4)
	JIS 10K/20K	7.3 (185)	N/A	1.49 (37,8)	8.1 (206)	18.6 (8,4)
	JIS 40K	8.4 (213)	N/A	1.49 (37,8)	8.1 (206)	25.5 (11,6)
2 (50)	Class 150	9.2 (234)	9.7 (246)	1.92 (48,8)	8.5 (216)	22.0 (10,0)
	Class 300	9.7 (246)	10.4 (264)	1.92 (48,8)	8.5 (216)	26.1 (11,8)
	Class 600	10.5 (267)	10.6 (269)	1.92 (48,8)	8.5 (216)	29.8 (13,5)
	Class 900	12.7 (323)	12.9 (328)	1.92 (48,8)	8.5 (216)	59.5 (27,0)
	Class 1500	12.7 (323)	12.9 (328)	1.79 (45,5)	8.5 (216)	59.5 (27,0)
	PN 16/40	8.0 (203)	N/A	1.92 (48,8)	8.5 (216)	23.2 (10,5)
	PN 63/64	9.1 (231)	N/A	1.92 (48,8)	8.5 (216)	30.8 (13,9)
	PN 100	9.6 (244)	N/A	1.92 (48,8)	8.5 (216)	36.5 (16,6)
	PN 160	10.2 (259)	N/A	1.92 (48,8)	8.5 (216)	38.8 (17,6)
	JIS 10K	7.7 (195)	N/A	1.92 (48,8)	8.5 (216)	19.5 (8,8)
	JIS 20K	8.3 (210)	N/A	1.92 (48,8)	8.5 (216)	20.4 (9,3)
	JIS 40K	9.8 (249)	N/A	1.92 (48,8)	8.5 (216)	28.5 (12,9)

Table 29: Flanged-Style Flowmeter (3- through 6-in./80 mm through 150 mm Line Sizes)

Nominal size inch (mm)	Flange rating	Face-to-face A inch (mm)	A-ANSI RTJ inch (mm)	Diameter B inch (mm)	Dimension C inch (mm)	Weight lb (kg)
3 (80)	Class 150	9.9 (251)	10.4 (264)	2.87 (72,9)	9.1 (231)	37.2 (16,9)
	Class 300	10.6 (269)	11.2 (284)	2.87 (72,9)	9.1 (231)	46.5 (21,1)
	Class 600	11.4 (290)	11.5 (292)	2.87 (72,9)	9.1 (231)	52.6 (23,8)
	Class 900	12.9 (328)	13.0 (330)	2.87 (72,9)	9.1 (231)	76.1 (34,5)
	Class 1500	14.1 (358)	14.2 (361)	2.60 (66)	9.1 (231)	108.9 (49,4)
	PN 16/40	8.9 (226)	N/A	2.87 (72,9)	9.1 (231)	36.6 (16,6)
	PN 63/64	10.0 (254)	N/A	2.87 (72,9)	9.1 (231)	45.3 (20,6)
	PN 100	10.5 (267)	N/A	2.87 (72,9)	9.1 (231)	54.7 (24,8)
	PN 160	11.1 (282)	N/A	2.87 (72,9)	9.1 (231)	59.6 (27,0)
	JIS 10K	7.9 (201)	N/A	2.87 (72,9)	9.1 (231)	28.0 (12,7)
	JIS 20K	9.3 (236)	N/A	2.87 (72,9)	9.1 (231)	35.4 (16,1)
	JIS 40K	11.0 (279)	N/A	2.87 (72,9)	9.1 (231)	50.3 (22,8)

Table 29: Flanged-Style Flowmeter (3- through 6-in./80 mm through 150 mm Line Sizes) (continued)

Nominal size inch (mm)	Flange rating	Face-to-face A inch (mm)	A-ANSI RTJ inch (mm)	Diameter B inch (mm)	Dimension C inch (mm)	Weight lb (kg)	
4 (100)	Class 150	10.3 (262)	10.8 (274)	3.79 (96,3)	9.6 (244)	51.3 (23,3)	
	Class 300	11.0 (279)	11.6 (295)	3.79 (96,3)	9.6 (244)	71.5 (32,4)	
	Class 600	12.8 (325)	12.9 (328)	3.79 (96,3)	9.6 (244)	97.5 (44,2)	
	Class 900	13.8 (351)	13.9 (353)	3.79 (96,3)	9.6 (244)	120.8 (54,8)	
	Class 1500	14.5 (368)	14.6 (371)	3.40 (86,4)	9.6 (244)	162.6 (73,8)	
	PN 16	8.4 (213)	N/A	3.79 (96,3)	9.6 (244)	40.4 (18,3)	
	PN 40	9.4 (239)	N/A	3.79 (96,3)	9.6 (244)	49.5 (22,4)	
	PN 63/64	10.4 (264)	N/A	3.79 (96,3)	9.6 (244)	62.5 (28,3)	
	PN 100	11.3 (287)	N/A	3.79 (96,3)	9.6 (244)	78.9 (35,8)	
	PN 160	12.1 (307)	N/A	3.79 (96,3)	9.6 (244)	86.2 (39,1)	
	JIS 10K	8.7 (220)	N/A	3.79 (96,3)	9.6 (244)	37.5 (17,0)	
	JIS 20K	8.7 (220)	N/A	3.79 (96,3)	9.6 (244)	45.4 (20,6)	
	JIS 40K	11.8 (300)	N/A	3.79 (96,3)	9.6 (244)	75.8 (34,4)	
	6 (150)	Class 150	11.6 (295)	12.1 (307)	5.7 (144,8)	10.8 (274)	81 (37)
		Class 300	12.3 (312)	13.0 (330)	5.7 (144,8)	10.8 (274)	120 (55)
Class 600		14.3 (363)	14.4 (366) 16.2 (411)	5.7 (144,8)	10.8 (274)	187 (55)	
Class 900		16.1 (409)		5.14 (130,6)	10.8 (274)	277.9 (126,0)	
Class 1500		18.6 (472)	18.8 (478)	5.14 (130,6)	10.8 (274)	375.8 (170,4)	
PN 16		8.9 (226)	N/A	5.7 (144,8)	10.8 (274)	66 (30)	
PN 40		10.5 (267)	N/A	5.7 (144,8)	10.8 (274)	86 (39)	
PN 63/64		12.1 (307)	N/A	5.7 (144,8)	10.8 (274)	130 (59)	
PN 100		13.6 (345)	N/A	5.7 (144,8)	10.8 (274)	160 (73)	
JIS 10K		10.6 (270)	N/A	5.7 (144,8)	10.8 (274)	70 (32)	
JIS 20K		10.6 (270)	N/A	5.7 (144,8)	10.8 (274)	88 (40)	
JIS 40K		14.2 (361)	N/A	5.7 (144,8)	10.8 (274)	166 (75)	

Table 30: Flanged-Style Flowmeter (8- through 12-in./200 mm through 300 mm Line Sizes)

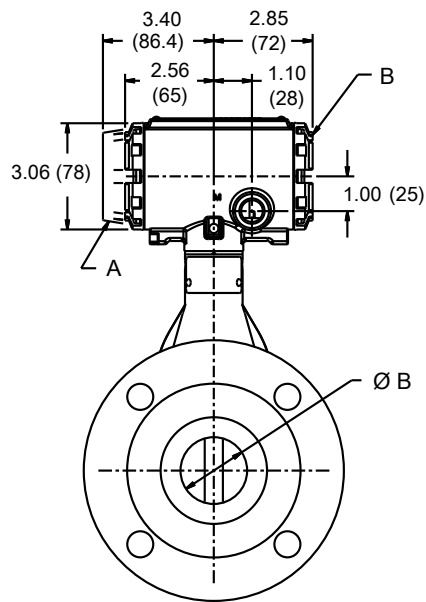
Nominal size inch (mm)	Flange rating	Face-to-face A inch (mm)	A-ANSI RTJ inch (mm)	Diameter B inch (mm)	Dimension C inch (mm)	Weight lb (kg)
8 (200)	Class 150	13.5 (343)	14.0 (356)	7.55 (191,8)	11.7 (297)	141.6 (64,2)
	Class 300	14.3 (363)	14.9 (378)	7.55 (191,8)	11.7 (297)	198.7 (90,1)
	Class 600	16.5 (419)	16.7 (424)	7.55 (191,8)	11.7 (297)	298.6 (135,4)
	Class 900	18.8 (478)	18.9 (480)	6.62 (168,1)	11.7 (297)	479.2 (217,4)
	Class 1500	22.8 (579)	23.2 (589)	6.62 (168,1)	11.7 (297)	652.4 (295,9)
	PN 10	10.4 (264)	N/A	7.55 (191,8)	11.7 (297)	110.5 (50,1)
	PN 16	10.4 (264)	N/A	7.55 (191,8)	11.7 (297)	109.4 (49,6)
	PN 25	11.8 (300)	N/A	7.55 (191,8)	11.7 (297)	137.7 (62,5)
	PN 40	12.5 (318)	N/A	7.55 (191,8)	11.7 (297)	156.5 (71,0)
	PN 63/64	14.2 (361)	N/A	7.55 (191,8)	11.7 (297)	217.1 (98,5)
	PN 100	15.8 (401)	N/A	7.55 (191,8)	11.7 (297)	282.7 (128,2)

Table 30: Flanged-Style Flowmeter (8- through 12-in./200 mm through 300 mm Line Sizes) (continued)

Nominal size inch (mm)	Flange rating	Face-to-face A inch (mm)	A-ANSI RTJ inch (mm)	Diameter B inch (mm)	Dimension C inch (mm)	Weight lb (kg)
	JIS 10K	12.2 (310)	N/A	7.55 (191,8)	11.7 (297)	110.1 (49,9)
	JIS 20K	12.2 (310)	N/A	7.55 (191,8)	11.7 (297)	134.5 (61,0)
	JIS 40K	16.5 (419)	N/A	7.55 (191,8)	11.7 (297)	255.7 (116)
10 (250)	Class 150	14.5 (368)	15.0 (381)	9.56 (243)	12.8 (325)	197.7 (89,7)
	Class 300	15.8 (401)	16.4 (417)	9.56 (243)	12.8 (325)	286.2 (129,8)
	Class 600	19.0 (483)	19.2 (488)	9.56 (243)	12.8 (325)	477.9 (219,9)
	PN 10	11.9 (302)	N/A	9.56 (243)	12.8 (325)	157.1 (71,3)
	PN 16	12.0 (305)	N/A	9.56 (243)	12.8 (325)	161.9 (73,5)
	PN 25	13.5 (343)	N/A	9.56 (243)	12.8 (325)	198.6 (90,1)
	PN 40	14.8 (376)	N/A	9.56 (243)	12.8 (325)	246.8 (111,9)
	PN 63/64	16.4 (417)	N/A	9.56 (243)	12.8 (325)	308.2 (139,8)
	PN 100	18.9 (480)	N/A	9.56 (243)	12.8 (325)	445.2 (201,9)
	JIS 10K	14.5 (368)	N/A	9.56 (243)	12.8 (325)	174.5 (79,1)
	JIS 20K	14.5 (368)	N/A	9.56 (243)	12.8 (325)	221.8 (100,6)
	JIS 40K	18.1 (460)	N/A	9.56 (243)	12.8 (325)	378.5 (171,7)
	12 (300)	Class 150	16.8 (427)	17.3 (439)	11.38 (289)	13.7 (348)
Class 300		18.0 (457)	18.6 (472)	11.38 (289)	13.7 (348)	415.7 (188,6)
Class 600		20.5 (521)	20.6 (523)	11.38 (289)	13.7 (348)	595.4 (270,1)
PN 10		13.1 (333)	N/A	11.38 (289)	13.7 (348)	204.1 (92,6)
PN 16		13.9 (353)	N/A	11.38 (289)	13.7 (348)	224.6 (101,9)
PN 25		15.0 (381)	N/A	11.38 (289)	13.7 (348)	269.4 (122,2)
PN 40		16.8 (427)	N/A	11.38 (289)	13.7 (348)	347.9 (157,8)
PN 63/64		18.8 (478)	N/A	11.38 (289)	13.7 (348)	431.2 (195,6)
PN 100		21.2 (538)	N/A	11.38 (289)	13.7 (348)	644.1 (292,2)
JIS 10K		15.7 (399)	N/A	11.38 (289)	13.7 (348)	222.9 (101,1)
JIS 20K		15.7 (399)	N/A	11.38 (289)	13.7 (348)	284.2 (128,9)
JIS 40K		19.6 (498)	N/A	11.38 (289)	13.7 (348)	493.8 (224,0)

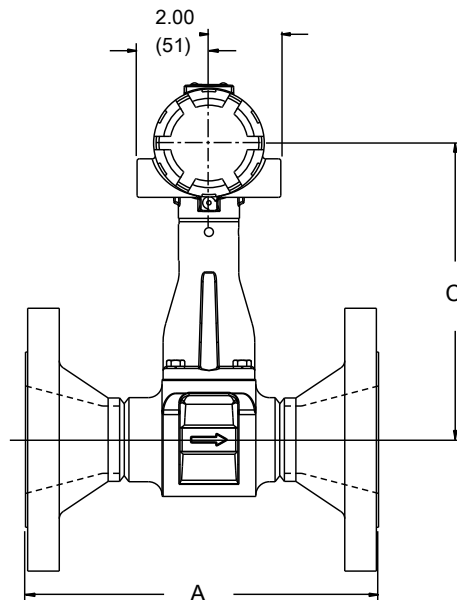
Rosemount 8800DR Reducer Flowmeter (1- through 12-in./25 mm through 300 mm Line Sizes)

Figure 6: Side view



- A** Display option
- B** Terminal cover
- ØB** Diameter B, see [Table 31](#), [Table 32](#)

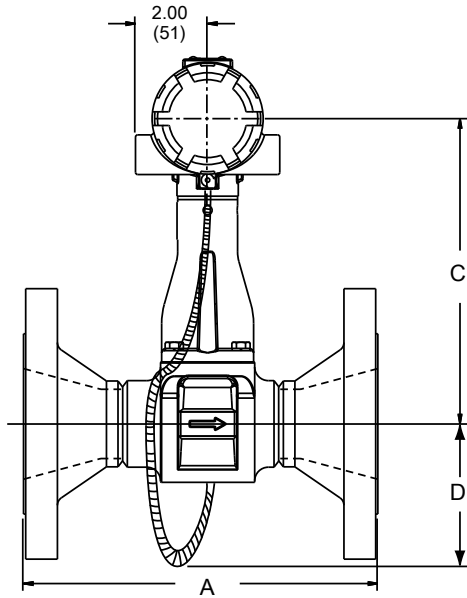
Figure 7: Front view – without MTA option



- A** Dimension A
- C** Dimension C

Note
See [Table 31](#) and [Table 32](#) for dimensions.

Figure 8: Front view – with MTA option



- A Dimension A
- C Dimension C
- D Dimension D

Note

See [Table 31](#) and [Table 32](#) for dimensions.

Table 31: Reducer Flowmeter (1- through 3-in./25 mm through 80 mm Line Sizes)

Nominal size inch (mm)	Flange rating	Face-to-face A inch (mm)	A-ANSI RTJ inch (mm)	Diameter B inch (mm)	Dimension C inch (mm)	Weight lb (kg)
1 (25)	Class 150	7.5 (191)	8.0 (203)	0.54 (13,7)	7.6 (193)	11.56 (5,24)
	Class 300	8.0 (203)	8.5 (216)	0.54 (13,7)	7.6 (193)	14.22 (6,45)
	Class 600	8.5 (216)	8.5 (216)	0.54 (13,7)	7.6 (193)	15.11 (6,85)
	Class 900	9.4 (239)	9.4 (239)	0.54 (13,7)	7.6 (193)	20.70 (9,40)
	PN 16/40	6.2 (157)	N/A	0.54 (13,7)	7.6 (193)	12.64 (5,73)
	PN 100	7.7 (196)	N/A	0.54 (13,7)	7.6 (193)	18.44 (8,36)
1 1/2 (40)	Class 150	8.2 (208)	8.7 (221)	0.95 (24,1)	7.7 (196)	15.81 (7,17)
	Class 300	8.7 (221)	9.2 (234)	0.95 (24,1)	7.7 (196)	21.20 (9,62)
	Class 600	9.3 (236)	9.3 (236)	0.95 (24,1)	7.7 (196)	23.77 (10,78)
	Class 900	10.3 (262)	10.3 (262)	0.95 (24,1)	7.7 (196)	34.98 (15,87)
	PN 16/40	6.9 (175)	N/A	0.95 (24,1)	7.7 (196)	17.50 (7,94)
	PN 100	8.2 (208)	N/A	0.95 (24,1)	7.7 (196)	26.20 (11,88)
2 (50)	PN 160	8.4 (213)	N/A	0.95 (24,1)	7.7 (196)	27.67 (12,55)
	Class 150	9.2 (234)	9.7 (246)	1.49 (37,8)	8.1 (206)	22.61 (10,26)
	Class 300	9.7 (246)	10.4 (264)	1.49 (37,8)	8.1 (206)	26.76 (12,14)

Table 31: Reducer Flowmeter (1- through 3-in./25 mm through 80 mm Line Sizes) (continued)

Nominal size inch (mm)	Flange rating	Face-to-face A inch (mm)	A-ANSI RTJ inch (mm)	Diameter B inch (mm)	Dimension C inch (mm)	Weight lb (kg)
	Class 600	10.5 (267)	10.6 (269)	1.49 (37,8)	8.1 (206)	30.59 (13,88)
	Class 900	12.7 (323)	12.9 (328)	1.49 (37,8)	8.1 (206)	60.76 (27,56)
	PN 16/40	8.0 (203)	N/A	1.49 (37,8)	8.1 (206)	23.52 (10,67)
	PN 63/64	9.1 (231)	N/A	1.49 (37,8)	8.1 (206)	31.28 (14,19)
	PN 100	9.6 (244)	N/A	1.49 (37,8)	8.1 (206)	37.25 (16,90)
	PN 160	10.2 (259)	N/A	1.49 (37,8)	8.1 (206)	39.64 (17,98)
3 (80)	Class 150	9.9 (251)	10.4 (264)	1.92 (48,8)	8.5 (216)	33.15 (15,04)
	Class 300	10.6 (269)	11.2 (284)	1.92 (48,8)	8.5 (216)	42.66 (19,35)
	Class 600	11.4 (290)	11.5 (292)	1.92 (48,8)	8.5 (216)	49.46 (22,43)
	Class 900	12.9 (328)	13.0 (330)	1.92 (48,8)	8.5 (216)	73.28 (33,24)
	PN 16/40	8.9 (226)	N/A	1.92 (48,8)	8.5 (216)	33.30 (15,10)
	PN 63/64	10.0 (254)	N/A	1.92 (48,8)	8.5 (216)	42.45 (19,25)
	PN 100	10.5 (267)	N/A	1.92 (48,8)	8.5 (216)	52.21 (23,68)
	PN 160	11.1 (282)	N/A	1.92 (48,8)	8.5 (216)	57.94 (26,28)

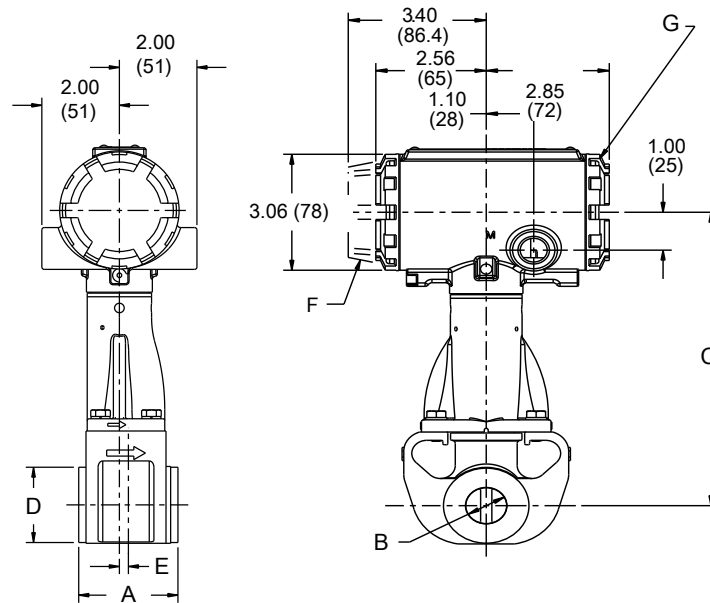
Table 32: Reducer Flowmeter (4- through 12-in./100 mm –300 mm Line Sizes)

Nominal size inch (mm)	Flange rating	Face-to-face A inch (mm)	A-ANSI RTJ inch (mm)	Diameter B inch (mm)	Dimension C inch (mm)	Weight lb (kg)
4 (100)	Class 150	10.3 (262)	10.8 (274)	2.87 (72,9)	9.1 (231)	46.33 (21,01)
	Class 300	11.0 (279)	11.6 (295)	2.87 (72,9)	9.1 (231)	67.04 (30,41)
	Class 600	12.8 (325)	12.9 (328)	2.87 (72,9)	9.1 (231)	94.26 (42,76)
	Class 900	13.8 (351)	13.9 (353)	2.87 (72,9)	9.1 (231)	118.04 (53,54)
	PN 16	8.4 (213)	N/A	2.87 (72,9)	9.1 (231)	36.36 (16,49)
	PN 40	9.4 (239)	N/A	2.87 (72,9)	9.1 (231)	45.89 (20,81)
	PN 63/64	10.4 (264)	N/A	2.87 (72,9)	9.1 (231)	59.72 (27,09)
	PN 100	11.3 (287)	N/A	2.87 (72,9)	9.1 (231)	76.73 (34,80)
	PN 160	12.1 (307)	N/A	2.87 (72,9)	9.1 (231)	84.73 (38,43)
6 (150)	Class 150	11.6 (295)	12.1 (307)	3.79 (96,3)	9.6 (244)	70.27 (31,87)
	Class 300	12.3 (312)	13.0 (330)	3.79 (96,3)	9.6 (244)	113.09 (51,30)
	Class 600	14.3 (363)	14.4 (366)	3.79 (96,3)	9.6 (244)	185.13 (83,97)
	Class 900	16.1 (409)	16.2 (411)	3.79 (96,3)	9.6 (244)	246.33 (111,73)
	PN 16	8.9 (226)	N/A	3.79 (96,3)	9.6 (244)	59.20 (26,85)
	PN 40	10.5 (267)	N/A	3.79 (96,3)	9.6 (244)	81.94 (37,17)
	PN 63/64	12.1 (307)	N/A	3.79 (96,3)	9.6 (244)	125.36 (56,86)
	PN 100	13.6 (345)	N/A	3.79 (96,3)	9.6 (244)	162.29 (73,61)

Table 32: Reducer Flowmeter (4- through 12-in./100 mm –300 mm Line Sizes) (continued)

Nominal size inch (mm)	Flange rating	Face-to-face A inch (mm)	A-ANSI RTJ inch (mm)	Diameter B inch (mm)	Dimension C inch (mm)	Weight lb (kg)
	PN 160	14.7 (373)	N/A	3.79 (96,3)	9.6 (244)	187.91 (85,23)
8 (200)	Class 150	13.5 (343)	14.0 (356)	5.70 (144,8)	10.8 (274)	124 (56)
	Class 300	14.3 (363)	14.9 (378)	5.70 (144,8)	10.8 (274)	186 (84)
	Class 600	16.5 (419)	16.7 (424)	5.70 (144,8)	10.8 (274)	295 (134)
	PN 10	10.4 (264)	N/A	5.70 (144,8)	10.8 (274)	91 (41)
	PN 16	10.4 (264)	N/A	5.70 (144,8)	10.8 (274)	91 (41)
	PN 25	11.8 (300)	N/A	5.70 (144,8)	10.8 (274)	124 (56)
	PN 40	12.5 (318)	N/A	5.70 (144,8)	10.8 (274)	145 (66)
	PN 63/64	14.2 (361)	N/A	5.70 (144,8)	10.8 (274)	211 (96)
	PN 100	15.8 (401)	N/A	5.70 (144,8)	10.8 (274)	283 (128)
10 (250)	Class 150	14.5 (368)	15.0 (381)	7.55 (191,8)	11.7 (297)	182.45 (82,76)
	Class 300	15.8 (401)	16.4 (417)	7.55 (191,8)	11.7 (297)	281.66 (127,76)
	Class 600	19.0 (483)	19.2 (488)	7.55 (191,8)	11.7 (297)	489.89 (222,21)
	PN 10	11.9 (302)	N/A	7.55 (191,8)	11.7 (297)	138.63 (62,88)
	PN 16	12.0 (305)	N/A	7.55 (191,8)	11.7 (297)	148.58 (67,39)
	PN 25	13.5 (343)	N/A	7.55 (191,8)	11.7 (297)	191.00 (86,64)
	PN 40	14.8 (376)	N/A	7.55 (191,8)	11.7 (297)	245.85 (111,52)
	PN 63/64	16.4 (417)	N/A	7.55 (191,8)	11.7 (297)	314.13 (142,49)
	PN 100	18.9 (480)	N/A	7.55 (191,8)	11.7 (297)	463.49 (210,24)
12 (300)	Class 150	16.8 (427)	17.3 (439)	9.56 (242,8)	12.8 (325)	281.98 (127,90)
	Class 300	18.0 (457)	18.6 (472)	9.56 (242,8)	12.8 (325)	412.18 (186,96)
	Class 600	20.5 (521)	20.6 (523)	9.56 (242,8)	12.8 (325)	609.89 (296,64)
	PN 10	13.1 (333)	N/A	9.56 (242,8)	12.8 (325)	188.28 (85,40)
	PN 16	13.9 (353)	N/A	9.56 (242,8)	12.8 (325)	211.79 (96,07)
	PN 25	15.0 (381)	N/A	9.56 (242,8)	12.8 (325)	262.45 (119,05)
	PN 40	16.8 (427)	N/A	9.56 (242,8)	12.8 (325)	349.92 (158,72)
	PN 63/64	18.8 (478)	N/A	9.56 (242,8)	12.8 (325)	444.21 (201,49)
	PN 100	21.2 (538)	N/A	9.56 (242,8)	12.8 (325)	672.07 (304,85)

Figure 9: Wafer-Style (1/2- through 8-in./15 mm through 200 mm Line Sizes)



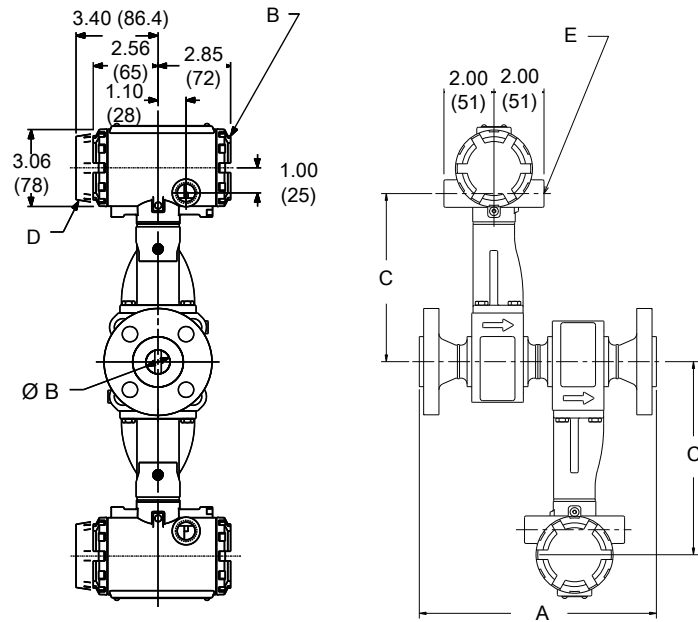
- A Dimension A
- B Dimension B
- C Dimension C
- D Dimension D
- E Dimension E
- F Display option
- G Terminal cover

Note
See [Table 33](#) for dimensions.

Table 33: Rosemount 8800D Wafer-Style Meter

Nominal size inch (mm)	Face-to-face A Inch (mm)	Diameter B Inch (mm)	Dimension C Inch (mm)	Dimension E Inch (mm)	Weight lb (kg)
1/2 (15)	2.56 (65)	0.52 (13,2)	7.63 (194)	0.17 (4,3)	6.8 (3,1)
1 (25)	2.56 (65)	0.95 (24,1)	7.74 (197)	0.23 (5,9)	7.4 (3,4)
1 1/2 (40)	2.56 (65)	1.49 (37,8)	8.14 (207)	0.18 (4,6)	10.0 (4,5)
2 (50)	2.56 (65)	1.92 (49)	8.85 (225)	0.12 (3)	10.6 (4,8)
3 (80)	2.56 (65)	2.87 (73)	9.62 (244)	0.25 (6)	13.6 (6,2)
4 (100)	3.42 (87)	3.79 (96)	10.48 (266)	0.44 (11)	21.4 (9,7)
6 (150)	5.00 (127)	5.70 (145)	10.29 (261)	0.30 (7,6)	36 (16)
8 (200)	6.60 (168)	7.55 (192)	11.22 (285)	0.70 (17,8)	62 (28)

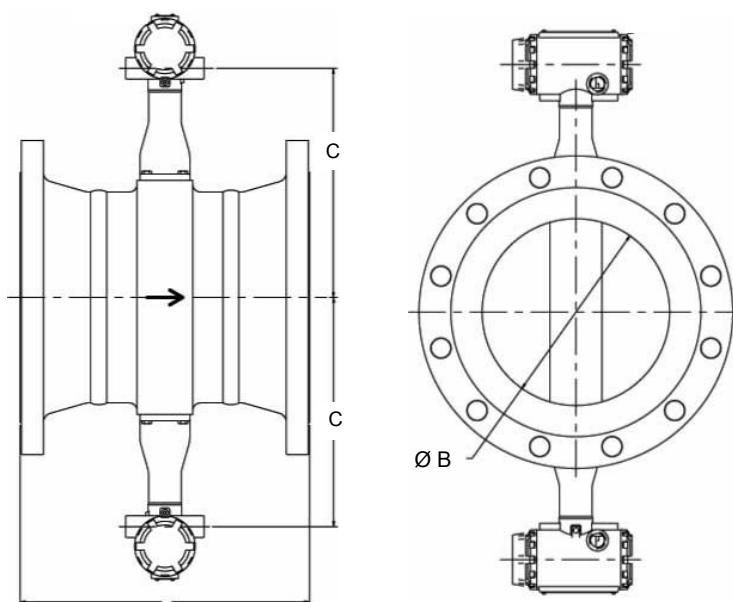
Figure 10: Vortex Dual-Sensor Style Flowmeter (1/2- through 4-in./15 mm through 100 mm Line Sizes)



- A Display option
- B Terminal cover
- $\varnothing B$ Diameter B
- C Dimension C
- D Display option
- E Electrical connection

Note
See [Table 34](#) and [Table 35](#) for dimensions.

Figure 11: Vortex Dual-Sensor Style Flowmeter (6- through 12-in./150 mm through 300 mm Line Sizes)



ØB Diameter B
C Dimension C

Note

See Table 34 and Table 35 for dimensions.

Table 34: Vortex Dual-Sensor Style Flowmeter (1/2- through 3-in./15 mm through 80 mm Line Sizes)

Nominal size inch (mm)	Flange rating	Face-to-face A inch (mm)	A-ANSI RTJ inch (mm)	Diameter B inch (mm)	Dimension C inch (mm)	Weight lb (kg)
1/2 (15)	Class 150	11.9 (302)	N/A	0.54 (13,7)	7.6 (193)	16.2 (7,4)
	Class 300	12.3 (312)	12.7 (323)	0.54 (13,7)	7.6 (193)	17.4 (7,9)
	Class 600	12.8 (325)	12.7 (323)	0.54 (13,7)	7.6 (193)	17.9 (8,1)
	Class 900	13.4 (340)	13.4 (340)	0.54 (13,7)	7.6 (193)	22.7 (10,3)
	PN 16/40	11.2 (284)	N/A	0.54 (13,7)	7.6 (193)	17.4 (7,9)
	PN 100	11.7 (297)	N/A	0.54 (13,7)	7.6 (193)	19.4 (8,8)
	JIS 10K/20K	11.4 (290)	N/A	0.54 (13,7)	7.6 (193)	17.3 (7,8)
	JIS 40K	12.4 (315)	N/A	0.54 (13,7)	7.6 (193)	20.8 (9,4)
1 (25)	Class 150	15.0 (381)	15.6 (396)	0.95 (24,1)	7.7 (196)	20.7 (9,4)
	Class 300	15.6 (396)	16.1 (409)	0.95 (24,1)	7.7 (196)	23.3 (10,6)
	Class 600	16.1 (409)	16.1 (409)	0.95 (24,1)	7.7 (196)	24.2 (11,0)
	Class 900	16.9 (429)	16.9 (429)	0.95 (24,1)	7.7 (196)	32.8 (14,9)
	Class 1500	16.9 (429)	16.9 (429)	0.95 (24,1)	7.7 (196)	32.8 (14,9)
	PN 16/40	13.8 (351)	N/A	0.95 (24,1)	7.7 (196)	21.9 (9,9)
	PN 100	15.3 (389)	N/A	0.95 (24,1)	7.7 (196)	28.0 (12,7)
	PN 160	15.3 (389)	N/A	0.95 (24,1)	7.7 (196)	28.0 (12,7)
	JIS 10K/20K	14.0 (356)	N/A	0.95 (24,1)	7.7 (196)	22.3 (10,1)
	JIS 40K	15.4 (391)	N/A	0.95 (24,1)	7.7 (196)	26.08 (11,8)

Table 34: Vortex Dual-Sensor Style Flowmeter (1/2- through 3-in./15 mm through 80 mm Line Sizes) (continued)

Nominal size inch (mm)	Flange rating	Face-to-face A inch (mm)	A-ANSI RTJ inch (mm)	Diameter B inch (mm)	Dimension C inch (mm)	Weight lb (kg)
1 1/2 (40)	Class 150	11.3 (287)	11.8 (300)	1.49 (37,8)	8.1 (206)	27.0 (12,3)
	Class 300	11.8 (300)	12.3 (312)	1.49 (37,8)	8.1 (206)	32.4 (14,7)
	Class 600	12.4 (315)	12.4 (315)	1.49 (37,8)	8.1 (206)	34.8 (15,8)
	Class 900	13.4 (340)	13.4 (340)	1.49 (37,8)	8.1 (206)	45.9 (20,8)
	Class 1500	13.4 (340)	13.4 (340)	1.49 (37,8)	8.1 (206)	45.9 (20,8)
	PN 16/40	9.9 (251)	N/A	1.49 (37,8)	8.1 (206)	28.7 (13,0)
	PN 100	11.3 (287)	N/A	1.49 (37,8)	8.1 (206)	37.4 (17,0)
	PN 160	11.4 (290)	N/A	1.49 (37,8)	8.1 (206)	38.8 (17,6)
	JIS 10K/20K	10.3 (262)	N/A	1.49 (37,8)	8.1 (206)	27.9 (12,6)
	JIS 40K	11.5 (292)	N/A	1.49 (37,8)	8.1 (206)	34.9 (15,8)
2 (50)	Class 150	13.0 (330)	13.5 (343)	1.92 (48,8)	8.5 (216)	31.9 (14,5)
	Class 300	13.5 (343)	14.0 (356)	1.92 (48,8)	8.5 (216)	35.9 (16,3)
	Class 600	14.3 (363)	14.3 (363)	1.92 (48,8)	8.5 (216)	39.4 (17,9)
	Class 900	16.5 (419)	16.7 (424)	1.92 (48,8)	8.5 (216)	69.1 (31,4)
	Class 1500	15.6 (396)	15.7 (399)	1.67 (42,4)	8.5 (216)	72.4 (32,9)
	PN 16/40	11.8 (300)	N/A	1.92 (48,8)	8.5 (216)	32.8 (14,9)
	PN 63/64	12.9 (328)	N/A	1.92 (48,8)	8.5 (216)	40.4 (18,3)
	PN 100	13.4 (340)	N/A	1.92 (48,8)	8.5 (216)	46.2 (20,9)
	PN 160	13.9 (353)	N/A	1.92 (48,8)	8.5 (216)	48.4 (21,9)
	JIS 10K	11.5 (292)	N/A	1.92 (48,8)	8.5 (216)	29.1 (13,2)
JIS 20K	12.0 (305)	N/A	1.92 (48,8)	8.5 (216)	30.0 (13,6)	
JIS 40K	13.6 (345)	N/A	1.92 (48,8)	8.5 (216)	38.1 (13,6)	
3 (80)	Class 150	14.3 (363)	14.8 (376)	2.87 (72,9)	9.1 (231)	50.6 (23,0)
	Class 300	15.0 (381)	15.7 (399)	2.87 (72,9)	9.1 (231)	59.9 (27,2)
	Class 600	15.8 (401)	15.9 (404)	2.87 (72,9)	9.1 (231)	65.9 (29,9)
	Class 900	17.3 (439)	17.4 (442)	2.87 (72,9)	9.1 (231)	88.4 (40,8)
	Class 1500	18.5 (470)	18.7 (475)	2.60 (66,0)	9.1 (232)	123.8 (56,2)
	PN 16/40	13.4 (340)	N/A	2.87 (72,9)	9.1 (231)	50.0 (22,7)
	PN 63/64	14.5 (367)	N/AN/A	2.87 (72,9)	9.1 (231)	58.7 (26,6)
	PN 100	14.9 (378)	N/A	2.87 (72,9)	9.1 (231)	68.0 (30,9)
	PN 160	15.6 (396)	N/A	2.87 (72,9)	9.1 (231)	73.4 (33,3)
	JIS 10K	12.3 (312)	N/A	2.87 (72,9)	9.1 (231)	41.4 (18,8)
JIS 20K	13.7 (348)	N/A	2.87 (72,9)	9.1 (231)	48.8 (22,1)	
JIS 40K	15.5 (394)	N/A	2.87 (72,9)	9.1 (231)	63.7 (28,9)	

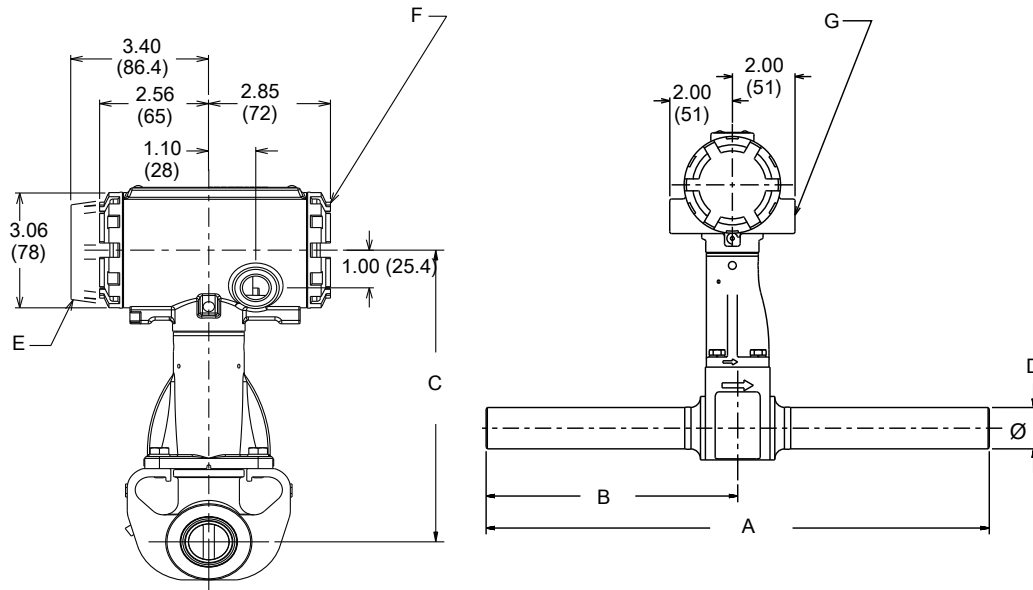
Table 35: Vortex Dual-Sensor Style Flowmeter (4- through 12-in./100 mm through 300 mm Line Sizes)

Nominal size inch (mm)	Flange rating	Face-to-face A inch (mm)	A-ANSI RTJ inch (mm)	Diameter B inch (mm)	Dimension C inch (mm)	Weight lb (kg)	
4 (100)	Class 150	15.2 (386)	15.7 (399)	3.79 (96,3)	9.6 (244)	69.7 (31.6)	
	Class 300	16.0 (406)	16.6 (422)	3.79 (96,3)	9.6 (244)	88.9 (40.8)	
	Class 600	17.7 (450)	17.9 (454)	3.79 (96,3)	9.6 (244)	116 (52.5)	
	Class 900	18.7 (475)	18.9 (480)	3.79 (96,3)	9.6 (244)	139 (63.1)	
	Class 1500	20.0 (509)	20.2 (512)	3.40 (86.4)	9.6 (244)	184 (83,3)	
	PN 16	13.3 (338)	N/A	3.79 (96,3)	9.6 (244)	58.7 (26,6)	
	PN 40	14.4 (366)	N/A	3.79 (96,3)	9.6 (244)	67.8 (30,8)	
	PN 63/64	15.4 (391)	N/A	3.79 (96,3)	9.6 (244)	80.8 (36,7)	
	PN 100	16.3 (414)	N/A	3.79 (96,3)	9.6 (244)	97.2 (44,1)	
	PN 160	17.1 (434)	N/A	3.79 (96,3)	9.6 (244)	104 (47,4)	
	JIS 10K	13.6 (345)	N/A	3.79 (96,3)	9.6 (244)	55.8 (25,3)	
	JIS 20K	13.6 (345)	N/A	3.79 (96,3)	9.6 (244)	63.8 (28,9)	
	JIS 40K	16.8 (427)	N/A	3.79 (96,3)	9.6 (244)	94.2 (42,7)	
	6 (150)	Class 150	11.6 (295)	12.1 (307)	5.7 (144,8)	10.8 (274)	85 (39)
		Class 300	12.3 (312)	13.0 (330)	5.7 (144,8)	10.8 (274)	124 (57)
Class 600		14.3 (363)	14.4 (366)	5.7 (144,8)	10.8 (274)	191 (87)	
Class 900		16.1 (409)	16.2 (411)	5.14 (130.6)	10.8 (274)	282 (128)	
Class 1500		18.6 (472)	18.8 (478)	5.14 (130.6)	10.8 (274)	380 (173)	
PN 16		8.9 (226)	N/A	5.7 (144,8)	10.8 (274)	70 (32)	
PN 40		10.5 (267)	N/A	5.7 (144,8)	10.8 (274)	90 (41)	
PN 63/64		12.1 (307)	N/A	5.7 (144,8)	10.8 (274)	134 (61)	
PN 100		13.6 (345)	N/A	5.7 (144,8)	10.8 (274)	164 (75)	
JIS 10K		10.6 (269)	N/A	5.7 (144,8)	10.8 (274)	74 (34)	
JIS 20K		10.6 (269)	N/A	5.7 (144,8)	10.8 (274)	92 (42)	
JIS 40K		14.2 (361)	N/A	5.7 (144,8)	10.8 (274)	170 (77)	
8 (200)		Class 150	13.5 (343)	14.0 (356)	7.55 (191,8)	11.7 (297)	146 (66)
		Class 300	14.3 (363)	14.9 (378)	7.55 (191,8)	11.7 (297)	203 (92)
		Class 600	16.5 (419)	16.7 (424)	7.55 (191,8)	11.7 (297)	303 (138)
	Class 900	18.8 (478)	18.9 (480)	6.62 (168,1)	11.7 (297)	484 (220)	
	Class 1500	22.8 (580)	23.2 (589)	6.62 (168,1)	11.7 (297)	657 (299)	
	PN 10	10.4 (264)	N/A	7.55 (191,8)	11.7 (297)	115 (52)	
	PN 16	10.4 (264)	N/A	7.55 (191,8)	11.7 (297)	114 (52)	
	PN 25	11.8 (300)	N/A	7.55 (191,8)	11.7 (297)	142 (65)	
	PN 40	12.5 (318)	N/A	7.55 (191,8)	11.7 (297)	161 (73)	
	PN 63/64	14.2 (361)	N/A	7.55 (191,8)	11.7 (297)	221 (101)	
	PN 100	15.8 (401)	N/A	7.55 (191,8)	11.7 (297)	287 (130)	
	JIS 10K	12.2 (310)	N/A	7.55 (191,8)	11.7 (297)	114 (52)	
	JIS 20K	12.2 (310)	N/A	7.55 (191,8)	11.7 (297)	139 (63)	
	JIS 40K	16.5 (419)	N/A	7.55 (191,8)	11.7 (297)	260 (118)	

Table 35: Vortex Dual-Sensor Style Flowmeter (4- through 12-in./100 mm through 300 mm Line Sizes) (continued)

Nominal size inch (mm)	Flange rating	Face-to-face A inch (mm)	A-ANSI RTJ inch (mm)	Diameter B inch (mm)	Dimension C inch (mm)	Weight lb (kg)
10 (250)	Class 150	14.5 (368)	15.0 (381)	9.56 (243)	12.8 (325)	202 (91,6)
	Class 300	15.8 (401)	16.4 (417)	9.56 (243)	12.8 (325)	290 (132)
	Class 600	19.0 (483)	19.2 (488)	9.56 (243)	12.8 (325)	482 (219)
	PN 10	11.9 (302)	N/A	9.56 (243)	12.8 (325)	161 (73,2)
	PN 16	12.0 (305)	N/A	9.56 (243)	12.8 (325)	166 (75,4)
	PN 25	13.5 (343)	N/A	9.56 (243)	12.8 (325)	203 (92,0)
	PN 40	14.8 (376)	N/A	9.56 (243)	12.8 (325)	251 (114)
	PN 63/64	16.4 (417)	N/A	9.56 (243)	12.8 (325)	312 (142)
	PN 100	18.9 (480)	N/A	9.56 (243)	12.8 (325)	450 (204)
	JIS 10K	14.5 (368)	N/A	9.56 (243)	12.8 (325)	179 (81,1)
	JIS 20K	14.5 (368)	N/A	9.56 (243)	12.8 (325)	226 (103)
	JIS 40K	18.1 (460)	N/A	9.56 (243)	12.8 (325)	383 (174)
	12 (300)	Class 150	16.8 (427)	17.3 (439)	11.38 (289)	13.7 (348)
Class 300		18.0 (457)	18.7 (475)	11.38 (289)	13.7 (348)	420 (191)
Class 600		20.5 (521)	20.7 (526)	11.38 (289)	13.7 (348)	600 (272)
PN 10		13.1 (331)	N/A	11.38 (289)	13.7 (348)	208 (94,5)
PN 16		13.9 (353)	N/A	11.38 (289)	13.7 (348)	229 (104)
PN 25		15.0 (381)	N/A	11.38 (289)	13.7 (348)	274 (124)
PN 40		16.8 (427)	N/A	11.38 (289)	13.7 (348)	352 (160)
PN 63/64		18.8 (478)	N/A	11.38 (289)	13.7 (348)	435 (198)
PN 100		21.2 (538)	N/A	11.38 (289)	13.7 (348)	648 (294)
JIS 10K		15.7 (399)	N/A	11.38 (289)	13.7 (348)	227 (103)
JIS 20K		15.7 (399)	N/A	11.38 (289)	13.7 (348)	288 (131)
JIS 40K		19.6 (498)	N/A	11.38 (289)	13.7 (348)	498 (226)

Figure 12: Vortex Weld-End Style Flowmeter (1/2- through 4-in. [15 mm – 100 mm] Line Sizes)



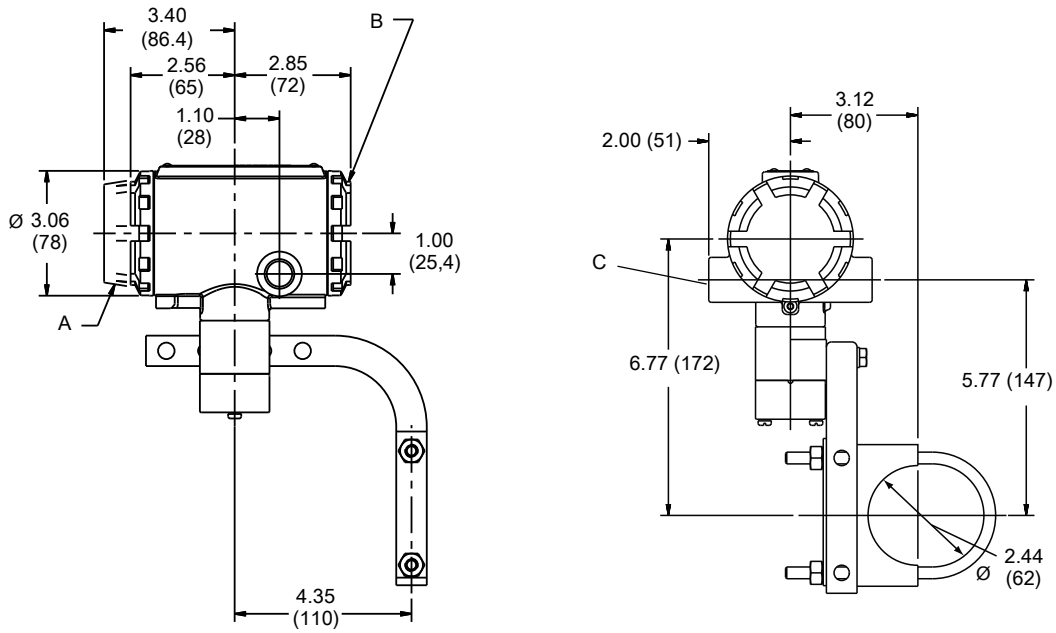
- A Dimension A
- B Dimension B
- C Dimension C
- D Dimension D
- E Display option
- F Terminal cover
- G Electrical connection

Note
See Table 36 for dimensions.

Table 36: Vortex Weld-End Style Flowmeter (1/2- through 4-in. [15 mm - 100 mm] Line Sizes)

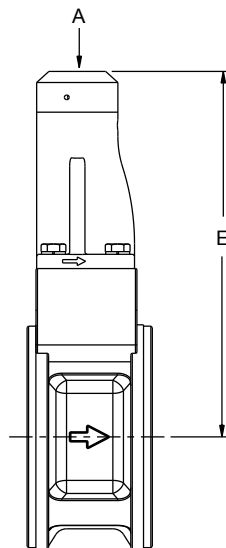
Nominal size in. (mm)	Dimension A in. (mm)	Dimension B in. (mm)	Dimension C ± 0.20 in. (5.1 mm)	Diameter D ± 0.031 in. (0.79 mm)
0.5	16.0 (406)	8.0 (203)	7.63 (194)	.840 (21.34)
1	16.0 (406)	8.0 (203)	7.74 (197)	1.315 (33.40)
1.5	16.0 (406)	8.0 (203)	8.14 (207)	1.900 (48.26)
2	16.0 (406)	8.0 (203)	8.49 (216)	2.375 (60.33)
3	16.0 (406)	8.0 (203)	9.05 (230)	3.500 (88.90)
4	16.0 (406)	8.0 (203)	9.60 (244)	4.500 (114.30)

Figure 13: Remote mount transmitters



- A Display option
- B Terminal cover
- C ½–14 NPT (for remote cable conduit)

Figure 14: Remote Mount Wafer-Style Flowmeters (1/2- through 8-in./15 mm through 200 mm Line Sizes)



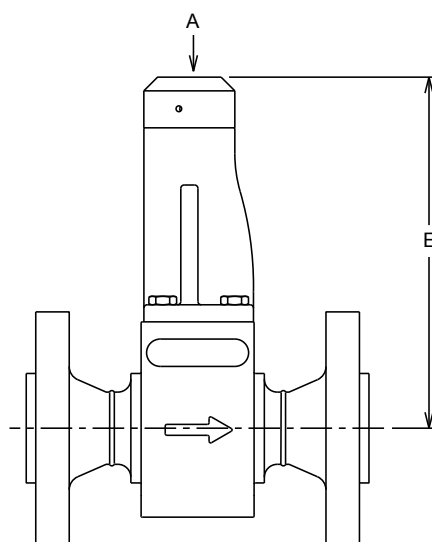
- A ½–14 NPT (for remote cable conduit)
- E Dimension E, [Table 37](#)

Table 37: Rosemount 8800D wafer-style meter

Nominal size in. (mm)	Dimension E in. (mm)
½ (15)	6.3 (160)

Table 37: Rosemount 8800D wafer-style meter (continued)

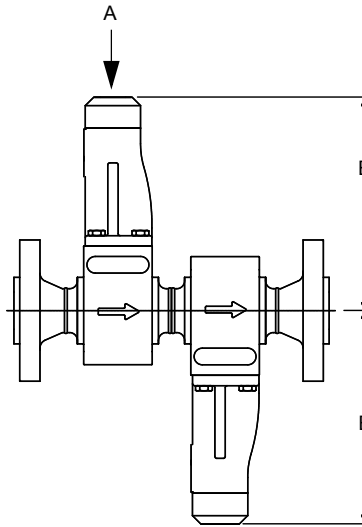
Nominal size in. (mm)	Dimension E in. (mm)
1 (25)	6.5 (165)
1½ (40)	6.7 (191)
2 (50)	7.5 (191)
3 (80)	8.3 (211)
4 (100)	9.2 (234)
6 (150)	9.5 (241)
8 (200)	10.4 (264)

Figure 15: Flanged Remote Mount Flowmeters (1/2- through 12-inch/15 mm through 300 mm Line Sizes)

A ½-14 NPT (for remote cable conduit)

E Dimension E, [Table 38](#)

Figure 16: Dual Sensor Flanged-Style Remote Mount Flowmeters (1/2- through 12-inch/15 mm through 300 mm Line Sizes)



- A ½-14 NPT (for remote cable conduit)
- E Dimension E, [Table 38](#)

Table 38: Remote Mount, Flanged-and Dual Sensor Flowmeter Dimensions

Nominal size inch (mm)	E Flange style inch (mm)
1/2 (15)	6.4 (162)
1 (25)	6.5 (165)
1 1/2 (40)	6.8 (173)
2 (50)	7.2 (183)
3 (80)	7.8 (198)
4 (100)	8.3 (211)
6 (150)	9.5 (241)
8 (200)	10.4 (264)
10 (250)	11.4 (290)
12 (300)	12.3 (313)

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