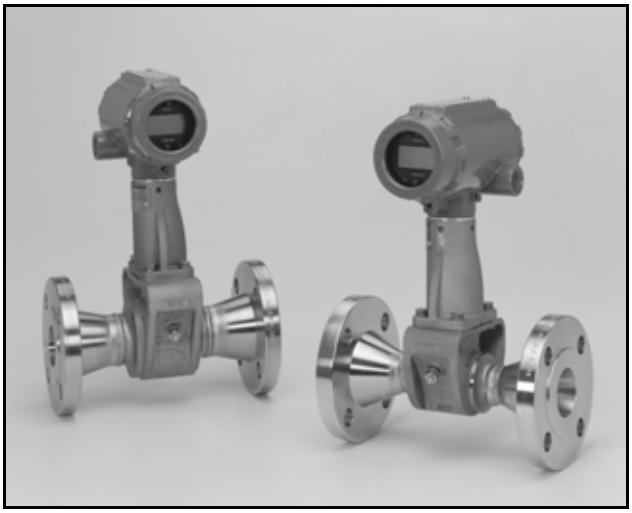
Product Data Sheet
00813-0100-4003, Rev NA
Catalog 2006 - 2007

Rosemount 8800C Series Vortex Flowmeter

HART® AND FOUNDATION™ FIELDBUS PROTOCOLS

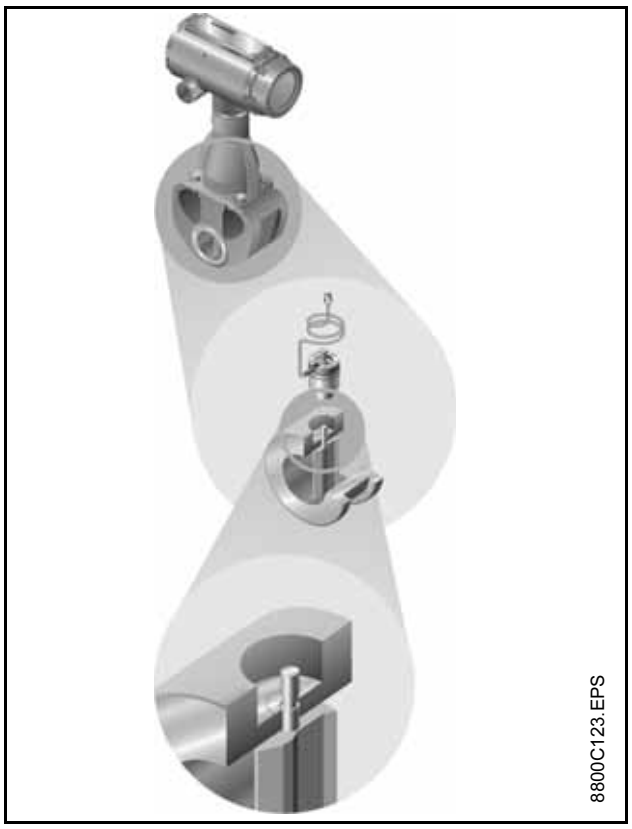
- *Available in wafer, flanged, dual, reducer and high pressure designs.*
- *Only manufacturer of Reducer™ Vortex which extends the measurable flow range, reduces installation costs, and minimizes project risk.*
- *All-welded, non-clog design eliminates ports and gaskets.*
- *Patented Adaptive Digital Signal Process (ADSP) provides vibration immunity.*
- *Unique isolated sensor design allows replacement without breaking the process seal.*
- *Simplified troubleshooting through device diagnostics.*



Contents

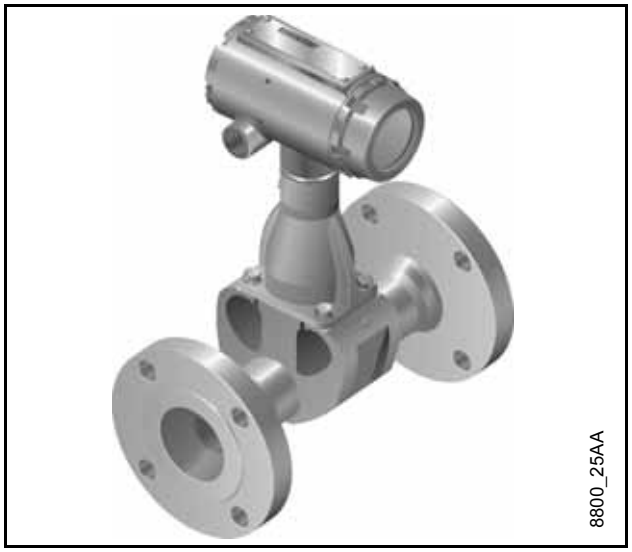
Specifications . . . . . page 5
Product Certifications . . . . . page 18
Dimensional Drawings. . . . . page 22
Ordering Information . . . . . page 36
Configuration Data Sheet . . . . . page 39

THE ROSEMOUNT 8800C DELIVERS RELIABILITY



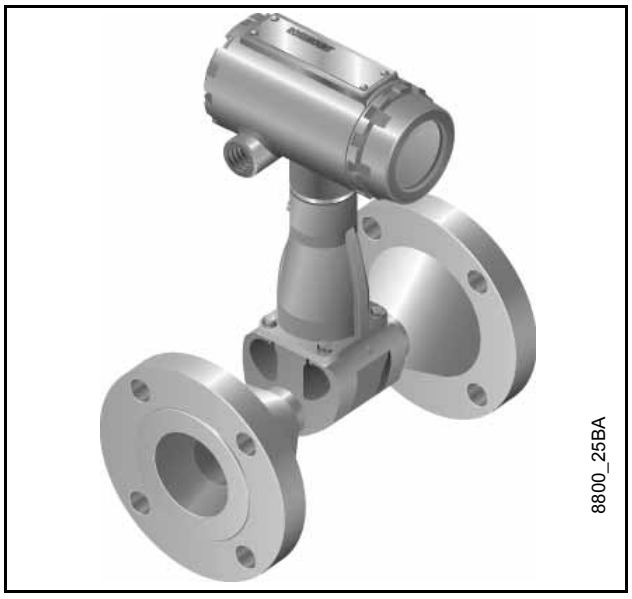
- **Rosemount Reliability** -The 8800C Vortex eliminates impulse lines, ports, and gaskets to improve reliability.
- **Non-clog Design** - Unique gasket-free construction which has no ports that can clog.
- **Vibration Immunity** - Mass Balancing of the sensor system, and Patented Adaptive Digital Signal Processing (ADSP) provide Vibration immunity.
- **Replaceable Sensor** - The sensor is isolated from the process and can be replaced without breaking the process seals. 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 with no process shutdown.

THE ROSEMOUNT 8800C OFFERING



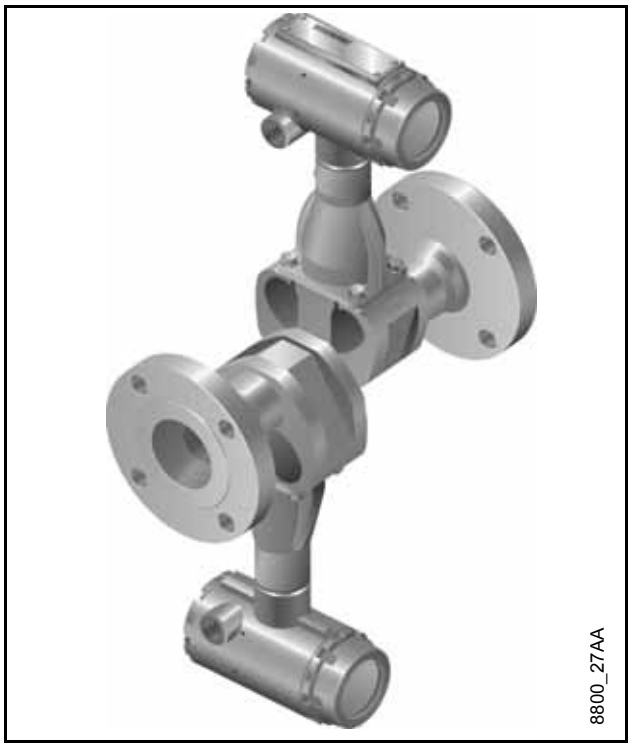
- The 8800C is available in wafer style meter bodies for 1/2 through 8 inch line sizes, and ASME B16.5 (ANSI), DIN, or JIS flanged style meter bodies for 1/2 through 12 inch line sizes.
- Alignment rings, provided with each wafer-style flowmeter, ensure that the meter body is properly centered with the adjacent piping.
- Both wafer and flanged style meter bodies are available in 316L stainless steel and Nickel Alloy materials of construction.
- Available up to ANSI class 1500 for 1 through 8 inch (25 mm through 200 mm) and ANSI class 900 for 1/2 inch (15 mm) through 8 inches (200 mm).
- Available with FOUNDATION fieldbus functionality which includes Device Diagnostics and PlantWeb Alerts.

THE ROSEMOUNT 8800CR REDUCER™ VORTEX EXTENDS THE MEASURABLE FLOW RANGE AT A REDUCED COST



- **Rosemount Reliability** - Designed with same electronics, sensor, and meter body as the 8800C.
- **Reduced Cost** - Eliminates field assembly and welding of separate reducers and piping reducing installed cost by as much as 50%.
- **Extended Measurable Flow** - Low-end flow range is doubled with the Rosemount 8800CR Reducer Vortex.
- **Reduced Project Risk** - Reducer Vortex and the Traditional Flanged Vortex have the same face-to-face dimension. As a result either meter can be used without affecting pipe layout.
- Available as flanged meter for 1 through 12 inch stainless steel and nickel alloy C materials of construction.
- Available with FOUNDATION fieldbus functionality.

THE DUAL-SENSOR VORTEX FLOWMETER



- **Safety Integrated Systems (SIS)** - Ideal solution where redundant flow signals are required.
- **Rosemount Reliability** - Designed with same electronics, sensor, and meter body as the 8800C.
- **Redundant Flow Measurement** - Dual Vortex meter is constructed of two complete vortex meters: sensor, electronics, and shedder bar(1). The meters are welded together and flow calibrated to provide an accurate single flowmeter with two independent flow measurements.
- Available as flanged meter for 1/2 through 12 inch stainless steel and nickel alloy C materials of construction.

(1) All 10 in (250 mm) and 12 in (300 mm) dual style vortex meters have a single shedder bar. 6 in (150 mm) and 8 in (200 mm) dual style vortex meters with 900# or 1500# flange ratings have a single shedder bar.

ROSEMOUNT 8800C VORTEX FLOWMETER WITH FOUNDATION FIELDBUS

The software for the 8800C Flowmeter with FOUNDATION fieldbus permits remote testing and configuration using any FOUNDATION fieldbus-compliant host, such as the DeltaV system from Emerson Process Management.

Transducer Block

The transducer block calculates flow from sensor frequency. The calculation includes information about damping, shedding frequency, K-factor, service type, 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 a Link Active Scheduler (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 software. The sensor strength value can be used to view the process flow signal and provide optimized 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 8800C Flowmeter with FOUNDATION fieldbus comes standard with two AI function blocks.

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.

Setup

Basic setup requires connecting the transmitter to a fieldbus network or 375 Handheld Communicator. The FOUNDATION fieldbus- compliant host will automatically establish communication with the device.

The Rosemount 8800C Flowmeter can be easily configured using the DeltaV system. User-configurable parameters include: tag, range values and units, service type, damping, process density, pipe internal diameter (ID)(1), and process temperature(1)

Tagging information can be entered into the transmitter to allow identification and a physical description. 32-character tags are provided for identification of the transmitter and each function block.

(1) Process temperature and pipe ID have known effects on the K-factor. The 8800C software automatically accounts for these effects by compensating the K-factor.

Specifications

The following specifications are for the Rosemount 8800C, Rosemount 8800CR, and Rosemount 8800CD, except where noted.

FUNCTIONAL SPECIFICATIONS

Service

Liquid, gas, and steam applications. Fluids must be homogeneous and single-phase.

Line Sizes

Wafer

1/2, 1, 1 1/2, 2, 3, 4, 6, and 8 inches
(DN 15, 25, 40, 50, 80, 100, 150, and 200)

Flanged and Dual-Sensor Style

1/2, 1, 1 1/2, 2, 3, 4, 6, 8, 10, and 12 inches
(DN 15, 25, 40, 50, 80, 100, 150, 200, 250, and 300)

Reducer

1, 1 1/2, 2, 3, 4, 6, 8, 10, and 12 inches
(DN 25, 40, 50, 80, 100, 150, 200, 250, and 300)

Pipe Schedules

Process piping Schedules 10, 40, and 80.

NOTE
The appropriate bore diameter of the process piping must be entered using the HART Communicator or AMS. Meters will be shipped from the factory at the Schedule 40 default value unless otherwise specified.

Measurable Flow Rates

Capable of processing signals from flow applications which meet the sizing requirements below.

To determine the appropriate flowmeter size for an application, process conditions must be within the Reynolds number and velocity limitations for the desired line size provided in Table 1, Table 2, Table 3, and Table 4.

NOTE
Consult your local sales representative to obtain a computer sizing program that describes in greater detail how to specify the correct flowmeter size for an application.

The Reynolds number equation shown below combines the effects of density (ρ), viscosity (μ_{cp}), pipe inside diameter (D), and flow velocity (V).

$$R_D = \frac{VD\rho}{\mu_{c\rho}}$$

TABLE 1. Minimum Measurable Meter Reynolds Numbers

Meter Sizes (Inches / DN)	Reynolds Number Limitations
1/2 through 4/15 through 100	10000 minimum
6 through 12 /150 through 300	20000 minimum

TABLE 2. Minimum Measurable Meter Velocities
(Use the larger of the two values)

	Feet per Second	Meters per Second
Liquids(1)	$\sqrt{36/\rho}$ or 0.7	$\sqrt{54/\rho}$ or 0.22
Gases	$\sqrt{36/\rho}$ or 6.5	$\sqrt{54/\rho}$ or 2.0
The ρ is the process fluid density at flowing conditions in lb/ft³ for ft/s and kg/m³ for m/s		

(1) The minimum measurable velocity for the 10in. line size is 0.94 ft/s (.27m/s) and 1.11 ft/s (.34m/s) for the 12in. line size.

(2) Velocities are referenced to schedule 40 pipe.

TABLE 3. Maximum Measurable Meter Velocities
(Use the smaller of the two values)

	Feet per Second	Meters per Second
Liquids	$\sqrt{90{,}000/\rho}$ or 25	$\sqrt{134{,}000/\rho}$ or 7.6
Gases(1)	$\sqrt{90{,}000/\rho}$ or 250	$\sqrt{134{,}000/\rho}$ or 76
The ρ is the process fluid density at flowing conditions in lb/ft³ for ft/s and kg/m³ for m/s		

(1) Accuracy limitations for gas and steam for Dual-style meters (all sizes): max velocity of 100 ft/s (30.5 m/s).

(2) Velocities are referenced to schedule 40 pipe.

Process Temperature Limits

Standard

–40 to 450 °F (–40 to 232 °C)

Extended

–330 to 800 °F (–200 to 427 °C)

Output Signals

4–20 mA Digital HART Signal

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 up to 30 V dc, 120 mA maximum

Digital Foundation fieldbus signal

Manchester-encoded digital signal that conforms to IEC 1158-2 and ISA 50.02.

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

Value of one pulse can be set to equal desired volume in selected engineering units.

Ambient Temperature Limits

Operating

–58 to 185 °F (–50 to 85 °C)
–4 to 185 °F (–20 to 85 °C) for flowmeters with local indicator

Storage

–58 to 250 °F (–50 to 121 °C)
–50 to 185 °F (–46 to 85 °C) for flowmeters with local indicator

Pressure Limits

Flange Style Meter

Rated for ASME B16.5 (ANSI) Class 150, 300, 600, 900, and 1500, DIN PN 10, 16, 25, 40, 64, 100, and 160, and JIS 10K, 20K, and 40K

Reducer Style Meter

Rated for ASME B16.5 (ANSI) Class 150, 300, 600, and 900, DIN PN 10, 16, 25, 40, 64, 100, and 160.

Dual Sensor Style Meter

Rated for ASME B16.5 (ANSI) Class 150, 300, 600, 900, and 1500, DIN PN 10, 16, 25, 40, 64, 100, and 160, and JIS 10K, 20K, and 40K

Wafer Style Meter

Rated for ASME B16.5 (ANSI) Class 150, 300, and 600, DIN PN 10, 16, 25, 40, 64, and 100, and JIS 10K, 20K, and 40K

Power Supply

HART Analog

External power supply required. Flowmeter operates on 10.8 to 42 V dc terminal voltage (with 250-ohm minimum load required for HART communications, 16.8 V dc power supply is required)

Foundation fieldbus

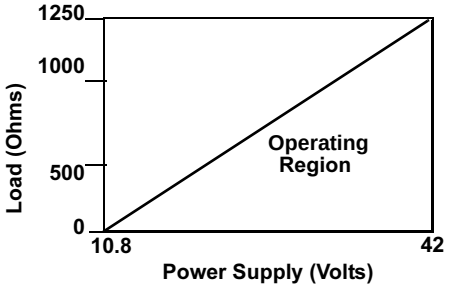
External power supply required. Flowmeter operates on 9 to 32 V dc, 17.8 mA nominal, 20.0 mA maximum.

Power Consumption

One watt maximum

Load Limitations (HART Analog)

Maximum loop resistance is determined by the voltage level of the external power supply, as described by:



R_{max} = $41.7(V_{ps} – 10.8)$
V_{ps} = Power Supply Voltage (Volts)
R_{max} = Maximum Loop Resistance (Ohms)

NOTE
HART Communication requires a minimum loop resistance of 250 ohms.

Optional LCD Indicator

Displays flow variable, percent of range, current output, and/or totalized flow. (Totalized Flow only available on Digital or Pulse Electronics)

Enclosure Rating

FM Type 4X; CSA Type 4X; IP66

Permanent Pressure Loss

The approximate permanent pressure loss (PPL) from the Rosemount 8800C flowmeter is calculated for each application in the Vortex sizing software available from your locat Rosemount representative. The PPL is determined using the equation:

$$PPL = \frac{A \times \rho_f \times Q^2}{D^4}$$

where:

PPL = Permanent Pressure loss (psi or kPa)

where:

ρ_f = Density at operating conditions (lb/ft^3 or kg/m^3)

Q = Actual volumetric flow rate (Gas = ft^3/min or m^3/hr; Liquid = gal/min or l/min)

D = Flowmeter bore diameter (in. or mm)

A = Constant depending on meter style, fluid type and flow units. Determined per following table:

TABLE 4. Determining the PPL

Meter Style	English Units				SI Units	
	A_{Liquid}		A_{Gas}		A_{Liquid}	A_{Gas}
8800CF/W	3.4	10^{-5}	1.9	10^{-3}	0.425	118
8800CR	3.91	10^{-5}	2.19	10^{-3}	0.489	136
8800CD(1)	6.12	10^{-5}	3.42	10^{-3}	0.765	212

(1) For all 10 and 12 in (250 and 300 mm) line sizes and 6 and 8 in (150 and 200 mm) with 900# or 1500# Flanges, A for Rosemount 8800CD is the same as Rosemount 8800CF.

Minimum Back 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 back pressure should be:

P = $2.9\Delta P + 1.3\ p_v$ or P = $2.9\Delta P + p_v + 0.5$psia (3.45 kPa) (use the smaller of the two results)

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)

Failure Mode Alarm

HART Analog

If self-diagnostics detect a gross flowmeter failure, the analog signal will be driven to the values below.

Low	3.75
High	21.75
NAMUR Low	3.60
NAMUR High	22.50

High or low alarm signal is user-selectable through the fail mode alarm jumper on the electronics. NAMUR-compliant alarm limits are available through the C4 or CN Option.

Foundation fieldbus

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

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 value listed below; the output does not exceed the listed saturation value regardless of the operating flow. The NAMUR-Compliant Saturation Values are available through the C4 or CN option.

Low	3.9
High	20.8
NAMUR Low	3.8
NAMUR High	20.5

Damping

Adjustable between 0.2 and 255 seconds

Response Time

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

Turn-on Time

HART Analog

Less than four (4) seconds plus the response time to rated accuracy from power up.

Foundation fieldbus

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

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:
ASME B16.5 (ANSI)/IEEE C62.41 - 1980
(IEEE 587) Categories A, B
3 kA crest (8 × 20 μs)
6 kV crest (1.2 × 50 μs)
6 kV/0.5 kA (0.5 μs, 100 kHz, ring wave)

Security Lockout

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

Output Testing

Current Source

Flowmeter may be commanded to set the current to a specified value between 4 and 20 mA.

Frequency Source

Flowmeter may be commanded to set the frequency to a specified value between 0 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 (in the scaled pulse mode only).

Humidity Limits

Operates in 0–95% relative humidity under noncondensing conditions (tested to IEC 770, Section 6.2.11).

Overrange Capability

HART Analog

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.

Foundation fieldbus

For liquid service 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.

Flow Calibration

Meter bodies are flow-calibrated and assigned a unique calibration factor (K-factor) at the factory. The calibration factor is entered into the electronics, enabling interchangeability of electronics and/or sensors without calculations or compromise in accuracy of the calibrated meter body.

Status (FOUNDATION fieldbus only)

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 (FOUNDATION fieldbus only)

Six (6)

Links (FOUNDATION fieldbus only)

Twelve (12)

Virtual Communications Relationships (VCRs) (FOUNDATION fieldbus only)

Two (2) predefined (F6, F7)
Four (4) configured (see Table 5)

TABLE 5. Block Information.

Block	Base Index	Execution Time (Milliseconds)
Resource (RB)	300	—
Transducer (TB)	400	—
Analog Input (AI)	1,000	15
Proportional/ Integral/Derivative (PID)	10,000	25
Integrator (INT)	12,000	20

TABLE 6. Typical pipe velocity ranges for 8800C and 8800CR(1)

Process Line Size		Liquid Velocity Ranges		Gas Velocity Ranges	
(Inches/ DN)	Vortex Meter (2)	(ft/s)	(m/s)	(ft/s)	(m/s)
0.5/ 15	8800CF005	0.70 to 25.0	0.21 to 7.6	6.50 to 250.0	1.98 to 76.2
1/ 25	8800CF010	0.70 to 25.0	0.21 to 7.6	6.50 to 250.0	1.98 to 76.2
	8800CR010	0.25 to 8.8	0.08 to 2.7	2.29 to 87.9	0.70 to 26.8
1.5/ 40	8800CF015	0.70 to 25.0	0.21 to 7.6	6.50 to 250.0	1.98 to 76.2
	8800CR015	0.30 to 10.6	0.09 to 3.2	2.76 to 106.1	0.84 to 32.3
2/ 50	8800CF020	0.70 to 25.0	0.21 to 7.6	6.50 to 250.0	1.98 to 76.2
	8800CR020	0.42 to 15.2	0.13 to 4.6	3.94 to 151.7	1.20 to 46.2
3/ 80	8800CF030	0.70 to 25.0	0.21 to 7.6	6.50 to 250.0	1.98 to 76.2
	8800CR030	0.32 to 11.3	0.10 to 3.5	2.95 to 113.5	0.90 to 34.6
4/ 100	8800CF040	0.70 to 25.0	0.21 to 7.6	6.50 to 250.0	1.98 to 76.2
	8800CR040	0.41 to 14.5	0.12 to 4.4	3.77 to 145.2	1.15 to 44.3
6/ 150	8800CF060	0.70 to 25.0	0.21 to 7.6	6.50 to 250.0	1.98 to 76.2
	8800CR060	0.31 to 11.0	0.09 to 3.4	2.86 to 110.2	0.87 to 33.6
8/ 200	8800CF080	0.70 to 25.0	0.21 to 7.6	6.50 to 250.0	1.98 to 76.2
	8800CR080	0.40 to 14.4	0.12 to 4.4	3.75 to 144.4	1.14 to 44.0
10/ 250	8800CF100	0.90 to 25.0	0.27 to 7.6	6.50 to 250.0	1.98 to 76.2
	8800CR100	0.44 to 15.9	0.13 to 4.8	4.12 to 158.6	1.26 to 48.3
12/ 300	8800CF120	1.10 to 25.0	0.34 to 7.6	6.50 to 250.0	1.98 to 76.2
	8800CR120	0.63 to 17.6	0.19 to 5.4	4.58 to 176.1	1.40 to 53.7

(1) Table 6 is a reference of pipe velocities that can be measured for the standard Rosemount 8800C and the reducer Rosemount 8800CR Vortex Meters. It does not consider density limitations, as described in tables 2 and 3. Velocities are referenced in schedule 40 pipe.

(2) Velocity range of the Rosemount 8800CW is the same as Rosemount 8800CF.

TABLE 7. Water Flow Rate Limits for the Rosemount 8800C and 8800CR(1)

Process Line Size		Minimum and Maximum Measurable Water Flow Rates*	
(Inches/ DN)	Vortex Meter (2)	Gallons/Minute	Cubic Meters/Hour
0.5/ 15	8800CF005	1.76 to 23.7	0.40 to 5.4
1/ 25	8800CF010	2.96 to 67.3	0.67 to 15.3
	8800CR010	1.76 to 23.7	0.40 to 5.4
1.5/ 40	8800CF015	4.83 to 158	1.10 to 35.9
	8800CR015	2.96 to 67.3	0.67 to 15.3
2/ 50	8800CF020	7.96 to 261	1.81 to 59.4
	8800CR020	4.83 to 158.0	1.10 to 35.9
3/ 80	8800CF030	17.5 to 576	4.00 to 130
	8800CR030	7.96 to 261.0	1.81 to 59.3
4/ 100	8800CF040	30.2 to 992	6.86 to 225
	8800CR040	17.5 to 576	4.00 to 130
6/ 150	8800CF060	68.5 to 2251	15.6 to 511
	8800CR060	30.2 to 992	6.86 to 225
8/ 200	8800CF080	119 to 3898	27.0 to 885
	8800CR080	68.5 to 2251	15.6 to 511
10/ 250	8800CF100	231 to 6144	52.2 to 1395
	8800CR100	119 to 3898	27.0 to 885
12/ 300	8800CF120	391 to 8813	88.8 to 2002
	8800CR120	231 to 6144	52.2 to 1395

***Conditions: 77 °F (25 °C) and 14.7 psia (1.01 bar absolute)**

(1) Table 7 is a reference of flow rates that can be measured for the standard Rosemount 8800C and the reducer 8800CR Vortex Meters. It does not consider density limitations, as described in tables 2 and 3.

(2) Velocity range of the 8800CW is the same as 8800CF.

TABLE 8. Air Flow Rate Limits at 59 °F (15 °C)

Process Pressure	Flow Rate Limits	Minimum and Maximum Air Flow Rates for line sizes 1/2 inch/DN 15 through 1 inch/DN 25							
		1/2 Inch/DN 15				1 Inch/DN 25			
		Rosemount 8800C		Rosemount 8800CR		Rosemount 8800C		Rosemount 8800CR	
		ACFM	ACMH	ACFM	ACMH	ACFM	ACMH	ACFM	ACMH
0 psig	max	27.9	47.3	Not	Not	79.2	134	27.9	47.3
(0 bar G)	min	3.86	6.56	Available	Available	7.81	13.3	3.86	6.56
50 psig	max	27.9	47.3	Not	Not	79.2	134	27.9	47.3
(3,45 bar G)	min	1.31	2.22	Available	Available	3.72	6.32	1.31	2.22
100 psig	max	27.9	47.3	Not	Not	79.2	134	27.9	47.3
(6,89 bar G)	min	0.98	1.66	Available	Available	2.80	4.75	0.98	1.66
150 psig	max	27.9	47.3	Not	Not	79.2	134	27.9	47.3
(10,3 bar G)	min	0.82	1.41	Available	Available	2.34	3.98	0.82	1.41
200 psig	max	27.9	47.3	Not	Not	79.2	134	27.9	47.3
(13,8 bar G)	min	0.82	1.41	Available	Available	2.34	3.98	0.82	1.41
300 psig	max	27.9	47.3	Not	Not	79.2	134	27.9	47.3
(20,7 bar G)	min	0.82	1.41	Available	Available	2.34	3.98	0.82	1.41
400 psig	max	25.7	43.9	Not	Not	73.0	124	25.7	43.9
(27,6 bar G)	min	0.82	1.41	Available	Available	2.34	3.98	0.82	1.41
500 psig	max	23.0	39.4	Not	Not	66.0	112	23.0	39.4
(34,5 bar G)	min	0.82	1.41	Available	Available	2.34	3.98	0.82	1.41

TABLE 9. Air Flow Rate Limits at 59 °F (15 °C)

Process Pressure	Flow Rate Limits	Minimum and Maximum Air Flow Rates for line sizes 1 1/2 inch/DN 40 through 2 inch/DN 50							
		1½ Inch/DN 40				2 Inch/DN 50			
		Rosemount 8800C		Rosemount 8800CR		Rosemount 8800C		Rosemount 8800CR	
		ACFM	ACMH	ACFM	ACMH	ACFM	ACMH	ACFM	ACMH
0 psig	max	212	360	79.2	134	349	593	212	360
(0 bar G)	min	18.4	31.2	7.81	13.3	30.3	51.5	18.4	31.2
50 psig	max	212	360	79.2	134	349	593	212	360
(3,45 bar G)	min	8.76	14.9	3.72	6.32	14.5	24.6	8.76	14.9
100 psig	max	212	360	79.2	134	349	593	212	360
(6,89 bar G)	min	6.58	11.2	2.80	4.75	10.8	18.3	6.58	11.2
150 psig	max	212	360	79.2	134	349	593	212	360
(10,3 bar G)	min	5.51	9.36	2.34	3.98	9.09	15.4	5.51	9.36
200 psig	max	212	360	79.2	134	349	593	212	360
(13,8 bar G)	min	5.51	9.36	2.34	3.98	9.09	15.4	5.51	9.36
300 psig	max	198	337	79.2	134	326	554	198	337
(20,7 bar G)	min	5.51	9.36	2.34	3.98	9.09	15.4	5.51	9.36
400 psig	max	172	293	73.0	124	284	483	172	293
(27,6 bar G)	min	5.51	9.36	2.34	3.98	9.09	15.4	5.51	9.36
500 psig	max	154	262	66.0	112	254	432	154	262
(34,5 bar G)	min	5.51	9.36	2.34	3.98	9.09	15.4	5.51	9.36

TABLE 10. Air Flow Rate Limits at 59 °F (15 °C)

Process Pressure	Flow Rate Limits	Minimum and Maximum Air Flow Rates for line sizes 3 inch/DN 80 through 4 inch/DN 100							
		3 Inch/DN 80				4 Inch/DN 100			
		Rosemount 8800C		Rosemount 8800CR		Rosemount 8800C		Rosemount 8800CR	
		ACFM	ACMH	ACFM	ACMH	ACFM	ACMH	ACFM	ACMH
0 psig	max	770	1308	349	593	1326	2253	770	1308
(0 bar G)	min	66.8	114	30.3	51.5	115	195	66.8	114
50 psig	max	770	1308	349	593	1326	2253	770	1308
(3,45 bar G)	min	31.8	54.1	14.5	24.6	54.8	93.2	31.8	54.1
100 psig	max	770	1308	349	593	1326	2253	770	1308
(6,89 bar G)	min	23.9	40.6	10.8	18.3	41.1	69.8	23.9	40.6
150 psig	max	770	1308	349	593	1326	2253	770	1308
(10,3 bar G)	min	20.0	34.0	9.09	15.4	34.5	58.6	20.0	34.0
200 psig	max	770	1308	349	593	1326	2253	770	1308
(13,8 bar G)	min	20.0	34.0	9.09	15.4	34.5	58.6	20.0	34.0
300 psig	max	718	1220	326	554	1237	2102	718	1220
(20,7 bar G)	min	20.0	34.0	9.09	15.4	34.5	58.6	20.0	34.0
400 psig	max	625	1062	284	483	1076	1828	625	1062
(27,6 bar G)	min	20.0	34.0	9.09	15.4	34.5	58.6	20.0	34.0
500 psig	max	560	951	254	432	964	1638	560	951
(34,5 bar G)	min	20.0	34.0	9.09	15.4	34.5	58.6	20.0	34.0

TABLE 11. Air Flow Rate Limits at 59 °F (15 °C)

Process Pressure	Flow Rate Limits	Minimum and Maximum Air Flow Rates for line sizes 6 inch/DN 150 through 8 inch/DN 200							
		6 Inch/DN 150				8 Inch/DN 200			
		Rosemount 8800C		Rosemount 8800CR		Rosemount 8800C		Rosemount 8800CR	
		ACFM	ACMH	ACFM	ACMH	ACFM	ACMH	ACFM	ACMH
0 psig	max	3009	5112	1326	2253	5211	8853	3009	5112
(0 bar G)	min	261	443	115	195	452	768	261	443
50 psig	max	3009	5112	1326	2253	5211	8853	3009	5112
(3,45 bar G)	min	124	211	54.8	93.2	215	365	124	211
100 psig	max	3009	5112	1326	2253	5211	8853	3009	5112
(6,89 bar G)	min	93.3	159	41.1	69.8	162	276	93.3	159
150 psig	max	3009	5112	1326	2253	5211	8853	3009	5112
(10,3 bar G)	min	78.2	133	34.5	58.6	135	229	78.2	133
200 psig	max	3009	5112	1326	2253	5211	8853	3009	5112
(13,8 bar G)	min	78.2	133	34.5	58.6	135	229	78.2	133
300 psig	max	2807	4769	1237	2102	4862	8260	2807	4769
(20,7 bar G)	min	78.2	133	34.5	58.6	135	229	78.2	133
400 psig	max	2442	4149	1076	1828	4228	7183	2442	4149
(27,6 bar G)	min	78.2	133	34.5	58.6	136	229	78.2	133
500 psig	max	2188	3717	964	1638	3789	6437	2188	3717
(34,5 bar G)	min	78.2	133	34.5	58.6	136	229	78.2	133

TABLE 12. Air Flow Rate Limits at 59 °F (15 °C)

Process Pressure	Flow Rate Limits	Minimum and Maximum Air Flow Rates for line sizes 10 inch/DN 250 through 12 inch/DN 300							
		10 Inch/DN 250				12 Inch/DN 300			
		Rosemount 8800C		Rosemount 8800CR		Rosemount 8800C		Rosemount 8800CR	
		ACFM	ACMH	ACFM	ACMH	ACFM	ACMH	ACFM	ACMH
0 psig	max	8214	13956	5211	8853	11781	20016	8214	13956
(0 bar G)	min	712.9	1211	452	768	1022	1736	712.9	1211
50 psig	max	8214	13956	5211	8853	11781	20016	8214	13956
(3,45 bar G)	min	339.5	577	215	365	486.9	827	339.5	577
100 psig	max	8214	13956	5211	8853	11781	20016	8214	13956
(6,89 bar G)	min	254.7	433	162	276	365.4	621	254.7	433
150 psig	max	8214	13956	5211	8853	11781	20016	8214	13956
(10,3 bar G)	min	213.6	363	135	229	306.3	520	213.6	363
200 psig	max	8214	13956	5211	8853	11781	20016	8214	13956
(13,8 bar G)	min	213.6	363	135	229	306.3	520	213.6	363
300 psig	max	7664	13021	4862	8260	10992	18675	7664	13021
(20,7 bar G)	min	213.6	363	135	229	306.3	520	213.6	363
400 psig	max	6664	11322	4228	7183	9559	16241	6664	11322
(27,6 bar G)	min	213.6	363	136	229	306.3	520	213.6	363
500 psig	max	5972	10146	3789	6437	8565	14552	5972	10146
(34,5 bar G)	min	213.6	363	136	229	306.3	520	213.6	363

NOTES

The Rosemount 8800C measures the volumetric flow under operating conditions (i.e. the actual volume at the operating pressure and temperature–acfm or acmh), as shown above. However, gas volumes are strongly dependent on pressure and temperature. Therefore, gas quantities are typically stated in standard or normal conditions (e.g. Scfm or Ncmh). (Standard conditions are typically 59 °F and 14.7 psia. Normal conditions are typically 0 °C and 1 bar abs.)

The flow rate limits in standard conditions are found using the equations below:

Standard Flow Rate = Actual Flow Rate X Density Ratio

Density Ratio = Density at Actual (Operating) Conditions / Density at Standard Conditions

TABLE 13. Saturated Steam Flow Rate Limits (Assumes Steam Quality is 100%)

Process Pressure	Flow Rate Limits	Minimum and Maximum Saturated Steam(1) Flow Rates for line sizes 1/2 inch/DN 15 through 1 inch/DN 25							
		½ Inch/DN 15				1 Inch/DN 25			
		Rosemount 8800C		Rosemount 8800CR		Rosemount 8800C		Rosemount 8800CR	
		lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
15 psig	max	120	54.6	Not	Not	342	155	120	54.6
(1,03 bar G)	min	12.8	5.81	Available	Available	34.8	15.8	12.8	5.81
25 psig	max	158	71.7	Not	Not	449	203	158	71.7
(1,72 bar G)	min	14.0	6.35	Available	Available	39.9	18.1	14.0	6.35
50 psig	max	250	113	Not	Not	711	322	250	113
(3,45 bar G)	min	17.6	8.00	Available	Available	50.1	22.7	17.6	8.00
100 psig	max	429	194	Not	Not	1221	554	429	194
(6,89 bar G)	min	23.1	10.5	Available	Available	65.7	29.8	23.1	10.5
150 psig	max	606	275	Not	Not	1724	782	606	275
(10,3 bar G)	min	27.4	12.5	Available	Available	78.1	35.4	27.4	12.5
200 psig	max	782	354	Not	Not	2225	1009	782	354
(13,8 bar G)	min	31.2	14.1	Available	Available	88.7	40.2	31.2	14.1
300 psig	max	1135	515	Not	Not	3229	1464	1135	515
(20,7 bar G)	min	37.6	17.0	Available	Available	107	48.5	37.6	17.0
400 psig	max	1492	676	Not	Not	4244	1925	1492	676
(27,6 bar G)	min	44.1	20.0	Available	Available	125	56.7	44.1	20.0
500 psig	max	1855	841	Not	Not	5277	2393	1855	841
(34,5 bar G)	min	54.8	24.9	Available	Available	156	70.7	54.8	24.9

(1) Assumes steam quality is 100%

TABLE 14. Saturated Steam Flow Rate Limits (Assumes Steam Quality is 100%)

Process Pressure	Flow Rate Limits	Minimum and Maximum Saturated Steam(1) Flow Rates for line sizes 1 1/2 inch/DN 40 through 2 inch/DN 50							
		1½ Inch/DN 40				2 Inch/DN 50			
		Rosemount 8800C		Rosemount 8800CR		Rosemount 8800C		Rosemount 8800CR	
		lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
15 psig	max	917	416	342	155	1511	685	917	416
(1,03 bar G)	min	82.0	37.2	34.8	15.8	135	61.2	82.0	37.2
25 psig	max	1204	546	449	203	1983	899	1204	546
(1,72 bar G)	min	93.9	42.6	39.9	18.1	155	70.2	93.9	42.6
50 psig	max	1904	864	711	322	3138	1423	1904	864
(3,45 bar G)	min	118	53.4	50.1	22.7	195	88.3	118	53.4
100 psig	max	3270	1483	1221	554	5389	2444	3270	1483
(6,89 bar G)	min	155	70.1	65.7	29.8	255	116	155	70.1
150 psig	max	4616	2094	1724	782	7609	3451	4616	2094
(10,3 bar G)	min	184	83.2	78.1	35.4	303	137	184	83.2
200 psig	max	5956	2702	2225	1009	9818	4453	5956	2702
(13,8 bar G)	min	209	94.5	88.7	40.2	344	156	209	94.5
300 psig	max	8644	3921	3229	1464	14248	6463	8644	3921
(20,7 bar G)	min	252	114	107	48.5	415	189	252	114
400 psig	max	11362	5154	4244	1925	18727	8494	11362	5154
(27,6 bar G)	min	295	134	125	56.7	487	221	295	134
500 psig	max	14126	6407	5277	2393	23284	10561	14126	6407
(34,5 bar G)	min	367	167	156	70.7	605	274	367	167

(1) Assumes steam quality is 100%

TABLE 15. Saturated Steam Flow Rate Limits (Assumes Steam Quality is 100%)

Process Pressure	Flow Rate Limits	Minimum and Maximum Saturated Steam(1) Flow Rates for line sizes 3 inch/DN 80 through 4 inch/DN 100							
		3 Inch/DN 80				4 Inch/DN 100			
		Rosemount 8800C		Rosemount 8800CR		Rosemount 8800C		Rosemount 8800CR	
		lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
15 psig	max	3330	1510	1511	685	5734	2601	3330	1510
(1,03 bar G)	min	298	135	135	61.2	513	233	298	135
25 psig	max	4370	1982	1983	899	7526	3414	4370	1982
(1,72 bar G)	min	341	155	155	70.2	587	267	341	155
50 psig	max	6914	3136	3138	1423	11905	5400	6914	3136
(3,45 bar G)	min	429	195	195	88.3	739	335	429	195
100 psig	max	11874	5386	5389	2444	20448	9275	11874	5386
(6,89 bar G)	min	562	255	255	116	968	439	562	255
150 psig	max	16763	7603	7609	3451	28866	13093	16763	7603
(10,3 bar G)	min	668	303	303	137	1150	522	668	303
200 psig	max	21630	9811	9818	4453	37247	16895	21630	9811
(13,8 bar G)	min	759	344	344	156	1307	593	759	344
300 psig	max	31389	14237	14248	6463	54052	24517	31389	14237
(20,7 bar G)	min	914	415	415	189	1574	714	914	415
400 psig	max	41258	18714	18727	8494	71047	32226	41258	18714
(27,6 bar G)	min	1073	487	487	221	1847	838	1073	487
500 psig	max	51297	23267	23284	10561	88334	40068	51297	23267
(34,5 bar G)	min	1334	605	605	274	2297	1042	1334	605

(1) Assumes steam quality is 100%

TABLE 16. Saturated Steam Flow Rate Limits (Assumes Steam Quality is 100%)

Process Pressure	Flow Rate Limits	Minimum and Maximum Saturated Steam(1) Flow Rates for line sizes 6 inch/DN 150 through 8 inch/DN 200							
		6 Inch/DN 150				8 Inch/DN 200			
		Rosemount 8800C		Rosemount 8800CR		Rosemount 8800C		Rosemount 8800CR	
		lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
15 psig	max	13013	5903	5734	2601	22534	10221	13013	5903
(1,03 bar G)	min	1163	528	513	233	2015	914	1163	528
25 psig	max	17080	7747	7526	3414	29575	13415	17080	7747
(1,72 bar G)	min	1333	605	587	267	2308	1047	1333	605
50 psig	max	27019	12255	11905	5400	46787	21222	27019	12255
(3,45 bar G)	min	1676	760	739	335	2903	1317	1676	760
100 psig	max	46405	21049	20448	9275	80356	36449	46405	21049
(6,89 bar G)	min	2197	996	968	439	3804	1725	2197	996
150 psig	max	65611	29761	28866	13093	113440	51455	65611	29761
(10,3 bar G)	min	2610	1184	1150	522	4520	2050	2610	1184
200 psig	max	84530	38342	37247	16895	146375	66395	84530	38342
(13,8 bar G)	min	2965	1345	1307	593	5134	2329	2965	1345
300 psig	max	122666	55640	54052	24517	212411	96348	122666	55640
(20,7 bar G)	min	3572	1620	1574	714	6185	2805	3572	1620
400 psig	max	161236	73135	71047	32226	279200	126643	161236	73135
(27,6 bar G)	min	4192	1901	1847	838	7259	3293	4192	1901
500 psig	max	200468	90931	88334	40068	347134	157457	200468	90931
(34,5 bar G)	min	5212	2364	2297	1042	9025	4094	5212	2364

(1) Assumes steam quality is 100%

TABLE 17. Saturated Steam Flow Rate Limits (Assumes Steam Quality is 100%)

Process Pressure	Flow Rate Limits	Minimum and Maximum Saturated Steam(1) Flow Rates for line sizes 10 inch/DN 250 through 12 inch/DN 300							
		10 Inch/DN 250				12 Inch/DN 300			
		Rosemount 8800C		Rosemount 8800CR		Rosemount 8800C		Rosemount 8800CR	
		lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
15 psig (1,03 bar G)	max	35519	16111	22534	10221	50994	23130	35519	16111
	min	3175	1440	2015	914	4554	2066	3175	1440
25 psig (1,72 bar G)	max	46618	21146	29575	13415	66862	30328	46618	21146
	min	4570	2073	2308	1047	5218	2367	4570	2073
50 psig (3,45 bar G)	max	73748	33452	46787	21222	105774	47978	73748	33452
	min	4575	2075	2903	1317	6562	2976	4575	2075
100 psig (6,89 bar G)	max	126660	57452	80356	36449	181663	82401	126660	57452
	min	5996	2720	3804	1725	8600	3901	5996	2720
150 psig (10,3 bar G)	max	178808	81106	113440	51455	256457	116327	178808	81106
	min	7125	3232	4520	2050	10218	4635	7125	3232
200 psig (13,8 bar G)	max	230722	104654	146375	66395	330915	150101	230722	104654
	min	8092	3670	5134	2329	11607	5265	8092	3670
300 psig (20,7 bar G)	max	334810	151867	212411	96348	480203	217816	334810	151867
	min	9749	4422	6185	2805	13983	6343	9749	4422
400 psig (27,6 bar G)	max	440085	199619	279200	126643	631195	286305	440085	199619
	min	11442	5190	7259	3293	16411	7444	11442	5190
500 psig (34,5 bar G)	max	547165	248190	347134	157457	784775	355968	547165	248190
	min	14226	6453	9025	4094	20404	9255	14226	6453

(1) Assumes steam quality is 100%

PERFORMANCE SPECIFICATIONS

The following performance specifications are for the Rosemount 8800C, 8800CR, and 8800CD, except where noted. Digital performance specifications applicable to both Digital HART and FOUNDATION fieldbus output.

Accuracy

Includes linearity, hysteresis, and repeatability.

Liquids—for Reynolds Numbers over 20000

Digital and Pulse Output
±0.65% of rate
Note: The accuracy for the 8800CR, line sizes 6 to 12 inch (150 to 300mm), is ±1.0% of rate.
Analog Output
Same as pulse output plus an additional 0.025% of span

Gas and Steam— for Reynolds Numbers over 15,000

Digital and Pulse Output
±1.35% of rate
Note: The accuracy for the 8800CR, line sizes 6 to 12 inch (150 to 300mm), is ±1.50% of rate.
Analog Output
Same as pulse output plus an additional 0.025% of span

Accuracy limitations for gas and steam:
- for 1/2- and 1-in. (DN 15 and DN 25):
max velocity of 220 ft/s (67.06 m/s)
- for Dual-style meters (all sizes):
max velocity of 100 ft/s (30.5 m/s)

NOTE
For 1/2-in. through 4-in. (15 mm through 100 mm) line sizes, as the meter Reynolds number decreases below the stated limit to 10000, the positive limit of the accuracy error band will increase to 2.1% for the pulse output. Example: +2.1% to –0.65% for liquids.

Repeatability

± 0.1% of actual flow rate

Stability

±0.1% of rate over one year

Process Temperature Effect

Automatic K-factor correction with user-entered process temperature

Table 18 indicates the percent change in K-factor per 100 °F (55.5 °C) in process temperature from reference temperature of 77 °F (25 °C).

TABLE 18. Process Temperature Effect

Material	Percent Change in K-Factor per 100 °F (55.5 °C)
316L @ < 77 °F (25 °C)	+ 0.23
316L @ > 77 °F (25 °C)	- 0.27
Nickel Alloy C < 77 °F (25 °C)	+ 0.22
Nickel Alloy C > 77 °F (25 °C)	- 0.22

Ambient Temperature Effect

Digital and Pulse Outputs

No effect

Analog Output

±0.1% of span from –58 to 185 °F (–50 to 85 °C)

Vibration Effect

An output with no process flow may be detected if sufficiently high vibration is present.

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. 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 $^1/_2$ 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.

EMI/RFI Effect

HART Analog

Output error less than ±0.025% of span with twisted pair from 80-1000 MHz for radiated field strength of 10 V/m and from 0.15-80 MHz for conducted RF of 3V (tested per EN61326).

Foundation fieldbus and Digital HART

No affect on the values that are being given if using HART digital signal or FOUNDATION fieldbus.

Magnetic-Field Interference

HART Analog

Output error less than ±0.025% of span at 30 A/m (rms); meets IEC 60770-1984, Section 6.2.9.

Foundation fieldbus

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

Series Mode Noise Rejection

HART Analog

Output error less than ±0.025% of span at 1 V rms, 60 Hz; meets IEC 60770-1984, Section 6.2.4.2.

Foundation fieldbus

No effect on digital output accuracy at 1 V rms 60 Hz. Meets IEC 60770-1984, Section 6.2.4.2

Common Mode Noise Rejection

HART Analog

Output error less than ±0.025% of span at 30 V rms, 60 Hz; meets IEC 60770-1984, Section 6.2.4.1.

Foundation fieldbus

No effect on digital output accuracy at 250 V rms, 60 Hz. According to FF-830-PS-2.0 test case 8.2.

Power Supply Effect

HART Analog

Less than 0.005% of span per volt

Foundation fieldbus

No effect on accuracy.

PHYSICAL SPECIFICATIONS

NACE Compliance

Materials of Construction meet NACE material recommendations per MR0175 for sour oilfield production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for refining environments.

Electrical Connections

1/2 –14 NPT, PG 13.5, or M20 1.5 conduit threads; screw terminals provided for 4–20 mA and pulse output connections; communicator connections permanently fixed to terminal block

Non-Wetted Materials

Housing

Low-copper aluminum (FM Type 4X, CSA Type 4X, IP66)

Paint

Polyurethane

Cover O-rings

Buna-N

Flanges

316/316L lap joint

Process-Wetted Materials

Meter Body

316L wrought stainless and CF-3M cast stainless or N06022 wrought Nickel Alloy CW2M cast Nickel Alloy. Other material grades available. Consult factory.

Flanges

316/316L stainless steel

Nickel Alloy N06022 Weld Neck

Collars

Nickel Alloy N06022

Surface Finish of Flanges and Collars

Standard: 125 to 250 μ inches
(3.1 to 6.3 μ meters) Ra roughness

Smooth: 63 to 125 μ inches
(1.6 to 3.1 μ meters) Ra roughness

Process Connections

Mounts between the following flange configurations:

ASME B16.5 (ANSI): Class 150, 300, 600, 900, 1500

DIN: PN 10, 16, 25, 40, 64, 100, 160

JIS: 10K, 20K, and 40K

Mounting

Integral (Standard)

Electronics are mounted on meter body

Remote (Optional)

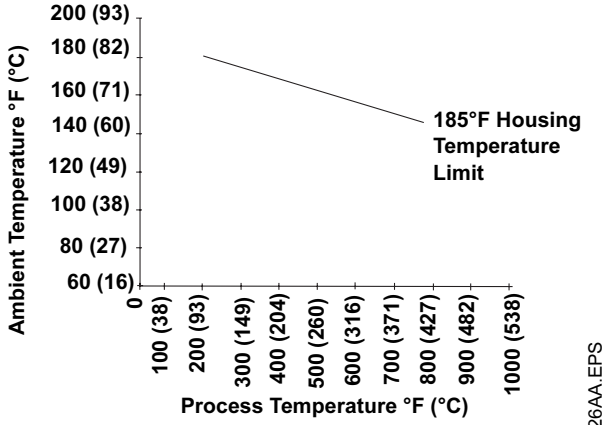
Electronics may be mounted remote from the meter body. Interconnecting coaxial cable available in nonadjustable 10, 20, and 30 ft (3,0, 6,1, and 9,1 m) lengths. Consult factory for non-standard lengths up to 75 ft (22,9 m). Remote mounting hardware includes a polyurethane painted, carbon steel pipe mount bracket with one carbon steel u-bolt.

Temperature Limitations for Integral Mounting

The maximum process temperature for integral mount electronics is dependent on the ambient temperature where the meter is installed. The electronics must not exceed 185°F (85°C). The following is for reference, please note that the pipe was insulated with 3 inches of ceramic fiber insulator.

FIGURE 1. Rosemount 8800 Vortex Flowmeter Ambient/process temperature limits

Shows combinations of ambient and process temperatures needed to remain at or below 185°F (85°C) housing temperature



Meter and pipe insulated with 3 inches of ceramic fiber insulation. Horizontal Pipe and Vertical meter position.

Pipe Length Requirements

The vortex meter may be installed with a minimum of ten straight pipe diameters (D) upstream and five straight pipe diameters (D) downstream by following the K-factor corrections as described in the Technical Data Sheet (00816-0100-3250) on Installation Effects. No K-factor correction is required if 35 diameters upstream (35D) and 10 diameters downstream (10D) are available.

Tagging

The flowmeter will be tagged at no charge, according to customer requirements. All tags are stainless steel. The standard tag is permanently attached to the flowmeter. Character height is 1/16-inch (1,6 mm). A wired-in tag is available on request.

Flow Calibration Information

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

Product Certifications

Approved Manufacturing Locations

Rosemount Inc. — Eden Prairie, Minnesota, USA

EUROPEAN DIRECTIVE INFORMATION

The EC declaration of conformity for all applicable European directives for this product can be found on our website at www.rosemount.com. A hard copy may be obtained by contacting our local sales office.

ATEX Directive

Rosemount Inc. complies with the ATEX Directive.

Flame-Proof enclosure Ex d protection type in accordance with EN50018

- Transmitters with Flame-Proof enclosure type protection shall only be opened when power is removed.
- ⚠ Closing of entries in the device must be carried out using the appropriate EEx d metal cable gland or metal blanking plug.
- Do not exceed the energy level, which is stated on the approval label.

Type n protection type in accordance with EN50021

⚠ Closing of entries in the device must be carried out using the appropriate EExe or EExn metal cable gland and metal blanking plug or any appropriate ATEX approved cable gland and blanking plug with IP66 rating certified by an EU approved certification body.

EUROPEAN PRESSURE EQUIPMENT DIRECTIVE (PED)

Rosemount 8800 Vortex Flowmeter Line Size 40 mm to 300 mm

Certificate Number PED-H-100 CE 0575

Module H Conformity Assessment

Mandatory CE-marking for flowmeters in accordance with Article 15 of the PED can be found on the flowtube body.

Flowmeter categories I – IV, use module H for conformity assessment procedures.

Rosemount 8800 Vortex Flowmeter Line Size 15 mm and 25 mm

Sound Engineering Practice

Flowmeters that are SEP or Category I with Explosion-Proof protection are outside the scope of PED and cannot be marked for compliance with PED.

HAZARDOUS LOCATION CERTIFICATIONS

Rosemount 8800C with HART Protocol

North American Certifications

Factory Mutual (FM)

E5 Explosion-Proof for
Class I, Division 1,
Groups B, C, and D;
Dust-ignition proof for
Class II/III, Division 1,
Groups E, F, and G;
Temp Code T6 (T_a = -50°C to 70°C)
Factory sealed.

I5 Intrinsically safe for use in
Class I, Division 1,
Groups A, B, C, and D;
Class II/III, Division 1,
Groups E, F, and G;
Temp. code T4; when connected in accordance with
Rosemount drawings 08800-0106 and 00268-0031;
Non-incendive for Class I, Division 2,
Groups A, B, C, and D;
Temperature Code T4

K5 E5 and I5 combination

Canadian Standards Association (CSA)

E6 Explosion-Proof for
Class I, Division 1,
Groups B, C, and D;
Dust-ignition proof for
Class II, Division 1,
Groups E, F, and G;
Class III, Division 1
Suitable for Class I, Division 2,
Groups A, B, C, and D;
Factory sealed.

I6 Intrinsically safe for
Class I, Division 1,
Groups A, B, C, and D;
When connected in accordance with Rosemount drawing
08800-0111;
Temperature code T3C

C6 E6 and I6 combination

European Certifications

ATEX Intrinsic Safety and Dust Certification

I1 Certification No. BAS99ATEX1222
ATEX Marking ⟨Ex⟩ II 1 GD
EEx ia IIC T5 (-50°C ≤ Ta ≤ 40°C)
EEx ia IIC T4 (-50°C ≤ Ta ≤ 70°C)
Dust Certification T80°C (-20°C ≤ Ta ≤ 70°C)
IP 66
CE 1180
Input Parameters:
U_i = 30 VDC
I_i(1) = 300 mA
P_i(1) = 1.0 W
C_i = 0 μF
L_i = 40 μH

ATEX Type N Certification

N1 Certification No. BAS99ATEX3221
ATEX Marking ⟨Ex⟩ II 3 GD
EEx nL IIC T5 (-40°C ≤ Ta ≤ 70°C)
Dust Certification T80°C (-20°C ≤ Ta ≤ 70°C)
IP 66
Input Parameters:
U_i = 42 V dc Max
C_i = 0 μF
L_i = 40 μH

ATEX Flame-Proof Certification

E1 Certification No. KEMA99ATEX3852X
ATEX Marking Remote Mount:
Transmitter: ⟨Ex⟩ II 2(1) G
EEx d [ia]IIC T6 (-50°C ≤ Ta ≤ 70°C)
Meter Body: ⟨Ex⟩ II 1 G
EEx ia IIC T6 (-50°C ≤ Ta ≤ 70°C)
ATEX Marking Integral Mount: ⟨Ex⟩ II 1/2 G
EEx d [ia] IIC T6 (-50°C ≤ Ta ≤ 70°C)
CE 1180
V = 42 Vdc Max
Um = 250V

SPECIAL CONDITIONS
When the equipment is installed particular precautions must be taken to ensure, taking account with the effect of the fluid temperature, that the ambient temperature of the electrical parts of the equipment is comprised between -50 °C and 70 °C.

The remote mounted sensor may only be connected to the transmitter with the associated cable, supplied by the manufacturer.

(1) Total for transmitter

Rosemount 8800C With FOUNDATION Fieldbus Protocol

North American Certifications

Factory Mutual (FM) Approvals

E5 Explosion-Proof for
Class I, Division 1, Groups B, C, and D. Dust-Ignition proof for
Class II/III, Division 1, Groups E, F, and G.
Factory sealed.
Temperature Code T6 (-50°C ≤ Ta ≤ 70°C)

I5 Intrinsically safe for use in
Class I, Division 1, Groups A, B, C, and D.
Class II/III, Division 1,Groups E, F, and G.
Temp. Code T4; when connected in accordance with
Rosemount drawings 08800-0106 and 00268-0031.
Non-incendive for Class I, Division 2,
Groups A, B, C, and D.
Temperature Code T4

IE FISCO for Class I, Division 1, Groups A, B, C, and D.
Class II/III, Division 1,Groups E, F, and G.
Temp. Code: T4 (Ta = 40°C)
when installed per Rosemount control drawing
08800-0106 and 00268-0031.
Non-incendive for Class I, Division 2,
Groups A, B, C, and D.
Temp. Code: T4 (Ta = 40°C)

K5 E5 and I5 combination

Canadian Standards Association (CSA) Approvals

E6 Explosion Proof for
Class I, Division 1, Groups B, C, and D; Dust-Ignition proof for
Class II, Division 1, Groups E, F, and G; Class III, Division 1.
Suitable for Class I, Division 2, Groups A, B, C, and D
hazardous locations.
Factory sealed.

I6 Intrinsically Safe for
Class I, Division 1, Groups A, B, C, and D;
When connected in accordance with Rosemount drawing
08800-0111;
Temperature Code T3C.

IF FISCO for Class I, Division 1, Groups A, B, C, and D;
Class I, Division 2, Groups A, B, C, and D;
Temperature Code: T3C;
When installed per Rosemount drawing 08800-0111;

C6 E6 and I6 combination.

European Certifications

ATEX Intrinsic Safety and Dust Certification

I1 Certification No. BAS99ATEX1241X
ATEX Marking Ⓔx II 1 GD
EEx ia IIC T4 (-50°C ≤ Ta ≤ 60°C)
Dust Certification T80°C (-20°C ≤ Ta ≤ 60°C)
IP 66
CE 1180
Input Parameters:
U_i = 30 VDC
I_i = 300 mA
P_i = 1.3 W
C_i = 0 μF
L_i = 20 μH

SPECIAL CONDITIONS FOR SAFE USE (X)
The apparatus (with T1 option) is not capable of withstanding the 500V insulation test required by EN 50020: 1994. This must be taken into account when installing the apparatus.

ATEX FISCO

IA Certification No. BAS99ATEX1241X
ATEX Marking Ⓔx II 1 GD
EEx ia IIC T4 (-50°C ≤ Ta ≤ 60°C)
Dust Certification
T80°C (-20°C ≤ Ta ≤ 60°C)
IP66
CE 1180
Input Parameters:
U_i = 17.5 VDC
I_i = 380 mA
P_i = 5.32 W
C_i = 0 μF
L_i =< 10 μH

SPECIAL CONDITIONS FOR SAFE USE (X)
The apparatus (with T1 option) is not capable of withstanding the 500V insulation test required by EN 50020: 1994. This must be taken into account when installing the apparatus.

ATEX Type N Certification

N1 Certification No. BAS99ATEX3240X
ATEX Marking Ⓔx II 3 GD
EEx nL IIC T5 (-40°C ≤ Ta ≤ 70°C)
Dust Certification T80°C (-20°C ≤ Ta ≤ 70°C)
IP 66
Input Parameters:
U_i = 42 VDC MAX
C_i = 0 μF
L_i = 20 μH

SPECIAL CONDITIONS FOR SAFE USE (X)
The apparatus is not capable of withstanding the 500V insulation test required by EN 50021: 1999. This must be taken into account when installing the apparatus.

ATEX Flame-Proof Certifications

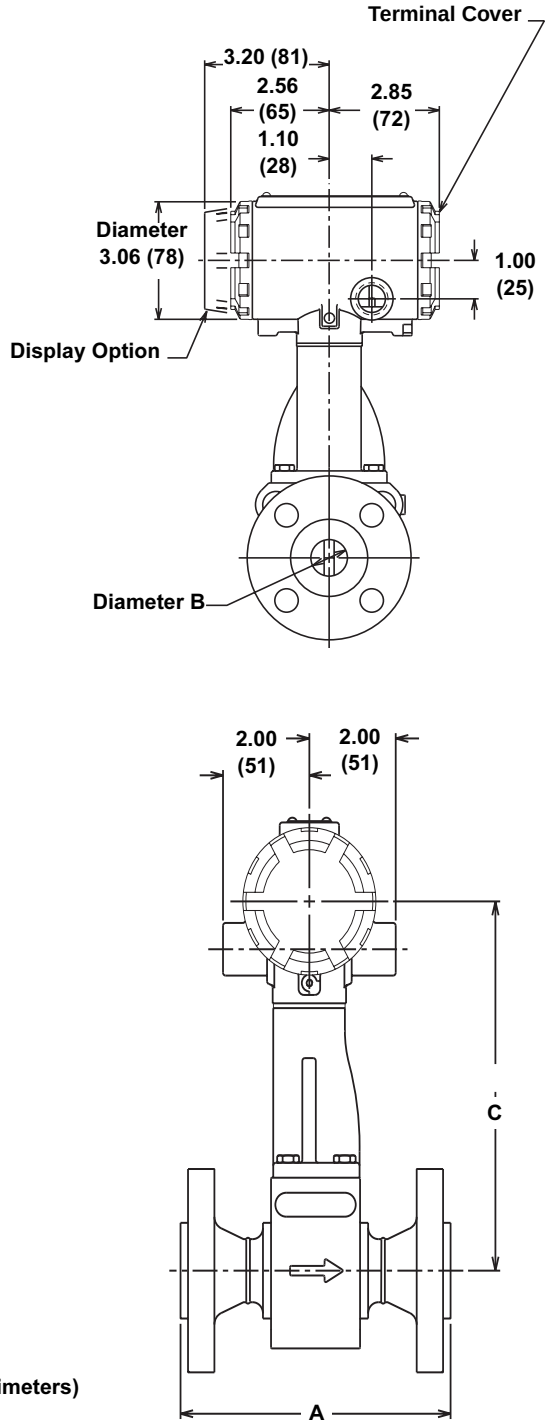
E1 Certification No. KEMA99ATEX3852X
ATEX Marking Remote Mount:
Transmitter: Ⓔx II 2(1) G
EEx d [ia]IIC T6 (-50°C ≤ Ta ≤ 70°C)
Meter Body: Ⓔx II 1 G
EEx ia IIC T6 (-50°C ≤ Ta ≤ 70°C)
ATEX Marking Integral Mount: Ⓔx II 1/2 G
EEx d [ia] IIC T6 (-50°C ≤ Ta ≤ 70°C)
CE 1180
V = 42 Vdc Max
Um = 250V

SPECIAL CONDITIONS
When the equipment is installed particular precautions must be taken to ensure, taking account with the effect of the fluid temperature, that the ambient temperature of the electrical parts of the apparatus is comprised between -50 °C and 70 °C.

The remote mounted sensor may only be connected to the transmitter with the associated cable, supplied by the manufacturer.

Dimensional Drawings

FIGURE 2. Flanged-Style Flowmeter Dimensional Drawings ($^1/_2$-through 12-in./15 through 300 mm Line Sizes)



NOTE
Dimensions are in inches (millimeters)

8800-8800_30AA, 8800_31AA.EPS

TABLE 19. Flanged-Style Flowmeter (1/2-through 2in./15 through 50 mm Line Sizes)

Nominal Size Inch (mm)	Flange Rating	Face-to-face A Inch (mm)(1)	A-ANSI RTJ Inch (mm)	Diameter B Inch (mm)(2)	C Inch (mm)(3)	Weight(4) lb (kg)
½ (15)	Class 150	6.9 (175)	–	0.54 (13,7)	7.6 (193)	9.1 (4,1)
	Class 300	7.2 (183)	7.7 (196)	0.54 (13,7)	7.6 (193)	10.4 (4,7)
	Class 600	7.7 (196)	7.7 (196)	0.54 (13,7)	7.6 (193)	10.8 (4,9)
	Class 900	8.4 (213)	8.4 (213)	0.54 (13,7)	7.6 (193)	15.3 (6,9)
	PN 16/40	6.1 (155)	–	0.54 (13,7)	7.6 (193)	10.4 (4,7)
	PN 100	6.6 (168)	–	0.54 (13,7)	7.6 (193)	12.3 (5,6)
	JIS 10K/20K	6.3 (160)	–	0.54 (13,7)	7.6 (193)	10.1 (4,5)
	JIS 40K	7.3 (185)	–	0.54 (13,7)	7.6 (193)	13.5 (6,1)
1 (25)	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)	24.3 (11,0)
	Class 1500	9.4 (239)	9.4 (239)	0.95 (24,1)	7.7 (196)	24.3 (11,0)
	PN 16/40	6.3 (160)	–	0.95 (24,1)	7.7 (196)	13.5 (6,1)
	PN 100	7.7 (195)	–	0.95 (24,1)	7.7 (196)	19.5 (8,8)
	PN 160	7.7 (195)	–	0.95 (24,1)	7.7 (196)	19.5 (8,8)
	JIS 10K/20K	6.5 (165)	–	0.95 (24,1)	7.7 (196)	13.7 (6,2)
	JIS 40K	7.9 (200)	–	0.95 (24,1)	7.7 (196)	17.4 (7,9)
1 ½ (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	9.4 (239)	9.4 (239)	1.49 (37,8)	8.1 (206)	25.3 (11,5)
	Class 900	10.4 (264)	10.4 (264)	1.49 (37,8)	8.1 (206)	36.3 (16,5)
	Class 1500	10.4 (264)	10.4 (264)	1.49 (37,8)	8.1 (206)	36.6 (16,6)
	PN 16/40	6.9 (175)	–	1.49 (37,8)	8.1 (206)	19.3 (8,8)
	PN 100	8.2 (208)	–	1.49 (37,8)	8.1 (206)	27.9 (12,7)
	PN 160	8.4 (213)	–	1.49 (37,8)	8.1 (206)	29.3 (13,3)
	JIS 10K/20K	7.3 (185)	–	1.49 (37,8)	8.1 (206)	18.6 (8,4)
	JIS 40K	8.5 (215)	–	1.49 (37,8)	8.1 (206)	25.6 (11,6)
2 (50)	Class 150	9.3 (236)	9.8 (249)	1.92 (48,8)	8.5 (216)	22.0 (10,0)
	Class 300	9.8 (249)	10.4 (264)	1.92 (48,8)	8.5 (216)	26.0 (11,8)
	Class 600	10.5 (267)	10.7 (271)	1.92 (48,8)	8.5 (216)	29.6 (13,4)
	Class 900	12.8 (325)	12.9 (328)	1.92 (48,8)	8.5 (216)	59.4 (26,9)
	Class 1500	12.8 (325)	12.9 (328)	1.67 (42,4)	8.5 (216)	59.4 (26,9)
	PN 16/40	8.0 (203)	–	1.92 (48,8)	8.5 (216)	23.0 (10,4)
	PN 64	9.2 (234)	–	1.92 (48,8)	8.5 (216)	30.6 (13,9)
	PN 100	9.6 (244)	–	1.92 (48,8)	8.5 (216)	36.4 (16,5)
	PN 160	10.2 (259)	–	1.92 (48,8)	8.5 (216)	38.7 (17,6)
	JIS 10K	7.7 (195)	–	1.92 (48,8)	8.5 (216)	19.5 (8,8)
	JIS 20K	8.3 (210)	–	1.92 (48,8)	8.5 (216)	20.1 (9,1)
	JIS 40K	9.8 (249)	–	1.92 (48,8)	8.5 (216)	28.3 (12,8)

(1) ±0.14 inch (3.6 mm)

(2) ±0.03 inch (0.8 mm)

(3) ±0.20 inch (5.1 mm)

(4) Add 0.2 lb (0,1 kg) for display option.

TABLE 20. Flanged-Style Flowmeter (3-through 6-in./80 through 150mm Line Sizes) (Refer to previous drawing)

Nominal Size Inch (mm)	Flange Rating	Face-to-face A Inch (mm)[1]	A ANSI RTJ Inch (mm)	Diameter B Inch (mm)[2]	C Inch (mm)[3]	Weight[4] lb (kg)
3 (80)	Class 150	9.9 (251)	10.4 (264)	2.87 (72,9)	9.1 (231)	36.9 (16,7)
	Class 300	10.6 (269)	11.2 (284)	2.87 (72,9)	9.1 (231)	46.1 (20,9)
	Class 600	11.4 (290)	11.5 (292)	2.87 (72,9)	9.1 (231)	52.1 (26,6)
	Class 900	12.9 (328)	13.0 (330)	2.87 (72,9)	9.1 (231)	75.5 (34,2)
	Class 1500	14.1 (358)	14.2 (361)	2.60 (66,0)	9.1 (231)	105.8 (48,0)
	PN 16/40	8.9 (226)	–	2.87 (72,9)	9.1 (231)	36.3 (16,5)
	PN 64	10.0 (254)	–	2.87 (72,9)	9.1 (231)	45.1 (20,5)
	PN 100	10.5 (267)	–	2.87 (72,9)	9.1 (231)	54.4 (24,7)
	PN 160	11.2 (284)	–	2.87 (72,9)	9.1 (231)	59.6 (27,0)
	JIS 10K	7.9 (200)	–	2.87 (72,9)	9.1 (231)	27.6 (12,5)
	JIS 20K	9.3 (235)	–	2.87 (72,9)	9.1 (231)	35.0 (15,9)
	JIS 40K	11.0 (280)	–	2.87 (72,9)	9.1 (231)	50.0 (22,7)
4 (100)	Class 150	10.3 (262)	10.8 (274)	3.79 (96,3)	9.6 (244)	50.7 (23,0)
	Class 300	11.0 (279)	11.6 (295)	3.79 (96,3)	9.6 (244)	70.8 (32,1)
	Class 600	12.8 (325)	12.9 (328)	3.79 (96,3)	9.6 (244)	96.5 (43,8)
	Class 900	13.8 (351)	13.9 (353)	3.79 (96,3)	9.6 (244)	119.7 (54,3)
	Class 1500	14.5 (368)	14.6 (371)	3.40 (86,4)	9.6 (244)	157.9 (71,6)
	PN 16	8.4 (213)	–	3.79 (96,3)	9.6 (244)	40.1 (18,2)
	PN 40	9.4 (239)	–	3.79 (96,3)	9.6 (244)	49.2 (22,3)
	PN 64	10.4 (264)	–	3.79 (96,3)	9.6 (244)	62.1 (28,2)
	PN 100	11.3 (287)	–	3.79 (96,3)	9.6 (244)	78.5 (35,6)
	PN 160	12.1 (307)	–	3.79 (96,3)	9.6 (244)	85.8 (38,9)
	JIS 10K	8.7 (220)	–	3.79 (96,3)	9.6 (244)	37.0 (16,8)
	JIS 20K	8.7 (220)	–	3.79 (96,3)	9.6 (244)	44.9 (20,4)
	JIS 40K	11.8 (300)	–	3.79 (96,3)	9.6 (244)	75.3 (34,2)
6 (150)	Class 150	11.6 (295)	12.1 (307)	5.7 (144,8)	10.8 (274)	90.0 (40,8)
	Class 300	12.4 (315)	13.0 (330)	5.7 (144,8)	10.8 (274)	129.5 (58,7)
	Class 600	14.3 (363)	14.5 (368)	5.7 (144,8)	10.8 (274)	195.5 (88,7)
	Class 900	16.1 (409)	16.2 (411)	5.14 (130,6)	10.8 (274)	253.7 (115,1)
	Class 1500	18.6 (472)	18.8 (478)	5.14 (130,6)	10.8 (274)	376.0 (170.6)
	PN 16	8.9 (226)	–	5.7 (144,8)	10.8 (274)	75.6 (34,3)
	PN 40	10.5 (267)	–	5.7 (144,8)	10.8 (274)	95.3 (43,2)
	PN 64	12.1 (307)	–	5.7 (144,8)	10.8 (274)	138.8 (63,0)
	PN 100	13.7 (348)	–	5.7 (144,8)	10.8 (274)	168.5 (76,4)
	JIS 10K	10.6 (270)	–	5.7 (144,8)	10.8 (274)	79.8 (36,2)
	JIS 20K	10.6 (270)	–	5.7 (144,8)	10.8 (274)	97.7 (44,3)
	JIS 40K	14.2 (360)	–	5.7 (144,8)	10.8 (274)	175.9 (79,8)

(1) ±0.14 inch (3.6 mm)

(2) ±0.03 inch (0.8 mm)

(3) ±0.20 inch (5.1 mm)

(4) Add 0.2 lb (0,1 kg) for display option.

TABLE 21. Flanged-Style Flowmeter (8-through 12-in./200 through 300mm Line Sizes) (Refer to previous drawing)

Nominal Size Inch (mm)	Flange Rating	Face-to-face A Inch (mm)[1]	A ANSI RTJ Inch (mm)	Diameter B Inch (mm)[2]	C Inch (mm)[3]	Weight[4] lb (kg)
8 (200)	Class 150	13.6 (345)	14.1 (358)	7.55 (191,8)	11.7 (297)	139.6 (63,3)
	Class 300	14.3 (363)	15.0 (381)	7.55 (191,8)	11.7 (297)	196.2 (89,0)
	Class 600	16.6 (422)	16.7 (424)	7.55 (191,8)	11.7 (297)	295.0 (133,8)
	Class 900	18.8 (478)	19.0 (483)	6.62 (168,1)	11.7 (297)	420.4 (190,7)
	Class 1500	22.8 (579)	23.2 (589)	6.62 (168,1)	11.7 (297)	646.0 (293,0)
	PN 10	10.5 (266)	–	7.55 (191,8)	11.7 (297)	109.6 (49,7)
	PN 16	10.5 (266)	–	7.55 (191,8)	11.7 (297)	108.5 (49,2)
	PN 25	11.9 (302)	–	7.55 (191,8)	11.7 (297)	136.3 (61,8)
	PN 40	12.5 (318)	–	7.55 (191,8)	11.7 (297)	154.8 (70,2)
	PN 64	14.2 (361)	–	7.55 (191,8)	11.7 (297)	214.6 (97,3)
	PN 100	15.8 (401)	–	7.55 (191,8)	11.7 (297)	279.9 (127)
	JIS 10K	12.2 (310)	–	7.55 (191,8)	11.7 (297)	109.9 (49,9)
	JIS 20K	12.2 (310)	–	7.55 (191,8)	11.7 (297)	134.3 (60,9)
	JIS 40K	16.5 (420)	–	7.55 (191,8)	11.7 (297)	255.7 (116)
10 (250)	Class 150	14.6 (371)	15.1 (384)	9.56 (243)	12.8 (325)	197.2 (89)
	Class 300	15.8 (401)	16.4 (417)	9.56 (243)	12.8 (325)	285.2 (129)
	Class 600	19.1 (485)	19.2 (488)	9.56 (243)	12.8 (325)	475.3 (216)
	PN 10	11.9 (302)	–	9.56 (243)	12.8 (325)	156.3 (71)
	PN 16	12.1 (307)	–	9.56 (243)	12.8 (325)	161.1 (73)
	PN 25	13.5 (343)	–	9.56 (243)	12.8 (325)	197.4 (90)
	PN 40	14.8 (376)	–	9.56 (243)	12.8 (325)	245.3 (111)
	PN 64	16.4 (417)	–	9.56 (243)	12.8 (325)	306.3 (139)
	PN 100	18.9 (480)	–	9.56 (243)	12.8 (325)	443.0 (201)
	JIS 10K	14.6 (371)	–	9.56 (243)	12.8 (325)	173.3 (79)
	JIS 20K	14.6 (371)	–	9.56 (243)	12.8 (325)	220.5 (100)
	JIS 40K	18.1 (460)	–	9.56 (243)	12.8 (325)	377.3 (171)
12 (300)	Class 150	16.8 (427)	17.3 (439)	11.38 (289)	13.7 (348)	296.0 (134)
	Class 300	18.0 (457)	18.7 (475)	11.38 (289)	13.7 (348)	413.2 (187)
	Class 600	20.5 (521)	20.7 (526)	11.38 (289)	13.7 (348)	592.2 (269)
	PN 10	13.2 (335)	–	11.38 (289)	13.7 (348)	203.1 (92)
	PN 16	13.9 (353)	–	11.38 (289)	13.7 (348)	223.4 (101)
	PN 25	15.0 (381)	–	11.38 (289)	13.7 (348)	267.8 (121)
	PN 40	16.9 (429)	–	11.38 (289)	13.7 (348)	345.7 (157)
	PN 64	18.8 (478)	–	11.38 (289)	13.7 (348)	428.5 (194)
	PN 100	21.2 (538)	–	11.38 (289)	13.7 (348)	640.8 (291)
	JIS 10K	15.7 (399)	–	11.38 (289)	13.7 (348)	224.5 (102)
	JIS 20K	15.7 (399)	–	11.38 (289)	13.7 (348)	287.1 (130)
	JIS 40K	19.7 (500)	–	11.38 (289)	13.7 (348)	504.7 (229)

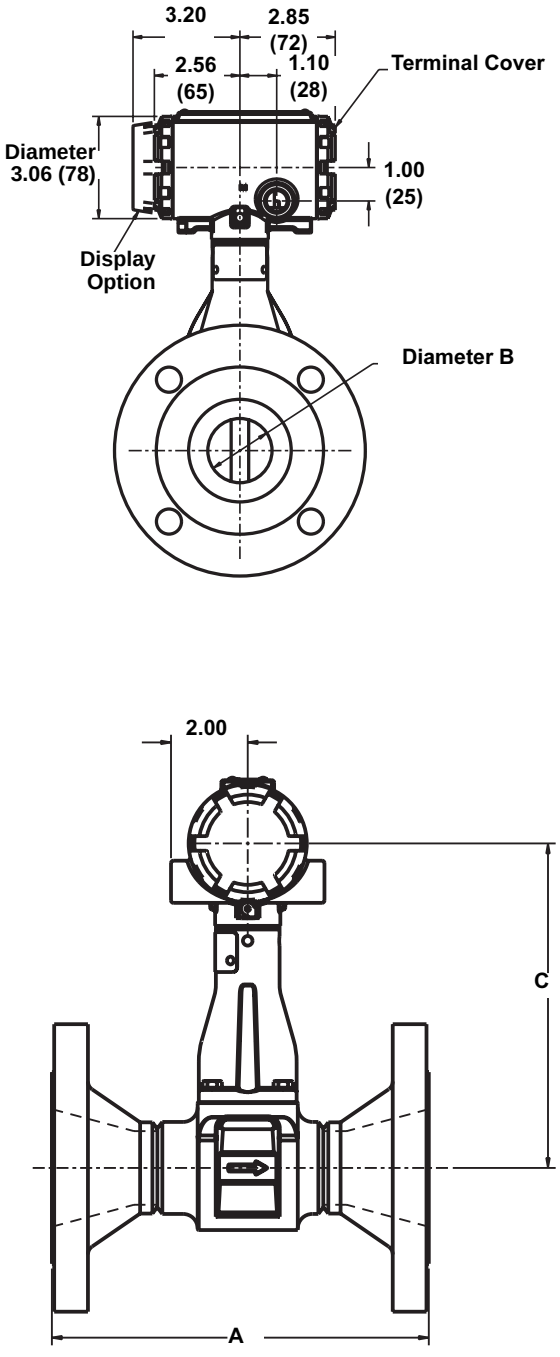
(1) ±0.14 inch (3.6 mm)

(2) ±0.03 inch (0.8 mm)

(3) ±0.20 inch (5.1 mm)

(4) Add 0.2 lb (0,1 kg) for display option.

FIGURE 3. Rosemount 8800CR Reducer™ Flowmeter Dimensional Drawings (1-through 12-in./25 through 300 mm Line Sizes)



NOTE
Dimensions are in inches (millimeters)

8800_22a, 8800_22ab

TABLE 22. Reducer Flowmeter (1-through 3in./25 through 80 mm Line Sizes)

Nominal Size Inch (mm)	Flange Rating	Face-to-face A Inch (mm)(1)	A-ANSI RTJ Inch (mm)	Diameter B Inch (mm)(2)	C Inch (mm)(3)	Weight(4) 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	6.3 (160)	–	0.54 (13,7)	7.6 (193)	12.64 (5,73)
	PN 100	7.7 (195)	–	0.54 (13,7)	7.6 (193)	18.44 (8,36)
	PN160	7.7 (195)	–	0.54 (13,7)	7.6 (193)	18.44 (8,36)
1 ½ (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	9.4 (239)	9.4 (239)	0.95 (24,1)	7.7 (196)	23.77 (10,78)
	Class 900	10.4 (264)	10.4 (264)	0.95 (24,1)	7.7 (196)	34.98 (15,87)
	PN 16/40	6.9 (175)	–	0.95 (24,1)	7.7 (196)	17.50 (7,94)
	PN 100	8.2 (208)	–	0.95 (24,1)	7.7 (196)	26.20 (11,88)
	PN 160	8.4 (213)	–	0.95 (24,1)	7.7 (196)	27.67 (12,55)
2 (50)	Class 150	9.3 (236)	9.8 (249)	1.49 (37,8)	8.1 (206)	22.61 (10,26)
	Class 300	9.8 (249)	10.4 (264)	1.49 (37,8)	8.1 (206)	26.76 (12,14)
	Class 600	10.5 (267)	10.7 (271)	1.49 (37,8)	8.1 (206)	30.59 (13,88)
	Class 900	12.8 (325)	12.9 (328)	1.49 (37,8)	8.1 (206)	60.76 (27,56)
	PN 16/40	8.0 (203)	–	1.49 (37,8)	8.1 (206)	23.52 (10,67)
	PN 64	9.2 (234)	–	1.49 (37,8)	8.1 (206)	31.28 (14,19)
	PN 100	9.6 (244	–	1.49 (37,8)	8.1 (206)	37.25 (16,90)
	PN 160	10.2 (259)	–	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)	–	1.92 (48,8)	8.5 (216)	33.30 (15,10)
	PN 64	10.0 (254)	–	1.92 (48,8)	8.5 (216)	42.45 (19,25)
	PN 100	10.5 (267)	–	1.92 (48,8)	8.5 (216)	52.21 (23,68)
	PN 160	11.2 (284)	–	1.92 (48,8)	8.5 (216)	57.94 (26,28)

(1) ±0.14 inch (3.6 mm)

(2) ±0.03 inch (0.8 mm)

(3) ±0.20 inch (5.1 mm)

(4) Add 0.2 lb (0,1 kg) for display option.

TABLE 23. Reducer Flowmeter (4-through 12-in./100 through 300mm Line Sizes) (Refer to previous drawing)

Nominal Size Inch (mm)	Flange Rating	Face-to-face A Inch (mm)(1)	A ANSI RTJ Inch (mm)	Diameter B Inch (mm)(2)	C Inch (mm)(3)	Weight(4) 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)	–	2.87 (72,9)	9.1 (231)	36.36 (16,49)
	PN 40	9.4 (239)	–	2.87 (72,9)	9.1 (231)	45.89 (20,81)
	PN 64	10.4 (264)	–	2.87 (72,9)	9.1 (231)	59.72 (27,09)
	PN 100	11.3 (287)	–	2.87 (72,9)	9.1 (231)	76.73 (34,80)
	PN 160	12.1 (307)	–	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	12.4 (315	13.0 (330)	3.79 (96,3)	9.6 (244)	113.09 (51,30)
	Class 600	14.3 (363)	14.5 (368)	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)	–	3.79 (96,3)	9.6 (244)	59.20 (26,85)
	PN 40	10.5 (267)	–	3.79 (96,3)	9.6 (244)	81.94 (37,17)
	PN 64	12.1 (307)	–	3.79 (96,3)	9.6 (244)	125.36 (56,86)
	PN 100	13.7 (348)	–	3.79 (96,3)	9.6 (244)	162.29 (73,61)
	PN 160	14.7 (373)	–	3.79 (96,3)	9.6 (244)	187.91 (85,23)
8 (200)	Class 150	13.6 (345)	14.1 (358)	5.70 (144,8)	10.8 (274)	133.14 (60,39)
	Class 300	14.3 (363)	15.0 (381)	5.70 (144,8)	10.8 (274)	195.54 (88,69)
	Class 600	16.6 (422)	16.7 (424)	5.70 (144,8)	10.8 (274)	305.18 (138,43)
	PN 10	10.5 (266)	–	5.70 (144,8)	10.8 (274)	100.92 (45,78)
	PN 16	10.5 (266)	–	5.70 (144,8)	10.8 (274)	100.92 (45,78)
	PN 25	11.9 (302)	–	5.70 (144,8)	10.8 (274)	134.05 (60,80)
	PN 40	12.5 (318)	–	5.70 (144,8)	10.8 (274)	155.00 (70,31)
	PN 64	14.2 (361)	–	5.70 (144,8)	10.8 (274)	220.68 (100,10)
	PN 100	15.8 (401)	–	5.70 (144,8)	10.8 (274)	292.93 (132,87)
10 (250)	Class 150	14.6 (371)	15.1 (384)	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	19.1 (485)	19.2 (488)	7.55 (191,8)	11.7 (297)	489.89 (222,21)
	PN 10	11.9 (302)	–	7.55 (191,8)	11.7 (297)	138.63 (62,88)
	PN 16	12.1 (307)	–	7.55 (191,8)	11.7 (297)	148.58 (67,39)
	PN 25	13.5 (343)	–	7.55 (191,8)	11.7 (297)	191.00 (86,64)
	PN 40	14.8 (376)	–	7.55 (191,8)	11.7 (297)	245.85 (111,52)
	PN 64	16.4 (417)	–	7.55 (191,8)	11.7 (297)	314.13 (142,49)
	PN 100	18.9 (480)	–	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)	18.7 (475)	9.56 (242,8)	12.8 (325)	412.18 (186,96)
	Class 600	20.5 (521)	20.7 (526)	9.56 (242,8)	12.8 (325)	609.89 (296,64)
	PN 10	13.2 (335)	–	9.56 (242,8)	12.8 (325)	188.28 (85,40)
	PN 16	13.9 (353)	–	9.56 (242,8)	12.8 (325)	211.79 (96,07)
	PN 25	15.0 (381)	–	9.56 (242,8)	12.8 (325)	262.45 (119,05)
	PN 40	16.9 (429)	–	9.56 (242,8)	12.8 (325)	349.92 (158,72)
	PN 64	18.8 (478)	–	9.56 (242,8)	12.8 (325)	444.21 (201,49)
	PN 100	21.2 (538)	–	9.56 (242,8)	12.8 (325)	672.07 (304,85)

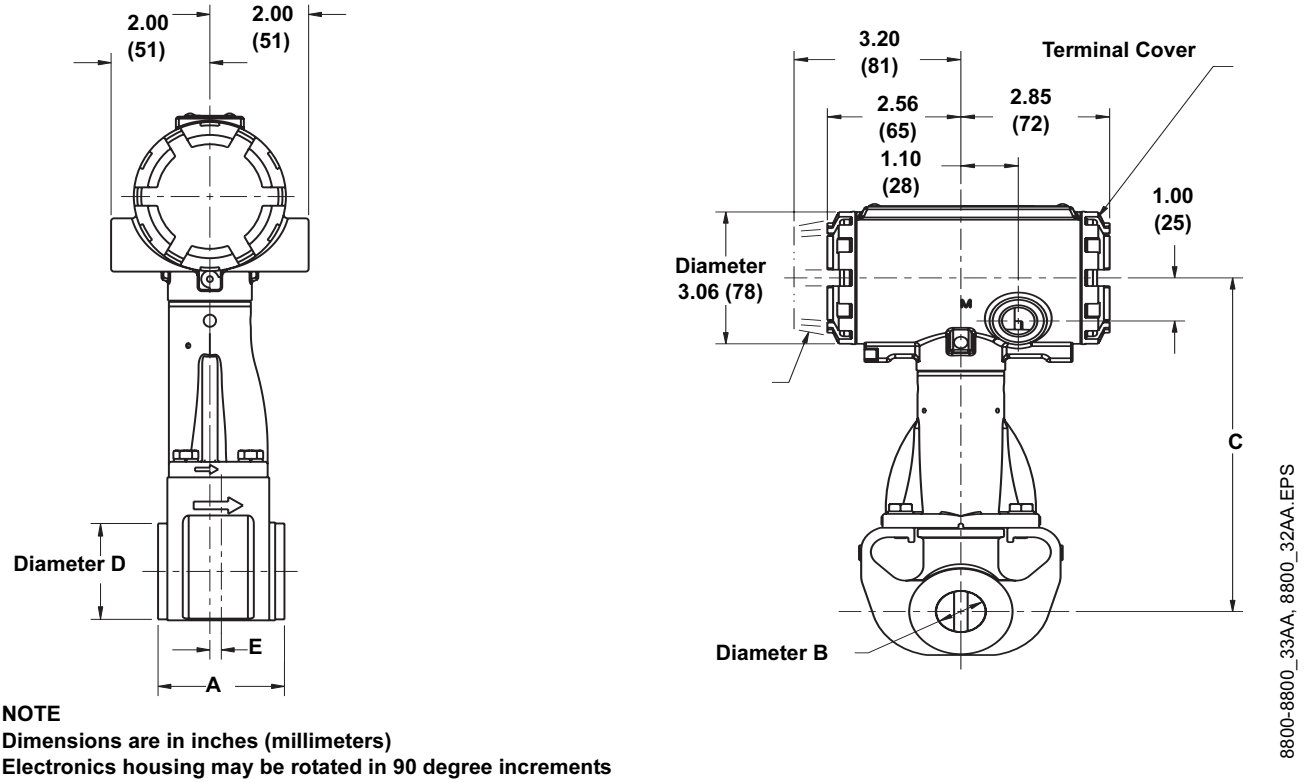
(1) ±0.14 inch (3.6 mm)

(2) ±0.03 inch (0.8 mm)

(3) ±0.20 inch (5.1 mm)

(4) Add 0.2 lb (0,1 kg) for display option.

FIGURE 4. Wafer-Style Dimensional Drawings (1/2-through 8 in./15 through 200 mm Line Sizes)



NOTE
Dimensions are in inches (millimeters)
Electronics housing may be rotated in 90 degree increments

TABLE 24. Rosemount 8800C Wafer-Style Meter

Nominal Size Inch (mm)	Face-to-face A Inch (mm)(1)	Diameter B Inch (mm)(2)	C Inch (mm)(3)	Diameter D Inch (mm)	E Inch (mm)	Weight lb (kg)(4)
½ (15)	2.56 (65)	0.54 (13,7)	7.63 (194)	1.38 (35,1)	0.23 (5,9)	7.3 (3,3)
1 (25)	2.56 (65)	0.95 (24,1)	7.74 (197)	1.98 (50,3)	0.23 (5,9)	7.4 (3,4)
1½ (40)	2.56 (65)	1.49 (37,8)	8.14 (207)	2.87 (72,9)	0.18 (4,6)	10.0 (4,5)
2 (50)	2.56 (65)	1.92 (49)	8.85 (225)	3.86 (98)	0.12 (3)	10.6 (4,8)
3 (80)	2.56 (65)	2.87 (73)	9.62 (244)	5.00 (127)	0.25 (6)	13.6 (6,2)
4 (100)	3.42 (87)	3.79 (96)	10.48 (266)	6.20 (158)	0.44 (11)	21.4 (9,7)
6 (150)	4.99 (127)	5.70 (145)	10.75 (273)	8.50 (216)	1.11 (28)	49.1 (22,3)
8 (200)	6.60 (168)	7.55 (192)	11.67 (296)	10.62 (270)	0.89 (23)	85 (38,6)

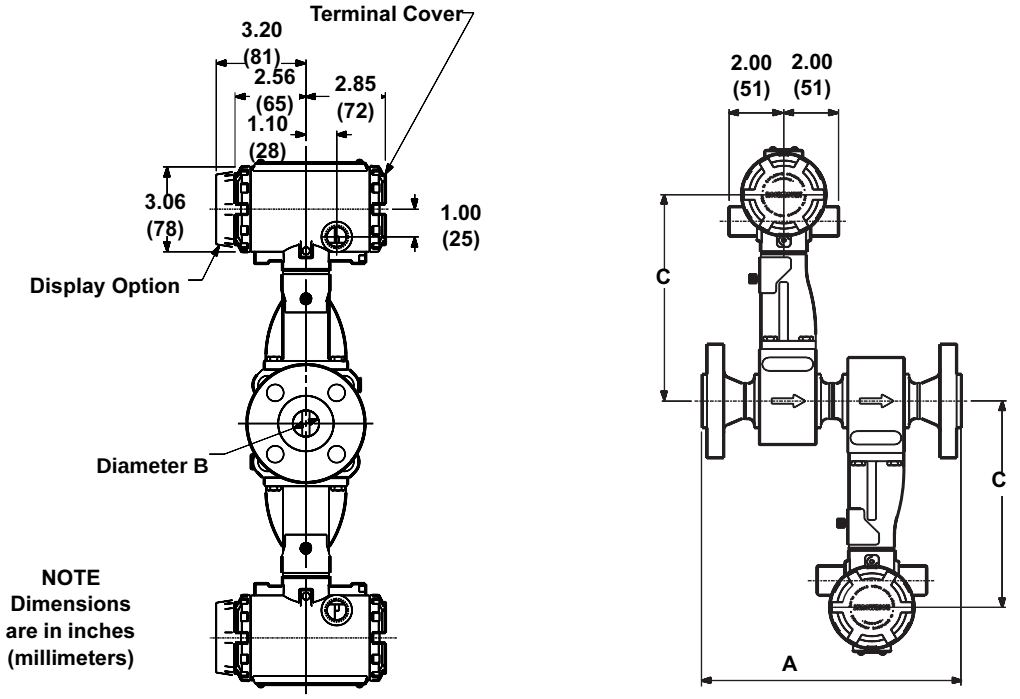
(1) ±0.14 inch (3.6 mm)

(2) ±0.03 inch (0.8 mm)

(3) ±0.20 inch (5.1 mm)

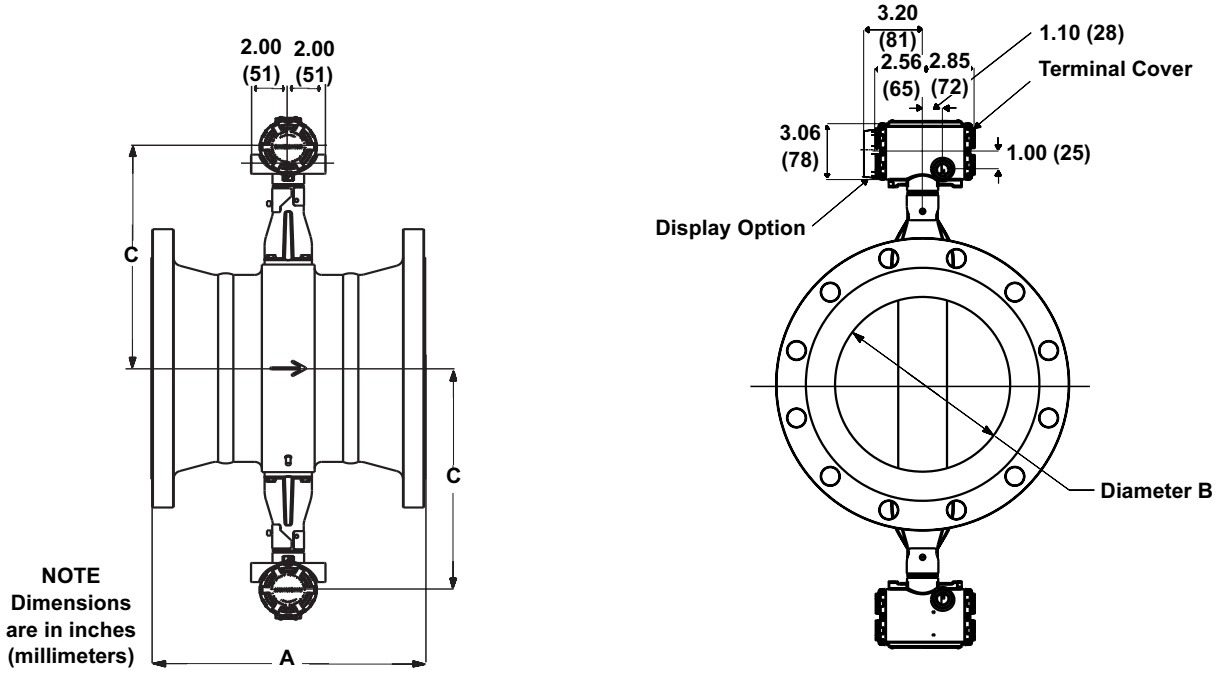
(4) Add 0.2 lb (0,1 kg) for display option.

FIGURE 5. Vortex Dual-Sensor Style Flowmeter Dimensional Drawings
(6 - 8 in (150 - 200mm) with 900# or 1500# flanges. See Figure 6.)



8800-0006A01A, 0006B01A

FIGURE 6. Vortex Dual-Sensor Style Flowmeter Dimensional Drawings
(6 - 8 in (150 - 200mm) with 900# or 1500# flanges and all 10 - 12 in. (250-300mm) line sizes)



8800C-8800C_01, 8800C_02

TABLE 25. Vortex Dual-Sensor Style Flowmeter (1/2-through 3-in./15 through 80 mm Line Sizes)

Nominal Size Inch (mm)	Flange Rating	Face-to-face A Inch (mm)(1)	A ANSI RTJ Inch (mm)	Diameter B Inch (mm)(2)	C Inch (mm)(3)	Weight lb (kg)(4)
½ (15)	Class 150	12.0 (305)	–	0.54 (13,7)	7.6 (193)	16.2 (7,4)
	Class 300	12.3 (312)	12.8 (325)	0.54 (13,7)	7.6 (193)	17.4 (7,9)
	Class 600	12.8 (325)	12.8 (325)	0.54 (13,7)	7.6 (193)	17.9 (8,1)
	Class 900	13.5 (343)	13.5 (343)	0.54 (13,7)	7.6 (193)	22.4 (10.2)
	PN 16/40	11.2 (284)	–	0.54 (13,7)	7.6 (193)	17.2 (7,8)
	PN 100	11.8 (300)	–	0.54 (13,7)	7.6 (193)	19.2 (8,7)
	JIS 10K/20K	11.4 (290)	–	0.54 (13,7)	7.6 (193)	17.1 (7,8)
	JIS 40K	12.4 (315)	–	0.54 (13,7)	7.6 (193)	20.6 (9,3)
1 (25)	Class 150	15.1 (384)	15.6 (396)	0.95 (24,1)	7.7 (196)	19.8 (9,0)
	Class 300	15.6 (396)	16.1 (409)	0.95 (24,1)	7.7 (196)	22.5 (10,2)
	Class 600	16.1 (409)	16.1 (409)	0.95 (24,1)	7.7 (196)	23.3 (10,6)
	Class 900	17.0 (432)	17.0 (432)	0.95 (24,1)	7.7 (196)	31.8 (14,4)
	Class 1500	17.0 (432)	17.0 (432)	0.95 (24,1)	7.7 (196)	31.8 (14,4)
	PN 16/40	13.9 (353)	–	0.95 (24,1)	7.7 (196)	21.0 (9,5)
	PN 100	15.3 (389)	–	0.95 (24,1)	7.7 (196)	27.0 (12,3)
	PN 160	15.3 (389)	–	0.95 (24,1)	7.7 (196)	27.0 (12,3)
	JIS 10K/20K	14.1 (358)	–	0.95 (24,1)	7.7 (196)	22.1 (10,0)
	JIS 40K	15.5 (394)	–	0.95 (24,1)	7.7 (196)	25.8 (11,7)
1 ½ (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	12.5 (318)	12.5 (318)	1.49 (37,8)	8.1 (206)	34.8 (15,8)
	Class 900	13.5 (343)	13.5 (343)	1.49 (37,8)	8.1 (206)	45.7 (20,7)
	Class 1500	13.5 (343)	13.5 (343)	1.49 (37,8)	8.1 (206)	45.7 (20,7)
	PN 16/40	10.0 (254)	–	1.49 (37,8)	8.1 (206)	28.7 (13,0)
	PN 100	11.3 (287)	–	1.49 (37,8)	8.1 (206)	37.4 (17,0)
	PN 160	11.5 (292)	–	1.49 (37,8)	8.1 (206)	38.8 (17,6)
	JIS 10K/20K	10.4 (264)	–	1.49 (37,8)	8.1 (206)	27.9 (12,6)
	JIS 40K	11.5 (292)	–	1.49 (37,8)	8.1 (206)	34.9 (15,8)
2 (50)	Class 150	13.0 (330)	13.6 (345)	1.92 (48,8)	8.5 (216)	31.9 (14,5)
	Class 300	13.6 (345)	14.1 (358)	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)	39.5 (17,9)
	Class 900	16.6 (422)	16.7 (424)	1.92 (48,8)	8.5 (216)	69.2 (31,4)
	Class 1500	15.6 (396)	15.7 (399)	1.67 (42.4)	8.5 (216)	72.0 (32.6)
	PN 16/40	11.8 (300)	–	1.92 (48,8)	8.5 (216)	32.9 (14,9)
	PN 64	12.9 (328)	–	1.92 (48,8)	8.5 (216)	40.5 (18,4)
	PN 100	13.4 (340)	–	1.92 (48,8)	8.5 (216)	46.2 (21,0)
	PN 160	14.0 (356)	–	1.92 (48,8)	8.5 (216)	48.5 (22,0)
	JIS 10K	11.5 (292)	–	1.92 (48,8)	8.5 (216)	29.1 (13,2)
	JIS 20K	12.1 (307)	–	1.92 (48,8)	8.5 (216)	29.7 (13,5)
	JIS 40K	13.6 (345)	–	1.92 (48,8)	8.5 (216)	37.9 (17,2)
3 (80)	Class 150	14.3 (363)	14.8 (376)	2.87 (72,9)	9.1 (231)	50.3 (22,8)
	Class 300	15.0 (381)	15.7 (399)	2.87 (72,9)	9.1 (231)	59.5 (27,0)
	Class 600	15.8 (401)	15.8 (401)	2.87 (72,9)	9.1 (231)	65.5 (29,7)
	Class 900	17.3 (439)	17.4 (442)	2.87 (72,9)	9.1 (231)	88.9 (40,3)
	Class 1500	18.5 (470)	18.6 (472)	2.60 (66.0)	9.1 (232)	123.0 (55.8)
	PN 16/40	13.4 (340)	–	2.87 (72,9)	9.1 (231)	49.7 (22,5)
	PN 64	14.5 (367)	–	2.87 (72,9)	9.1 (231)	58.5 (26,5)
	PN 100	14.9 (378)	–	2.87 (72,9)	9.1 (231)	67.8 (30,8)
	PN 160	15.6 (396)	–	2.87 (72,9)	9.1 (231)	73.0 (33,1)
	JIS 10K	12.3 (312)	–	2.87 (72,9)	9.1 (231)	41.0 (18,6)
	JIS 20K	13.7 (348)	–	2.87 (72,9)	9.1 (231)	48.4 (22,0)
	JIS 40K	15.5 (394)	–	2.87 (72,9)	9.1 (231)	63.4 (28,8)

(1) ±0.14 inch (3.6 mm)

(2) ±0.03 inch (0.8 mm)

(3) ±0.20 inch (5.1 mm)

(4) Add 0.4 lb (0,2 kg) for display option.

TABLE 26. Vortex Dual-Sensor Style Flowmeter (4- through 12-in./100 through 300 mm Line Sizes)

Nominal Size Inch (mm)	Flange Rating	Face-to-face A Inch (mm)[1]	A ANSI RTJ Inch (mm)	Diameter B Inch (mm)[2]	C Inch (mm)[3]	Weight lb (kg)[4]
4 (100)	Class 150	15.2 (386)	15.7 (399)	3.79 (96,3)	9.6 (244)	68.1 (30,9)
	Class 300	16.0 (406)	16.6 (422)	3.79 (96,3)	9.6 (244)	88.2 (40,0)
	Class 600	17.7 (450)	17.7 (450)	3.79 (96,3)	9.6 (244)	113.9 (51,7)
	Class 900	18.7 (475)	18.9 (480)	3.79 (96,3)	9.6 (244)	137.1 (62,2)
	Class 1500	20.0 (509)	20.2 (512)	3.40 (86.4)	9.6 (244)	182 (82.6)
	PN 16	13.3 (338)	–	3.79 (96,3)	9.6 (244)	57.6 (26,1)
	PN 40	14.4 (366)	–	3.79 (96,3)	9.6 (244)	66.6 (30,2)
	PN 64	15.4 (391)	–	3.79 (96,3)	9.6 (244)	79.6 (36,1)
	PN 100	16.3 (414)	–	3.79 (96,3)	9.6 (244)	95.9 (43,5)
	PN 160	17.1 (434)	–	3.79 (96,3)	9.6 (244)	103.2 (46,8)
	JIS 10K	13.6 (345)	–	3.79 (96,3)	9.6 (244)	55.4 (25,1)
	JIS 20K	13.6 (345)	–	3.79 (96,3)	9.6 (244)	63.2 (28,7)
	JIS 40K	16.8 (427)	–	3.79 (96,3)	9.6 (244)	93.7 (42,5)
6 (150)	Class 150	19.4 (493)	19.9 (505)	5.7 (144,8)	10.8 (274)	126.4 (57,3)
	Class 300	20.2 (513)	20.8 (528)	5.7 (144,8)	10.8 (274)	165.9 (75,3)
	Class 600	22.2 (564)	22.3 (566)	5.7 (144,8)	10.8 (274)	231.9 (105,2)
	Class 900	16.1 (409)	16.2 (411)	5.14 (130.6)	10.8 (274)	266 (120.6)
	Class 1500	18.6 (472)	18.8 (478)	5.14 (130.6)	10.8 (274)	378 (171.4)
	PN 16	16.8 (427)	–	5.7 (144,8)	10.8 (274)	112.0 (50,8)
	PN 40	18.3 (465)	–	5.7 (144,8)	10.8 (274)	131.7 (59,7)
	PN 64	19.9 (505)	–	5.7 (144,8)	10.8 (274)	175.2 (79,5)
	PN 100	21.5 (546)	–	5.7 (144,8)	10.8 (274)	204.8 (92,9)
	JIS 10K	18.5 (470)	–	5.7 (144,8)	10.8 (274)	124.0 (56,2)
	JIS 20K	18.5 (470)	–	5.7 (144,8)	10.8 (274)	141.9 (64,4)
	JIS 40K	22.0 (559)	–	5.7 (144,8)	10.8 (274)	220.1 (99,8)
8 (200)	Class 150	24.0 (610)	24.5 (622)	7.55 (191,8)	11.7 (297)	190.1 (86,2)
	Class 300	24.8 (630)	25.4 (645)	7.55 (191,8)	11.7 (297)	246.7 (111,9)
	Class 600	27.0 (686)	27.1 (688)	7.55 (191,8)	11.7 (297)	345.5 (156,7)
	Class 900	18.4 (467)	19.0 (483)	6.62 (168,1)	11.7 (297)	479 (217.3)
	Class 1500	22.8 (580)	23.2 (589)	6.62 (168,1)	11.7 (297)	637 (288.9)
	PN 10	20.9 (531)	–	7.55 (191,8)	11.7 (297)	160.2 (72,7)
	PN 16	20.9 (531)	–	7.55 (191,8)	11.7 (297)	159.0 (72,1)
	PN 25	22.3 (566)	–	7.55 (191,8)	11.7 (297)	186.9 (83,4)
	PN 40	22.9 (582)	–	7.55 (191,8)	11.7 (297)	205.4 (93,2)
	PN 64	24.7 (627)	–	7.55 (191,8)	11.7 (297)	265.1 (120,2)
	PN 100	26.3 (668)	–	7.55 (191,8)	11.7 (297)	330.4 (149,9)
	JIS 10K	22.6 (574)	–	7.55 (191,8)	11.7 (297)	178.2 (80,8)
	JIS 20K	22.6 (574)	–	7.55 (191,8)	11.7 (297)	202.6 (91,9)
	JIS 40K	27.0 (686)	–	7.55 (191,8)	11.7 (297)	324.0 (147,0)
10 (250)	Class 150	14.6 (371)	15.1 (384)	9.56 (243)	12.8 (325)	201.5 (91)
	Class 300	15.8 (401)	16.4 (417)	9.56 (243)	12.8 (325)	289.5 (131)
	Class 600	19.1 (485)	19.2 (488)	9.56 (243)	12.8 (325)	479.6 (218)
	PN 10	11.9 (302)	–	9.56 (243)	12.8 (325)	160.6 (73)
	PN 16	12.1 (307)	–	9.56 (243)	12.8 (325)	165.4 (75)
	PN 25	13.5 (343)	–	9.56 (243)	12.8 (325)	210.7 (96)
	PN 40	14.8 (376)	–	9.56 (243)	12.8 (325)	249.6 (113)
	PN 64	16.4 (417)	–	9.56 (243)	12.8 (325)	310.6 (141)
	PN 100	18.9 (480)	–	9.56 (243)	12.8 (325)	447.3 (203)
	JIS 10K	14.6 (371)	–	9.56 (243)	12.8 (325)	177.6 (81)
	JIS 20K	14.6 (371)	–	9.56 (243)	12.8 (325)	224.8 (102)
	JIS 40K	18.1 (460)	–	9.56 (243)	12.8 (325)	381.6 (173)
12 (300)	Class 150	16.8 (427)	17.3 (439)	11.38 (289)	13.7 (348)	300.3 (136)
	Class 300	18.0 (457)	18.7 (475)	11.38 (289)	13.7 (348)	417.5 (189)
	Class 600	20.5 (521)	20.7 (526)	11.38 (289)	13.7 (348)	596.5 (271)
	PN 10	13.2 (335)	–	11.38 (289)	13.7 (348)	207.4 (94)
	PN 16	13.9 (353)	–	11.38 (289)	13.7 (348)	227.7 (103)
	PN 25	15.0 (381)	–	11.38 (289)	13.7 (348)	272.1 (123)
	PN 40	16.9 (429)	–	11.38 (289)	13.7 (348)	350.0 (159)
	PN 64	18.8 (478)	–	11.38 (289)	13.7 (348)	432.8 (196)
	PN 100	21.2 (538)	–	11.38 (289)	13.7 (348)	645.1 (293)
	JIS 10K	15.7 (399)	–	11.38 (289)	13.7 (348)	228.8 (104)
	JIS 20K	15.7 (399)	–	11.38 (289)	13.7 (348)	291.4 (132)
	JIS 40K	19.7 (500)	–	11.38 (289)	13.7 (348)	508.9 (231)

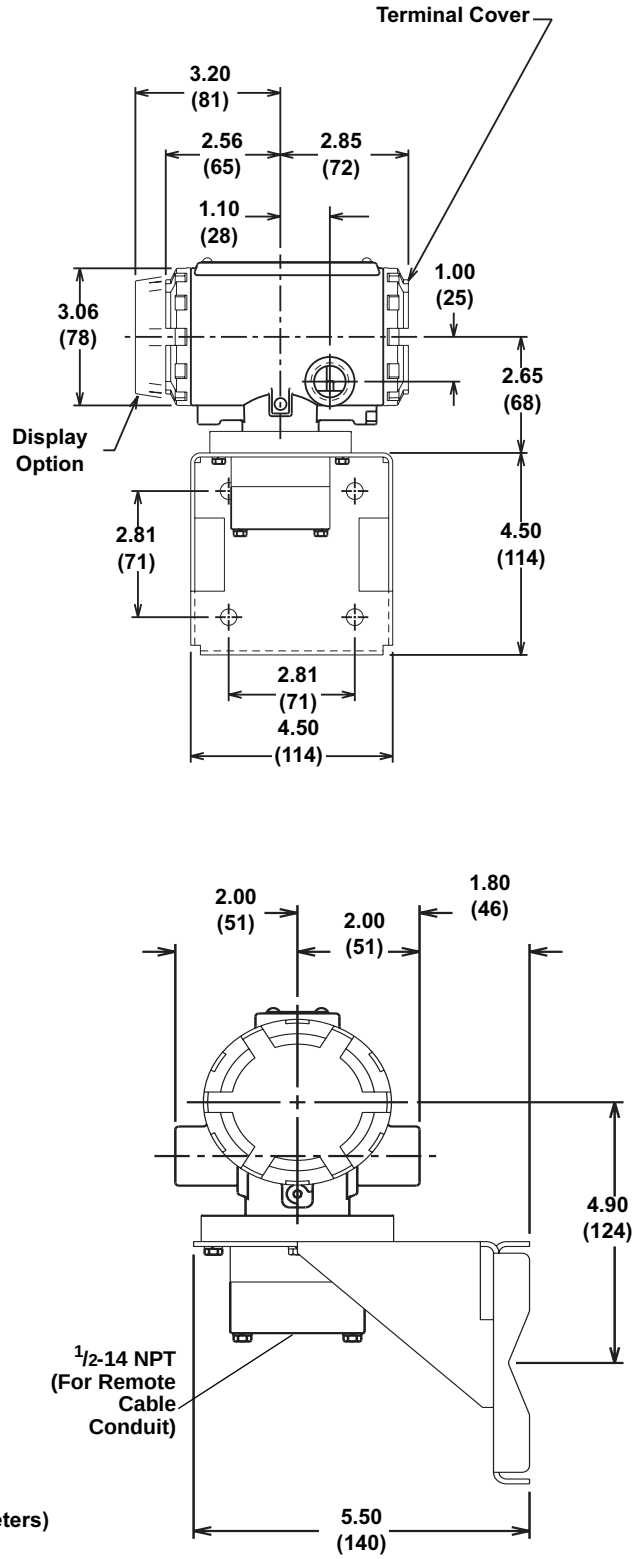
(1) ±0.14 inch (3.6 mm)

(2) ±0.03 inch (0.8 mm)

(3) ±0.20 inch (5.1 mm)

(4) Add 0.4 Lb (0,2 kg) for display option.

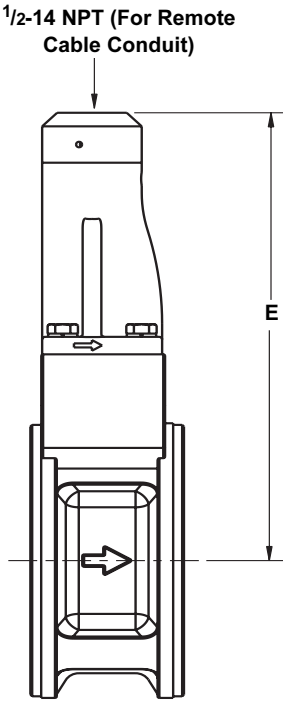
FIGURE 7. Dimensional Drawings for Remote Mount Transmitters



NOTE
Dimensions are in inches (millimeters)

8800-8800_34AA, 8800_35AA.EPS

FIGURE 8. Dimensional Drawings for Remote Mount Wafer-Style Flowmeters
($^1/_2$-through 8-inch/15 through 200 mm Line Sizes)



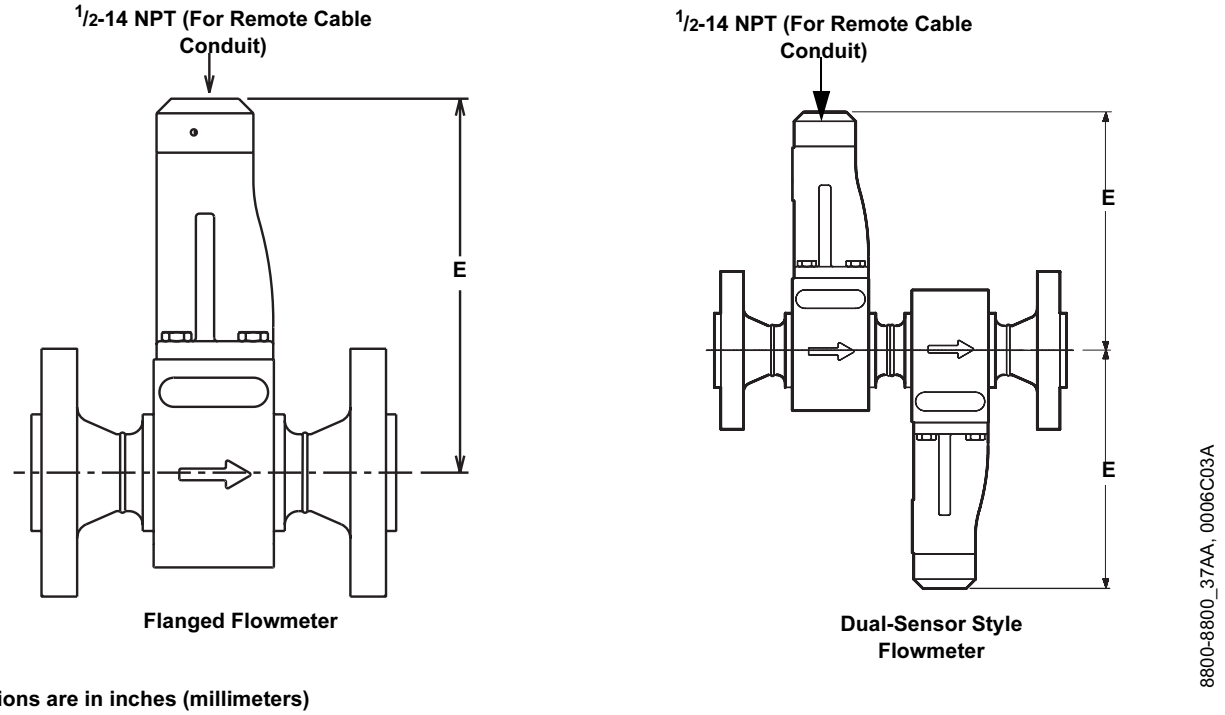
8800-8800_36AA.EPS

NOTE
Dimensions are in inches (millimeters)

TABLE 27. Rosemount 8800C Wafer-Style Meter

Nominal Size Inch (mm)	E Wafer Style Inch (mm)
½ (15)	6.4 (163)
1 (25)	6.5 (165)
1½ (40)	6.9 (175)
2 (50)	7.6 (193)
3 (80)	8.3 (211)
4 (100)	9.2 (234)
6 (150)	9.5 (241)
8 (200)	10.4 (264)

FIGURE 9. Dimensional Drawings for Flanged-and Dual Sensor Flanged-Style Remote Mount Flowmeters ($^1/_2$-through 12-inch/15 through 300 mm Line Sizes)



NOTE
Dimensions are in inches (millimeters)

TABLE 28. Remote Mount, Flanged-and Dual Sensor Flowmeter Dimensions

Nominal Size Inch (mm)	E Flange Style Inch (mm)
½ (15)	6.4 (162)
1 (25)	6.5 (165)
1½ (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)

Ordering Information

Model	Product Description
8800C	Vortex Flowmeter
Code	**Meter Style**
W	Wafer style
F	Flanged style
R	Reducer Style (Flanged style only)
D	Dual-sensor style (Flanged style only)
Code	**Line Size**
005	1/2 Inch (15 mm) (Not available for Rosemount 8800CR)
010	1 Inch (25 mm)
015	1 1/2 Inches (40 mm)
020	2 Inches (50 mm)
030	3 Inches (80 mm)
040	4 Inches (100 mm)
060	6 Inches (150 mm)
080	8 Inches (200 mm)
100	10 Inches (250mm)
120	12 Inches (300mm)
Code	**Wetted Materials**
S	316L wrought stainless and CF-3M cast stainless
H	UNS N06022 wrought Nickel Alloy; CW2M cast Nickel Alloy *Note: See Table 29 on page 38*
	Other wetted materials are available. Consult factory for details.
Code	**Flange or Alignment Ring Size**
A1	ASME B16.5 (ANSI) RF Class 150
A3	ASME B16.5 (ANSI) RF Class 300
A6	ASME B16.5 (ANSI) RF Class 600
A7(1)	ASME B16.5 (ANSI) RF Class 900
A8(2)	ASME B16.5 (ANSI) RF Class 1500
B1	ASME B16.5 (ANSI) RTJ Class 150 for flange-style only
B3	ASME B16.5 (ANSI) RTJ Class 300 for flange-style only
B6	ASME B16.5 (ANSI) RTJ Class 600 for flange-style only
B7(1)	ASME B16.5 (ANSI) RTJ Class 900 for flange-style only
B8(2)	ASME B16.5 (ANSI) RTJ Class 1500 for flange-style only
C1	ASME B16.5 (ANSI) RF Class 150, smooth finish
C3	ASME B16.5 (ANSI) RF Class 300, smooth finish
C6	ASME B16.5 (ANSI) RF Class 600, smooth finish
C7(1)	ASME B16.5 (ANSI) RF Class 900, smooth finish
D0	DIN PN 10 2526-Type D
D1	DIN PN 16 (PN 10/16 for wafer-style)2526-Type D
D2	DIN PN 25 2526-Type D
D3	DIN PN 40 (PN 25/40 for wafer-style) 2526-Type D
D4	DIN PN 64 2526-Type D
D6	DIN PN 100 2526-Type D
D7(1)	DIN PN 160 2526-Type D
G0	DIN PN 10 2512-Type N for flange-style only
G1	DIN PN 16 2512-Type N for flange-style only
G2	DIN PN 25 2512-Type N for flange-style only
G3	DIN PN 40 2512-Type N for flange-style only
G4	DIN PN 64 2512-Type N for flange-style only
G6	DIN PN 100 2512-Type N for flange-style only
G7(1)	DIN PN 160 2512-Type N for flange-style only

Continued on Next Page

Code	Flange or Alignment Ring Size
H0	DIN PN 10 2526-Type E
H1	DIN PN 16 (PN 10/16 for wafer-style) 2526-Type E
H2	DIN PN 25 2526-Type E
H3	DIN PN 40 (PN 25/40 for wafer-style) 2526-Type E
H4	DIN PN 64 2526-Type E
H6	DIN PN 100 2526-Type E
H7(1)	DIN PN 160 2526-Type E
J1	JIS 10K
J2	JIS 20K
J4	JIS 40K
Code	**Sensor Process Temperature Range**
N	Standard: -40 to 450°F (-40 to 232°C)
E	Extended: -330 to 800°F (-200 to 427°C)
Code	**Conduit Entry**
1	1/2 -14 NPT
2	M20 × 1.5
3	PG 13.5
Code	**Outputs**
D	4-20 mA digital electronics (Hart® protocol)
P	4-20 mA digital electronics (Hart® protocol) with scaled pulse
F	FOUNDATION fieldbus digital signal(3)
Code	**Calibration**
1	Flow calibration
Code	**Options**
	Hazardous Locations Certifications
E5	Factory Mutual (FM) Explosion-Proof approval
I5	Factory Mutual (FM) intrinsic safety approval
IE	Factory Mutual (FM) FISCO (4)
K5	Factory Mutual (FM) E5 and I5 combination approval
I1	ATEX / BASEEFA Intrinsic safety and dust certification
IA	ATEX / BASEEFA FISCO(4)
N1	ATEX / BASEEFA Type n certification
E1	ATEX / KEMA Flame-Proof certification
E6	Canadian Standards Association (CSA) Explosion-Proof approval
I6	Canadian Standards Association (CSA) intrinsic safety approval
IF	Canadian Standards Association (CSA) FISCO(4)
C6	Canadian Standards Association (CSA) E6 and I6 combination approval
	Plantweb Functionality
A01	Basic Control: One Proportional/Integral/Derivative (PID) Function Block
	Conduit Electrical Connector
GE(5)	M12, 4-pin, Male Connector (*eurofast*®)
GM(5)	A size Mini, 4-pin, Male Connector (*minifast*®)

Continued on Next Page

	Options Continue
	Other Options
M5	LCD indicator
P2	Cleaning for special services
C4[6]	NAMUR alarm and saturation values, high alarm
CN[6]	NAMUR alarm and saturation values, low alarm
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
RXX[7]	Remote electronics with customer-specified cable length (up to 75 ft (23 m) maximum)
T1	Transient protection terminal block
V5 [8]	External ground screw assembly
	Certification Options
Q4	Calibration data sheet per ISO 10474 3.1B and EN 10204 3.1
Q8	Material traceability certification per ISO 10474 3.1B and EN 10204 3.1
Q14[9]	German TRB 801 Nr.45 certification per ISO 10474 3.1B and EN 10204 3.1
Q69[10]	Inspection certificate weld examination (wafer) per ISO 10474 3.1B and EN 10204 3.1
Q70	Inspection certificate weld examination (flanged) per ISO 10474 3.1B and EN 10204 3.1
Q71	Inspection certification weld examination (flanged) per ISO 10474 3.1B (includes x-rays) and EN 10204 3.1

Typical Model Number: 8800C F 020 S A1 N 1 D 1 M5

(1) Available on flanged and dual style meters from 1/2" - 8" (15-200 mm) and Reducer style meters from 1" - 6" (25-150 mm).

(2) Only available for stainless steel flanged and dual style meters from 1" - 8" (25-200 mm).

(3) Includes one analog input (AI) function block and Backup Link Active Scheduler.

(4) Fieldbus Intrinsic Safe Concept available with F (FOUNDATION fieldbus digital signal) output code only.

(5) Not available with certain hazardous location certifications. Contact a Rosemount representative for details.

(6) NAMUR compliant operation and the alarm latch options are pre-set at the factory and cannot be changed to standard operation in the field.

(7) XX is a customer specified length in feet.

(8) V5 only available with no approval or E5, I5, K5, E6, I6, and C6; it is standard with the other approvals.

(9) Q14 is not available with flange codes A7, A8, B7, B8, C7, D7, G7, H7, 10in.-12in. meters, and 8800CR Reducer Vortex.

(10) Q69 available for all Nickel Alloy C wafers and stainless steel wafers in line sizes 1/2-in. (15 mm), 6-in. (150 mm), and 8-in. (200 mm).

TABLE 29. Method of Construction for the 8800CF in Hastelloy-C Material

Line Size	A1	A3	A6	A7	D1	D3	D4	D6	D7
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)	W	W	W	NA	W	W	W	W	CF
8 (200)	W	W	W	NA	W	W	W	W	CF
10 (250)	W	W	W	NA	W	W	W	W	NA
12 (300)	W	W	W	NA	W	W	W	W	NA

C = Nickel Alloy collar and 316 SST lap flange. If weld neck flange is required, V0022 can be ordered.
W = Nickel Alloy weld neck flange.
CF = Consult factory
NA = Not available
All 8800DR Reducer Vortex Meters with Nickel Alloy C materials of construction use weld neck flanges.

Configuration Data Sheet

★ = **Default**

APPLICATION AND CONFIGURATION DATA SHEET — REQUIRED WITH ORDER

Sold to: _____ P.O. #: _____

End Customer: _____

Model No: 8800|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|

Tag #: |__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__| (21 characters maximum)

Software Tag #: |__|__|__|__|__|__|__|__| (8 characters maximum) **(Blank★)**

Default Configuration** ☐ U.S. Units Name: _____ Date: _____

☐ S.I. Units

Service: ☐ **Liquid** ☐ Gas ☐ Steam **Fluid Description:** _____

Process Line Size: _____

Flow Rates: Maximum _____ URV (20 mA value) _____(Default value is maximum. Not applicable for Foundation fieldbus output).

Minimum _____ LRV (4 mA value) _____0_____

(Minimum flow to be measured – not LRV) (☐ If you want LRV ≠ 0; enter desired value here_____)

Flow Rate Units:

☐ gal/s	☐ igal/s	☐ l/s	☐ ACFM	☐ ACMM	☐ kg/s	☐ lb/s
☐ gal/min	☐ igal/min	☐ l/min	☐ ACFH	☐ ACMH	☐ kg/min	☐ lb/min
☐ gal/h	☐ igal/h	☐ l/h	☐ ACFD	☐ ACMD	☐ kg/h	☐ lb/h
☐ gal/d	☐ igal/d	☐ l/d	☐ bbl/min	☐ MACMD	☐ kg/d	☐ lb/d
☐ ton/h			☐ bbl/h	☐ ston/h	☐ ft/s	☐ m/s
☐ ton/d			☐ bbl/d	☐ ston/d		

0 to meter maximum flow, GPM (ACMH) (1 bbl = 42 gal., 1 ston = 2000 lb, 1 ton = 1000 kg)

If you select one of the following units, be sure to fill out the density ratio information below:

SCFM SCFH NCMM NCMH NCMD

Density Ratio (from sizing program) _____

Note: *If no density ration is given, calculate the ratio with an assumed base pressure of 14.696 psia, a base temperature of 59°F, and a base compressibility of one (1) for SCFM and SCFH. For NCMM, NCMH, and NCMD, calculate with a base pressure of 1,01 bar, a base temperature of 0°C, and a base compressibility of one (1).*

Special: Special flow rate units |__|__|__|__| (4 characters) / Second Minute Hour Day

Special units conversion number: _____

(1 Base Volume Unit = Conversion Number, number of Special Units; ex. 1 gal = 1/31 barrels)

Base volume unit: Cubic ft Gallons Barrels

Cubic m Liters Imp. Gal

Note*: The Rosemount 8800C measures actual volumetric flow rates. To use units not shown above, a conversion factor must be entered into the electronics through the use of special units. Use of this special conversion factor or the density value (used in mass flow units) requires that the process density remain constant. Changes in the process density will result in an inaccurate flow output.*

Operating Temperature _____ °F °C **77°F (25°C)**

Operating Pressure _____ Gauge Absolute

Operating Density _____ or Specific Gravity _____ **62.4 lb/ft^3 (1000 kg/m^3)**

Viscosity _____ (At operating temperature)

Vapor Pressure _____ (At operating temperature — required for liquids only)

Mating Pipe Schedule Sch 10 **Sch 40 ★** Sch 80 (Will default to Sch 40; Pipe I.D., dependent on line size) Sch 160

OR _____ Mating Pipe I.d. inches mm

Signal Options - required only if output Option Code P is selected.

4-20 mA and scaled pulse-digital smart electronics with *HART* protocol

Pulse Mode: Direct Scaled (1 Pulse = _____ *unit*) (e.g. 1 pulse = 1 *gal* or 1 pulse = 1 *lb*) Off

OR (_____ *Hz*= _____ *unit)* (e.g., 1000 *Hz* = 10 *gal/min*)

APPLICATION AND CONFIGURATION DATA SHEET — REQUIRED WITH ORDER

For Rosemount Internal Use Only

Sales Order _____ Line Item # |__|__|__| ID # |__|__|__|
Cont. Admin. _____ Salesperson _____

APPLICATION AND CONFIGURATION DATA SHEET (Optional Information)

Other Functions

LCD Configuration: (Select as many as desired)
- **% of Range★**
- **Flow Rate★**
- Output Current
- Totalizer

Damping
- **2 seconds★**
- Other _____ (Value between 0.2 and 255 seconds.)

Hardware Selectable:

Alarm		Security	
High★	Low	**Off★**	On

Transmitter Information

Descriptor |__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__| (16 characters maximum)
Message |__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|
|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|(32 characters maximum)

Date: / / or / / *NOTE: Default is date of calibration — (Month/Day/Year)*
Month / Day / Year or Day / Month / Year

HART Output Options

The following output options are specifically used for special *HART* Communications configurations
Burst mode of *HART* digital process variable (Select one option below.)
- Primary variable in engineering units
- Primary variable in percent of range

**By selecting “Default Configuration,” Rosemount Inc. does not verify flowmeter sizing for your application.

Rosemount 8800C

Product Data Sheet
00813-0100-4003, Rev NA
Catalog 2006 - 2007

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