Product Data Sheet
00813-0100-4716, Rev LA
Catalog 2008 - 2009

Rosemount 3095 *MultiVariable*™ Mass Flow Transmitter

THE PROVEN LEADER IN MULTIVARIABLE MASS FLOW MEASUREMENT.

- *1.0% Mass Flow rate accuracy over 10:1 Flow Range*
- *Ten year stability under actual process conditions*
- *Unprecedented reliability backed by a limited 12-year warranty*
- *Four variables in one device*
- *"Real-Time" fully-compensated Mass Flow*
- *Coplanar™ platform enables DP Flowmeters*

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The Leader in *MultiVariable* Mass Flow Measurement.

Rosemount delivers a tradition of excellence and technology leadership, featuring the state-of-the-art Rosemount 3095 *MultiVariable* Mass Flow transmitter. The Rosemount 3095 delivers four measurements from one *coplanar* device with unmatched operating performance, including dynamic fully compensated mass flow. Engineered to combine best products with best installation practices, the Rosemount 3095 enables a complete offering of DP Flowmeters.

1.0% of Mass Flow rate accuracy over 10:1 flow range

Enabled by superior sensor technology and engineered for optimal flow performance, the Rosemount 3095 delivers unprecedented ±0.05% of DP reading reference accuracy, resulting in mass flow accuracy of ±1.0% over 10:1 flow range. Superior performance means reduced variability and improved plant safety.

Ten year stability of ±0.25%

Through aggressive testing, the Rosemount 3095 has proven its ability to maintain unprecedented performance under the most demanding conditions. Superior transmitter stability decreases calibration frequency for reduced maintenance and operation costs.

Unprecedented reliability backed by a limited 12-year warranty

Further enhance installation practices with the most reliable platform supported by a 12-year warranty.

Four variables in one device

The advanced Rosemount 3095 measures three process variables simultaneously and dynamically calculates “real-time” fully compensated mass flow. One transmitter means reduced process penetrations, inventory and installation costs.

“Real-Time” fully-compensated mass flow

Fully compensated mass flow reduces sources of traditional DP flow uncertainty. Rosemount 3095 calculates Mass Flow by measuring process pressure and temperature to perform ‘real-time’ calculation of all flow equation parameters including density, viscosity, velocity, Reynolds number, beta ratio, discharge coefficient, velocity of approach, and the gas expansion factor. Superior flow calculations yield more accurate measurements to reduce variability and increase profitability.

Coplanar platform enables DP flowmeters

The flexible *coplanar* platform allows integration with the complete offering of Rosemount primary elements for any flow application. The solution arrives factory calibrated, pressure-tested, and ready to install right out of the box. Only Rosemount has a scalable *coplanar* transmitter design to reduce engineering and inventory costs.

Advanced *PlantWeb* functionality

From multiple process variable generation to advanced compensated Mass Flow functionality and highly integrated flowmeter solutions, the 3095 reduces operational and maintenance expenditures while improving throughput and utilities management.

Rosemount DP-Flow Solutions

Rosemount 3051S Series of Instrumentation
Scalable pressure, flow, and level measurement solutions improve installation and maintenance practices.

Rosemount 305, 306 and 304 Manifolds
Factory-assembled, calibrated, and seal-tested transmitter-to-manifold assemblies reduce on-site installation costs.

Rosemount 1199 Diaphragm Seals
Provides reliable, remote measurements of process pressure and protects the transmitter from hot, corrosive, or viscous fluids.

Rosemount 1495, 1496, 1497, and 1595 Orifice Plate Primary Element Systems
A comprehensive offering of orifice plates, flange unions and meter sections that is easy to specify and order. The 1595 Conditioning Orifice provides superior performance in tight fit applications.

Rosemount 3051SFA, 3095MFA, 485, and 285 Annubar® Series
The state-of-the-art, fifth generation Rosemount 485 Annubar combined with the 3051S or 3095 MultiVariable transmitter creates an accurate, repeatable and dependable insertion-type flowmeter. The Rosemount 285 provides a commercial product offering for your general purpose applications.

Rosemount 3051SFC, 3095MFC, and 405 Compact Orifice Series
Compact Orifice Flowmeters can be installed between existing flanges, up to a Class 600 (PN100) rating. In tight fit applications, a conditioning orifice plate version is available, requiring only two diameters of straight run upstream and two diameters downstream.

Rosemount 3051SFP, 3095MFP, and 1195 ProPlate® Series
These Integral Orifice Flowmeters eliminate the inaccuracies that become more pronounced in small orifice line installations. The completely assembled, ready to install flowmeters reduce cost and simplify installation.

Specifications

FUNCTIONAL

Service

Gas, liquid, or steam

Differential Sensor

Limits

- Range 1: –25 to 25 inH2O (–0,062 to 0,062 bar)
- Range 2: –250 to 250 inH2O (–0,622 to 0,622 bar)
- Range 3: –1000 to 1000 inH2O (–2,49 to 2,49 bar)

Absolute Sensor

Limits

- Range 3: 0.5 to 800 psia (3,447 to 5516 kPa)
- Range 4: 0.5 to 3,626 psia (3,447 to 25000 kPa)

Gage Sensor

Limits

- Range C: 0 to 800 psig (0 to 5516 kPa)
- Range D: 0 to 3,626 psig (0 to 25000 kPa)

Temperature Sensor

Process Temperature Range

- –300 to 1500 °F (–184 to 816 °C)

Fixed Temperature Range

- –459 to 3500 °F (–273 to 1927 °C)

Overpressure Limit

0.5 psia (3,447 kPa) to two times the static pressure sensor range up to a maximum of 3,626 psia (25000 kPa) for differential pressure ranges 2-3 and 2000 psia (13790 kPa) for differential pressure range 1.

Static Pressure Limit

Operates within specifications between static line pressures of 0.5 psia (3,45 kPa) and the URL of the absolute pressure sensor.

Temperature Limits

Process (at transmitter isolator flange for atmospheric pressures and above)

- Silicone fill: –40 to 250 °F (–40 to 121 °C)
- Inert fill: 0 to 185 °F (–18 to 85 °C) (Process temperature above 185 °F (85 °C) require derating the ambient limits by a 1.5:1 ratio.)

Ambient:

- -40 to 185 °F (-40 to 85 °C)
- With LCD Display[(1)]: -40 to 175 °F (-40 to 80 °C)

Storage:

- -50 to 230 °F (-46 to 110 °C)
- With LCD Display: -40 to 185 °F (-40 to 85 °C)

(1) LCD Display may not be readable and LCD updates will be slow at temperatures below -4 °F (-20 °C).

Damping

Analog output response to step input change can be user-selectable from 0 to 29 seconds for one time constant.

4–20 mA (output option code A)

Zero and Span Adjustment

Zero and span values can be set anywhere within the range. Span must be greater than or equal to the minimum span.

Output

Two-wire 4–20 mA, user-selectable for DP, AP, GP, PT, mass flow, or totalized flow. Digital HART protocol superimposed on 4–20 mA signal, available to any host that conforms to the HART protocol.

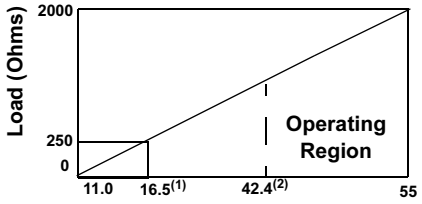
Power Supply

External power supply required. Transmitter operates on terminal voltage of 11–55 V dc.

Load Limitations

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

$$\text{Maximum Loop Resistance} = \frac{\text{Power Supply} - 11.0}{0.022}$$



(1) HART protocol communication requires a loop resistance value between 250-1100 ohms, inclusive.

(2) For CSA approval, power supply must not exceed 42.4 V dc.

FOUNDATION fieldbus (output option code V)

Power Supply

External power supply required; transmitters operate on 9.0 to 32.0 V dc transmitter terminal voltage.

Current Draw

17.5 mA for all configurations (including LCD Display option)

Humidity Limits

0–100% relative humidity

Turn-on Time

Digital and analog measured variables will be within specifications 7–10 seconds after power is applied to transmitter.

Digital and analog flow output will be within specifications 10–14 seconds after power is applied to transmitter.

Failure Mode Alarm

Output Code A

If self-diagnostics detect a non-recoverable transmitter failure, the analog signal will be driven either below 3.75 mA or above 21.75 mA to alert the user. High or low alarm signal is user-selectable by internal jumper pins.

Output Code V

If self-diagnostics detect a gross transmitter failure, that information gets passed as a status along with the process variable(s).

Configuration

375 HART Hand-held Communicator

- Performs traditional transmitter maintenance functions

3095 Multivariable Engineering Assistant (EA) software package

- Contains built-in physical property database
- Enables mass flow configuration, maintenance, and diagnostic functions via HART modem (output option code A)
- Enables mass flow configuration via PCM-CIA Interface for FOUNDATION fieldbus (output option code V)

Primary Elements

Supports over 25 different primary elements including:

- *Annubar* Averaging Pitot Tube
- Rosemount 1195 Integral Orifice Plate
- Rosemount 405 Compact and Conditioning Orifice
- ISO/ASME Orifice Flange Taps
- Calibrated and Custom Primary Elements
- ISO/ASME Corner Taps
- AGA Flange Taps
- ISO/ASME Venturi
- ISO/ASME Venturi Nozzle
- Area Averaging Meter
- V-Cone

Physical Properties Database

- Maintained in Engineering Assistant Software Configurator
- Physical properties for over 110 fluids
- Natural gas per AGA
- Steam and water per ASME
- Other database fluids per American Institute of Chemical Engineers (AIChE)
- Optional custom entry

FOUNDATION fieldbus Function Blocks

Standard Function Blocks

Resource Block

- Contains hardware, electronics, and diagnostic information.

Transducer Block

- Contains actual sensor measurement data including the sensor diagnostics and the ability to trim the pressure sensor or recall factory defaults.

LCD Block

- Configures the local display.

5 Analog Input Blocks

- Processes the measurements for input into other function blocks. The output value is in engineering or custom units and contains a status indicating measurement quality.

PID Block with Auto-tune

- Contains all logic to perform PID control in the field including cascade and feedforward. Auto-tune capability allows for superior tuning for optimized control performance.

Advanced Control Function Block Suite (Option Code A01)

Input Selector Block

- Selects between inputs and generates an output using specific selection strategies such as minimum, maximum, midpoint, average, or first “good.”

Arithmetic Block

- Provides pre-defined application-based equations including flow with partial density compensation, electronic remote seals, hydrostatic tank gauging, ratio control and others.

Signal Characterizer Block

- Characterizes or approximates any function that defines an input/output relationship by configuring up to twenty X, Y coordinates. The block interpolates an output value for a given input value using the curve defined by the configured coordinates.

Integrator Bock

- Compares the integrated or accumulated value from one or two variables to pre-trip and trip limits and generates discrete output signals when the limits are reached. This block is useful for calculating total flow, total mass, or volume over time.

Output Splitter Block

- Splits the output of one PID or other control block so that the PID will control two valves or other actuators.

Control Selector Block

- Selects one of up to three inputs (highest, middle, or lowest) that are normally connected to the outputs of PID or other control function blocks.

Steam Flow Calculations

Steam densities calculated per ASME steam tables.

Saturated steam configurable using static pressure based density calculations.

Natural Gas Flow Calculations

Flow calculations per 1992 AGA (American Gas Association) Report No 3 or ISO-5167 (2003).

Compressibilty Calculations per AGA Report No 8 or ISO-12213.

PERFORMANCE

(Zero-based spans, reference conditions, silicone oil fill, 316 SST isolating diaphragms, 4–20 mA analog output.)

Specification Conformance

The Rosemount 3095 maintains a specification conformance of measured variables to at least 3σ.

Mass Flow

Fully compensated for pressure, temperature, density, viscosity gas expansion, discharge coefficient, and thermal correction variances over operating range.

$$Q_m = NC_d E Y_1 d^2 \sqrt{DP(\rho)}$$

Ultra for Flow: Mass Flow Reference Accuracy (option U3)(1)

- ±1.0% of Mass Flow Rate over a 10:1 flow range (100:1 DP range for liquids and gases)

Mass Flow Reference Accuracy

- ±1.0% of Mass Flow Rate over 8:1 flow range (64:1 DP range for liquids and gases)

Totalized Mass Flow

- ±1.0% of Total Mass Flow

(Uncalibrated differential producer (Orifice) installed per ASME MFC3M or ISO 5167-1. Uncertainties for discharge coefficient, producer bore, tube diameter, and gas expansion factor defined in ASME MFC3M or ISO 5167-1. Density uncertainty of 0.1%. Differential pressure calibrated at up to 1/10th full scale for optimum flow accuracy/rangeability.)

Differential Pressure

Range 1

- 0–0.5 to 0–25 inH2O (0–1,25 to 0–62,3 mbar) (50:1 rangeability is allowed)

Range 2

- 0–2.5 to 0–250 inH2O (0–6,22 to 0–622,7 mbar) (100:1 rangeability is allowed)

Range 3

- 0–10 to 0–1000 inH2O (0–0,249 to 0–2,49 bar) (100:1 rangeability is allowed)

Reference Accuracy (including Linearity, Hysteresis, Repeatability)(2)

Range 2-3 Ultra for Flow (Option U3)(1)

- ±0.05% of DP reading up to 3:1 DP turndown from URL
- For DP turndowns up to 100:1 from URL,

$$\text{Accuracy} = \pm\left[0.05 + 0.0145\left(\frac{URL}{DP Reading}\right)\right] \% \text{ of DP Reading}$$

Accuracy = Range 2-3

- ±0.075% of span for spans from 1:1 to 10:1 of URL
- For spans less than 10:1 of URL,

$$\text{Accuracy} = \pm\left[0.025 + 0.005\left(\frac{URL}{Span}\right)\right] \% \text{ of Span}$$

(1) Ultra for Flow (option U3) applicable for HART protocol, DP ranges 2 and 3 with SST isolator material and silicone fill fluid options only.

(2) For FOUNDATION fieldbus transmitters, use calibrated range in place of span.

Range 1

- ±0.10% of span for spans from 1:1 to 15:1 of URL
- For spans less than 15:1 of URL,

$$\text{Accuracy} = \pm\left[0.025 + 0.005\left(\frac{URL}{Span}\right)\right] \% \text{ of Span}$$

Ambient Temperature Effect per 50 °F (28 °C)

Range 2-3 Ultra for Flow (Option U3)(1)

- ±0.130% of DP reading up to 3:1 DP turndown from URL
- ±[0.05 + 0.0345 (URL/DP Reading)]% of DP reading up to 100:1 DP turndown from URL

Range 2-3

- ±(0.025% of URL + 0.125% of span) for spans from 1:1 to 30:1
- ±(0.035% of URL – 0.175% of span) for spans from 30:1 to 100:1

Range 1

- ±(0.20% of URL + 0.25% of span) for spans from 1:1 to 30:1
- ±(0.24% of URL +0.15% of span) for spans from 30:1 to 50:1

Static Pressure Effects

Range 2-3

- Zero error = ±0.05% of URL per 1,000 psi (68,9 bar)
- Span error = ±0.20% of DP Reading per 1,000 psi (68,9 bar)

Range 1

- Zero error = ±0.05% of URL per 800 psi (55,1 bar)
- Span error = ±0.40% of DP Reading per 800 psi (55,1 bar)

Stability

Range 2-3 Ultra for Flow (Option U3)(1)

- ±0.25% of URL for 10 years for ±50 °F (28 °C) temperature changes, up to 1000 psi (68,9 bar) line pressure

Ranges 2-3

- ±0.125% URL for 5 years for ±50 °F (28 °C) ambient temperature changes, and up to 1000 psi (68,9 bar) line pressure.

Range 1

- ±0.2% of URL for 1 year

Absolute/Gage Pressure

Absolute (100:1 rangeability allowed)

Range 3

0.5–8 to 0.5–800 psia (3,447–55,16 to 3,447–5516 kPa)

Range 4

0.5–36.26 to 0.5–3,626 psia (3,447–250 to 3,447–25000 kPa)

Gage (100:1 rangeability allowed)

Range C

0–8 to 0–800 psig (0–55,16 to 0–5516 kPa)

Range D

- 0–36.26 to 0–3,626 psig (0–250 to 0–25000 kPa)

Reference Accuracy (including Linearity, Hysteresis, Repeatability)

±0.075% of span for spans from 1:1 to 10:1 of URL
For spans less than 10:1 of URL,

$$\text{Accuracy} = \pm\left[0.03 + 0.0075\left(\frac{URL}{Span}\right)\right] \% \text{ of Span}$$

Ambient Temperature Effect per 50 °F (28 °C)

±(0.050% of URL + 0.125% of span) spans from 1:1 to 30:1

±(0.060% of URL – 0.175% of span) spans from 30:1 to 100:1

Stability

±0.125% URL for 5 years for ±50°F (28 °C) ambient temperature changes, and up to 1000 psi (6,9MPa) line pressure.

Process Temperature

Specification for process temperature is for the transmitter portion only. Sensor errors caused by the RTD are not included. The transmitter is compatible with any PT100 RTD conforming to IEC 751 Class B, which has a nominal resistance of 100 ohms at 0 °C and $\propto$ = 0.00385. Examples of compatible RTDs include the Rosemount Series 68 and 78 RTD Temperature Sensors.

RTD Range

–300 to 1500°F (–184 to 816 °C)

Accuracy (including Linearity, Hysteresis, Repeatability)

For 12 and 24 ft. Cables

- ±1.0 °F (0.56 °C) for process temperatures from –300 to 1200 °F (–184 to 649 °C)
- For process temperatures above 1200 °F (649 °C), add ±1.0 °F (0.56 °C) per 100 °F (38 °C)

For 75 ft. cables:

- ±2.0 °F (1.12 °C) for process temperatures from –300 to 1200 °F (–184 to 649 °C)
- For process temperatures above 1200 °F (649 °C), add ±1.0 °F (0.56 °C) per 100 °F (38 °C)

Stability

±1.0 °F (0.56 °C) for 12 months

Physical

Security

Transmitter security jumper mounted on electronics board, when enabled prevents changes to transmitter configuration.

User Engineering Assistant provides two levels of optional password security

Electrical Connections

½–14 NPT, M20 × 1.5 (CM20), PG-13.5. HART interface connections fixed to terminal block for output code A.

RTD Process Temperature Input

100-ohm platinum RTD per IEC-751 Class B

Process Connections

Transmitter: ¼–18 NPT on $2^1/_8$-in. centers $^1/_2$–14 NPT on 2-, $2^1/_8$-, or $2^1/_4$-in. centers with optional flange adapters
RTD: RTD dependent.

Process Wetted Parts

Isolating Diaphragms

- 316L SST or Hastelloy C-276®. CF-8M (last version of 316 SST, material per ASTM-A743)

Drain/Vent Valves

- 316 SST or Hastelloy C-276

Flanges

- Plated carbon steel, 316 SST, or Hastelloy C-276

Wetted O-rings

- Glass-Filled PTFE

Non-Wetted Parts

Electronics Housing

- Low copper aluminum. NEMA 4X, CSA, Enclosure Type 4X, IP 65, IP 66, IP 68

Bolts

- Plated carbon steel per ASTM A449, Grade 5 or austenitic 316 SST

Fill Fluid

- Silicone or halocarbon inert oil (Inert oil only available for gage sensor modules.)

Paint (Aluminum Housing only)

- Polyurethane

O-rings

- Buna-N

Weight

Component	Weight in lb (kg)
Rosemount 3095 Transmitter	6.0 (2.7)
SST Mounting Bracket	1.0 (0.4)
12 ft (3.66 m) RTD Shielded Cable	0.5 (0.2)
12 ft (3.66 m) RTD Armored Cable	1.1 (0.5)
24 ft (7.32 m) RTD Shielded Cable	1.0 (0.4
24 ft (7.32 m) RTD Armored Cable	2.2 (1.0)
75 ft (22.86 m) RTD Shielded Cable	1.9 (0.9)
75 ft (22.86 m) RTD Armored Cable	7.2 (3.2)
21 in (53 cm) RTD Armored Cable	0.5 (0.2)
12 ft (3.66 m) RTD CENELEC Cable	2.1 (0.9)
24 ft (7.32 m) RTD CENELEC Cable	3.0 (1.4)
75 ft (22.86 m) RTD CENELEC Cable	7.1 (3.2)
21 in (53 cm) RTD CENELEC Cable	1.2 (0.5)
4 ft (1.22 m) RTD Shielded Cable	0.17 (.07)

Product Certifications

ROSEMOUNT 3095 WITH HART

Approved Manufacturing Locations

Rosemount Inc. — Chanhassen, Minnesota USA

Emerson Process Management GmbH & Co. — Wessling, Germany

Emerson Process Management Asia Pacific Private Limited — Singapore

Beijing Rosemount Far East Instrument Co., Limited – Beijing, China

European Directive Information

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

ATEX Directive (94/9/EC)

Emerson Process Management complies with the ATEX Directive.

European Pressure Equipment Directive (PED) (97/23/EC)

3095F_2/3,4/D and 3095M_2/3,4/D Flow Transmitters — QS Certificate of Assessment - EC No. PED-H-100 Module H Conformity Assessment

All other 3095_ Transmitters/Level Controller — Sound Engineering Practice

Transmitter Attachments: Process Flange - Manifold — Sound Engineering Practice

Electro Magnetic Compatibility (EMC) (2004/108/EC)

3095 Flow Transmitters

— EN 61326-1:1997 – A1, A2, and A3

Ordinary Location Certification for Factory Mutual

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

Rosemount 3095 HART Hazardous Locations Certifications

North American Certifications

FM Approvals

A Explosion Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition Proof for Class II/Class III, Division 1, Groups E, F, and G. Enclosure Type 4X. Factory Sealed. Provides nonincendive RTD connections for Class I, Division 2, Groups A, B, C, and D.

J Intrinsically Safe for use in Class I, II and III, Division 1, Groups A, B, C, D, E, F, and G hazardous outdoor locations. Non-incendive for Class I, Division 2, Groups A, B, C, and D. Temperature Code T4. Factory Sealed.

For input parameters and installation see control drawing 03095-1010.

Canadian Standards Association (CSA)

C Explosion Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition Proof for Class II/Class III, Division 1, Groups E, F, and G. CSA enclosure Type 4X suitable for indoor and outdoor hazardous locations. Provides nonincendive RTD connection for Class I, Division 2, Groups A, B, C, and D.Factory Sealed. Install in accordance with Rosemount Drawing 03095-1024. Approved for Class I, Division 2, Groups A, B, C, and D.

K Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D. when installed in accordance with Rosemount drawing 03095-1021. Temperature Code T3C.

For input parameters and installation see control drawing 03095-1021.

European Certifications

F ATEX Intrinsic Safety
Certificate Number: BAS98ATEX1359X  II 1 G
EEx ia IIC T5 (T_{amb} = –45 °C to 40 °C)
EEx ia IIC T4 (T_{amb} = –45 °C to 70 °C)
CE 1180

TABLE 1. Connection Parameters
(Power/Signal Terminals)

U_i = 30V
I_i = 200 mA
P_i = 1.0 W
C_i = 0.012 µF
L_i = 0

TABLE 2. Temperature Sensor Connection Parameters

U_o = 30V
I_o = 19 mA
P_o = 140 mW
C_i = 0.002 µF
L_i = 0

TABLE 3. Connection Parameters for Temperature Sensor Terminals

C_o = 0.066 μF	Gas Group IIC
C_o = 0.560 μF	Gas Group IIB
C_o = 1.82 μF	Gas Group IIA
L_o = 96 mH	Gas Group IIC
L_o = 365 mH	Gas Group IIB
L_o = 696 mH	Gas Group IIA
L_o/R_o = 247 μH/ohm	Gas Group IIC
L_o/R_o = 633 μH/ohm	Gas Group IIB
L_o/R_o= 633 μH/ohm	Gas Group IIA

Special Conditions for Safe Use

The 3095, when fitted with the transient terminal block (order code B), are not capable of withstanding the 500 volts insulation test required by EN 60079-11: 2007, Clause 6.3.12. This condition must be accounted for during installation.

G ATEX Type n

Certificate Number: BAS98ATEX3360X ⟨Ex⟩ II 3 G

EEx nL IIC T5 (T_{amb} = –45 °C to 40 °C)
EEx nL IIC T4 (T_{amb} = –45 °C to 70 °C)

U_i = 55V

CE

The apparatus is designed for connection to a remote temperature sensor such as a resistance temperature detection (RTD)

Special Conditions for Safe Use

The 3095, when fitted with the transient terminal block (order code B), are not capable of withstanding the 500 volts insulation test required by EN50 021, Clause 9.1 (1995). This condition must be accounted for during installation.

H ATEX Flameproof

Certificate Number: KEMA02ATEX2320X ⟨Ex⟩ II 1/2 G
EEx d IIC T5 (-50°C ≤ T_{amb} ≤ 80°C)
T6 (-50°C ≤ T_{amb} ≤ 65°C)
CE 1180

Special Conditions for Safe Use (x):

The device contains a thin wall diaphragm. Installation, maintenance, and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.

P ATEX Dust
Certificate Number: KEMA02ATEX2321 ⟨Ex⟩ II 1 D T 90°C
V = 55 Vdc MAX
I = 23 mA MAX
IP66
CE 1180

IECEx Certifications (HART)

4 IECEx Intrinsic Safety
Certificate Number: IECEx BAS06.0070X
Ex ia IIC T4 (-45°C ≤ T_a ≤ 70°C)
Ex ia IIC T5 (-45°C ≤ T_a ≤ 40°C)

TABLE 4. Input Parameters

HART I.S.
U_i = 30Vdc
I_i = 200 mAdc
P_i = 1.0 W
C_i = 12 nF
L_i = 0

TABLE 5. RTD Terminals Entity Parameters

U_o = 30Vdc
I_o = 19 mAdc
P_o = 140 mW

The capacitance and either the Inductance or the Inductance to Resistance Ratio (L/R) of the load connected to the 4-pin connector must not exceed the following values:

Group	Capacitance (μF)	Inductance (mH)	or L/R Ratio μH/Ohm
IIC	0.066	96	247
IIB	0.56	365	633
IIA	1.82	696	633

NOTE
1. The external circuit contains no combined lumped inductance and capacitance greater than 1% of the above values.
Or 2. The inductance and capacitance are distributed as in a cable.
Or 3. The external circuit contains only lumped inductance or only lumped capacitance in combination with a cable.
In all other situations e.g. combined lumped inductance and capacitance, up to 50% of each of L and C values is allowed.

Conditions of Certification (X):

When fitted with the transient option, the apparatus is not capable of withstanding the 500V electrical strength test as defined in Clause 6.4.12 of IEC 60079-11: 1999. This must be taken into account during installation.

5 IECEx Type n
Certificate Number: IECEx BAS06.0071X
Ex nA nL IIC T4 (-45°C ≤ T_a ≤ 70°C)
Ex nA nL IIC T5 (-45°C ≤ T_a ≤ 40°C)
U_i = 55V dc max

Conditions of Certification (X):

When fitted with the transient option, the apparatus is not capable of withstanding the 500V electrical strength test as defined in Clause 6.8.1 of IEC 60079-15: 2005. This must be taken into account during installation.

7 IECEx Flameproof
Certificate Number: IECEx KEM 06.0018
Zone 0/1 Ex d IIC T6 (-20°C ≤ T_a ≤ 65°C)
Zone 0/1 Ex d IIC T5 (-20°C ≤ T_a ≤ 80°C)
V_{max} = 55 Vdc
I_{max} = 23 mAdc

8 IECEx Dust
Certificate Number: IECEx KEM 06.0018
Ex tD A22 T90°C
IP66

Combinations of Certifications

Stainless steel certification tag is provided when optional approval is specified. Once a device labeled with multiple approval types is installed, it should not be reinstalled using any other approval types. Permanently mark the approval label to distinguish it from unused approval types.

B A and J combination
D C and K combination
L F, G, H, and P combination
9 4, 5, 7, and 8 combination

ROSEMOUNT 3095 WITH *FIELDBUS*

Approved Manufacturing Locations

Rosemount Inc. — Chanhassen, Minnesota USA

European Directive Information

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

ATEX Directive (94/9/EC)

Emerson Process Management complies with the ATEX Directive.

European Pressure Equipment Directive (PED) (97/23/EC)

3095F_2/3,4/D and 3095M_2/3,4/D Flow Transmitters

— QS Certificate of Assessment - EC No. PED-H-100 Module H Conformity Assessment

All other 3095_ Transmitters/Level Controller

— Sound Engineering Practice

Transmitter Attachments: Process Flange - Manifold

— Sound Engineering Practice

Primary Elements, Flowmeter

— See appropriate Primary Element QIG

Electro Magnetic Compatibility (EMC) (2004/108/EC)

3095 Flow Transmitters

— EN 50081-1: 1992; EN 50082-2:1995; EN 61326-1:1997 – A1, A2, and A3

Ordinary Location Certification for Factory Mutual

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

Rosemount 3095 Fieldbus Hazardous Locations Certifications

North American Certifications

FM Approvals

A Explosion Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition Proof for Class II/Class III, Division 1, Groups E, F, and G. Enclosure type NEMA 4X. Factory Sealed. Provides nonincendive RTD connections for Class I, Division 2, Groups A, B, C, and D.

J Intrinsically Safe for use in Class I, II and III, Division 1, Groups A, B, C, D, E, F, and G hazardous outdoor locations. Non-incendive for Class I, Division 2, Groups A, B, C, and D. Temperature Code T4. Factory Sealed.

For input parameters and installation see control drawing 03095-1020.

V FISCO for use in Class I, II and III, Division 1, Groups A, B, C, D, E, F, and G hazardous outdoor locations. Temperature Code T4. Factory Sealed.

For input parameters and installation see control drawing 03095-1020.

Canadian Standards Association (CSA)

C Explosion Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition Proof for Class II/Class III, Division 1, Groups E, F, and G. Factory Sealed. CSA enclosure Type 4X for indoor and outdoor hazardous locations. Suitable for Class I, Division 2, Groups A, B, C, and D. Install in accordance with Rosemount Drawing 03095-1024.

K Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D. When installed in accordance with Rosemount Drawing 03095-1021. Temperature Code T3C.

W FISCO Field Device. Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D. When installed in accordance with Rosemount Drawing 03095-1021. Temperature Code T3C.

European Certifications

F/T ATEX Intrinsic Safety Certificate Number: Baseefa 05ATEX0022X

Ⓔx II 1 G

EEx ia IIC T5 (T_{amb} = -45°C to 40°C)

EEx ia IIC T4 (T_{amb} = -45°C to 70°C)

CE 1180

TABLE 6. Connection Parameters (Power/Signal Terminals)

Fieldbus (F Option)	FISCO (T Option)
U_i = 30V	U_i = 17.5V
I_i = 300 mA	I_i = 380 mA
P_i = 1.3 W	P_i = 5.32 W
C_i = 3.3 nF	$C_i \leq 5$ nF
L_i = 0	L_i = 10 µH

TABLE 7. Temperature Sensor Connection Parameters

U_o = 30V
I_o = 19 mA
P_o = 140 mW

TABLE 8. Connection Parameters for Temperature Sensor Terminals

C_o = 0.066 µF	Gas Group IIC
C_o = 0.560 µF	Gas Group IIB
C_o = 1.82 µF	Gas Group IIA
L_o = 96 mH	Gas Group IIC
L_o = 365 mH	Gas Group IIB
L_o = 696 mH	Gas Group IIA
L_o/R_o = 247 µH/ohm	Gas Group IIC
L_o/R_o = 633 µH/ohm	Gas Group IIB
L_o/R_o= 633 µH/ohm	Gas Group IIA

Special Conditions for Safe Use

Versions of the apparatus fitted with the transient protected terminals are not capable of withstanding the 500 volts insulation test required by Clause 6.4.12 of EN 50020:2002. This must be taken into account when installing the apparatus.

G ATEX Type N

Certificate Number: Baseefa05ATEX0023X
Ⓔx II 3 G
EEx nA nL IIC T5 (T_{amb} = –45 °C to 40 °C)
EEx nA nL IIC T4 (T_{amb} = –45 °C to 70 °C)
U_i = 55V
RTD Terminals - The apparatus is designed for connection to a remote temperature sensor such as a resistance temperature detection (RTD).

Special Conditions for Safe Use

Versions of the apparatus fitted with the transient protected terminals are not capable of withstanding the 500 volts insulation test required by Clause 8.1 of EN 60079-15:2003. This must be taken into account when installing the apparatus.

H ATEX Flameproof

Certificate Number: KEMA02ATEX2320X
Ⓔx II 1/2 G
EEx d IIC T5 (-50°C ≤ T_{amb} ≤ 80°C)
T6 (-50°C ≤ T_{amb} ≤ 65°C)
Vmax = 55 Vdc MAX
Imax = 23 mA MAX
IP66
CE 1180

Special Conditions for Safe Use (x):

The device contains a thin wall diaphragm. Installation, maintenance, and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.

P ATEX Dust

Certificate Number: KEMA02ATEX2321
Ⓔx II 1 D T90°C (-50°C ≤ T_{amb} ≤ 80°C)
Vmax = 55 Vdc
Imax = 23 mA
IP66
CE 1180

IECEx Certifications (Fieldbus)

4/Y IECEx Intrinsic Safety

Certificate Number: IECEx BAS05.0023X
Ex ia IIC T4 (-45°C ≤ T_a ≤ 70°C)
Ex ia IIC T5 (-45°C ≤ T_a ≤ 40°C)

TABLE 9. Input Parameters

Fieldbus I.S.	FISCO
U_i = 30Vdc	U_i = 17.5Vdc
I_i = 300 mAdc	I_i = 380 mAdc
P_i = 1.3 W	P_i = 5.32 W
C_i = 3.3 nF	$C_i \leq 5$ nF
L_i = 0	$L_i \leq 10$ mH

TABLE 10. RTD Terminals Entity Parameters

U_o = 30Vdc
I_o = 19 mAdc
P_o = 140 mW

The capacitance and either the Inductance or the Inductance to Resistance Ratio (L/R) of the load connected to the 4-pin connector must not exceed the following values:

Group	Capacitance (µF)	Inductance (mH)	or L/R Ratio µH/Ohm
IIC	0.066	96	247
IIB	0.56	365	633
IIA	1.82	696	633

Conditions of Certification (X):

When fitted with the transient option, the apparatus is not capable of withstanding the 500V electrical strength test as defined in Clause 6.4.12 of IEC 60079-11: 1999. This must be taken into account during installation.

5 IECEx Type n

Certificate Number: IECEx BAS05.0024X
Ex nC IIC T4 (-45°C ≤ T_a ≤ 70°C)
Ex nC IIC T5 (-45°C ≤ T_a ≤ 40°C)
U_i = 55V dc max

Conditions of Certification (X):

When fitted with the transient option, the apparatus is not capable of withstanding the 500V electrical strength test as defined in Clause 8 of IEC 60079-15: 1987. This must be taken into account during installation.

7 IECEx Flameproof
Certificate Number: IECEx KEM 06.0018
Zone 0/1 Ex d IIC T6 (-20°C ≤ T_a ≤ 65°C)
Zone 0/1 Ex d IIC T5 (-20°C ≤ T_a ≤ 80°C)
V_{max} = 55 Vdc
I_{max} = 23 mAdc

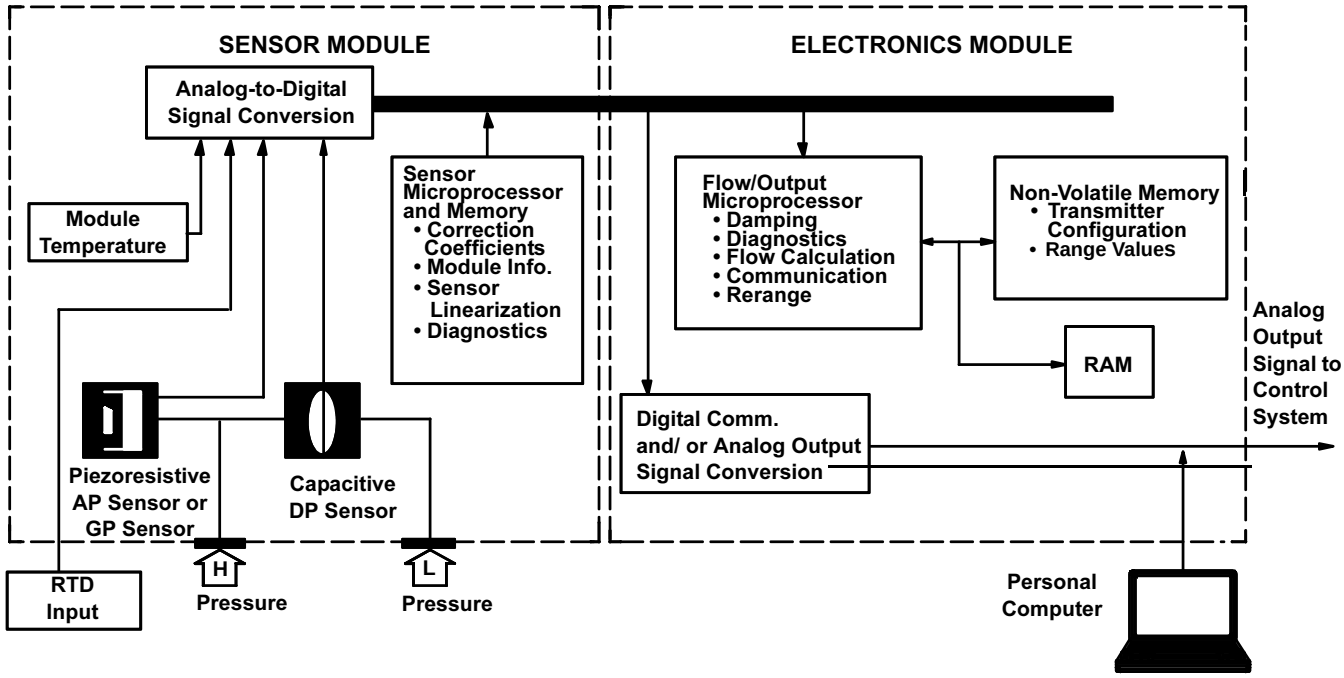
8 IECEx Dust
Certificate Number: IECEx KEM 06.0018
Ex tD A22 T90°C
IP66

Combinations of Certifications

Stainless steel certification tag is provided when optional approval is specified. Once a device labeled with multiple approval types is installed, it should not be reinstalled using any other approval types. Permanently mark the approval label to distinguish it from unused approval types.

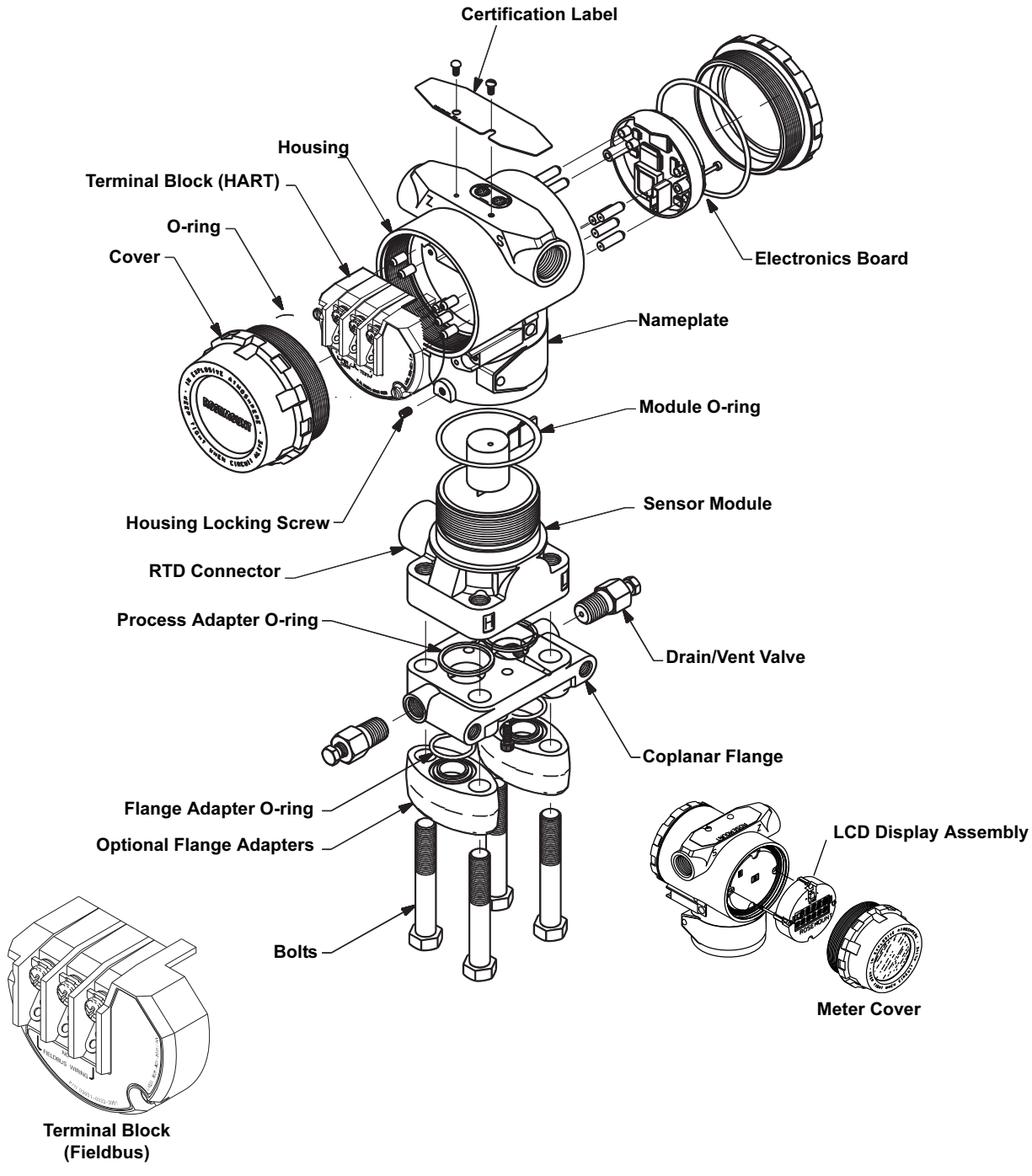
B A and J combination
D C and K combination
L F, G, H, and P combination
9 4, 5, 7, and 8 combination

FIGURE 1. 3095 MultiVariable Sensor Module/ Electronics Module



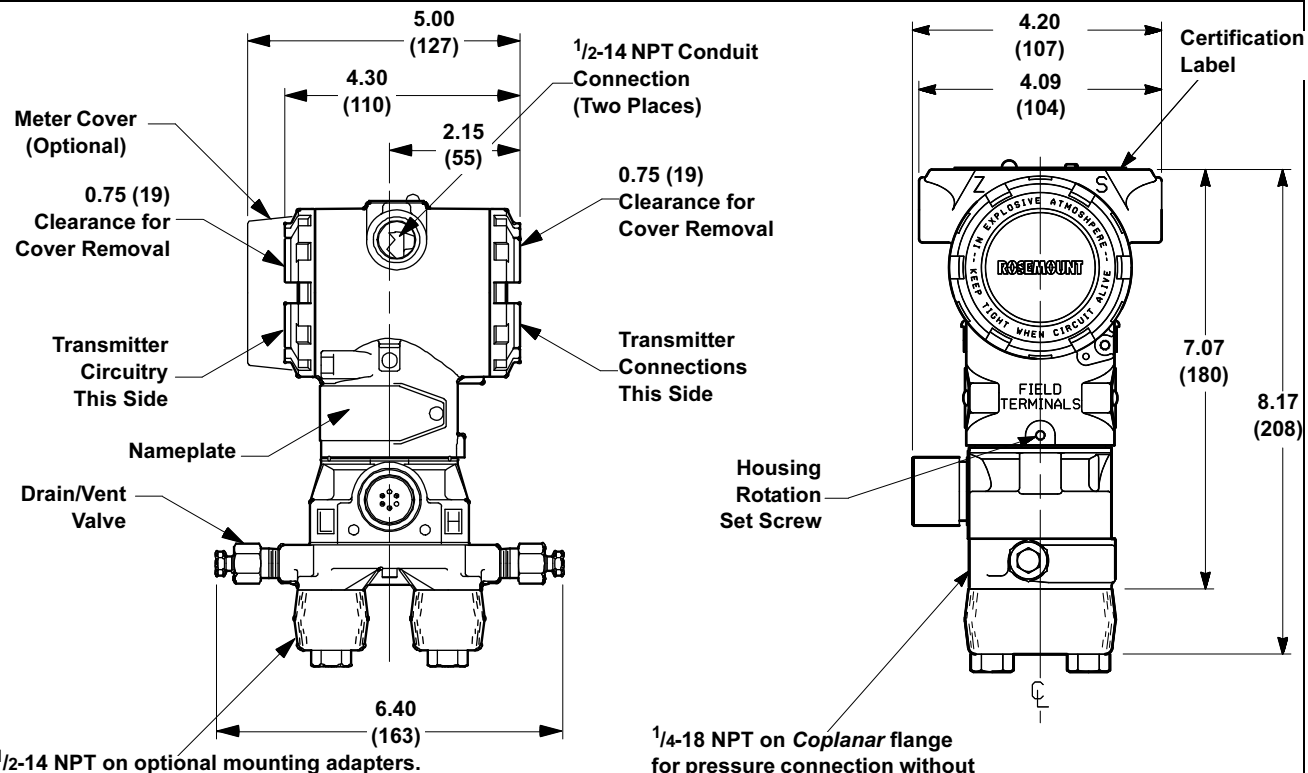
Dimensional Drawings

Exploded View of the Rosemount 3095



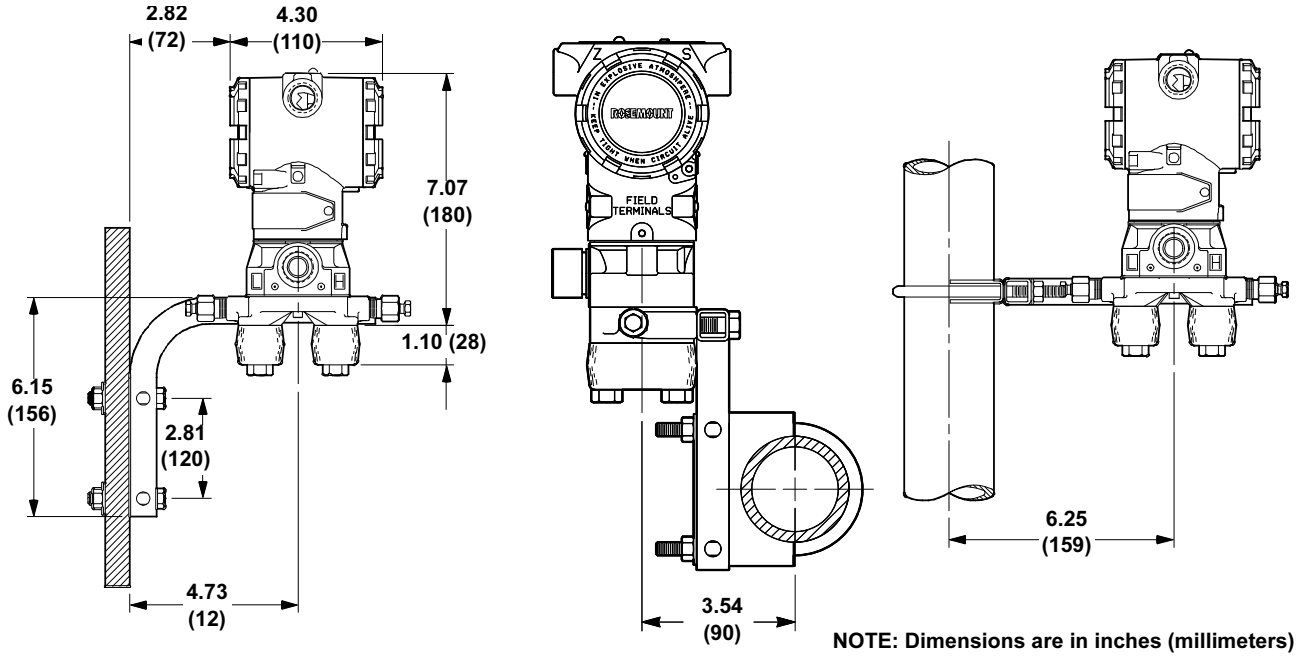
Rosemount 3095 MultiVariable

Rosemount 3095



NOTE: Dimensions are in inches (millimeters).

Mounting Configurations



NOTE: Dimensions are in inches (millimeters)

Ordering Information

Model	Product Description		
3095M	*MultiVariable* Mass Flow Transmitter		
Code	**Output**		
A	4–20 mA with digital signal based on HART protocol		
V	FOUNDATION™ fieldbus protocol		
Code	**Differential Pressure Ranges**		
1[1]	0–0.5 to 0–25 inH_2O (0–1,25 to 0–62,3 mbar)		
2	0–2.5 to 0–250 inH_2O (0–6,22 to 0–622,7 mbar)		
3	0–10 to 0–1000 inH_2O (0–0,0249 to 0–2,49 bar)		
Code	**Static Pressure Ranges**		
3	0.5-8 to 0.5–800 psia (3,447–55,16 to 3,447–5516 kPa)		
4	0.5-36.26 to 0.5–3626 psia (3,447-250 to 3,447–25000 kPa)		
C	0-8 to 0-800 psig (0–55,16 to 0–5516 kPa)		
D	0-36.26 to 0-3626 psig (0-250 to 0–25000 kPa)		
Code	**Isolator Material**	**Fill Fluid**	
A	316L SST	Silicone	
B[2]	Hastelloy C-276	Silicone	
F	Gold Plated SST	Silicone	
D	Tantalum	Silicone	
J[3]	316L SST	Inert	
K[2][3]	Hastelloy C-276	Inert	
L[3]	Tantalum	Inert	
Code	**Flange Style**		**Material**
A	*Coplanar*		CS
B[2]	*Coplanar*		SST
C[2]	*Coplanar*		Hastelloy C-276
F[2][4]	*Coplanar*		SST, non-vented
J	DIN compliant traditional flange, SST 10 mm adapter/manifold bolting		SST, $^7/_{16}$ — 20 Bolting
0	None (required for option code S3 or S5)		
Code	**Drain/Vent Material**		
A	SST		
C[2]	Hastelloy C-276		
0	None (required for option code S3 or S5)		
Code	**O-ring**		
1	Glass-filled PTFE		
Code	**Process Temperature Input (RTD ordered separately)**		
0	Fixed process temperature (no cable)		
1	RTD Input with 12 ft. (3,66 m) of Shielded cable (intended for use with conduit)		
2	RTD Input with 24 ft. (7,32 m) of Shielded cable (intended for use with conduit)		
7	RTD Input with 75 ft. (22,86 m) of Shielded cable (intended for use with conduit)		
6	RTD Input with 4 ft. (1,22 m) of Armored, Shielded cable		
3	RTD Input with 12 ft. (3,66 m) of Armored, Shielded cable		
4	RTD Input with 24 ft. (7,32 m) of Armored, Shielded cable		
5[5]	RTD Input with 21 in. (53 cm) of Armored, Shielded cable		
8	RTD Input with 75 ft. (22,86 m) of Armored, Shielded cable		
A	RTD Input with 12 ft. (3,66 m) of ATEX/IECEx Flameproof cable		
B	RTD Input with 24 ft. (7,32 m) of ATEX/IECEx Flameproof cable		
C	RTD Input with 75 ft. (22,86 m) of ATEX/IECEx Flameproof cable		
D[5]	RTD Input with 21 in. (53 cm) of ATEX/IECEx Flameproof cable		
Code	**Transmitter Housing Material**	**Conduit Entry Size**	
A	Polyurethane-covered aluminum	½–14 NPT	
B	Polyurethane-covered aluminum	M20 × 1.5 (CM20)	
C	Polyurethane-covered aluminum	PG 13.5	
J	SST	½–14 NPT	
K	SST	M20 × 1.5 (CM20)	
L	SST	PG 13.5	

Code	Terminal Block
A	Standard
B	With integral transient protection
Code	**Display**
0	None
1	LCD Display
Code	**Bracket**
0	None
1	*Coplanar* SST flange bracket for 2-in. pipe or panel mount, SST bolts
2	Traditional Flange Bracket for 2-in. Pipe Mounting, CS Bolts
3	Traditional Flange Bracket for panel Mounting, CS Bolts
4	Traditional Flange Flat Bracket for 2-in. Pipe Mounting, CS Bolts
5	Traditional Flange Bracket for 2-in. Pipe Mounting, 300-Series, SST Bolts
6	Traditional Flange Bracket for Panel Mounting, 300-Series, SST Bolts
7	Traditional Flange Flat Bracket for 2-in. Pipe Mounting, 300-Series, SST Bolts
8	SST Traditional Flange Bracket for 2-in. Pipe Mounting, 300-Series, SST Bolts
9	SST Traditional Flange Flat Bracket for 2-in. Pipe Mounting, 300-Series, SST Bolts
Code	**Bolts**
0	CS bolts
1	Austenitic 316 SST bolts
N	None (Required for Option Code S3 or S5)
Code	**Product Certifications**
0	None
A	FM Explosion-proof, Dust Ignition-proof
B	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of A and J)
J	FM Intrinsically Safe, Division 2
V	FM FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only
K	CSA Intrinsically Safe, Division 2
C	CSA Explosion-proof, Dust Ignition-proof, Division 2
D	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of C and K)
W	CSA FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only
F	ATEX Intrinsic Safety
G	ATEX Type n
H	ATEX Flameproof
L	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of F, G, H, and P)
P	ATEX Dust
T	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only
6	ATEX FISCO, Flameproof, Intrinsic Safety, Type n, Dust
Y	IECEx FISCO Intrinsic Safety
4	IECEx Intrinsic Safety
5	IECEx Type n
7	IECEx Flameproof
8	IECEx Dust
9	IECEx Flameproof, Dust, Intrinsic Safety, Type n (combination of 4, 5, 7, and 8)
2	China Intrinsic Safety
3	China Flameproof
R	TIIS Flameproof
Code	**Engineered Measurement Solution (EMS)**
B[6]	Fully Compensated Mass Flow and Measured Variables (DP, P, and T) with HART or FOUNDATION fieldbus.
V[7]	Process Variable Measurement (DP, P, and T) only (No Mass Flow Variable)

Code	Options
	Performance Class
U3[8]	Ultra for Flow: ±0.05% DP reading accuracy, up to 100:1 rangedown, 10 year stability, limited 12 year warranty
	***PlantWeb* Control Functionality**
A01[9]	FOUNDATION fieldbus Advanced Control Function Block Suite
	Custom Configuration
C2	Custom Flow Configuration (Requires completed Configuration Data Sheet
	Flange Adapter
DF[10]	Flange Adapters — Adapter Type Determined by Selected Flange Material: Plated CS, SST, Hastelloy C-276
	Integral Manifold
S5[11]	Assemble to Rosemount 305 Integral Manifold
S6[11]	Assemble to Rosemount 304 Manifold or Connection System (Requires traditional Flange Style Options J, K, or L)
	Cleaning
P2	Cleaning for Special Services
	Material Traceability Certification
Q8[12]	Material Inspection Certificate per EN 10204 3.1B
	Calibration Data Sheet
Q4	Inspection Certificate for Calibration Data
	Hydrostatic Testing
P1	Hydrostatic Testing with certificate
	Primary Elements
S3[11]	Assemble to Rosemount 405 Compact Orifice
S4[11][13]	Assemble to Rosemount *Annubar* Averaging Pitot Tubes or Rosemount 1195 Integral Orifice Plate
	Remote Seals
S1[11]	Assemble to one Rosemount 1199 Diaphragm Seal
S2[11]	Assemble to two Rosemount 1199 Diaphragm Seals
Q16	Surface Finish Certification
Typical Model Number	**3095M A 2 3 A A A 1 3 A B 0 1 1 0 B**

(1) Available only with 3 or C sensor modules and "A" 316L SST/silicone, Isolator/Fill Fluid option.

(2) Materials of Construction comply with metallurgical requirements highlighted within NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.

(3) Only available with C or D Gage Sensor Modules.

(4) Requires that Drain/Vent Material Code 0 (none).

(5) For use with Annubars with integral RTDs.

(6) Requires Rosemount 3095 Engineering Software Assistant to configure mass flow.

(7) Not available with HART output.

(8) Ultra for Flow applicable for HART protocol, DP ranges 2 and 3 with SST isolator material and silicone fill fluid options only.

(9) Function Blocks include: Arithmetic, Integrator, Analog Output, Signal Characterizer, Control Selector, and Output Selector.

(10) Not available with assembly to Rosemount 1195 Integral Orifice Option Code S4.

(11) "Assemble-to" items are specified separately and require a completed model number.

(12) This option is available for the sensor module housing, Coplanar and Coplanar flange adapters.

(13) With a primary element installed, the maximum operating pressure will be the lesser of either the transmitter or the primary element.

OPTIONS

Standard Configuration

Unless otherwise specified, transmitter is shipped as follows:

Engineering units:

Differential	inH_2O (Range 2)
Absolute/gage	psi (all ranges)
Output:	Specified model code option
Flange type:	Specified model code option
Flange material:	Specified model code option
O-ring material:	Specified model code option
Drain/vent:	Specified model code option
Flow Configuration Parameters:	Factory default
Software tag:	(Blank)

In addition, transmitter is shipped as follows:

- The three process variables are digitally trimmed to the specified upper and lower range values.
- For Mass Flow and Measured Variables (EMS Code B), process variable output order is set to Flow, DP, AP/GP, PT.
- Flow is configured to measure air via ASME Orifice: Flange Tap, with a primary element minimum diameter of 0.5 in. (SST material), meter tube diameter of 2 in. (carbon steel material), flow range configured from 0–8,262 SCFH, 10–100 psia operating pressure range, and 50–100 °F operating temperature range.

Custom Configuration (Option Code C2)

If Option Code C2 is ordered, the custom flow configuration parameters are specified in addition to the standard configuration parameters.

Fixed Process Temperature (Option Code 0)

If Process Temperature Input (option code 0) is ordered, the fixed process temperature is set to 68 °F unless specified during order entry (HART protocol only).

Tagging

Three customer tagging options are available:

- Standard SST tag is wired to the transmitter. Tag character height is 0.125 in. (3.18 mm), 85 characters maximum.
- Tag may be permanently stamped on transmitter nameplate upon request. Tag character height is 0.0625 in. (1.59 mm), 65 characters maximum.
- Tag may be stored in transmitter memory.
- Software tag (8 characters maximum HART protocol; 32 characters maximum FOUNDATION fieldbus protocol) is left blank unless specified.

Additional Information

Rosemount transmitters are available as fully assembled and factory calibrated flowmeters. Flowmeter Product Data Sheets are listed below:

- *Annubar* Flowmeter Series:00813-0100-4809
  Rosemount 3051SFA *ProBar*
  Rosemount 3095MFA Mass *ProBar*
  Rosemount 485 *Annubar* Primary Element
- *Proplate* Flowmeter Series: 00813-0100-4686
  Rosemount 3051SFP *Proplate*
  Rosemount 3095MFP Mass *Proplate*
  Rosemount 1195 Integral Orifice Primary Element
- Compact Orifice Flowmeter Series: 00813-0100-4810
  Rosemount 3051SFC Flowmeter
  Rosemount 3095MFC Mass Flowmeter
  Rosemount 405 Compact Orifice Primary
- Orifice Plate Primary Element Systems: 00813-0100-4792
  Rosemount 1495 Orifice Plate
  Rosemount 1595 Conditioning Orifice Plate 00813-0100-4828
  Rosemount 1496 Flange Union
  Rosemount 1497 Meter Section

Optional Rosemount 305 Integral Manifolds

Rosemount 3095 Transmitter and 305AC (305BC) Integral Manifold are fully assembled, calibrated, and seal tested by the factory. Refer to PDS 00813-0100-4733 for additional information.

Temperature Sensors and Assemblies

Rosemount offers many types of temperature sensors and assemblies.

ACCESSORIES

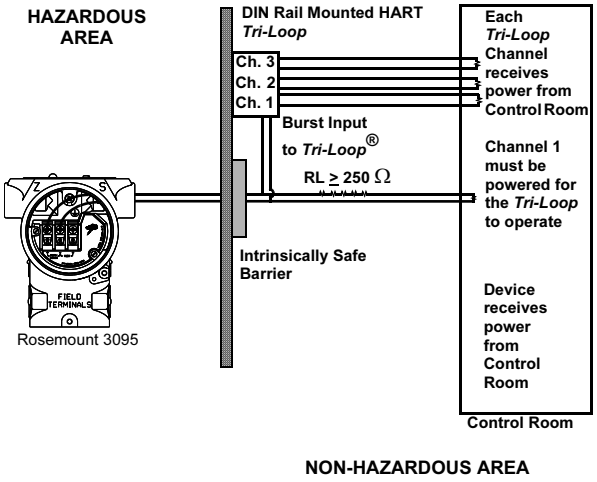
Rosemount 333 HART *Tri-Loop*™ HART-to-Analog Signal Converter

The Rosemount 333 HART *Tri-Loop* can be installed with the 3095 without disrupting existing device wiring. The 333 HART *Tri-Loop* provides up to three additional analog outputs for process monitoring or control without additional pipe penetrations.

The HART *Tri-Loop* accepts the 3095 digital signal and converts it to three independent isolated 4–20 mA analog signals. Any of the 3095 process variables (DP, AP, GP, PT, or flow) can be provided via the 333 HART *Tri-Loop*.

Rosemount 333 HART *Tri-Loop*

Model	Product Description
333	*HART Tri-Loop* (standard configuration)
Code	**Alarm Option**
U	High Alarm
D	Low Alarm
Code	**Options**
C2	Custom Configuration. Requires a completed Configuration Data Sheet (00806-0100-4754)
Typical Model Number: 333 U	



Accessories

Item Description	Part Number
Serial Port HART Modem and Cables Only	03095-5105-0001
USB Port HART Modem and Cables Only(1)	03095-5105-0002
FOUNDATION fieldbus PCM-CIA Interface Card and Cables Only	03095-5108-0001

(1) Supported by Snap-On EA with AMS Device Manager version 6.2 or higher.

Rosemount 3095 Engineering Assistant (EA) Software Packages

The Rosemount 3095 Engineering Assistant software supports mass flow configuration for both HART and FOUNDATION fieldbus protocols. The package is available with or without protocol-specific modem and connecting cables. All configurations are packaged separately.

For best performance of the EA Software, the following computer hardware and software is recommended:

- Pentium, 800MHz personal computer or above
- 512 MB RAM
- 350 MB of available hard disk space
- Mouse or other pointing device
- Color computer display
- *Microsoft* ® *Windows*™ NT, 2000 or XP

3095 Engineering Assistant Software Package

Code	Product Description
EA	Engineering Assistant Software Package
Code	**Software Version**
2(1)	EA Rev. 5 (Compatible with 3095, 3051S FOUNDATION fieldbus, and 333)
Code	**Language**
E	English
Code	**Modem and Connecting Cables**
0	None
H	Serial Port HART Modem and Cables
B	USB Port HART Modem and Cables
E	770 USB to FOUNDATION fieldbus Interface
C	FOUNDATION fieldbus PCM-CIA Interface Card and Cables
Code	**License**
N1	Single PC License
N2	Site License
Typical Model Number: EA 2 E O N1	

(1) Revisions of EA - HART 5.3, 5.4, and 5.5 supports Windows NT, 2000, and XP operating systems. EA-FOUNDATION Fieldbus supports Windows 2000 and XP.

Rosemount 3095 MultiVariable

Product Data Sheet
00813-0100-4716, Rev LA
Catalog 2008 - 2009

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