Product Data Sheet
00813-0100-5710, Rev. AH
November 2026

Micro Motion 4700 Transmitters



- Compact, integral mount transmitter design saves electrical cost and space for use on integrated systems and skids
- Direct mass measurement improves process control while reducing number of measurement devices required
- Smart Meter Verification provides you with the confidence you need in your meter performance
- Zero verification confirms the calibration and indicates when it's time to re-zero the meter
- Easy access to detailed measurement history gives you valuable insight into your process for better troubleshooting and optimization
- Real-time indication of multiphase flow events allow for greater process control

Overview 4700 Configurable I/O

The Micro Motion 4700 Configurable Inputs and Outputs transmitter enables the use of reliable and accurate Micro Motion Coriolis meters for your flow measurement application, offering flexibility for outputs and diagnostics. The Coriolis meter delivers measurement accuracy, repeatability, and operational savings.

- The historian records upsets and process deviations every second for 13.5 days and every five minutes for one year
- NAMUR-compliant (NE-21, NE-43, NE-53, NE-107, NE-131, NE-132)
- Certified to be SIL2/3 capable (for both single meter/multiple meters) per IEC 61508

The 4700 meter delivers multivariable and diagnostic information through HART® or Modbus® communications. Comprised of a cutting-edge 4700 transmitter and the proven best-in-class performance of a Micro Motion Coriolis meter, the Micro Motion meter reduces costs through improved process consistency and maximized up time.

Access information when you need it with asset tags

Newly shipped devices include a unique QR code asset tag that enables you to access serialized information directly from the device. With this capability, you can:

- Access device drawings, diagrams, technical documentation, and troubleshooting information in your MyEmerson account
- Improve mean time to repair and maintain efficiency
- Ensure confidence that you have located the correct device
- Eliminate the time-consuming process of locating and transcribing nameplates to view asset information

Installation types for the 4700 transmitter

⚠ WARNING

Improper installation in a hazardous area can cause an explosion.

If you are installing the transmitter in a hazardous area, refer to Micro Motion approval instructions, shipped with the product or available from the Micro Motion website (Emerson.com/global).

Applications

Applications are custom-designed software available to offer additional functionality and performance to transmitters. These applications are available through options in the transmitter model code. See Ordering information for details.

Smart Meter Verification

- Provides a quick, complete assessment of a Coriolis meter, determining whether the meter has been affected by erosion, corrosion, or other influences affecting meter calibration
- A basic version of Smart Meter Verification is included with the 4700 transmitter that provides simple pass/fail results.
- Smart Meter Verification Professional is a licensed option that provides access to more meter diagnostics and a printable report when paired with ProLink™ Basic or Professional software.

Data historian

- Long-term data historian: 5-minute Min. Max Avg. Std Dev (1 year)
- Short-term data historian: 1-second data (13.5 days)

Petroleum measurement and API correction option

- Accepts inputs from temperature and pressure devices

- Calculates values as per May 2004 API Chapters 11.1 and 11.2.4
    - Relative density (specific gravity and API gravity) at reference temperature from observed density and temperature
    - Volume corrected to reference temperature and pressure
- Calculates flow-weighted average temperature and flow-weighted average observed density (specific gravity and API gravity)

Concentration measurement

Provides concentration measurement based on either industry-specific or liquid-specific units and relationships. Standard measurement options include:

- Industry-specific:
    - °Brix
    - °Plato
    - °Balling
    - °Baumé at SG60/60
    - Specific gravity
- Liquid-specific:
    - %HFCS
    - Concentration derived from reference density
    - Concentration derived from specific gravity

Additionally, the application can be customized for site-specific concentration measurement (such as $\%HNO_3$, %NaOH).

Advanced Phase Measurement

- Accurately measures liquid or gas flow in limited multiple-phase conditions
    - Immediate and continuous access to production or process data
    - Real time reporting of Gas Void Fraction (GVF)
- Facilitates reliable measurement at a fraction of the cost of true multiphase meters
    - Historian automatically captures all production data
    - Little to no maintenance or calibration
- Combines with Net Oil Computer (NOC) or concentration measurement to measure two liquids in the presence of gas
    - Provides single-well real-time Net Oil and Net Water measurements
    - Improves concentration measurement in processes with intermittent entrained gas Piecewise Linearization (PWL) for enhanced gas applications
- Provides gas calibration enhancement capability for industry-leading gas measurement performance
- Designed specifically for midstream natural gas fiscal metering applications

Input output signal detail

Configurable Inputs and Outputs 4700 Transmitter

Signal	Channel A		Channel B		Channel C	
Wiring terminals	1	2	3	4	5	6
mA inputs and outputs	mA Output 1 (HART®)		mA Output 2		RS-485	
Frequency outputs	Frequency Output 2		Frequency Output 1			
Discrete outputs	Discrete Output 2		Discrete Output 1			
Discrete inputs			Discrete Input 1			

- mA/FO/DO/DI can all be configured for either active or passive operation.
- mA Outputs are NE-43 compliant and have a linearity of .015% Span, Span = 16 mA.

Intrinsically Safe 4700 Transmitter

Signal	Channel A		Channel B		Channel C	
Wiring terminals	1	2	3	4	5	6
mA inputs and outputs	mA Output 1 (HART®)				mA Output 2	
Frequency outputs			Frequency Output 1			
Discrete outputs			Discrete Output 1			

Electrical connections

Connection type	Transmitter
Input/Output (I/O)	• Up to three pairs of wiring terminals for transmitter input/output and digital communications. • Screw terminals accept solid or stranded conductors, 26 AWG (0.129 mm^2) to 14 AWG (2.08 mm^2).
Digital communications administrative connection	• Two clips inside the terminal cover for a temporary connection to HART®/Bell 202 terminals. • Loop resistance is required and must be present in the main I/O loop, but not physically on the main terminal block.
Power	Universal (self-switching) with a supply voltage range of : • 18 Vdc to 100 Vdc • 85 Vac (RMS) to 250 Vac (RMS) • One pair of wiring terminals accepts AC or DC power. • One internal ground lug for power supply ground wiring Maximum load conditions: • 4700 4-wire: 3.54 W (Maximum) • 4700 9-wire: 2.76 W (Maximum)
Sensor	• 4-wire remote mount – four terminals for connection to 4-wire sensor • 9-wire remote mount – nine terminals for connection to 9-wire sensor
Reverse Polarity Protection(1)	• Because the 4700 has a Universal AC/DC power supply, reversing the leads on a DC supply to the 4700 will still power the product and not damage anything. • Both the CHA and CHB configurable channels have reverse polarity protection. • Configurable I/O Channels incorporate reverse polarity protection.
Universal Service Port (USP)	A USP connected to commercially-available USB equipment and cables

(1) Applies only to DC supplies or instances where reversing the leads can cause damage.

Environmental effects

Electromagnetic interference (EMI) effects

- Complies with Electromagnetic Compatibility (EMC) directive 2014/30/EU

- Complies with Low Voltage Directive 2014/35/EU
- These standards include surge and transient testing. The transmitter incorporates internal protection against surge and transient events.

Ambient temperature effect

- On analog outputs: ±0.0025 percent of span per °C change from the temperature at which the outputs were trimmed.

Environmental compliance

	The battery in the 4700 transmitter cannot be serviced or replaced by users. In compliance with Restriction of Hazardous Substances (RoHS) and Waste Electrical and Electronic Equipment (WEEE), Micro Motion provides a service for battery replacement and disposal. The 4700 transmitter complies with RoHS Directive 2011/65/EU.
Ingress protection	4700 transmitters are rated to NEMA® 4X, 6 as well as IP66, IP67, IP69.

Digital communications

Connection type	Transmitter
Modbus®/USP	• One service port can be used for a temporary connection only. • Connects to a PC through USB as if the transmitter had a built-in USB.RS-485 converter • Supports all Modbus data rates • Requires a USB A/male-to-A/male cable A 4 ft cable is provided with each meter.
Modbus/RS-485, HART®/ RS-485	• Available on Channel C, if licensed • One RS-485 output can be used for direct connection to HART or Modbus host systems. • Accepts data rates between 1200 baud and 38.4 kilobaud • 115.2 kilobaud is also available as a special order item. • Uses the latest HART 7 standard
HART/Bell 202	• Available on Channel A, if licensed • HART/Bell 202 signal is superimposed on the primary milliamp output, and is available for the host system interface. • Requires 250 to 600 ohms resistance • Uses the latest HART 7 standard

Environmental limits

Aluminum painted housing

Type	Ambient temperature limits
Operating	-61 to +149 °F (-52 to +65 °C)
Storage	-61 to +185 °F (-52 to +85 °C)

Stainless steel housing

Type	Ambient temperature limits
Operating	–68 °F (–56.0 °C) to +140 °F (+60.0 °C)
Storage	–68 °F (-56.0 °C) to +185 °F (+85.0 °C)

Vibration limits

Meets IEC 60068-2-6, endurance sweep, 5 to 2000 Hz up to 1.0 g

Housing rating

Type	Value
Transmitter	NEMA® 4X (IP66/67/69) polyurethane-painted cast aluminum or 316 stainless steel

Humidity limits

The humidity limits are 5 to 95% relative humidity, non-condensing between 40 °F (-40.0 °C) to 149 °F (65.0 °C).

Hazardous area classifications

	Approval type	Approval
CSA C-US		XP: • Class I, Div. 1, Groups C, D • Class I, Div. 2, Groups A, B, C, D • Class II, Div. 1, Groups E, F, G IS: • Class I, Div. 1, Groups A, B, C, D • Class I, Div. 2, Groups A, B, C, D • Class II, Div. 1, Groups E, F, and G NI: • Class I, Div. 2, Groups A, B, C, D • Class II, Div. 2, Groups F, G
ATEX EU		• II 2(1)G Ex db [ia Ga] IIC T6 Gb • II 2(1)D Ex tb [ia Da] IIIC T72 °C Db • IP66/IP67 or • II 2(1)G Ex db eb [ia Ga] IIC T6 Gb • II 2(1)D Ex tb [ia Da] IIIC T72 °C Db • IP66/IP67 or • II 1G Ex ia IIC T4 Ga • II 1D Ex ia IIIC T77 °C Da • IP66/IP67
		• II 3(1)G Ex ec [ia Ga] IIC T6 Gc • II 3(1)D Ex tc [ia Da] IIIC T72 °C Dc • IP66/IP67

IECEx

	Approval type	Approval
IECEx		IECEx Z1 Ex d: • Ex db [ia Ga] IIC T6 Gb • Ex tb [ia Da] IIIC T72 °C Db • IP66/IP67 IECEx Z1 Ex de: • Ex db eb [ia Ga] IIC T6 Gb • Ex tb [ia Da] IIIC T72 °C Db • IP66/IP67 IECEx Z0/1 Ex ia: • Ex ia IIC T4 Ga • Ex ia IIIC T77 °C Da • IP66/IP67 IECEx Z2 Ex ec: • Ex ec [ia Ga] IIC T6 Gc • Ex tc [ia Da] IIIC T72 °C Dc • IP66/IP67

Physical specifications

Transmitter

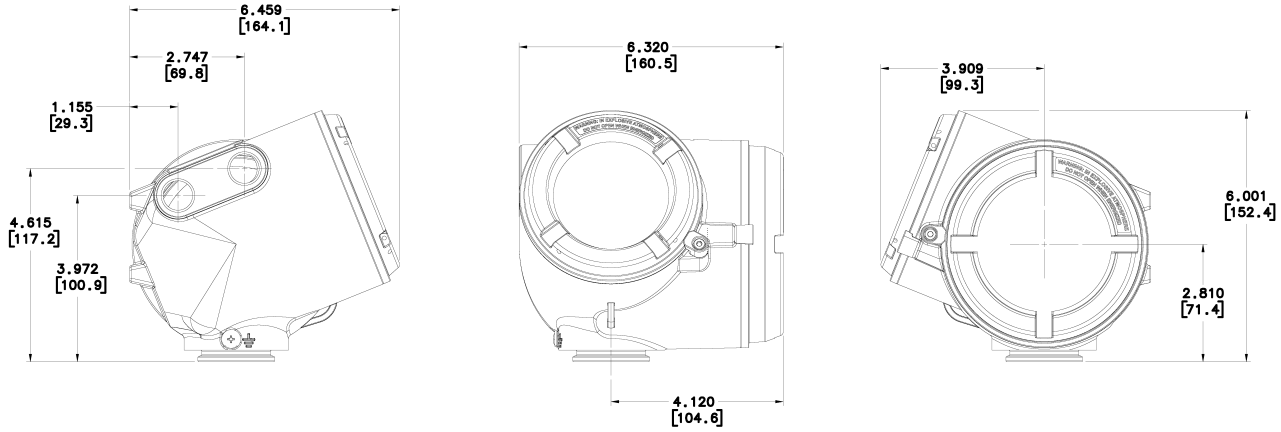
Specification	Value
Housing	NEMA® 4X (IP66/67) polyurethane-painted cast aluminum or 316L stainless steel. Available with ½-inch NPT or M20 conduit connections.
Weight	See the sensor product data sheet for combined weight of the flow meter: • Integral mount version with display 13.9 lb (6.30 kg) • Remote mount version with display 7.60 lb (3.447 kg) • 4700 Stainless steel integral mount version 13.9 lb (6.30 kg) with small clamp • 4700 Stainless steel remote version without mounting bracket 19.1 lb (8.66 kg) • 4700 Stainless steel remote mount version 21.5 lb (9.75 kg) with mounting brackets
Cable gland entrances	Two ½-inch NPT or M20 x1.5 female conduit port.
Mounting	• Available integrally mounted to the following Coriolis sensors: - CMF200 – CMFHC4 - CMFS010 – CMFS150 - F025 – F400 - H025 – H400 - R025 – R300 - T025 – T150 - G025 – G300

Specification	Value
	• Available remotely mounted to the following Coriolis sensors: - CMF010 – CMFHC4 - CMFS007 – CMFS150 - F025 – F400 - H025 – H400 - R025 – R300 - T075 – T150 - G025 – G300 • Available as a stainless steel sensor for the following Coriolis sensors - CMF010 – CMFHC4 - CMFS007 – CMFS150 - F025 – F400 - H025 – H400 - R025 – R300 - T075 – T150 - G025 – G300 • The transmitter can be rotated in 90 degree increments.
Interface/display 	Standard user interface with LCD panel • Bluetooth® wireless technology display option available, with a typical range of 49 ft. (14.94 m)(1) • Suitable for hazardous area installation • User interface module can rotate 360° in 90° increments by software selection • Four capacitive buttons for local operation without removing transmitter housing cover • Display can be configured to scroll through displayed variables at user-specified rate • Display update rate is user-configurable: 500 to 10,000 milliseconds • Start, stop, and reset totalizers

(1) The maximum communication range will vary depending on orientation, obstacles (person, metal, wall, etc.), or electromagnetic environment..

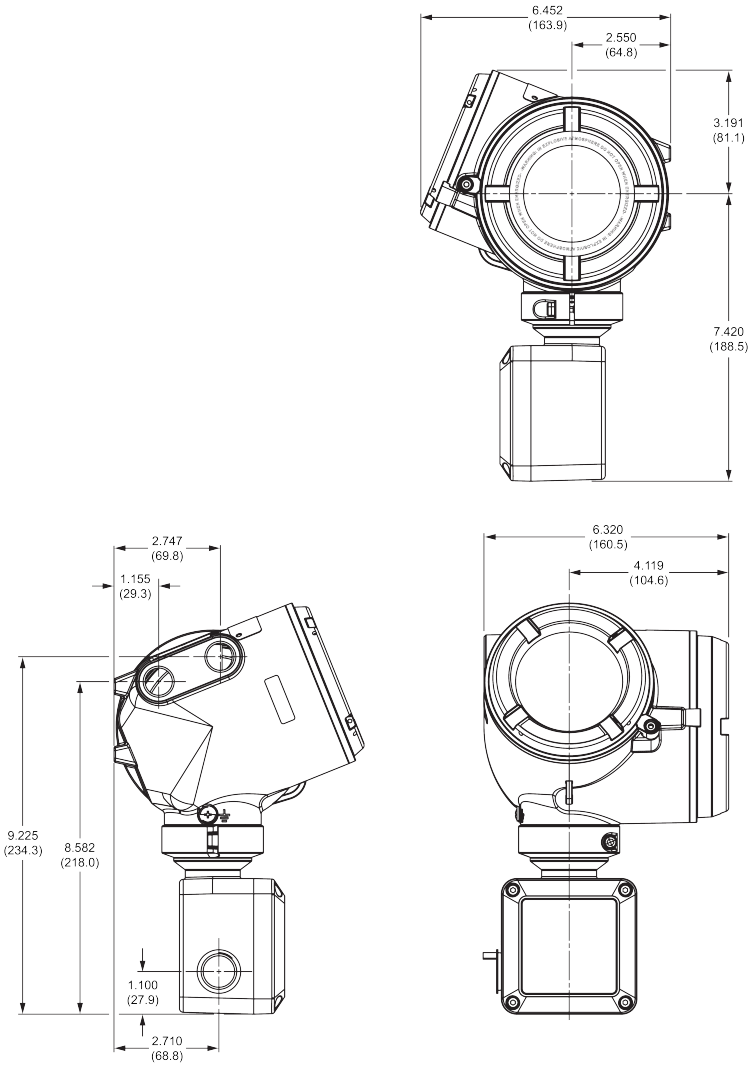
Dimensional drawings

Figure 1: 4700 Transmitter - Aluminum and Stainless Steel Housing for Integral Installation



Dimensions are in inches [mm].

Figure 2: 4700 Transmitter - Aluminum and Stainless Steel Housing Remote Installation



Dimensions are in inches [mm].

4700 with Smart Wireless THUM™ Adapter

The 4700 transmitter is available with the Smart Wireless THUM Adapter using order option code NI (THUM ordered separately and not assembled to the 4700 transmitter). Refer to the THUM Adapter option.

Ordering information

4700

Base model

Model	Product description
4700	4700 Micro Motion Coriolis Field Mount Transmitter

Mounting

Code	Options for 4700
I	Integral mount transmitter (polyurethane-painted aluminum housing)
J	Integral mount transmitter (316 stainless steel housing)
R	4-wire remote mount transmitter (polyurethane-painted aluminum housing), and hardware for 2 in. NPS (DN 50) pipe and hardware for 2-in. pipe mount, includes 10 ft (3.0 m) 4-wire shielded PVC cable
M	Remote mount transmitter (316 stainless steel housing), stainless steel bracket for wall or pipe mounting and hardware for 2 in. NPS (DN 50) pipe mount, includes 10 ft (3.0 m) 4 wire shielded PVC cable
C	9-wire remote mount transmitter (polyurethane-painted aluminum housing) and hardware for 2 in. NPS (DN 50) pipe mount. Includes 10 ft (3.0 m) of CFEPS cable
P	9-wire remote mount transmitter (316 stainless steel housing), stainless steel bracket for wall or pipe mounting and hardware for 2 in. NPS (DN 50) pipe mount. Includes 10 ft (3.0 m) of CFEPS cable
S	Integral mount transmitter retrofit to existing sensor replacing 1700/2700 integral mount transmitter (polyurethane-painted aluminum housing)

Power

Code	Power options
1	18 to 100 Vdc and 85 to 265 Vac self-switching

Display

Code	Transmitter display options
Available with all approval codes	
2	Backlit graphic display
3	No display
R	Backlit graphic display with Bluetooth® technology
Available with approval code MA	
7	Non-glass backlit graphic display
T	Non-glass backlit graphic display with Bluetooth technology

Output hardware board

Code	**Output hardware board**
A	Configurable outputs
D	Intrinsically Safe Configurable Outputs

Conduit connection

Code	Conduit connection options
B	½-inch NPT - no gland
C	½-inch NPT with brass nickel cable gland
D	½-inch NPT with stainless steel cable gland
E	M20 - no gland
F	M20 with brass nickel cable gland
G	M20 with stainless steel cable gland
K	JISB0202 ½ G - no gland
L	Japan - brass nickel cable gland
M	Japan - stainless steel cable gland

Approval

Code	Approval options
MA	Micro Motion Standard (no approval)
AA	CSA (US and Canada): Class I, Division 1, Groups C and D
ZA	ATEX: II 2G, Ex de, Zone 1 and II 2D Ex tb, Zone 21
FA	ATEX: II 2G, Ex d, Zone 1 and II 2D Ex tb, Zone 21
IA	IECEx: EPL Gb, Ex d, Zone 1
EA	IECEx: EPL Gb, Ex de, Zone 1
PA	NEPSI: EPL Gb, Ex d, Zone 1
KA	NEPSI: EPL Gb, Ex de, Zone 1
TA	Japan Ex d Zone 1 (Flameproof Terminal Compartment)
SA	Japan Ex de Zone 1 (Increased Safety Terminal Compartment)
2A	CSA (US and Canada): Class I, Division 2, Groups A, B, C, D Sensor connections will be Intrinsically Safe without additional barrier.
VA	ATEX: II 3G, Ex nA nC, Zone 2 and II 3D Ex tc Zone 22 Sensor connections will be Intrinsically Safe without additional barrier.
3A	IECEx: EPL Gc, Ex nA nC, Zone 2 Sensor connections will be Intrinsically Safe without additional barrier.
NA	NEPSI: EPL Gc, Ex nA nC, Zone 2
R1	EAC: Ex de, Zone 1 and II 2D Ex tb, Zone 21
R2	EAC: Ex db, Zone 1 and Ex tb, Zone 21
R3	EAC: nA nC, with or without IS output, Zone 2 and Ex tc, with or without IS output, Zone 22

Revision

Code	Revision
A	Revision A

Transmitter option 1

Code	Transmitter option 1
Z	Standard
G	Flow only outputs - (NEPSI or EAC approval only) Available with approval options PA, KA, NA, R1, R2, and R3 only Available with display options 3 and 5 only Available with output channel A and channel B assignment code A only

Transmitter option 2

Code	Transmitter option 2
Z	Standard

Factory options

Code	Factory options for 4700
Z	Standard product
X	ETO product

Output channel A assignment

Code	Output channel A assignment
Available with A output hardware board	
A	Channel A: 4-20 mA/HART®, FO, DO configurable
Z	Channel Off

Output channel B assignment

Code	Output channel B assignment
Available with A output board	
A	Channel B: 4-20 mA, FO, DO, DI configurable
Z	Channel Off

Output channel C assignment

Code	Output channel C assignment
Available with A output board	
A	Channel C: RS-485
Z	Channel Off

Add on options

Code	Add on options (all are optional, none mandatory)
Instrument Tagging	
TG	Instrument - customer information required (maximum 24 characters)
Historian	
HS	Historian
Meter Verification	
MV	Smart Meter Verification Available with all mounting options, but mounting code C is limited to 60 ft. (18 m) of 9-wire cable and only available when purchased with a new 9-wire sensor.
Enhanced Measurement (select only one from this group.)	
PS	API referral software
CM	Concentration Measurement software
Additional software options	
FE	Fuel efficiency software Only available with output hardware board option A.
Advanced Phase Management (select only one from this group.)	
PG	Advanced Phase Measurement for wet gas Not available with weights and measures options.
PL	Advanced Phase Measurement for single liquid and gas Not available with weights and measures options.
Net Oil computer software (select only one from this group.)	
MA	Manual Advanced Phase Management Configuration Not available with add on options NT and SI. Not available with output hardware board option D. Not available with add on option PL.
PO	Net Oil computer software – single well (PL option is highly recommended) Not available with weights and measures options. Not available with add on options NT and SI.
Piecewise Linearization for gas software	
PW	Piecewise Linearization for gas software Not available with certification option SI.
Additional certifications, requires "A" board option	
SI	Safety certification of 4-20 mA output per IEC 61508
Smart Wireless 775 THUM™ ready, requires "A" board option	
NI	Smart Wireless 775 THUM Ready – 775 ordered separately and not assembled to the 4700 transmitter

For more information: Emerson.com

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