

# Micro Motion® Model 5700 Ethernet Transmitters

Ethernet Installations



MICRO MOTION™

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# 1 Planning

## Topics covered in this chapter:

- [About this document](#)
- [Related documentation](#)
- [Installation checklist](#)
- [Additional considerations for retrofitting existing installations](#)
- [Power requirements](#)
- [Model 5700 transmitters in Ethernet networks](#)

## 1.1 About this document

This manual provides information on planning, mounting, wiring, and initial setup of the transmitter. For information on full configuration, maintenance, troubleshooting, or service of the transmitter, see the configuration and use manual.

The information in this document assumes that users understand:

- Basic transmitter and sensor installation, configuration, and maintenance concepts and procedures
- All corporate, local government, and national government safety standards and requirements that guard against injuries and death

## 1.2 Related documentation

You can find all product documentation via the Micro Motion product documentation DVD shipped with the product or at [www.micromotion.com](http://www.micromotion.com).

**Table 1-1: Additional documentation and resources**

Topic	Document
Sensor	Sensor documentation
Transmitter configuration and use	<i>Micro Motion Model 5700 Transmitters Ethernet Configuration and Use Manual</i>
Product Data Sheet	<i>Micro Motion Model 5700 Product Data Sheet (PDS)</i>
Ethernet EtherNET/IP	<i>Micro Motion Model 5700 Transmitters Ethernet EtherNet/IP Rockwell RSLogix Integration Guide</i>
PROFINET	<i>Micro Motion Ethernet PROFINET Siemens Integration Guide</i>
Modbus configuration	<i>Modbus Interface Tool (MIT)</i> — available at <a href="http://www.micromotion.com">www.micromotion.com</a>

**Table 1-1: Additional documentation and resources (continued)**

Topic	Document
Hazardous area installation	See the approval documentation shipped with the transmitter, or download the appropriate documentation from the Micro Motion web site at <a href="http://www.micromotion.com">www.micromotion.com</a> .

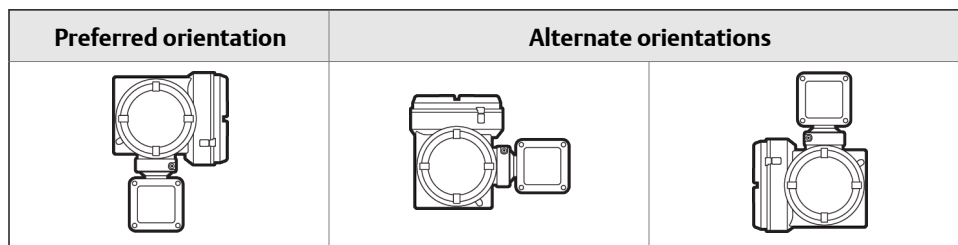
## 1.3 Installation checklist

- Safety messages are provided throughout this content to protect personnel and equipment. Read each safety message carefully before proceeding to the next step.
- If possible, install the transmitter in a location that will prevent direct exposure to sunlight. The environmental limits for the transmitter may be further restricted by hazardous area approvals.
- If you plan to mount the transmitter in a hazardous area:
  - Verify that the transmitter has the appropriate hazardous area approval. Each transmitter has a hazardous area approval tag attached to the transmitter housing.
  - Ensure that any cable used between the transmitter and the sensor meets the hazardous area requirements.
  - For ATEX/IECEX installations, you must strictly adhere to the safety instructions documented in the ATEX/IECEX approvals documentation available on the Micro Motion Product Documentation DVD shipped with the product or at [www.micromotion.com](http://www.micromotion.com). Be sure to reference this documentation in addition to the information shown in this guide.
- Verify that you have the appropriate cable and required cable installation parts for your installation. For wiring between the transmitter and sensor, verify the maximum cable length does not exceed 1000 ft (300 m).
- Ensure that you use the following cable for the different connections:
  - A twisted-pair instrument cable for the Channel C I/O connection
  - A shielded Cat5e or higher rated instrumentation cable for the Ethernet connections
- You can mount the transmitter in any orientation as long as the conduit openings or transmitter display do not point upward.

Installing the transmitter with the conduit openings or transmitter display facing upward risks condensation moisture entering the transmitter housing, which could damage the transmitter.

Following are examples of possible orientations for the transmitter.

**Table 1-2: Possible transmitter orientation**



- Mount the meter in a location and orientation that satisfies the following conditions:
  - Allows sufficient clearance to open the transmitter housing cover. Micro Motion recommends 8–10 inches (200–250 mm) clearance at the wiring access points.
  - Provides clear access for installing cabling to the transmitter.

## 1.4 Additional considerations for retrofitting existing installations

- The transmitter installation may require 3–6 inches (76–153 mm) of additional wiring for the input/output and power connections. This length would be in addition to the currently installed wiring. Confirm you have the additional wiring necessary for the new installation.
- Before removing the existing transmitter, be sure to record the configuration data for the currently installed transmitter. At initial startup of the newly installed transmitter, you will be prompted to configure the meter via a guided setup.

Micro Motion recommends that you record the following information (if applicable):

Variable	Setting
Tag	
Mass flow units	
Volume flow units	
Density units	
Temperature units	
Channel configuration	
mA output 1	<ul style="list-style-type: none"> <li>- Power (Internal or External):</li> <li>- Source:</li> <li>- Scaling (LRV, URV):</li> <li>- Fault Action:</li> </ul>
mA output 2 (optional)	<ul style="list-style-type: none"> <li>- Power (Internal or External):</li> <li>- Source:</li> <li>- Scaling (LRV, URV):</li> <li>- Fault Action:</li> </ul>

Variable	Setting
Frequency output (optional)	<ul style="list-style-type: none"> <li>- Power (Internal or External):</li> <li>- Source:</li> <li>- Scaling (LRV, URV):</li> <li>- Fault Action:</li> <li>- Dual output:</li> </ul>
Discrete output (optional)	<ul style="list-style-type: none"> <li>- Power (Internal or External):</li> <li>- Source:</li> <li>- Scaling (LRV, URV):</li> <li>- Fault Action:</li> </ul>
Discrete input (optional)	<ul style="list-style-type: none"> <li>- Power (Internal or External):</li> <li>- Source:</li> <li>- Scaling (LRV, URV):</li> <li>- Fault Action:</li> </ul>
<b>Calibration parameters (for 9-wire installations only)</b>	
Flow calibration factor	<ul style="list-style-type: none"> <li>- FCF (Flow Cal or Flow Calibration Factor):</li> </ul>
Density calibration factors	<ul style="list-style-type: none"> <li>- D1:</li> <li>- D2:</li> <li>- K1:</li> <li>- K2:</li> <li>- TC:</li> <li>- FD:</li> </ul>

## 1.5 Power requirements

Self-switching AC/DC input, automatically recognizes supply voltage:

- 85 to 265 VAC, 6.5 watts typical, 9 watts maximum
- 18 to 100 VDC, 6.5 watts typical, 9 watts maximum

---

### Note

For DC power:

- Power requirements assume a single transmitter per cable.
  - At startup, the power source must provide a minimum of 1.5 amps of short-term current per transmitter.
  - Length and conductor diameter of the power cable must be sized to provide 18 VDC minimum at the power terminals, at a load current of 0.7 amps.
- 

### Table sizing formula

$$M = 18V + (R \times L \times 0.7A)$$

- M: minimum supply voltage
- R: cable resistance

- L: cable length (in  $\Omega/\text{ft}$ )

**Typical power cable resistance at 68 °F (20 °C)**

Wire gauge	Resistance
14 AWG	0.0050 $\Omega/\text{ft}$
16 AWG	0.0080 $\Omega/\text{ft}$
18 AWG	0.0128 $\Omega/\text{ft}$
20 AWG	0.0204 $\Omega/\text{ft}$
2.5 mm <sup>2</sup>	0.0136 $\Omega/\text{m}$
1.5 mm <sup>2</sup>	0.0228 $\Omega/\text{m}$
1.0 mm <sup>2</sup>	0.0340 $\Omega/\text{m}$
0.75 mm <sup>2</sup>	0.0460 $\Omega/\text{m}$
0.50 mm <sup>2</sup>	0.0680 $\Omega/\text{m}$

## 1.5.1 Maximum cable lengths between sensor and transmitter

The maximum cable length between the sensor and transmitter that are separately installed is determined by cable type.

**Table 1-3: Maximum cable lengths between sensor and transmitter**

Cable type	Wire gauge	Maximum length
Micro Motion 4-wire	Not applicable	<ul style="list-style-type: none"> <li>• 1000 ft (300 m) without Ex-approval</li> <li>• 500 ft (150 m) with IIC rated sensors</li> <li>• 1000 ft (300 m) with IIB rated sensors</li> </ul>
Micro Motion 9-wire	Not applicable	1000 ft (300 m)
User-supplied 4-wire	VDC 22 AWG (0.35 mm <sup>2</sup> )	300 ft (90 m)
	VDC 20 AWG (0.5 mm <sup>2</sup> )	500 ft (150 m)
	VDC 18 AWG (0.8 mm <sup>2</sup> )	1000 ft (300 m)
	RS-485 22 AWG (0.35 mm <sup>2</sup> ) or larger	1000 ft (300 m)

## 1.6 Model 5700 transmitters in Ethernet networks

You can install the Model 5700 transmitter in star, ring, or daisy-chain networks using industrial-rated shielded Ethernet cables.

- Make sure that each cable is no longer than 100 meters.

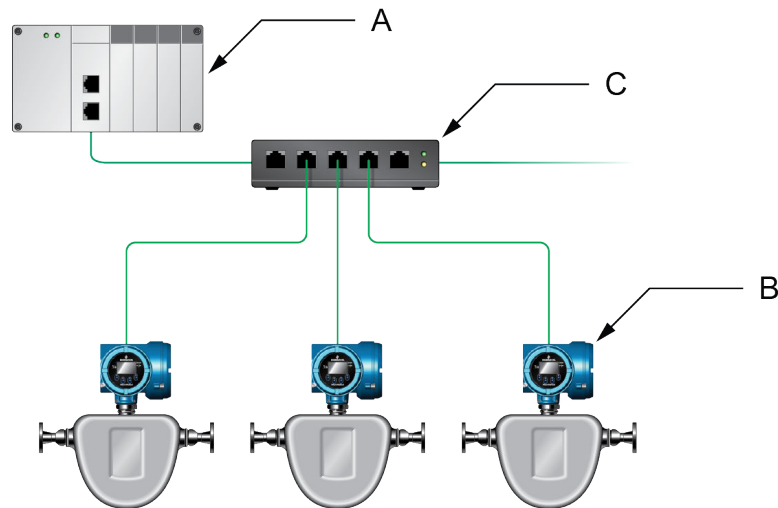
- Connect the Model 5700 transmitter to the host system via a LAN (Local Area Network) and not a WAN (Wide Area Network).
- Follow all network security best practices.

## 1.6.1 Star topology

Model 5700 transmitters can be installed in a star network.

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**Figure 1-1: Model 5700 star network**

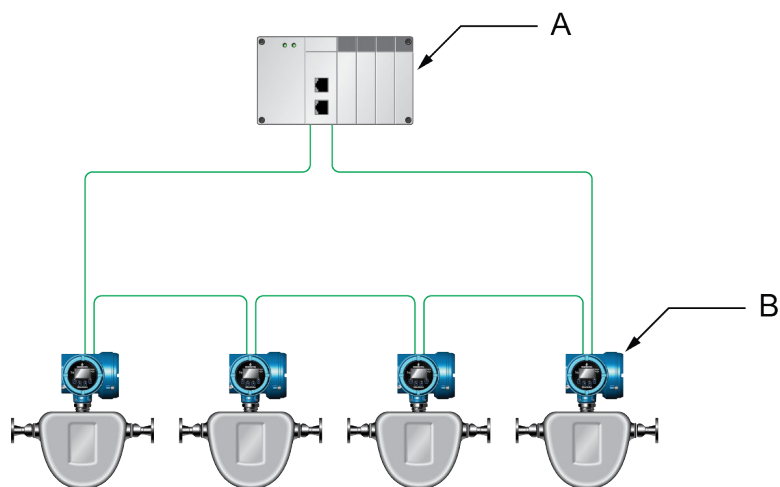


- A. Programmable Logic Controller (PLC)  
B. Model 5700 with Ethernet output  
C. External Ethernet switch
- 

## 1.6.2 Ring topology

Model 5700 transmitters can be installed in a ring network.

**Figure 1-2: Model 5700 ring network**

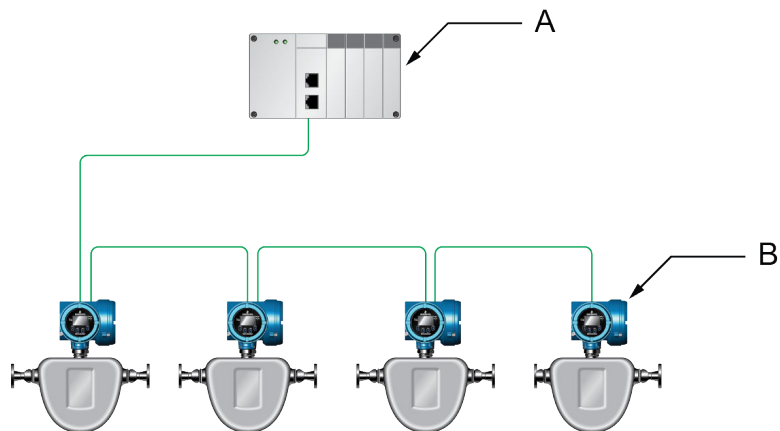


- A. Programmable Logic Controller (PLC)
- B. Model 5700 with Ethernet output

### 1.6.3 Daisy-chain topology

Model 5700 transmitters can be installed in a daisy-chain network.

**Figure 1-3: Model 5700 daisy-chain network**



- A. Programmable Logic Controller (PLC)
- B. Model 5700 with Ethernet output

## 2 Mounting and sensor wiring

### Topics covered in this chapter:

- *Mounting and sensor wiring for integral-mount transmitters*
- *Mount the 4-wire or 9-wire remote-mount transmitters*
- *Wire the 4-wire or 9-wire remote-mount transmitter to the sensor*
- *Ground the meter components*
- *Rotate the transmitter on the sensor (optional)*
- *Rotate the user interface on the transmitter (optional)*
- *Rotate the sensor wiring junction box on a remote-mount transmitter (optional)*

### 2.1 Mounting and sensor wiring for integral-mount transmitters

There are no separate mounting requirements for integral transmitters, and no need to connect wiring between the transmitter and the sensor.

### 2.2 Mount the 4-wire or 9-wire remote-mount transmitters

#### 2.2.1 Mount the transmitter to a wall or instrument pole

There are two options available for mounting the transmitter:

- Mount the transmitter to a wall or flat surface.
- Mount the transmitter to an instrument pole.

#### Prerequisites

- If you are mounting the transmitter to a wall or flat surface:
  - Micro Motion recommends the use of 5/16-18 (M8X1.25) fasteners that can withstand the process environment. Micro Motion does not supply bolts or nuts as part of the standard offering (general purpose bolts and nuts are available as an option).
  - Ensure that the surface is flat and rigid, does not vibrate, or move excessively.
  - Confirm that you have the necessary tools, and the mounting kit shipped with the transmitter.

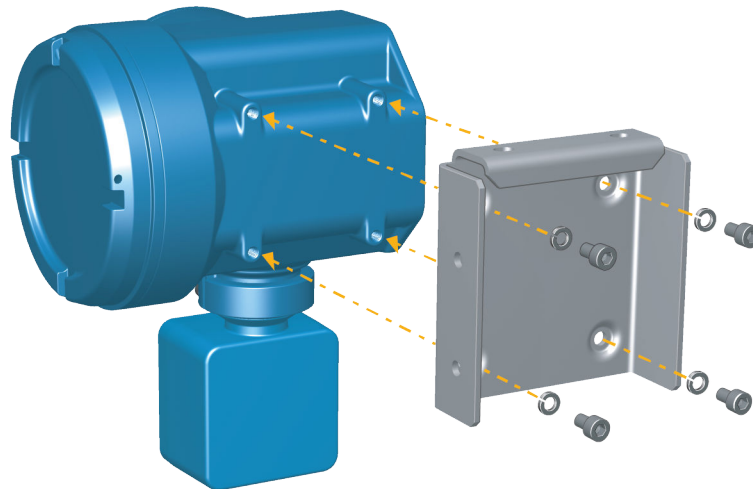


- If you are mounting the transmitter to an instrument pole:
  - Ensure that the instrument pole extends at least 12 inches (305 mm) from a rigid base, and is no more than 2 inches (50.8 mm) in diameter.
  - Confirm that you have the necessary tools, and the instrument-pole mounting kit shipped with the transmitter.

#### Procedure

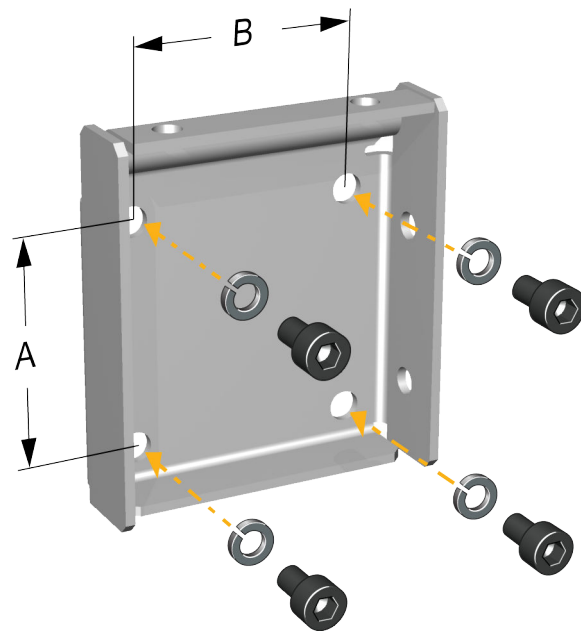
1. Attach the mounting bracket to the transmitter and tighten the screws to 80-90 in-lbs.

**Figure 2-1: Mounting bracket to transmitter**



2. Using a wall-mount or pole-mount:
  - For wall-mount installations, secure the mounting bracket to the prepared surface.

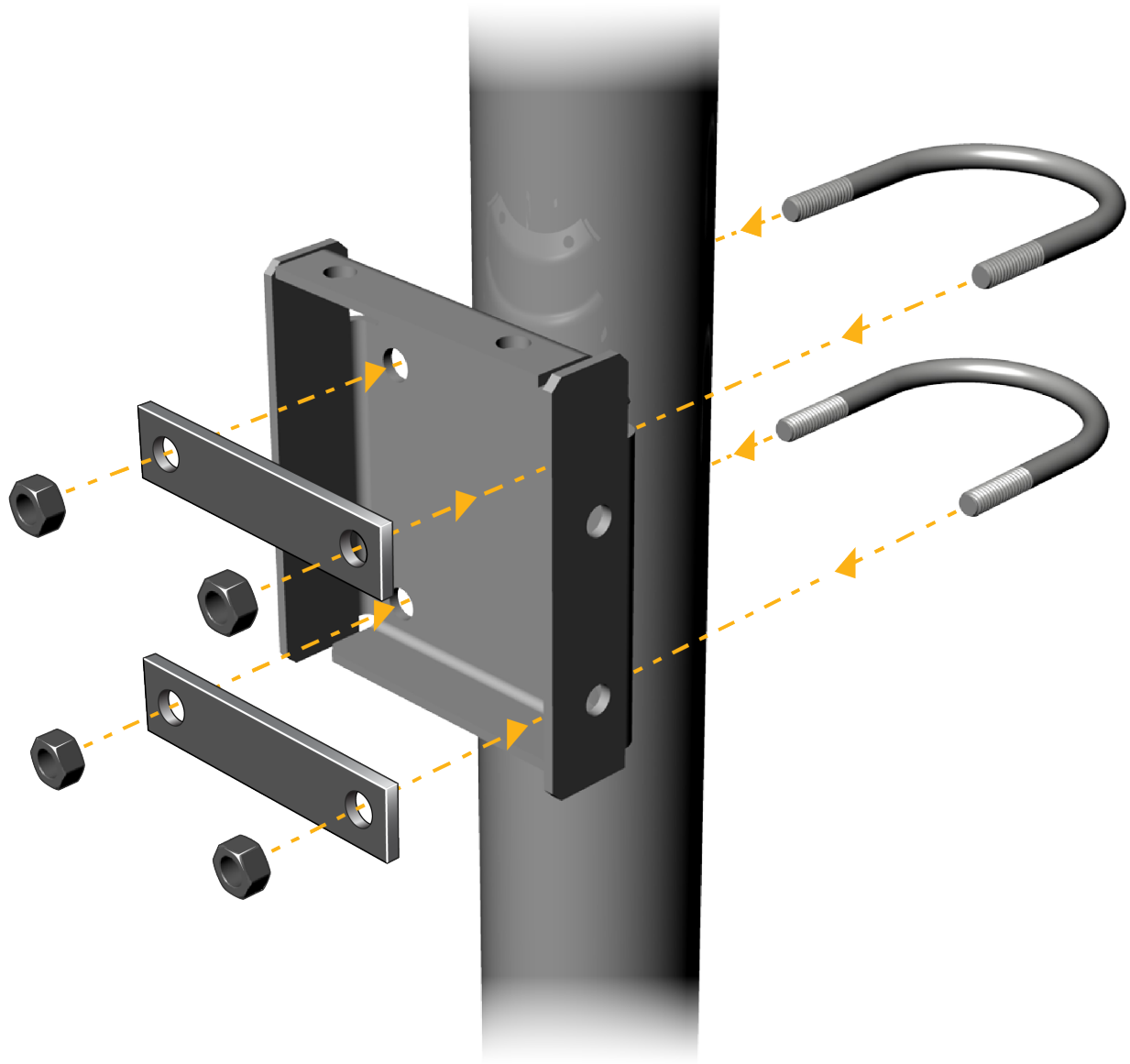
**Figure 2-2: Wall-mounting bracket dimensions**



A. 2.8 in (71.4 mm)

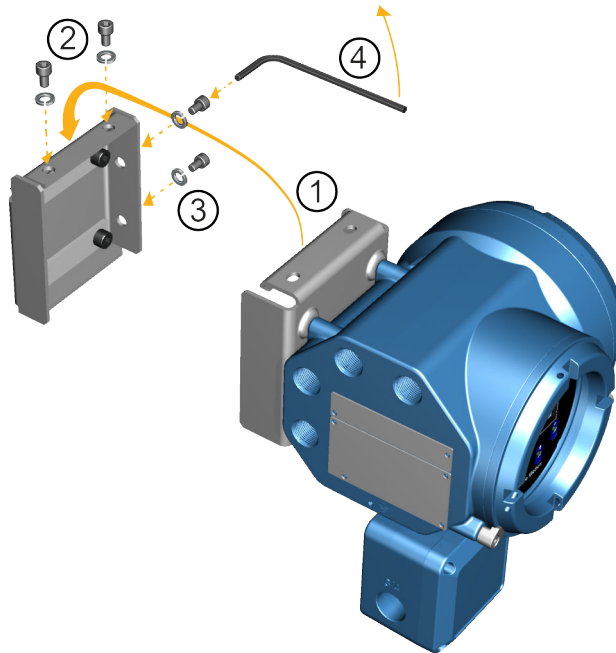
B. 2.8 in (71.4 mm)

- 
- For pole-mount installations, attach the U-bolt mounting piece to the instrument pole.

**Figure 2-3: Pole-mounting bracket attachment**

3. Place and attach the transmitter-mounting bracket to the mounting bracket secured to the wall or instrument pole.

**Figure 2-4: Attaching and securing transmitter to mounting bracket**



**Tip**

To ensure the mounting bracket holes are aligned, insert all attachment bolts into place before tightening.

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## 2.3 Wire the 4-wire or 9-wire remote-mount transmitter to the sensor

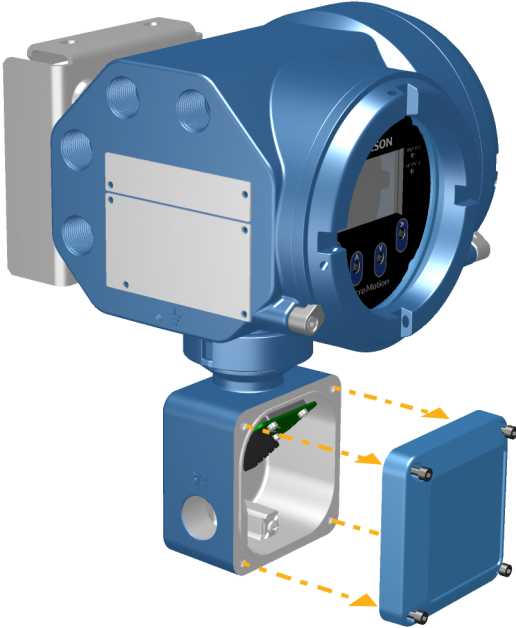
### Prerequisites

- Prepare 4-wire or 9-wire cable as described in the sensor documentation.
- Connect the cable to the sensor-mounted core processor or junction box as described in the sensor documentation. You can access all product documentation online via the Micro Motion product documentation DVD shipped with the product or at [www.micromotion.com](http://www.micromotion.com).

### Procedure

1. Remove the transmitter-to-sensor wiring compartment cover to reveal the terminal connections.

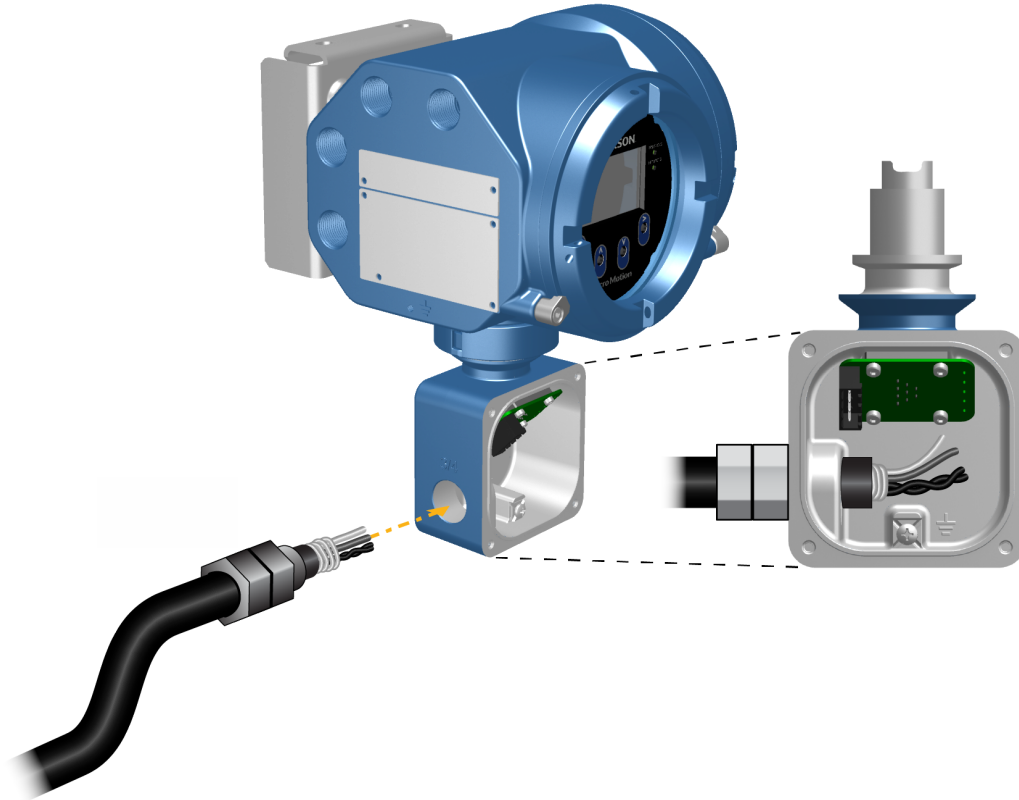
Figure 2-5: Removal of the transmitter-to-sensor wiring compartment cover



2. Feed the sensor wiring cable into the transmitter wiring compartment.

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**Figure 2-6: Sensor wiring feedthrough**



- 
3. Connect the sensor wires to the appropriate terminals.

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**Note**

Terminate the 4-wire cable drain wires only at the sensor/core processor end of the cable. See the sensor installation manual for more detail. Do not connect the 4-wire cable drain wires to the ground screw located inside the 5700 junction box.

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- See [Figure 2-7](#) for 4-wire terminal connections.
- See [Figure 2-8](#) for 9-wire terminal connections.

Figure 2-7: 4-wire transmitter-to-sensor wiring connections

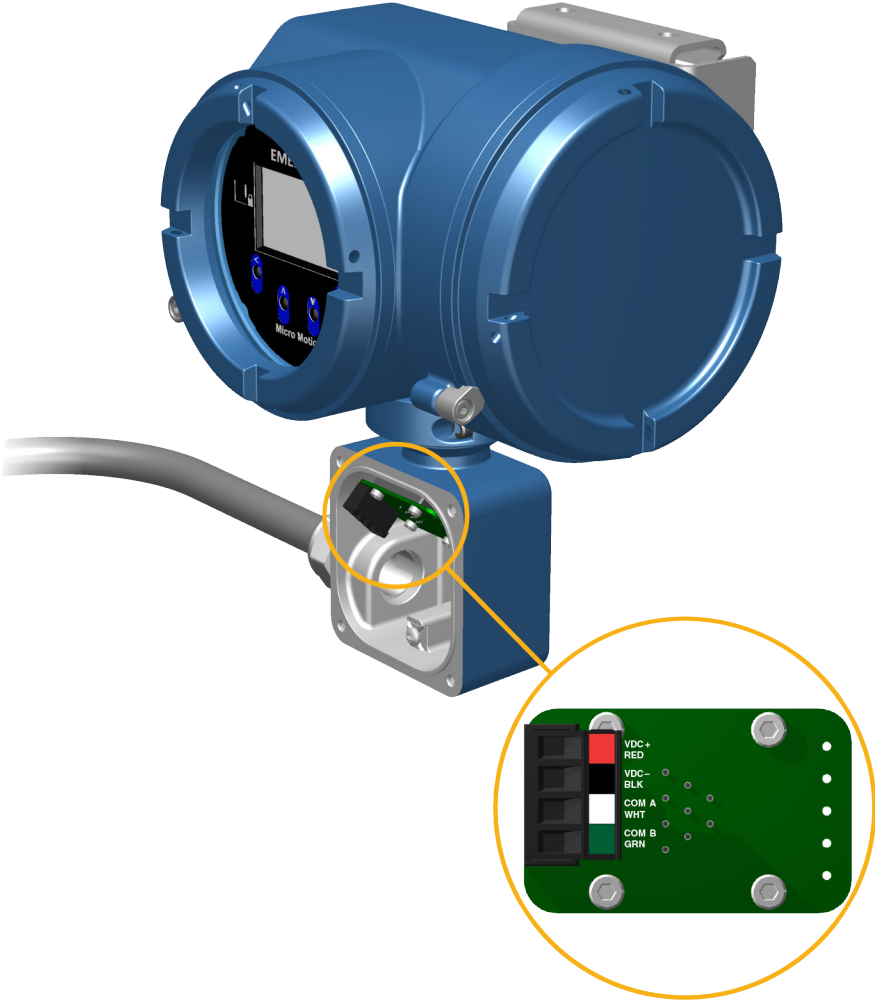
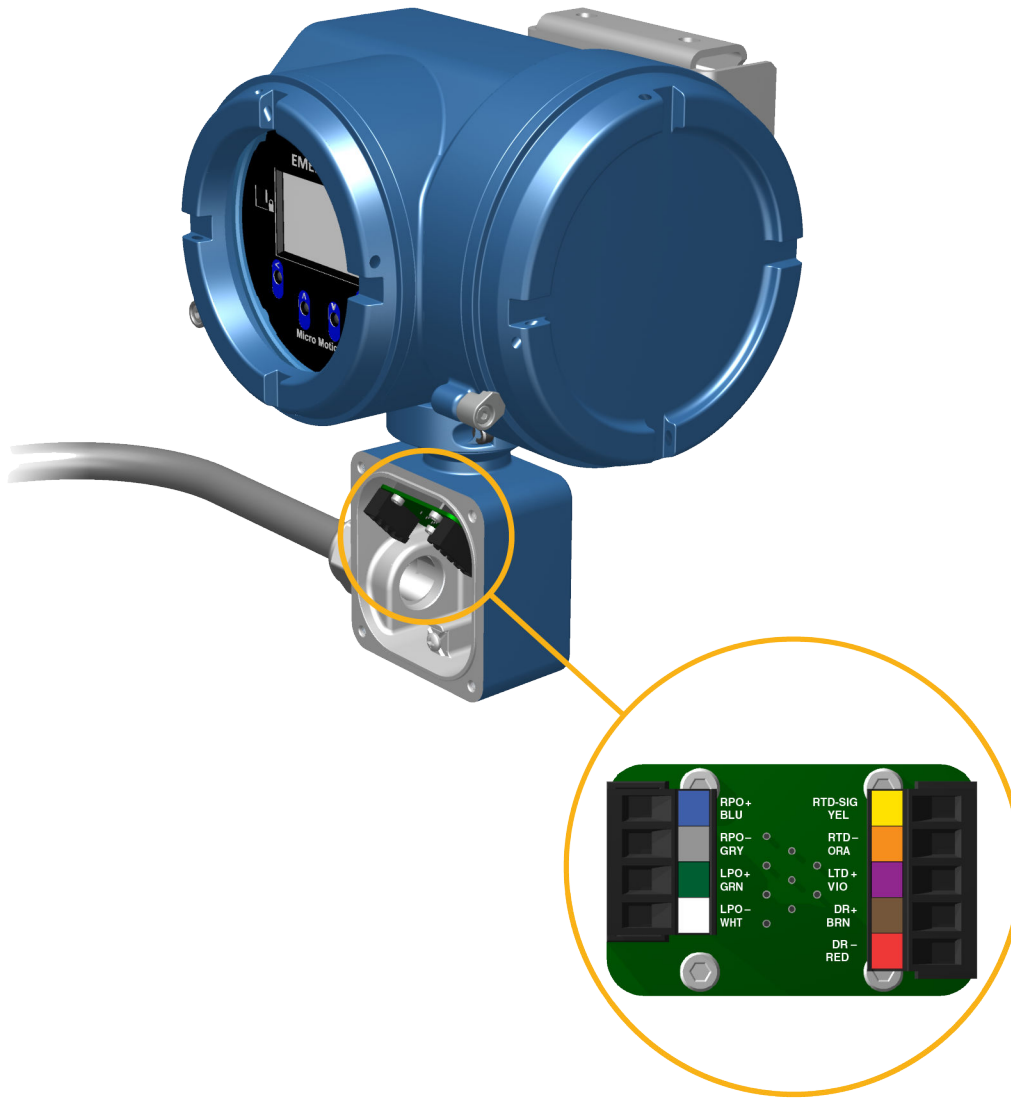


Figure 2-8: 9-wire transmitter-to-sensor wiring connections



**Note**

Connect the 4 drain wires in the 9-wire cable to the ground screw located inside the junction box.

4. Replace the transmitter-to-sensor wiring compartment cover and tighten the screws to 14-16 in-lbs.

## 2.4 Ground the meter components

In 4-wire or 9-wire remote installations, the transmitter and sensor are grounded separately.



## Prerequisites

### CAUTION!

Improper grounding could cause inaccurate measurements or meter failure.

### WARNING!

Failure to comply with requirements for intrinsic safety in a hazardous area could result in an explosion.

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### Note

For hazardous area installations in Europe, refer to standard EN 60079-14 or national standards.

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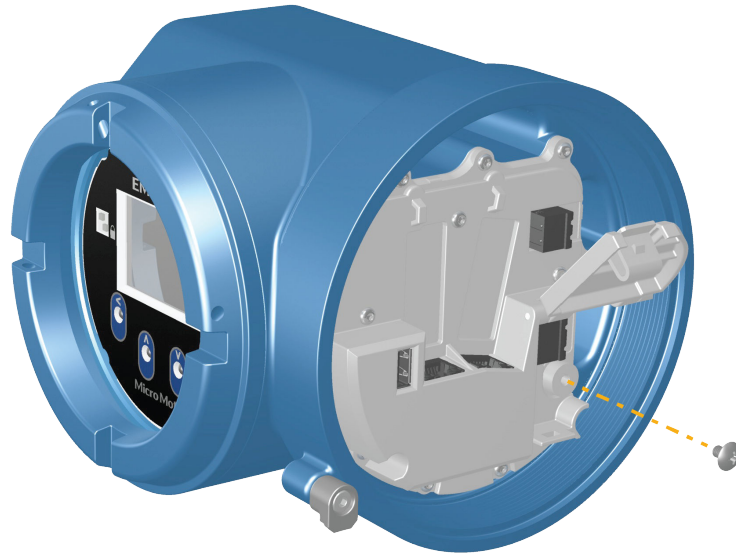
If national standards are not in effect, adhere to the following guidelines for grounding:

- Use copper wire, 14 AWG (2.5 mm<sup>2</sup>) or larger wire size.
- Keep all ground leads as short as possible, less than 1  $\Omega$  impedance.
- Connect ground leads directly to earth, or follow plant standards.

### Procedure

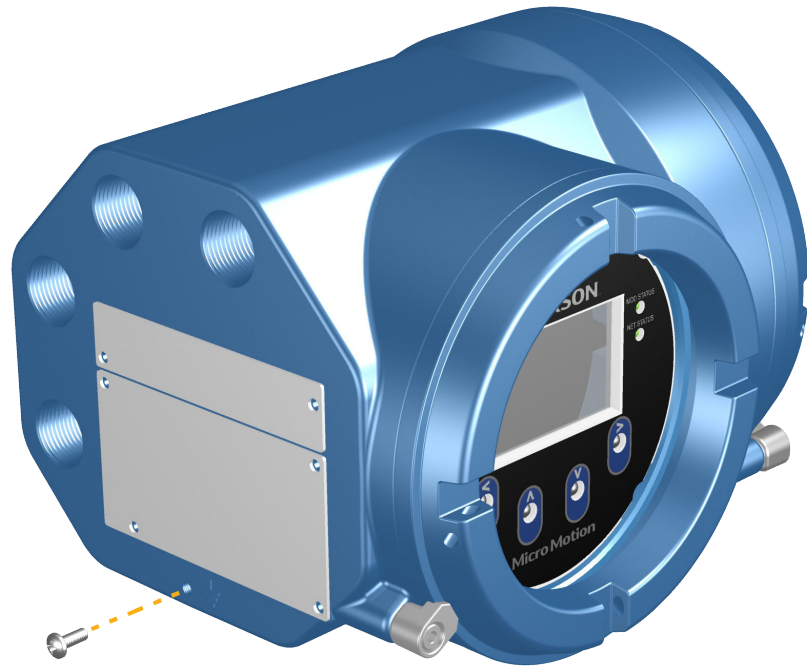
1. Ground the sensor according to the instructions in the sensor documentation.
2. Ground the transmitter according to applicable local standards, using the transmitter's internal or external ground screw.
  - The internal ground screw is located inside the transmitter-to-sensor wiring compartment.

**Figure 2-9: Internal ground screw**



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- The external ground screw is located on the side of the transmitter located below the transmitter tag.

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**Figure 2-10: External ground screw**

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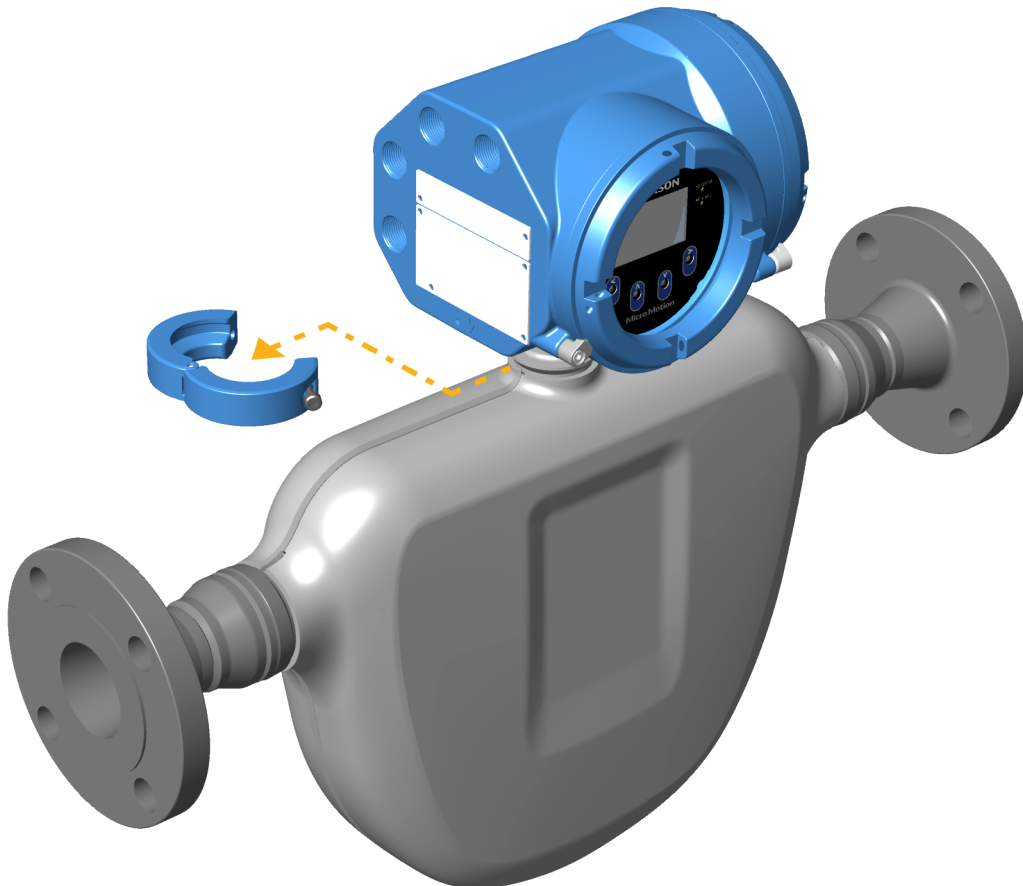
## 2.5 Rotate the transmitter on the sensor (optional)

In integral installations, you can rotate the transmitter on the sensor up to 360° in 45° increments.

1. Using a 4 mm hex key, loosen and remove the clamp securing the transmitter head in place.

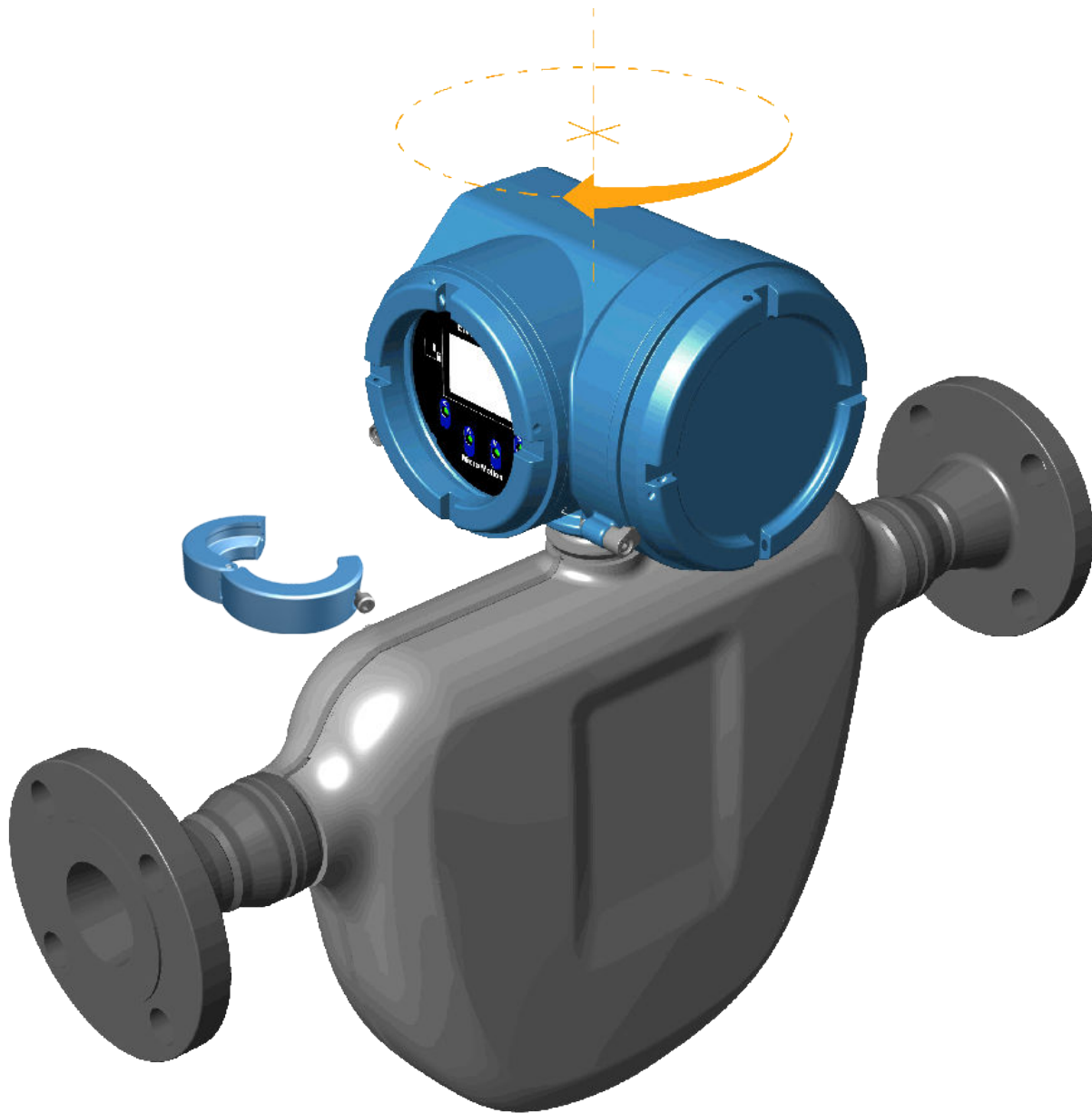
**Figure 2-11: Removal of the sensor clamp**

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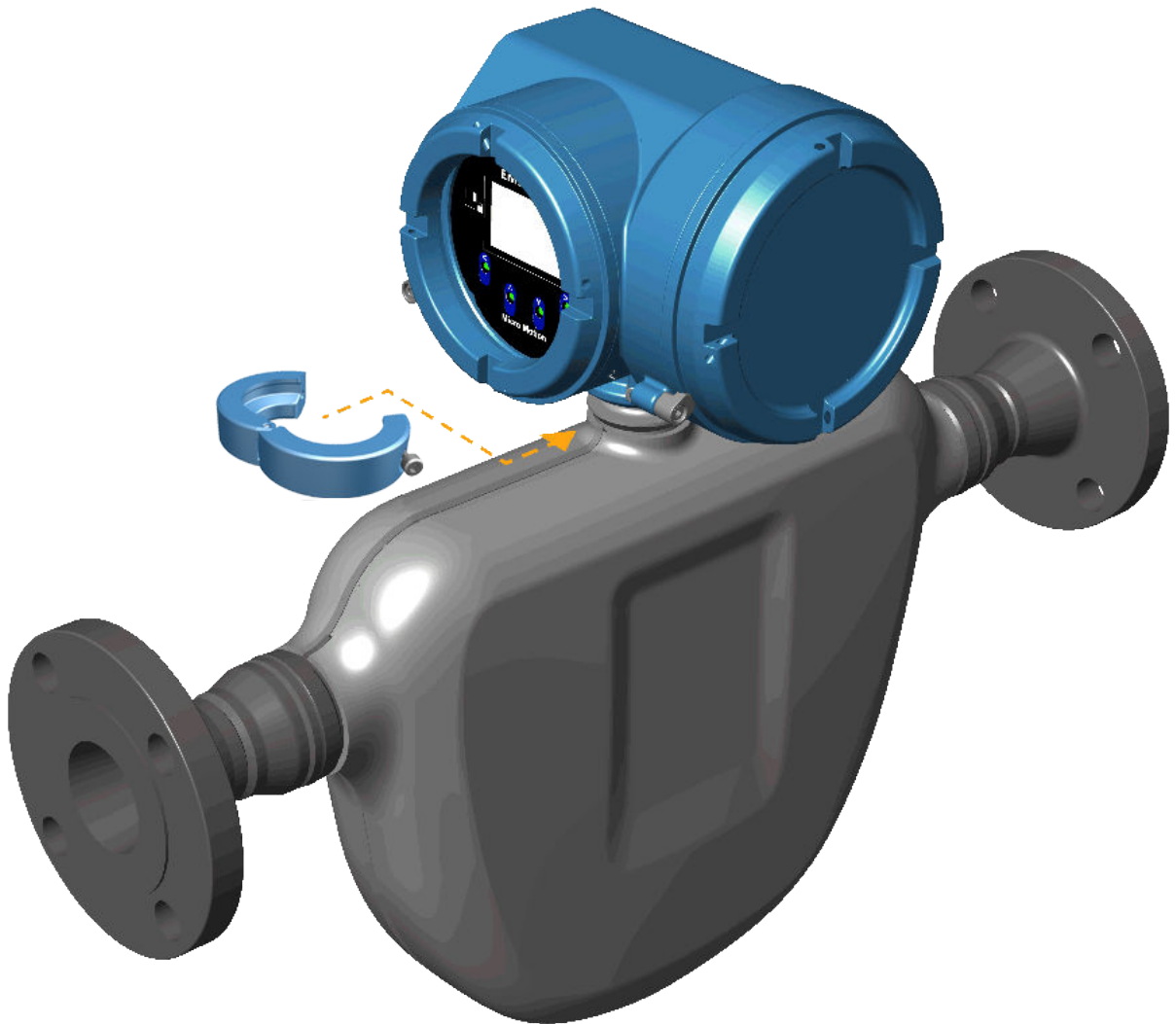
2. Gently lift the transmitter straight up, and rotate the transmitter to the desired position.

You can rotate the transmitter to any of the eight positions, but a stop exists that will not allow a full 360° rotation.

**Figure 2-12: Rotation of the transmitter head**

3. Gently lower the transmitter onto the base, confirming that the transmitter is in a locked position.
4. Replace the clamp in its original position and tighten the cap screw. Torque to 28 to 30 in-lbs (2.3 to 3.4 N-m).

**Figure 2-13: Re-attachment of the sensor clamp**

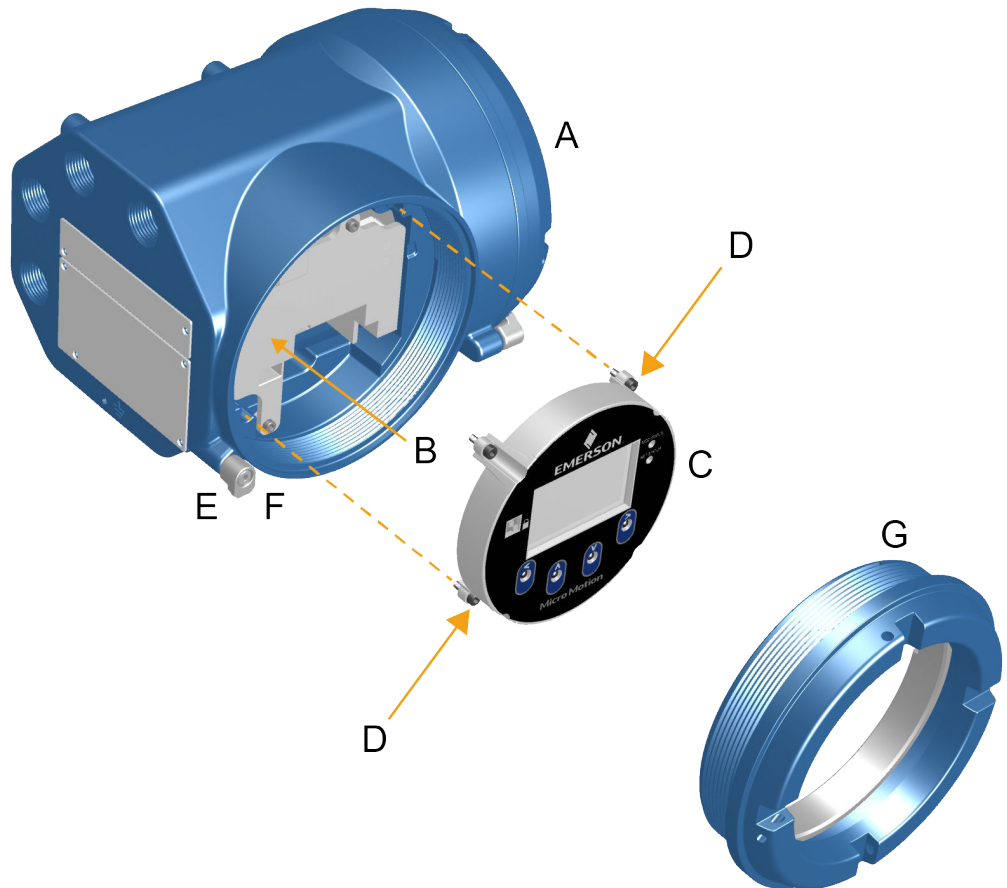


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## 2.6 Rotate the user interface on the transmitter (optional)

The user interface on the transmitter electronics module can be rotated 90°, 180°, or 270° from the original position.

Figure 2-14: Display components



- A. Transmitter housing
- B. Sub-bezel
- C. Display module
- D. Display screws
- E. End-cap clamp
- F. Cap screw
- G. Display cover

### Procedure

1. Shut off power to the unit.

**⚠ WARNING!**

**If the transmitter is in a hazardous area, wait five minutes after disconnecting the power before opening the enclosure.**

2. Loosen and rotate the end cap clamp so that it does not interfere with the cover.
3. Turn the display cover counterclockwise to remove it from the main enclosure.

4. Carefully loosen the semi-captive display screws while holding the display module in place.
5. Carefully pull the display module out of the main enclosure.
6. Rotate the display module to the desired position.
7. Gently press the display module back onto the connector.
8. Tighten display screws.
9. Place the display cover onto the main enclosure.
10. Turn the display cover clockwise until it is fully seated.
11. Replace the end-cap clamp by tightening the cap screw.
12. Restore power to the transmitter.

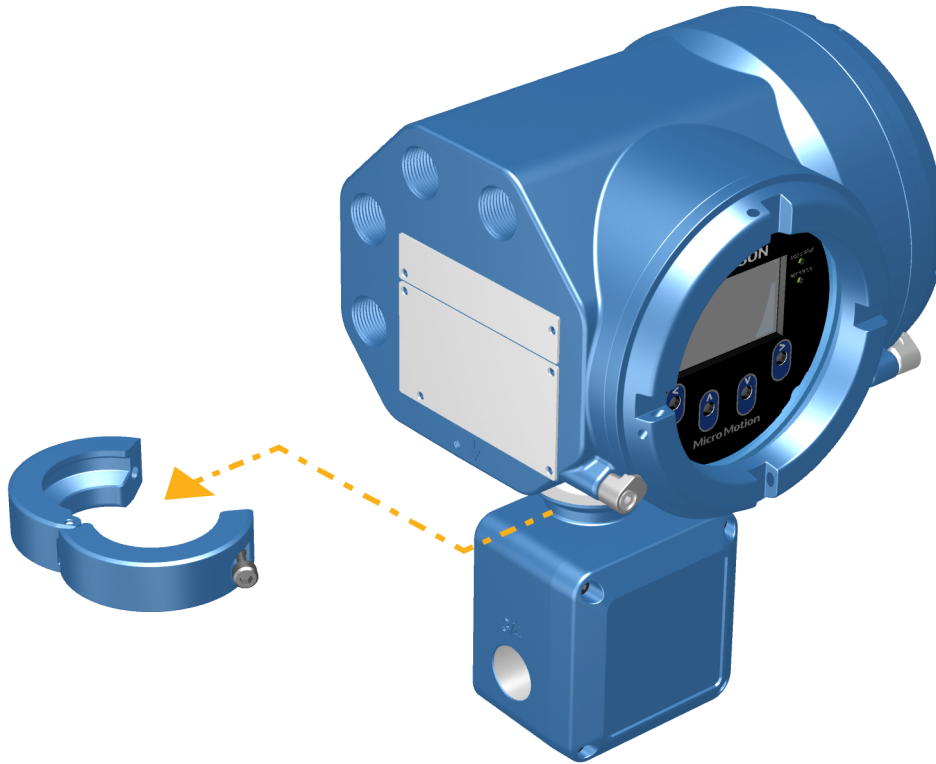
## 2.7 Rotate the sensor wiring junction box on a remote-mount transmitter (optional)

In remote-mount installations, you can rotate the sensor wiring junction box on the transmitter plus or minus 180°.

1. Using a 4 mm hex key, loosen and remove the clamp securing the sensor wiring junction box in place.



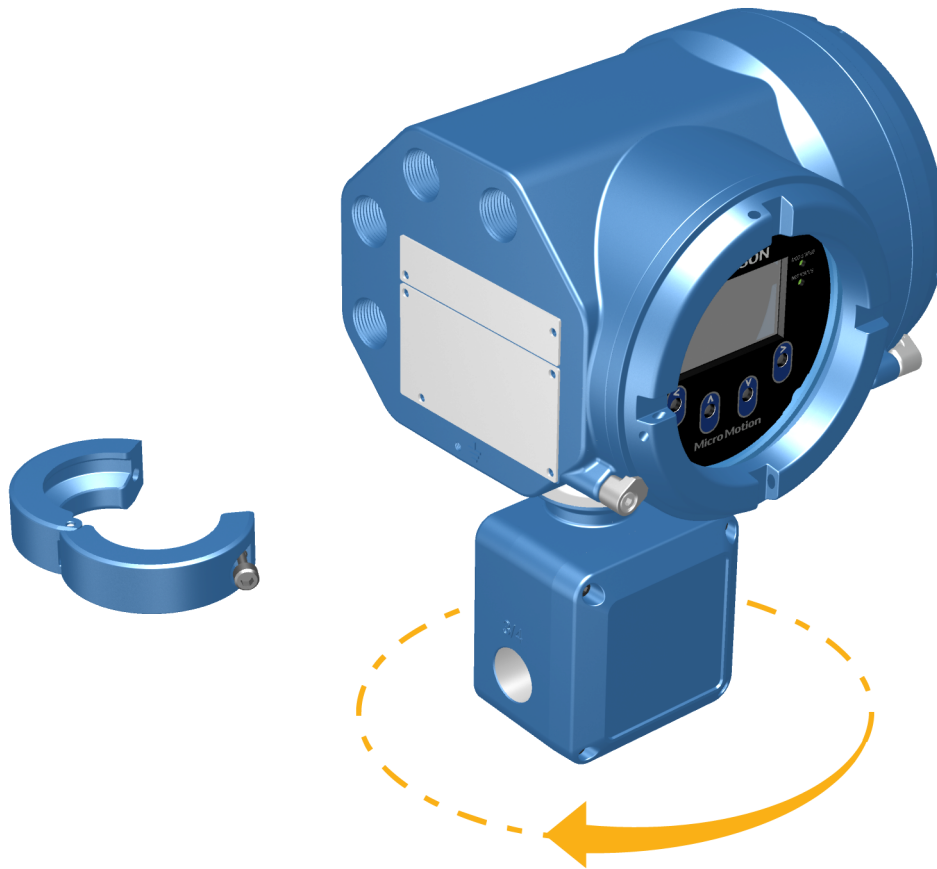
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**Figure 2-15: Removal of the clamp**

- 
2. Gently rotate the junction box to the desired position.  
You can rotate the junction box plus or minus 180° to any position.

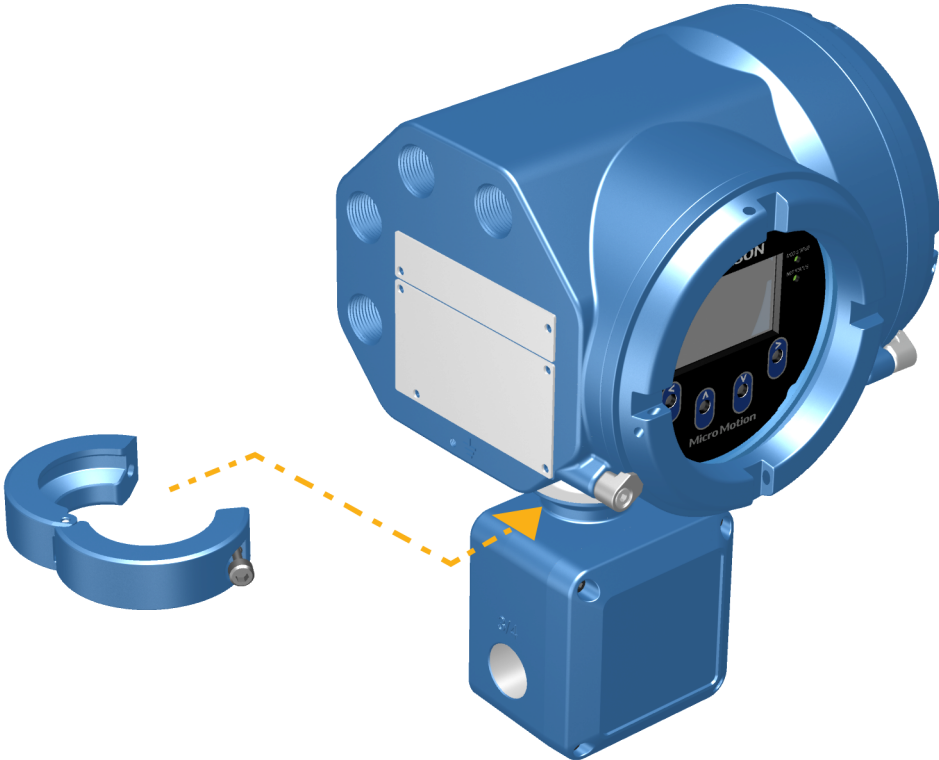
**Figure 2-16: Rotation of the sensor wiring junction box**

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3. Gently set the junction box into its new position, confirming that the position is locked.
4. Replace the clamp in its original position and tighten the cap screw. Torque to 28 to 30 in-lbs (2.3 to 3.4 N-m).

Figure 2-17: Re-attachment of the clamp



## 3 Wiring the channels

### Topics covered in this chapter:

- [Wire the I/O channel](#)
- [Wire the Ethernet channels](#)

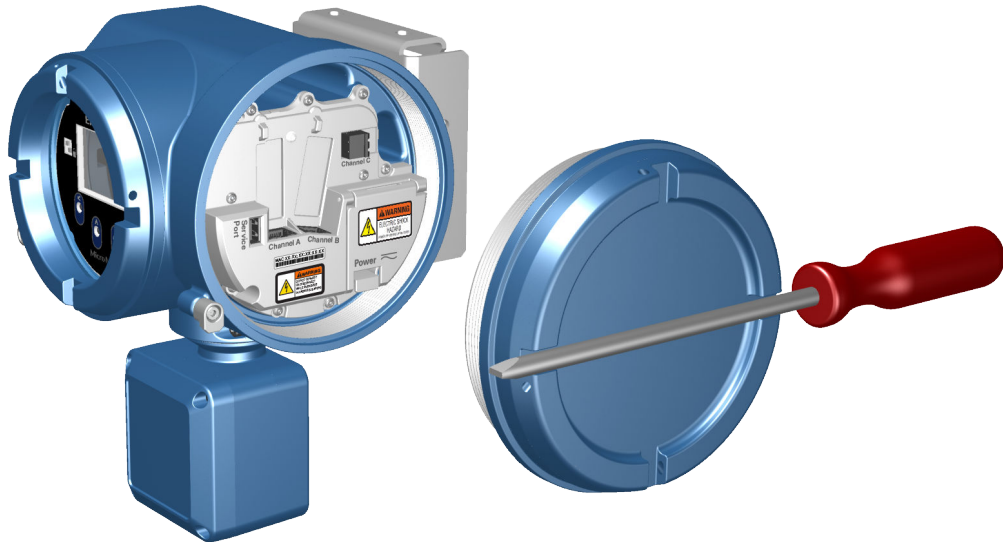
### 3.1 Wire the I/O channel

The Channel C I/O can be configured as:

- mA Output
- Frequency Output
- Discrete Output
- Discrete Input

#### 3.1.1 Access the wiring channels

Remove the wiring access cover to reveal the I/O wiring terminal block connectors.



#### 3.1.2 Wire the mA Output

Wire the mA Output for explosion-proof, nonincendive, or nonhazardous installations.

## Prerequisites

### Important

Meter installation and wiring should be performed only by suitably-trained personnel using the appropriate government and corporate safety standards.

### Procedure

Wire to the appropriate output terminal and pins.

**Figure 3-1: Internally-powered mA Output wiring**



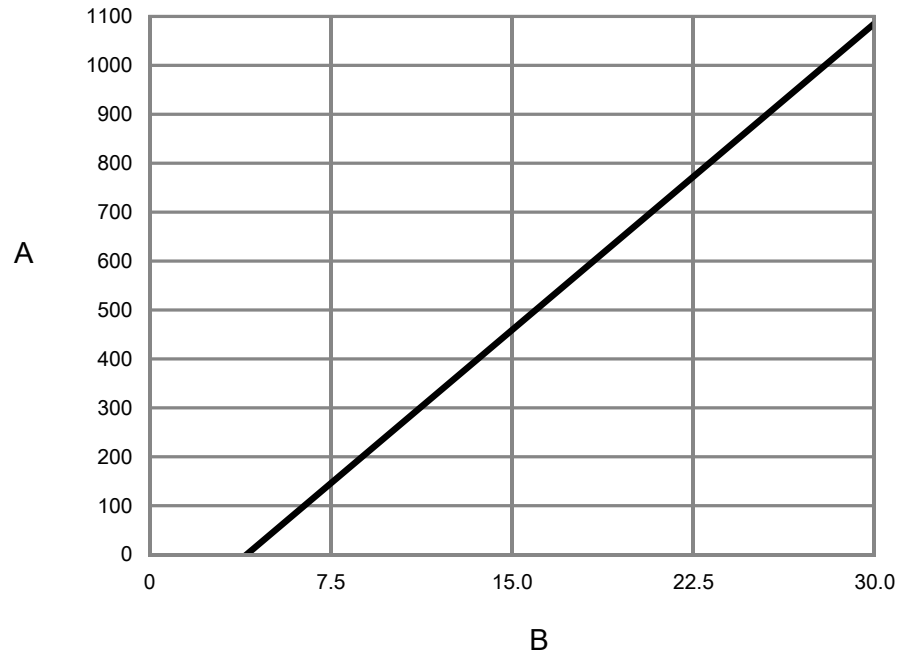
- A. mA Output
- B. Channel C
- C. 820  $\Omega$  maximum loop resistance
- D. Signal device

**Figure 3-2: Externally-powered mA Output wiring**



- A. mA Output
- B. Channel C
- C. 5–30 VDC (maximum)
- D. See [Figure 3-3](#)
- E. Signal device

**Figure 3-3: Externally-powered mA Output: maximum loop resistance**



- A. Maximum resistance ( $\Omega$ )  
 B. External supply voltage (V)
- 

### 3.1.3 Wire the Frequency Output

Wire the Frequency Output in explosion-proof, nonincendive, or nonhazardous installations.

#### Prerequisites

#### Important

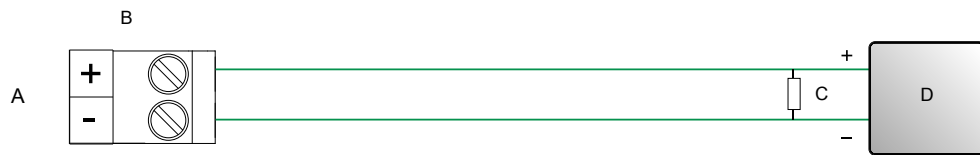
Meter installation and wiring should be performed only by suitably-trained personnel using the appropriate government and corporate safety standards.

---

#### Procedure

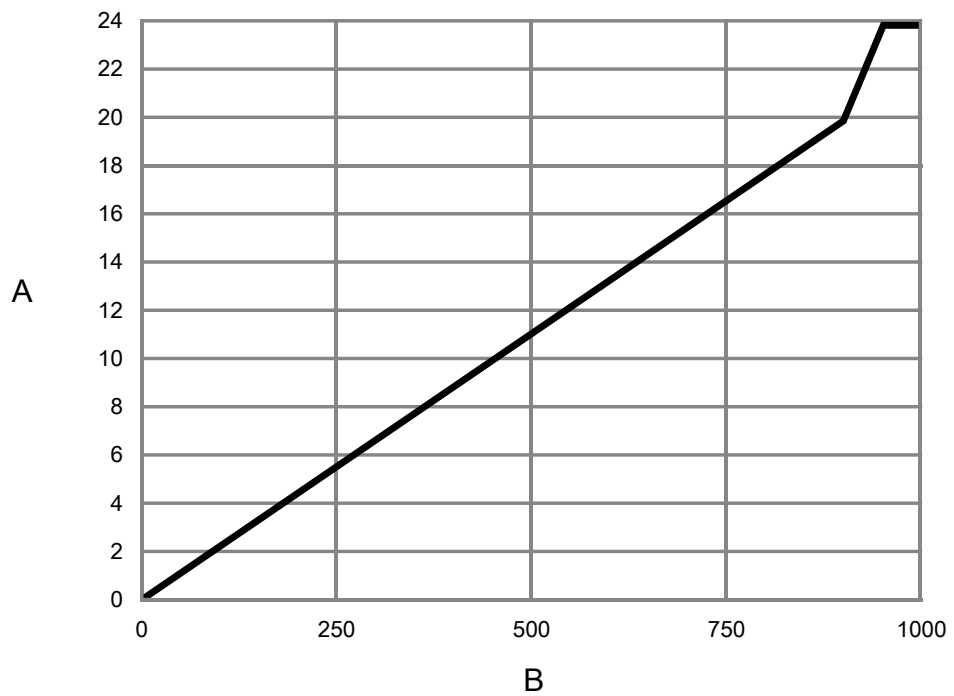
Wire to the appropriate output terminal and pins.

**Figure 3-4: Internally-powered FO wiring**



- A. Frequency Output
- B. Channel C
- C. See [Figure 3-5](#)
- D. Counter

**Figure 3-5: Internally-powered FO: output amplitude versus load resistance [24 VDC (Nom) open circuit]**



- A. Output amplitude (V)
- B. Load resistor ( $\Omega$ )

**Figure 3-6: Externally-powered FO wiring**



- A. Frequency Output
- B. Channel C
- C. 5–30 VDC (maximum)
- D. 500 mA current (maximum)
- E. Counter

### 3.1.4 Wire the Discrete Output

Wire the Discrete Output in explosion-proof, nonincendive, or nonhazardous installations.

#### Prerequisites

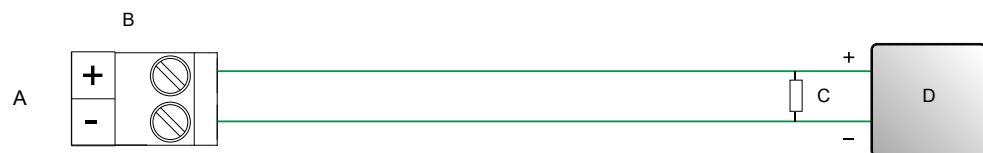
#### Important

Meter installation and wiring should be performed only by suitably-trained personnel using the appropriate government and corporate safety standards.

#### Procedure

Wire to the appropriate output terminal and pins.

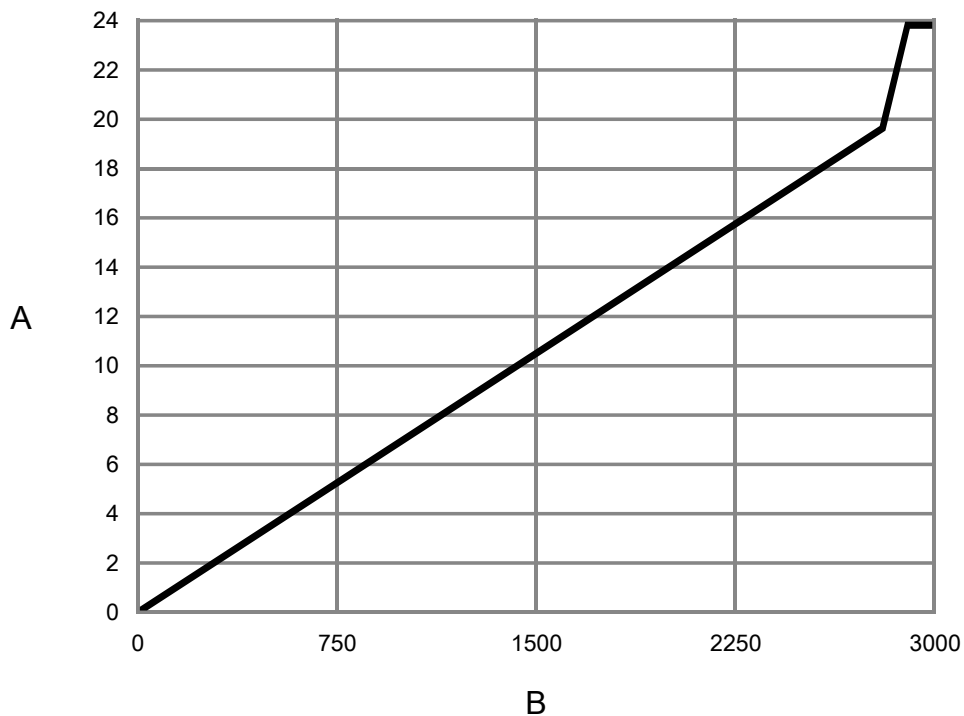
**Figure 3-7: Internally-powered DO wiring**



- A. Discrete Output
- B. Channel C
- C. See [Figure 3-8](#)
- D. Counter



**Figure 3-8: Internally-powered DO: output amplitude versus load resistance [24 VDC (Nom) open circuit]**



- A. Output amplitude (V)  
B. Load resistor ( $\Omega$ )

**Figure 3-9: Externally-powered DO wiring**



- A. Discrete Output  
B. Channel C  
C. 3–30 VDC (maximum)  
D. 500 mA current (maximum)  
E. Counter

## 3.1.5 Wire the Discrete Input

### Prerequisites

**⚠ CAUTION!**

**Wire the Discrete Input in explosion-proof, nonincendive, or nonhazardous installations.**

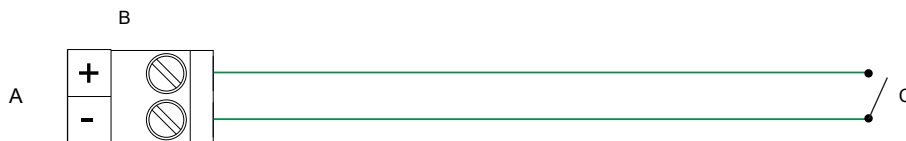
### Important

Meter installation and wiring should be performed only by suitably-trained personnel using the appropriate government and corporate safety standards.

### Procedure

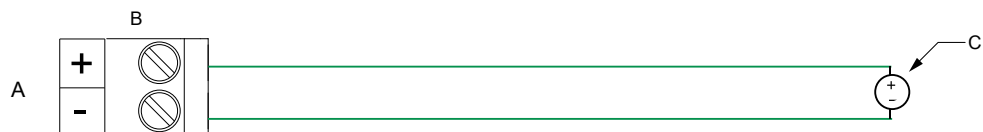
Wire to the appropriate input terminal and pins.

**Figure 3-10: Internally-powered DI wiring**



- A. Discrete input
- B. Channel C
- C. Switch

**Figure 3-11: Externally-powered DI wiring**



- A. Discrete input
- B. Channel C
- C. 30 VDC (maximum)

### Note

- Maximum positive threshold is 3 VDC.
- Minimum negative threshold is 0.6 VDC.

### 3.1.6 Wire the I/O channel using an M12-terminated cable (optional)

Use this procedure if you are using an M12-terminated cable to wire the I/O channel.

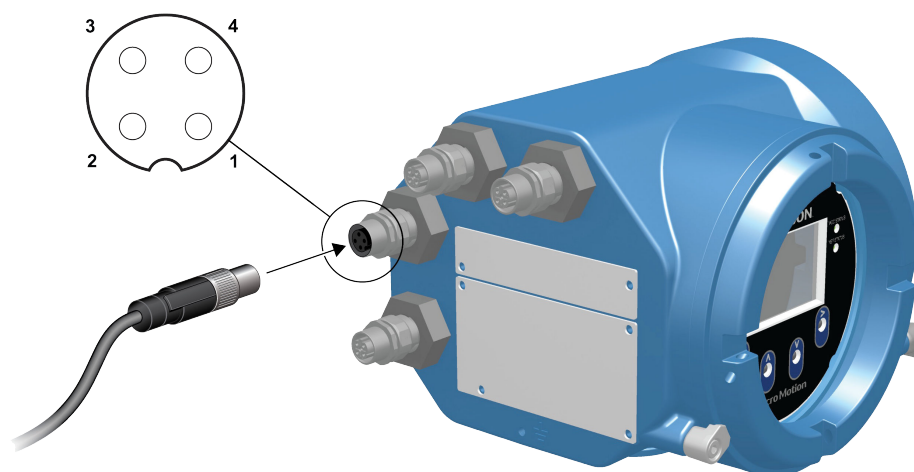
#### Prerequisites

Obtain an A-coded M12-terminated cable.

#### Procedure

1. Attach the M12-terminated cable to the configuration I/O connector on the Model 5700 transmitter. See [Figure 3-12](#).
2. Attach the other cable end using the pinouts described in [Table 3-1](#).

**Figure 3-12: M12-terminated cables to the Configuration I/O**



**Table 3-1: M12 configuration I/O pinouts**

Pin identifica- tion	Wire color	Outputs
Pin 1	Not used	Not used
Pin 2	White	Positive terminal
Pin 3	Not used	Not used
Pin 4	Black	Neutral terminal

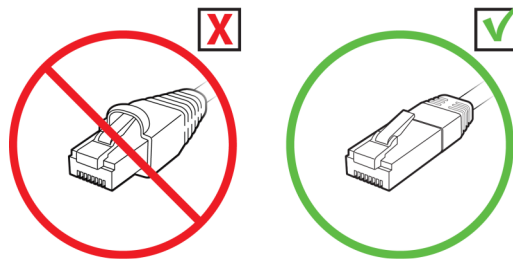
## 3.2 Wire the Ethernet channels

To meet the EC Directive for Electromagnetic Compatibility (EMC), use a suitable shielded Cat5e, or higher-rated instrumentation cable to connect the meter. The instrumentation cable should have an overall screen to cover all cores. Where permissible, connect the overall screen to earth at the host end (360° bonded).

### 3.2.1 Wire an Ethernet network using the RJ45 ports

#### Prerequisites

When using a pre-terminated RJ45 cable, ensure there is no protective boot on the connector, as a protective boot will not fit through the conduit. Alternatively, you can use the RJ45 connector using a shielded-field termination connector.



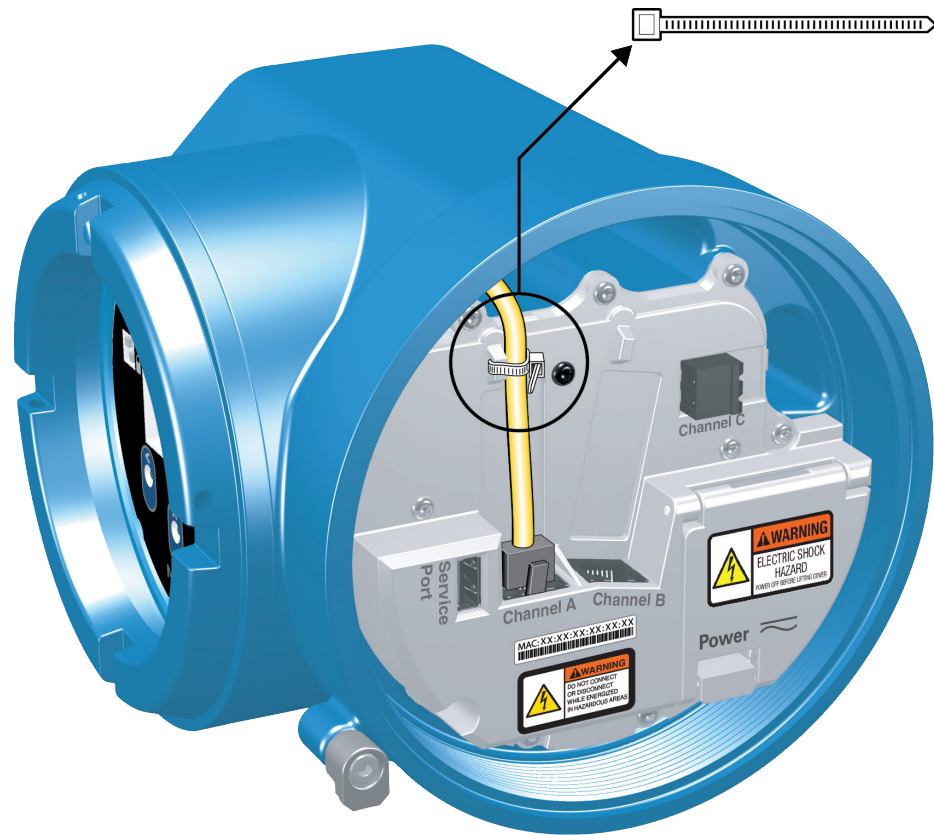
#### Direct connection and star topology

1. Feed the RJ45 cable through the conduit on the Model 5700 transmitter.
2. Connect the RJ45 cable into either Channel A or Channel B.

Functionality is identical for both Channel A and Channel B as the Model 5700 transmitter contains an internal Ethernet switch.

3. Anchor the cable to the module backplate using a cable tie.

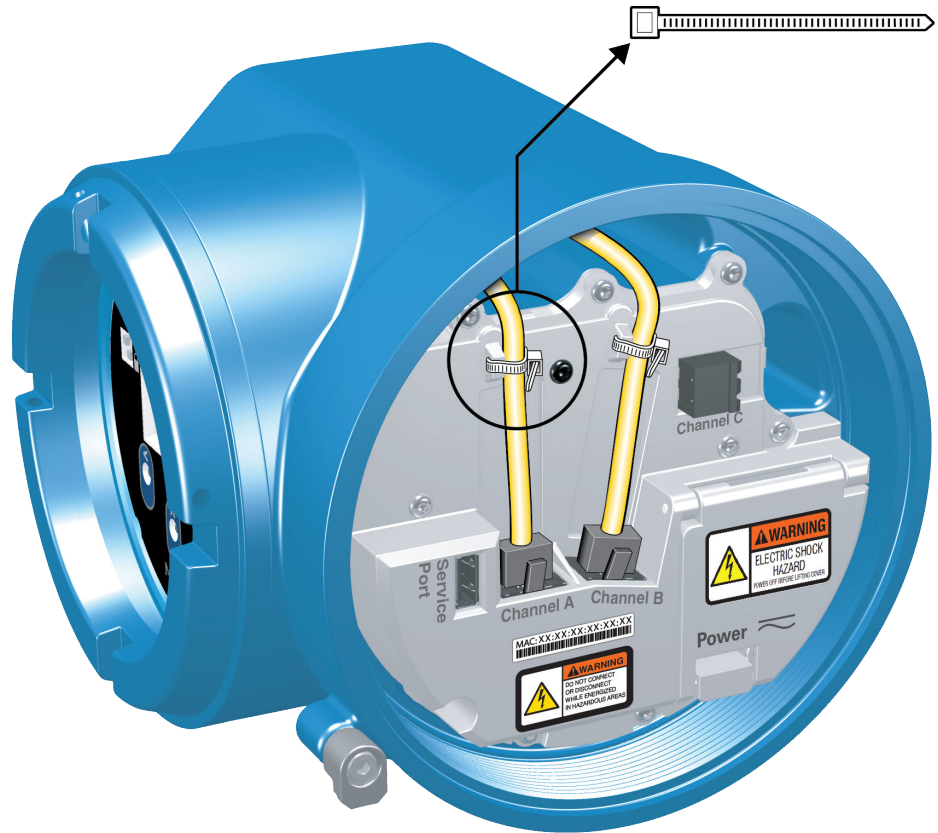
Example:



## Daisy chain and ring topologies

1. Feed two RJ45 cables through the conduits on the Model 5700 transmitter.  
Since two cables will not fit into one conduit, you will need to use separate conduits for each cable.
2. Connect the external switch or previous transmitter to Channel A or Channel B.  
Functionality is identical for both Channel A and Channel B as the Model 5700 transmitter contains an internal Ethernet switch.
3. Connect the next transmitter in the network to the unused channel.
4. Anchor the cables to the module backplate using cable ties.

Example:



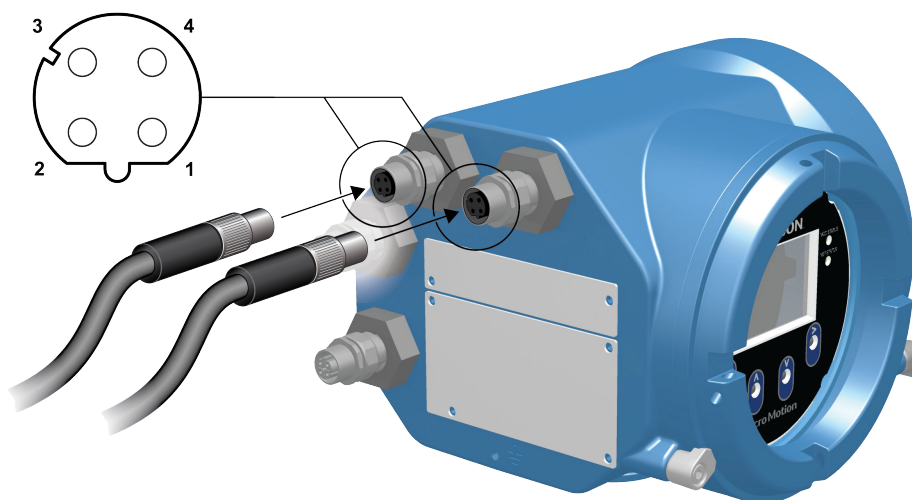
### 3.2.2 Wire the Ethernet I/O using M12-terminated cables (optional)

#### Prerequisites

Obtain two D-coded M12-terminated Ethernet cables.

#### Procedure

1. Attach both M12-terminated Ethernet cables to the Ethernet I/O connectors on the Model 5700 transmitter. See [Figure 3-13](#).
2. Attach the other cable end using the pinouts described in [Table 3-2](#).

**Figure 3-13: M12 cables to the Ethernet I/O****Note**

Depending on what type of M12 Ethernet option you have, your transmitter may have only the two Ethernet I/O connectors.

**Table 3-2: M12 Ethernet I/O pinouts**

Pin identification	Wire color	Outputs on RJ45	Signal name
Pin 1	Orange/White	Pin 1	TDP1/RDP2
Pin 2	Green/White	Pin 3	RDP1/TDP2
Pin 3	Orange	Pin 2	TDN1/RDN2
Pin 4	Green	Pin 6	RDN1/RDN2

## 4 Power supply wiring

### Topics covered in this chapter:

- [Wiring the power supply](#)
- [Wire the power supply using an M12-terminated cable \(optional\)](#)

### 4.1 Wiring the power supply

You can install a user-supplied switch in the power supply line.

---

#### **Important**

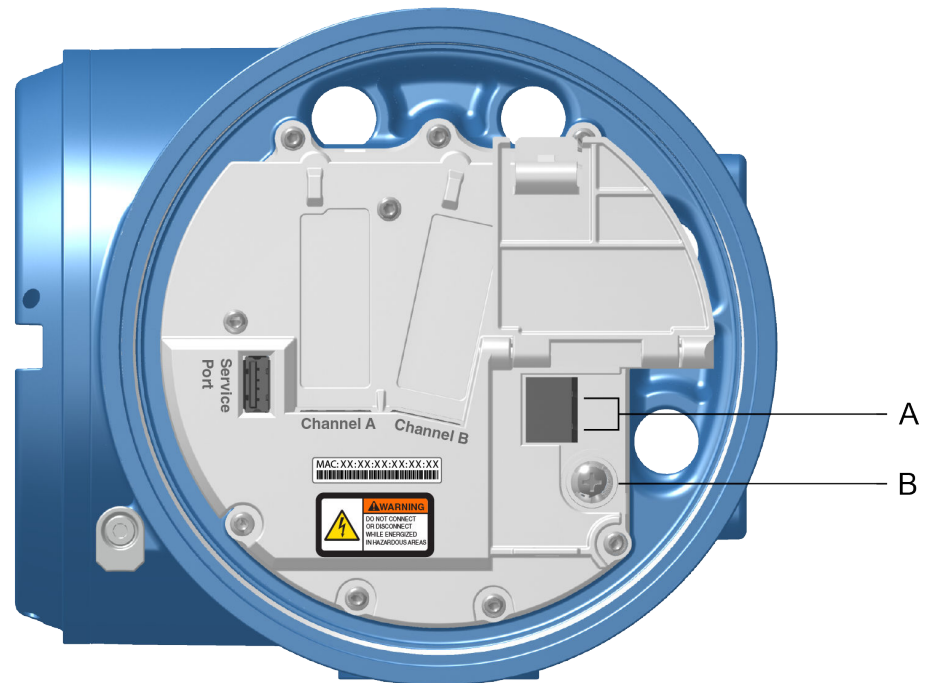
For compliance with the Low Voltage Directive 2014/35/EU (European installations), a switch in close proximity to the transmitter is required.

---

#### **Procedure**

1. Remove the wiring access cover.
2. Open the Power warning flap to locate the power terminals.



**Figure 4-1: Location of power supply wiring terminals and equipment ground**

- A. Power supply wiring terminals (+ and -)  
B. Equipment ground

3. Connect the power supply wires:
  - For DC power: connect to terminals + and -.
  - For AC power: connect to terminals L/L1 (line) and N/L2 (neutral).
4. Tighten the two screws holding the power connector in place.
5. Ground the power supply using the equipment ground, also under the Power warning flap.

## 4.2 Wire the power supply using an M12-terminated cable (optional)

Use this procedure if you are using an M12-terminated cable to wire the power supply.

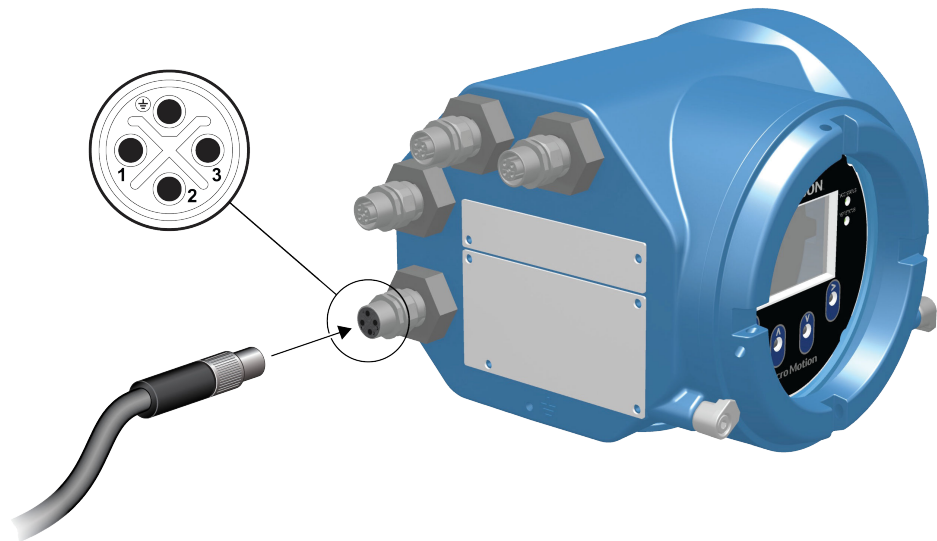
**Prerequisites**

Obtain an S-coded M12-terminated cable.

**Procedure**

1. Attach the M12-terminated cable to the power connector on the Model 5700 transmitter. See [Figure 4-2](#).
2. Attach the other cable end using the pinouts described in [Table 4-1](#).

**Figure 4-2: M12-terminated cable to power supply**



**Table 4-1: M12 power supply pinouts**

Pin identification	Outputs
Pin 1	+ / L / L1
Pin 2	- / N / L2
Pin 3	Not used
Ground	Ring terminal (C)

## 5 Power up the transmitter

The transmitter must be powered up for all configuration and commissioning tasks, or for process measurement.

1. Ensure that all transmitter and sensor covers and seals are closed.

 **WARNING!**

**To prevent ignition of flammable or combustible atmospheres, ensure that all covers and seals are tightly closed. For hazardous area installations, applying power while housing covers are removed or loose can cause an explosion.**

2. Turn on the electrical power at the power supply.

### Postrequisites

Although the sensor is ready to receive process fluid shortly after power-up, the electronics can take up to 10 minutes to reach thermal equilibrium. Therefore, if this is the initial startup, or if power has been off long enough to allow components to reach ambient temperature, allow the electronics to warm up for approximately 10 minutes before relying on process measurements. During this warm-up period, you may observe minor measurement instability or inaccuracy.

## 6 Guided Setup

At initial startup of the transmitter, the guided configuration screen appears on the transmitter display. This tool guides you through basic configuration of the transmitter. The guided setup allows you to upload configuration files, set the transmitter display options, configure channels, and review sensor calibration data.

## 7 Using the Display controls

The transmitter display interface includes a display (LCD panel) and four optical switches – left, up, down, and right arrow keys – used to access the display menus and navigate the display screens.

1. To activate an optical switch, block the light by holding your thumb or finger in front of the opening.

You can activate the optical switch through the lens. Do not remove the transmitter housing cover.

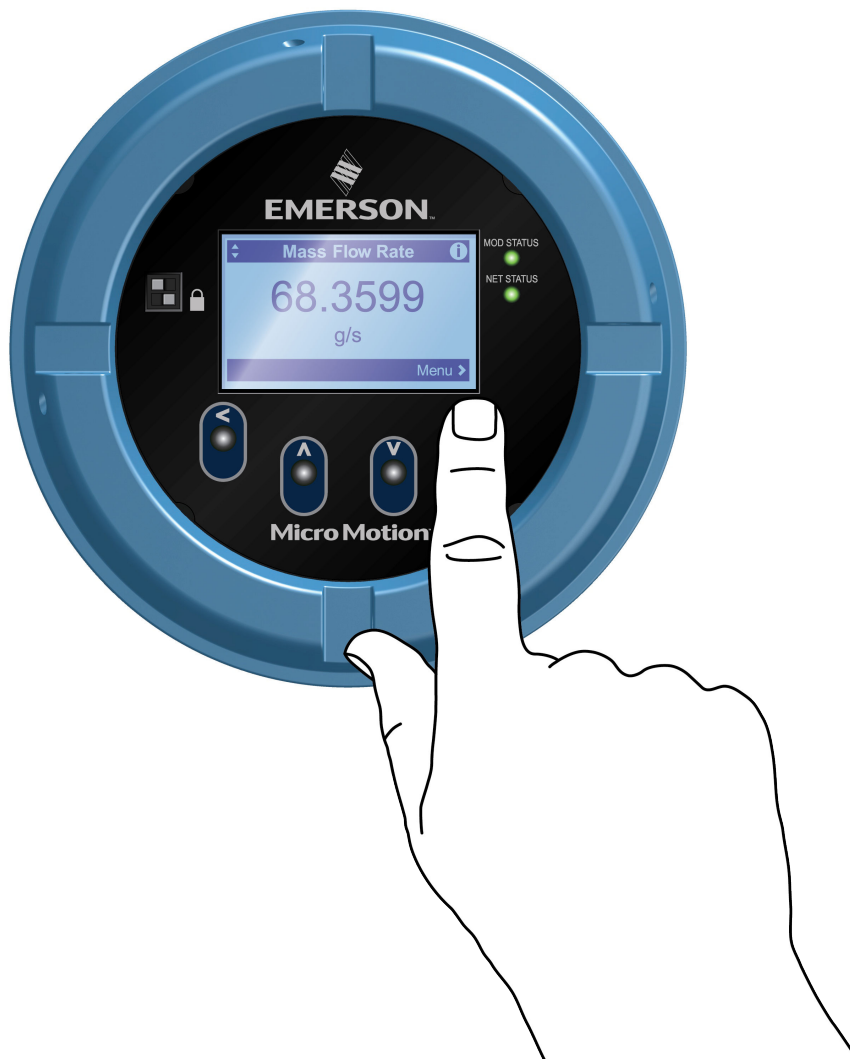
---

### **Important**

The transmitter only detects one switch selection at a time. Be sure to place your thumb or finger directly over a single optical switch, and ensure no other switches are being obstructed.

---

**Figure 7-1: Proper finger positioning for activating an optical switch**



- 
2. Use the arrow indicators on the display screen to identify which optical switch to use to navigate the screen (see examples 1 and 2).

---

**Important**

When using the arrow keys, you must first activate the optical switch then release the same switch by removing your finger from the glass to move up, down, right, left or to make a selection. To enable auto-scroll when navigating up or down, activate the appropriate switch and continue to hold for one second. Release the switch when the desired selection is highlighted.

---

Figure 7-2: Example 1: Active arrow indicators on the transmitter display



**Figure 7-3: Example 2: Active arrow indicators on the transmitter display**





## 8 Available Service Port connection

You can interface with the transmitter through the service port connection, located under the transmitter cap.

To interface with the service port, you can use commonly available USB hardware, such as a USB drive or USB cable. Use the service port connection to download or upload data from/to the transmitter.

---

### Note

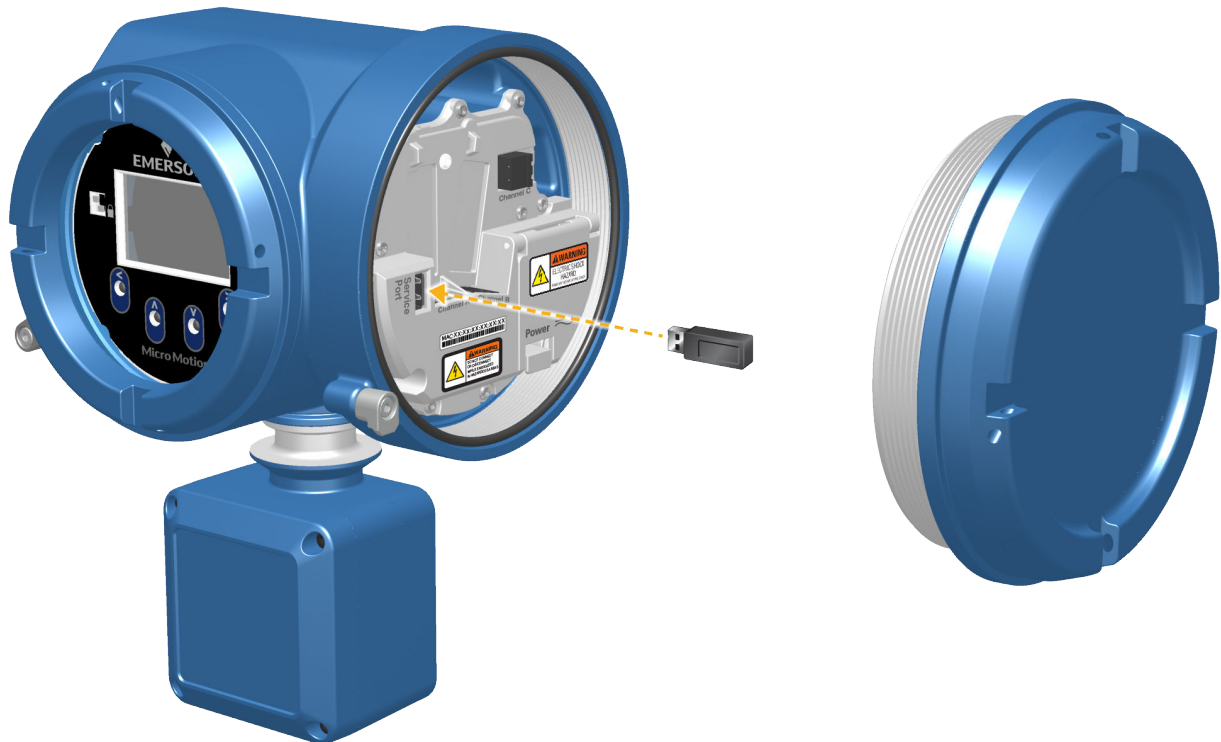
The USB drive must be in FAT format. The transmitter does not recognize NTFS format.

---

### ⚠ WARNING!

**If the transmitter is in a hazardous area, do not remove the housing cover while power is being supplied to the unit. Removing the housing cover while power is supplied to the unit could cause an explosion. To access the service port in a hazardous environment, be sure to remove power from the transmitter and wait 5 minutes before removing the housing cover.**

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MMI-20029768

Rev AA

2016

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