

## Quick Reference Guide

P/N 3300996, Rev. C

April 2003

# Model 3700 Transmitter (9-Wire) or Model 3350 Peripheral Installation Instructions for Field-Mount

For online technical support, use the EXPERT<sub>2</sub><sup>™</sup> system at [www.expert2.com](http://www.expert2.com). To speak to a customer service representative, call the support center nearest you:

- In the U.S.A., phone 1-800-522-MASS (1-800-522-6277)
- In Canada and Latin America, phone (303) 530-8400
- In Asia, phone (65) 6770-8155
- In the U.K., phone 0800 - 966 180 (toll-free)
- Outside the U.K., phone +31 (0) 318 495 67



## BEFORE YOU BEGIN

This quick reference guide explains basic installation guidelines for mounting the Micro Motion® Model 3350/3700 applications platform on an instrument pole or flat surface.

For information on I.S. applications, refer to Micro Motion ATEX, UL, or CSA installation instructions.

For complete instructions about configuration, maintenance, and service, refer to the instruction manual shipped with the transmitter.

### **WARNING**

**Improper installation in a hazardous area can cause an explosion.**

For information about hazardous applications, refer to Micro Motion ATEX, UL, or CSA installation instructions, shipped with the transmitter or available from the Micro Motion web site.

### **WARNING**

**Hazardous voltage can cause severe injury or death.**

Install transmitter and complete all wiring before supplying power.

### **CAUTION**

**Improper installation could cause measurement error or flowmeter failure.**

Follow all instructions to ensure transmitter will operate correctly.

## European installations

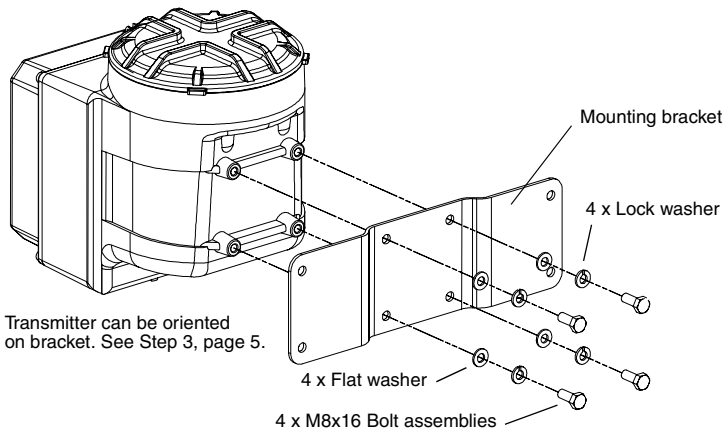
This Micro Motion product complies with all applicable European directives when properly installed in accordance with the instructions in this quick reference guide. Refer to the EC declaration of conformity for directives that apply to this product.

The EC declaration of conformity, with all applicable European directives, and the complete *ATEX Installation Drawings and Instructions* are available on the internet at [www.micromotion.com/atex](http://www.micromotion.com/atex) or through your local Micro Motion support center.

## Installation kit

The Model 3350/3700 installation kit includes the parts shown in Figure 1.

**Figure 1. Field-mount installation kit**



## STEP 1. Choosing a location

Choose a location for the transmitter based on the requirements described below.

**⚠ WARNING**

**Improper installation in a hazardous area could cause an explosion.**

Install the transmitter in an area that is compatible with the rating on the approvals tag. See Figure 3, page 4.

### Environmental requirements

Install the Model 3350/3700 according to specified limits:

- Ambient temperature:  $-4$  to  $+140$  °F ( $-20$  to  $+60$  °C)
- Humidity: SAMA PMC 31.3, Section 5.2, Environmental NEMA 4X (IP 65)
- Vibration: Per IEC 68-2-6 at 1,0 g, 15 to 2000 Hz, 50 sweep cycles

### Dimensions

See Figures 2 and 3, page 4, for Model 3350/3700 dimensions.

### Visibility of tags

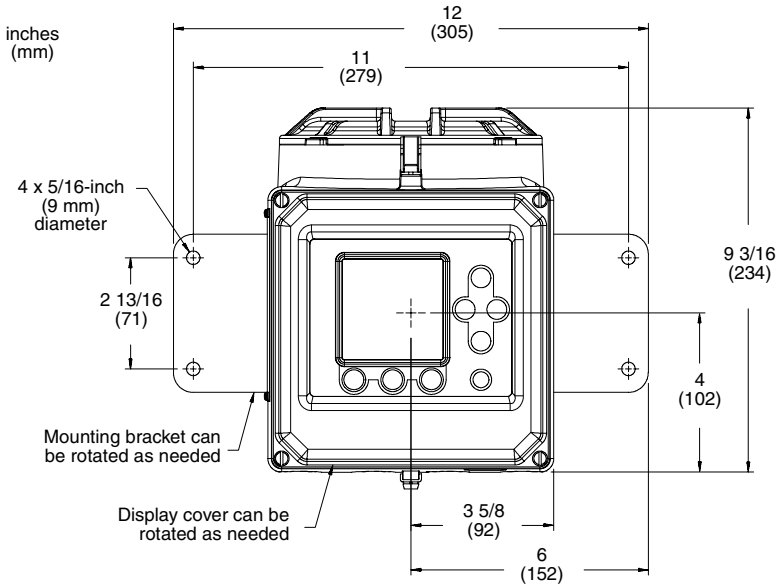
To ensure personal and system safety, all tags attached to the housing must remain visible. Clean them as often as necessary. Replace tags that are damaged, missing, or worn. See Figure 3, page 4, for location of approvals tag.

### Flowmeter cable lengths

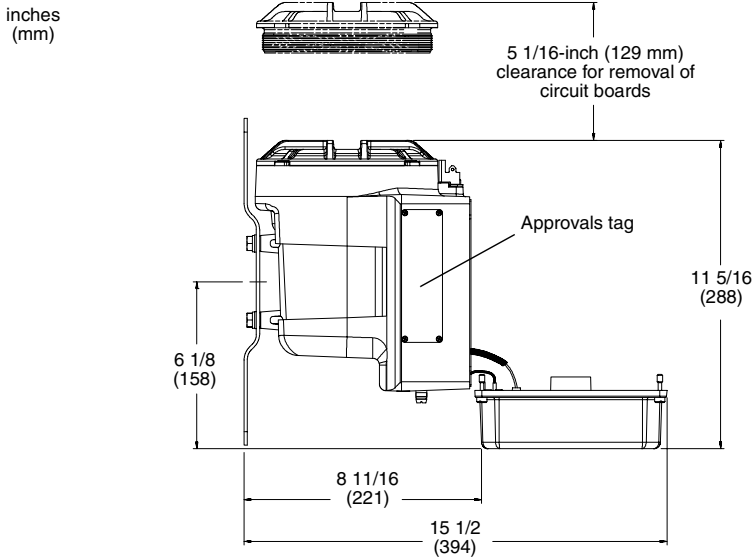
Maximum cable length from the sensor to the Model 3700 transmitter is 1000 feet (300 meters).

If you are installing the Model 3350 applications peripheral in combination with a transmitter, the maximum cable length from the transmitter's frequency output to the Model 3300's frequency input is 500 feet (150 meters).

**Figure 2. Dimensions – face view**



**Figure 3. Dimensions – top view**



## STEP 2. Preparing conduit openings for ATEX Zone 1

If the Model 3350/3700 carries an ATEX Zone 1 approval:

1. Remove thread protectors from conduit openings (see Figure 4).
2. Install factory-supplied cable glands or user-supplied EExe cable entry devices in conduit openings that are in use.
3. Install EExe plugs in conduit openings that are not in use.

## STEP 3. Orienting the Model 3350/3700 (optional)

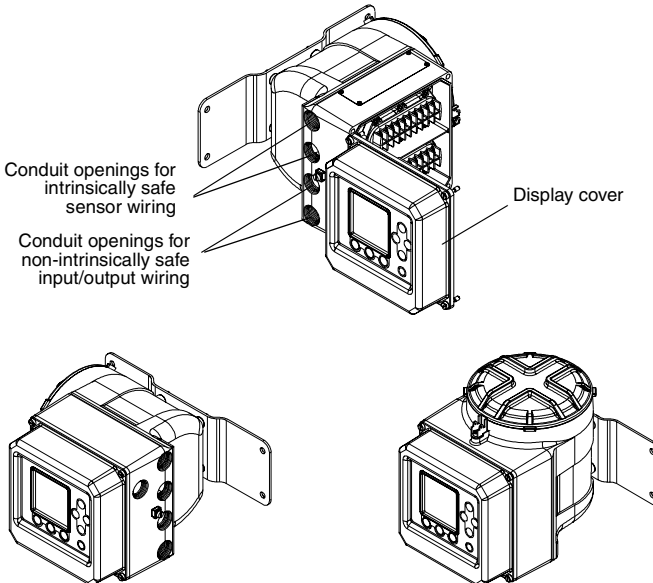
The Model 3350/3700 can be oriented on the mounting bracket as needed, and the display cover can be rotated on the applications platform. Figure 4 provides orientation examples.

To orient the Model 3350/3700:

1. Use the four supplied mounting bolt assemblies.
2. Using a 13 mm hex wrench, install the bolt assemblies to 12 ft-lb (16 Nm) of torque.

To rotate the display cover, if needed, see the transmitter installation manual.

**Figure 4. Orientation examples**



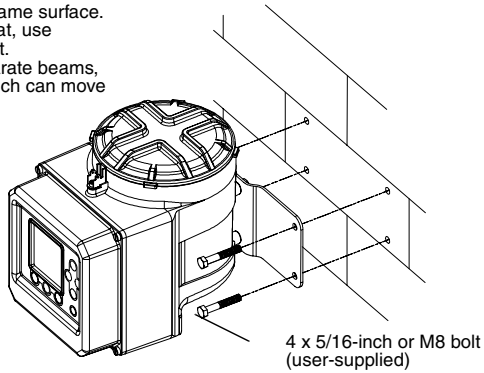
## STEP 4. Mounting the applications platform

For flat-surface mounting, see Figure 5.

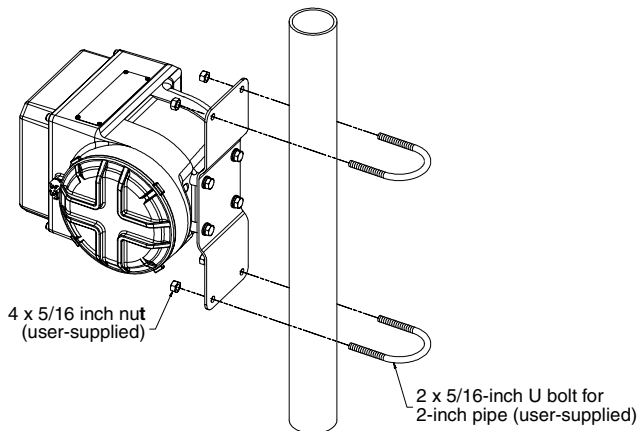
For pole mounting, see Figure 6.

### Figure 5. Mounting to a flat surface

- Mount all four bolts to the same surface.
- If mounting surface is not flat, use washers to shim the bracket.
- Do not secure bolts to separate beams, girders, wall studs, etc., which can move independently.



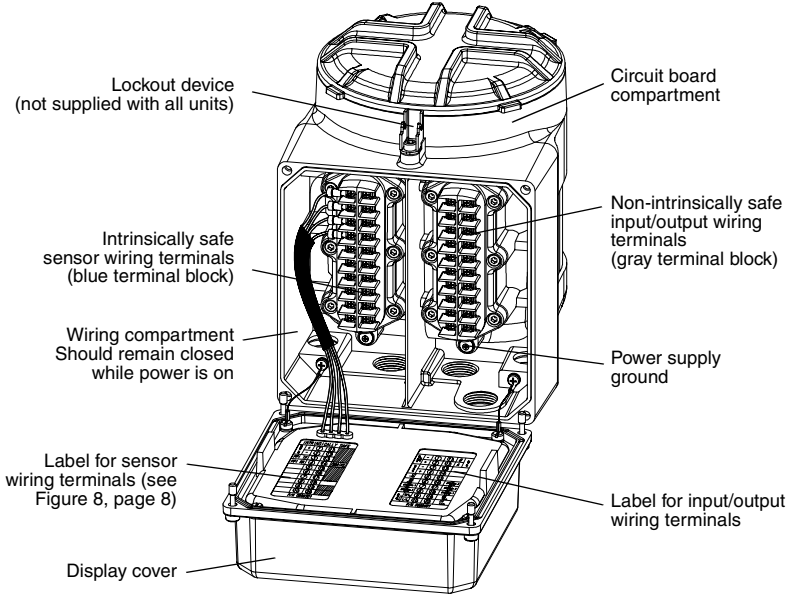
### Figure 6. Mounting to a pole



## STEP 5. Connecting input and output wiring

Figure 7 shows the location of the wiring terminals on the Model 3350/3700.

**Figure 7. Wiring terminals**



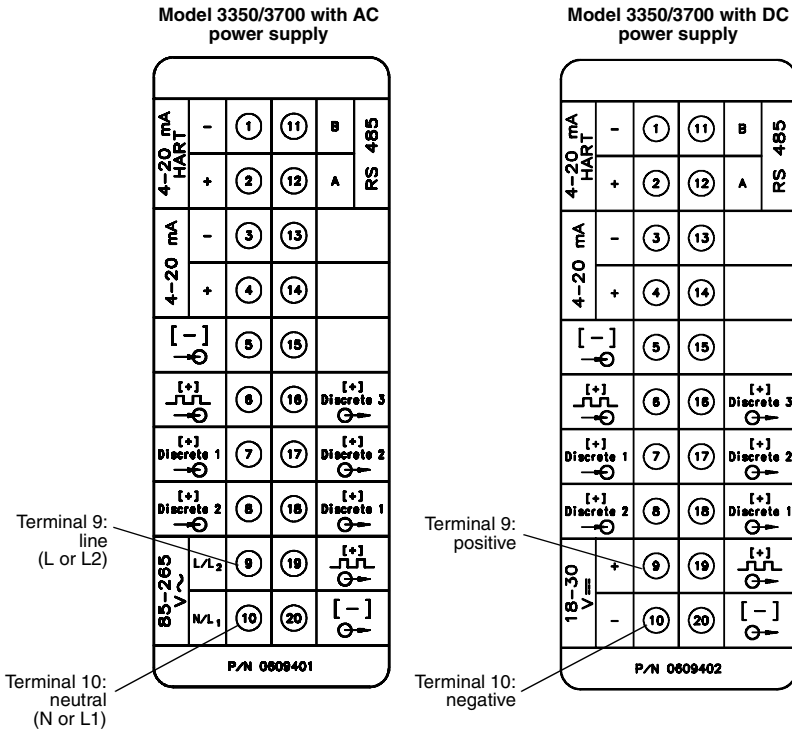
1. Use 22 to 16 AWG (0,35 to 1,5 mm<sup>2</sup>) twisted-pair shielded wire.
2. Using a flat-head screwdriver, loosen the four captive screws that secure the display cover to the housing.
3. Connect input/output wiring to the gray terminal strip. Refer to Table 1, page 8, and to the label attached to the back of the display cover (shown in Figure 8, page 8).
  - Ground the cable shields at a single point only.
  - If more than two wires must be connected to a single terminal, use a butt splice or spade lug to connect the wires.



**Table 1. Input/output wiring terminals**

Terminal number		Designation
1 -	2 +	Primary 4-20 mA output
3 -	4 +	Secondary 4-20 mA output
5 -	6 +	Frequency input
5 -	7 +	Discrete input 1
5 -	8 +	Discrete input 2
11 (B line)	12 (A line)	RS-485 output
20 -	16 +	Discrete output 3
20 -	17 +	Discrete output 2
20 -	18 +	Discrete output 1
20 -	19 +	Frequency output

**Figure 8. Wiring terminal labels**

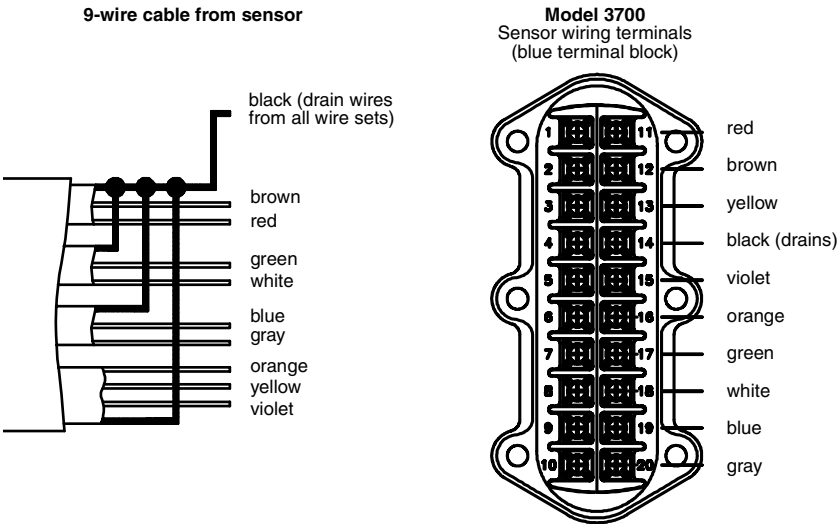


## STEP 6. Connecting the Model 3700 to the sensor

If you are installing the Model 3350 applications peripheral, this step is not required. To connect the Model 3700 transmitter to a Micro Motion sensor, follow the steps below.

1. Identify the components shown in Figure 9.

**Figure 9. Sensor cable to Model 3700**



2. Prepare the cable according to the instructions in Micro Motion's *9-Wire Flowmeter Cable Preparation and Installation Guide*.
3. Ensure that the cable has 360° shielding, continuous from the transmitter to the sensor's junction box. Two methods can be used:
  - Metallic conduit
  - Shielded or armored cable

Refer to Micro Motion's *9-Wire Flowmeter Cable Preparation and Installation Guide* for specific instructions.

4. At the sensor:
  - a. Clip the cable drain wires.
  - b. Connect wiring inside the junction box housing and tighten the screws to hold the wires in place.

For information on your sensor's junction box terminals, see the sensor installation manual or Micro Motion's *9-Wire Flowmeter Cable Preparation and Installation Guide*.

5. At the transmitter:
  - a. Connect the color-coded wires to the appropriate terminals. To identify the terminals, refer to Figure 9, page 9. No bare wires should remain exposed.
  - b. If using shielded or armored cable, terminate the cable braid in the cable gland, as described in Micro Motion's *9-Wire Flowmeter Cable Preparation and Installation Guide*.

## **STEP 7. Connecting power supply wiring**

**⚠ CAUTION**

**Improper wiring installation can cause device failure or measurement error.**

- To avoid device failure or measurement error, do not install power supply wiring in the same cable tray or conduit as input/output wiring.
- Shut off power supply before installing the applications platform.
- Make sure power supply voltage matches voltage that is indicated on power supply wiring terminals. See Figure 8, page 8.

Connect the Model 3350/3700 to a power supply as follows:

1. Use 18 to 12 AWG (0,75 to 4,0 mm<sup>2</sup>) wire.
2. Ground the power supply wiring:
  - Connect the ground wire to the green screw. See Figure 7, page 7.
  - Connect the other end of the ground wire directly to earth ground.
  - Keep all ground leads as short as possible.
  - Ground wiring must have less than 1 ohm impedance.

3. Connect wires to terminals 9 and 10 on the gray terminal strip. See Figure 8, page 8.

A user-supplied switch may be installed in the power supply line. For compliance with low-voltage directive 73/23/EEC (European installations), a switch in close proximity to the Model 3350/3700 is required.

4. Close the display cover and tighten the screws.







©2003. Micro Motion, Inc. All rights reserved. P/N 3300996, Rev. C



Visit us on the Internet at [www.micromotion.com](http://www.micromotion.com)

**Micro Motion Inc. USA**  
Worldwide Headquarters

7070 Winchester Circle  
Boulder, Colorado 80301  
T (303) 530-8400  
(800) 522-6277  
F (303) 530-8459

**Micro Motion Europe**

Emerson Process Management  
Wiltonstraat 30  
3905 KW Veenendaal  
The Netherlands  
T +31 (0) 318 495 670  
F +31 (0) 318 495 689

**Micro Motion Asia**

Emerson Process Management  
1 Pandan Crescent  
Singapore 128461  
Republic of Singapore  
T (65) 6777-8211  
F (65) 6770-8003

**Micro Motion United Kingdom**

Emerson Process Management Limited  
Horsfield Way  
Bredbury Industrial Estate  
Stockport SK6 2SU U.K.  
T 0800 966 180  
F 0800 966 181

**Micro Motion Japan**

Emerson Process Management  
Shinagawa NF Bldg. 5F  
1-2-5, Higashi Shinagawa  
Shinagawa-ku  
Tokyo 140-0002 Japan  
T (81) 3 5769-6803  
F (81) 3 5769-6843

