

Quick Reference Guide

P/N 3300995, Rev. C

April 2003

Model 3500 Transmitter (9-wire) or Model 3300 Peripheral Installation Instructions for Rack-Mount

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BEFORE YOU BEGIN

This quick reference guide explains basic installation guidelines for mounting the Micro Motion® Model 3300/3500 applications platform in a 19-inch (486,2 mm) rack.

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 or through your local Micro Motion support center.

Installation kit

For mounting in a rack, the Model 3300/3500 installation kit includes the following parts:

- One DIN standard 41612, Type D connector for input/output wiring, with solder tails or screw terminals
- (Model 3500 only) One DIN standard 41612, keyed Type D connector for sensor wiring, with solder tails or screw terminals
- One plug-in connector for power supply wiring
- Four (Model 3300) or six (Model 3500) slotted cheese-head machine screws, size M2.5x8, for securing wiring connectors to the rack

STEP 1. Choosing a location

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

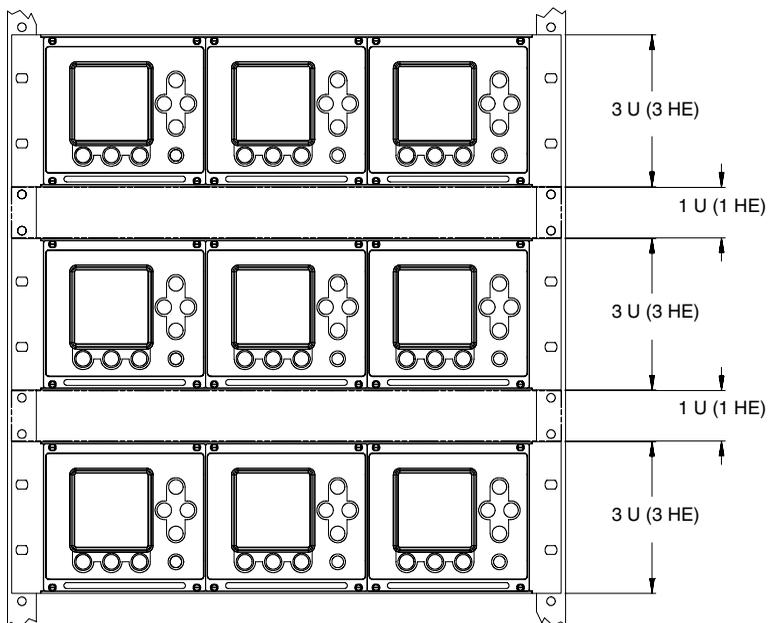
Environmental requirements

Install the transmitter where ambient temperature is between -4 and $+140$ °F (-20 and $+60$ °C).

If multiple applications platforms are installed, provide at least 1 U (1 HE) of vertical space between racks to ensure proper ventilation. See Figure 1, page 3.

Figure 1. Space requirements for proper ventilation

1 U = 1 HE = 1.750 inches (44,5 mm)



Dimensions

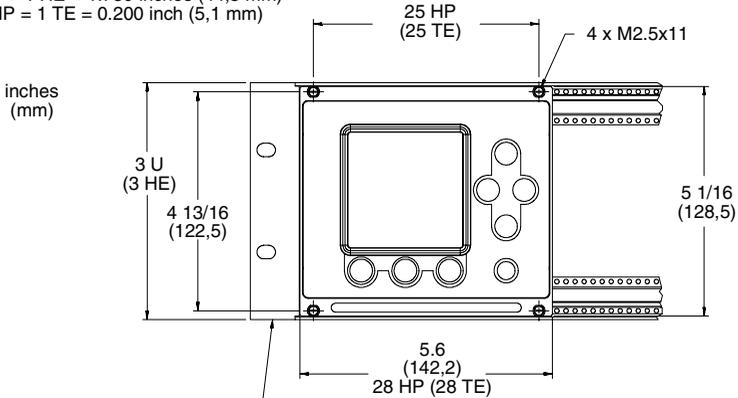
The Model 3300/3500 has the following dimensions (see Figure 2, page 4):

- Height: 128 mm (3 U or 3 HE)
- Width: 142 mm (28 HP or 28 TE)
- Depth: 160 mm

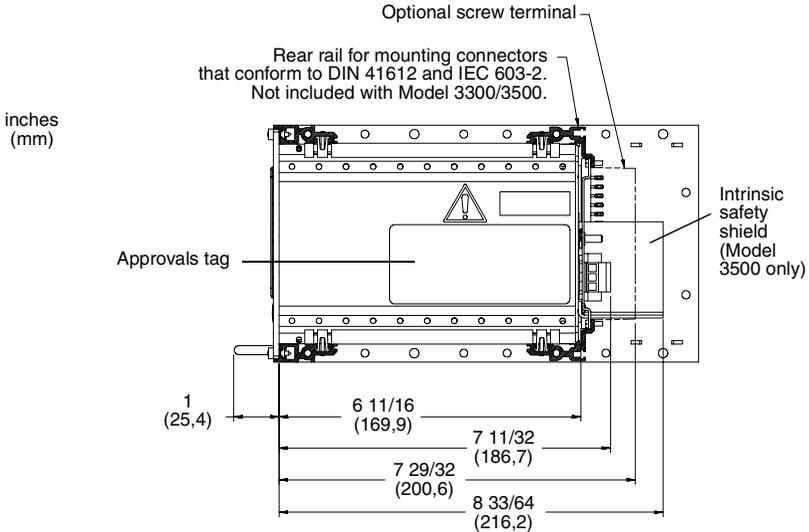
The Model 3300/3500 conforms to DIN standard 41494, Part 5 (IEC 297-3) for 19-inch (486,2 mm) racks. Up to three enclosures fit into one rack. See Figure 1.

Figure 2. Dimensions for mounting in rack

1 U = 1 HE = 1.750 inches (44,5 mm)
 1 HP = 1 TE = 0.200 inch (5,1 mm)



19-inch (486,2 mm) rack conforms to DIN 41494, Part 5, and IEC 297-3.
 Not included with Model 3300/3500.



Flowmeter cable lengths

Maximum cable length from the sensor to the Model 3500 transmitter is 1000 feet (300 meters).

If you are installing the Model 3300 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).

STEP 2. Installing guide rails and wiring connectors

Guide rails

Positions of guide rails and wiring connectors are indicated in Figure 3, page 6. Centers of guide rails should be 27 HP (27 TE) apart, for example, at 1 HP (TE) and 28 HP (TE).

Wiring connectors

The applications platform is shipped with a solder-tail or screw-type connector for input/output wiring, a keyed solder-tail or screw-type connector for sensor wiring (Model 3500 only), and a plug-in connector for power supply wiring.

Working from the front of the rack, use the supplied M2.5x8 screws to install the wiring connectors onto the back of the rack as follows:

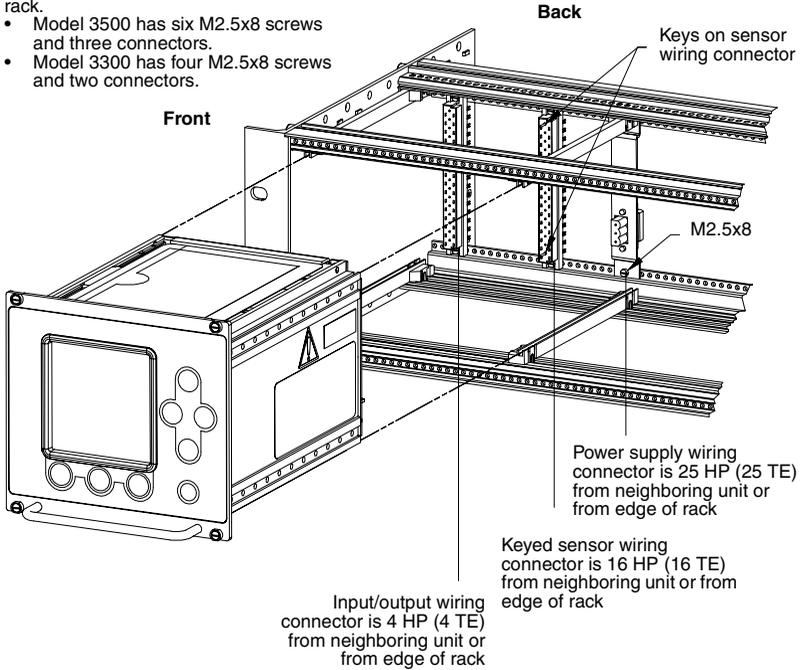
1. Use the centers of the guide rails as reference points and refer to Figure 3, page 6.
2. Install the input/output wiring connector at 4 HP (4 TE) from the neighboring unit or from the edge of the rack.
3. (Model 3500 only) Install the keyed sensor wiring connector at 16 HP (16 TE) from the neighboring unit or from the edge of the rack.
4. Install the power supply wiring connector at 25 HP (25 TE) from the neighboring unit or from the edge of the rack.

Figure 3. Positions of guide rails and wiring connectors

Guide rail centers should be 27 HP (27 TE) apart;
for example, 1 HP (1 TE) and 28 HP (28 TE)

Install screws and connectors from front of rack.

- Model 3500 has six M2.5x8 screws and three connectors.
- Model 3300 has four M2.5x8 screws and two connectors.



STEP 3. Installing the Model 3300/3500 in the rack

1. Align the Model 3300/3500 with the guide rails.
2. Slide the Model 3300/3500 into the rack. Make sure the pins on the back panel make contact with the wiring connectors.
3. Tighten the supplied captive screws to secure the front panel of the Model 3300/3500 to the guide rails.

STEP 4. Connecting input and output wiring

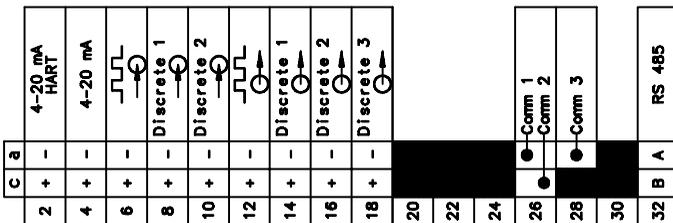
Connect input and output wiring to the appropriate terminals on the input/output wiring connector, which is the far right connector. Refer to Table 1 and to the card that is inserted into the sleeve on the top panel (shown in Figure 4).

- Use 24 to 16 AWG (0,25 to 1,5 mm²) twisted-pair shielded wire.
- Ground the shields at a single point only.

Table 1. Input/output wiring terminals

Terminal number		Designation
c 2+	a 2 –	Primary 4–20 mA output
c 4 +	a 4 –	Secondary 4–20 mA output
c 6 +	a 6 –	Frequency input
c 8 +	a 8 –	Discrete input 1
c 10 +	a 10 –	Discrete input 2
c 12 +	a 12 –	Frequency output
c 14 +	a 14 –	Discrete output 1
c 16 +	a 16 –	Discrete output 2
c 18 +	a 18 –	Discrete output 3
c 32 (B line)	a 32 (A line)	RS-485 output

Figure 4. Input/output wiring terminal card

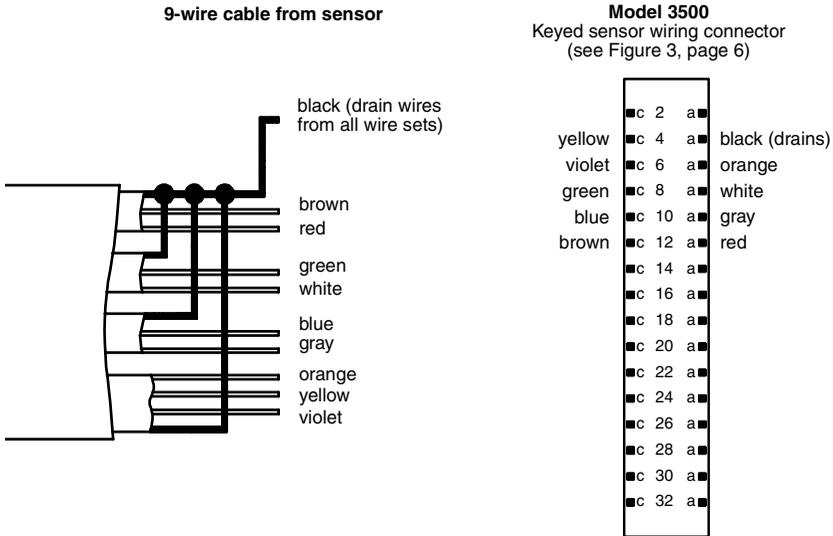


STEP 5. Connecting the Model 3500 to the sensor

To connect the Model 3500 transmitter to a Micro Motion sensor, follow the steps below. If you are installing the Model 3300 applications peripheral, this step is not required.

1. Identify the components shown in Figure 5.

Figure 5. Sensor cable to Model 3500



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 5, page 8. No bare wires should remain exposed.
 - b. If using shielded or armored cable, connect the cable braid to the rear stud, as described in Micro Motion's *9-Wire Flowmeter Cable Preparation and Installation Guide*.

STEP 6. Connecting power supply wiring

⚠ CAUTION

Improper wiring installation can cause device failure or measurement error.

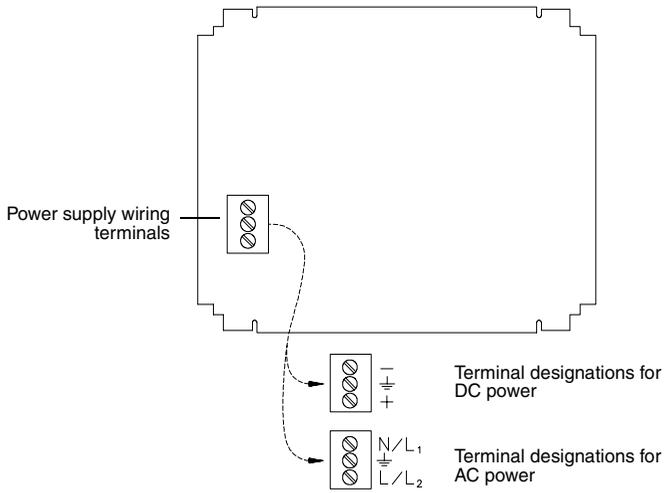
- To avoid device failure or measurement error, do not install power supply wiring in the same cable tray or conduit as input/output wiring.
- Shut off power supply before installing the applications platform.
- Make sure power supply voltage matches voltage that is indicated on power supply wiring terminals. See Figure 6, page 10.

Referring to Figure 6, page 10, connect the Model 3300/3500 to a power supply as follows:

1. Use 18 to 14 AWG (0,75 to 2,5 mm²) wire.
2. Ground the power supply wiring:
 - Connect the ground wire to the middle terminal.
 - Connect the power supply ground directly to earth ground.
 - Keep all ground leads as short as possible.
 - Ensure that all ground wiring has less than 1 ohm impedance.
3. Connect wires to the upper and lower terminals.

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 rack is required.

Figure 6. Power supply wiring terminals



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