

Micro Motion® Model 775

Smart Wireless Integral-Mount THUM™ Adapter



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About this supplement

The *Micro Motion® Model 775: Smart Wireless Integral-Mount THUM™ Adapter Wiring Supplement* provides detailed information on wiring the integral-mount THUM Adapter wireless device to your Micro Motion meter. This supplement is not a comprehensive guide for the Smart Wireless THUM Adapter device.

For additional information on installing and configuring the Smart Wireless THUM Adapter, refer to the *Smart Wireless THUM™ Adapter Quick Installation Guide* or *Smart Wireless THUM™ Adapter Reference Manual* also available on the Micro Motion Product Documentation CD or at www.micromotion.com.

For more information on installing and configuring your Micro Motion meter, see the Micro Motion Product Documentation CD for the appropriate product manual.

Safety and approval information

This Micro Motion product complies with all applicable European directives when properly installed in accordance with the instructions in this manual. 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.

For hazardous installations in Europe, refer to standard EN60079-14 if national standards do not apply.

Micro Motion customer service

For customer service, phone the support center nearest you:

- In the U.S.A., phone **800-522-MASS** (800-522-6277) (toll-free)
- In Canada and Latin America, phone +1 303-527-5200
- In Asia:
 - In Japan, phone 3 5769-6803
 - In other locations, phone +65 6777-8211 (Singapore)
- In Europe:
 - In the U.K., phone 0870 240 1978 (toll-free)
 - In other locations, phone +31 (0) 318 495 555 (The Netherlands)

Customers outside the U.S.A. can also email Micro Motion customer service at flow.support@emerson.com.

THUM Adapter overview

The Smart Wireless THUM™ Adapter acts as an extension of the HART function of the primary mA output on your Micro Motion transmitter. It broadcasts HART data from the transmitter to the Wireless HART™ network. The THUM Adapter can be used with any Micro Motion transmitter that supports HART over the primary mA output. The Smart Wireless THUM Adapter is shipped integrally mounted to the Micro Motion transmitter.

The THUM Adapter is installed using an approved thread sealant and secured to a torque value of 30–35 ft-lbs. Figure 1 shows an integrally mounted THUM adapter installed in a Model 2700 transmitter. Figure 2 shows an integrally mounted THUM adapter installed in a Model 2200S transmitter.

Figure 1 Integral-mount THUM Adapter components (Model 2700)

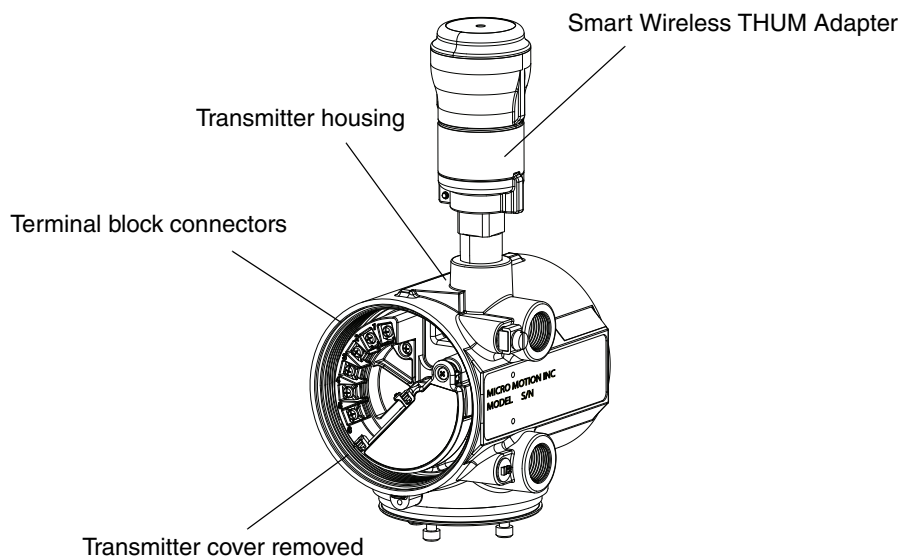
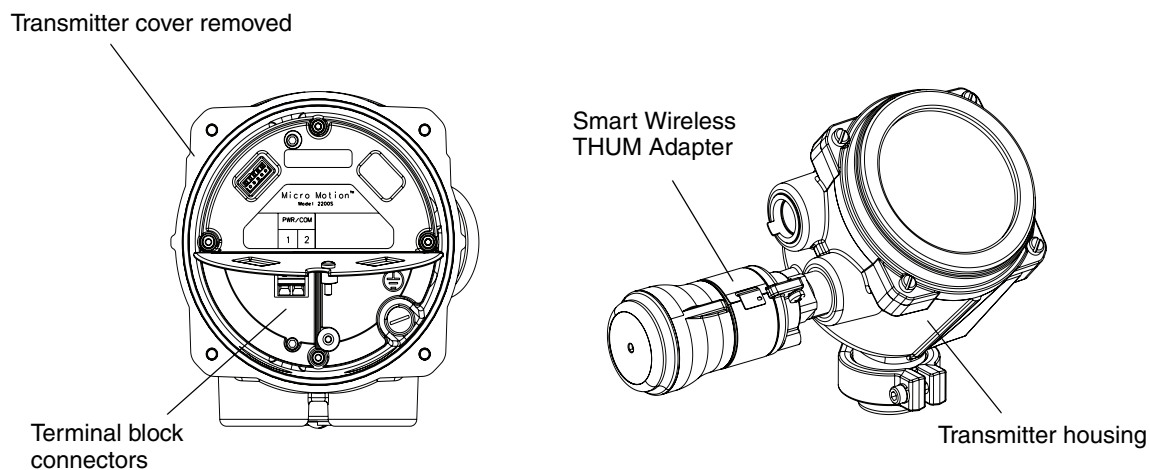


Figure 2 Integral-mount THUM Adapter components (Model 2200S)



Installation considerations



Explosions could result in death or serious injury.

Installation of the equipment in an explosive environment must be in accordance with the appropriate local, national, and international standards, codes, and practices. Please review the Product Certifications section in the *Smart Wireless THUM™ Adapter Quick Installation Guide* for any restrictions associated with a safe installation.

Before connecting a Communicator in an explosive atmosphere, ensure the instruments are installed in accordance with intrinsically safe or non-incendive field wiring practices.



Electrical shock can result in death or serious injury.

Avoid contact with the leads and terminals. High voltage that may be present on leads can cause electrical shock. This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions. This device may not cause harmful interference.



Do not install the THUM Adapter or all other wireless devices until the Smart Wireless Gateway has been installed and is functioning properly. Power up the wireless devices in the order of proximity from the Smart Wireless Gateway, beginning with the closest. This will result in a simpler and faster network installation. For more information, see the Smart Wireless Gateway Manual available on the Micro Motion product documentation CD or at www.micromotion.com

Locating the THUM Adapter

For best performance, the THUM Adapter should be installed according to the following requirements:

- Access to the device
- Optimally, in a vertical position – either straight up or straight down
- With approximately 3 ft (1 m) between objects in a parallel metal plane such as a pipe or metal framework. Pipes or framework may adversely affect the performance of the antenna.



This device must be installed to ensure a minimum antenna separation distance of 7.9" (20 cm) from all persons. This device must accept any interference received, including interference that may cause undesired operation.

THUM Adapter wiring requirements

The THUM Adapter must be wired to the transmitter's primary mA output. Wiring depends on whether the mA output is internally powered (active) or externally powered (passive). Adapt the wiring diagrams in the transmitter installation manual as required.

The THUM Adapter causes a voltage drop across the loop. The drop is linear from 2.25 V at 3.5 mA to 1.2 V at 25 mA, but does not effect the 4–20 mA signal on the loop. Under fault conditions, the maximum voltage drop is 2.5 V. To maintain normal operating functions of the wired device, the power in the loop must have at least a 2.5 V margin at a 250 Ohm load.



Ensure that the power supply can provide at least 2.5 V more than the lift-off voltage of the meter to make sure it works properly with the THUM Adapter installation. During normal operation, or in fault condition, the THUM Adapter will cause a 2.5 V drop in the connected loop. To determine the lift-off voltage for the meter, refer to the meter installation and configuration manual.

Additional wiring requirements for hazardous area installations

For hazardous area installations, you may be required to use either cable glands or conduit to wire between the THUM Adapter and the transmitter.

- If you use cable glands:
 - You must supply the appropriate cable glands. Cable glands are available from Micro Motion.
 - For best results, use shielded or armored cable.
- If you use conduit, any poured seals must be within 18" (45.7 cm) of the transmitter conduit opening.

Wiring the integral-mount THUM Adapter



Ensure that your installation complies with all applicable safety requirements. Refer to the transmitter installation manual for additional safety information.

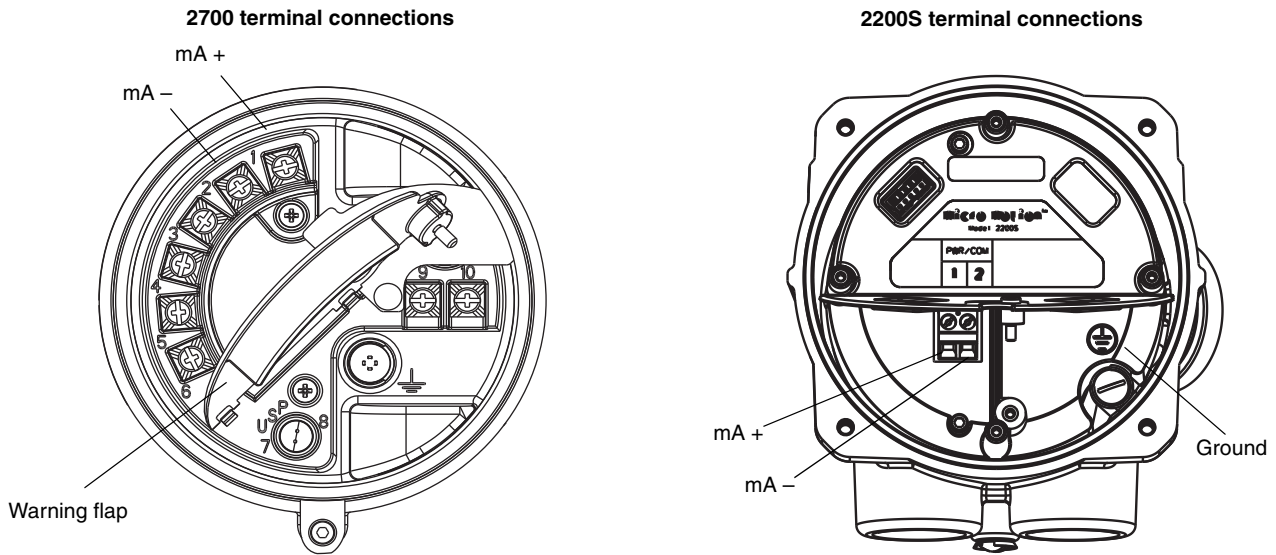
1. Power down the transmitter. **WARNING! If the transmitter is in a hazardous area, wait five minutes before opening the wiring compartment.**
2. Access the wiring compartment on the transmitter.
3. Connect the wires from the THUM Adapter to the transmitter terminals as shown in Table 1. Figure 3 identifies the terminal block connectors. The following information applies to all installations.

Table 1 Integral-mount THUM Adapter wiring to transmitter

Primary mA output	THUM Adapter wire	At transmitter
For internally powered (active)	Red wire	mA + terminal on transmitter
	Black wire	mA – terminal on transmitter
	Yellow wire	Splice into the mA output wiring ⁽¹⁾
	White wire	Splice into mA output wiring ⁽¹⁾
For externally powered (passive)	Yellow wire	mA + terminal on transmitter
	White wire	mA – terminal on transmitter
	Red wire	Splice into mA output wiring ⁽¹⁾
	Black wire	Splice into mA output wiring ⁽¹⁾
	Green wire	Transmitter internal ground For the 2200S, a redundant ground is provided with a green wire attached to the internal housing ground screw.

(1) If your installation does not include mA output wiring, create a loop by connecting both wires to a 250-Ω resistor. When you close the wiring compartment, tuck the resistor inside. Do not crimp or pinch the wires or interfere with other wiring.

Figure 3 Transmitter terminal block connections



4. Close the wiring compartment and replace all covers.
5. Reinstall the conduit or cable gland.

Post-installation and configuration of the THUM Adapter

For information on verifying your THUM Adapter installation, refer to the *Smart Wireless THUM™ Adapter Quick Installation Guide*.

For information on configuring and troubleshooting the wireless device, refer to the *Smart Wireless THUM™ Adapter Reference Manual*. Both manuals are available on the Micro Motion Product Documentation CD or at www.micromotion.com.

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