

# Configuring the RFT9739 Rack-Mount Transmitter for Commercial Trade

## Introduction

These instructions explain how to configure a Version 3 rack-mount RFT9739 transmitter for use in custody transfer and other commercial trade applications.

For commercial trade applications, the transmitter has security switches and an optional lockout kit.

- Security switches enable the user to write-protect all configuration and calibration parameters and/or disable flowmeter zeroing and resetting of totalizers.
- The lockout kit prevents access to the transmitter's electronics.

### NOTE

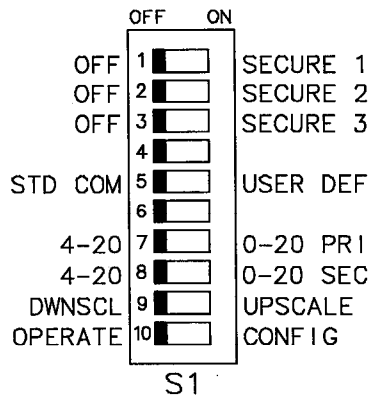
Before securing the transmitter configuration or installing the lockout screws, make sure the transmitter has been properly installed in the rack and the flowmeter has been zeroed, according to the appropriate sections in the instruction manual that is shipped with the transmitter.

## Securing the transmitter configuration

A Version 3 rack-mount RFT9739 has three security switches.

- Switches are on the processor board. Remove the bottom cover of the housing to access the switches. Top and bottom covers are secured to the housing by screws.
- **Figure 1** illustrates the switches, which are labeled SECURE 1, SECURE 2, and SECURE 3.

**Figure 1.**  
Switches



Switches 1 through 10 at left are shown in the OFF position.

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## Security modes

Switches 1, 2, and 3 enable the user to disable flowmeter zeroing, disable resetting of totalizers, and write-protect all configuration and calibration parameters.

Switch settings enable any of eight possible security modes. Different modes determine which functions are disabled and whether configuration and calibration parameters are write-protected. The following functions can be disabled:

- Flowmeter zeroing through digital communications
- Flowmeter zeroing with the Scroll and Reset buttons
- Totalizer reset, with flow, using digital communications
- Totalizer reset, with flow, using the Scroll and Reset buttons
- Totalizer reset, with zero flow, using digital communications
- Totalizer reset, with zero flow, using the Scroll and Reset buttons

**Table 1** lists the parameters that are write-protected and functions that are disabled for each security mode. Security modes 1 through 7 are entered immediately when switches are set.

For information about security mode 8, see page 3.

**Table 1. Security modes**

Switch settings		Mode 1	Mode 2	Mode 3	Mode 4	Mode 5	Mode 6	Mode 7	Mode 8*
Switch 1		OFF	OFF	OFF	OFF	ON	ON	ON	ON
Switch 2		OFF	OFF	ON	ON	OFF	OFF	ON	ON
Switch 3		OFF	ON	OFF	ON	OFF	ON	OFF	ON

Function/parameter	Performed with	Mode 1	Mode 2	Mode 3	Mode 4	Mode 5	Mode 6	Mode 7	Mode 8
Flowmeter zeroing	Zero button or Reset button		Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	HART or Modbus			Disabled	Disabled	Disabled			Disabled
Totalizer reset, no flow	Scroll and Reset buttons		Disabled		Disabled	Disabled		Disabled	
	HART or Modbus			Disabled		Disabled	Disabled		
Totalizer reset, with flow	Scroll and Reset buttons		Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
	HART or Modbus			Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Configuration and calibration parameters				Write-protected	Write-protected	Write-protected	Write-protected	Write-protected	Write-protected

\*Security mode 8 is not entered when switches are set. For more information about security mode 8, see page 3.

## Security mode 8

When transmitter security is set for mode 8, the transmitter meets security requirements for custody transfer described in National Institute of Standards and Technology (NIST) Handbook 44.

### NOTE

Once the transmitter is configured for security mode 8, the security mode cannot be changed unless a master reset is performed.

A master reset causes all configuration parameters to return to their default values, and **requires complete characterization and reconfiguration of the transmitter.**

If the user attempts to enter a new security mode or change the transmitter configuration after entering security mode 8:

- Internal totalizers stop counting
- The frequency/pulse output goes to 0 Hz
- mA outputs go to 4 mA
- The display reads "SECURITY BREACH; SENSOR OK"
- Custody transfer event registers record each change made to defined configuration and calibration parameters. (For a list of these parameters, see the instruction manual that is shipped with the transmitter.)

The security breach continues, and totalizers and outputs remain inactive, until the transmitter is reconfigured for security mode 8, or until a master reset has been performed. Custody transfer event registers are not affected by a master reset. For information about event registers, or to perform a master reset, see the instruction manual that is shipped with the transmitter.

### NOTE

Milliamp output trim, milliamp output test, and frequency/pulse output test cannot be performed after security mode 8 is entered.

**Before entering security mode 8**, perform milliamp trim and/or test procedures, if necessary, as described in either of the following manuals:

- *Using the HART Communicator with Micro Motion Transmitters*
- *Using ProLink Software with Micro Motion Transmitters*

**To enter security mode 8:**

1. Note the position of switch 5.
2. Set switches 1, 2, 3, and 10 to the ON position.
3. Set switches 4, 5, and 6 to the OFF position.
4. Locate the ZERO button on the transmitter front panel.
5. Press and hold the ZERO button for five seconds.
6. Reset switch 5 to the desired position (as noted in Step 1).
7. Reset switch 10 to the OFF (OPERATE) position.
8. To verify the transmitter is in security mode 8, use the Scroll button to scroll through the display screens. The transmitter is in security mode 8 if the CONFIG REG and CALIBRATE REG screens appear.

**To verify the transmitter is in security mode 8:**

Use the Scroll button to scroll through process variable screens to event register screens. If event register screens appear, the transmitter is in security mode 8.

**To make changes to configuration or calibration parameters once security mode 8 is entered:**

1. Set switches 1, 2, and 3 to the OFF position.
2. Make changes through digital communication or with the Scroll and Reset buttons. Custody transfer event registers record each change made to defined configuration and calibration parameters. For more information about digital communications, see the following instruction manuals:
  - *Using the HART Communicator with Micro Motion Transmitters*
  - *Using Modbus Protocol with Micro Motion ELITE RFT9739 Transmitters*
  - *Using ProLink Software with Micro Motion Transmitters*
3. Reset switches 1, 2, and 3 to the ON position.

**To re-enter security mode 8:**

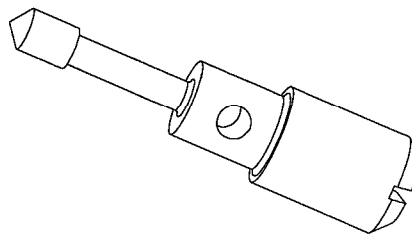
If security mode 8 has been established previously, and the security mode has been temporarily changed, it is not necessary to use the Reset button to re-enter security mode 8. In such a case, resetting switches 1, 2, and 3 to the ON position will re-enter security mode 8 immediately.

If a master reset has been performed, it is necessary to use the ZERO button method to re-enter security mode 8. See the procedure at the top of this page.

**Lockout screw installation procedure**

<b>NOTE</b>
For custody transfer and other commercial trade applications in the United States and Europe, both mounting screws are required (see <b>Figure 2</b> ).

**Figure 2.**  
**Lockout screw**



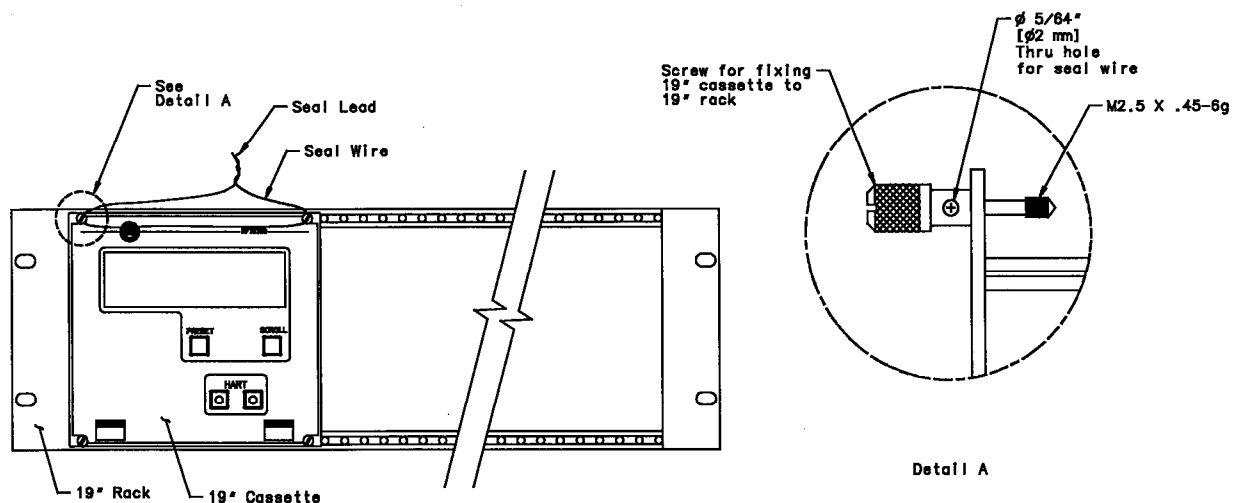
**Note for Figure 2.**

The lockout kit includes two screws.

To install the lockout screws, refer to **Figure 3** and follow these steps:

1. The front panel of the transmitter is held in place by four screws. Replace the two top or two bottom screws with the lockout screws.
2. Make sure all four front-panel screws are tightly secured to the rack assembly.
3. A weights and measures inspector will inspect the installation.
4. To complete the installation, the inspector runs a wire seal through the holes in the lockout screws, then secures the seal.

**Figure 3. Installation diagram for lockout screws**



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