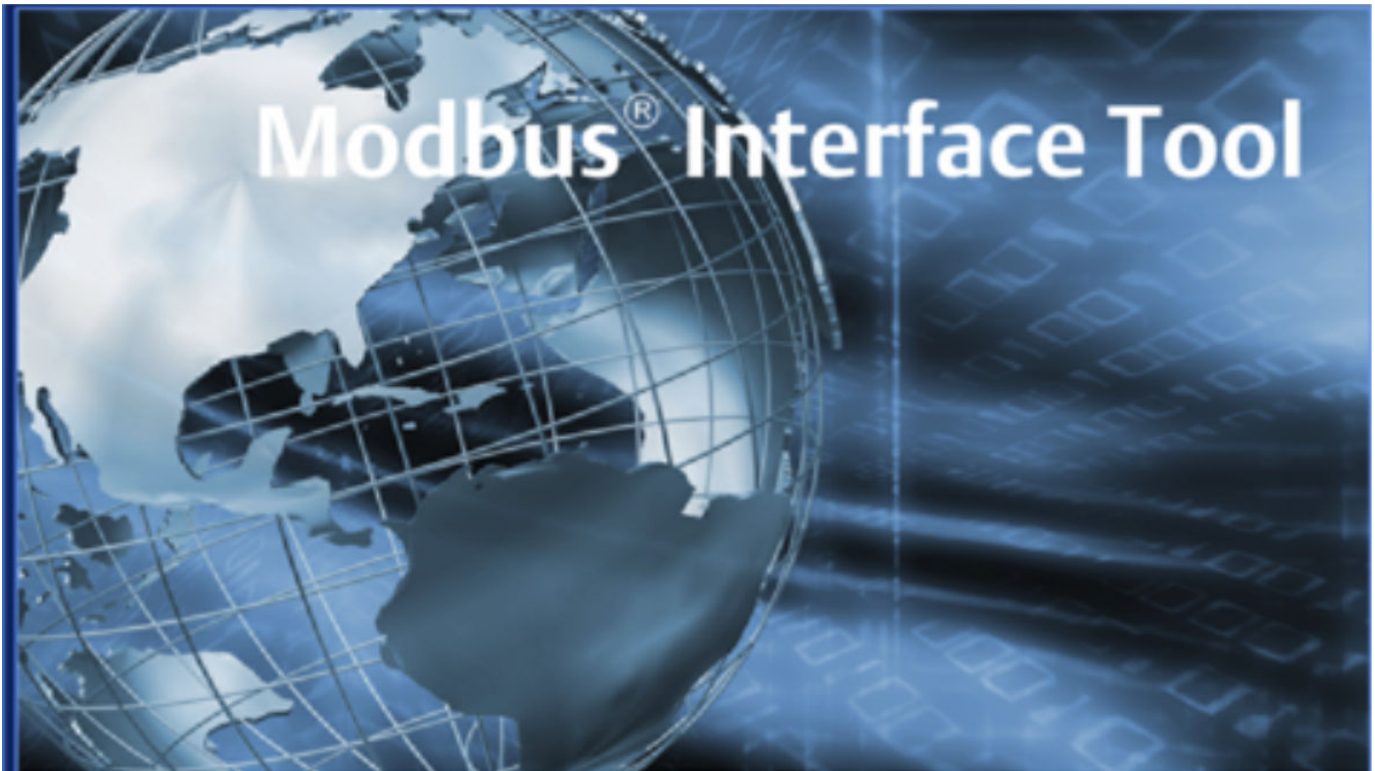


Micro Motion[®] Modbus Interface Tool

Smart Meter Verification



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 EU declaration of conformity for directives that apply to this product. The EU declaration of conformity, with all applicable European directives, and the complete ATEX Installation Drawings and Instructions are available on the internet at www.emerson.com or through your local Micro Motion support center.

Information affixed to equipment that complies with the Pressure Equipment Directive, can be found on the internet at www.emerson.com.

For hazardous installations in Europe, refer to standard EN 60079-14 if national standards do not apply.

Other information

Full product specifications can be found in the product data sheet. Troubleshooting information can be found in the configuration manual. Product data sheets and manuals are available from the Micro Motion web site at www.emerson.com.

Return policy

Follow Micro Motion procedures when returning equipment. These procedures ensure legal compliance with government transportation agencies and help provide a safe working environment for Micro Motion employees. Micro Motion will not accept your returned equipment if you fail to follow Micro Motion procedures.

Return procedures and forms are available on our web support site at www.emerson.com, or by phoning the Micro Motion Customer Service department.

Emerson Flow customer service

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		Russia/CIS	+7 495 981 9811	South Korea	+82 2 3438 4600
		Egypt	0800 000 0015	Singapore	+65 6 777 8211
		Oman	800 70101	Thailand	001 800 441 6426
		Qatar	431 0044	Malaysia	800 814 008
		Kuwait	663 299 01		
		South Africa	800 991 390		
		Saudi Arabia	800 844 9564		
		UAE	800 0444 0684		

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1 Smart Meter Verification

Smart Meter Verification (SMV) is a Micro Motion diagnostic tool that allows you to compare the sensor's current performance to benchmark data established at the factory.

Using the Modbus interface, you can:

- Execute an SMV test from the Modbus host
- Set up a scheduled test execution
- Read result data for the twenty test results stored on the transmitter

Note

You can view more than twenty previous test results and see detailed test reports only if SMV is licensed.

For more information on requirements and features, see your transmitter configuration and use manual.

2 Execute an SMV test from the Modbus host

Prerequisites

The Modbus host must be connected to the transmitter.

Procedure

1. If you are fixing outputs during the test, set the output state from Register 3093.

Option	Description
0	Last Measured Value
1	Fault Action

2. From Register 3000, start or abort the test.
0 = Abort
1 = Start with outputs fixed (apply Register 3093)
6 = Start in **Continue Measurement Mode**

3. Read Register 3001. Is the test running?

Option	Description
> 0 = Yes	Read the percent complete from Register 3020. Range: 0 to 100
0 = No	Continue to the next step.

4. Read Register 3003. Did the test run to completion?

Option	Description
16 = Yes	Continue to the next step.
< 16 = No	Read the abort code on Register 3002. 1 = User Initiated Abort 3 = Frequency Drift 5 = High Drive Gain 8 = Unstable Flow 12 = Fault Condition 13 = No Air Reference 14 = No Water Reference 15 = Missing Configuration Data

5. Read Register 3004. Is the test passed?

0 = Yes	The test passed.
> 0 = No	The test result is caution. Continue to the next step.

6. For Model 5700 transmitters, read Register 6348. For all other transmitters, read Register 6364.

128	Possible coating or corrosion/erosion; coating detection is available only on the Model 5700
256	Possible extreme temperature or corrosion
512	Possible extreme temperature or damage
1024	Possible coating or damage; coating detection is available only on the Model 5700
2048	Possible corrosion/erosion
4096	Possible coating; coating detection is available only on the Model 5700

3 Configure and view scheduled test executions

Use the Modbus host to set up the schedule.

Prerequisites

To configure a test execution and view a scheduled test execution, the Modbus host must be connected to the transmitter. Once the schedule is loaded into the transmitter, the Modbus host no longer has to be connected to the transmitter.

Procedure

1. Choose any of the following options:

Option	Description
Specify the hours until test execution for a single execution	Write a floating-point value to Register 2993.
Specify the hours for a recurring execution	<ul style="list-style-type: none">• To specify the number of hours until the first test is executed, write a floating-point value to Register 2993.• To specify the number of hours between test executions, write a floating-point value to Register 2995.
View the number of hours until the next execution	Read Register 2997.
Cancel a scheduled execution	<ul style="list-style-type: none">• Write 0 to Register 2993.• Write 0 to Register 2995.

2. Disconnect as desired.

4 Read stored test results

The results of the twenty most recent tests are stored on the transmitter.

Note

You can view more than twenty previous test results and see detailed test reports only if SMV is licensed.

Prerequisites

To read test results, the Modbus host must be connected to the transmitter.

Procedure

1. Specify the test record you want to read by writing a value between 0 and 19 to the appropriate register.

Register for Model 5700 transmitters	Register for all other transmitters	Description
5779	2984	For Model 5700 transmitters: Register 5825 = the most recent test For all other meters: 0 = the most recent test

2. Read the Modbus register values using the descriptions in the following table.

Registers for Model 5700 transmitters	Registers for all other transmitters	Description
5697	2985	Test number
5820 and 5821	2986 Bit #7	Test result 0 = Pass 1 = Caution
5819	2986 Bits #6-4	State
5818	2986 Bits #3-0	Abort code (compressed)
5780	2987	Time initiated
5782 and 5783	2989	Inlet normalized data
5784 and 5785	2991	Outlet normalized data

3. Disconnect as desired.



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