

Instruction Manual

P/N 3600283, Rev. C

July 2002

Modbus[®] Mapping Assignments for Micro Motion[®] Transmitters



www.micromotion.com



Modbus[®] Mapping Assignments for Micro Motion[®] Transmitters

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Using the Modbus Map

1.1 What this document tells you

This document lists Modbus® mapping assignments for Micro Motion® flowmeter components that support Modbus protocol.

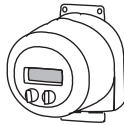
Micro Motion flowmeter components that support Modbus protocol include:



Series 1000 and 2000 transmitters, all versions



Core processor stand-alone (MVDSolo or MVD Direct Connect)



Field-mount Model RFT9739 transmitters, Version 2 and higher



Rack-mount Model RFT9739 transmitters, Version 2 and higher



Keys to using the Modbus map

Tables throughout the Modbus map contain checkmarks (✓) that identify the Micro Motion implementations for which each mapped address is available.

There are two Micro Motion implementations that do not include a Micro Motion transmitter:

- MVDSolo – includes only a sensor and core processor
- MVD Direct Connect – includes a sensor, core processor, and barrier

In this document, the term "MVDSolo" is used to refer to both.

What this document does not tell you

This document does *not* explain how individual mapped addresses are used. This document is a list of mapped addresses that are available for Micro Motion transmitters that support Modbus protocol.

For detailed information about using the mapped addresses that are listed in this document, see *Using Modbus Protocol with Micro Motion Transmitters*, available on the compact disk (CD) that is shipped with the transmitter, or from our website (www.micromotion.com).

This manual does *not* explain terminology and procedures for using Modbus protocol, or how to use a host controller to communicate with other devices in a Modbus-compatible multidrop network. For detailed information about using Modbus protocol, contact Modicon, Inc., North Andover, Massachusetts, U.S.A.

This manual does not explain transmitter installation or flowmeter wiring. For information about installation and wiring, see the appropriate sensor and transmitter manuals.

To order any of the manuals, see the phone numbers and website address that are listed below.

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Modbus Mapping Assignments

Table 2-1. Read/write coils

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---------|---|---------|-------------|------------------|---------|
| 0 0002 | Start/stop totalizers | √ | √ | √ | √ |
| 0 0003 | Reset totals | √ | √ | √ | √ |
| 0 0004 | Reset inventories | √ | √ | √ | √ |
| 0 0005 | Perform flowmeter zeroing | √ | √ | √ | √ |
| 0 0006 | Trim primary mA output at 0 or 4 mA | | √ | √ ¹ | √ |
| 0 0007 | Trim primary mA output at 20 mA | | √ | √ | √ |
| 0 0008 | Trim secondary mA output at 0 or 4 mA | | | √ ^{1,2} | √ |
| 0 0009 | Trim secondary mA output at 20 mA | | | √ ² | √ |
| 0 0010 | Fix current level from primary mA output | | √ | √ | √ |
| 0 0011 | Fix current level from secondary mA output | | | √ ² | √ |
| 0 0012 | Fix frequency from frequency/pulse output | | √ | √ | √ |
| 0 0013 | Perform low-density calibration | √ | √ | √ | √ |
| 0 0014 | Perform high-density calibration | √ | √ | √ | √ |
| 0 0014 | Perform third-point density calibration | | | | √ |
| 0 0015 | Perform temperature offset calibration | √ | √ | √ | |
| 0 0016 | Perform temperature slope calibration | √ | √ | √ | |
| 0 0018 | Perform flowing density (FD) calibration | √ | √ | √ | |
| 0 0018 | Save non-volatile data | | | | √ |
| 0 0020 | Perform transmitter test | √ | √ | √ | √ |
| 0 0039 | Reset configuration and calibration registers | | | | √ |
| 0 0041 | Perform reboot | √ | √ | √ | √ |
| 0 0044 | Perform T-Series sensor D3 calibration | √ | √ | √ | |
| 0 0045 | Perform T-Series sensor D4 calibration | √ | √ | √ | |
| 0 0046 | Fix discrete output 1 | | √ | √ | |
| 0 0047 | Fix discrete output 2 | | | √ ³ | |
| 0 0056 | Reset mass total | √ | √ | √ | |
| 0 0057 | Reset line volume (gross volume) total | √ | √ | √ | |
| 0 0058 | Reset API reference volume total (Standard volume total) | √ | √ | √ | |
| 0 0081 | Enable/disable cryogenic modulus compensation | √ | √ | √ | |
| 0 0082 | Enable/disable pressure compensation | √ | √ | √ | |
| 0 0083 | Enable/disable HART burst mode | | √ | √ | |
| 0 0084 | Enable/disable FOUNDATION Fieldbus simulation mode | | | √ ⁴ | |
| 0 0086 | Enable/disable Use externally written temperature (20449/20450) for internal calculations | √ | √ | √ | |
| 0 0094 | Enable/disable totalizer reset using display | | √ | √ | |
| 0 0095 | Enable/disable automatic scrolling using display | | √ | √ | |
| 0 0096 | Enable/disable display offline menu | | √ | √ | |
| 0 0097 | Enable/disable offline password for display | | √ | √ | |
| 0 0098 | Enable/disable display alarm menu | | √ | √ | |
| 0 0099 | Enable/disable acknowledge all alarms using display | | √ | √ | |

¹Only the 4 mA trim value is supported.

²Transmitters with intrinsically safe output boards or configurable input/output boards only.

³Transmitters with configurable input/output boards only.

⁴Transmitters with FOUNDATION Fieldbus option board only.

Modbus Mapping Assignments *continued*

Table 2-2. RFT9739 security coils

| Address | Description | RFT9739 |
|---------|--|---------|
| 0 0113 | Read protect calibration factors | √ |
| 0 0114 | Write protect output variables and units | √ |
| 0 0115 | Write protect scaled integers | √ |
| 0 0116 | Write protect sensor and transmitter information | √ |
| 0 0117 | Write protect special units factors | √ |
| 0 0118 | Write protect control output variable | √ |
| 0 0119 | Write protect flow direction | √ |
| 0 0120 | Write protect fault code | √ |
| 0 0121 | Write protect fault limit | √ |
| 0 0122 | Write protect output variables | √ |
| 0 0123 | Write protect flowmeter zeroing and process variable limits | √ |
| 0 0124 | Write protect pressure variables | √ |
| 0 0125 | Write protect calibration factors | √ |
| 0 0126 | Write protect coil 00002 (start/stop totalizer) | √ |
| 0 0127 | Write protect coil 00003 (reset totals) | √ |
| 0 0128 | Write protect coil 00004 (reset inventories) | √ |
| 0 0129 | Write protect coil 00005 (perform flowmeter zeroing) | √ |
| 0 0130 | Write protect coil 00006 (trim primary mA output at 4 mA or 0 mA) | √ |
| 0 0131 | Write protect coil 00007 (trim primary mA output at 20 mA) | √ |
| 0 0132 | Write protect coil 00008 (trim secondary mA output at 4 mA or 0 mA) | √ |
| 0 0133 | Write protect coil 00009 (trim secondary mA output at 20 mA) | √ |
| 0 0134 | Write protect coil 00010 (fix primary mA output) | √ |
| 0 0135 | Write protect coil 00011 (fix secondary mA output) | √ |
| 0 0136 | Write protect coil 00012 (fix frequency output) | √ |
| 0 0137 | Write protect coil 00013 (perform low-density calibration) | √ |
| 0 0138 | Write protect coil 00014 (perform high-density calibration) | √ |
| 0 0142 | Write protect coil 00018 (save non-volatile data) | √ |
| 0 0143 | Read/write protect master reset defaults | √ |
| 0 0144 | Read/write protect coil 00020 (perform transmitter self-test) | √ |
| 0 0145 | Read protect coil 10021 (EEPROM checksum failure) | √ |
| 0 0146 | Read protect coil 10022 (RAM diagnostic failure) | √ |
| 0 0147 | Read protect coil 10023 (real-time interrupt failure) | √ |
| 0 0148 | Read protect coil 10024 (sensor failure) | √ |
| 0 0149 | Read protect coil 10025 (temperature sensor failure) | √ |
| 0 0150 | Read protect coil 10026 (flowmeter zeroing failure) | √ |
| 0 0151 | Read protect coil 10027 (other failure occurred) | √ |
| 0 0152 | Read protect coil 10028 (transmitter initializing/warming up) | √ |
| 0 0153 | Read protect coil 10029 (primary variable out of range) | √ |
| 0 0154 | Read protect coil 10030 (non-primary variable out of range) | √ |
| 0 0155 | Read protect coil 10031 (milliamp output saturated) | √ |
| 0 0156 | Read protect coil 10032 (milliamp output fixed) | √ |
| 0 0157 | Read protect coil 10033 (watchdog timer error) | √ |
| 0 0158 | Read protect coil 10034 (power reset occurred) | √ |
| 0 0159 | Read protect coil 10035 (transmitter configuration changed) | √ |
| 0 0160 | Read protect coil 10036 (transmitter electronics failure) | √ |

Modbus Mapping Assignments *continued*

Table 2-3. Read-only discrete inputs

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---------|---------------------------------------|---------|-------------|-------------|---------|
| 1 0021 | (E)EPROM checksum failure | √ | √ | √ | √ |
| 1 0022 | RAM diagnostic failure | √ | √ | √ | √ |
| 1 0023 | Real-time interrupt failure | √ | √ | √ | √ |
| 1 0024 | Sensor failure | √ | √ | √ | √ |
| 1 0025 | Temperature sensor failure | √ | √ | √ | √ |
| 1 0026 | Flowmeter zeroing failure | √ | √ | √ | √ |
| 1 0027 | Other failure occurred | √ | √ | √ | √ |
| 1 0028 | Transmitter initializing/warming up | √ | √ | √ | √ |
| 1 0029 | Primary variable out of range | √ | √ | √ | √ |
| 1 0030 | Secondary variable out of range | √ | √ | √ | √ |
| 1 0031 | Milliamp output(s) saturated | | √ | √ | √ |
| 1 0032 | Milliamp output(s) fixed | | √ | √ | √ |
| 1 0033 | Watchdog timer error | √ | √ | √ | √ |
| 1 0034 | Power reset occurred | √ | √ | √ | √ |
| 1 0035 | Transmitter configuration changed | √ | | | √ |
| 1 0036 | Transmitter electronics failure | √ | √ | √ | √ |
| 1 0037 | Event 1 status (ON/OFF) | √ | √ | √ | √ |
| 1 0038 | Event 2 status (ON/OFF) | √ | √ | √ | √ |
| 1 0065 | Event 1 or event 2 status (ON/OFF) | | √ | √ | |
| 1 0066 | Flow direction switch status (ON/OFF) | | √ | √ | |
| 1 0067 | Flow rate indicator status (ON/OFF) | | √ | √ | |
| 1 0068 | Zero in progress status (ON/OFF) | | √ | √ | |
| 1 0069 | Fault status (ON/OFF) | | √ | √ | |

Table 2-4. Floating-point register pairs

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|-------------|--|---------|-------------|----------------|---------|
| 2 0141 0142 | Slug duration (seconds) | √ | √ | √ | √ |
| 2 0143 0144 | Fixed current for primary mA output test (milliamps) | | √ | √ | √ |
| 2 0145 0146 | Fixed current for secondary mA output test (milliamps) | | | √ ¹ | √ |
| 2 0147 0148 | Fixed frequency for frequency/output test (Hz) | | √ | √ | √ |
| 2 0149 0150 | Cutoff for density | √ | √ | √ | |
| 2 0151 0152 | Temperature for temperature offset/slope calibrations | √ | √ | √ | |
| 2 0155 0156 | Density for low-density calibration (g/cc) | √ | √ | √ | √ |
| 2 0157 0158 | Density for high-density calibration (g/cc) | √ | √ | √ | √ |
| 2 0157 0158 | Density for flowing-density calibration (g/cc) | | | | √ |
| 2 0159 0160 | Density calibration constant 1 (μsec) | √ | √ | √ | √ |
| 2 0161 0162 | Density calibration constant 2 (μsec) | √ | √ | √ | √ |
| 2 0163 0164 | Density temperature coefficient | √ | √ | √ | √ |
| 2 0165 0166 | High mass flow limit of sensor | √ | √ | √ | √ |
| 2 0167 0168 | High temperature limit of sensor | √ | √ | √ | √ |
| 2 0169 0170 | High density limit of sensor (g/cc) | √ | √ | √ | √ |
| 2 0171 0172 | High volume flow limit of sensor | √ | √ | √ | √ |
| 2 0173 0174 | Low mass flow limit of sensor | √ | √ | √ | √ |
| 2 0175 0176 | Low temperature limit of sensor | √ | √ | √ | √ |
| 2 0177 0178 | Low density limit of sensor (g/cc) | √ | √ | √ | √ |
| 2 0179 0180 | Low volume flow limit of sensor | √ | √ | √ | √ |
| 2 0181 0182 | Mass flow minimum range | √ | √ | √ | √ |
| 2 0183 0184 | Temperature minimum range | √ | √ | √ | √ |
| 2 0185 0186 | Density minimum range | √ | √ | √ | √ |

Modbus Mapping Assignments *continued*

Table 2-4. Floating-point register pairs *continued*

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|-------------|---|---------|-------------|----------------|---------|
| 2 0187 0188 | Volume flow minimum range | √ | √ | √ | √ |
| 2 0189 0190 | Flow rate internal damping (seconds) | √ | √ | √ | √ |
| 2 0191 0192 | Temperature internal damping (seconds) | √ | √ | √ | √ |
| 2 0193 0194 | Density internal damping (seconds) | √ | √ | √ | √ |
| 2 0195 0196 | Mass flow cutoff for frequency/pulse output and totalizers | √ | √ | √ | √ |
| 2 0197 0198 | Volume flow cutoff for frequency/pulse output and totalizers | √ | √ | √ | √ |
| 2 0199 0200 | Slug flow high-density limit (g/cc) | √ | √ | √ | √ |
| 2 0201 0202 | Slug flow low-density limit (g/cc) | √ | √ | √ | √ |
| 2 0203 0204 | Primary mA output present current (milliamps) | | √ | √ | √ |
| 2 0205 0206 | Added damping on primary mA output (seconds) | | √ | √ | √ |
| 2 0207 0208 | Flow cutoff for primary mA output | | √ | √ | √ |
| 2 0209 0210 | Primary variable at 20 mA | | √ | √ | √ |
| 2 0211 0212 | Primary variable at 0 mA or 4 mA | | √ | √ | √ |
| 2 0213 0214 | Secondary mA output present current (milliamps) ¹ | | | √ | √ |
| 2 0215 0216 | Added damping on secondary mA output (seconds) ¹ | | | √ | √ |
| 2 0217 0218 | Flow cutoff for secondary mA output ¹ | | | √ | √ |
| 2 0219 0220 | Secondary variable at 20 mA | | | √ ¹ | √ |
| 2 0221 0222 | Secondary variable at 0 mA or 4 mA | | | √ ¹ | √ |
| 2 0223 0224 | Frequency setpoint or number of pulses (Hz) | | √ | √ | √ |
| 2 0225 0226 | Flow rate or total represented by frequency or number of pulses | | √ | √ | √ |
| 2 0227 0228 | Frequency pulse width (seconds) | | √ | √ | √ |
| 2 0229 0230 | Frequency/pulse output present frequency (Hz) | | √ | √ | √ |
| 2 0231 0232 | Flowmeter zeroing standard deviation | | | | √ |
| 2 0233 0234 | Present flow signal offset at zero flow | √ | √ | √ | √ |
| 2 0235 0236 | Flowmeter zeroing standard deviation limit | | | | √ |
| 2 0237 0238 | Special mass unit conversion factor | √ | √ | √ | √ |
| 2 0239 0240 | Special volume unit conversion factor | √ | √ | √ | √ |
| 2 0241 0242 | Event 1 setpoint | √ | √ | √ | √ |
| 2 0243 0244 | Event 2 setpoint | √ | √ | √ | √ |
| 2 0245 0246 | 1 (E)EPROM checksum failure | √ | √ | √ | √ |
| | 2 RAM diagnostic failure | √ | √ | √ | √ |
| | 4 Sensor failure | √ | √ | √ | √ |
| | 8 Temperature sensor failure | √ | √ | √ | √ |
| | 16 Input overrange | √ | √ | √ | √ |
| | 32 Frequency/pulse output saturated | √ | √ | √ | √ |
| | 64 Transmitter not configured | √ | √ | √ | √ |
| | 128 Real-time interrupt failure | √ | √ | √ | √ |
| | 256 Primary mA output saturated | | √ | √ | √ |
| | 512 Secondary mA output saturated ¹ | | | √ | √ |
| | 1024 Primary mA output fixed | | √ | √ | √ |
| | 2048 Secondary mA output fixed ¹ | | | √ | √ |
| | 4096 Density overrange | √ | √ | √ | √ |
| | 8192 Flowmeter zeroing failure | √ | √ | √ | √ |
| | 16384 Zero value too low | √ | √ | √ | √ |
| | 32768 Zero value too high | √ | √ | √ | √ |
| | 65536 Transmitter electronics failure | √ | √ | √ | √ |
| | 131072 Flowmeter zeroing in progress | √ | √ | √ | √ |
| | 262144 Slug flow | √ | √ | √ | √ |
| | 524288 Power reset occurred | √ | √ | √ | √ |
| | 1048576 Transmitter configuration changed | √ | √ | √ | √ |
| | 2097152 Transmitter initializing/warming up | √ | √ | √ | √ |

Modbus Mapping Assignments *continued*

Table 2-4. Floating-point register pairs *continued*

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|-------------|--|---------|-------------|-------------|----------------|
| 2 0247 0248 | Mass flow rate | √ | √ | √ | √ |
| 2 0249 0250 | Density | √ | √ | √ | √ |
| 2 0251 0252 | Temperature | √ | √ | √ | √ |
| 2 0253 0254 | Volume flow rate | √ | √ | √ | √ |
| 2 0257 0258 | Pressure | | | | √ |
| 2 0259 0260 | Mass total | √ | √ | √ | √ |
| 2 0261 0262 | Volume total | √ | √ | √ | √ |
| 2 0263 0264 | Mass inventory | √ | √ | √ | √ |
| 2 0265 0266 | Volume inventory | √ | √ | √ | √ |
| 2 0267 0268 | Pressure correction factor for flow | √ | √ | √ | √ |
| 2 0269 0270 | Pressure correction factor for density | √ | √ | √ | √ |
| 2 0271 0272 | Flow calibration pressure | √ | √ | √ | √ |
| 2 0273 0274 | Pressure input at 4 mA | | | | √ |
| 2 0275 0276 | Pressure input at 20 mA | | | | √ |
| 2 0277 0278 | Density for flowing-density calibration | √ | √ | √ | √ ⁴ |
| 2 0277 0278 | Constant for third-point density calibration | | | | √ ² |
| 2 0279 0280 | Mass flow rate meter factor | √ | √ | √ | √ ³ |
| 2 0281 0282 | Volume flow rate meter factor | √ | √ | √ | √ |
| 2 0283 0284 | Density meter factor | √ | √ | √ | √ |
| 2 0285 0286 | Raw tube frequency (Hz) | √ | √ | √ | √ ³ |
| 2 0287 0288 | Left pickoff voltage (millivolts) | √ | √ | √ | √ ³ |
| 2 0289 0290 | Right pickoff voltage (millivolts) | √ | √ | √ | √ ³ |
| 2 0291 0292 | Drive gain (% for MVDSolo, Series 1000, or Series 2000; volts for RFT9739) | √ | √ | √ | √ ³ |
| 2 0293 0294 | Mass flow live zero flow | √ | √ | √ | √ ³ |
| 2 0303 0304 | Flowing-density calibration constant | √ | √ | √ | √ ⁴ |
| 2 0319 0320 | API reference temperature | √ | √ | √ | |
| 2 0323 0324 | API thermal expansion coefficient | √ | √ | √ | |
| 2 0325 0326 | Temperature-corrected density | √ | √ | √ | |
| 2 0329 0330 | CTL | √ | √ | √ | |
| 2 0331 0332 | Temperature/pressure-corrected volumetric flow | √ | √ | √ | |
| 2 0333 0334 | Temperature/pressure-corrected volumetric total | √ | √ | √ | |
| 2 0335 0336 | Temperature/pressure-corrected volumetric inventory | √ | √ | √ | |
| 2 0337 0338 | Weighted average batch observed density | √ | √ | √ | |
| 2 0339 0340 | Weighted average batch observed temperature | √ | √ | √ | |
| 2 0407 0408 | Flow calibration factor (FCF) | √ | √ | √ | |
| 2 0409 0410 | Temperature coefficient for flow (FT) | √ | √ | √ | |
| 2 0411 0412 | Tempcal slope | √ | √ | √ | |
| 2 0413 0414 | Tempcal offset | √ | √ | √ | |
| 2 0435 0436 | Sensor maximum recorded temperature | √ | √ | √ | |
| 2 0437 0438 | Sensor minimum recorded temperature | √ | √ | √ | |
| 2 0439 0440 | Sensor average recorded temperature | √ | √ | √ | |
| 2 0449 0450 | External temperature input value | √ | √ | √ | |
| 2 0451 0452 | External pressure input value | √ | √ | √ | |
| 2 0463 0464 | Electronics maximum recorded temperature | √ | √ | √ | |
| 2 0465 0466 | Electronics minimum recorded temperature | √ | √ | √ | |
| 2 0467 0468 | Electronics average recorded temperature | √ | √ | √ | |
| 2 0503 0504 | T-Series K3 density constant | √ | √ | √ | |
| 2 0505 0506 | T-Series FTG value | √ | √ | √ | |
| 2 0507 0508 | T-Series FTQ value | √ | √ | √ | |
| 2 0509 0510 | Density for T-Series sensor D3 density calibration | √ | √ | √ | |
| 2 0511 0512 | Density for T-Series sensor D4 density calibration | √ | √ | √ | |

Modbus Mapping Assignments *continued*

Table 2-4. Floating-point register pairs *continued*

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|-------------|--------------------------------|---------|-------------|-------------|---------|
| 2 0513 0514 | T-Series DTG value | √ | √ | √ | |
| 2 0515 0516 | T-Series DFQ1 value | √ | √ | √ | |
| 2 0517 0518 | T-Series DFQ2 value | √ | √ | √ | |
| 2 0519 0520 | T-Series K4 density constant | √ | √ | √ | |
| 2 0687 0688 | Slot 0 configuration variable | √ | √ | √ | |
| 2 0689 0690 | Slot 1 configuration variable | √ | √ | √ | |
| 2 0691 0692 | Slot 2 configuration variable | √ | √ | √ | |
| 2 0693 0694 | Slot 3 configuration variable | √ | √ | √ | |
| 2 0695 0696 | Slot 4 configuration variable | √ | √ | √ | |
| 2 0697 0698 | Slot 5 configuration variable | √ | √ | √ | |
| 2 0699 0700 | Slot 6 configuration variable | √ | √ | √ | |
| 2 0701 0702 | Slot 7 configuration variable | √ | √ | √ | |
| 2 0703 0704 | Slot 8 configuration variable | √ | √ | √ | |
| 2 0705 0706 | Slot 9 configuration variable | √ | √ | √ | |
| 2 0707 0708 | Slot 10 configuration variable | √ | √ | √ | |
| 2 0709 0710 | Slot 11 configuration variable | √ | √ | √ | |
| 2 0711 0712 | Slot 12 configuration variable | √ | √ | √ | |
| 2 0713 0714 | Slot 13 configuration variable | √ | √ | √ | |
| 2 0715 0716 | Slot 14 configuration variable | √ | √ | √ | |
| 2 0717 0718 | Slot 15 configuration variable | √ | √ | √ | |
| 2 0719 0720 | Slot 16 configuration variable | √ | √ | √ | |
| 2 0721 0722 | Slot 17 configuration variable | √ | √ | √ | |
| 2 0723 0724 | Slot 18 configuration variable | √ | √ | √ | |
| 2 0725 0726 | Slot 19 configuration variable | √ | √ | √ | |
| 2 0727 0728 | Slot 20 configuration variable | √ | √ | √ | |
| 2 0729 0730 | Slot 21 configuration variable | √ | √ | √ | |
| 2 0731 0732 | Slot 22 configuration variable | √ | √ | √ | |
| 2 0733 0734 | Slot 23 configuration variable | √ | √ | √ | |
| 2 0735 0736 | Slot 24 configuration variable | √ | √ | √ | |
| 2 0737 0738 | Slot 25 configuration variable | √ | √ | √ | |
| 2 0739 0740 | Slot 26 configuration variable | √ | √ | √ | |
| 2 0741 0742 | Slot 27 configuration variable | √ | √ | √ | |
| 2 0743 0744 | Slot 28 configuration variable | √ | √ | √ | |
| 2 0745 0746 | Slot 29 configuration variable | √ | √ | √ | |
| 2 0747 0748 | Slot 30 configuration variable | √ | √ | √ | |
| 2 0749 0750 | Slot 31 configuration variable | √ | √ | √ | |
| 2 0783 0784 | Slot 0 process variable | √ | √ | √ | |
| 2 0785 0786 | Slot 1 process variable | √ | √ | √ | |
| 2 0787 0788 | Slot 2 process variable | √ | √ | √ | |
| 2 0789 0790 | Slot 3 process variable | √ | √ | √ | |
| 2 0791 0792 | Slot 4 process variable | √ | √ | √ | |
| 2 0793 0794 | Slot 5 process variable | √ | √ | √ | |
| 2 0795 0796 | Slot 6 process variable | √ | √ | √ | |
| 2 0797 0798 | Slot 7 process variable | √ | √ | √ | |
| 2 0799 0800 | Slot 8 process variable | √ | √ | √ | |
| 2 0801 0802 | Slot 9 process variable | √ | √ | √ | |
| 2 0803 0804 | Slot 10 process variable | √ | √ | √ | |
| 2 0805 0806 | Slot 11 process variable | √ | √ | √ | |
| 2 0807 0808 | Slot 12 process variable | √ | √ | √ | |
| 2 0809 0810 | Slot 13 process variable | √ | √ | √ | |
| 2 0811 0812 | Slot 14 process variable | √ | √ | √ | |
| 2 0813 0814 | Slot 15 process variable | √ | √ | √ | |

Modbus Mapping Assignments *continued*

Table 2-4. Floating-point register pairs *continued*

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|-------------|--|---------|-------------|-------------|---------|
| 2 0815 0816 | Slot 16 process variable | √ | √ | √ | |
| 2 0817 0818 | Slot 17 process variable | √ | √ | √ | |
| 2 0819 0820 | Slot 18 process variable | √ | √ | √ | |
| 2 0821 0822 | Slot 19 process variable | √ | √ | √ | |
| 2 0823 0824 | Slot 20 process variable | √ | √ | √ | |
| 2 0825 0826 | Slot 21 process variable | √ | √ | √ | |
| 2 0827 0828 | Slot 22 process variable | √ | √ | √ | |
| 2 0829 0830 | Slot 23 process variable | √ | √ | √ | |
| 2 0831 0832 | Slot 24 process variable | √ | √ | √ | |
| 2 0833 0834 | Slot 25 process variable | √ | √ | √ | |
| 2 0835 0836 | Slot 26 process variable | √ | √ | √ | |
| 2 0837 0838 | Slot 27 process variable | √ | √ | √ | |
| 2 0839 0840 | Slot 28 process variable | √ | √ | √ | |
| 2 0841 0842 | Slot 29 process variable | √ | √ | √ | |
| 2 0843 0844 | Slot 30 process variable | √ | √ | √ | |
| 2 0845 0846 | Slot 31 process variable | √ | √ | √ | |
| 2 1101 1102 | Frequency output pulses per unit | | √ | √ | |
| 2 1103 1104 | Frequency output units per pulse | | √ | √ | |
| 2 1105 1106 | Frequency output fault setting | | √ | √ | |
| 2 1109 1110 | Primary mA output fault setting | | √ | √ | |
| 2 1111 1112 | Secondary mA output fault setting ¹ | | | √ | |
| 2 1159 1160 | Flow rate switch setpoint | | √ | √ | |

¹Transmitters with intrinsically safe output boards or configurable input/output boards only.

²Version 3.5 or lower revision RFT9739 transmitter.

³Version 3 or higher revision RFT9739 transmitter.

⁴Version 3.6 or higher revision RFT9739 transmitter.

Table 2-5. Input registers

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---------|---|---------|-------------|-------------|---------|
| 3 0001 | Bit #0 (E)EPROM checksum failure | √ | √ | √ | √ |
| | Bit #1 Transmitter configuration changed | √ | | | √ |
| | Bit #2 Sensor failure | √ | √ | √ | √ |
| | Bit #3 Temperature sensor failure | √ | √ | √ | √ |
| | Bit #4 Input overrange | √ | √ | √ | √ |
| | Bit #5 Frequency/pulse output saturated | | √ | √ | √ |
| | Bit #6 Transmitter not configured | √ | √ | √ | √ |
| | Bit #7 Real-time interrupt failure | √ | √ | √ | √ |
| | Bit #8 Milliamp output(s) saturated | | √ | √ | √ |
| | Bit #9 Milliamp output(s) fixed | | √ | √ | √ |
| | Bit #10 Density overrange | √ | √ | √ | √ |
| | Bit #11 Flowmeter zeroing failure | √ | √ | √ | √ |
| | Bit #12 Transmitter electronics failure | √ | √ | √ | √ |
| | Bit #13 Slug flow | √ | √ | √ | √ |
| | Bit #14 Transmitter initializing/warming up | √ | √ | √ | √ |
| | Bit #15 Power reset occurred | √ | √ | √ | √ |
| 3 0002 | Mass flow rate scaled integer | √ | √ | √ | √ |
| 3 0003 | Density scaled integer | √ | √ | √ | √ |
| 3 0004 | Temperature scaled integer | √ | √ | √ | √ |

Modbus Mapping Assignments *continued*

Table 2-5. Input registers *continued*

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---------|---|---------|-------------|-------------|----------------|
| 3 0005 | Volume flow rate scaled integer | √ | √ | √ | √ |
| 3 0008 | Mass total scaled integer | √ | √ | √ | √ |
| 3 0009 | Volume total scaled integer | √ | √ | √ | √ |
| 3 0010 | Mass inventory scaled integer | √ | √ | √ | √ |
| 3 0011 | Volume inventory scaled integer | √ | √ | √ | √ |
| 3 0016 | Transmitter software revision (xxxx.x format; 141 = rev14.1) | √ | √ | √ | √ |
| 3 0045 | Standard or special mass total or inventory unit ¹ | √ | √ | √ | √ |
| 3 0046 | Standard or special volume total or inventory unit ² | √ | √ | √ | √ |
| 3 0120 | Device type code | √ | √ | √ | √ |
| 3 0121 | Electronics manufacturer's code identification number | √ | √ | √ | √ |
| 3 0122 | HART device I.D. number – high order register of 3-byte integer | √ | √ | √ | √ |
| 3 0123 | HART device I.D. number – low order register of 3-byte integer | √ | √ | √ | √ |
| 3 0125 | Bit #0 Primary mA output saturated | | √ | √ | √ |
| | Bit #1 Secondary mA output saturated ³ | | | √ | √ |
| | Bit #2 Primary mA output fixed | | √ | √ | √ |
| | Bit #3 Secondary mA output fixed ¹ | | | √ | √ |
| | Bit #4 Density overrange | √ | √ | √ | √ |
| | Bit #5 Drive gain overrange | √ | √ | √ | √ |
| | Bit #6 Not used | | | | |
| | Bit #7 External input error | | | | √ |
| | Bit #8 (E)EPROM checksum failure, core processor or RFT9739 | √ | √ | √ | √ |
| | Bit #9 RAM diagnostic failure, core processor or RFT9739 | √ | √ | √ | √ |
| | Bit #10 Sensor failure | √ | √ | √ | √ |
| | Bit #11 Temperature sensor failure | √ | √ | √ | √ |
| | Bit #12 Input overrange | √ | √ | √ | √ |
| | Bit #13 Frequency/pulse output saturated | | √ | √ | √ |
| | Bit #14 Transmitter not configured | √ | √ | √ | √ |
| | Bit #15 Real-time interrupt failure | √ | √ | √ | √ |
| 3 0126 | Bit #0 Burst mode enabled | | √ | √ | √ |
| | Bit #1 Power reset occurred | √ | √ | √ | √ |
| | Bit #2 Transmitter initializing/warming up | √ | √ | √ | √ |
| | Bit #3 Security breach | | | | √ |
| | Bit #4 Display readback error | | | | √ |
| | Bit #5 Event 2 ON | √ | √ | √ | √ |
| | Bit #6 Event 1 ON | √ | √ | √ | √ |
| | Bit #7 Not used | | | | |
| | Bit #8 Flowmeter zeroing failure | √ | √ | √ | √ |
| | Bit #9 Zero value too low | √ | √ | √ | √ |
| | Bit #10 Zero value too high | √ | √ | √ | √ |
| | Bit #11 Zero too noisy | √ | √ | √ | √ |
| | Bit #12 Transmitter electronics failure | √ | √ | √ | √ |
| | Bit #13 Data loss possible | √ | √ | √ | √ |
| | Bit #14 Calibration in progress | √ | √ | √ | √ |
| | Bit #15 Slug flow | √ | √ | √ | √ |
| 3 0295 | Security event configuration register | | | | √ |
| 3 0296 | Security event calibration register | | | | √ |
| 3 0297 | Mass flow live zero flow | | | | √ ⁴ |
| 3 0305 | Most significant word for binary mass total | | | | √ ⁵ |
| 3 0306 | High-order word for binary mass total | | | | √ ³ |
| 3 0307 | Low-order word for binary mass total | | | | √ ³ |
| 3 0308 | Least significant word for binary mass total | | | | √ ³ |
| 3 0309 | Most significant word for binary volume total | | | | √ ³ |

Modbus Mapping Assignments *continued*

Table 2-5. Input registers *continued*

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---------|---|---------|-------------|-------------|----------------|
| 3 0310 | High-order word for binary volume total | | | | √ ³ |
| 3 0311 | Low-order word for binary volume total | | | | √ ³ |
| 3 0312 | Least significant word for binary volume total | | | | √ ³ |
| 3 0419 | Bit #0 (E)EPROM checksum error, core processor | √ | √ | √ | |
| | Bit #1 RAM test error, core processor | √ | √ | √ | |
| | Bit #2 Real-time interrupt failure | √ | √ | √ | |
| | Bit #3 Sensor not vibrating | √ | √ | √ | |
| | Bit #4 Temperature sensor out of range | √ | √ | √ | |
| | Bit #5 Calibration failure | √ | √ | √ | |
| | Bit #6 Other failure occurred | √ | √ | √ | |
| | Bit #7 Transmitter initializing/warming up | √ | √ | √ | |
| | Bit #8 Primary variable out of limits | √ | | | |
| | Bit #9 Secondary variable out of limits | √ | | | |
| | Bit #10 Not used | | | | |
| | Bit #11 Not used | | | | |
| | Bit #12 Watchdog error | √ | | | |
| | Bit #13 Cold start occurred | √ | | | |
| | Bit #14 Transmitter configuration changed | √ | | | |
| | Bit #15 Transmitter fault | √ | √ | √ | |
| 3 0420 | Bit #0 Primary mA output saturated | | √ | √ | |
| | Bit #1 Secondary mA output saturated ¹ | | | √ | |
| | Bit #2 Primary mA output fixed | | √ | √ | |
| | Bit #3 Secondary mA output fixed ¹ | | | √ | |
| | Bit #4 Density overrange | √ | √ | √ | |
| | Bit #5 Drive overrange | √ | √ | √ | |
| | Bit #6 Not used | | | | |
| | Bit #7 External input failure | | √ | √ | |
| | Bit #8 (E)EPROM checksum failure, core processor | √ | √ | √ | |
| | Bit #9 RAM diagnostic failure, core processor | √ | √ | √ | |
| | Bit #10 Sensor not vibrating | √ | √ | √ | |
| | Bit #11 Temperature sensor failure | √ | √ | √ | |
| | Bit #12 Input overrange | √ | √ | √ | |
| | Bit #13 Frequency/pulse output saturated | | √ | √ | |
| | Bit #14 Transmitter not configured | √ | √ | √ | |
| | Bit #15 Real-time interrupt failure | √ | √ | √ | |
| 3 0421 | Bit #0 Burst mode enabled | | √ | √ | |
| | Bit #1 Power reset occurred | √ | √ | √ | |
| | Bit #2 Transmitter initializing/warming up | √ | √ | √ | |
| | Bit #3 Not used | | | | |
| | Bit #4 Not used | | | | |
| | Bit #5 Event 2 ON | √ | √ | √ | |
| | Bit #6 Event 1 ON | √ | √ | √ | |
| | Bit #7 Sensor/transmitter communication failure | | √ | √ | |
| | Bit #8 Calibration failure | √ | √ | √ | |
| | Bit #9 Zero value too low | √ | √ | √ | |
| | Bit #10 Zero value too high | √ | √ | √ | |
| | Bit #11 Zero too noisy | √ | √ | √ | |
| | Bit #12 Transmitter electronics failure | √ | √ | √ | |
| | Bit #13 Data loss possible | √ | √ | √ | |
| | Bit #14 Calibration in progress | √ | √ | √ | |
| | Bit #15 Slug flow | √ | √ | √ | |

Modbus Mapping Assignments *continued*

Table 2-5. Input registers *continued*

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---------|-------------------------------|--|-------------|-------------|---------|
| 3 0422 | Bit #0 | API: Temperature outside standard range | √ | √ | √ |
| | Bit #1 | API: Density outside standard range | √ | √ | √ |
| | Bit #2 | Line temperature sensor out of range | √ | √ | √ |
| | Bit #3 | Meter temperature sensor out of range | √ | √ | √ |
| | Bit #4 | Flow direction (1 = reverse, 0 = forward or zero flow) | √ | √ | √ |
| | Bit #5 | Not used | | | |
| | Bit #6 | Not used | | | |
| | Bit #7 | Not used | | | |
| | Bit #8 | Not used | | | |
| | Bit #9 | Transmitter not configured | √ | √ | √ |
| | Bit #10 | (E)EPROM checksum error | | √ | √ |
| | Bit #11 | RAM test error in transmitter | | √ | √ |
| | Bit #12 | Invalid/unrecognized sensor type | √ | √ | √ |
| | Bit #13 | (E)EPROM database corrupt | √ | √ | √ |
| | Bit #14 | (E)EPROM powerdown totals corrupt | √ | √ | √ |
| Bit #15 | (E)EPROM program corrupt | √ | √ | √ | |
| 3 0423 | Bit #0 | Boot sector fault | √ | √ | √ |
| | Bit #1 | Software upgrade needed | | √ | √ |
| | Bit #2 | Frequency output fixed | | √ | √ |
| | Bit #3 | Not used | | | |
| | Bit #4 | DO1 status (0=OFF, 1=ON) | | √ | √ |
| | Bit #5 | DO2 status (0=OFF, 1=ON) ⁶ | | | √ |
| | Bit #6 | T-Series D3 calibration in progress | √ | √ | √ |
| | Bit #7 | T-Series D4 calibration in progress | √ | √ | √ |
| | Bit #8 | Not used | | | |
| | Bit #9 | Not used | | | |
| | Bit #10 | Temperature slope calibration in progress | √ | √ | √ |
| | Bit #11 | Temperature offset calibration in progress | √ | √ | √ |
| | Bit #12 | Flowing density calibration in progress | √ | √ | √ |
| | Bit #13 | High-density calibration in progress | √ | √ | √ |
| | Bit #14 | Low-density calibration in progress | √ | √ | √ |
| Bit #15 | Flowmeter zeroing in progress | √ | √ | √ | |
| 3 0424 | Bit #0 | Discrete input 1 status (0=OFF, 1=ON) ⁴ | | | √ |
| | Bit #1 | Not used | | | |
| | Bit #2 | Discrete output 1 fixed | | √ | √ |
| | Bit #3 | Discrete output 2 fixed ⁴ | | | √ |
| | Bit #4 | Not used | | | |
| | Bit #5 | Not used | | | |
| | Bit #6 | Security breach | | | √ |
| | Bit #7 | Not used | | | |
| | Bit #8 | Not used | | | |
| | Bit #9 | Not used | | | |
| | Bit #10 | Not used | | | |
| | Bit #11 | Not used | | | |
| | Bit #12 | Not used | | | |
| | Bit #13 | Not used | | | |
| | Bit #14 | Not used | | | |
| Bit #15 | Not used | | | | |

Modbus Mapping Assignments *continued*

Table 2-5. Input registers *continued*

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---------------------|--|---------|-------------|-------------|---------|
| 3 1137 | Core processor software revision | | √ | √ | |
| 3 1138 | Output option board | | √ | √ | |
| 3 1187 ⁸ | Core processor HART device I.D. number – high order register of 3-byte integer | | √ | √ | |
| 3 1188 | Core processor HART device I.D. number – low order register of 3-byte integer | | √ | √ | |

¹Automatically derived from holding register 40039.

²Automatically derived from holding register 40042.

³Transmitters with intrinsically safe output boards or configurable input/output boards only.

⁴Version 3 RFT9739 transmitter.

⁵Version 3.7 or higher revision RFT9739 transmitter.

⁶Transmitters with configurable input/output boards only.

⁷Must be queried through transmitter. If wiring is direct to core processor, registers 31187 and 31188 do not exist.

⁸Same as registers 41187-41188. If these registers contain a non-zero value, they are read-only. If they contain 0, they can be written to.

Table 2-6. Holding registers

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---------|---|----------------|----------------|------------------|---------|
| 4 0007 | Pressure scaled integer | | | | √ |
| 4 0012 | Process variable assigned to primary variable | √ ¹ | √ | √ | √ |
| 4 0013 | Process variable assigned to secondary variable | √ ¹ | √ ¹ | √ ^{1,2} | √ |
| 4 0014 | Process variable assigned to tertiary variable | √ ¹ | √ | √ ¹ | √ |
| 4 0015 | Process variable assigned to RFT9739 control output variable | | | | √ |
| 4 0015 | Process variable assigned to quaternary variable | √ ¹ | √ | √ | |
| 4 0017 | Flow direction | √ | √ | √ | √ |
| 4 0018 | Maximum integer | √ | √ | √ | √ |
| 4 0019 | Mass flow offset | √ | √ | √ | √ |
| 4 0020 | Density offset | √ | √ | √ | √ |
| 4 0021 | Temperature offset | √ | √ | √ | √ |
| 4 0022 | Volume flow offset | √ | √ | √ | √ |
| 4 0024 | Pressure offset | | | | √ |
| 4 0025 | Mass total offset | √ | √ | √ | √ |
| 4 0026 | Volume total offset | √ | √ | √ | √ |
| 4 0027 | Mass inventory offset | √ | √ | √ | √ |
| 4 0028 | Volume inventory offset | √ | √ | √ | √ |
| 4 0029 | Mass flow scale factor | √ | √ | √ | √ |
| 4 0030 | Density scale factor | √ | √ | √ | √ |
| 4 0031 | Temperature scale factor | √ | √ | √ | √ |
| 4 0032 | Volume flow scale factor | √ | √ | √ | √ |
| 4 0034 | Pressure scale factor | | | | √ |
| 4 0035 | Mass total scale factor | √ | √ | √ | √ |
| 4 0036 | Volume total scale factor | √ | √ | √ | √ |
| 4 0037 | Mass inventory scale factor | √ | √ | √ | √ |
| 4 0038 | Volume inventory scale factor | √ | √ | √ | √ |
| 4 0039 | Standard or special mass flow rate unit | √ | √ | √ | √ |
| 4 0040 | Density unit | √ | √ | √ | √ |
| 4 0041 | Temperature unit | √ | √ | √ | √ |
| 4 0042 | Standard or special volume flow rate unit | √ | √ | √ | √ |
| 4 0044 | Pressure unit | | | | √ |
| 4 0047 | Polling address ³ | | √ | √ | √ |
| 4 0048 | Final assembly number – high order register of 3-byte integer | √ | √ | √ | √ |

Modbus Mapping Assignments *continued*

Table 2-6. Holding registers *continued*

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---------|---|---------|-------------|-------------|----------------|
| 4 0049 | Final assembly number – low order register of 3-byte integer | √ | √ | √ | √ |
| 4 0050 | Date low order byte: day | √ | √ | √ | √ |
| 4 0051 | Date high order byte: month Date low order byte: year (1900 + x assumed) | √ | √ | √ | √ |
| 4 0124 | RFT9739 fault code | | | | √ |
| 4 0124 | MVD digital output fault code | √ | √ | √ | |
| 4 0127 | Sensor serial number | √ | √ | √ | √ |
| 4 0128 | Sensor serial number | √ | √ | √ | √ |
| 4 0129 | Sensor flange type | √ | √ | √ | √ |
| 4 0130 | Sensor flow tube construction material | √ | √ | √ | √ |
| 4 0131 | Sensor flow tube liner material | √ | √ | √ | √ |
| 4 0132 | Base mass unit | √ | √ | √ | √ |
| 4 0133 | Base time unit for special mass unit | √ | √ | √ | √ |
| 4 0134 | Base volume unit | √ | √ | √ | √ |
| 4 0135 | Base time unit for special volume unit | √ | √ | √ | √ |
| 4 0136 | Maximum zeroing time | √ | √ | √ | √ |
| 4 0137 | Event 1 variable assignment | √ | √ | √ | √ |
| 4 0138 | Event 2 variable assignment | √ | √ | √ | √ |
| 4 0139 | Event 1 type (high=1/low=2) | √ | √ | √ | √ |
| 4 0140 | Event 2 type (high=1/low=2) | √ | √ | √ | √ |
| 4 0302 | Polling control code #1 | | √ | √ | √ |
| 4 0313 | Modbus polling address | √ | √ | √ | √ ⁴ |
| 4 0314 | Last measured value fault timeout | √ | √ | √ | |
| 4 0351 | API 2540 CTL table type (see CTL Code Table) | √ | √ | √ | |
| 4 0366 | DSP calculation update rate (20 Hz or 100 Hz) | √ | √ | √ | |
| 4 0521 | Floating-point byte order | √ | √ | √ | |
| 4 0522 | Additional delay to Modbus response | √ | √ | √ | |
| 4 0655 | Slot 0 configuration index | √ | √ | √ | |
| 4 0656 | Slot 1 configuration index | √ | √ | √ | |
| 4 0657 | Slot 2 configuration index | √ | √ | √ | |
| 4 0658 | Slot 3 configuration index | √ | √ | √ | |
| 4 0659 | Slot 4 configuration index | √ | √ | √ | |
| 4 0660 | Slot 5 configuration index | √ | √ | √ | |
| 4 0661 | Slot 6 configuration index | √ | √ | √ | |
| 4 0662 | Slot 7 configuration index | √ | √ | √ | |
| 4 0663 | Slot 8 configuration index | √ | √ | √ | |
| 4 0664 | Slot 9 configuration index | √ | √ | √ | |
| 4 0665 | Slot 10 configuration index | √ | √ | √ | |
| 4 0666 | Slot 11 configuration index | √ | √ | √ | |
| 4 0667 | Slot 12 configuration index | √ | √ | √ | |
| 4 0668 | Slot 13 configuration index | √ | √ | √ | |
| 4 0669 | Slot 14 configuration index | √ | √ | √ | |
| 4 0670 | Slot 15 configuration index | √ | √ | √ | |
| 4 0671 | Slot 16 configuration index | √ | √ | √ | |
| 4 0672 | Slot 17 configuration index | √ | √ | √ | |
| 4 0673 | Slot 18 configuration index | √ | √ | √ | |
| 4 0674 | Slot 19 configuration index | √ | √ | √ | |
| 4 0675 | Slot 20 configuration index | √ | √ | √ | |
| 4 0676 | Slot 21 configuration index | √ | √ | √ | |
| 4 0677 | Slot 22 configuration index | √ | √ | √ | |
| 4 0678 | Slot 23 configuration index | √ | √ | √ | |
| 4 0679 | Slot 24 configuration index | √ | √ | √ | |

Modbus Mapping Assignments *continued*

Table 2-6. Holding registers *continued*

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---------|---|---------|-------------|----------------|---------|
| 4 0680 | Slot 25 configuration index | √ | √ | √ | |
| 4 0681 | Slot 26 configuration index | √ | √ | √ | |
| 4 0682 | Slot 27 configuration index | √ | √ | √ | |
| 4 0683 | Slot 28 configuration index | √ | √ | √ | |
| 4 0684 | Slot 29 configuration index | √ | √ | √ | |
| 4 0685 | Slot 30 configuration index | √ | √ | √ | |
| 4 0686 | Slot 31 configuration index | √ | √ | √ | |
| 4 0751 | Slot 0 process variable index | √ | √ | √ | |
| 4 0752 | Slot 1 process variable index | √ | √ | √ | |
| 4 0753 | Slot 2 process variable index | √ | √ | √ | |
| 4 0754 | Slot 3 process variable index | √ | √ | √ | |
| 4 0755 | Slot 4 process variable index | √ | √ | √ | |
| 4 0756 | Slot 5 process variable index | √ | √ | √ | |
| 4 0757 | Slot 6 process variable index | √ | √ | √ | |
| 4 0758 | Slot 7 process variable index | √ | √ | √ | |
| 4 0759 | Slot 8 process variable index | √ | √ | √ | |
| 4 0760 | Slot 9 process variable index | √ | √ | √ | |
| 4 0761 | Slot 10 process variable index | √ | √ | √ | |
| 4 0762 | Slot 11 process variable index | √ | √ | √ | |
| 4 0763 | Slot 12 process variable index | √ | √ | √ | |
| 4 0764 | Slot 13 process variable index | √ | √ | √ | |
| 4 0765 | Slot 14 process variable index | √ | √ | √ | |
| 4 0766 | Slot 15 process variable index | √ | √ | √ | |
| 4 0767 | Slot 16 process variable index | √ | √ | √ | |
| 4 0768 | Slot 17 process variable index | √ | √ | √ | |
| 4 0769 | Slot 18 process variable index | √ | √ | √ | |
| 4 0770 | Slot 19 process variable index | √ | √ | √ | |
| 4 0771 | Slot 20 process variable index | √ | √ | √ | |
| 4 0772 | Slot 21 process variable index | √ | √ | √ | |
| 4 0773 | Slot 22 process variable index | √ | √ | √ | |
| 4 0774 | Slot 23 process variable index | √ | √ | √ | |
| 4 0775 | Slot 24 process variable index | √ | √ | √ | |
| 4 0776 | Slot 25 process variable index | √ | √ | √ | |
| 4 0777 | Slot 26 process variable index | √ | √ | √ | |
| 4 0778 | Slot 27 process variable index | √ | √ | √ | |
| 4 0779 | Slot 28 process variable index | √ | √ | √ | |
| 4 0780 | Slot 29 process variable index | √ | √ | √ | |
| 4 0781 | Slot 30 process variable index | √ | √ | √ | |
| 4 0782 | Slot 31 process variable index | √ | √ | √ | |
| 4 1107 | Frequency/pulse output fault code | | √ | √ | |
| 4 1108 | Frequency/pulse output scaling method | | √ | √ | |
| 4 1113 | Primary milliamp output fault code | | √ | √ | |
| 4 1114 | Secondary milliamp output fault code | | | √ ² | |
| 4 1115 | Display offline password (0000 to 9999) | | √ | √ | |
| 4 1116 | Display scroll rate (1 to 10 seconds) | | √ | √ | |
| 4 1117 | Display variable #1 | | √ | √ | |
| 4 1118 | Display variable #2 | | √ | √ | |
| 4 1119 | Display variable #3 | | √ | √ | |
| 4 1120 | Display variable #4 | | √ | √ | |
| 4 1121 | Display variable #5 | | √ | √ | |
| 4 1122 | Display variable #6 | | √ | √ | |
| 4 1123 | Display variable #7 | | √ | √ | |

Modbus Mapping Assignments *continued*

Table 2-6. Holding registers *continued*

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---------------------|--|---------|-------------|-------------|---------|
| 4 1124 | Display variable #8 | | √ | √ | |
| 4 1125 | Display variable #9 | | √ | √ | |
| 4 1126 | Display variable #10 | | √ | √ | |
| 4 1127 | Display variable #11 | | √ | √ | |
| 4 1128 | Display variable #12 | | √ | √ | |
| 4 1129 | Display variable #13 | | √ | √ | |
| 4 1130 | Display variable #14 | | √ | √ | |
| 4 1131 | Display variable #15 | | √ | √ | |
| 4 1132 | RS-485 digital communication protocol setting AIO | | √ | √ | |
| 4 1133 | RS-485 digital communication baud rate AIO | | √ | √ | |
| 4 1134 | RS-485 digital communication parity setting AIO | | √ | √ | |
| 4 1135 | RS-485 digital communication stop bits setting AIO | | √ | √ | |
| 4 1139 | Sensor type code | | √ | √ | |
| 4 1144 | Polling control code #2 | | √ | √ | |
| 4 1145 | Polled variable #1 code | | √ | √ | |
| 4 1146 | Polled variable #2 code | | √ | √ | |
| 4 1147 | Polling type code ⁵ | | √ | √ | |
| 4 1151 | Discrete output 1 assignment | | √ | √ | |
| 4 1153 | Discrete output 2 assignment ⁶ | | | √ | |
| 4 1164 | 100 Hz update rate variable assignment | | √ | √ | |
| 4 1165 | Burst command | | √ | √ | |
| 4 1166 | Output channel A type assignment | | √ | √ | |
| 4 1167 | Output channel B type assignment | | √ | √ | |
| 4 1168 | Output channel C type assignment | | √ | √ | |
| 4 1169 | Burst variable 1 | | √ | √ | |
| 4 1170 | Burst variable 2 | | √ | √ | |
| 4 1171 | Burst variable 3 | | √ | √ | |
| 4 1172 | Burst variable 4 | | √ | √ | |
| 4 1174 | Channel B power ³ | | | √ | |
| 4 1175 | Channel C power ⁵ | | | √ | |
| 4 1176 | Discrete input 1 assignment ⁸ | | | √ | |
| 4 1181 | Frequency output mode ⁵ | | | √ | |
| 4 1182 | Discrete output 1 fixed value | | √ | √ | |
| 4 1183 | Discrete output 2 fixed value ⁵ | | | √ | |
| 4 1186 | Profibus station address (0-126) ⁷ | | | √ | |
| 4 1187 ⁸ | Core processor HART device I.D. number – high order register of 3-byte integer | | √ | √ | |
| 4 1188 | Core processor HART device I.D. number – low order register of 3-byte integer | | √ | √ | |
| 4 1197 | Frequency output polarity (0=active low, 1=active high) | | √ | √ | |

¹Supported in software even if associated output is not available.

²Transmitters with intrinsically safe output boards or configurable input/output boards only.

³Modbus or HART polling address (Version 3.6 or lower RFT9739 transmitter); HART polling address (Version 3.7 or higher RFT9739 transmitter and Series 1000 and 2000 transmitters).

⁴Version 3.7 or higher revision RFT9739 transmitter.

⁵Release 2.x or lower only.

⁶Transmitters with configurable input/output boards only.

⁷Transmitters with Profibus-PA software only.

⁸Must be queried through transmitter. Same as registers 31187-31188. If these registers contain a non-zero value, they are read-only. If they contain 0, they can be written to.

Modbus Mapping Assignments *continued*

Table 2-7. ASCII character strings

Note

Always write character strings as single-write multiples.

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 | |
|---------|--|---------|-------------|-------------|---------|-----------------------|
| 5 0052 | Special mass flow unit | | | | | Single-write multiple |
| 5 0053 | Special mass flow unit | | | | | |
| 5 0054 | Special mass flow unit ¹ or space character ² | √ | √ | √ | √ | |
| 5 0055 | Special mass flow unit ¹ or space character ² | | | | | |
| 5 0056 | Special mass total or mass inventory unit | | | | | Single-write multiple |
| 5 0057 | Special mass total or mass inventory unit | | | | | |
| 5 0058 | Special mass total or mass inventory unit ¹ or space character ² | √ | √ | √ | √ | |
| 5 0059 | Special mass total or mass inventory unit ¹ or space character ² | | | | | |
| 5 0060 | Special volume flow unit | | | | | Single-write multiple |
| 5 0061 | Special volume flow unit | | | | | |
| 5 0062 | Special volume flow unit ¹ or space character ² | √ | √ | √ | √ | |
| 5 0063 | Special volume flow unit ¹ or space character ² | | | | | |
| 5 0064 | Special volume total or volume inventory unit | | | | | Single-write multiple |
| 5 0065 | Special volume total or volume inventory unit | | | | | |
| 5 0066 | Special volume total or volume inventory unit ¹ or space character ² | √ | √ | √ | √ | |
| 5 0067 | Special volume total or volume inventory unit ¹ or space character ² | | | | | |
| 5 0068 | Device tag | | | | | Single-write multiple |
| 5 0069 | Device tag | | | | | |
| 5 0070 | Device tag | √ | √ | √ | √ | |
| 5 0071 | Device tag | | | | | |
| 5 0072 | Flow calibration factor | | | | | Single-write multiple |
| 5 0073 | Flow calibration factor | | | | | |
| 5 0074 | Flow calibration factor | | | | | |
| 5 0075 | Flow temperature coefficient | √ | √ | √ | √ | |
| 5 0076 | Flow temperature coefficient | | | | | |
| 5 0077 | Space character | | | | | |
| 5 0078 | Space character | | | | | |
| 5 0079 | Space character | | | | | |
| 5 0080 | Temperature calibration slope | | | | | Single-write multiple |
| 5 0081 | Temperature calibration slope | | | | | |
| 5 0082 | Temperature calibration slope | | | | | |
| 5 0083 | Temperature calibration slope | √ | √ | √ | √ | |
| 5 0084 | Temperature calibration offset | | | | | |
| 5 0085 | Temperature calibration offset | | | | | |
| 5 0086 | Temperature calibration offset | | | | | |
| 5 0087 | Space character | | | | | |
| 5 0096 | Description | | | | | Single-write multiple |
| 5 0097 | Description | | | | | |
| 5 0098 | Description | | | | | |
| 5 0099 | Description | | | | | |
| 5 0100 | Description | √ | √ | √ | √ | |
| 5 0101 | Description | | | | | |
| 5 0102 | Description | | | | | |
| 5 0103 | Description | | | | | |

Modbus Mapping Assignments *continued*

Table 2-7. ASCII character strings *continued*

Note

Always write character strings as single-write multiples.

| Address | Description | MVDSolo | Series 1000 | Series 2000 | RFT9739 | |
|---------|---|---------|-------------|-------------|---------|-----------------------|
| 5 0104 | User message | | | | | Single-write multiple |
| 5 0105 | User message | | | | | |
| 5 0106 | User message | | | | | |
| 5 0107 | User message | | | | | |
| 5 0108 | User message | | | | | |
| 5 0109 | User message | | | | | |
| 5 0110 | User message | | | | | |
| 5 0111 | User message | | | | | |
| 5 0112 | User message | √ | √ | √ | √ | |
| 5 0113 | User message | | | | | |
| 5 0114 | User message | | | | | |
| 5 0115 | User message | | | | | |
| 5 0116 | User message | | | | | |
| 5 0117 | User message | | | | | |
| 5 0118 | User message | | | | | |
| 5 0119 | User message | | | | | |
| 5 0298 | Polling tag name for external device #1 | | | | | Single-write multiple |
| 5 0299 | Polling tag name for external device #1 | | | | | |
| 5 0300 | Polling tag name for external device #1 | | √ | √ | √ | |
| 5 0301 | Polling tag name for external device #1 | | | | | |
| 5 0425 | Sensor type | | | | | Single-write multiple |
| 5 0426 | Sensor type | | | | | |
| 5 0427 | Sensor type | | | | | |
| 5 0428 | Sensor type | | | | | |
| 5 0429 | Sensor type | √ | √ | √ | | |
| 5 0430 | Sensor type | | | | | |
| 5 0431 | Sensor type | | | | | |
| 5 0432 | Sensor type | | | | | |
| 5 1140 | Polling tag name for external device #2 | | | | | Single-write multiple |
| 5 1141 | Polling tag name for external device #2 | | | | | |
| 5 1142 | Polling tag name for external device #2 | | √ | √ | | |
| 5 1143 | Polling tag name for external device #2 | | | | | |

¹MVDSolo or Series 1000 or 2000 transmitter.

²RFT9739 transmitter.

Modbus Mapping Assignments *continued*

Table 2-8. Integer codes

| | | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---|---------------------------------|---------|-------------|-------------|---------|
| Mass flow unit codes (holding register 40039) | | | | | |
| 70 | Grams/second | √ | √ | √ | √ |
| 71 | Grams/minute | √ | √ | √ | √ |
| 72 | Grams/hour | √ | √ | √ | √ |
| 73 | Kilograms/second | √ | √ | √ | √ |
| 74 | Kilograms/minute | √ | √ | √ | √ |
| 75 | Kilograms/hour | √ | √ | √ | √ |
| 76 | Kilograms/day | √ | √ | √ | √ |
| 77 | Metric tons/minute | √ | √ | √ | √ |
| 78 | Metric tons/hour | √ | √ | √ | √ |
| 79 | Metric tons/day | √ | √ | √ | √ |
| 80 | Pounds/second | √ | √ | √ | √ |
| 81 | Pounds/minute | √ | √ | √ | √ |
| 82 | Pounds/hour | √ | √ | √ | √ |
| 83 | Pounds/day | √ | √ | √ | √ |
| 84 | Short tons (2000 pounds)/minute | √ | √ | √ | √ |
| 85 | Short tons (2000 pounds)/hour | √ | √ | √ | √ |
| 86 | Short tons (2000 pounds)/day | √ | √ | √ | √ |
| 87 | Long tons (2240 pounds)/hour | √ | √ | √ | |
| 88 | Long tons (2240 pounds)/day | √ | √ | √ | |
| 253 | Special | √ | √ | √ | √ |
| Mass totalizer unit codes (holding register 40045) | | | | | |
| 60 | Grams | √ | √ | √ | √ |
| 61 | Kilograms | √ | √ | √ | √ |
| 62 | Metric tons | √ | √ | √ | √ |
| 63 | Pounds | √ | √ | √ | √ |
| 64 | Short tons (2000 pounds) | √ | √ | √ | √ |
| 65 | Long tons (2240 pounds) | √ | √ | √ | |
| 253 | Special | √ | √ | √ | √ |
| Mass inventory unit codes (holding register 40045) | | | | | |
| 60 | Grams | √ | √ | √ | √ |
| 61 | Kilograms | √ | √ | √ | √ |
| 62 | Metric tons | √ | √ | √ | √ |
| 63 | Pounds | √ | √ | √ | √ |
| 64 | Short tons (2000 pounds) | √ | √ | √ | √ |
| 65 | Long tons (2240 pounds) | √ | √ | √ | |
| 253 | Special | √ | √ | √ | √ |
| Base mass unit codes for special mass units (holding register 40132) | | | | | |
| 60 | Grams | √ | √ | √ | √ |
| 61 | Kilograms | √ | √ | √ | √ |
| 62 | Metric tons | √ | √ | √ | √ |
| 63 | Pounds | √ | √ | √ | √ |
| 64 | Short tons (2000 pounds) | √ | √ | √ | √ |
| 65 | Long tons (2240 pounds) | √ | √ | √ | |

Modbus Mapping Assignments *continued*

Table 2-8. Integer codes *continued*

| | | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---|---------------------------|---------|-------------|-------------|----------------|
| Base time unit codes for special mass units (holding register 40133) | | | | | |
| 50 | Minutes | √ | √ | √ | √ |
| 51 | Seconds | √ | √ | √ | √ |
| 52 | Hours | √ | √ | √ | √ |
| 53 | Days | √ | √ | √ | √ |
| Volume flow unit codes (holding register 40042) | | | | | |
| 15 | Cubic feet/minute | √ | √ | √ | √ |
| 16 | Gallons/minute | √ | √ | √ | √ |
| 17 | Liters/minute | √ | √ | √ | √ |
| 18 | Imperial gallons/minute | √ | √ | √ | √ |
| 19 | Cubic meters/hour | √ | √ | √ | √ |
| 22 | Gallons/second | √ | √ | √ | √ |
| 23 | Million U.S. gallons/day | √ | √ | √ | |
| 24 | Liters/second | √ | √ | √ | √ |
| 25 | Million liters/day | √ | √ | √ | |
| 26 | Cubic feet/second | √ | √ | √ | √ |
| 27 | Cubic feet/day | √ | √ | √ | |
| 28 | Cubic meters/second | √ | √ | √ | √ |
| 29 | Cubic meters/day | √ | √ | √ | √ |
| 30 | Imperial gallons/hour | √ | √ | √ | √ |
| 31 | Imperial gallons/day | √ | √ | √ | √ |
| 130 | Cubic feet/hour | √ | √ | √ | √ |
| 131 | Cubic meters/minute | √ | √ | √ | √ |
| 132 | Barrels/second | √ | √ | √ | √ |
| 133 | Barrels/minute | √ | √ | √ | √ |
| 134 | Barrels/hour | √ | √ | √ | √ |
| 135 | Barrels/day | √ | √ | √ | √ |
| 136 | U.S. gallons/hour | √ | √ | √ | √ ¹ |
| 137 | Imperial gallons/second | √ | √ | √ | √ ¹ |
| 138 | Liters/hour | √ | √ | √ | √ ¹ |
| 235 | U.S. gallons/day | √ | √ | √ | |
| 253 | Special | √ | √ | √ | √ |
| Volume totalizer unit codes (holding register 40046) | | | | | |
| 40 | U.S. gallons | √ | √ | √ | √ |
| 41 | Liters | √ | √ | √ | √ |
| 42 | Imperial gallons | √ | √ | √ | √ |
| 43 | Cubic meters | √ | √ | √ | √ |
| 46 | Barrels (42 U.S. gallons) | √ | √ | √ | √ |
| 112 | Cubic feet | √ | √ | √ | √ |
| 253 | Special | √ | √ | √ | √ |
| Volume inventory unit codes (holding register 40046) | | | | | |
| 40 | U.S. gallons | √ | √ | √ | √ |
| 41 | Liters | √ | √ | √ | √ |
| 42 | Imperial gallons | √ | √ | √ | √ |
| 43 | Cubic meters | √ | √ | √ | √ |
| 46 | Barrels (42 U.S. gallons) | √ | √ | √ | √ |
| 112 | Cubic feet | √ | √ | √ | √ |
| 253 | Special | √ | √ | √ | √ |

Modbus Mapping Assignments *continued*

Table 2-8. Integer codes *continued*

| | | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|--|-------------------------------------|---------|----------------|----------------|---------|
| Base volume units for special volume units (holding register 40134) | | | | | |
| 40 | U.S. gallons | √ | √ | √ | √ |
| 41 | Liters | √ | √ | √ | √ |
| 42 | Imperial gallons | √ | √ | √ | √ |
| 43 | Cubic meters | √ | √ | √ | √ |
| 46 | Barrels (42 U.S. gallons) | √ | √ | √ | √ |
| 112 | Cubic feet | √ | √ | √ | √ |
| Base time units for special volume units (holding register 40135) | | | | | |
| 50 | Minutes | √ | √ | √ | √ |
| 51 | Seconds | √ | √ | √ | √ |
| 52 | Hours | √ | √ | √ | √ |
| 53 | Days | √ | √ | √ | √ |
| Temperature unit codes (holding register 40041) | | | | | |
| 32 | Degrees Celsius | √ | √ | √ | √ |
| 33 | Degrees Fahrenheit | √ | √ | √ | √ |
| 34 | Degrees Rankine | √ | √ | √ | √ |
| 35 | Kelvin | √ | √ | √ | √ |
| Density unit codes (holding register 40040) | | | | | |
| 90 | Specific gravity units | √ | √ | √ | √ |
| 91 | Grams/cubic centimeter | √ | √ | √ | √ |
| 92 | Kilograms/cubic meter | √ | √ | √ | √ |
| 93 | Pounds/gallon | √ | √ | √ | √ |
| 94 | Pounds/cubic foot | √ | √ | √ | √ |
| 95 | Grams/milliliter | √ | √ | √ | |
| 96 | Kilograms/liter | √ | √ | √ | |
| 97 | Grams/liter | √ | √ | √ | |
| 98 | Pounds/cubic inch | √ | √ | √ | |
| 99 | Short tons (2000 pounds)/cubic yard | √ | √ | √ | |
| 104 | Degrees API | √ | √ | √ | √ |
| Pressure unit codes (holding register 40044) | | | | | |
| 1 | Inches water at 68° Fahrenheit | √ | √ | √ | √ |
| 2 | Inches mercury at 0° Celsius | √ | √ | √ | √ |
| 3 | Feet water at 68° Fahrenheit | √ | √ | √ | √ |
| 4 | Millimeters water at 68° Fahrenheit | √ | √ | √ | √ |
| 5 | Millimeters mercury at 0° Celsius | √ | √ | √ | √ |
| 6 | Pounds/square inch | √ | √ | √ | √ |
| 7 | Bar | √ | √ | √ | √ |
| 8 | Millibar | √ | √ | √ | √ |
| 9 | Grams/square centimeter | √ | √ | √ | √ |
| 10 | Kilograms/square centimeter | √ | √ | √ | √ |
| 11 | Pascals | √ | √ | √ | √ |
| 12 | Kilopascals | √ | √ | √ | √ |
| 13 | Torr at 0° Celsius | √ | √ | √ | √ |
| 14 | Atmospheres | √ | √ | √ | √ |

Modbus Mapping Assignments *continued*

Table 2-8. Integer codes *continued*

| | | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---|--|---------|-------------|-------------|---------|
| Milliamp output variable codes (holding register 40012 or 40013) | | | | | |
| 0 | Mass flow rate | | √ | √ | √ |
| 1 | Temperature | | √ | √ | √ |
| 3 | Density | | √ | √ | √ |
| 5 | Volume flow rate | | √ | √ | √ |
| 9 | Pressure | | | | √ |
| 10 | Event 1 | | | | √ |
| 11 | Event 2 | | | | √ |
| 15 | API: Temperature-corrected density | | √ | √ | |
| 16 | API: Temperature-corrected (standard) volume flow | | √ | √ | |
| 19 | API: Batch-weighted average corrected density | | √ | √ | |
| 20 | API: Batch-weighted average temperature | | √ | √ | |
| 47 | Drive gain | | √ | √ | |
| Display variable codes (holding registers 41117-41131) | | | | | |
| 0 | Mass flow rate | | √ | √ | |
| 1 | Temperature | | √ | √ | |
| 2 | Mass totalizer | | √ | √ | |
| 3 | Density | | √ | √ | |
| 4 | Mass inventory | | √ | √ | |
| 5 | Volume flow rate | | √ | √ | |
| 6 | Volume totalizer | | √ | √ | |
| 7 | Volume inventory | | √ | √ | |
| 15 | API: Temperature-corrected density | | √ | √ | |
| 16 | API: Temperature-corrected (standard) volume flow | | √ | √ | |
| 17 | API: Temperature-corrected (standard) volume total | | √ | √ | |
| 18 | API: Temperature-corrected (standard) volume inventory | | √ | √ | |
| 19 | API: Batch-weighted average corrected density | | √ | √ | |
| 20 | API: Batch-weighted average temperature | | √ | √ | |
| 33 | API: CTL | | √ | √ | |
| 46 | Raw tube frequency | | √ | √ | |
| 47 | Drive gain | | √ | √ | |
| 48 | Meter temperature (T-Series) | | | | |
| 49 | Left pickoff amplitude | | √ | √ | |
| 50 | Right pickoff amplitude | | √ | √ | |
| 51 | Board temperature | | √ | √ | |
| 52 | Input voltage | | √ | √ | |
| 53 | Externally read pressure | | √ | √ | |
| 55 | Externally read temperature | | √ | √ | |
| Event output variable codes (holding register 40137 or 40138) | | | | | |
| 0 | Mass flow rate | √ | √ | √ | √ |
| 1 | Temperature | √ | √ | √ | √ |
| 2 | Mass totalizer | √ | √ | √ | √ |
| 3 | Density | √ | √ | √ | √ |
| 4 | Mass inventory | √ | √ | √ | √ |
| 5 | Volume flow rate | √ | √ | √ | √ |
| 6 | Volume totalizer | √ | √ | √ | √ |
| 7 | Volume inventory | √ | √ | √ | √ |

Modbus Mapping Assignments *continued*

Table 2-8. Integer codes *continued*

| | | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---|--|---------|----------------|----------------|---------|
| Quaternary variable codes (holding register 40015) | | | | | |
| 0 | Mass flow rate | √ | √ | √ | |
| 1 | Temperature | √ | √ | √ | |
| 2 | Mass total | √ | √ | √ | |
| 3 | Density | √ | √ | √ | |
| 4 | Mass inventory | √ | √ | √ | |
| 5 | Volume flow rate | √ | √ | √ | |
| 6 | Volume total | √ | √ | √ | |
| 7 | Volume inventory | √ | √ | √ | |
| 15 | API: Temperature-corrected density | √ | √ | √ | |
| 16 | API: Temperature-corrected (standard) volume flow | √ | √ | √ | |
| 17 | API: Temperature-corrected (standard) volume total | √ | √ | √ | |
| 18 | API: Temperature-corrected (standard) volume inventory | √ | √ | √ | |
| 19 | API: Batch-weighted average corrected density | √ | √ | √ | |
| 20 | API: Batch-weighted average temperature | √ | √ | √ | |
| 33 | API: CTL | √ | √ | √ | |
| 47 | Drive gain | √ | √ | √ | |
| 53 | Externally read pressure | √ | √ | √ | |
| 55 | Externally read temperature | √ | √ | √ | |
| Event alarm type codes (holding register 40139 or 40140) | | | | | |
| 1 | High alarm | √ | √ | √ | √ |
| 2 | Low alarm | √ | √ | √ | √ |
| Flow direction codes (holding register 40017) | | | | | |
| 0 | Forward flow only | √ | √ | √ | √ |
| 1 | Reverse flow only | √ | √ | √ | √ |
| 2 | Bidirectional flow | √ | √ | √ | √ |
| 3 | Absolute forward/reverse | √ | √ | √ | |
| 4 | Negate - forward only | √ | | | |
| 5 | Negate - bidirectional | √ | | | |
| Process variable and diagnostic codes for slot addresses (holding registers 40751-40782) | | | | | |
| 0 | Mass flow rate | √ | √ | √ | |
| 1 | Temperature | √ | √ | √ | |
| 2 | Mass totalizer | √ | √ | √ | |
| 3 | Density | √ | √ | √ | |
| 4 | Mass inventory | √ | √ | √ | |
| 5 | Volume flow rate | √ | √ | √ | |
| 6 | Volume totalizer | √ | √ | √ | |
| 7 | Volume inventory | √ | √ | √ | |
| 10 | Event 1 | √ | √ | √ | |
| 11 | Event 2 | √ | √ | √ | |
| 12 | Status word 1 (419/420) | √ | √ | √ | |
| 13 | Status word 2 (421/422) | √ | √ | √ | |
| 14 | Status word 3 (423/424) | √ | √ | √ | |
| 15 | API: Temperature-corrected density | √ | √ | √ | |
| 16 | API: Temperature-corrected (standard) volume flow | √ | √ | √ | |
| 17 | API: Temperature-corrected (standard) volume total | √ | √ | √ | |
| 18 | API: Temperature-corrected (standard) volume inventory | √ | √ | √ | |
| 19 | API: Batch-weighted average corrected density | √ | √ | √ | |
| 20 | API: Batch-weighted average temperature | √ | √ | √ | |

Modbus Mapping Assignments *continued*

Table 2-8. Integer codes *continued*

| | | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---|---|---------|-------------|-------------|---------|
| 33 | API: CTL | √ | √ | √ | |
| 34 | High-order doubleword of binary mass total in grams | √ | √ | √ | |
| 35 | Low-order doubleword of binary mass total in grams | √ | √ | √ | |
| 36 | High-order doubleword of binary volume total in cubic centimeters | √ | √ | √ | |
| 37 | Low-order doubleword of binary volume total in cubic centimeters | √ | √ | √ | |
| 38 | Raw API: Temperature/pressure-corrected volume total, high-order doubleword | √ | √ | √ | |
| 39 | Raw API: Temperature/pressure-corrected volume total, low-order doubleword | √ | √ | √ | |
| 46 | Raw tube frequency | √ | √ | √ | |
| 47 | Drive gain | √ | √ | √ | |
| 49 | Left pickoff amplitude | √ | √ | √ | |
| 50 | Right pickoff amplitude | √ | √ | √ | |
| 51 | Board temperature | √ | √ | √ | |
| 52 | Input voltage | √ | √ | √ | |
| 53 | Externally read pressure | √ | √ | √ | |
| 55 | Externally read temperature | √ | √ | √ | |
| 100 | Event 1 or event 2 ² | | √ | √ | |
| 101 | Flow switch indicator ² | | √ | √ | |
| 102 | Forward/reverse indication ² | | √ | √ | |
| 103 | Calibration in progress ² | | √ | √ | |
| 104 | Fault condition indication ² | | √ | √ | |
| Frequency/pulse output variable codes (holding register 40014) | | | | | |
| 0 | Mass flow rate | | | √ | √ |
| 2 | Mass totalizer | | | | √ |
| 5 | Volume flow rate | | | √ | √ |
| 6 | Volume totalizer | | | | √ |
| 16 | API: Temperature-corrected (standard) volume flow | | | √ | |
| Frequency/pulse output scaling method codes (holding register 41108) | | | | | |
| 0 | Frequency=flow | | √ | √ | |
| 1 | Pulses/unit | | √ | √ | |
| 2 | Units/pulse | | √ | √ | |
| Control output variable codes (holding register 40015) | | | | | |
| 0 | Forward/reverse flow | | | | √ |
| 1 | Zero in progress | | | | √ |
| 2 | Faults | | | | √ |
| 3 | Event 1 | | | | √ |
| 4 | Event 2 | | | | √ |
| 100 Hz variable codes (holding register 41164) | | | | | |
| 0 | Mass flow rate | √ | √ | √ | |
| 1 | Temperature | √ | √ | √ | |
| 2 | Mass totalizer | √ | √ | √ | |
| 3 | Density | √ | √ | √ | |
| 4 | Mass inventory | √ | √ | √ | |
| 5 | Volume flow rate | √ | √ | √ | |
| 6 | Volume totalizer | √ | √ | √ | |
| 7 | Volume inventory | √ | √ | √ | |
| 10 | Event 1 | √ | √ | √ | |
| 11 | Event 2 | √ | √ | √ | |

Modbus Mapping Assignments *continued*

Table 2-8. Integer codes *continued*

| | | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---|--|---------|-------------|-------------|---------|
| Flow tube liner material codes (holding register 40131) | | | | | |
| 10 | PTFE (Teflon) | √ | √ | √ | √ |
| 11 | Halar | √ | √ | √ | √ |
| 16 | Tefzel | √ | √ | √ | √ |
| 251 | None | √ | √ | √ | √ |
| 252 | Unknown | √ | √ | √ | √ |
| 253 | Special | √ | √ | √ | √ |
| Sensor type codes (holding register 41139) | | | | | |
| 0 | Curved-tube sensor (D, DL, DT, CMF, F-Series, R-Series) | | √ | √ | |
| 1 | Straight-tube sensor (T-Series) | | √ | √ | |
| Pressure value receiving method codes (holding register 40302) | | | | | |
| 0 | None | | | | √ |
| 3 | HART primary | | | | √ |
| 4 | HART secondary | | | | √ |
| 6 | Analog input | | | | √ |
| 8 | Modbus | | | | √ |
| Version 2 RFT9739 fault output codes (holding register 40124) | | | | | |
| 0 | Upscale | | | | √ |
| 1 | Downscale | | | | √ |
| 2 | Last measured value | | | | √ |
| 3 | Internal zero | | | | √ |
| Analog fault output codes (holding registers 41107 and 41113) | | | | | |
| 0 | Upscale | | √ | √ | |
| 1 | Downscale | | √ | √ | |
| 3 | Internal zero | | √ | √ | |
| 4 | None | | √ | √ | |
| Digital fault output codes (holding register 40124) | | | | | |
| 0 | Hold at value greater than upper sensor limit, stop totalizing | √ | √ | √ | |
| 1 | Hold at value less than lower sensor limit, stop totalizing | √ | √ | √ | |
| 2 | Drive outputs to zero values of process variables, stop totalizing | √ | √ | √ | |
| 3 | Report not-a-number or maximum scaled integer, stop totalizing | √ | √ | √ | |
| 4 | Drive flow rate to zero value, other process variables remain unaffected | √ | √ | √ | |
| 5 | None (default; use status bits for fault detection) | √ | √ | √ | |
| Floating-point byte ordering codes (holding register 40521) | | | | | |
| 0 | 0-1-2-3 | √ | √ | √ | |
| 1 | 2-3-0-1 (Default) | √ | √ | √ | |
| 2 | 1-0-3-2 | √ | √ | √ | |
| 3 | 3-2-1-0 | √ | √ | √ | |
| Sensor flange type codes (holding register 40129) | | | | | |
| 0 | ANSI 150 | √ | √ | √ | √ |
| 1 | ANSI 300 | √ | √ | √ | √ |
| 2 | ANSI 600 | √ | √ | √ | √ |
| 5 | PN 40 | √ | √ | √ | √ |
| 7 | JIS 10K | √ | √ | √ | √ |
| 8 | JIS 20K | √ | √ | √ | √ |

Modbus Mapping Assignments *continued*

Table 2-8. Integer codes *continued*

| | | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---|---|---------|-------------|-------------|---------|
| 9 | ANSI 900 | √ | √ | √ | √ |
| 10 | Sanitary clamp | √ | √ | √ | √ |
| 11 | Union | √ | √ | √ | √ |
| 12 | PN 100 | √ | √ | √ | |
| 250 | Reserved | | | | √ |
| 251 | None | √ | √ | √ | √ |
| 252 | Unknown | √ | √ | √ | √ |
| 253 | Special | √ | √ | √ | √ |
| 254 | Reserved | | | | √ |
| 255 | Reserved | | | | √ |
| Flow tube construction material codes (holding register 40130) | | | | | |
| 3 | Hastelloy C-22 | √ | √ | √ | √ |
| 4 | Monel | √ | √ | √ | √ |
| 5 | Tantalum | √ | √ | √ | √ |
| 6 | Titanium | √ | √ | √ | |
| 19 | 316L stainless steel | √ | √ | √ | √ |
| 23 | Inconel | √ | √ | √ | |
| 252 | Unknown | √ | √ | √ | √ |
| 253 | Special | √ | √ | √ | √ |
| Digital communication protocol codes (holding register 41132) | | | | | |
| 0 | None | | √ | √ | |
| 1 | HART only | | √ | √ | |
| 2 | Modbus RTU only | | √ | √ | |
| 3 | Modbus ASCII only | | √ | √ | |
| Digital communication baud rate codes (holding register 41133) | | | | | |
| 0 | 1200 baud | | √ | √ | |
| 1 | 2400 baud | | √ | √ | |
| 2 | 4800 baud | | √ | √ | |
| 3 | 9600 baud | | √ | √ | |
| 4 | 19,200 baud | | √ | √ | |
| 5 | 38,400 baud | | √ | √ | |
| Digital communication parity codes (holding register 41134) | | | | | |
| 0 | None | | √ | √ | |
| 1 | Odd parity | | √ | √ | |
| 2 | Even parity | | √ | √ | |
| Digital communication stop bits codes (holding register 41135) | | | | | |
| 1 | 1 stop bit | | √ | √ | |
| 2 | 2 stop bits | | √ | √ | |
| Read-only output board codes (input register 31138) | | | | | |
| 0 | None | | √ | √ | |
| 1 | Analog I/O (mA/Frequency/RS-485) | | √ | √ | |
| 2 | Foundation Fieldbus (H1) or Profibus-PA | | | √ | |
| 3 | Intrinsically safe output | | √ | √ | |
| 4 | Configurable input/output | | | √ | |

Modbus Mapping Assignments *continued*

Table 2-8. Integer codes *continued*

| | | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|---|---|---------|-------------|-------------|---------|
| Polling control option codes (holding register 40302 or 41144) | | | | | |
| 0 | Do not poll | | √ | √ | |
| 1 | Poll transmitter: HART primary | | √ | √ | |
| 2 | Poll transmitter: HART secondary | | √ | √ | |
| Polling type option codes (holding register 41147) | | | | | |
| 0 | None | | | | |
| 1 | Pressure compensation only | | √ | √ | |
| 3 | API only (temperature) | | √ | √ | |
| 6 | Pressure compensation and API (temperature) | | √ | √ | |
| Polled variable codes (holding registers 41145-41146) | | | | | |
| 53 | Externally read pressure | | √ | √ | |
| 55 | Externally read temperature | | √ | √ | |
| Output type codes (holding registers 41166-41168) | | | | | |
| 0 | Milliamp (primary) output | | √ | √ | |
| 1 | Frequency output | | √ | √ | |
| 2 | Digital communications ³ | | √ | √ | |
| 3 | Milliamp (secondary) output ⁴ | | | √ | |
| 4 | Discrete output | | √ | √ | |
| 5 | Discrete input ⁵ | | | √ | |
| Discrete input assignment codes (holding register 41176)⁵ | | | | | |
| 0 | None | | | √ | |
| 1 | Start sensor zero | | | √ | |
| 2 | Reset mass total | | | √ | |
| 3 | Reset volume total | | | √ | |
| 4 | Reset corrected volume total | | | √ | |
| Discrete output assignment codes (holding registers 41151 and 41153) | | | | | |
| 10 | Event 1 active | | √ | √ | |
| 11 | Event 2 active | | √ | √ | |
| 100 | Event 1 or event 2 active | | √ | √ | |
| 101 | Flow switch indication | | √ | √ | |
| 102 | Forward/reverse indication | | √ | √ | |
| 103 | Calibration in progress | | √ | √ | |
| 104 | Fault condition indication | | √ | √ | |
| Power source codes (holding registers 41174-41175) | | | | | |
| 0 | External | | √ | √ | |
| 1 | Internal | | √ | √ | |
| Burst command option codes (holding register 41165) | | | | | |
| 1 | Read primary variable | | √ | √ | |
| 2 | Read PV current and percent of range | | √ | √ | |
| 3 | Read dynamic variables and PV current | | √ | √ | |
| 33 | Read transmitter variables | | √ | √ | |

Modbus Mapping Assignments *continued*

Table 2-8. Integer codes *continued*

| | | MVDSolo | Series 1000 | Series 2000 | RFT9739 |
|--|----------------------------|---------|----------------|----------------|---------|
| Burst variable codes for command 33 (holding registers 41169-41172) | | | | | |
| 0 | Mass flow rate | √ | √ | √ | |
| 1 | Temperature | √ | √ | √ | |
| 2 | Mass totalizer | √ | √ | √ | |
| 3 | Density | √ | √ | √ | |
| 4 | Mass inventory | √ | √ | √ | |
| 5 | Volume flow rate | √ | √ | √ | |
| 6 | Volume totalizer | √ | √ | √ | |
| 7 | Volume inventory | √ | √ | √ | |
| Frequency output mode codes (holding register 41181)⁵ | | | | | |
| 0 | Single | | | √ | |
| 1 | Quadrature | | | √ | |
| 2 | Dual with 0° phase shift | | | √ | |
| 3 | Dual with 180° phase shift | | | √ | |
| 4 | Dual with +90° phase shift | | | √ | |
| 5 | Dual with -90° phase shift | | | √ | |
| CTL code table codes (holding register 40351) | | | | | |
| 17 | Table 5A | √ | √ | √ | |
| 18 | Table 5B | √ | √ | √ | |
| 19 | Table 5D | √ | √ | √ | |
| 36 | Table 6C | √ | √ | √ | |
| 49 | Table 23A | √ | √ | √ | |
| 50 | Table 23B | √ | √ | √ | |
| 51 | Table 23D | √ | √ | √ | |
| 68 | Table 24C | √ | √ | √ | |
| 81 | Table 53A | √ | √ | √ | |
| 82 | Table 53B | √ | √ | √ | |
| 83 | Table 53D | √ | √ | √ | |
| 100 | Table 54C | √ | √ | √ | |
| Discrete output state codes (holding registers 41182-41183) | | | | | |
| 0 | Off | | √ | √ | |
| 1 | On | | √ | √ | |
| 255 | Unfix discrete output | | √ | √ | |

¹Version 3 RFT9739 transmitter.

²Available only when mapped to a discrete output.

³Transmitters with analog output boards only.

⁴Transmitters with intrinsically safe output boards and configurable input/output boards only.

⁵Transmitters with configurable input/output boards only.

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