

HART® 7.x Field Device Specification for Honeywell SMV800 Smart Multivariable Transmitters

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Table of Contents

| | |
|---|-------------|
| Table of Contents | ii |
| List of Figures | viii |
| List of Tables | viii |
| 1. Introduction..... | 1 |
| 1.1 Scope..... | 1 |
| 1.2 Purpose | 1 |
| 1.3 Who should use this document?..... | 1 |
| 1.4 Abbreviations and definitions..... | 1 |
| 1.5 References | 1 |
| 2. Device Identification..... | 2 |
| 3. Product Overview..... | 3 |
| 3.1 Transmitter..... | 3 |
| 3.2 Communicator Purpose..... | 4 |
| 4. Product Interfaces | 5 |
| 4.1 Process Interface | 5 |
| 4.2 Host Interface | 5 |
| 4.3 Local Interfaces, Jumpers and Switches..... | 6 |
| 4.4 Meter Display Options | 8 |
| 5. Device Variables | 9 |
| 6. Dynamic Variables..... | 9 |
| 7. Status Information..... | 11 |
| 7.1 Field Device Status | 11 |
| 7.2 Extended Device Status..... | 12 |
| 7.3 Command #48 – Additional Field Device Status..... | 12 |
| 8. Universal Commands..... | 14 |
| 9. Common-Practice Commands | 15 |
| 9.1 Supported Common Practice Commands | 15 |
| 9.2 Burst Mode..... | 15 |
| 9.3 Catch Device Variable..... | 15 |
| 10. Device-Specific Commands..... | 16 |
| 10.1 Command #130: Correct Sensor 1 Input to URV..... | 29 |
| 10.2 Command #131: Correct Sensor 1 Input to LRV | 30 |
| 10.3 Command #133: Reset Corrects sensor 1 | 31 |
| 10.4 Command #134: Read Transmitter Specifics | 32 |
| 10.5 Command #135: Read sensors extra configuration | 33 |
| 10.6 Command #136: Read sensor1 configuration..... | 34 |

| | | |
|-------|--|-----|
| 10.7 | Command #138: Read URL1, LRL1 | 36 |
| 10.8 | Command #139: Read Model Number – Key Number, Table I..... | 37 |
| 10.9 | Command #140: Read Model Number – Table II | 38 |
| 10.10 | Command #141: Read Model Number –Table III | 39 |
| 10.11 | Command #142: Read time in service, percent time in stress, service life remaining | 40 |
| 10.12 | Command #144: Read last Time & Date for correct URV, correct LRV for Sensor 1. | 41 |
| 10.13 | Command #148: Read power fail counter and its timestamp | 42 |
| 10.14 | Command #149: Read ET and electronics temperature tracking values. | 43 |
| 10.15 | Command #150: Read ET lower tracking parameters | 44 |
| 10.16 | Command #155: Read current, minimum operating voltage and its timestamp | 45 |
| 10.17 | Command #156: Reset min terminal voltage and its time stamp..... | 46 |
| 10.18 | Command #157: Read M360 core temperature up tracking parameters | 47 |
| 10.19 | Command #158: Read M360 core temperature down tracking parameters | 48 |
| 10.20 | Command #159: Read AVDD max and time stamp..... | 49 |
| 10.21 | Command #160: Read AVDD min and time stamp | 50 |
| 10.22 | Command #161: Read sensors and transmitter install dates..... | 51 |
| 10.23 | Command #162: Read sensor board stress monitor and sensor board service life.. | 52 |
| 10.24 | Command #163: Write Temperature Terminal board install date to sensor | 53 |
| 10.25 | Command #164: Read Model Number –Table IV..... | 54 |
| 10.26 | Command #165: Read Previous Time & Date for correct URV, correct LRV sensor | 155 |
| 10.27 | Command #166: Read current Time & Date for correct URV, correct LRV sensor 1. | 56 |
| 10.28 | Command #167: Read current, last and previous reset correct Time & Date sensor | 157 |
| 10.29 | Command #173: Write sensor1 bias value | 58 |
| 10.30 | Command #175: Read/Lock Write Protect Configuration | 59 |
| 10.31 | Command #176: Write/Change Write Protect Password..... | 60 |
| 10.32 | Command #177: Read Database ID | 61 |
| 10.33 | Command #178: Read Configuration history..... | 64 |
| 10.34 | Command #179: Read UTL1, LTL1 | 65 |
| 10.35 | Command #185: Read CJ-UTL, CJ-LL..... | 66 |
| 10.36 | Command #186: Read all sensor times in service..... | 67 |
| 10.37 | Command #187: Read HART-DE board firmware revision | 68 |
| 10.38 | Command #188: Read the loop control mode, loop controlling sensor | 69 |
| 10.39 | Command #192: Write PV high and low alarm limits | 72 |
| 10.40 | Command #193: Write RTD1 type..... | 73 |
| 10.41 | Command #197: Write CJ compensation type | 74 |
| 10.42 | Command #198: Write break detect status..... | 75 |
| 10.43 | Command #200: Write latching status | 76 |
| 10.44 | Command #201: Write match PV status | 77 |
| 10.45 | Command #202: Write fixed CJ compensation | 78 |
| 10.46 | Command #203: Write RTD1 lead wire resistance..... | 79 |
| 10.47 | Command #210: Write Display General configuration | 80 |
| 10.48 | Command #211: Read Display General configuration | 82 |
| 10.49 | Command #212: Read Display Firmware Version | 83 |
| 10.50 | Command #213: Read error log part1 | 84 |
| 10.51 | Command #214: Read error log part2 | 86 |
| 10.52 | Command #215: Reset error log | 87 |
| 10.53 | Command #216: Read error logging status..... | 88 |
| 10.54 | Command #217: Write error logging status | 89 |
| 10.55 | Command #218: Read PV tracking values..... | 90 |
| 10.56 | Command #219: Read SV up tracking values | 91 |
| 10.57 | Command #220: Read additional status | 92 |
| 10.58 | Command #221: Set Date/Time for calibration..... | 93 |
| 10.59 | Command #222: Read Temperature sensor firmware version number..... | 94 |
| 10.60 | Command #228: Read maintenance flag | 95 |
| 10.61 | Command #229: Write maintenance flag | 96 |
| 10.62 | Command #230: Read tamper alarm settings | 97 |

| | | |
|--------|--|-----|
| 10.63 | Command #231: Write Tamper alarm settings | 98 |
| 10.64 | Command #232: Reset executed attempts counter..... | 99 |
| 10.65 | Command #240: Reset PT tracking values..... | 100 |
| 10.66 | Command #247: Read SV down tracking values | 101 |
| 10.67 | Command #64768: Write Display Screen configuration | 102 |
| 10.68 | Command #64769: Write Display View configuration II | 104 |
| 10.69 | Command #64770: Write View configuration IV..... | 106 |
| 10.70 | Command #64771: Read Display View configuration I | 107 |
| 10.71 | Command #64772: Read Display View configuration II | 109 |
| 10.72 | Command #64773: Read Display View configuration IV | 110 |
| 10.73 | Command #64790: Write upper calibration point sensor 1 | 111 |
| 10.74 | Command #64791: Write lower calibration point sensor1 | 112 |
| 10.75 | Command #64794: Read sensor1 calibration points..... | 113 |
| 10.76 | Command #64807: Read sensor ET up tracking values | 114 |
| 10.77 | Command #64808: Read sensor ET down tracking values | 115 |
| 10.78 | Command #64809: Read SHM1 ohms, M360 Core Temp Delta | 116 |
| 10.79 | Command #64811: Write Sensor1 install date | 117 |
| 10.80 | Command #64813: Reset CJ tracking parameters | 118 |
| 10.81 | Command #64814: Acknowledge latching | 119 |
| 10.83 | Command #64816: Read Sensor scratch pad | 121 |
| 10.84 | Command #64817: Write output level selection..... | 122 |
| 10.85 | Command #64818: Read Namur Enable/Disable | 123 |
| 10.86 | Command #64822: Read Flow Cutoff Low & High Limit | 124 |
| 10.87 | Command #64823: Write Flow Cutoff Low & High Limit | 125 |
| 10.88 | Command #64824: Read Static Pressure Calibrated URV at A, LRV at A, URV at B Set Points 126 | |
| 10.89 | Command #64825: Read Static Pressure Calibrated LRV at B, URV at C, LRV at C Set Points 127 | |
| 10.90 | Command #64826: Read Selected and Available Calibration Sets | 128 |
| 10.91 | Command # 64827: Write Selected and Available Calibration Sets..... | 129 |
| 10.92 | Command #64831: Write Upper Sensor Trim Point (Correct URV) | 130 |
| 10.93 | Command #64832: Write Lower Sensor Trim Point (Correct LRV) | 131 |
| 10.94 | Command #64833: Reset Corrects | 132 |
| 10.95 | Command #64834: Read Transmitter Specifics | 133 |
| 10.96 | Command #64835: Read Primary Variable Sensor Information | 134 |
| 10.97 | Command #64836: Read Alternate filter selection parameter | 135 |
| 10.98 | Command #64837: Read last time and date for correct URV, correct LRV and zero trim. 136 | |
| 10.99 | Command #64838: Read filter selection | 137 |
| 10.100 | Command #64839: Write filter selection | 138 |
| 10.101 | Command #64841: Read differential PV UP tracking parameters..... | 139 |
| 10.102 | Command #64842: Read MBT upper tracking parameters | 140 |
| 10.103 | Command #64843: Read MBT lower tracking parameters..... | 141 |
| 10.104 | Command #64844: Read SP and its tracking parameters..... | 142 |
| 10.105 | Command #64845: Read M360 core temperature up tracking parameters | 143 |
| 10.106 | Command #64846: Read M360 core temperature down tracking parameters | 144 |
| 10.107 | Command #64847: Read AVDD max and time stamp..... | 145 |
| 10.108 | Command #64848: Read AVDD min and time stamp | 146 |
| 10.109 | Command #64849: Read Pressure sensor install date | 147 |
| 10.110 | Command #64850: Read MB stress monitor and MB service life | 148 |
| 10.111 | Command #64851: Write install date to Pressure sensor..... | 149 |
| 10.112 | Command #64852: Read Previous time and date for correct URV, correct LRV, zero trim 150 | |
| 10.113 | Command #64853: Read current time and date for correct URV, correct LRV, zero trim 151 | |

| | |
|--|------------|
| 10.114 Command #64854: Read Differential Pressure current, last and previous reset correct Time & Date..... | 152 |
| 10.115 Command #64855: Read differential PV Down tracking parameters..... | 153 |
| 10.116 Command #64868: Read low flow cutoff mode..... | 154 |
| 10.117 Command #64869: Read sensor time in service..... | 155 |
| 10.118 Command #64871: Read sensor firmware version number..... | 156 |
| 10.119 Command #64872: Read flow value for square-root functionality..... | 157 |
| 10.120 Command #64873: Low flow cutoff method selection | 158 |
| 10.121 Command #64874: Read user breakpoint in % flow for low flow cutoff..... | 159 |
| 10.122 Command #64875: Write user breakpoint in % flow for low flow cutoff | 160 |
| 10.123 Command #64882: Read Enhanced features available in device..... | 161 |
| 10.124 Command #64883: Write License Key | 162 |
| 10.125 Command #64895: Read Calibrated LRV at B, URV at C, LRV at C Set Points..... | 163 |
| 10.126 Command #64896: Read Calibrated URV at A, LRV at A, URV at B Set Points | 164 |
| 10.127 Command #64897: Read Selected and Available Calibration Sets for DP | 165 |
| 10.128 Command #64898: Write Calibration Set Selection for DP | 166 |
| 10.129 Command #64899: Read Units conversion factor, Pipe diameter, Bore diameter | 167 |
| 10.130 Command #64900: Read Pipe diam meas temperature, Bore diam meas temperature, Pipe thermal expansion coeff | 168 |
| 10.131 Command #64901: Read Bore thermal expansion coeff, Discharge Coefficients, Low limit for Reynolds Number | 169 |
| 10.132 Command #64902: Read High limit for Reynolds Number, Viscosity polynomial coefficients, Lower Temp Limit Viscosity | 170 |
| 10.133 Command #64903: Read Upper Temp Limit Viscosity, Isentropic coefficient, Local Atmosphere Pressure | 171 |
| 10.134 Command #64904: Read Manually Input Density Value, Manually Input Viscosity Value, Manually Input Discharge Coeff..... | 172 |
| 10.135 Command #64905: Read Manually Input Expan Factor, Manually Input Temp Exp Fact, Density polynomial coefficients..... | 173 |
| 10.136 Command #64906: Read Lower Limit Density polynomial, Upper Limit Density polynomial, Nominal temperature | 174 |
| 10.137 Command #64907: Read Nominal absolute pressure, Nominal differential pressure, Base Density | 175 |
| 10.138 Command #64908: Read Design Pressure, Design Temperature, Design Density ... | 176 |
| 10.139 Command #64909: Read Super Compressed Factor, Gas compressibility, Specific Gravity of Ideal Gas | 177 |
| 10.140 Command #64910: Read Max flow rate on Sizing of Vcone, Maximum DP on Sizing for Vcone, Pipe Roughness for Gost or Beta | 178 |
| 10.141 Command #64911: Read initial Radius, Inter Control Interval..... | 179 |
| 10.142 Command #64912: Read Flow Calculation Standard/ Discharge Exponent, Manual Input Switch/Compensation Switch, Primary Element Type and SubType, Fluid Type..... | 180 |
| 10.143 Command #64913: Read Algorithms Type, Pipe Material, Bore Material, PV Simulation and FailSafe Switch | 185 |
| 10.144 Command #64914: Read Value substituted for PV1, Value substituted for PV2..... | 187 |
| 10.145 Command #64915: Read Value substituted for PV3, Value substituted for PV4..... | 188 |
| 10.146 Command #64916 : Write Units conversion factor | 189 |
| 10.147 Command #64917 : Write Pipe diameter, Pipe diam meas temperature, Pipe thermal expansion coeff | 190 |
| 10.148 Command #64918 : Write Bore diameter, Bore diam meas temperature, Bore thermal expansion coeff | 191 |
| 10.149 Command #64919 : Write Discharge Coefficients (r1), Discharge Coefficients (r2) . | 192 |
| 10.150 Command #64920 : Write Low limit for Reynolds Number, High limit for Reynolds Number 193 | |
| 10.151 Command #64921 : Write Viscosity polynomial coefficients (v1), Viscosity polynomial coefficients (v2), Viscosity polynomial coefficients (v3)..... | 194 |

| | |
|--|-----|
| 10.152 Command #64922 : Write Viscosity polynomial coefficients (v4), Viscosity polynomial coefficients (v5) | 195 |
| 10.153 Command #64923 : Write Lower Temp Limit Viscosity, Upper Temp Limit Viscosity..... | 196 |
| 10.154 Command #64924 : Write Isentropic coefficient, Local Atmosphre Pressure, Base Density | 197 |
| 10.155 Command #64925 : Write Manually Input Density Value, Manually Input Viscosity Value, Manually Input Discharge Coeff..... | 198 |
| 10.156 Command #64926 : Write Manually Input Expan Factor, Manually Input Temp Exp Fact | 199 |
| 10.157 Command #64927 : Write Density polynomial coefficients (d1), Density polynomial coefficients (d2), Density polynomial coefficients (d3) | 200 |
| 10.159 Command #64929 : Write Lower Limit Density polynomial, Upper Limit Density polynomial | 202 |
| 10.160 Command #64930 : Write Nominal temperature, Nominal absolute pressure, Nominal differential pressure | 203 |
| 10.161 Command #64931 : Write Design Pressure, Design Temperature, Design Density.. | 204 |
| 10.162 Command #64932 : Write Super Compressed Factor, Gas compressibility, Specific Gravity of Ideal Gas | 205 |
| 10.163 Command #64933 : Write Max flow rate on Sizing of Vcone, Maximum DP on Sizing for Vcone | 206 |
| 10.164 Command #64934 : Write Pipe Roughness for Gost or Beta, Initial Radius, Inter Control Interval | 207 |
| 10.168 Command #64954 : Write Flow Calculation Standard Discharge Exponent | 213 |
| 10.169 Command #64955 : Write Manual Input Switch Compensation Switch..... | 214 |
| 10.170 Command #64956: Write Primary Element Type and SubType..... | 215 |
| 10.171 Command #64957 : Write Fluid Type | 216 |
| 10.172 Command #64958 : Write Algorithms Type | 217 |
| 10.173 Command #64959 : Pipe Material, Bore Material | 218 |
| 10.174 Command #64961 : Write PV Simulation and FailSafe Switch | 219 |
| 10.175 Command #64962 : Write Simulate PV1..... | 220 |
| 10.176 Command #64963 : Write Simulate PV2..... | 221 |
| 10.177 Command #64964 : Write Simulate PV3..... | 222 |
| 10.178 Command #64965 : Write Simulate PV4..... | 223 |
| 10.179 Command #64966: Write View configuration III | 224 |
| 10.180 Command #64967: Read Display View configuration III | 225 |
| 10.181 Command #64968 : Write Differential Pressure Range Values | 226 |
| 10.182 Command #64969 : Write Static Pressure Range Values | 227 |
| 10.183 Command #64970 : Write Process Temperature Range Values..... | 228 |
| 10.184 Command #64971 : Write Flow Range Values..... | 229 |
| 10.185 Command #64972 : Read DP, SP, Temp, Flow, MBT Range Values | 230 |
| 10.186 Temp, Flow, and MBT | 232 |
| 10.187 Command #64978 : Read DP UTL LTL URL LRL, SP UTL LTL URL LRL, Temp UTL LTL URL LRL, Flow URL LRL, MBT Limit Values | 233 |
| 10.188 Command #64979 : Write damping Values for DP | 234 |
| 10.189 Command #64980 : Write damping Values for SP | 235 |
| 10.190 Command #64981 : Write damping Values for PT | 236 |
| 10.191 Command #64982 : Write damping Values for Flow..... | 237 |
| 10.192 Command #64983 : Write damping Values for MBT | 238 |
| 10.193 Command #64984 : Read Damping values of DP, SP, Temp, Flow , MBT | 239 |
| 10.194 Command #64989 : Read Process values of DP, SP, Temp, Flow , MBT and CJT ... | 240 |
| 10.195 Command #64990 : Write Flow Upper Range Limit (customer entry) URL | 241 |
| 10.196 Command #65000: Read Discharge Coefficients (r2), Viscosity polynomial coefficients (v2), Viscosity polynomial coefficients (v3) | 242 |
| 10.197 Command #65001: Read Viscosity polynomial coefficients (v4), Viscosity polynomial coefficients (v5), Density polynomial coefficients (d2) | 243 |

| | |
|--|------------|
| 10.198 Command #65002: Read Density polynomial coefficients (d3), Density polynomial coefficients (d4), Density polynomial coefficients (d5) | 244 |
| 10.199 Command #65009: SP Correct Input to URV | 245 |
| 10.200 Command #65010: SP Correct input at LRV..... | 246 |
| 10.201 Command #65011: SP Reset Corrects | 247 |
| 10.202 Command #65012: Read Max Flow Rate and Max DP for Mass and Volume Flow ... | 248 |
| 10.203 Command #65013: Write Max Flow Rate and Max DP for Mass and Volume Flow ... | 249 |
| 10.204 Command #65014: Read Static Pressure last Time & Date for correct URV, correct LRV, zero trim | 251 |
| 10.205 Command #65015: Read Static Pressure Previous Time & Date for correct URV, correct LRV, zero trim | 252 |
| 10.206 Command #65016: Read Static Pressure current Time & Date for correct URV, correct LRV, zero trim..... | 253 |
| 10.207 Command #65017: Read Static Pressure current, last and previous reset correct Time & Date | 254 |
| 10.208 Variable Zero..... | 255 |
| 10.209 Command #65019 Set Static Pressure Primary Variable Zero | 256 |
| 10.210 Command #64828 Write Totalizer Configuration | 257 |
| 10.211 Command #64829: Read Totalizer Configuration | 261 |
| 10.212 Command #64829: Read Totalizer Configuration | 262 |
| 10.213 Command #64830: Write totalizer Range Config parameters..... | 267 |
| 11. Tables | 269 |
| 11.1 Unit Codes for Temperature..... | 269 |
| 11.2 Unit Codes for Pressure (DP and SP) | 269 |
| 11.3 Unit Codes for Mass Flow | 270 |
| 11.4 Unit Codes for Volume Flow | 272 |
| 11.5 Unit Conversion..... | 274 |
| 11.6 Command 220 details | 275 |
| 11.7 Sensor Type Codes | 278 |
| 12. Performance..... | 279 |
| 12.1 Technical Specifications | 279 |
| 12.2 Power-Up..... | 279 |
| 12.3 Device Reset | 279 |
| 12.4 Self Test..... | 279 |
| 12.5 Command Response Times | 280 |
| 12.6 Busy and Delayed-Response | 280 |
| 12.7 Long Messages | 280 |
| 12.8 Non-Volatile Memory..... | 281 |
| 12.9 Modes | 281 |
| 12.10 Write Protection..... | 281 |
| 12.11 Damping | 281 |
| Annex A. Capability Checklist..... | 282 |
| Annex B. Default Configuration..... | 283 |
| Annex C. Revision History | 284 |

List of Figures

| | |
|---|---|
| FIGURE 1: TYPICAL COMMUNICATION INTERFACE | 3 |
| FIGURE 2: THREE-BUTTON OPTION | 6 |
| FIGURE 3: LOCATING THE FAILSAFE JUMPER | 7 |

List of Tables

| | |
|--|-----|
| TABLE 1: ABBREVIATIONS AND DEFINITIONS | 1 |
| TABLE 2: DEVICE IDENTIFICATION..... | 2 |
| TABLE 3: ANALOG OUTPUT VALUES..... | 5 |
| TABLE 4: AVAILABLE DISPLAY CHARACTERISTICS | 8 |
| TABLE 5: LIST OF DYNAMIC VARIABLES | 10 |
| TABLE 6 FIELD DEVICE STATUS..... | 11 |
| TABLE 7: EXTENDED DEVICE STATUS | 12 |
| TABLE 8: ADDITIONAL FIELD DEVICE STATUS | 12 |
| TABLE 9: UNIVERSAL COMMANDS..... | 14 |
| TABLE 10: COMMON PRACTICE COMMANDS | 15 |
| TABLE 11: DEVICE SPECIFIC COMMANDS | 16 |
| TABLE 12: UNIT CODES SUPPORTED FOR TEMPERATURE | 269 |
| TABLE 13: UNIT CODES SUPPORTED FOR PRESSURE | 269 |
| TABLE 14: UNIT CODES SUPPORTED FOR MASS FLOW..... | 270 |
| TABLE 15: UNIT CODES SUPPORTED FOR VOLUME FLOW..... | 272 |
| TABLE 16: TOTALIZER MASS UNIT | 273 |
| TABLE 17: TOTALIZER VOLUME UNIT | 273 |
| TABLE 18: TEMPERATURE UNITS..... | 274 |
| TABLE 19: COMMAND 220 DETAILS..... | 275 |
| TABLE 20: SENSOR TYPE CODES | 278 |
| TABLE 21: RESPONSE TIMES..... | 280 |
| TABLE 22: CAPABILITY CHECKLIST..... | 282 |
| TABLE 23: DEFAULT CONFIGURATION | 283 |

1. Introduction

1.1 Scope

The Honeywell SmartLine Multivariable Transmitter, SMV800 device complies with HART® Protocol Revision 7.x. This document specifies all the device specific features and gives HART® Protocol implementation details. The functionality of this Field Device is described sufficiently to allow its proper application in a process and its complete support in HART® capable Host Applications.

1.2 Purpose

This specification is designed to complement other documentation by providing a complete, unambiguous description of this Field Device from a HART® Communication perspective.

1.3 Who should use this document?

The specification is designed to be a technical reference for HART® capable Host Application Developers, System Integrators and knowledgeable End Users. It also provides functional specifications (e.g., commands, enumerations and performance requirements) used during Field Device development, maintenance and testing. This document assumes the reader is familiar with HART® Protocol requirements and terminology.

1.4 Abbreviations and definitions

Table 1: Abbreviations and Definitions

| | |
|-------------|--|
| ADC | Analog to Digital Converter |
| DAC | Digital to Analog Converter |
| DP | Differential Pressure |
| SP | Static pressure (Absolute/Gaussian) |
| PT | Process Temperature |
| MBT | Meter Body Temperature |
| EEPROM | Electrically-Erasable Programmable Read-Only Memory |
| ROM | Read-Only Memory |
| PV | Primary Variable |
| SV | Secondary Variable |
| TV64806 | Tertiary Variable |
| QV | Quaternary Variable |
| MSG | Model Selection Guide |
| Float | An IEEE 754 single precision floating point value (4 bytes) |
| Packed | A string consisting of 6-bit alpha-numeric characters that are a subset of the ASCII character set. This allows four characters to be packed into three bytes. |
| Unsigned-nn | An unsigned integer where nn indicates the number of bits in this integer. Multi-byte integers are transmitted MSB-LSB. |
| Enum | It can be assigned any of the enumerators as a value |

1.5 References

HART® Field Communications Protocol Specification. HCF_SPEC-12, Revision 7.5, dated 29 May 2013.

2. Device Identification

Table 2: Device Identification

| | | | |
|-----------------------------------|---|--------------------------|-------------|
| Manufacturer Name: | Honeywell | Model Name(s): | SMV800 |
| Manufacture ID Code: | 23 (17 Hex) | Device Type Code: | 36 (24 Hex) |
| HART Protocol Revision | 7.x | Device Revision: | 2 |
| Number of Device Variables | 6 | | |
| Physical Layers Supported | FSK | | |
| Physical Device Category | Transmitter, Non-DC-isolated Bus Device | | |

The Honeywell SMV800 is designed to meet hazardous area approvals. Refer to the user manual on the available methods of protections for use in hazardous locations.

3. Product Overview

3.1 Transmitter

The SMV800 Multivariable Transmitter measures process variables like Differential Pressure, Static Pressure, process temperature and Flow and transmits an output signal proportional to the measured variable over a 4 to 20 milli ampere, two-wire loop. A diagrammatic representation of SMV800 is shown in Figure 1.

The SMV800 can transmit its output in analog 4 to 20 milli ampere format. Besides the process variable (PV) output, the transmitter also provides the configuration to select any of the dynamic variables DP, SP, Flow and PT as primary variable controlling the loop. SV, TV, QV can be configured from DP, SP, MBT, Flow and PT, which are available as read-only parameters through the MC Toolkit when the transmitter is in its analog mode. DP is always available in SMV. SP will be measured as either Absolute or Gauge pressure depending on the model of transmitter.

For Temperature sensor, it supports multiple various TC, RTD sensor types. Refer to the SMV800 Transmitter manual, 34-SM-25-03.

A configuration tool (Honeywell MC Toolkit) is connected to the loop wiring of the SMV800 transmitter for direct communication with the transmitter. The handheld device communicates with the transmitter via the HART® interface.

Note that multiple mounting configurations are possible and are fully described in the SMV800 Installation and User Manuals.

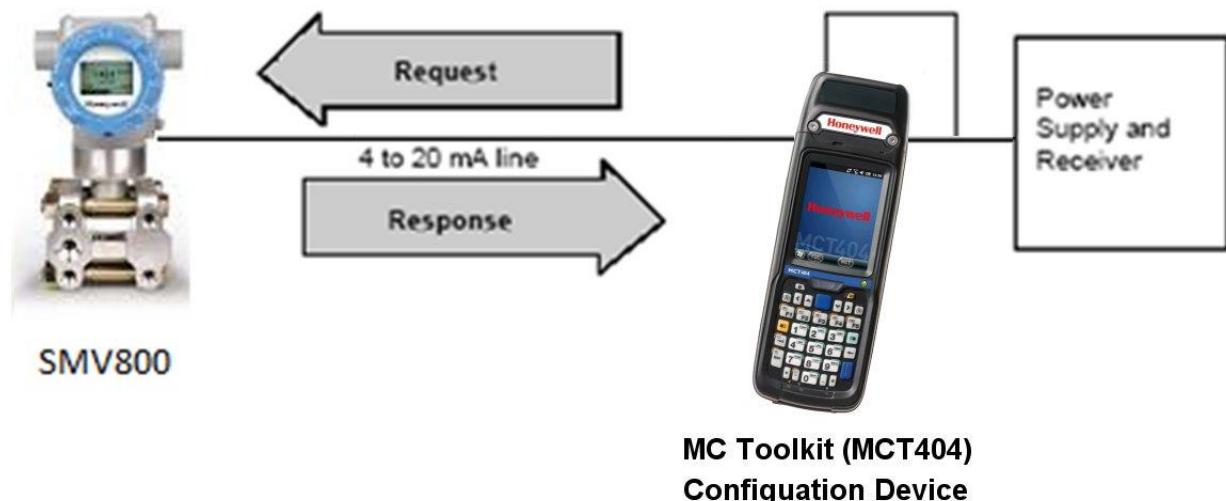


Figure 1: Typical Communication Interface

3.2 Communicator Purpose

The communicator allows the user to adjust transmitter values, or diagnose potential problems from a remote location such as the control room. The communicator can be used to:

- Configure: Define and enter the transmitter's operating parameters.
- Monitor: Read the input pressure or temperature of the transmitter in engineering units and the transmitter's output in mA or percent.
- Display: Retrieve and display data from the transmitter or the communicator's memory.
- Change Mode of Operation: Select configuration for point-to-point (digital), multi-drop mode (digital) or loop current enabled (analog) operation.
- Check current output: Use the transmitter to supply the output current desired for verifying analog loop operation, troubleshooting, or calibrating other components in the analog loop.
- Troubleshoot: Check status of transmitter operation and display diagnostic messages to identify transmitter, communication, or operator error problems.

4. Product Interfaces

4.1 Process Interface

The primary device variable can be DP, SP, PT, Flow, Totalizer and Meter Body temperature are selectable via the host.

Open circuit sensor analysis is carried out in every measurement cycle.

The transmitter is designed to operate in a two-wire power/current loop with loop resistance and power supply voltage within the operating range.

4.2 Host Interface

Analog Output:

SMV800 supports 6 device variables:

1. Differential Pressure
2. Static Pressure
3. Process Temperature
4. Calculated Flow Rate
5. Totalizer
6. Meter Body Temperature.

First 5 variables can be mapped to PV, SV, TV, QV (Analog Out). 6th one, Meter Body Temperature, can be mapped to SV, TV, QV, but not to PV (Analog out).

The transmitter is powered via the 2 wire, 4-20 mA signal connected to the + and - terminals on the output side of the module. This is the only output from this transmitter, representing the Differential pressure or Static pressure or process temperature or Flow measurement. The data is linearized and ranged to lower and upper range values held in the non-volatile memory.

HART® Communication is supported on this loop. A guaranteed linear over-range is provided. Downscale or upscale current can indicate device malfunction. The direction is selectable by the user.

Current values are shown in the table below.

Table 3: Analog Output Values

| Direction | | Values (% of range) | | Values (mA or V) | | |
|-------------------------------|------------------|---------------------|------------------------|-----------------------------------|--|--|
| Linear over-range* | Classic | Down | -1.25 % \pm 0.1 % | 3.8 to 4.0 mA 0.95 to 1.0 V | | |
| | | Up | 105.0 % \pm 0.1 % | 20.0 to 20.8 mA 5.0 to 5.2 V | | |
| | NAMUR | Down | -1.25 % to \pm 0.1 % | 3.8 to 4.0 mA 0.95 to 1.0 V | | |
| | | Up | 103.125 % \pm 0.1 % | 20.0 to 20.5 mA 5.0 to 5.125 V | | |
| Device malfunction indication | Down: less than | | - 1.25 % | 3.58 mA | | |
| | Up: greater than | | + 105 % | 21 mA | | |
| Maximum current | | | +111.25% | 21.8 mA | | |
| Multi-Drop current draw | | | | 4.0 mA | | |
| Lift-off voltage ** | | | | 10.8 V | | |

* Honeywell will offer the SMV800 HART® transmitter with NAMUR compliant analog outputs, in addition to the "Classic" levels traditionally featured in the product.

** For the Lightning protection option, add 1 Volt (internal added 50 Ohm impedance).

4.3 Local Interfaces, Jumpers and Switches

The SMV800 three-button option provides a user interface and operation without the use of the MC Toolkit. Figure shows the location of the three-button option and the labels for each button.

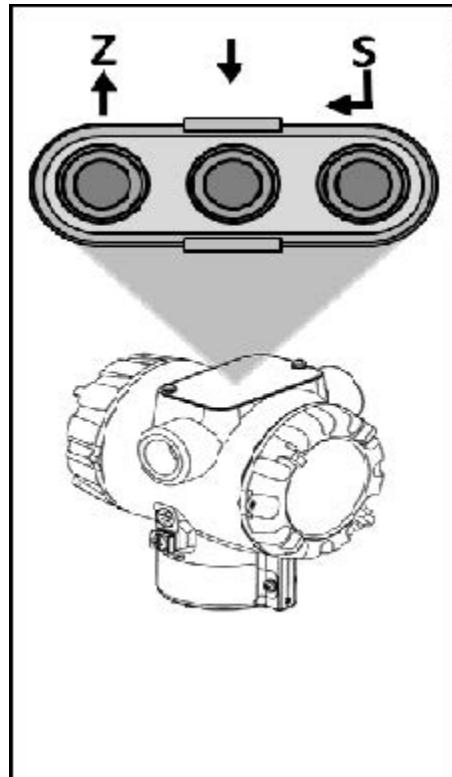


Figure 2: Three-Button Option

The functions of the three buttons are:

- Enter ($S\leftarrow$)
 - Enter the top level main menu from the normal PV display mode
 - Select a target to go down to the next menu level, up to the previous level or exit back to the PV display mode
 - Accept the current value of an entered parameter
- Down (\downarrow)
 - Advance to the next configured screen when in the normal PV display mode
 - Scroll down to the next item in a menu
 - Advance through a list of parameters for configuration
 - Advance through numerical values or alpha characters for data entry

- Up (Z↑)
 - Go back to the previous configured screen when in the normal PV display mode
 - Scroll up to the previous item in a menu
 - Go back through a list of parameters for configuration
 - Go back through numerical values or alpha characters for data entry

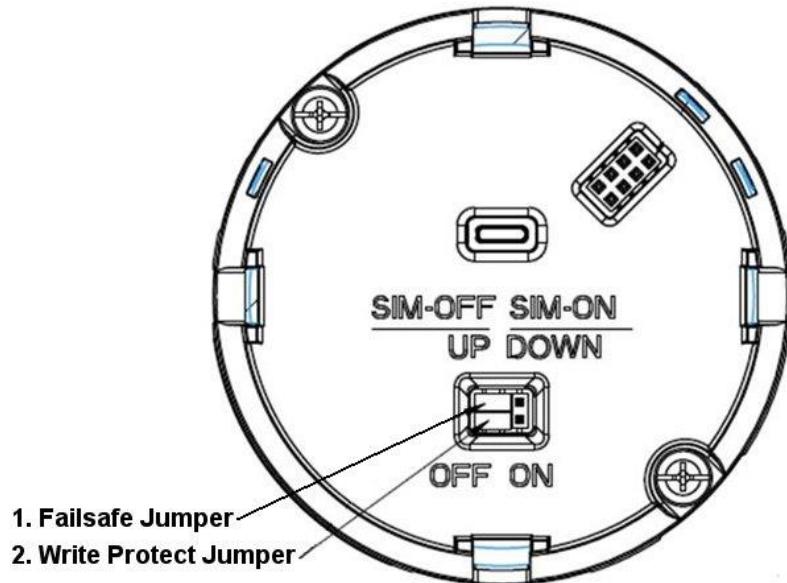


Figure 3: Locating the Failsafe Jumper

Device Malfunction

The direction of indication of a detected malfunction by the analog current output is user-selectable to up or down, by means of a two-position jumper inside the instrument. SMV800 transmitters are shipped with a default failsafe direction of upscale. This means that the transmitter's output will be driven upscale (maximum output) when the transmitter detects a critical status.

Write Protection

The SMV800 transmitters have a transmitter security option, also known as a “write protect option,” which is jumper-selectable. The jumper, located on the transmitter’s printed wiring assembly (PWA), can be positioned to allow read and write access or read only access to the transmitter’s configuration database. When the jumper is in the read only position, the transmitter’s configuration and calibration data can only be read / viewed. The factory-default jumper positions are for read and write access. The figure above shows the location of the write protect jumper on the PWA. The Write Protect hardware jumper is located on the HART® communications module. To access the write protect jumper the Display module, if present, must be removed. Also software write protect is available. Refer Common Practice command 175 & command 176. When the Device is in Hardware write protect (Jumper) then the software write protect functionality is inoperative.

4.4 Meter Display Options

The SMV800 Multivariable Transmitter offers only Advanced display; see Table 4.

Table 4: Available Display Characteristics

| | |
|------------------|--|
| Advanced Display | <ul style="list-style-type: none">• 360° rotation in 90° increments• Three (3) configurable screen formats with configurable rotation timing<ul style="list-style-type: none">◦ Large process variable (PV)◦ Small PV with bar graph◦ Small PV with trend (1-999 hours, configurable)• Eight (8) screens 3-30 seconds rotation timing• Standard and custom engineering units• Diagnostic alerts and diagnostic messaging• Multiple language support:<ul style="list-style-type: none">◦ English◦ French◦ German◦ Spanish◦ Russian◦ Chinese◦ Japanese◦ Turkish◦ Italian• out-of-range indication• Supports 3-button configuration, transmitter messaging, and maintenance mode indications |
|------------------|--|

5. Device Variables

The Device variables are listed below:

- DP: Differential Pressure
- SP: Static Pressure (Absolute or Gauge Pressure)
- PT: Process temperature
- Flow: Mass flow or Volume flow
- MBT: Meter body Temperature
- Totalizer: Totalizer for Mass flow or Volume flow

6. Dynamic Variables

Four Dynamic Variables are implemented.

Table 5: List of Dynamic Variables

| Process Variable | Meaning | Units |
|-------------------------|---|---|
| PV | Depends on Mapping. Only DP, SP, PT, Flow and Totalizer can be configured as PV | Depends on Mapping. refer to Table 13 for DP and SP refer to Table 12 for PT refer to Table 15 and 18 for Flow refer to Table 16 and Table 17 for Totalizer |
| SV | Depends on Mapping. DP, SP, PT, Flow, Totalizer and MBT can be configured as SV. | Depends on Mapping. refer to Table 13 for DP and SP refer to Table 12 for PT refer to Table 15 and 18 for Flow refer to Table 16 and Table 17 for Totalizer |
| TV | Depends on Mapping. DP, SP, PT, Flow, Totalizer and MBT can be configured as TV. | Depends on Mapping. refer to Table 13 for DP and SP refer to Table 12 for PT refer to Table 15 and 18 for Flow refer to Table 16 and Table 17 for Totalizer |
| QV | Depends on Mapping. DP, SP, PT, Flow, Totalizer and MBT can be configured as QV. | Depends on Mapping. refer to Table 13 for DP and SP refer to Table 12 for PT refer to Table 15 and 18 for Flow refer to Table 16 and Table 17 for Totalizer |

7. Status Information

7.1 Field Device Status

Many of the flags in the device status are further described by critical, non-critical, and informative flags in the additional status bytes described in section [7.3](#).

Table 6 Field Device Status

| Bit | Name | Use |
|-----|------------------------------------|---|
| 7 | Device Malfunction | This flag is set to "1" when any critical failure is detected. When a "Device Malfunction" is indicated, the "More Status Available" status flag is always asserted and further information is available in the manufacturer specific status bytes. The designation for critical status, and Honeywell's unique status bytes are described in section 7.3 . |
| 6 | Configuration Changed | Set when any parameter in the device configuration is changed. The flag will be reset when command 38 is received. |
| 5 | Cold Start | Set when power is first applied. The flag will also be set when the device is reset. |
| 4 | More Status Available | Set whenever any failure is detected. Command #48 gives further detail. (See section 7.3). |
| 3 | Loop Current Fixed | Set when the device is placed in fixed current mode (command 40). |
| 2 | Loop Current Saturated | Set if the primary variable is out of range. The measurement limits differ between the "classic" and "NAMUR" output options. This event does <i>not</i> set bit 7 ("Field Device Malfunction"). |
| 1 | Non-Primary Variable Out Of Limits | Set if the temperature calculated from the internal meter body temperature sensor is too high (greater than 125 degC for most transmitters). When this status is asserted, the "More Status Available" flag is also set, and the specific failure is indicated as "Sensor Over Temp" in the manufacturer specific status (see section 7.3). |
| 0 | Primary Variable Out of Limits | Set if the PV is greater than twice the Upper Range Limit (URL) of the device. When this status is asserted, the "More Status Available" flag is also set, and the specific failure is indicated as "Meter Body Overload" in the manufacturer specific status (see section 7.3). |

7.2 Extended Device Status

The Extended Device Status byte has the following flags:

Table 7: Extended Device Status

| Bit | Description | Use in Device |
|-----|-----------------------|---|
| 0 | Maintenance Required | Not Used |
| 1 | Device Variable Alert | Set when a critical or non-critical error (except "In Fixed Output Current Mode") associated with the PV has been detected (see section 7.3). |
| 2-7 | Undefined | |

7.3 Command #48 – Additional Field Device Status

Command #48 returns 9 bytes of data. The first 4 bytes contain device specific status as shown below. The Extended Device Status byte (byte 7) will be returned as defined above in section 7.2. All other bytes are unused, and will be returned as 0. The four detailed status bytes are divided by category of status: critical error and non-critical error. Byte 5th, 6th and 9th will be always zero. And byte 8th is for Device operating mode, its value will be always zero.

Table 8: Additional Field Device Status

| Status Type | Bit | Command 48 Status |
|---------------------------------|-----|--|
| Critical status (Byte 1) | 7 | Unused |
| | 6 | Unused |
| | 5 | Unused |
| | 4 | COMM Vcc fault |
| | 3 | Sensor failure |
| | 2 | Comm. Section failure |
| | 1 | Configuration corrupt |
| | 0 | Electronic Module DAC Failure |
| Non-Critical status (Byte 2) | 7 | No DAC Compensation |
| | 6 | No Factory Calibration |
| | 5 | PV Out of Range |
| | 4 | Fixed Current Mode |
| | 3 | Cold junction temperature out of range |
| | 2 | Sensing section non critical failure |
| | 1 | Comm. Section non critical failure |
| | 0 | Display Failure |

| | | |
|---|---|------------------------------------|
| Non-Critical status 2 (Byte 3) | 7 | Low Supply Voltage |
| | 6 | No DAC Calibration |
| | 5 | Tamper Alarm |
| | 4 | Unreliable sensor communication |
| | 3 | Loop current noise |
| | 2 | AO Out of Range |
| | 1 | URV Set Error - Span Config Button |
| | 0 | LRV Set Error - Zero Config Button |
| Non-Critical status 3 (Byte 4) | 7 | Flow Calculation Details |
| | 6 | Simulation Mode Status |
| | 5 | Sensor1 input out of range |
| | 4 | Sensor in low power mode |
| | 3 | Sensor1 input open |
| | 2 | Sensor over temperature |
| | 1 | Not Used |
| | 0 | Totalizer Reached Max. Value |
| Non-Critical Status 4 (Byte 5) | 1 | No Flow Output |
| | 0 | Totalizer mapped to PV and stopped |

All critical faults will be indicated to the user with bits 4 and 7 set in the Field Device Status byte of the response.

Some faults are cleared when the error condition is resolved, while all Critical Status faults require the device be power cycled.

8. Universal Commands

The transmitter supports version 7.x of the HART® protocol, thus each universal command is as specified in that standard. The following universal commands are provided by the device:

Table 9: Universal Commands

| Number | Name | Notes |
|--------|--|---|
| 0 | Read Unique Identifier | Returns unique identification for the device |
| 1 | Read Primary Variable | Returns PV value and its unit |
| 2 | Read Loop Current and Percent of Range | Returns AO value and % range |
| 3 | Read Dynamic Variables and Loop Current | Returns PV and SV, TV, QV values and corresponding unit values along with AO value |
| 6 | Write Polling Address | Changes device's polling address and loop current mode. |
| 7 | Read Loop Configuration | Returns polling address and loop current mode status. |
| 8 | Read Dynamic Variable Classifications | Returns dynamic variable classification. |
| 9 | Read Device Variables with Status | Returns dynamic variables PV, SV, TV & QV with status. |
| 11 | Read Unique Identifier Associated With Tag | Same response as command 0 |
| 12 | Read Message | Returns 24 bytes of packed ASCII data |
| 13 | Read Tag, Descriptor, Date | Returns tag, descriptor (packed ASCII format) and date from the device |
| 14 | Read Primary Variable Transducer Information | Returns transducer limits and span |
| 15 | Read Device Information | Returns burnout settings, PV unit value, LRV, URV, damping value and write protect code |
| 16 | Read Final Assembly Number | Returns final assembly number |
| 17 | Write Message | Write 24 bytes of packed ASCII data. |
| 18 | Write Tag, Descriptor, Date | Writes tag, descriptor (packed ASCII format) and date to the device |
| 19 | Write Final Assembly Number | Writes final assembly number to the device |
| 20 | Read Long Tag | Returns 32-byte Long Tag. |
| 21 | Read Unique Identifier | Returns unique identifier associated with Long Tag. |
| 22 | Write Long Tag | Writes Long Tag |
| 38 | Reset Configuration Changed Flag | Resets the configuration change flag |
| 48 | Read Additional Device Status | See section 11.2 for details. |

9. Common-Practice Commands

9.1 Supported Common Practice Commands

The following common-practice commands are implemented:

Table 10: Common Practice Commands

| Number | Name | Notes |
|--------|--|--|
| 33 | Read Device Variables | Will return Device Variable 0 = PV (Temperature), Device Variable 1 = SV (Cold Junction Temperature) , Device Variable 2 = TV (Sensor1 input temperature) and Device Variable 3 = QV (Sensor2 input temperature) when requested. |
| 34 | Write PV Damping Value | Accepts damping values between 0 and 102 seconds. |
| 35 | Write PV Range Values | Write PV LRV/URV values |
| 36 | Set PV Upper Range Value | Set current PV as URV. Adjusts the span accordingly. |
| 37 | Set PV Lower Range Value | Set current PV as LRV. Adjusts the span accordingly. |
| 40 | Enter/Exit Fixed Current Mode | Sets loop current to a fixed value. |
| 42 | Perform Device Reset | Resets the device |
| 44 | Write Primary Variable Units | Write PV units value |
| 45 | Trim Loop Current Zero | Trims loop current to 4mA |
| 46 | Trim Loop Current Gain | Trims loop current to 20mA |
| 47 | Write Transfer Function | Write Transfer Function (Supported for Differential Pressure only) |
| 50 | Read dynamic device variable assignment | Read PV, SV, TV, QV codes |
| 51 | Write dynamic device variable assignment | Write PV, SV, TV, QV codes |
| 53 | Write Device Variable Units | Writes Device Variable Units |
| 71 | Lock Device | This command locks a device preventing any changes being made from a local panel or from another master. |
| 76 | Read Lock Device status | This command reads the current state of lock device. |

9.2 Burst Mode

This Field Device does not support burst mode.

9.3 Catch Device Variable

This Field Device does not support Catch Device Variable.

10.Device-Specific Commands

Each device specific command is detailed below. Only the supported response codes are listed for a command.

Table 11: Device Specific Commands

| Number | Name | Notes | Command Scope (Pressure module, Temperature module or Device Level) |
|--------|--|--|--|
| 130 | Correct Sensor 1 Input to URV | It trims the Sensor 1 input to URV. | Temperature |
| 131 | Correct Sensor 1 Input to LRV | It trims the Sensor 1 input to LRV. | Temperature |
| 133 | Reset Corrects Sensor 1 | It resets all the user correct operations performed for sensor 1. | Temperature |
| 134 | Read transmitter specifics | Information about display | Device level command |
| 135 | Read sensor extra configuration | Reads the sensor configuration common to both sensors. | Temperature |
| 136 | Read sensor1 configuration | Reads the configuration specific to sensor1. | Temperature |
| 138 | Read URL1, LRL1 | Reads the range limits from sensor1 | Temperature |
| 139 | Read model number – Key Number and Table I | Reads 7 byte Key number, and Table I information. For factory use. | Device level command |
| 140 | Read model number – Table II | Reads Table II information. For factory use. | Device level command |
| 141 | Read model number – Table III | Reads Table III information. For factory use. | Device level command |
| 142 | Read time in service, service life remaining, percent time in stress | It reads Time in Service, Service life and % life in stress. | Device level command |
| 144 | Read last time and date for correct URV, correct LRV sensor 1 | Reads Calibration records sensor 1. | Temperature |
| 148 | Read power fail counter and its timestamp | The power fail count and Time stamp are read. | Device level command |
| 149 | Read Electronics Temperature and upper tracking parameters value | Electronics Temperature maximum tracking parameters. | Device level command |
| 150 | Read Electronics Temperature lower tracking parameters value | Electronics Temperature minimum tracking parameters. | Device level command |
| 155 | Read current and min operating voltage and its timestamp | Reads operating voltage and minimum Time stamp. | Device level command |

| | | | |
|------------|--|---|----------------------|
| 156 | Reset min terminal voltage and its time stamp | It resets the Operating Voltage records. | Device level command |
| 157 | Read M360 core temperature up tracking parameters | Reads M360 temp up tracking. | Temperature |
| 158 | Read M360 core temperature down tracking parameters | Reads M360 temp down tracking. | Temperature |
| 159 | Read AVDD max and time stamp | Read AVDD records and Time stamp. | Temperature |
| 160 | Read AVDD min and time stamp | Read AVDD records and Time stamp. | Temperature |
| 161 | Read sensors and transmitter install dates | Reads sensor1, sensor2 and transmitter installed date. | Temperature |
| 162 | Read sensor board stress monitor and sensor board service life | Reads sensor board Stress and service life. | Temperature |
| 163 | Write Temperature Terminal board install date to sensor | Writes transmitter install date to sensor. One time writable. | Temperature |
| 164 | Read Model Number –Table IV | Reads Table IV information. For factory use. | Device level command |
| 165 | Read Previous time and date for correct URV, correct LRV sensor 1 | Reads Calibration records Sensor 1. | Temperature |
| 166 | Read current time and date for correct URV, correct LRV sensor 1 | Reads Calibration records sensor 1. | Temperature |
| 167 | Read current, last and previous reset correct Time & Date sensor 1 | Reads Calibration records for sensor 1 Reset corrects. | Temperature |
| 173 | Write sensor1 bias value | Configures the senor1 bias value | Temperature |
| 175 | Read/Lock Write Protect Configuration | Soft Write protection | Device level command |
| 176 | Write/Change Write Protect Password | Changes the write Protect Password. | Device level command |
| 177 | Read Database ID | Reads Database ID for the requested config history code | Device level command |
| 178 | Read last 5 Configuration history | Enables to view the last 5 configuration history. | Device level command |
| 179 | Read UTL1, LTL1 | Reads the respective values | Temperature |
| 185 | Read CJ-UTL, CJ-LTL | Reads the respective values | Temperature |
| 186 | Read all sensor times in service | Reads Sensor, transmitter time in Service. | Temperature |
| 187 | Read HART-DE board firmware revision | It reads Communication board firmware rev. number. | Device level command |
| 188 | Read the loop control mode, loop controlling sensor | Reads the respective values | Device level command |

| | | | |
|------------|--|---|----------------------|
| 191 | Write Sensor type & Id | Configures the types and Id's of sensor. R100 release is supporting single input. | Temperature |
| 192 | Write PV high and low alarm limits | Configures PV high and low alarm limits needed for PV tracking | Temperature |
| 193 | Write RTD1 type | Configures the sensor 1 RTD type | Temperature |
| 197 | Write CJ compensation type | Configures the cold junction compensation state | Temperature |
| 198 | Write Break detect | Configures the break detect status | Temperature |
| 200 | Write Latching | Configures latching status | Temperature |
| 201 | Write match PV's | Configures PV matching status | Temperature |
| 202 | Write fixed CJ compensation | Configures the Cold Junction compensation value | Temperature |
| 203 | Write RTD1 lead wire resistance | Configures the sensor 1 RTD resistance | Temperature |
| 210 | Write Display Common Configuration | Writes Displays common features like Rotation time and Contrast. | Device level command |
| 211 | Read Display Common Setup | Reads the display set-up. | Device level command |
| 212 | Read Display Firmware Version | Reads Display Firmware Version. | Device level command |
| 213 | Read Error log Part 1 | Reads the latest 5 errors | Device level command |
| 214 | Read Error log Part 2 | Reads the oldest 5 errors | Device level command |
| 215 | Reset Error Log | Resets the errors logged | Device level command |
| 216 | Read Error Logging Status | Reads the error logging status | Device level command |
| 217 | Write Error Logging Status | Configures the error logging status | Device level command |
| 218 | Read Highest Value, Lowest Value, Time stamp, High alarm limit, Low alarm limit, Counters for PV | Reads the PV tracking values | Device level command |
| 219 | Read SV up racking values | Reads SV up racking values | Temperature |
| 220 | Read additional status | It reads the Device status in Detail. | Device level command |
| 221 | Set Date/Time for calibration | Before Calibration it is compulsory to enter the Time and Date. | Device level command |
| 222 | Temperature Sensor f/w read | Reads Sensor Firmware version | Temperature |

| | | | |
|--------------|--|--|----------------------|
| 228 | Read the state of “Available for maintenance” flag | Reads the status of “Available for Maintenance” Flag | Device level command |
| 229 | Enable “Available for maintenance” message | Enables the flag. | Device level command |
| 230 | Read the Tamper configuration | Reads the tamper configuration | Device level command |
| 231 | Write tamper configuration | Writes the tamper configuration. | Device level command |
| 232 | Reset recorded tamper attempts | It resets the Tamper attempts recorded. | Device level command |
| 240 | Reset PT Tracking values | Resets the PV tracking values. | Temperature |
| 247 | Read SV down racking values | Reads SV down racking values | Temperature |
| 64768 | Write View configuration I | Writes display screen configuration part 1 | Device level command |
| 64769 | Write View configuration II | Writes display screen configuration part 2 | Device level command |
| 64770 | Write View configuration IV (Custom tag) | Writes display screen configuration part 3 | Device level command |
| 64771 | Read View configuration I | Reads display screen configuration part 1 | Device level command |
| 64772 | Read View configuration II | Reads display screen configuration part 2 | Device level command |
| 64773 | Read View configuration IV (Custom Tag) | Reads display screen configuration part 3 | Device level command |
| 64790 | Write upper calibration point sensor1 | Sensor1 upper calibration point write | Temperature |
| 64791 | Write lower calibration point sensor1 | Sensor1 lower calibration point write | Temperature |
| 64794 | Read calibration points sensor 1 | Read sensor1 calibration points | Temperature |
| 64807 | Read sensor ET up tracking values | Read sensor electronics temperature up tracking values | Temperature |
| 64808 | Read sensor ET down tracking values | Read sensor electronics temperature down tracking values | Temperature |
| 64809 | Read SHM1 ohms, M360 Core Temp Delta | Read SHM1 ohms, SHM2 ohms, M360 Core Temp Delta | Temperature |
| 64811 | Write Sensor1 install date | | Temperature |
| 64813 | Reset CJ Tracking values | Reset Cold Junction temperature tracking values | Temperature |
| 64814 | Acknowledge Latching | Acknowledge the sensor errors | Temperature |
| 64815 | Write Sensor Scratch pad | Writes 32 bytes | Device level command |
| 64816 | Read Sensor scratch pad | Reads 32 bytes | Device level command |

| | | | |
|--------------|--|--|----------------------|
| 64817 | Write output level selection | It writes output level selection | Device level command |
| 64818 | Read Namur selection | It reads Namur selection | Device level command |
| 64822 | Read Flow Cutoff Low & High Limit | It reads Flow Cutoff Low & High Limit | Pressure |
| 64823 | Wire Flow Cutoff Low & High Limit | It writes Flow Cutoff Low & High Limit | Pressure |
| 64824 | Read SP URV during factory A calibration SP LRV during factory A calibration SP URV during factory B calibration | It reads SP URV during factory A calibration SP LRV during factory A calibration SP URV during factory B calibration SP URV during factory B calibration | Pressure |
| 64825 | Read SP LRV during factory B calibration SP URV during factory C calibration SP LRV during factory C calibration | It reads SP LRV during factory B calibration SP URV during factory C calibration SP LRV during factory C calibration | Pressure |
| 64826 | Read Selected and Available Calibration Sets | It reads Active calibration selected by user and available calibration sets for SP | Pressure |
| 64827 | Write Selected and Available Calibration Sets | It writes Active calibration selected by user and available calibration sets for SP | Pressure |
| 64831 | Write Upper Sensor Trim Point (Correct URV) | It trims the PV to URV. | Pressure |
| 64832 | Write Lower Sensor Trim Point (Correct LRV) | It trims the PV to LRV. | Pressure |
| 64833 | Reset Corrects | It resets all the user correct operations performed. | Pressure |
| 64834 | Read transmitter specifics | It reads 13 digit Meter-body bar code and display information | Pressure |
| 64835 | Read Primary Variable Sensor Information | It reads DP URL and LRL values | Pressure |
| 64836 | Read Alternate filter selection parameter | Reads alternate filter parameters. | Pressure |
| 64837 | Read last time and date for correct URV, correct LRV and zero trim. | Reads Calibration records. | Pressure |
| 64838 | Read filter selection | Reads filter parameters. | Pressure |
| 64839 | Write filter selection | Write filter parameters. | Pressure |

| | | | |
|--------------|---|---|----------|
| 64841 | Read differential PV UP tracking parameters | Reads PV maximum tracking. | Pressure |
| 64842 | Read Meter Body Temperature upper tracking parameters | Reads Meter Body Temperature tracking (maximum) | Pressure |
| 64843 | Read Meter Body Temperature lower tracking parameters | Reads Meter Body Temperature tracking (minimum) | Pressure |
| 64844 | Read Static Pressure and its tracking parameters | Reads Static Pressure tracking | Pressure |
| 64845 | Read M360 core temperature up tracking parameters | Reads M360 temp up tracking. | Pressure |
| 64846 | Read M360 core temperature down tracking parameters | Reads M360 temp down tracking. | Pressure |
| 64847 | Read AVDD max and time stamp | Read AVDD records and Time stamp. | Pressure |
| 64848 | Read AVDD min and time stamp | Read AVDD records and Time stamp. | Pressure |
| 64849 | Read sensor install date and time in service | Reads sensor installed date. | Pressure |
| 64850 | Read MB stress monitor and MB service life | Reads MB Stress and service life. | Pressure |
| 64851 | Write install date to sensor | Writes Pressure Sensor install date. One time writable. | Pressure |
| 64852 | Read Previous time and date for correct URV, correct LRV, zero trim | Reads Calibration records. | Pressure |
| 64853 | Read current time and date for correct URV, correct LRV, zero trim | Reads Calibration records. | Pressure |
| 64854 | Read current, last and previous reset correct Time & Date | Read Calibration records for Reset correct. | Pressure |
| 64855 | Read differential PV Down tracking parameters | Reads PV down tracking. | Pressure |
| 64868 | Read low flow cutoff mode | Reads Method selected for Low Flow cut-off. | Pressure |
| 64869 | Read sensor time in service | Reads Sensor time in Service. | Pressure |
| 64871 | Sensor f/w read | Reads Sensor Firmware version | Pressure |
| 64872 | Read flow value | Read the % flow value. | Pressure |
| 64873 | Low flow cutoff method selection | Selects the method for Low flow cutoff. | Pressure |
| 64874 | Read user breakpoint | It reads the user break point for method 1 selected. | Pressure |
| 64875 | Write user breakpoint in % flow | It writes the user break point for method 1 selected. | Pressure |

| | | | |
|--------------|--|--|-----------------------------|
| 64882 | Read available options for pay for play | Read 32 bit value | Device level command |
| 64883 | Write License Key for pay for play | It writes the License Key for pay-for-play | Device level command |
| 64895 | Read Calibrated LRV at B, URV at C, LRV at C Set Points | It reads Calibrated LRV at B, URV at C, LRV at C Set Points | Pressure |
| 64896 | Read Calibrated URV at A, LRV at A, URV at B Set Points | It reads Calibrated URV at A, LRV at A, URV at B Set Points | Pressure |
| 64897 | Read Selected and Available Calibration Sets for DP | Read Active calibration selected by user and available calibration sets for DP | Pressure |
| 64898 | Write Calibration Set Selection for DP | Select required calibration set from available calibrations for DP | Pressure |
| 64899 | Read Units conversion factor, Pipe diameter, Bore diameter | | Device level command (Flow) |
| 64900 | Read Pipe diam meas temperature, Bore diam meas temperature, Pipe thermal expansion coeff | | Device level command (Flow) |
| 64901 | Read Bore thermal expansion coeff, Discharge Coefficients (r1), Low limit for Reynolds Number | | Device level command (Flow) |
| 64902 | Read High limit for Reynolds Number, Viscosity polynomial coefficients (v1), Lower Temp Limit Viscosity | | Device level command (Flow) |
| 64903 | Read Upper Temp Limit Viscosity, Isentropic coefficient, Local Atmosphere Pressure | | Device level command (Flow) |
| 64904 | Read Manually Input Density Value, Manually Input Viscosity Value, Manually Input Discharge Coeff | | Device level command (Flow) |
| 64905 | Read Manually Input Expan Factor, Manually Input Temp Exp Fact, Density polynomial coefficients (d1) | | Device level command (Flow) |

| | | | |
|--------------|--|--|--------------------------------|
| 64906 | Read Lower Limit Density polynomial, Upper Limit Density polynomial, Nominal temperature | | Device level command (Flow) |
| 64907 | Read Nominal absolute pressure, Nominal differential pressure, Base Density | | Device level command (Flow) |
| 64908 | Read Design Pressure, Design Temperature, Design Density | | Device level command (Flow) |
| 64909 | Read Super Compressed Factor, Gas compressibility, Specific Gravity of Ideal Gas | | Device level command (Flow) |
| 64910 | Read Max flow rate on Sizing of Vcone, Maximum DP on Sizing for Vcone, Pipe Roughness for Gost or Beta | | Device level command (Flow) |
| 64911 | Read Max flow rate on Sizing of Vcone, Maximum DP on Sizing for Vcone, Pipe Roughness for Gost or Beta | | Device level command (Flow) |
| 64912 | Read Flow Calculation Standard/ Discharge Exponent, Manual Input Switch/Compensation Switch, Primary Element Type and SubType, Fluid Type | | Device level command (Flow) |
| 64913 | Read Algorithms Type, Pipe Material, Bore Material, PV Simulation and Failsafe Switch | | Device level command (Flow) |
| 64914 | Read Value substituted for PV1, Value substituted for PV2 | | Device level command (Flow) |

| | | | |
|--------------|--|--|--------------------------------|
| 64915 | Read Value substituted for PV3, Value substituted for PV4 | | Device level command (Flow) |
| 64916 | Write Units conversion factor | | Device level command (Flow) |
| 64917 | Write Pipe diameter Pipe diam meas temperature Pipe thermal expansion coeff | | Device level command (Flow) |
| 64918 | Write Bore diameter Bore diam meas temperature Bore thermal expansion coeff | | Device level command (Flow) |
| 64919 | Write Discharge Coefficients (r1) Discharge Coefficients (r2) | | Device level command (Flow) |
| 64920 | Write Low limit for Reynolds Number High limit for Reynolds Number | | Device level command (Flow) |
| 64921 | Write Viscosity polynomial coefficients (v1) Viscosity polynomial coefficients (v2) Viscosity polynomial coefficients (v2) | | Device level command (Flow) |
| 64922 | Write Viscosity polynomial coefficients (v4) Viscosity polynomial coefficients (v5) | | Device level command (Flow) |
| 64923 | Write Lower Temp Limit Viscosity Upper Temp Limit Viscosity | | Device level command (Flow) |
| 64924 | Write Isentropic coefficient Local Atmosphere Pressure Base Density | | Device level command (Flow) |
| 64925 | Write Manually Input Density Value Manually Input Viscosity Value Manually Input Discharge Coeff | | Device level command (Flow) |
| 64926 | Write Manually Input Exp Factor Manually Input Temp Expan Fact | | Device level command (Flow) |

| | | | |
|--------------|--|--|---|
| 64927 | Write Density polynomial coefficients (d1) Density polynomial coefficients (d2) Density polynomial coefficients (d3) | | Device level command (Flow) |
| 64928 | Write Density polynomial coefficients (d4) Density polynomial coefficients (d5) | | Device level command (Flow) |
| 64929 | Write Lower Limit Density polynomial Upper Limit Density polynomial | | Device level command (Flow) |
| 64930 | Write Nominal temperature Nominal absolute pressure Nominal differential pressure | | Device level command (Flow) |
| 64931 | Write Design Pressure Design Temperature Design Density | | Device level command (Flow) |
| 64932 | Write Super Compressibility Factor Gas compressibility Specific Gravity of Ideal Gas | | Device level command (Flow) (COMM firmware supports, but command will not be sent from host) |
| 64933 | Write Max flow rate on Sizing of Vcone Maximum DP on Sizing for Vcone | | Device level command (Flow) |
| 64934 | Write Pipe Roughness for Gost or Beta Initial Radius Inter Control Interval | | Device level command (Flow) |
| 64954 | Write Flow Calculation Standard Discharge Exponent | | Device level command (Flow) |
| 64935 | Write custom Unit parameters and DTM parameters. | | Device level command (Flow) |

| | | | |
|--------------|--|-------------------------------|-----------------------------|
| 64936 | Read custom Unit parameters and DTM parameters | | Device level command (Flow) |
| 64939 | Read Serial Number from EEPROM | | Device level command |
| 64955 | Write Manual Input Switch Compensation Switch | | Device level command (Flow) |
| 64956 | Write Primary Element Type and SubType | | Device level command (Flow) |
| 64957 | Write Fluid Type | | Device level command (Flow) |
| 64958 | Write Algorithms Type | | Device level command (Flow) |
| 64959 | Write Pipe Material Bore Material | | Device level command (Flow) |
| 64961 | Write PV Simulation and Failsafe Switch | | Device level command (Flow) |
| 64962 | Write Simulate PV1 | | Device level command (Flow) |
| 64963 | Write Simulate PV2 | | Device level command (Flow) |
| 64964 | Write Simulate PV3 | | Device level command (Flow) |
| 64965 | Write Simulate PV4 | | Device level command (Flow) |
| 64966 | Write View configuration III (Custom Units) | Write 18 bytes of custom unit | Device level command (Flow) |
| 64967 | Read View configuration III (Custom Units) | Read 18 bytes of custom unit | Device level command (Flow) |
| 64968 | Write Differential Pressure Range Values | | Pressure |
| 64969 | Write Static Pressure Range Values | | Pressure |
| 64970 | Write Process Temperature Range Values | | Temperature |

| | | | |
|--------------|---|-------------------------|-----------------------------|
| 64971 | Write Flow Range Values | | Device level command (Flow) |
| 64972 | Read DP, SP, Temp, Flow, MBT Range Values | Read 10 float value | Device level command |
| 64975 | Read Unit Codes for DP, SP, Process Temp, Flow, and MBT | Read 6 char value | Device level command |
| 64978 | Read DP, SP, Temp, Flow , MBT Limit Values | Read 10 float value | Device level command |
| 64979 | Write damping Values for DP | | Device level command |
| 64980 | Write damping Values for SP | | Device level command |
| 64981 | Write damping Values for PT | | Device level command |
| 64982 | Write damping Values for Flow | | Device level command |
| 64983 | Write damping Values for MBT | | Device level command |
| 64984 | Read DP, SP, Temp, Flow , MBT damping Values | Read 5 float value | Device level command |
| 64989 | Read DP, SP, PT, Flow, MBT, and CJT Process Values | Read 6 float value | Device level command |
| 64990 | Write Flow Upper Range Limit (customer entry) URL | | Device level command |
| 65000 | Read Discharge Coefficients (r2), Viscosity polynomial coefficients (v2), Viscosity polynomial coefficients (v3) | | Device level command (Flow) |
| 65001 | Read Viscosity polynomial coefficients (v4), Viscosity polynomial coefficients (v5), Density polynomial coefficients (d2) | | Device level command (Flow) |
| 65002 | Read Density polynomial coefficients (d3), Density polynomial coefficients (d4), Density polynomial coefficients (d5) | | Device level command (Flow) |
| 65009 | SP Write Upper Sensor Trim Point (Correct URV) | It trims the SP to URV. | Pressure |

| | | | |
|--------------|---|--|-----------------------------|
| 65010 | SP Write Lower Sensor Trim Point (Correct LRV) | It trims the SP to LRV. | Pressure |
| 65011 | SP Reset Corrects | It resets all the user correct operations performed. | Pressure |
| 65012 | Read Max Flow Rate and Max DP for Mass and Volume Flow | | Device level command (Flow) |
| 65013 | Write Max Flow Rate and Max DP for Mass and Volume Flow | | Device level command (Flow) |
| 65014 | Static Pressure Read last T&D for correct URV, correct LRV, zero trim | Reads SP Calibration records. | Pressure |
| 65015 | Static Pressure Read Previous T&D for correct URV, correct LRV, zero trim | Reads SP Calibration records. | Pressure |
| 65016 | Static Pressure Read current T&D for correct URV, correct LRV, zero trim | Reads SP Calibration records. | Pressure |
| 65017 | Static Pressure Read current, last and previous reset correct T&D | Reads SP reset corrects records | Pressure |
| 65018 | Differential Pressure Set PV Zero | | Pressure |
| 65019 | Static Pressure Set PV Zero | | Pressure |

10.1 Command #130: Correct Sensor 1 Input to URV

This command performs a calibration trim for the sensor1. The calibration temperature applied to the transmitter is received with this command and the transmitter trims the sensor1 calibration so that its output equals the applied value.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Passed parameter too large |
| 4 | Error | Passed parameter too small |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 9 | Error | Applied Process too High |
| 10 | Error | Applied process too low |
| 16 | Error | Access restricted |
| 20 | Error | Excess span corrects |
| 32 | Error | Busy |

10.2 Command #131: Correct Sensor 1 Input to LRV

This command performs a calibration trim for the sensor1. The calibration temperature applied to the transmitter is received with this command and the PV is calibrated to the applied LRV input.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Passed parameter too large |
| 4 | Error | Passed parameter too small |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 9 | Error | Applied Process too High |
| 10 | Error | Applied process too low |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.3 Command #133: Reset Corrects sensor 1

This command removes the calibration of sensor 1 and returns the performance to factory calibration. This function is useful as a diagnostic tool to get an indication of characterization performance.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.4 Command #134: Read Transmitter Specifics

The command reads the display information.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|---------------|---|
| 0 | Unsigned Char | Device type |
| 1 | Enum | meter connected flag 00: Not Connected 01: Connected |
| 2 | Enum | meter type 01: Advanced display 02: Basic display |
| 3 | Enum | Language pack 00 : English 01 : Western languages (for advanced display type ,) 02 : Eastern languages (for advanced display type ,) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.5 Command #135: Read sensors extra configuration

The command is used to read configurable sensor parameters common to both sensors.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0-3 | Float | Mid range Value (MRV) |
| 4 | Enum | Break detect status 0x00 = OFF, 0x01 = ON |
| 5 | Enum | Cold Junction compensation type 0x00 = Internal, 0x01 = External, 0x02 = Fixed |
| 6 | Enum | Match PV status 0x00 = OFF, 0x01 = ON |
| 7 | Enum | Latching status 0x00 = OFF, 0x01 = ON |
| 8-11 | Float | Fixed cold junction compensation value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.6 Command #136: Read sensor1 configuration

This command reads the sensor 1 configuration parameters.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|--|
| 0 | Enum | Sensor 1 type 0 = MV, 1 = TC, 2 = RTD, 3 = OHMS |
| 1 | Enum | Sensor Id (0 = MV, 1 = MV1, 2 = TC Type E, 3 = TC Type J, 4 = TC Type K, 5 = TC Type N, 6 = TC Type T, 7 = TC Type S, 8 = TC Type R, 9 = TC Type B, 10 = RTD Pt 25, 11 = RTD Pt 100, 12 = RTD Pt 200, 13 = RTD Pt 500, 14 = RTD Pt 1000, 15 = OHM 500, 16 = OHM 2K, 17 = OHM 3K) |
| 2 | Enum | RTD1 type (0 = 2wire, 1 = 3wire, 2 = 4wire) |
| 3-6 | Float | RTD1 lead wire resistance |
| 7-10 | Float | Sensor 1 Bias value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.7 Command #138: Read URL1, LRL1

The command reads range limits of sensor 1.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|----------------------------|
| 0-3 | Float | Upper Range Limit sensor 1 |
| 4-8 | Float | Lower Range Limit Sensor 1 |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.8 Command #139: Read Model Number – Key Number, Table I

This command reads the 7 byte key number and 20 byte Table 1 information.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------------|---------------------|
| 0-6 | Ascii String | key number |
| 7-26 | Ascii String | Table 1 information |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.9 Command #140: Read Model Number – Table II

This command reads Model number Table II information.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------------|----------------------|
| 0-19 | Ascii String | Table II information |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.10 Command #141: Read Model Number –Table III

This command reads Model number Table III information.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------------|-----------------------|
| 0-19 | Ascii String | Table III information |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.11 Command #142: Read time in service, percent time in stress, service life remaining

This command reads time in service, percent time in stress, service life remaining for the transmitter.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|------------------------|
| 0-3 | Unsigned-32 | Time in Service |
| 4-7 | Float | Percent Time in stress |
| 8-11 | Float | Service Life remaining |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.12 Command #144: Read last Time & Date for correct URV, correct LRV for Sensor 1

This command reads Last Time and Dates for correct URV, correct LRV of sensor 1

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0-4 | Enum | last correct URV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 5-9 | Enum | last correct LRV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| | | |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.13 Command #148: Read power fail counter and its timestamp

This command reads the power fail counter and its time stamp.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|------------------|
| 0-1 | Unsigned-16 | Power fail count |
| 2-5 | Unsigned-32 | Time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.14 Command #149: Read ET and electronics temperature tracking values.

This command reads electronics temperature and electronics temperature tracking values.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|------------------|
| 0-3 | Float | ET value |
| 4-7 | Float | ET max limit |
| 8-11 | Float | max value |
| 12-15 | Unsigned-32 | max time counter |
| 16-19 | Unsigned-32 | max time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.15 Command #150: Read ET lower tracking parameters

This command reads ET lower tracking parameters.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|------------------|
| 0-3 | Float | ET min limit |
| 4-7 | Float | min value |
| 8-11 | Unsigned-32 | min time counter |
| 12-15 | Unsigned-32 | min time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.16 Command #155: Read current, minimum operating voltage and its timestamp

This command reads current, minimum operating voltage and its timestamp.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|-------------------------|
| 0-3 | Float | Vloop current value(4), |
| 4-7 | Float | VLOOP min value(4), |
| 8-11 | Unsigned-32 | Vloop min time stamp(4) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.17 Command #156: Reset min terminal voltage and its time stamp

This command Resets min terminal voltage and its time stamp.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |
| 32 | Error | Busy |

10.18 Command #157: Read M360 core temperature up tracking parameters

This command reads the M360 (Sensor's Microprocessor) core temperature up tracking parameters.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | | Format | Description |
|------|--|-------------|--------------------|
| 0-3 | | Float | M360 core temp max |
| 4-7 | | Unsigned-32 | max accumulator |
| 8-11 | | Unsigned-32 | max time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.19 Command #158: Read M360 core temperature down tracking parameters

This command reads the M360 core temperature down tracking parameters.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--------------------|
| 0-3 | Float | M360 core temp min |
| 4-7 | unsigned-32 | min accumulator |
| 8-11 | Unsigned-32 | min time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.20 Command #159: Read AVDD max and time stamp

This command reads the AVDD max and time stamp.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------|
| 0-3 | Float | AVDD max |
| 4-7 | Unsigned-32 | max time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.21 Command #160: Read AVDD min and time stamp

This command reads the AVDD min and time stamp.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------|
| 0-3 | Float | AVDD min |
| 4-7 | Unsigned-32 | min time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.22 Command #161: Read sensors and transmitter install dates

This command reads the sensor install dates. Sensor2 installed date is not applicable in this release.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---------------------|
| 0 | Enum | Date, sensor 1 |
| 1 | Enum | Month, sensor 1 |
| 2 | Enum | Year, sensor 1 |
| 3 | Enum | Hour, sensor 1 |
| 4 | Enum | Minute, sensor 1 |
| 5 | Enum | Date, sensor 2 |
| 6 | Enum | Month, sensor 2 |
| 7 | Enum | Year, sensor 2 |
| 8 | Enum | Hour, sensor 2 |
| 9 | Enum | Minute, sensor 2 |
| 10 | Enum | Date, Transmitter |
| 11 | Enum | Month, Transmitter |
| 12 | Enum | Year, Transmitter |
| 13 | Enum | Hour, Transmitter |
| 14 | Enum | Minute, Transmitter |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.23 Command #162: Read sensor board stress monitor and sensor board service life

This command reads the sensor stress monitor and sensor service life.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-----------------------|
| 0-3 | Float | sensor stress monitor |
| 4-7 | Float | Sensor service life |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.24 Command #163: Write Temperature Terminal board install date to sensor

This command writes transmitter install date to sensor.

Request Data Bytes

| Byte | Format | Description |
|------|--------|--------------------|
| 0 | Enum | Date, Transmitter |
| 1 | Enum | Month, Transmitter |
| 2 | Enum | Year, Transmitter |

Response Data Bytes

| Byte | Format | Description |
|------|--------|--------------------|
| 0 | Enum | Date, Transmitter |
| 1 | Enum | Month, Transmitter |
| 2 | Enum | Year, Transmitter |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In write protect mode |
| 16 | Error | Access Restricted |

10.25 Command #164: Read Model Number –Table IV

This command reads the 20 byte Model Number –Table IV

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------------|------------------------------------|
| 0-19 | Ascii String | Model Number –Table IV Information |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.26 Command #165: Read Previous Time & Date for correct URV, correct LRV sensor 1

This command reads Previous Time and Dates for correct URV, correct LRV for sensor 1

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0-4 | Enum | Previous correct URV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 5-9 | Enum | Previous correct LRV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| | | |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.27 Command #166: Read current Time & Date for correct URV, correct LRV sensor 1

This command reads Current Time and Dates for correct URV, correct LRV For sensor 1.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|--|
| 0-4 | Enum | Current correct URV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 5-9 | Enum | Current correct LRV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| | | |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.28 Command #167: Read current, last and previous reset correct Time & Date sensor 1

This command reads the current, last and previous reset correct T&D for sensor 1

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|-------|--------|---|
| 0-4 | Enum | Read current reset correct T&D(DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 5-9 | Enum | Read last reset correct T&D(DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 10-14 | Enum | Read previous reset correct T&D(DD 1 MM 1 YY 1 HR 1 MIN 1) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.29 Command #173: Write sensor1 bias value

This command configures the sensor1 bias value

Request Data Bytes

| Byte | Format | Description |
|------|--------|---------------------|
| 0-3 | Float | Sensor 1 bias value |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---------------------|
| 0-3 | Float | Sensor 1 bias value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.30 Command #175: Read/Lock Write Protect Configuration

This command reads or Locks Write Protect Configuration based on selection.

Request Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | 0x01 – Enable WP 0x02 – Read WP status |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-----------------------------------|
| 0 | Enum | 0x00 – Disabled 0x01 – Enabled |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too Few Data Bytes Received |
| 7 | Error | Transmitter In Write Protect Mode |
| 16 | Error | Access Denied |
| 32 | Error | Busy |

10.31 Command #176: Write/Change Write Protect Password

This command is used to Write/Change Write Protect Password.

Request Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Disable WP(0x00) / Change(0x03) |
| 1-4 | ASCII | “Current Password” for Disable WP command (Or) “New Password” for Change command |
| 5-8 | ASCII | Current password (field valid only for password change command) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-----------------------------|
| 0 | Enum | Unlock(0x00) / Change(0x03) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too Few Data Bytes Received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | Transmitter In Write Protect Mode |
| 16 | Error | Access Denied |
| 32 | Error | Busy |

10.32 Command #177: Read Database ID

This command provides a Database ID for the requested configuration history code.

Request Data Bytes

| Byte | Format | Description |
|------|--------|--|
| 0 | Enum | 01 This is request byte to read latest parameter) 02:- (This is request byte to read second last parameter written) 03:- (This is request byte to read third last parameter written) 04:- (This is request byte to read forth last parameter written) 05:- (This is request byte to read fifth last parameter written) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|--|
| 0 | Enum | Database ID of the parameter for which we have made request When no record is present, database ID returned will be 0xFF. |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too Few Data Bytes Received |

Database Id's:

1. NVM database version - 0
2. HART/DE selection -1
3. Crc of common data block - 2
4. Conformity - 3
5. Loop current 4mA - 4
6. Loop current 20mA - 5
7. Damping - 6
8. Polling address & Loop Current Mode - 7
9. Namur - 8
10. Pv Units - 9
11. Sv Units - 10

12. Device number identifier - 11
13. User break point -12
14. Cutoff method - 13
15. Lock device configuration - 14
16. Final assembly number - 15
17. Software write protect - 16
18. User password -17
19. Master password -18
20. Tag, descriptor & date -19
21. Tag -20
22. Message -21
23. Message1 -22
24. Message2 - 23
25. Message3 - 24
26. Message4 - 25
27. Long tag - 26
28. Basic database MX - 27
29. Extended database UT - 28
30. Digital database byte1 -29
31. Broadcast selection - 30
32. Tamper mode configuration - 31
33. Hysteresis band -32
34. Damping for bump less transfer -33
35. Loop control mode, Excess delta detect status, URV, LRV, MRV, Delta Limit-34
36. Excess delta detect status - 35
37. Delta limit -36
38. Error logging status -37
39. URV, LRV, MRV, DeltaLimit -38

- 40. Mrv - 39
- 41. Loop current mode - 40
- 42. Polling address - 41
- 43. Date - 42
- 44. High and Low Alarm Limits – 43
- 45. Sensor Scratch Pad -- 44
- 46. Flow Damping -- 45
- 47. Device Variable Units -- 46
- 48. Dynamic PV Code --- 47
- 49. Damping Values – 48
- 50. Flow Cutoff Limits -- 49
- 51. Pay-for-play option -- 50

10.33 Command #178: Read Configuration history

This command provides a history of the last 5 Configuration changes.

Request Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | 01:- (This is request byte to read latest parameter) 02:- (This is request byte to read second last parameter written) 03:- (This is request byte to read third last parameter written) 04:- (This is request byte to read forth last parameter written) 05:- (This is request byte to read fifth last parameter written) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|--|
| 0 | Enum | Database ID of the parameter for which we have made request When no record is present, database ID returned will be 0xFF. |
| 1-32 | Enum | Value of the parameter for which we have made request We will get number of bytes = size of parameter Eg, If PV unit is of size 2 byte so we will get 2 bytes rest 3-32 bytes will be garbage. Rest bytes will be garbage data When no record is present, it will return 32 garbage bytes. |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too Few Data Bytes Received |

10.34 Command #179: Read UTL1, LTL1

The command reads the transducer limits sensor1 upper limit, sensor1 lower limit.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---------------------------------|
| 0-3 | Float | Upper Transducer Limit sensor 1 |
| 4-7 | Float | Lower Transducer Limit Sensor 1 |
| 8-11 | Float | Reserved |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.35 Command #185: Read CJ-UTL, CJ-LL

The command reads the transducer limits sensor2 lower limit and cold junction upper and lower limits.

Sensor2 lower limit is to be ignored.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---------------------------|
| 0-3 | Float | Reserved |
| 4-7 | Float | Cold Junction upper Limit |
| 8-11 | Float | Cold Junction lower Limit |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.36 Command #186: Read all sensor times in service

This command reads the Sensor Times in Service.

Sensor2 Time in Service is to be ignored.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|-----------------------------|
| 0-3 | Unsigned-32 | Sensor1 Time in Service |
| 4-7 | Unsigned-32 | Reserved |
| 8-11 | Unsigned-32 | Transmitter Time in Service |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.37 Command #187: Read HART-DE board firmware revision

This command reads the HART-DE board firmware revision.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|------------------|
| 0-7 | ASCII | Firmware version |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.38 Command #188: Read the loop control mode, loop controlling sensor

Reads the HART® communication board parameters loop control mode, loop controlling sensor

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Loop control mode 0x02: Sensor |
| 1 | Enum | Loop controlling PV 0x04: Single Input |
| 2-5 | Float | Reserved |
| 6-9 | Float | Reserved |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

Command #191: Write sensor1 type

This command configures the types and Id's of sensor1 and sensor2.

Request Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Sensor 1 type (1 = TC, 2 = RTD,) |
| 1 | Enum | Sensor 1 Id (if sensor1 type is TC then 0 = TC Type E, 1 = TC Type J, 2 = TC Type K, 3 = TC Type N, 4 = TC Type T, 5 = TC Type S, 6 = TC Type R, 7 = TC Type B, 8 = TC Type C (W5W26), if sensor1 type is RTD then 0 = RTD Pt 25, 1 = RTD Pt 100, 2 = RTD Pt 200, 3 = RTD Pt 500, 4 = RTD Pt 1000,) |
| 2 | Enum | Reserved |
| 3 | Enum | Reserved |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---------------|
| 0 | Enum | Sensor 1 type |
| 1 | Enum | Sensor 1 Id |
| 2 | Enum | Reserved |
| 3 | Enum | Reserved |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.39 Command #192: Write PV high and low alarm limits

This command configures the PV high and low alarm limits.

Request Data Bytes

| Byte | Format | Description |
|------|--------|---------------------|
| 0-3 | Float | PV high alarm limit |
| 4-7 | Float | PV low alarm limit |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---------------------|
| 0-3 | Float | PV high alarm limit |
| 4-7 | Float | PV low alarm limit |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.40 Command #193: Write RTD1 type

This command configures the sensor1 RTD type.

Request Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | RTD 1 type (0 = 2wire, 1 = 3wire, 2 = 4wire) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | RTD 1 type (0 = 2wire, 1 = 3wire, 2 = 4wire) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.41 Command #197: Write CJ compensation type

This command configures the Cold Junction compensation type.

Request Data Bytes

| Byte | Format | Description |
|------|--------|--|
| 0 | Enum | CJ compensation type (0x00 = Internal, 0x01 = External, 0x02 = Fixed) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|--|
| 0 | Enum | CJ compensation type (0x00 = Internal, 0x01 = External, 0x02 = Fixed) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.42 Command #198: Write break detect status

This command configures the break detection status.

Request Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Break detect status (0x00 = OFF, 0x01 = ON) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Break detect status (0x00 = OFF, 0x01 = ON) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.43 Command #200: Write latching status

This command configures the sensor information bits latching status.

Request Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Latching status (0x00 = OFF, 0x01 = ON) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Latching status (0x00 = OFF, 0x01 = ON) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.44 Command #201: Write match PV status

This command configures the PV matching status.

Request Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Match PV status (0x00 = OFF, 0x01 = ON) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Match PV status (0x00 = OFF, 0x01 = ON) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.45 Command #202: Write fixed CJ compensation

This command configures the fixed cold junction compensation.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-----------------------|
| 0-3 | Float | Fixed CJ compensation |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-----------------------|
| 0-3 | Float | Fixed CJ compensation |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.46 Command #203: Write RTD1 lead wire resistance

This command configures the sensor1 lead wire resistance.

Request Data Bytes

| Byte | Format | Description |
|------|--------|---------------------------|
| 0-3 | Float | RTD1 lead wire resistance |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---------------------------|
| 0-3 | Float | RTD1 lead wire resistance |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.47 Command #210: Write Display General configuration

This command writes the General Display Configuration

Request Data Bytes

| Byte | Format | Description |
|------|--------|--|
| 0 | Enum | Language: (English-0, French-1, German-2, Spanish-3, Russian-4, Chinese-5, Japanese-6, Turkish-7, Itaian-8) |
| 1 | Enum | Rotation Time(3 to 30 Seconds.) |
| 2 | Enum | Rotation Enable/Disable (1=Enable, 0=Disable) |
| 3-6 | ASCII | Password |
| 7 | Enum | Display Contrast(0-9) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|--|
| 0 | Enum | Language: (English-0, French-1, German-2, Spanish-3, Russian-4, Chinese-5, Japanese-6, Turkish-7, Itaian-8) |
| 1 | Enum | Rotation Time (3 to 30 Seconds.) |
| 2 | Enum | Rotation Enable/Disable (1=Enable, 0=Disable) |
| 3-6 | ASCII | Password |
| 7 | Enum | Display Contrast(0-9) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too Few Data Bytes Received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | Transmitter In Write Protect Mode |
| 16 | Error | Access Denied |
| 32 | Error | Busy |

10.48 Command #211: Read Display General configuration

This command reads the Display General Configuration.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Language: (English-0, French-1, German-2, Spanish-3, Russian-4, Chinese-5, Japanese-6, Turkish-7, Italian-8) |
| 1 | Enum | Rotation Time (3 to 30 Seconds.) |
| 2 | Enum | Rotation Enable/Disable (1=Enable, 0=Disable) |
| 3-6 | ASCII | Password |
| 7 | Enum | Display Contrast(0-9) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.49 Command #212: Read Display Firmware Version

This command reads the Display Firmware Version.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---------------------------|
| 0-7 | ASCII | Display Firmware revision |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.50 Command #213: Read error log part1

This command reads the 5 latest errors information.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|-------|--------------|-----------------------------|
| 0 | Enum | Error code1 |
| 1 | Enum | Error code2 |
| 2 | Enum | Error code3 |
| 3 | Enum | Error code4 |
| 4 | Enum | Error code5 |
| 5-8 | Unsigned -32 | Error 1 time stamp |
| 9-12 | Unsigned -32 | Error 2 time stamp |
| 13-16 | Unsigned -32 | Error 3 time stamp |
| 17-20 | Unsigned -32 | Error 4 time stamp |
| 21-24 | Unsigned -32 | Error 5 time stamp |
| 25-28 | Unsigned -32 | Transmitter time in service |

Error Log codes:

- a) No error = 0
- b) DAC failure = 1
- c) Calibration corrupt = 2
- d) Configuration corrupt = 3
- e) Comm section failure = 4
- f) Sensing section failure =5
- g) Sensor communication timeout = 6
- h) Pressure Sensor communication timeout = 7
- i) Pressure Sensing section failure = 8
- j) Display failure = 9
- k) Watch dog reset =10

- l) Cold start = 11
- m) Comm section non-critical failure= 12
- n) Sensing section non-critical failure = 13
- o) Input 1 open = 14
- p) Pressure sensor calibration corrupt = 16

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.51 Command #214: Read error log part2

This command reads the 5 oldest errors information.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|-------|--------------|---------------------|
| 0 | Enum | Error code6 |
| 1 | Enum | Error code7 |
| 2 | Enum | Error code8 |
| 3 | Enum | Error code9 |
| 4 | Enum | Error code10 |
| 5-8 | Unsigned -32 | Error 6 time stamp |
| 9-12 | Unsigned -32 | Error 7 time stamp |
| 13-16 | Unsigned -32 | Error 8 time stamp |
| 17-20 | Unsigned -32 | Error 9 time stamp |
| 21-24 | Unsigned -32 | Error 10 time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.52 Command #215: Reset error log

This command initializes the error log data to zeros.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|------------|---|
| 0 | Unsigned-8 | Command execution status (always 0x00 indicating success) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.53 Command #216: Read error logging status

This command reads the error logging status.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Error logging status (0x00: Disabled 0x01: Enabled) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.54 Command #217: Write error logging status

This command configures the error logging status.

Request Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Error logging status (0x00: Disable 0x01: Enable) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Error logging status (0x00: Disabled 0x01: Enabled) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.55 Command #218: Read PV tracking values

This command reads Primary Variable tracking values.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|--|
| 0-3 | Float | Highest PV recorded |
| 4-7 | Unsigned-32 | Highest PV Timestamp |
| 8-11 | Float | Lowest PV recorded |
| 12-15 | Unsigned-32 | Lowest PV Timestamp |
| 16-19 | Float | High alarm limit |
| 20-23 | Float | Low alarm limit |
| 24-25 | Unsigned-16 | No of times PV recorded above High alarm limit |
| 26-27 | Unsigned-16 | No of times PV recorded below low alarm limit |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.56 Command #219: Read SV up tracking values

This command reads Secondary variable up tracking values.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-3 | Float | Highest SV recorded |
| 4-7 | Unsigned-32 | Highest SV Timestamp |
| 8-11 | Unsigned-32 | No of times SV recorded above High alarm limit |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.57 Command #220: Read additional status

This command reads the additional Status.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|----------------|
| 0-12 | Enum | Refer table 17 |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.58 Command #221: Set Date/Time for calibration

This command is used to Set Date/Time for calibration.

Request Data Bytes

| Byte | Format | Description |
|------|--------|---------------------------|
| 0-4 | Enum | DD 1 MM 1 YY 1 HR 1 MIN 1 |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---------------------------|
| 0-4 | Enum | DD 1 MM 1 YY 1 HR 1 MIN 1 |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------------|
| 0 | Success | No Command-Specific Errors |
| 5 | Error | Too Few Data Bytes Received |
| 7 | Error | Transmitter In Write Protect Mode |
| 16 | Error | Access Restricted |
| 32 | Error | Busy |

10.59 Command #222: Read Temperature sensor firmware version number

This command reads the Temperature sensor Firmware revision number.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|--------------------------------------|
| 0-7 | ASCII | Temperature Sensor Firmware revision |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.60 Command #228: Read maintenance flag

This command reads the maintenance flag.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|--|
| 0 | Enum | 0x00 – “Check with operator” 0x01 – “Available for maintenance” |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.61 Command #229: Write maintenance flag

This command writes Maintenance Flag.

Request Data Bytes

| Byte | Format | Description |
|------|--------|--|
| 0 | Enum | 0x00 – “Check with operator” 0x01 – “Available for maintenance” |

Response Data Bytes

| Byte | Format | Description |
|------|--------|--|
| 0 | Enum | 0x00 – “Check with operator” 0x01 – “Available for maintenance” |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too Few Data Bytes Received |
| 16 | Error | Access Restricted |
| 32 | Error | Busy |

10.62 Command #230: Read tamper alarm settings

This command reads tamper alarm settings.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Tamper mode(0x00 – Disable/ 0x01 – Enable), |
| 1 | Enum | Tamper latency in seconds(range 0 - 60 seconds), |
| 2 | Enum | Maximum allowable Tamper Attempts (Min 1 / Max 10), |
| 3 | Enum | Tamper attempts recorded so far |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.63 Command #231: Write Tamper alarm settings

This command writes Tamper alarm settings.

Request Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Tamper mode(0x00 – Disable/ 0x01 – Enable), |
| 1 | Enum | Tamper latency in seconds(range 0 - 60 seconds), |
| 2 | Enum | Maximum allowable Tamper Attempts (Min 1 / Max 10), |

Response Data Bytes

| Byte | Format | Description |
|------|--------|---|
| 0 | Enum | Tamper mode(0x00 – Disable/ 0x01 – Enable), |
| 1 | Enum | Tamper latency in seconds(range 0 - 60 seconds), |
| 2 | Enum | Maximum allowable Tamper Attempts (Min 1 / Max 10), |
| | | |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too Few Data Bytes Received |
| 7 | Error | Transmitter In Write Protect Mode |
| 16 | Error | Access Denied |
| 32 | Error | Busy |

10.64 Command #232: Reset executed attempts counter

This command resets the tamper attempt count.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------------|
| 0 | Success | No Command-Specific Errors |
| 7 | Error | Transmitter In Write Protect Mode |
| 16 | Error | Access Denied |
| | | |

10.65 Command #240: Reset PT tracking values

This command initializes the PV tracking values.

Request Data Bytes

| Byte | Format | Description |
|------|--------|--|
| 0 | Enum | Reset data type (0x01: Reset all 0x02: Reset Highest value 0x03: Reset Lowest value 0x04: Reset high alarm count 0x05: Reset low alarm count) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-----------------|
| 0 | Enum | Reset data type |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.66 Command #247: Read SV down tracking values

This command reads Secondary variable down tracking values.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-3 | Float | lowest SV recorded |
| 4-7 | Unsigned-32 | lowest SV Timestamp |
| 8-11 | Unsigned-32 | No of times SV recorded below low alarm limit |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.67 Command #64768: Write Display Screen configuration

This command writes part 1 of screen configuration.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD00) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |
| 3 | Enum | Screen Format None- 00 PV - 01 PV & Bar Graph - 02 PV & Trend – 03 |
| 4 | Enum | Identifies which of the process variables in the publish message is displayed in the view – parameter index |
| 5-6 | Enum | Unit Code (Refer Table 12, 13, 14, 15) |
| 7 | Enum | Number of digits to display after the decimal point (0 – 3). |
| 8 | Enum | PV Processing - None: 00 Convert Units: 01 Linear: 02 Square Root: 03 (For DP only) |
| 9-10 | Enum | Trend duration, Duration of a trend screen in hours. Valid range 1 – 999 |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD00) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |
| 3 | Enum | Screen Format None- 00 PV – 01 PV & Bar Graph – 02 PV & Trend – 03 |
| 4 | Enum | Identifies which of the process variables in the publish message is displayed in the view – parameter index |
| 5-6 | Enum | Unit Code (Refer Table 12, 13, 14, 15) |
| 7 | Enum | Number of digits to display after the decimal point (0 – 3). |
| 8 | Enum | PV Processing - None: 00 Convert Units: 01 Linear: 02 Square Root: 03 (For DP only) |
| 9-10 | Enum | Trend duration, Duration of a trend screen in hours. Valid range 1 – 999 |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too Few Data Bytes Received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | Transmitter In Write Protect Mode |
| 16 | Error | Access Denied |
| 32 | Error | Busy |

10.68 Command #64769: Write Display View configuration II

This command writes part 2 of screen configuration.

Request Data Bytes

| Byte | Format | Description |
|-------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD01) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |
| 3-6 | Float | Custom EuHi |
| 7-10 | Float | Custom EuLo |
| 11-14 | Float | Low Limit (Trend, Bar chart) |
| 15-18 | Float | High Limit (Trend, Bar chart) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD01) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |
| 3-6 | Float | Custom EuHi |
| 7-10 | Float | Custom EuLo |
| 11-14 | Float | Low Limit (Trend, Bar chart) |
| 15-18 | Float | High Limit (Trend, Bar chart) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too Few Data Bytes Received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | Transmitter In Write Protect Mode |
| 16 | Error | Access Denied |
| 32 | Error | Busy |

10.69 Command #64770: Write View configuration IV

This command writes part 4 of screen configuration.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD02) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |
| 3-32 | ASCII | CustomTag |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD02) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |
| 3-32 | ASCII | CustomTag |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too Few Data Bytes Received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | Transmitter In Write Protect Mode |
| 16 | Error | Access Denied |
| 32 | Error | Busy |

10.70 Command #64771: Read Display View configuration I

This command reads view configuration I.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD03) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD03) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |
| 3 | Enum | Screen Format None- 00 PV – 01 PV & Bar Graph – 02 PV & Trend – 03 |
| 4 | Enum | Identifies which of the process variables in the publish message is displayed in the view – parameter index |
| 5-6 | Enum | Unit Code (Refer Table 12, 13, 14, 15) |
| 7 | Enum | Number of digits to display after the decimal point (0 – 3) |

| | | |
|------|------|---|
| 8 | Enum | PV Processing - None: 00 Convert Units: 01 Linear: 02 Square Root: 03 (For DP only) |
| 9-10 | enum | Trend duration, Duration of a trend screen in hours. Valid range 1 – 999 |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------|
| 0 | Success | No Command-Specific Errors |
| 5 | Error | Too Few Data Bytes Received |

10.71 Command #64772: Read Display View configuration II

This command reads the View configuration II

Request Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD04) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD04) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |
| 3-6 | Float | Custom EuHi |
| 7-10 | Float | Custom EuLo |
| 11-14 | Float | Low Limit (Trend, Bar chart) |
| 15-18 | Float | High Limit (Trend, Bar chart) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------|
| 0 | Success | No Command-Specific Errors |
| 5 | Error | Too Few Data Bytes Received |

10.72 Command #64773: Read Display View configuration IV

This command reads the View configuration IV.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD05) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD05) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |
| 3-32 | Enum | Custom Tag |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------|
| 0 | Success | No Command-Specific Errors |
| 5 | Error | Too Few Data Bytes Received |

10.73 Command #64790: Write upper calibration point sensor 1

This command configures the sensor1 upper calibration value.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD16) |
| 2-5 | Float | Upper calibration value |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD16) |
| 2-5 | Float | Upper calibration value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Passed parameter too large |
| 4 | Error | Passed parameter too small |
| 5 | Error | Too few data bytes |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 9 | Error | Applied process too high |
| 10 | Error | Applied process too low |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.74 Command #64791: Write lower calibration point sensor1

This command configures the sensor1 lower calibration value.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD17) |
| 2-5 | Float | Lower calibration value |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD17) |
| 2-5 | Float | lower calibration value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Passed parameter too large |
| 4 | Error | Passed parameter too small |
| 5 | Error | Too few data bytes |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 9 | Error | Applied process too high |
| 10 | Error | Applied process too low |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.75 Command #64794: Read sensor1 calibration points

This command reads the sensor1 calibration values.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD1A) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD1A) |
| 2-5 | Float | upper calibration value |
| 6-9 | Float | Lower calibration value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.76 Command #64807: Read sensor ET up tracking values

This command reads sensor electronics temperature up tracking values.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD27) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD27) |
| 2-5 | Float | ET highest value |
| 6-9 | Float | ET highest value timestamp |
| 10-13 | Float | ET high alarm counter |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.77 Command #64808: Read sensor ET down tracking values

This command reads the sensor electronics temperature up tracking values.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD28) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD28) |
| 2-5 | Float | ET lowest value |
| 6-9 | Float | ET lowest value timestamp |
| 10-13 | Float | ET low alarm counter |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.78 Command #64809: Read SHM1 ohms, M360 Core Temp Delta

This command reads the sensor advanced diagnostic parameters SHM1 ohms, SHM2 ohms, M360 Core Temp Delta

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD29) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|-----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD29) |
| 2-5 | Float | SHM1 ohms |
| 6-9 | Float | Reserved |
| 10-13 | Float | M360 core temperature delta value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.79 Command #64811: Write Sensor1 install date

This command is used to write the sensor1 install date.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD2B) |
| 2 | Enum | Day |
| 3 | Enum | Month |
| 4 | Enum | Year |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD2B) |
| 2 | Enum | Day |
| 3 | Enum | Month |
| 4 | Enum | Year |
| 5 | Enum | Hour |
| 6 | Enum | Minute |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.80 Command #64813: Reset CJ tracking parameters

This command is used to reset the cold junction (SV) tracking parameters.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD2D) |
| 2 | Enum | Reset parameter selection (0x01: Reset all 0x02: Reset Highest value 0x03: Reset Lowest value 0x04: Reset High alarm count 0x05: Reset Low alarm count) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD2D) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.81 Command #64814: Acknowledge latching

This command is used to acknowledge sensor errors.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD2E) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD2E) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.82 Command #64815: Write Sensor scratch pad

This command is used to Write Sensor scratch pad.

Request Data Bytes

| Byte | Format | Description |
|------|---------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD2F) |
| 2-32 | Unsigned char | Sensor scratch pad data |

Response Data Bytes

| Byte | Format | Description |
|------|---------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD2F) |
| 2-32 | Unsigned char | Sensor scratch pad data |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Too many data bytes received |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.83 Command #64816: Read Sensor scratch pad

This command is used to Read Sensor scratch pad.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD30) |

Response Data Bytes

| Byte | Format | Description |
|------|---------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD30) |
| 2-32 | Unsigned char | Sensor scratch pad data |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.84 Command #64817: Write output level selection

This command is used to write output level selection.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD31) |
| 2 | Enum | 0x00 = "classic" - meas clamped at 105% 0x01 = "NAMUR" - meas clamped at 103.125% |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD31) |
| 2 | Enum | Accepted value 0x00 = "classic" - meas clamped at 105% 0x01 = "NAMUR" - meas clamped at 103.125% |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Too many data bytes received |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.85 Command #64818: Read Namur Enable/Disable

This command is used to Read Namur Enable/Disable.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD32) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFD32) |
| 2 | Enum | NAMUR selection 0x00 = "classic" - meas clamped at 105% 0x01 = "NAMUR" - meas clamped at 103.125% |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.86 Command #64822: Read Flow Cutoff Low & High Limit

This command is used to Read Flow Cutoff Low & High Limit.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD36) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD36) |
| 2-5 | Float | Flow Cutoff Low Limit |
| 6-9 | Float | Flow Cutoff High Limit |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.87 Command #64823: Write Flow Cutoff Low & High Limit

This command is used to write Flow Cutoff Low & High Limit.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD37) |
| 2-5 | Float | Flow Cutoff Low Limit |
| 6-9 | Float | Flow Cutoff High Limit |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD37) |
| 2-5 | Float | Flow Cutoff Low Limit |
| 6-9 | Float | Flow Cutoff High Limit |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 8 | Error | Illegal value |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.88 Command #64824: Read Static Pressure Calibrated URV at A, LRV at A, URV at B Set Points

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD7F) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD7F) |
| 2-5 | Float | URV at Calibration Set A |
| 6-9 | Float | LRV at Calibration Set A |
| 10-13 | Float | URV at Calibration Set B |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.89 Command #64825: Read Static Pressure Calibrated LRV at B, URV at C, LRV at C Set Points

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD80) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD80) |
| 2-5 | Float | LRV at Calibration Set B |
| 6-9 | Float | URV at Calibration Set C |
| 10-13 | Float | LRV at Calibration Set C |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.90 Command #64826: Read Selected and Available Calibration Sets

Reads Active calibration selected by user and available calibration sets for SP

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD3A) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD3A) |
| 2 | Enum | Calibration Selected by User for SP 0x00 = Fact Cal A 0x01 = Fact Cal B 0x02 = Fact Cal C 0x03 = Auto select, best fit |
| 3 | Enum | Active Calibration for SP 0x00 = Factory Cal A 0x01 = Factory Cal B 0x02 = Factory Cal C |
| 4 | Enum | Available Calibrations for SP 0x01 = Fact Cal A 0x03 = Fact Cal A and B 0x07 = Fact Cal A, B and C |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.91 Command # 64827: Write Selected and Available Calibration Sets

This command writes Active calibration selected by user and available calibration sets for SP.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFD3B) |
| 2 | Enum | <p>SP Calibration Selection</p> <p>0x00 = Fact Cal A</p> <p>0x01 = Fact Cal B</p> <p>0x02 = Fact Cal C</p> <p>0x03 = Auto select best fit</p> |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFD3B) |
| 2 | Enum | <p>SP Calibration Selection</p> <p>0x00 = Fact Cal A</p> <p>0x01 = Fact Cal B</p> <p>0x02 = Fact Cal C</p> <p>0x03 = Auto select best fit</p> |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too few data bytes |
| 6 | Error | Transmitter specific command error |
| 7 | Error | Transmitter In Write Protect Mode |
| 8 | Error | Illegal Value |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.92 Command #64831: Write Upper Sensor Trim Point (Correct URV)

This command trims the PV to URV.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD3F) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Passed parameter too large |
| 4 | Error | Passed parameter too small |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 9 | Error | Applied Process too High |
| 10 | Error | Applied process too low |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.93 Command #64832: Write Lower Sensor Trim Point (Correct LRV)

This command trims the PV to LRV.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD40) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Passed parameter too large |
| 4 | Error | Passed parameter too small |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 9 | Error | Applied Process too High |
| 10 | Error | Applied process too low |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.94 Command #64833: Reset Corrects

This command resets all the user correct operations performed.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD41) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.95 Command #64834: Read Transmitter Specifics

The command reads the 13 digit Meter-body bar code and display information.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD42) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD42) |
| 2 | Enum | Device type 01: AP 02: GP |
| 3-15 | ASCII | Meter-body bar code |
| 16 | Enum | meter connected flag 00: Not Connected 01: Connected |
| 17 | Enum | meter type 01: Advanced display 02: Basic display |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.96 Command #64835: Read Primary Variable Sensor Information

This command reads the PV related information for sensor.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD43) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD43) |
| 2-5 | Float | Upper Range Limit |
| 6-9 | Float | Lower Range Limit |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.97 Command #64836: Read Alternate filter selection parameter

This command reads Alternate filter parameters.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD44) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD44) |
| 0 | Enum | SF (sync filter) value and can be in the range of 0 to 255. |
| 1 | Enum | AF (averaging filter) value and can be in the range of 0 to 255. |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.98 Command #64837: Read last time and date for correct URV, correct LRV and zero trim.

This command reads Calibration records.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD45) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFD45) |
| 2-6 | Enum | last correct URV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 7-11 | Enum | last correct LRV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 12-16 | Enum | last zero trim time (DD 1 MM 1 YY 1 HR 1 MIN 1) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.99 Command #64838: Read filter selection

This command read filter Selection parameters.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD46) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFD46) |
| 2 | Enum | 0 - optimal 50/60 Hz noise filter 1 – fastest speed of response filter |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.100 Command #64839: Write filter selection

This command writes filter Selection parameters.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFD47) |
| 2 | Enum | 0 - optimal 50/60 Hz noise filter 1 – fastest speed of response filter |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFD47) |
| 0 | Enum | 0 - optimal 50/60 Hz noise filter 1 – fastest speed of response filter |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too Few Data Bytes Received |
| 6 | Error | Transmitter Specific command error |
| 7 | Error | Transmitter In Write Protect Mode |
| 16 | Error | Access Denied |
| 32 | Error | Device busy |

10.101 Command #64841: Read differential PV UP tracking parameters

This command reads differential PV UP tracking parameters.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD49) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD49) |
| 2-5 | Float | PV max |
| 6-9 | Float | PV up accumulator |
| 10-13 | Float | PV up time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.102 Command #64842: Read MBT upper tracking parameters

This command reads MBT upper tracking parameters.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD4A) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD4A) |
| 2-5 | Float | MBT max |
| 6-9 | Float | MBT max accumulator |
| 10-13 | Float | MBT max time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.103 Command #64843: Read MBT lower tracking parameters

This command reads MBT lower tracking parameters.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD4B) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD4B) |
| 2-5 | Float | MBT min |
| 6-9 | Float | MBT min accumulator |
| 10-13 | Float | MBT min time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.104 Command #64844: Read SP and its tracking parameters

This command reads SP and its tracking parameters.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD4C) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD4C) |
| 2-5 | Float | SP max |
| 6-9 | Float | SP max accumulator |
| 10-13 | Float | SP max time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.105 Command #64845: Read M360 core temperature up tracking parameters

This command reads the M360 (Sensor's microprocessor) core temperature up tracking parameters.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD4D) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD4D) |
| 2-5 | Float | M360 core temp max |
| 6-9 | Float | max accumulator |
| 10-13 | Float | max time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.106 Command #64846: Read M360 core temperature down tracking parameters

This command reads the M360 core temperature down tracking parameters.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD4E) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD4E) |
| 2-5 | Float | M360 core temp min |
| 6-9 | Float | min accumulator |
| 10-13 | Float | min time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.107 Command #64847: Read AVDD max and time stamp

This command reads the AVDD max and time stamp.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD4F) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD4F) |
| 2-5 | Float | AVDD max |
| 6-9 | Float | max time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.108 Command #64848: Read AVDD min and time stamp

This command reads the AVDD min and time stamp.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD50) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD50) |
| 2-5 | Float | AVDD min |
| 6-9 | Float | min time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.109 Command #64849: Read Pressure sensor install date

This command reads the sensor install date.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD51) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD51) |
| 2-6 | Enum | install date (DD 1 MM 1 YY 1 HR 1 MIN 1) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.110 Command #64850: Read MB stress monitor and MB service life

This command reads the MB stress monitor and MB service life.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD52) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD52) |
| 2-5 | Float | MB stress monitor |
| 6-9 | Float | service life |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.111 Command #64851: Write install date to Pressure sensor

This command write install date to sensor.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD53) |
| 2 | Enum | Date |
| 3 | Enum | Month |
| 4 | Enum | Year |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD53) |
| 2 | Enum | Date |
| 3 | Enum | Month |
| 4 | Enum | Year |
| 5-6 | Enum | Hours - Minutes |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In write protect mode |
| 16 | Error | Access Restricted |
| 32 | Error | Busy |

10.112 Command #64852: Read Previous time and date for correct URV, correct LRV, zero trim

This command reads Calibration records.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD54) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFD54) |
| 2-6 | Enum | Previous correct URV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 7-11 | Enum | Previous correct LRV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 12-16 | Enum | Previous zero trim time (DD 1 MM 1 YY 1 HR 1 MIN 1) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.113 Command #64853: Read current time and date for correct URV, correct LRV, zero trim

This command reads Calibration records.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD55) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD55) |
| 2-6 | Enum | Current correct URV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 7-11 | Enum | Current correct LRV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 12-16 | Enum | Current zero trim time (DD 1 MM 1 YY 1 HR 1 MIN 1) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.114 Command #64854: Read Differential Pressure current, last and previous reset correct Time & Date

This command reads DP the current, last and previous reset correct T&D

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD56) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFD56) |
| 2-6 | Enum | Read current reset correct T&D(DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 7-11 | Enum | Read last reset correct T&D(DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 12-16 | Enum | Read previous reset correct T&D(DD 1 MM 1 YY 1 HR 1 MIN 1) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.115 Command #64855: Read differential PV Down tracking parameters

This command reads the differential PV Down tracking parameters.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD57) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD57) |
| 2-5 | Float | DP min |
| 6-9 | Float | DP min accumulator |
| 10-13 | Float | DP min time stamp |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.116 Command #64868: Read low flow cutoff mode

This command reads low flow cutoff mode

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD64) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|-------------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD64) |
| 2 | Enum | 0x00 – Method 1 (Single Breakpoint) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.117 Command #64869: Read sensor time in service

This command reads the Sensor Time in Service.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD65) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD65) |
| 2-5 | Float | Sensor Time in Service |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.118 Command #64871: Read sensor firmware version number

This command reads the sensor Firmware revision number.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD67) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD67) |
| 2-9 | ASCII | Sensor Firmware revision |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.119 Command #64872: Read flow value for square-root functionality

This command reads the 4 byte float value for the flow calculation when the device is configured for square root mode.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD68) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD68) |
| 2-5 | Float | Flow value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.120 Command #64873: Low flow cutoff method selection

This command helps in selecting the method for Low Flow Cutoff.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|-------------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD69) |
| 2 | Enum | 0x00 - Method 1 (Single Breakpoint) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD69) |
| 2 | Enum | 0x00 - Method 1 |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too Few Data Bytes Received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | Transmitter In Write Protect Mode |
| 16 | Error | Access Denied |
| 32 | Error | Busy |

10.121 Command #64874: Read user breakpoint in % flow for low flow cutoff

This command reads the user breakpoint in % flow for low flow cut-off.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD6A) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD6A) |
| 2-5 | Float | Flow value in %. |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.122 Command #64875: Write user breakpoint in % flow for low flow cutoff

This command Writes user breakpoint in % flow for low flow cutoff.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD6B) |
| 2-5 | Float | User configured breakpoint in % flow for low cut off feature |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD6B) |
| 2-5 | Float | User configured breakpoint in % flow for low cut off feature |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Passed parameter too large |
| 4 | Error | Passed parameter too small |
| 5 | Error | Too Few Data Bytes Received |
| 7 | Error | Transmitter In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.123 Command #64882: Read Enhanced features available in device

This command reads the HART-DE board firmware revision.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD72) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFD72) |
| 2-5 | Enum | 0x00000001 : PILD feature is provided (not supported in R100) 0x00000002 : Universal input is provided |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.124 Command #64883: Write License Key

This command is used to enter license key which would enable special features based on the license key entered.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD73) |
| 2-5 | Enum | License number |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD73) |
| 2-5 | Enum | License number |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too Few Data Bytes Received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | Transmitter In Write Protect Mode |
| 8 | Error | Illegal value |
| 16 | Error | Access Denied/Restricted |
| 32 | Error | Device Busy |
| 67 | Error | Functionality cannot be Activated |

10.125 Command #64895: Read Calibrated LRV at B, URV at C, LRV at C Set Points

This command reads Calibrated LRV at B, URV at C, LRV at C Set Points

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD7F) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD7F) |
| 2-5 | Float | LRV at Calibration Set B |
| 6-9 | Float | URV at Calibration Set C |
| 10-13 | Float | LRV at Calibration Set C |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.126 Command #64896: Read Calibrated URV at A, LRV at A, URV at B Set Points

This command reads Calibrated URV at A, LRV at A, URV at B Set Points

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD80) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD80) |
| 2-5 | Float | URV at Calibration Set A |
| 6-9 | Float | LRV at Calibration Set A |
| 10-13 | Float | URV at Calibration Set B |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.127 Command #64897: Read Selected and Available Calibration Sets for DP

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD81) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD81) |
| 2 | Enum | Calibration Selected by User for DP 0x00 = Fact Cal A 0x01 = Fact Cal B 0x02 = Fact Cal C 0x03 = Auto select, best fit |
| 3 | Enum | Active Calibration for DP 0x00 = Factory Cal A 0x01 = Factory Cal B 0x02 = Factory Cal C |
| 4 | Enum | Available Calibrations for DP 0x01 = Fact Cal A 0x03 = Fact Cal A and B 0x07 = Fact Cal A, B and C |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.128 Command #64898: Write Calibration Set Selection for DP

This command writes Calibration Set Selection for DP.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFD82) |
| 2 | Enum | <p>DP Calibration Selection</p> <p>0x00 = Fact Cal A</p> <p>0x01 = Fact Cal B</p> <p>0x02 = Fact Cal C</p> <p>0x03 = Auto select best fit</p> |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFD82) |
| 2 | Enum | <p>DP Calibration Selection</p> <p>0x00 = Fact Cal A</p> <p>0x01 = Fact Cal B</p> <p>0x02 = Fact Cal C</p> <p>0x03 = Auto select best fit</p> |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too few data bytes |
| 6 | Error | Transmitter specific command error |
| 7 | Error | Transmitter In Write Protect Mode |
| 8 | Error | Illegal Value |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.129 Command #64899: Read Units conversion factor, Pipe diameter, Bore diameter

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD83) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD83) |
| 2-5 | Float | Units conversion factor |
| 6-9 | Float | Pipe diameter |
| 10-13 | Float | Bore diameter |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.130 Command #64900: Read Pipe diam meas temperature, Bore diam meas temperature, Pipe thermal expansion coeff

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD84) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD84) |
| 2-5 | Float | Pipe diam meas temperature |
| 6-9 | Float | Bore diam meas temperature |
| 10-13 | Float | Pipe thermal expansion coeff |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.131 Command #64901: Read Bore thermal expansion coeff, Discharge Coefficients, Low limit for Reynolds Number

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD85) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD85) |
| 2-5 | Float | Bore thermal expansion coeff |
| 6-9 | Float | Discharge Coefficients |
| 10-13 | Float | Low limit for Reynolds Number |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.132 Command #64902: Read High limit for Reynolds Number, Viscosity polynomial coefficients, Lower Temp Limit Viscosity

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD86) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|-----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD86) |
| 2-5 | Float | High limit for Reynolds Number |
| 6-9 | Float | Viscosity polynomial coefficients |
| 10-13 | Float | Lower Temp Limit Viscosity |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.133 Command #64903: Read Upper Temp Limit Viscosity, Isentropic coefficient, Local Atmosphere Pressure

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD87) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD87) |
| 2-5 | Float | Upper Temp Limit Viscosity |
| 6-9 | Float | Isentropic coefficient |
| 10-13 | Float | Local Atmosphere Pressure |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.134 Command #64904: Read Manually Input Density Value, Manually Input Viscosity Value, Manually Input Discharge Coeff

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD88) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD88) |
| 2-5 | Float | Manually Input Density Value |
| 6-9 | Float | Manually Input Viscosity Value |
| 10-13 | Float | Manually Input Discharge Coeff |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.135 Command #64905: Read Manually Input Expan Factor, Manually Input Temp Exp Fact, Density polynomial coefficients

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD89) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD89) |
| 2-5 | Float | Manually Input Expan Factor |
| 6-9 | Float | Manually Input Temp Exp Fact |
| 10-13 | Float | Density polynomial coefficients |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.136 Command #64906: Read Lower Limit Density polynomial, Upper Limit Density polynomial, Nominal temperature

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD8A) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD8A) |
| 2-5 | Float | Lower Limit Density polynomial |
| 6-9 | Float | Upper Limit Density polynomial |
| 10-13 | Float | Nominal temperature |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.137 Command #64907: Read Nominal absolute pressure, Nominal differential pressure, Base Density

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD8B) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD8B) |
| 2-5 | Float | Nominal absolute pressure |
| 6-9 | Float | Nominal differential pressure |
| 10-13 | Float | Base Density |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.138 Command #64908: Read Design Pressure, Design Temperature, Design Density

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD8C) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD8C) |
| 2-5 | Float | Design Pressure |
| 6-9 | Float | Design Temperature |
| 10-13 | Float | Design Density |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.139 Command #64909: Read Super Compressed Factor, Gas compressibility, Specific Gravity of Ideal Gas

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD8D) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD8D) |
| 2-5 | Float | Super Compressivity Factor |
| 6-9 | Float | Gas compressibility |
| 10-13 | Float | Specific Gravity of Ideal Gas |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.140 Command #64910: Read Max flow rate on Sizing of Vcone, Maximum DP on Sizing for Vcone, Pipe Roughness for Gost or Beta

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD8E) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD8E) |
| 2-5 | Float | Max flow rate on Sizing of Vcone |
| 6-9 | Float | Maximum DP on Sizing for Vcone |
| 10-13 | Float | Pipe Roughness for Gost or Beta |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.141 Command #64911: Read initial Radius, Inter Control Interval

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD8F) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD8F) |
| 2-5 | Float | initial Radius |
| 6-9 | Float | Inter Control Interval |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.142 Command #64912: Read Flow Calculation Standard/ Discharge Exponent, Manual Input Switch/Compensation Switch, Primary Element Type and SubType, Fluid Type

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD90) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFD90) |
| 2 | Unsigned-8 | Flow Calculation Standard/ Discharge Exponent (Refer Note1) |
| 3 | Unsigned-8 | Manual Input Switch/Compensation Switch (Refer note 2) |
| 4 | Unsigned-8 | Primary Element Type and SubType (Refer Note 3) |
| 5 | Unsigned-8 | Fluid Type (Refer Note 4) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

| Note 1: | Byte 0 | | Meaning |
|----------------------------|------------|---|--------------------|
| Flow Calculation Standard: | Bits 0 - 4 | 0 | ASME-MFC-3 |
| | | 1 | ISO5167 |
| | | 2 | GOST |
| | | 3 | AGA3 |
| | | 4 | VCONE/WAFER CONE |
| | | 5 | ASME-MFC-14M |
| | | 6 | WEDGE |
| | | 7 | AVERAGE PITOT TUBE |

| | | | |
|---------------------|------------|-------|---------------------|
| | | 8 | INTEGRAL ORIFICE |
| | | 9 | CONDITIONAL ORIFICE |
| | | 10 | LEGACY SMV 3000 |
| | | 11 | LEGACY LAMINAR FLOW |
| | | 12-31 | Reserved |
| Not Used | Bits 5 - 6 | X | Reserved |
| Discharge Exponent: | Bit 7 | 0 | 0.75 |
| | | 1 | 0.5 |

| Note 2: | Byte 1 | Meaning |
|----------------------|--------|---------------------------------------|
| Manual Input Switch: | Bit0 | 0:Off 1: Manually Input Density On |
| | Bit1 | 0: Off 1: Manually Input Viscosity On |
| | Bit2 | 0:Off 1: Manually Input Cd On |
| | Bit3 | 0:Off 1: Manually Input Y On |
| | Bit4 | 0:Off 1: Manually Input Fa On |
| Not Used | Bit5 | Reserved |
| Compensation Switch: | Bit6 | 0:Off 1: AP Compensation On |
| | Bit7 | 0:Off 1: Temp Compensation on |

Note 3:

Primary Element Type

For Legacy Control=SMV3000 Method:

| Bits 0 – 7 | Meaning |
|------------|---|
| 0x00 | Orifice - Flange Taps (ASME-ISO) D >/= 2.3 inches |
| 0x01 | Flange Taps (ASME-ISO) 2 </= D </= 2.3 |
| 0x02 | Orifice - Corner Taps (ASME-ISO) |

| | |
|-----------|--|
| 0x03 | Orifice - D and D/2 Taps (ASME-ISO) |
| 0x04 | Orifice - 2.5D and 8D Taps (ASME-ISO) |
| 0x05 | Venturi - Machined Inlet (ASME-ISO) |
| 0x06 | Venturi - Rough Cast Inlet (ASME-ISO) |
| 0x07 | Venturi - Rough Welded Sheet-Iron Inlet (ASME-ISO) |
| 0x08 | Nozzle (ASME Long Radius) |
| 0x09 | Venturi nozzle (ISA Inlet) |
| 0x0A | Leopold venturi |
| 0x0B | Gerand venturi |
| 0x0C | Universal Venturi Tube |
| 0x0D | Lo-Loss Venturi Tube |
| 0x0E | Preso Ellipse Ave. Pitot Tube |
| 0x0F | Other Pitot Tube |
| 0x10-0xFF | Reserved |

For Legacy Control=SMV800 Method:

| | |
|------|--|
| 0x00 | Orifice ASME-MFC-3-2004 Flange Pressure Taps |
| 0x01 | Orifice ASME-MFC-3-2004 Corner Pressure Taps |
| 0x02 | Orifice ASME-MFC-3-2004 D and D/2 Pressure Taps |
| 0x03 | Orifice ISO5167-2003 Flange Pressure Taps |
| 0x04 | Orifice ISO5167-2003 Corner Pressure Taps |
| 0x05 | Orifice ISO5167-2003 D and D/2 Pressure Taps |
| 0x06 | Orifice Gost 8.586-2005 Flange Pressure Taps |
| 0x07 | Orifice Gost 8.586-2005 Corner Pressure Taps |
| 0x08 | Orifice Gost 8.586-2005 Three-Radius Pressure Taps |
| 0x09 | Orifice AGA3-2003 Flange Pressure Taps |
| 0x0A | Orifice AGA3-2003 Corner Pressure Taps |

| | |
|-----------|---|
| 0x0B-0x0F | Reserved |
| 0x10 | Nozzle ASME-MFC-3-2004 ASME Long Radius Nozzles |
| 0x11 | Nozzle ASME-MFC-3-2004 Venturi Nozzles |
| 0x12 | Nozzle ASME-MFC-3-2004 ISA 1932 Nozzles |
| 0x13 | Nozzle ISO5167-2003 Long Radius Nozzles |
| 0x14 | Nozzle ISO5167-2003 Venturi Nozzles |
| 0x15 | Nozzle ISO5167-2003 ISA 1932 Nozzles |
| 0x16 | Nozzle Gost 8.586-2005 Long Radius Nozzles |
| 0x17 | Nozzle Gost 8.586-2005 Venturi Nozzles |
| 0x18 | Nozzle Gost 8.586-2005 ISA 1932 Nozzles |
| 0x19-0x1F | Reserved |
| 0x20 | Venturi ASME-MFC-3-2004 "As-Cast" Convergent Section |
| 0x21 | Venturi ASME-MFC-3-2004 Machined Convergent Section |
| 0x22 | Venturi ASME-MFC-3-2004 Rough-Welded Convergent Section |
| 0x23 | Venturi ISO5167-2003 "As-Cast" Convergent Section |
| 0x24 | Venturi ISO5167-2003 Machined Convergent Section |
| 0x25 | Venturi ISO5167-2003 Rough-Welded Sheet-Iron Convergent Section |
| 0x26 | Venturi Gost 8.586-2005 Cast Upstream Cone Part |
| 0x27 | Venturi Gost 8.586-2005 Machined Upstream Cone Part |
| 0x28 | Venturi Gost 8.586-2005 Welded Upstream Cone Part made of Sheet Steel |
| 0x29-0x2F | Reserved |
| 0x30 | Averaging Pitot Tube |
| 0x31-0x3F | Reserved |
| 0x40 | Standard Vcone |
| 0x41 | Wafer Cone |
| 0x42-0x4F | Reserved |
| 0x50 | Wedge |

| | |
|-----------|------------------|
| 0x51-0x5F | Reserved |
| 0x60 | Integral Orifice |
| 0x61-0xFF | Reserved |

| Note 4: | Byte 3 | | Meaning |
|----------------------------------|------------|------|--|
| Fluid Type: | Bits 0 - 3 | 0 | Gas |
| | | 1 | Liquid |
| | | 2 | Steam |
| | | 3 | Saturated Steam-SP |
| | | 4 | Saturated Steam-PT |
| | | 5-15 | Reserved |
| Vcone Y Method | Bit 4 | | 0: Use McCrometer Method 1: Use ASME Method |
| Vcone Simplified Liquid | Bit 5 | | 0: Off 1: On |
| Use Wedge Fixed Flow Coefficient | Bit 6 | | 0: Off 1: On |
| Not Used | Bit 7 | | Reserved |

10.143 Command #64913: Read Algorithms Type, Pipe Material, Bore Material, PV Simulation and FailSafe Switch

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD91) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFD91) |
| 2 | Unsigned-8 | Algorithms Type (Refer Note: 5) |
| 3 | Unsigned-8 | Pipe Material |
| 4 | Unsigned-8 | Bore Material |
| 5 | Unsigned-8 | PV Simulation and FailSafe Switch (Refer Note: 6) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

| Note 5: | Byte 0 | | Meaning |
|-------------------|------------|-------|---|
| Flow Output Type: | Bits 0 - 3 | 0 | No Flow Output |
| | | 1 | Ideal Gas Actual Volume Flow |
| | | 2 | Ideal Gas Mass Flow |
| | | 3 | Superheated Steam Mass Flow Saturated Steam Mass Flow or Steam Mass Flow |
| | | 4 | Liquid Mass Flow |
| | | 5 | Ideal Gas Volume Flow @ Std Condition |
| | | 6 | Liquid Actual Volume Flow |
| | | 7 | Liquid Volume Flow @ Std Condition |
| | | 11-15 | Reserved |

| Note 6: | Byte 3 | Meaning |
|--------------------------|--------|-----------------------------|
| PV Failsafe: | Bit0 | 0:Off 1: PV2 Failsafe On |
| | Bit1 | 0:Off 1: PV3 Failsafe On |
| Reverse Flow Calculation | Bit2 | 0:Off 1: On |
| Simulation Switch: | Bit3 | 0:Off 1: Simulate PV1 On |
| | Bit4 | 0:Off 1: Simulate PV2 On |
| | Bit5 | 0:Off 1: Simulate PV3 On |
| | Bit6 | 0:Off 1: Simulate PV4 On |
| Not Used | Bit7 | Reserved |

10.144 Command #64914: Read Value substituted for PV1, Value substituted for PV2

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD92) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD92) |
| 2-5 | Float | Value substituted for PV1 |
| 6-9 | Float | Value substituted for PV2 |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.145 Command #64915: Read Value substituted for PV3, Value substituted for PV4

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD93) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD93) |
| 2-5 | Float | Value substituted for PV3 |
| 6-9 | Float | Value substituted for PV4 |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.146 Command #64916 : Write Units conversion factor

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD94) |
| 2-5 | Float | Units conversion factor |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD94) |
| 2-5 | Float | Units conversion factor |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.147 Command #64917 : Write Pipe diameter, Pipe diam meas temperature, Pipe thermal expansion coeff

Request Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD95) |
| 2-5 | Float | Pipe diameter |
| 6-9 | Float | Pipe diam meas temperature |
| 10-13 | Float | Pipe thermal expansion coeff |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD95) |
| 2-5 | Float | Pipe diameter |
| 6-9 | Float | Pipe diam meas temperature |
| 10-13 | Float | Pipe thermal expansion coeff |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.148 Command #64918 : Write Bore diameter, Bore diam meas temperature, Bore thermal expansion coeff

Request Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD96) |
| 2-5 | Float | Bore diameter |
| 6-9 | Float | Bore diam meas temperature |
| 10-13 | Float | Bore thermal expansion coeff |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD96) |
| 2-5 | Float | Bore diameter |
| 6-9 | Float | Bore diam meas temperature |
| 10-13 | Float | Bore thermal expansion coeff |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.149 Command #64919 : Write Discharge Coefficients (r1), Discharge Coefficients (r2)

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD97) |
| 2-5 | Float | Discharge Coefficients (r1) |
| 6-9 | Float | Discharge Coefficients (r2) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD97) |
| 2-5 | Float | Discharge Coefficients (r1) |
| 6-9 | Float | Discharge Coefficients (r2) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.150 Command #64920 : Write Low limit for Reynolds Number, High limit for Reynolds Number

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD98) |
| 2-5 | Float | Low limit for Reynolds Number |
| 6-9 | Float | High limit for Reynolds Number |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD98) |
| 2-5 | Float | Low limit for Reynolds Number |
| 6-9 | Float | High limit for Reynolds Number |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.151 Command #64921 : Write Viscosity polynomial coefficients (v1), Viscosity polynomial coefficients (v2), Viscosity polynomial coefficients (v3)

Request Data Bytes

| Byte | Format | Description |
|-------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD99) |
| 2-5 | Float | Viscosity polynomial coefficients (v1) |
| 6-9 | Float | Viscosity polynomial coefficients (v2) |
| 10-13 | Float | Viscosity polynomial coefficients (v3) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD99) |
| 2-5 | Float | Viscosity polynomial coefficients (v1) |
| 6-9 | Float | Viscosity polynomial coefficients (v2) |
| 10-13 | Float | Viscosity polynomial coefficients (v3) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.152 Command #64922 : Write Viscosity polynomial coefficients (v4), Viscosity polynomial coefficients (v5)

Request Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD9A) |
| 2-5 | Float | Viscosity polynomial coefficients (v4) |
| 6-9 | Float | Viscosity polynomial coefficients (v5) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFD9A) |
| 2-5 | Float | Viscosity polynomial coefficients (v4) |
| 6-9 | Float | Viscosity polynomial coefficients (v5) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.153 Command #64923 : Write Lower Temp Limit Viscosity, Upper Temp Limit Viscosity

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD9B) |
| 2-5 | Float | Lower Temp Limit Viscosity |
| 6-9 | Float | Upper Temp Limit Viscosity |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD9B) |
| 2-5 | Float | Lower Temp Limit Viscosity |
| 6-9 | Float | Upper Temp Limit Viscosity |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.154 Command #64924 : Write Isentropic coefficient, Local Atmosphere Pressure, Base Density

Request Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD9C) |
| 2-5 | Float | Isentropic coefficient |
| 6-9 | Float | Local Atmosphere Pressure |
| 10-13 | Float | Base Density |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD9C) |
| 2-5 | Float | Isentropic coefficient |
| 6-9 | Float | Local Atmosphere Pressure |
| 10-13 | Float | Base Density |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.155 Command #64925 : Write Manually Input Density Value, Manually Input Viscosity Value, Manually Input Discharge Coeff

Request Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD9D) |
| 2-5 | Float | Manually Input Density Value |
| 6-9 | Float | Manually Input Viscosity Value |
| 10-13 | Float | Manually Input Discharge Coeff |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD9D) |
| 2-5 | Float | Manually Input Density Value |
| 6-9 | Float | Manually Input Viscosity Value |
| 10-13 | Float | Manually Input Discharge Coeff |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.156 Command #64926 : Write Manually Input Expan Factor, Manually Input Temp Exp Fact

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD9E) |
| 2-5 | Float | Manually Input Expan Factor |
| 6-9 | Float | Manually Input Temp Exp Fact |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD9E) |
| 2-5 | Float | Manually Input Expan Factor |
| 6-9 | Float | Manually Input Temp Exp Fact |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.157 Command #64927 : Write Density polynomial coefficients (d1), Density polynomial coefficients (d2), Density polynomial coefficients (d3)

Request Data Bytes

| Byte | Format | Description |
|-------|-------------|--------------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD9F) |
| 2-5 | Float | Density polynomial coefficients (d1) |
| 6-9 | Float | Density polynomial coefficients (d2) |
| 10-13 | Float | Density polynomial coefficients (d3) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|--------------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFD9F) |
| 2-5 | Float | Density polynomial coefficients (d1) |
| 6-9 | Float | Density polynomial coefficients (d2) |
| 10-13 | Float | Density polynomial coefficients (d3) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.158 Command #64928 : Write Density polynomial coefficients (d4), Density polynomial coefficients (d5)

Request Data Bytes

| Byte | Format | Description |
|------|-------------|--------------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDA0) |
| 2-5 | Float | Density polynomial coefficients (d4) |
| 6-9 | Float | Density polynomial coefficients (d5) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--------------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDA0) |
| 2-5 | Float | Density polynomial coefficients (d4) |
| 6-9 | Float | Density polynomial coefficients (d5) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.159 Command #64929 : Write Lower Limit Density polynomial, Upper Limit Density polynomial

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDA1) |
| 2-5 | Float | Lower Limit Density polynomial |
| 6-9 | Float | Upper Limit Density polynomial |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDA1) |
| 2-5 | Float | Lower Limit Density polynomial |
| 6-9 | Float | Upper Limit Density polynomial |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.160 Command #64930 : Write Nominal temperature, Nominal absolute pressure, Nominal differential pressure

Request Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDA2) |
| 2-5 | Float | Nominal temperature |
| 6-9 | Float | Nominal absolute pressure |
| 10-13 | Float | Nominal differential pressure |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDA2) |
| 2-5 | Float | Nominal temperature |
| 6-9 | Float | Nominal absolute pressure |
| 10-13 | Float | Nominal differential pressure |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.161 Command #64931 : Write Design Pressure, Design Temperature, Design Density

Request Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDA3) |
| 2-5 | Float | Design Pressure |
| 6-9 | Float | Design Temperature |
| 10-13 | Float | Design Density |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDA3) |
| 2-5 | Float | Design Pressure |
| 6-9 | Float | Design Temperature |
| 10-13 | Float | Design Density |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.162 Command #64932 : Write Super Compressed Factor, Gas compressibility, Specific Gravity of Ideal Gas

Request Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDA4) |
| 2-5 | Float | Super Compressivity Factor |
| 6-9 | Float | Gas compressability |
| 10-13 | Float | Specific Gravity of Ideal Gas |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDA4) |
| 2-5 | Float | Super Compressivity Factor |
| 6-9 | Float | Gas compressability |
| 10-13 | Float | Specific Gravity of Ideal Gas |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.163 Command #64933 : Write Max flow rate on Sizing of Vcone, Maximum DP on Sizing for Vcone

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDA5) |
| 2-5 | Float | Max flow rate on Sizing of Vcone |
| 6-9 | Float | Maximum DP on Sizing for Vcone |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDA5) |
| 2-5 | Float | Max flow rate on Sizing of Vcone |
| 6-9 | Float | Maximum DP on Sizing for Vcone |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.164 Command #64934 : Write Pipe Roughness for Gost or Beta, Initial Radius, Inter Control Interval

Request Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDA6) |
| 2-5 | Float | Pipe Roughness for Gost or Beta |
| 6-9 | Float | Initial Radius |
| 10-13 | Float | Inter Control Interval |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDA6) |
| 2-5 | Float | Pipe Roughness for Gost or Beta |
| 6-9 | Float | Initial Radius |
| 10-13 | Float | Inter Control Interval |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.165 Command #64935 : Write Custom Unit and DTM Configuration

This is a multi-transaction command and has to send total 20 bytes of data. If the actual data bytes are less than 20 then the remaining bytes to be filled with 0x00.

Transaction 1:

This transaction is used for writing custom unit configuration.

Request Data Bytes

| Byte | Format | Description |
|--------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDA7) |
| 2 | Unsigned 8 | Command details (Index) 0x01 – Custom unit configuration |
| 3 - 10 | Unsigned 8 | Custom unit Tag |
| 11 | Unsigned 8 | Base unit (Flow) |
| 12-15 | Float | Custom unit conversion factor |
| 16-19 | Unsigned 8 | Reserved |

Response Data Bytes

| Byte | Format | Description |
|--------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDA7) |
| 2 | Unsigned 8 | Command details (Index) 0x01 – Custom unit configuration |
| 3 - 10 | Unsigned 8 | Custom unit Tag |
| 11 | Unsigned 8 | Base unit (Flow) |
| 12-15 | Float | Custom unit conversion factor |
| 16-19 | Unsigned 8 | Reserved |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

Transaction 2:

This transaction is used for writing the parameters used for DTM.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDA7) |
| 2 | Unsigned 8 | Command details (Index) 0x02 – DTM parameters write |
| 3 | Unsigned 8 | Unit Selection :-> 0x00- US Unit 0x01- SI Unit 0x02- Custom unit |
| 4 | Unsigned 8 | Length Unit |
| 5 | Unsigned 8 | Density Unit |
| 6 | Unsigned 8 | Viscosity Unit |
| 7-19 | Unsigned 8 | Reserved |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFDA7) |
| 2 | Unsigned 8 | Command details (Index) 0x02 – DTM parameters write |
| 3 | Unsigned 8 | Unit Selection |
| 4 | Unsigned 8 | Length Unit |
| 5 | Unsigned 8 | Density Unit |
| 6 | Unsigned 8 | Viscosity Unit |
| 7-19 | Unsigned 8 | Reserved |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.166 Command #64936 : Read Custom Unit and DTM Configuration

Transaction 1:

This transaction is used for reading custom unit configuration.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDA8) |
| 2 | Unsigned 8 | Command details (Index) 0x01 – Custom unit configuration |

Response Data Bytes

| Byte | Format | Description |
|--------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDA8) |
| 2 | Unsigned 8 | Command details (Index) 0x01 – Custom unit configuration |
| 3 - 10 | Unsigned 8 | Custom unit Tag |
| 11 | Unsigned 8 | Base unit (Flow) |
| 12-15 | Float | Custom unit conversion factor |
| 16-19 | Unsigned 8 | Reserved |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |
| | | |

Transaction 2:

This transaction is used for reading DTM parameters.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDA8) |
| 2 | Unsigned 8 | Command details (Index) 0x02 – DTM parameters support in Comm. |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDA8) |
| 2 | Unsigned 8 | Command details (Index) 0x02 – DTM parameters support in Comm. |
| 3 | Unsigned 8 | Unit Selection |
| 4 | Unsigned 8 | DP Unit |
| 5 | Unsigned 8 | SP Unit |
| 6 | Unsigned 8 | Length Unit |
| 7 | Unsigned 8 | Density Unit |
| 8 | Unsigned 8 | Viscosity Unit |
| 9 | Unsigned 8 | Flow Unit |
| 10 | Unsigned 8 | Custom Unit |
| 11-19 | Unsigned 8 | Reserved |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |
| | | |

10.167 Command #64939: Read Device Serial Number From EEPROM

This command reads device serial number from EEPROM.

Request Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Response Data Bytes

| Byte | Format | Description |
|------|------------|------------------------|
| 0-13 | Unsigned-8 | 14 bytes serial number |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.168 Command #64954 : Write Flow Calculation Standard Discharge Exponent

Request Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDBA) |
| 2 | Unsigned-8 | Flow Calculation Standard Discharge Exponent |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDBA) |
| 2 | Unsigned-8 | Flow Calculation Standard Discharge Exponent |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.169 Command #64955 : Write Manual Input Switch Compensation Switch

Request Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDBB) |
| 2 | Unsigned-8 | Manual Input Switch Compensation Switch |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDBB) |
| 2 | Unsigned-8 | Manual Input Switch Compensation Switch |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.170 Command #64956: Write Primary Element Type and SubType

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDBC) |
| 2 | Unsigned-8 | Primary Element Type and SubType |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDBC) |
| 2 | Unsigned-8 | Primary Element Type and SubType |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.171 Command #64957 : Write Fluid Type

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDBD) |
| 2 | Unsigned-8 | Fluid Type |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDBD) |
| 2 | Unsigned-8 | Fluid Type |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.172 Command #64958 : Write Algorithms Type

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDBE) |
| 2 | Unsigned-8 | Algorithms Type |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDBE) |
| 2 | Unsigned-8 | Algorithms Type |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.173 Command #64959 : Pipe Material, Bore Material

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDBF) |
| 2 | Unsigned-8 | Pipe Material |
| 3 | Unsigned-8 | Bore Material |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDBF) |
| 2 | Unsigned-8 | Pipe Material |
| 3 | Unsigned-8 | Bore Material |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.174 Command #64961 : Write PV Simulation and FailSafe Switch

Request Data Bytes

| Byte | Format | Description |
|------|-------------|-----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDC1) |
| 2 | Unsigned-8 | PV Simulation and FailSafe Switch |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|-----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDC1) |
| 2 | Unsigned-8 | PV Simulation and FailSafe Switch |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.175 Command #64962 : Write Simulate PV1

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDC2) |
| 2-5 | Float | Simulate PV1 |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDC2) |
| 2-5 | Float | Simulate PV1 |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 8 | Error | Illegal Value |
| 16 | Error | Access restricted |

10.176 Command #64963 : Write Simulate PV2

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDC3) |
| 2-5 | Float | Simulate PV2 |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDC3) |
| 2-5 | Float | Simulate PV2 |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 8 | Error | Illegal Value |
| 16 | Error | Access restricted |

10.177 Command #64964 : Write Simulate PV3

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDC4) |
| 2-5 | Float | Simulate PV3 |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDC4) |
| 2-5 | Float | Simulate PV3 |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 8 | Error | Illegal Value |
| 16 | Error | Access restricted |

10.178 Command #64965 : Write Simulate PV4

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDC5) |
| 2-5 | Float | Simulate PV4 |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDC5) |
| 2-5 | Float | Simulate PV4 |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 8 | Error | Illegal Value |
| 16 | Error | Access restricted |

10.179 Command #64966: Write View configuration III

This command writes part 3 of screen configuration.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFDC6) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |
| 3-20 | ASCII | CustomUnits |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFDC6) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |
| 3-20 | ASCII | CustomUnits |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too Few Data Bytes Received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | Transmitter In Write Protect Mode |
| 16 | Error | Access Denied |
| 32 | Error | Busy |

10.180 Command #64967: Read Display View configuration III

This command reads the View configuration III.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFDC7) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFDC7) |
| 2 | Enum | Screen Selection screen 1:-Hex 3E screen 2:-Hex 3F screen 3:-Hex 40 screen 4:-Hex 41 screen 5:-Hex 42 screen 6:-Hex 43 screen 7:-Hex 44 screen 8:-Hex 45 |
| 3-20 | Enum | Custom Units |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------|
| 0 | Success | No Command-Specific Errors |
| 5 | Error | Too Few Data Bytes Received |

10.181 Command #64968 : Write Differential Pressure Range Values

Request Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDC8) |
| 2-5 | Float | Differential Pressure Upper Range Value |
| 6-9 | Float | Differential Pressure Lower Range Value |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDC8) |
| 2-5 | Float | Differential Pressure Upper Range Value |
| 6-9 | Float | Differential Pressure Lower Range Value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|--|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 9 | Error | Lower Range Value too High |
| 10 | Error | Lower Range Value too Low |
| 11 | Error | Upper Range Value Too High |
| 12 | Error | Upper Range Value Too Low |
| 13 | Error | Upper and Lower Range Values Out of Limits |
| 14 | Error | Span too Small |
| 16 | Error | Access restricted |

10.182 Command #64969 : Write Static Pressure Range Values

Request Data Bytes

| Byte | Format | Description |
|------|-------------|-----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDC9) |
| 2-5 | Float | Static Pressure Upper Range Value |
| 6-9 | Float | Static Pressure Lower Range Value |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|-----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDC9) |
| 2-5 | Float | Static Pressure Upper Range Value |
| 6-9 | Float | Static Pressure Lower Range Value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|--|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 9 | Error | Lower Range Value too High |
| 10 | Error | Lower Range Value too Low |
| 11 | Error | Upper Range Value Too High |
| 12 | Error | Upper Range Value Too Low |
| 13 | Error | Upper and Lower Range Values Out of Limits |
| 14 | Error | Span too Small |
| 16 | Error | Access restricted |

10.183 Command #64970 : Write Process Temperature Range Values

Request Data Bytes

| Byte | Format | Description |
|------|-------------|---------------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDCA) |
| 2-5 | Float | Process Temperature Upper Range Value |
| 6-9 | Float | Process Temperature Lower Range Value |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|---------------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDCA) |
| 2-5 | Float | Process Temperature Upper Range Value |
| 6-9 | Float | Process Temperature Lower Range Value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|--|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 9 | Error | Lower Range Value too High |
| 10 | Error | Lower Range Value too Low |
| 11 | Error | Upper Range Value Too High |
| 12 | Error | Upper Range Value Too Low |
| 13 | Error | Upper and Lower Range Values Out of Limits |
| 14 | Error | Span too Small |
| 16 | Error | Access restricted |

10.184 Command #64971 : Write Flow Range Values

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDCB) |
| 2-5 | Float | Flow Upper Range Value |
| 6-9 | Float | Flow Lower Range Value |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDCB) |
| 2-5 | Float | Flow Upper Range Value |
| 6-9 | Float | Flow Lower Range Value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|--|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid selection |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 9 | Error | Lower Range Value too High |
| 10 | Error | Lower Range Value too Low |
| 11 | Error | Upper Range Value Too High |
| 12 | Error | Upper Range Value Too Low |
| 13 | Error | Upper and Lower Range Values Out of Limits |
| 14 | Error | Span too Small |
| 16 | Error | Access restricted |

10.185 Command #64972 : Read DP, SP, Temp, Flow, MBT Range Values

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDCC) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFDCC) |
| 2-5 | Float | DP Upper Range Values |
| 6-9 | Float | DP Lower Range Values |
| 10-13 | Float | SP Upper Range Values |
| 14-17 | Float | SP Lower Range Values |
| 18-21 | Float | Process Temperature Upper Range Values |
| 22-25 | Float | Process Temperature Lower Range Values |
| 26-29 | Float | Flow Upper Range Values |
| 30-33 | Float | Flow Lower Range Values |
| 34-37 | Float | MBT Upper Range values |
| 38-41 | Float | MBT Lower Range values |
| 42-45 | Float | Totalizer Upper Range values |
| 46-49 | Float | Totalizer Lower Range values |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.186 Command #64975 : Read Range unit code DP, SP, Temp, Flow, MBT and Totalizer.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDCF) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDCF) |
| 2 | Unsigned 8 | Unit code for DP |
| 3 | Unsigned 8 | Unit code for SP |
| 4 | Unsigned 8 | Unit code for PT |
| 5 | Unsigned 8 | Unit code for FLOW |
| 6 | Unsigned 8 | Unit code for MBT |
| 7 | Unsigned 8 | Unit code for Totlizer |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.187 Temp, Flow, and MBT

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDCF) |

Response Data Bytes

| Byte | Format | Description |
|------|---------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDCF) |
| 2 | Unsigned Char | DP Unit Code |
| 3 | Unsigned Char | SP Unit Code |
| 4 | Unsigned Char | Process Temperature Unit Code |
| 5 | Unsigned Char | Flow Range Unit Code |
| 6 | Unsigned Char | Meter body Temperature Unit Code |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.188 Command #64978 : Read DP UTL LTL URL LRL, SP UTL LTL URL LRL, Temp UTL LTL URL LRL, Flow URL LRL, MBT Limit Values

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDD2) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|---------------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDD2) |
| 2-5 | Float | DP UTL value |
| 6-9 | Float | DP LTL Value |
| 10-13 | Float | DP Upper Limit Value |
| 14-17 | Float | DP Lower Limit Value |
| 18-21 | Float | SP UTL Value |
| 22-25 | Float | SP LTL Value |
| 26-29 | Float | SP Upper Limit Value |
| 30-33 | Float | SP Lower Limit Value |
| 34-37 | Float | Process Temperature UTL Value |
| 38-41 | Float | Process Temperature LTL Value |
| 42-45 | Float | Process Temperature Upper Limit Value |
| 46-49 | Float | Process Temperature Lower Limit Value |
| 50-53 | Float | Flow Upper Limit Value |
| 54-57 | Float | Flow Lower Limit Value |
| 58-61 | Float | MBT Upper Limit Value |
| 62-65 | Float | MBT Lower Limit Value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.189 Command #64979 : Write damping Values for DP

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDD3) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDD3) |
| 2-5 | Float | Write damping Values for DP |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Greater than Low Limit |
| 4 | Error | Less than Low Limit |
| 5 | Error | Too few data bytes received |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.190 Command #64980 : Write damping Values for SP

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDD4) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDD4) |
| 2-5 | Float | Write damping Values for SP |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Greater than Low Limit |
| 4 | Error | Less than Low Limit |
| 5 | Error | Too few data bytes received |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.191 Command #64981 : Write damping Values for PT

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDD5) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDD5) |
| 2-5 | Float | Write damping Values for PT |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Greater than Low Limit |
| 4 | Error | Less than Low Limit |
| 5 | Error | Too few data bytes received |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.192 Command #64982 : Write damping Values for Flow

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDD6) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDD6) |
| 2-5 | Float | Write damping Values for Flow |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Greater than Low Limit |
| 4 | Error | Less than Low Limit |
| 5 | Error | Too few data bytes received |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.193 Command #64983 : Write damping Values for MBT

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDD7) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDD7) |
| 2-5 | Float | Write damping Values for MBT |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|-----------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Greater than Low Limit |
| 4 | Error | Less than Low Limit |
| 5 | Error | Too few data bytes received |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.194 Command #64984 : Read Damping values of DP, SP, Temp, Flow , MBT

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDD8) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDD8) |
| 2-5 | Float | DP Value |
| 6-9 | Float | SP Value |
| 10-13 | Float | Process Temperature Value |
| 14-17 | Float | Flow Value |
| 18-21 | Float | MBT Value |
| 22-25 | Float | Totalizer Value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.195 Command #64989 : Read Process values of DP, SP, Temp, Flow , MBT and CJT

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDDD) |

Response Data Bytes

| Byte | Format | Description |
|---------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDDD) |
| 2-5 | Float | DP Value |
| 6-9 | Float | SP Value |
| 10-13 | Float | Process Temperature Value |
| 14-17 | Float | Flow Value |
| 18-21 | Float | MBT Value |
| 22-25 | Float | CJ Value |
| 26 - 29 | Float | Totalizer Value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |

10.196 Command #64990 : Write Flow Upper Range Limit (customer entry) URL

Request Data Bytes

| Byte | Format | Description |
|------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDDE) |
| 2-5 | Float | Write Flow Upper Range Limit (customer entry) URL |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDDE) |
| 2-5 | Float | Flow Upper Range Limit Value |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Passed parameter too large |
| 4 | Error | Passed parameter too small |
| 5 | Error | Too few data bytes received |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |

10.197 Command #65000: Read Discharge Coefficients (r2), Viscosity polynomial coefficients (v2), Viscosity polynomial coefficients (v3)

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDE8) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFDE8) |
| 2-5 | Float | Discharge Coefficients (r2) |
| 6-9 | Float | Viscosity polynomial coefficients (v2) |
| 10-13 | Float | Viscosity polynomial coefficients (v3) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.198 Command #65001: Read Viscosity polynomial coefficients (v4), Viscosity polynomial coefficients (v5), Density polynomial coefficients (d2)

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDE9) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFDE9) |
| 2-5 | Float | Viscosity polynomial coefficients (v4) |
| 6-9 | Float | Viscosity polynomial coefficients (v5) |
| 10-13 | Float | Density polynomial coefficients (d2) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.199 Command #65002: Read Density polynomial coefficients (d3), Density polynomial coefficients (d4), Density polynomial coefficients (d5)

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDEA) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|--------------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDEA) |
| 2-5 | Float | Density polynomial coefficients (d3) |
| 6-9 | Float | Density polynomial coefficients (d4) |
| 10-13 | Float | Density polynomial coefficients (d5) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.200 Command #65009: SP Correct Input to URV

This command performs a calibration trim for the sensor. The calibration pressure applied to the transmitter is received with this command and the transmitter trims the sensor calibration so that its output equals this value.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDF1) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Passed parameter too large |
| 4 | Error | Passed parameter too small |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 9 | Error | Applied Process too High |
| 10 | Error | Applied process too low |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.201 Command #65010: SP Correct input at LRV

This command performs a calibration trim for the sensor. The calibration pressure applied to the transmitter is received with this command and the PV is calibrated to the applied URV input.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDF2) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Passed parameter too large |
| 4 | Error | Passed parameter too small |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 9 | Error | Applied Process too High |
| 10 | Error | Applied process too low |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.202 Command #65011: SP Reset Corrects

This command removes the calibration and returns the performance to factory calibration. This function is useful as a diagnostic tool to get an indication of characterization performance, as well as the PV is calibrated to the applied LRV input.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDF3) |

Response Data Bytes

| Byte | Format | Description |
|------|--------|-------------|
| None | | |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |

10.203 Command #65012: Read Max Flow Rate and Max DP for Mass and Volume Flow

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDF4) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFDF4) |
| 2 | Enum | <p>Flow Output Type</p> <p>0 = No Flow Output</p> <p>1 = Ideal Gas Actual Volume Flow</p> <p>2 = Ideal Gas Mass Flow</p> <p>3 = Superheated Steam Mass Flow/Saturated Steam Mass Flow or Steam Mass Flow</p> <p>4 = Liquid Mass Flow</p> <p>5 = Ideal Gas Volume Flow @ Std Condition</p> <p>6 = Liquid Actual Volume Flow</p> <p>7 = Liquid Volume Flow @ Std Condition</p> <p>11-15 = Reserved</p> |
| 3-6 | Float | Max Flow Rate |
| 7-10 | Float | Max DP |
| 11 | Enum | <p>Units Mode</p> <p>0 = Tool will use Units conversion factor value of 1.0f</p> <p>1 = Tool will use Units conversion factor passed in byte 12-15</p> |
| 12-15 | Float | Units Conversion Factor |
| 16 | Enum | Fluid List index |
| 17 | Enum | Polynomial Coefficient index |
| 18-33 | Unsigned-8 | custom fluid name |
| 34 | Enum | Fluid Type |
| 35 | Enum | Flow Calculation Standard |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|----------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |

10.204 Command #65013: Write Max Flow Rate and Max DP for Mass and Volume Flow

Request Data Bytes

| Byte | Format | Description |
|-------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDF5) |
| 2 | Enum | Flow Output Type 0 = No Flow Output 1 = Ideal Gas Actual Volume Flow 2 = Ideal Gas Mass Flow 3 = Superheated Steam Mass Flow Saturated Steam Mass Flow or Steam Mass Flow 4 = Liquid Mass Flow 5 = Ideal Gas Volume Flow @ Std Condition 6 = Liquid Actual Volume Flow 7 = Liquid Volume Flow @ Std Condition 11-15 = Reserved |
| 3-6 | Float | Max Flow Rate |
| 7-10 | Float | Max DP |
| 11 | Enum | Units Mode 0 = Tool will use Units conversion factor value of 1.0f 1 = Tool will use Units conversion factor passed in byte 12-15 |
| 12-15 | Float | Units Conversion Factor |
| 16 | Enum | Fluid List index |
| 17 | Enum | Polynomial Coefficient index |
| 18-33 | Unsigned-8 | custom fluid name |
| 34 | Enum | Fluid Type |
| 35 | Enum | Flow Calculation Standard |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDF5) |
| 2 | Unsigned-8 | Flow Output Type 0 = No Flow Output 1 = Ideal Gas Actual Volume Flow 2 = Ideal Gas Mass Flow 3 = Superheated Steam Mass Flow Saturated Steam Mass Flow or Steam Mass Flow 4 = Liquid Mass Flow 5 = Ideal Gas Volume Flow @ Std Condition 6 = Liquid Actual Volume Flow 7 = Liquid Volume Flow @ Std Condition 11-15 = Reserved |
| 3-6 | Float | Max Flow Rate |
| 7-10 | Float | Max DP |
| 11 | Enum | Units Mode 0 = Tool will use Units conversion factor value of 1.0f 1 = Tool will use Units conversion factor passed in byte 12-15 |
| 12-15 | Float | Units Conversion Factor |
| 16 | Enum | Fluid List index |
| 17 | Enum | Polynomial Coefficient index |
| 18-33 | Unsigned-8 | custom fluid name |
| 34 | Enum | Fluid Type |
| 35 | Enum | Flow Calculation Standard |

Command-Specific Response Cdeso

| Code | Class | Description |
|------|---------|-----------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Too few data bytes received |

10.205 Command #65014: Read Static Pressure last Time & Date for correct URV, correct LRV, zero trim

This command reads Static Pressure Last Time and Dates for correct URV, correct LRV and zero trim.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDF6) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDF6) |
| 2-6 | Enum | last correct URV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 7-11 | Enum | last correct LRV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 12-16 | Enum | last zero trim time (DD 1 MM 1 YY 1 HR 1 MIN 1) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.206 Command #65015: Read Static Pressure Previous Time & Date for correct URV, correct LRV, zero trim

This command reads static pressure previous Time and Dates for correct URV, correct LRV and zero trim.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDF7) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDF7) |
| 2-6 | Enum | Previous correct URV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 7-11 | Enum | Previous correct LRV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 12-16 | Enum | Previous zero trim time (DD 1 MM 1 YY 1 HR 1 MIN 1) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.207 Command #65016: Read Static Pressure current Time & Date for correct URV, correct LRV, zero trim

This command reads Static pressure Current Time and Dates for correct URV, correct LRV and zero trim.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDF8) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|--|
| 0-1 | Unsigned-16 | Extended command number (0xFDF8) |
| 2-6 | Enum | Current correct URV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 7-11 | Enum | Current correct LRV time (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 12-16 | Enum | Current zero trim time (DD 1 MM 1 YY 1 HR 1 MIN 1) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.208 Command #65017: Read Static Pressure current, last and previous reset correct Time & Date

This command reads the Static Pressure current, last and previous reset correct T&D

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDF9) |

Response Data Bytes

| Byte | Format | Description |
|-------|-------------|---|
| 0-1 | Unsigned-16 | Extended command number (0xFDF9) |
| 2-6 | Enum | Read current reset correct T&D (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 7-11 | Enum | Read last reset correct T&D (DD 1 MM 1 YY 1 HR 1 MIN 1) |
| 12-16 | Enum | Read previous reset correct T&D (DD 1 MM 1 YY 1 HR 1 MIN 1) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 6 | Error | Transmitter specific command error |

10.209 Variable Zero

This command performs a calibration trim for the sensor. The calibration pressure applied to the transmitter is received with this command and the transmitter trims the sensor calibration so that it's Set DP Primary Variable Zero.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDFA) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDFA) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Passed parameter too large |
| 4 | Error | Passed parameter too small |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 9 | Error | Applied Process too High |
| 10 | Error | Applied process too low |
| 16 | Error | Access restricted |

10.210 Command #65019 Set Static Pressure Primary Variable Zero

This command performs a calibration trim for the sensor. The calibration pressure applied to the transmitter is received with this command and the transmitter trims the sensor calibration so that it's Set SP Primary Variable Zero.

Request Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDFB) |

Response Data Bytes

| Byte | Format | Description |
|------|-------------|----------------------------------|
| 0-1 | Unsigned-16 | Extended command number (0xFDFB) |

Command-Specific Response Codes

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 3 | Error | Passed parameter too large |
| 4 | Error | Passed parameter too small |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 9 | Error | Applied Process too High |
| 10 | Error | Applied process too low |
| 16 | Error | Access restricted |

10.211 Command #64828 Write Totalizer Configuration

Transition 0: Write Totalizer basic configuration:

This command is used to perform Totalizer configuration (transition 0).

Request Data Bytes:

| Byte | Format | Description |
|---------|-------------|---|
| 0 -1 | Unsigned 8 | Command number (64828) |
| 2 | Unsigned 8 | Command details (index) (0 – Totalizer configuration) |
| 3 – 6 | Float - 4 | Maximum Totalizer Value |
| 7 | Bits-8 | Start/Stop Totalizer and Reset Totalizer (Bit 0 : Start/Stop Totalizer Bit 1 : Reset Positive Totalizer Bit 2 : Reset Negative Totalizer, Bit 3 : Totalizer Exceed Counter) |
| 8 – 9 | Unsigned 16 | Sampling Rate in millisecond |
| 10 – 13 | Float - 4 | Totalizer Base Value |
| 14 – 15 | Unsigned 16 | Totalizer status Latency in seconds |
| 16 – 29 | Unsigned 8 | Reserved |

Response Data Bytes:

| Byte | Format | Description |
|---------|-------------|---|
| 0 -1 | Unsigned 8 | Command number (64828) |
| 2 | Unsigned 8 | Command details (index) (0 – Totalizer configuration) |
| 3 – 6 | Float - 4 | Maximum Totalizer Value |
| 7 | Bits-8 | Start/Stop Totalizer and Reset Totalizer (Bit 0 : Start/Stop Totalizer Bit 1 : Reset Positive Totalizer Bit 2 : Reset Negative Totalizer, Bit 3 : Totalizer Exceed Counter) |
| 8 – 9 | Unsigned 16 | Sampling Rate in millisecond |
| 10 – 13 | Float - 4 | Totalizer Base Value |
| 14 – 15 | Unsigned 16 | Totalizer status Latency in seconds |
| 16 – 29 | Unsigned 8 | Reserved |

Command-Specific Response Codes:

| Code | Class | Description |
|------|---------|---|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 3 | Error | Passed Parameter too large |
| 4 | Error | Passed Parameter too small |
| 5 | Error | Passed too few data bytes. |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 16 | Error | Access restricted |
| 32 | Error | Busy |
| 65 | Error | Max Totalizer value too High |
| 66 | Error | Max Totalizer value too Low |
| 67 | Error | Sampling rate is too High |
| 68 | Error | Sampling rate is too Low |
| 69 | Error | Preset Value is too High |
| 70 | Error | Preset Value is too Low |
| 71 | Error | Latency time too high |
| 72 | Error | Access restricted to Totalizer base value as Totalizer is running |

Transition 1: Write Totalizer Advance Configuration

This command is used to perform Totalizer Advance configuration (transition 1).

Request Data Bytes:

| Byte | Format | Description |
|---------|------------|---|
| 0 -1 | Unsigned 8 | Command number (64828) |
| 2 | Unsigned 8 | Command details (index) (1 - Totalizer Custom Unit Configuration) |
| 3 - 10 | ASCII | Custom Unit Tag |
| 11 | Unsigned 8 | Base Unit (Totalizer Unit Code) |
| 12 - 15 | Float 4 | Conversion Factor (Base per custom unit) |
| 16 - 29 | Unsigned 8 | Reserved |

Response Data Bytes:

| Byte | Format | Description |
|---------|------------|---|
| 0 -1 | Unsigned 8 | Command number (64828) |
| 2 | Unsigned 8 | Command details (index) (1 - Totalizer Custom Unit Configuration) |
| 3 – 10 | ASCII | Custom Unit Tag |
| 11 | Unsigned 8 | Base Unit (Totalizer Unit Code) |
| 12 - 15 | Float 4 | Conversion Factor (Base per custom unit) |
| 16 - 29 | Unsigned 8 | Reserved |

Command-Specific Response Codes:

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 3 | Error | Passed Parameter too large |
| 4 | Error | Passed Parameter too small |
| 5 | Error | Passed too few data bytes. |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 12 | Error | Invalid unit code |
| 16 | Error | Access restricted |
| 32 | Error | Busy |
| 65 | Error | Reserved |
| 66 | Error | Reserved |

10.212 Command #64829: Read Totalizer Configuration

Transition 0: Read Totalizer basic configuration:

This command will read Totalizer configuration (transition 0).

Request Data Bytes:

| Byte | Format | Description |
|------|------------|---|
| 0 -1 | Unsigned 8 | Command number (64829) |
| 2 | Unsigned 8 | Command details (index) (0 – Totalizer configuration) |

Response Data Bytes:

| Byte | Format | Description |
|---------|-------------|---|
| 0 -1 | Unsigned 8 | Command number (64829) |
| 2 | Unsigned 8 | Command details (index) (0 – Totalizer configuration) |
| 3 – 6 | Float - 4 | Maximum Totalizer Value |
| 7 | Bits-8 | Start/Stop Totalizer and Reset Totalizer (Bit 0 : Start/Stop Totalizer Bit 1 : Reset Positive Totalizer Bit 2 : Reset Negative Totalizer, Bit 3 : Totalizer Exceed Counter) |
| 8 – 9 | Unsigned 16 | Sampling Rate in sec |
| 10 – 13 | Float 4 | Totalizer Preset Value |
| 14 – 15 | Unsigned 16 | Totalizer status Latency in seconds |
| 16 | Unsigned 8 | Totalizer Start stop status |
| 17- 29 | Unsigned 8 | Reserved |

Command-Specific Response Codes:

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Passed too few data bytes. |
| 6 | Error | Transmitter specific command error |
| 32 | Error | Busy |
| 65 | Error | Reserved |
| 66 | Error | Reserved |

10.213 Command #64829: Read Totalizer Configuration

Transition 1: Read Totalizer unit configuration:

This command will read Totalizer Advance configuration (transition 1).

Request Data Bytes:

| Byte | Format | Description |
|------|------------|--|
| 0 -1 | Unsigned 8 | Command number (64829) |
| 2 | Unsigned 8 | Command details (index) (1 - Totalizer Custom Unit Configuration) |

Response Data Bytes:

| Byte | Format | Description |
|---------|------------|--|
| 0 -1 | Unsigned 8 | Command number (64829) |
| 2 | Unsigned 8 | Command details (index) (1 - Totalizer Custom Unit Configuration) |
| 3 – 10 | ASCII | Custom Unit Tag |
| 11 | Unsigned 8 | Base Unit (Totalizer Unit Code) |
| 12 – 15 | Float 4 | Conversion Factor (Base per custom unit) |
| 16 - 29 | Unsigned 8 | Reserved |

Command-Specific Response Codes:

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Passed too few data bytes. |
| 6 | Error | Transmitter specific command error |
| 32 | Error | Busy |
| 65 | Error | Reserved |
| 66 | Error | reserved |

Transition 2: Read Totalizer Value and status:

This command will read Totalizer configuration (transition 2).

Request Data Bytes:

| Byte | Format | Description |
|------|------------|---|
| 0 -1 | Unsigned 8 | Command number (64829) |
| 2 | Unsigned 8 | Command details (index) (2- Read Totalizer Value) |

Response Data Bytes:

| Byte | Format | Description |
|---------|-------------|---|
| 0 -1 | Unsigned 8 | Command number (64829) |
| 2 | Unsigned 8 | Command details (index) (2- Read Totalizer Value) |
| 3 – 10 | Float – 8 | Totalizer Positive Value |
| 11 – 18 | Float – 8 | Totalizer Negative Value |
| 19 – 20 | Unsigned 16 | Totalizer exceed Counter |
| 21 | Bits-8 | Totalizer Status |
| 22 – 29 | Float – 8 | Totalizer Value |

Command-Specific Response Codes:

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Passed too few data bytes. |
| 6 | Error | Transmitter specific command error |
| 32 | Error | Busy |
| 65 | Error | Reserved |
| 66 | Error | reserved |

Transition 3: Read Totalizer Limit Values:

This command will read Totalizer Limit value (transition 3).

Request Data Bytes:

| Byte | Format | Description |
|------|------------|---|
| 0 -1 | Unsigned 8 | Command number (64829) |
| 2 | Unsigned 8 | Command details (index) (3 – Totalizer LTL and UTL Value) |

Response Data Bytes:

| Byte | Format | Description |
|---------|------------|---|
| 0 -1 | Unsigned 8 | Command number (64829) |
| 2 | Unsigned 8 | Command details (index) (3 – Totalizer LTL and UTL Value) |
| 3 – 6 | Float 4 | Totalizer UTL |
| 7 - 10 | Float 4 | Totalizer LTL |
| 11 - 29 | Unsigned 8 | Reserved |

Command-Specific Response Codes:

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Passed too few data bytes. |
| 6 | Error | Transmitter specific command error |
| 32 | Error | Busy |
| 65 | Error | Reserved |
| 66 | Error | reserved |

Transition 4: Read Totalizer Values in double precision format:

This command will read Totalized, Positive and Negative Totalizer values (transition 4).

Request Data Bytes:

| Byte | Format | Description |
|------|------------|--|
| 0 -1 | Unsigned 8 | Command number (64829) |
| 2 | Unsigned 8 | Command details (index) (4- Read Totalized Value) |

Response Data Bytes:

| Byte | Format | Description |
|---------|------------|--|
| 0 -1 | Unsigned 8 | Command number (64829) |
| 2 | Unsigned 8 | Command details (index) (4- Read Totalized Value) |
| 3 – 10 | Float – 8 | Totalizer Positive Value |
| 11 – 18 | Float – 8 | Totalizer Negative Value |
| 19 – 26 | Float – 8 | Totalizer Value |
| 27 – 29 | Unsigned 8 | Reserved |
| | | |

Command-Specific Response Codes:

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Passed too few data bytes. |
| 6 | Error | Transmitter specific command error |
| 32 | Error | Busy |
| 65 | Error | Reserved |
| 66 | Error | reserved |

Transition 5: Read Totalizer Max Values and Limit:

This command will read Totalizer value and limits value. (transition 5).

Request Data Bytes:

| Byte | Format | Description |
|------|------------|---|
| 0 -1 | Unsigned 8 | Command number (64829) |
| 2 | Unsigned 8 | Command details (index) (5- Read Totalizer Max and Limit Value) |

Response Data Bytes:

| Byte | Format | Description |
|---------|------------|---|
| 0 -1 | Unsigned 8 | Command number (64829) |
| 2 | Unsigned 8 | Command details (index) (5- Read Totalizer Max and Limit Value) |
| 3 – 6 | Float – 4 | Totalizer UTL Value |
| 7 - 10 | Float – 4 | Totalizer LTL Value |
| 11 – 14 | Float – 4 | Maximum Totalizer Value |
| 15 – 18 | Float – 4 | Totalizer Base Value |
| 19 - 22 | Float – 4 | Totalizer LRV Value |
| 23 – 26 | Float – 4 | Totalizer URV Value |
| 27-29 | Unsigned 8 | Reserved |

Command-Specific Response Codes:

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Passed too few data bytes. |
| 6 | Error | Transmitter specific command error |
| 32 | Error | Busy |
| 65 | Error | Reserved |
| 66 | Error | reserved |

10.214 Command #64830: Write totalizer Range Config parameters

This command is used to perform Totalizer URV LRV and damping configuration (transition 0).

Request Data Bytes:

| Byte | Format | Description |
|---------|------------|--|
| 0 -1 | Unsigned 8 | Command number (64830) |
| 2 | Unsigned 8 | Command details (index) (0 – Totalizer URV LRV Damp configuration) |
| 3 – 6 | Float - 4 | Totalizer URV Value |
| 7 – 10 | Float - 4 | Totalizer LRV Value |
| 11 – 14 | Float - 4 | Totalizer reserved float parameter |
| 15-19 | Unsigned 8 | Reserved |

Response Data Bytes:

| Byte | Format | Description |
|---------|------------|--|
| 0 -1 | Unsigned 8 | Command number (64830) |
| 2 | Unsigned 8 | Command details (index) (0 – Totalizer URV LRV Damp configuration) |
| 3 – 6 | Float - 4 | Totalizer URV Value |
| 7 – 10 | Float - 4 | Totalizer LRV Value |
| 11 – 14 | Float - 4 | Totalizer reserved float parameter |
| 15-19 | Unsigned 8 | Reserved |

Command-Specific Response Codes:

| Code | Class | Description |
|------|---------|------------------------------------|
| 0 | Success | No Command-Specific Errors |
| 2 | Error | Invalid Selection |
| 5 | Error | Passed too few data bytes. |
| 6 | Error | Transmitter specific command error |
| 7 | Error | In Write Protect Mode |
| 8 | Error | Set to nearest possible value |
| 9 | Error | Lower range value too high |

| | | |
|----|-------|----------------------------|
| 10 | Error | Lower range value too low |
| 11 | Error | Upper range value too high |
| 12 | Error | Upper range value too low |
| 13 | Error | URV and LRV out of limits |
| 14 | Error | Span too small |
| 16 | Error | Access restricted |
| 18 | Error | Invalid units |
| 29 | Error | Invalid span |
| 32 | Error | Busy |

11.Tables

11.1 Unit Codes for Temperature

Table 12: Unit Codes supported for temperature

| | Unit | HART Code |
|---|--------------------|-----------|
| 1 | Custom | 0 |
| 2 | Degrees Celsius | 32 |
| 3 | Degrees Fahrenheit | 33 |
| 4 | Degrees Rankin | 34 |
| 5 | Kelvin | 35 |
| 6 | Percent | 57 |

11.2 Unit Codes for Pressure (DP and SP)

Table 13: Unit Codes supported for pressure

| | Unit | HART Code |
|----|--------------------------------------|-----------|
| 1 | Inches of water at 68 degrees F | 1 |
| 2 | Inches of mercury at 0 degrees C | 2 |
| 3 | Feet of water at 68 degrees F | 3 |
| 4 | Millimeter of water at 68 degrees F | 4 |
| 5 | Millimeter of mercury at 0 degrees C | 5 |
| 6 | Pounds per square inch | 6 |
| 7 | Bars | 7 |
| 8 | Millibars | 8 |
| 9 | Grams per square centimeter | 9 |
| 10 | Kilograms per square centimeter | 10 |
| 11 | Pascal | 11 |

| | Unit | HART Code |
|----|---|------------------|
| 12 | Kilopascals | 12 |
| 13 | Torr | 13 |
| 14 | Atmospheres | 14 |
| 15 | Inches of water at 60 degrees F | 145 |
| 16 | Megapascals | 237 |
| 17 | Inches of water at 4 degrees C | 238 |
| 18 | Millimeter of water at 4 degrees C | 239 |
| 19 | Default Inches of water at 60 degrees F | 240 |

11.3 Unit Codes for Mass Flow

Table 14: Unit Codes supported for mass flow

| | Unit | HART Code |
|----|----------------------|------------------|
| 1 | Grams per second | 70 |
| 2 | Grams per minute | 71 |
| 3 | Grams per hour | 72 |
| 4 | Kilograms per second | 73 |
| 5 | Kilograms per minute | 74 |
| 6 | Kilograms per hour | 75 |
| 7 | Ton per minute | 77 |
| 8 | Ton per hour | 78 |
| 9 | Pounds per second | 80 |
| 10 | Pounds per minute | 81 |
| 11 | Pounds per hour | 82 |
| 12 | Kilograms per day | 76 |

| | Unit | HART Code |
|----|------------------------|------------------|
| 13 | Metric tons per minute | 77 |
| 14 | Metric tons per hours | 78 |
| 15 | Metric tons per day | 79 |
| 17 | Pounds per day | 79 |
| 18 | Short tons per minute | 84 |
| 19 | Short tons per hours | 85 |
| 20 | Short tons per day | 86 |
| 21 | Long tons per hours | 87 |
| 22 | Long tons per day | 88 |
| | | |

11.4 Unit Codes for Volume Flow

Table 15: Unit Codes supported for volume flow

| | Unit | HART Code |
|----|---------------------------------|-----------|
| 1 | Cubic feet per minute | 15 |
| 2 | Gallons per minute | 16 |
| 3 | Liters per minute | 17 |
| 4 | Cubic meter per hour | 19 |
| 5 | Cubic feet per seconds | 26 |
| 6 | Cubic meter per second | 28 |
| 7 | Cubic meter per day | 29 |
| 8 | Cubic feet per hour | 130 |
| 9 | Cubic meters per minute | 131 |
| 10 | Barrels per day | 135 |
| 11 | Gallons per hour | 136 |
| 12 | Liters per hour | 138 |
| 13 | Gallons per day | 235 |
| 14 | Standard cubic feet per minute | 123 |
| 15 | Standard cubic feet per hours | 185 |
| 16 | Standard cubic feet per day | 184 |
| 17 | Normal cubic feet per minute | |
| 18 | Normal cubic feet per hour | |
| 19 | Normal cubic feet per day | |
| 20 | Normal cubic feet per seconds | |
| 21 | Normal cubic meter per minute | 182 |
| 22 | Normal cubic meter per hours | 121 |
| 23 | Normal cubic meter per day | 181 |
| 24 | Standard cubic meter per minute | 189 |

| | Unit | HART Code |
|----|--------------------------------|------------------|
| 25 | Standard cubic meter per hours | 188 |
| 26 | Standard cubic meter per day | 187 |
| 27 | Gallons per second | 22 |
| 28 | Liters per second | 24 |
| 29 | Normal liter per hour | 122 |
| 30 | Barrels per second | 132 |
| 31 | Barrels per minute | 133 |
| 32 | Barrels per hour | 134 |

Table 16: Totalizer Mass Unit

| Engineering Unit | Abbreviation | HART Unit code |
|-------------------------|---------------------|-----------------------|
| Kg | Kilogram | 61 |
| G | gram | 60 |
| ShTons | Short Tons | 64 |
| LTons | Long Tons | 65 |
| Mton | metric Ton | 62 |
| Lb | Pounds | 63 |
| Ounce | Ounce | 125 |
| Special | custom Unit | 253 |

Table 17: Totalizer Volume Unit

| Engineering Unit | Abbreviation | HART Unit code |
|-------------------------|----------------------|-----------------------|
| m3 | cubic meter | 43 |
| Barrels | barrels | 46 |
| ft3 | cubic feet | 112 |
| nm3 | normal cubic meter | 166 |
| nLiters | normal Liters | 167 |
| Liters | Liters | 41 |
| Scft | standard cubic feet | 168 |
| Scm | standard cubic meter | 172 |
| Gallons | gallons | 40 |
| Special | custom Unit | 253 |

11.5 Unit Conversion

Temperature Units

Internally, the transmitter uses degrees Celsius for the temperature variable. Conversions to the other supported units are made using the following equations:

Table 18: Temperature Units

| "To" unit | Formula |
|-----------|------------------------------|
| Farenheit | $T_F = (T_C * 1.8) + 32$ |
| Rankine | $T_R = (T_C + 273.15) * 1.8$ |
| Kelvin | $T_K = T_C + 273.15$ |

11.6 Command 220 details

Table 19: Command 220 details

| Type | Bit | Command 220 bit status |
|--|-----|-------------------------------------|
| | | |
| DAC Failure (HART/DE) (BYTE1) | 7 | DAC SPI Failure |
| | 6 | DAC Packet Error |
| | 5 | Over Current Status |
| | 4 | Under Current Status |
| | 3 | Temp Above 140C |
| | 2 | Temp Above 100C |
| | 1 | Unused |
| | 0 | Unused |
| Communication (HART/DE) (BYTE2) | 7 | Unused |
| | 6 | Unused |
| | 5 | Low transmitter supply |
| | 4 | Dac Write failure |
| | 3 | Brownout Status |
| | 2 | Program Flow Failure |
| | 1 | ROM Failure |
| | 0 | RAM Failure |
| Display (HART/DE) (BYTE3) | 7 | Unused |
| | 6 | Unused |
| | 5 | Unused |
| | 4 | Unused |
| | 3 | Unused |
| | 2 | Display NVM corrupt |
| | 1 | Display Communication failure |
| | 0 | Unused |
| Sensors (Temp & Pres) (HART/DE) (BYTE4) | 7 | Unused |
| | 6 | Unused |
| | 5 | Temp sensor comm. timeout |
| | 4 | Temp calibration corrupt |
| | 3 | Temp sensing failure |
| | 2 | Pres sensor comm. timeout |
| | 1 | Pres NVM corrupt |
| | 0 | Pres sensing failure |
| Temp Sensor (HART/DE) (BYTE5) | 7 | Unused |
| | 6 | Temperature sensor over temperature |
| | 5 | Temp No Factory Calibration |
| | 4 | Temp unreliable comm. |
| | 3 | temp ADC Reference fault |
| | 2 | temp ADC1 Range fault |
| | 1 | temp ADC0 Range fault |
| | 0 | CJ_CT delta warning |

| | | |
|------------------------|-----|--|
| Temp Sensor (BYTE6) | 7 | Program Flow Failure in Sensor |
| | 6 | ROM Failure in Sensor |
| | 5 | RAM Failure in Sensor |
| | 4 | Suspect Input |
| | 3 | Sensor1/CJ Bad |
| | 2 | Sensor characterization CRC fault |
| | 1 | Sensor section NVM corrupt |
| | 0 | Low sensor supply |
| Temp Sensor (BYTE7) | 7 | Unused |
| | 6 | Sensor1 input fault |
| | 5 | CJ Bad |
| | 4 | Unused |
| | 3 | Sensor1 Bad |
| | 2 | Charact Calc Error |
| | 1 | Unused |
| | 0 | Sensor1 Excess cal Correction |
| Pres Sensor (BYTE8) | 7 | Sensor flow failed |
| | 6 | Sensor code corrupt |
| | 5 | Sensor ram corrupt |
| | 4 | Input may not be valid (Suspect input) |
| | 3 | DP / MBT / SP / PT / Flow bad |
| | 2 | Sensor characterization corrupt |
| | 1 | Meter body failure |
| | 0 | Low sensor supply |
| Pres Sensor (BYTE9) | 7 | Pressure sensor over temperature |
| | 6 | Pressure unreliable comm. |
| | 5 | Pres No Factory Calibration |
| | 4 | Sensor RAM DB fault |
| | 3 | Sensor overload or sensor fault |
| | 2 | Char calc error |
| | 1 | excess span correction |
| | 0 | excess zero correction |
| Pres Sensor (Byte1) | 7-6 | Unused |
| | 5 | Bad Totalizer |
| | 4 | Bad Flow |
| | 3 | Bad PT |
| | 2 | Bad SP |
| | 1 | Bad MBT |
| | 0 | Bad DP |

| | | |
|--------------------------------|---|--|
| Database Integrity (BYTE11) | 7 | Unused |
| | 6 | Display Common Config DB corrupt |
| | 5 | Display View Config DB corrupt |
| | 4 | Adv Diag/ Backup Totalizer DB corrupt |
| | 3 | Config Change / Flow Param DB corrupt |
| | 2 | General Config/ Flow Unit DB corrupt |
| | 1 | Vital Config/ Totalizer value DB corrupt |
| | 0 | Common/ Miscellaneous DB corrupt |
| Display Integrity (BYTE12) | 7 | Display View8 corrupt |
| | 6 | Display View7 corrupt |
| | 5 | Display View6 corrupt |
| | 4 | Display View5 corrupt |
| | 3 | Display View4 corrupt |
| | 2 | Display View3 corrupt |
| | 1 | Display View2 corrupt |
| | 0 | Display View1 corrupt |
| Flow Status (BYTE13) | 7 | FLOW Simulation Mode |
| | 6 | PT Simulation Mode |
| | 5 | SP Simulation Mode |
| | 4 | DP Simulation Mode |
| | 3 | FLOW – Bad SP/PT Compensation |
| | 2 | FLOW – REVERSE FLOW |
| | 1 | FLOW – SQRT OF NEG |
| | 0 | FLOW – DIV BY ZERO |

11.7 Sensor Type Codes

Table 20: Sensor type codes

| | |
|-----------|---------------------|
| 2 | Thermocouple Type E |
| 3 | Thermocouple Type J |
| 4 | Thermocouple Type K |
| 5 | Thermocouple Type N |
| 6 | Thermocouple Type T |
| 7 | Thermocouple Type S |
| 8 | Thermocouple Type R |
| 9 | Thermocouple Type B |
| 10 | RTD Pt 25 |
| 11 | RTD Pt 100 |
| 12 | RTD Pt 200 |
| 13 | RTD Pt 500 |
| 14 | RTD Pt 1000 |

12. Performance

12.1 Technical Specifications

Refer to the SMV800 SmartLine Multivariable Transmitter specification, 34-SM-03-92, for information about the overall accuracy and performance of the SMV 800 transmitter.

12.2 Power-Up

On power up, the transmitter initializes the data in RAM and the HART® communication links and starts the task scheduler to sample the input.

The device will not respond to HART® commands during the Power Up sequence.

Fixed-current mode is cancelled by power loss or software reset (command 42, for instance).

Typical Startup Time = 5 sec

HART® communication start time = 18 sec

In very short succession after power is applied to the transmitter, the device will set its output to the user-selected burnout level, then briefly transition to 50% (12 mA nominal), and then begin publishing the primary variable.

12.3 Device Reset

Command 42 ("Perform Device Reset") causes the device to reset its microprocessor. The resulting restart is similar to the normal power up sequence. (See section 0). The only difference is if the primary variable is valid at the start of the reset sequence. If so, it will be maintained until initialization is performed, and then a new calculation will be placed on the analog output channel.

12.4 Self Test

The transmitter keeps performing continuous self tests in the background. The device does support Command 237 "Self Test".

12.5 Command Response Times

Table 21: Response Times

| | |
|---------|-----------|
| Minimum | 18.236ms |
| Typical | 64ms |
| Maximum | 220.643ms |

12.6 Busy and Delayed-Response

1) BUSY (32) response code implementation:

BUSY Response code is implemented for the commands, where NVM writing is involved. Each time when the NVM write command comes, first it is checked if the device is busy in writing NVM in background, when some configuration is done from display OR long string parameters like tag/datedescriptor, Long tag, Message from previous HART® command, in the background task.

- a. If device is busy in writing long string parameters then the device issues RC-32 to the HART® command and completes the NVM write activity in hand in the command itself using its response time of 250ms. As device sends RC-32 to the HART® command, the host is expected to send the same command again until it gets a success response code or till the limited number of retries as decided by host in case of BUSY RC.
- b. If the NVM write background task is in progress for the parameters configured from display, the device sends BUSY RC to the host, and keeps on sending BUSY RC's to the next coming HART® commands until it finishes this background task of NVM write.

For host requests that involve request/response between the communication module and Pressure Sensor and / or Temperature sensor and / or Display, one BUSY response is returned to the host when the response time to the host exceeds 240mSec. Host can retry on this BUSY response. Device specific error (RC=0x06) is returned to the host when the response time to the host exceeds 240mSec for the second time for the same request.

2) Delayed-response is not used.

12.7 Long Messages

The largest data field used is in the response to Commands 20 and 22: 32 bytes of long tag and Command 17: 24 bytes containing the packed ASCII message data.

12.8 Non-Volatile Memory

EEPROM is used to hold the device's configuration parameters. New data is written to this memory 20 seconds after the execution of a write command. When data is downloaded to the device, power to the transmitter should not be interrupted until the data is copied to the non volatile memory.

12.9 Modes

Fixed current mode is implemented, using Command 40. This mode is cleared by power loss or reset. When the device is in fixed current mode, the analog output will not track the input.

12.10 Write Protection

Write-protection is provided, selected by an external jumper as well as a software write protect (command 175 and 176) .When the jumper is present, all commands are available.

12.11 Damping

The damping is available from 0 to 102 seconds in HART® for Temperature. 0 to 32 seconds for DP, SP and Flow

Annex A. Capability Checklist

Table 22: Capability checklist

| | |
|--------------------------------------|--|
| Manufacturer, model and revision | Honeywell Intl (24)., SMV800, rev.2 |
| Device type | 1 (Transmitter) |
| HART® revision | 7.x |
| Device Description available? | Yes |
| Number and type of sensors | 2 - Temp sensor – external - Pressure sensor |
| Number and type of actuators | 0 |
| Number and type of host side signals | 1: 4 – 20mA analog |
| Number of Device Variables | 6 |
| Number of Dynamic Variables | 5 |
| Dynamic Variables can be mapped | Yes |
| Number of common-practice commands | 17 |
| Number of device-specific commands | 291 |
| Bits of additional device status | 13 bytes are used |
| Alternative operating modes? | Yes (Total 6 operating modes) |
| Burst mode? | No |
| Capture Device Variables? | No |
| Write-protection? | Yes |

Annex B. Default Configuration

Table 23: Default Configuration

| Parameter | Default value |
|------------------------------|----------------------------|
| Loop controlled by | DP |
| Lower Range Value | Based on Mapping |
| Upper Range Value | Based on Mapping |
| PV Units | Based on Mapping |
| SV Units | Based on Mapping |
| TV Units | Based on Mapping |
| QV Units | Based on Mapping |
| Damping time constant | 0.5 |
| Fault-indication jumper | Up-scale |
| Write-protect jumper | Installed (write disabled) |
| Number of response preambles | 7 |
| Polling Address | 0 |
| Loop Current | Enable |
| Output mode | Analog |

Annex C. Revision History

| Document Revision | Date | Device Revision | DD Revision | Description |
|-------------------|------------|-----------------|-------------|--------------------------|
| 1.0 | 11/6/2014 | 1.0 | 1.0 | Initial Version |
| 1.1 | 10/10/2017 | 2.0 | 2.0 | Added R120 functionality |

Sales and Service

For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one the offices below.

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Specifications are subject to change without notice.

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