

HART® Field Device Specification:
Siemens SITRANS LT500 device revision 1

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1 Introduction

1.1 Purpose of this document

This specification is designed to complement other documentation (e.g. Operating Instructions) by providing a complete, unambiguous description of this field device from a HART communication perspective.

1.2 Scope, Field of application

The LT500 complies with HART Protocol Revision 7. This document specifies all the device specific features and documents HART protocol implementation details (e.g. the engineering unit codes supported).

1.3 Document References

- [1] SITRANS LT500 with mA/HART Operating Instructions A5E48417538A

1.4 Definitions, Acronyms and Abbreviations, Conventions

1.4.1 Glossary

Term	Description
EUP	End User Privilege
SUP	Service User Privilege
RUP	Restricted User Privilege
PIN	Personal Identification Number
LUI	Local User Interface

2 Device Identification

The device will identify itself differently depending on which sensor technology is used.

Manufacturer Name:	Siemens	Model Name(s):	SITRANS LT500
Manufacture ID Code:	42 (2A Hex)	Device Type Code:	41 (29 Hex)
HART Protocol Revision	7.5	Device Revision:	1
Number of Device Variables	21		
Physical Layers Supported	FSK		
Physical Device Category	Transmitter		

Please see chapter 0 for details about the supported device variables.

3 Product Overview

This information can be found in the product specific HART Data Specification.

4 Product Interfaces

4.1 Process Interface

4.1.1 Sensor Input Channels

This device contains two sensor input channels.

See [1] SITRANS LT500 with mA/HART Operating Instructions A5E48417538A

4.2 Host Interface

4.2.1 Analog Output

This device only supports one analog channel on HART (Channel 1 - the one that the HART communication is superimposed on). This analog output corresponds to the primary variable. Even though more analog channels might be present in the device, they will not be exposed on the HART interface through common practice or universal commands.

A linear over-range is provided. The over-range is limited according to the value of the output scaling parameter. This relation is shown in the following table.

Output Scaling	0% range	100% range	Linear under-range	Linear over-range	Failure indication low	Failure indication high
4-20 mA NAMUR	4 mA	20 mA	3.8 mA	20.5 mA	3.5 mA	22.6 mA
4-20 mA US	4 mA	20 mA	4.0 mA	20.8 mA	3.75mA	22.6 mA

The selection of whether the failure indication low or high should be used is selected by writing the appropriate parameter (Current Fail Mode).

In Multi-Drop mode, the current is fixed at 4.0mA regardless of the output scaling setting.

Maximum current	25 mA
Multi-drop current draw	4 mA
Lift-off voltage	8 V

4.3 Local Interfaces, Jumpers and Switches

4.3.1 Local Controls and Displays

This device is available only with a local user interface (LUI).

4.3.2 Polling Address

The polling address of the device is selectable by LUI or HART command.

The address can be changed from the HART interface (using Universal Command 6) or LUI only if the polling address is zero.

Multi-Drop mode is selected independently from the polling address by setting the loop current mode (also see Universal Command 6).

5 Device Variables

This device exposes the device variables that are stated in the following table. The given update interval is used in the responses to common practice command 54.

Code	Device Variable Code Description		Device Variable Classification	Typical update time [s]
0	Point 1	Level	69 (Length)	1
1		Space	69 (Length)	1
2		Distance	69 (Length)	1
3		Volume	68 (Volume)	1
4		Head	69 (Length)	1
5		Volume flow	66 (Volumetric Flow)	1
6		Medium temperature	64 (Temperature)	1
7		Totalizer 1	68 (Volume)	1
8	Totalizer 2		68 (Volume)	1
9	Totalizer 3		68 (Volume)	1
10	Totalizer 4		68 (Volume)	1
11	Point 2	Level	69 (Length)	1
12		Space	69 (Length)	1
13		Distance	69 (Length)	1
14		Volume	68 (Volume)	1
15		Head	69 (Length)	1
16		Volume flow	66 (Volumetric Flow)	1
17		Medium temperature	64 (Temperature)	1
18	Level difference between Point 1 and 2		69 (Length)	1
19	Level average of Point 1 and 2		69 (Length)	1
20	Auxiliary temperature *		64 (Temperature)	1
21...239	Reserved for future use			
240...243	Reserved by HCF			
244	Percent of Range			0.01
245	Loop Current			0.01
246	Primary Variable (PV)			0.01
247	Secondary Variable (SV)			0.01
248	Tertiary Variable (TV)			0.01
249	Quaternary Variable (QV)			0.01
250...255	Reserved by HCF			

In case that no transducer is connected to point 2 the device will return “Bad status” for those device variables that require a point 2 transducer. The device does not reject HART commands requesting this device variable code.

* The auxiliary temperature is not available on mA/HART sensor input device.

6 Dynamic Variables

All four dynamic variables (PV, SV, TV and QV) are supported.

Except for totaled values, all device variables can be freely mapped to the dynamic variables.

Totalized values are integrated values which are (normally) monotonously increasing. Therefore, it does not make sense to map those values to a 4...20 mA current output which would be the case when letting totaled values to be mapped to the primary variable (PV).

The following table shows the possible and default mappings.

Device Variable Code	Device Variable Name		PV	SV	TV	QV	Unit Class
0	Point 1	Level	X	X	X	X	Length
1		Space	X	X	X	X	Length
2		Distance	X	X	X	X	Length
3		Volume	X	X	X	X	Volume
4		Head	X	X	X	X	Length
5		Volume flow	X	X	X	X	Volumetric Flow
6		Process temperature	X	X	X	X	Temperature
7	Totalizer 1			X	X	X	Volume
8	Totalizer 2			X	X	X	Volume
9	Totalizer 3			X	X	X	Volume
10	Totalizer 4			X	X	X	Volume
11	Point 2	Level	X	X	X	X	Length
12		Space	X	X	X	X	Length
13		Distance	X	X	X	X	Length
14		Volume	X	X	X	X	Volume
15		Head	X	X	X	X	Length
16		Volume flow	X	X	X	X	Volumetric Flow
17		Medium temperature	X	X	X	X	Temperature
18	Level difference between Point 1 and 2		X	X	X	X	Length
19	Level average of Point 1 and 2		X	X	X	X	Length
20	Auxiliary temperature		X	X	X	X	Temperature

The bold marking

X denotes the default mapping.

With the information of column "Unit Class" the supported units for each device variable are defined in 11 Supported Engineering Units.

Dynamic variables are transmitted in the unit specified for their device variable they are mapped to. In other words: Using e.g. Common Practice Command 44 "Write Primary Variable Units" and Command 53 "Write Device Variable Units" can affect the same settings.

7 Status Information

7.1 Device Status

8 bits of device status see Command Summary Specification HCF_SPEC-99, 7.3 Command Status Bytes.

Bits	Description
0 (0x01)	Primary variable out of limits
1 (0x02)	Non-primary variable out of limits
2 (0x04)	Loop current saturated
3 (0x08)	Loop current fixed
4 (0x10)	More status available
5 (0x20)	Cold start
6 (0x40)	Configuration changed
7 (0x80)	Device malfunction

7.2 Device Specific Status

Device status bitmap (16 bits) generated from the alarm bits. The following bits are defined:

Bits	Description
0 (0x0001)	Process value alarm
1 (0x0002)	Process value warning
2 (0x0004)	Maintenance alarm
3 (0x0008)	Maintenance demanded
4 (0x0010)	Maintenance required
5 (0x0020)	Function check
6..15	Not used, fixed to 0

7.3 Extended Device Status

8 bits of extended device status see HART Common Table 17.

Bits	Description	Caused by
0 (0x01)	Maintenance required	One of Bits 2, 3 or 4 of device specific status is currently set
1 (0x02)	Device variable alert	Bit 0 of device specific status is currently set
2...7	Not used, fixed to 0	

7.4 Additional Device Status (Command #48)

Command 48 returns 25 bytes of data, with the following status information:

Byte	Meaning
0..1	Device specific status See Chapter 7.2
2..5	Unused, fixed to 0
6	Extended device status See Chapter 7.3
7	Device operating mode fixed to 0
8	Standardized status 0 (Common Table 29) Bit 0 (0x01) Simulation Active Bits 1..7 unused, fixed to 0
9	Standardized status 1 (Common Table 30) fixed to 0
10	Analog channel saturated (Common Table 27) fixed to 0
11	Standardized status 2 (Common Table 31) fixed to 0
12	Standardized status 3 (Common Table 32) fixed to 0
13	Analog channel fixed (Common Table 28) fixed to 0
14..24	Not used, fixed to 0

8 Universal Commands

All universal commands are supported. Command details can be found in HCF_SPEC-127

#	Description
0	Read unique identifier
1	Read primary variable
2	Read loop current and percent of range
3	Read dynamic variables And loop current
6	Write polling address
7	Read loop configuration
8	Read dynamic variable classification
9	Read device variable with status
11	Read unique identifier associated with tag
12	Read message
13	Read tag, descriptor, date
14	Read primary variable transducer information
15	Read device information
16	Read final assembly number
17	Write message
18	Write tag, descriptor, date
19	Write final assembly number
20	Read long tag
21	Read unique identifier associated with long tag
22	Write long tag
38	Reset configuration changed flag
48	Read additional device status

8.1 Command #14: Read Primary Variable Transducer Information / Minimum Span

The command returns for all valid primary variables a Minimum Span value of 0.

8.2 Command #15: Read Device Information / Write Protect Code

The device does not support Write Protection. Therefore, the response to command #15 contains the Write Protect Code 251 (Write protection is not implemented).

9 Common Practice Commands

The device supports the following Common Practice commands:

#	Description
33	Read device variables
34	Write primary variable damping value
35	Write primary variable range values
36	Set primary variable upper range value
37	Set primary variable lower range value
40	Enter/exit fixed current mode
42	Perform device reset
44	Write primary variable units
45	Trim loop current zero
46	Trim loop current gain
50	Read dynamic variable assignment
51	Write dynamic variable assignment
53	Write device variable units
54	Read device variable information
59	Write number of response preambles
60	Read analog channel and percent of range
63	Read analog channel information
70	Read analog channel endpoint values
95	Read device communications statistics

9.1 Burst Mode

This device does not support Burst-Mode.

9.2 Catch Device Variable

This device does not support Catch Device Variable.

9.3 Command #53: Write Device Variable Units

The HART master is able to modify the device variable units for those device variables assigned to one of the following unit classification:

Unit Classification
Length
Temperature
Volumetric flow
Volume

10 Device Specific Commands

This chapter specifies the device specific commands that are implemented.

The HART specification specifies that device specific commands are in the range of 128...253 (126 commands), as well as the additional device specific commands 64768...65021 (254 commands).

The additional area is not used by the current version of the device.

#	Description
130	Write Service User PIN
131	Read current HART access level
140	Read parameter(s)
141	Write parameter(s)
142	Read unit related parameter(s)
143	Write unit related parameter(s)
144	Read device variable information
145	Read unit related parameter(s)
146	Write unit related parameter(s)

Optional request and response bytes are written *italicized*.

10.1 Command #130: Write Service User PIN

Operation: WRITE

By writing the same PIN as in the stored PIN the Hart-Access-Level is raised to SUP (64).
Either by writing a wrong PIN or by timeout the Hart-Access-Level is falling back to default RUP (16).

The HART Access-Level is falling back to RUP after 10 minutes. Timeout is restarted with every Write-Access over HART.

Request Data Bytes

Byte	Format	Description
0...1	Unsigned-16	Service User PIN

Response Data Bytes

Byte	Format	Description
0...1	Unsigned-16	Written Service User PIN
2	Enum	Resulting Access-Level 16 (RUP) 32 (EUP) 64 (SUP)

Command-Specific Response Codes

Code	Class	Description	Explanation
0	Success	No command-specific errors	
5	Error	Too few data bytes received	Not enough data for SUP PIN
6	Error	Device specific command error	

10.2 Command #131: Read Current HART Access Level

Operation: READ

This command reads the currently set HART Access Level from the device.

Request Data Bytes

Byte	Format	Description
None		

Response Data Bytes

Byte	Format	Description
0	Enum	Current Access Level 16 (RUP) 32 (EUP) 64 (SUP)

Command-Specific Response Codes

Code	Class	Description	Explanation
0	Success	No command-specific errors	
6	Error	Device specific command error	

10.3 Command #132: Write End User PIN

Operation: WRITE

By writing the same PIN as in the stored PIN the HART-Access-Level is raised to EUP (32).
Either by writing a wrong PIN or by timeout the HART -Access-Level is falling back to default RUP (16).
The HART Access-Level is falling back to RUP after 10 minutes. Timeout is restarted with every Write-Access over HART.

Request Data Bytes

Byte	Format	Description
0...1	Unsigned-16	End User PIN

Response Data Bytes

Byte	Format	Description
0...1	Unsigned-16	Written End User PIN
2	Enum	Resulting Access-Level 16 (RUP) 32 (EUP) 64 (SUP)

Command-Specific Response Codes

Code	Class	Description	Explanation
0	Success	No command-specific errors	
5	Error	Too few data bytes received	Not enough data for SUP PIN
6	Error	Device specific command error	

10.4 Command #140: Read Parameter(s)

Operation: READ

This command is a general read access command, used to read one or more parameters from the device. The parameters to read are specified by MODBUS registers that are provided in the request data. See chapter 12.1 Parameters.

The value returned when reading a parameter is in its base unit e.g. m³/s, kg/s, kg, m³, °C (depending on the parameter definition).

For unit related readings of parameters see command #142.

Request Data Bytes

Byte	Format	Description
0...1	Unsigned-16	MODBUS register of parameter 1
2...3	<i>Unsigned-16</i>	<i>MODBUS register of parameter 2</i>
		...
2*n-2... 2*n-1	<i>Unsigned-16</i>	<i>MODBUS register of parameter n</i>

Response Data Bytes

Byte	Format	Description
0...?	<parameter-specific>	Value of parameter 1
	<parameter-specific>	<i>Value of parameter 2</i>
		...
	<parameter-specific>	<i>Value of parameter n</i>

Command-Specific Response Codes

Code	Class	Description	Explanation
0	Success	No command-specific errors	
2	Error	Invalid selection	Register does not exist
5	Error	Too few data bytes received	Not enough data for a Modbus register
6	Error	Device specific command error	
16	Error	Access restricted	Modbus register is not readable
30	Error	Command response truncated	Response would be too large

10.5 Command #141: Write Parameter(s)

Operation: WRITE

This command is a general write access command, used to write one or more parameters to the device. The parameters to write are specified by MODBUS registers that are provided in the request data. See chapter 12.1 Parameters.

When writing floating-point values that are related to a unit (e.g. process value limits) the written value must be related to its base unit e.g. m³/s, kg/s, kg, m³, °C.

For unit related writings of parameters see command #143.

Request Data Bytes

Byte	Format	Description
0...1	Unsigned-16	MODBUS register of parameter 1
2...?	<parameter-specific>	value of parameter 1 to be written
	<i>Unsigned-16</i>	<i>MODBUS register of parameter 2</i>
	<parameter-specific>	value of parameter 2 to be written
		...
	<i>Unsigned-16</i>	<i>MODBUS register of parameter n</i>
	<parameter-specific>	value of parameter n to be written

Response Data Bytes

Byte	Format	Description
0...1	Unsigned-16	MODBUS register of parameter 1
2...?	<parameter-specific>	value of parameter 1 as stored
	<i>Unsigned-16</i>	<i>MODBUS register of parameter 2</i>
	<parameter-specific>	value of parameter 2 as stored
		...
	<i>Unsigned-16</i>	<i>MODBUS register of parameter n</i>
	<parameter-specific>	value of parameter n as stored

Command-Specific Response Codes

Code	Class	Description	Explanation
0	Success	No command-specific errors	
2	Error	Invalid selection	Register does not exist
3	Error	Parameter too large	provided TRN parameter value is too large
4	Error	Parameter too small	provided TRN parameter value is too small
5	Error	Too few data bytes received	not enough data for a Modbus register with data
6	Error	Device specific command error	Invalid value of SEN parameter
7	Error	Write protected	Device is in write-protect-mode
8	Warning	Set to nearest possible value	Value was adapted
16	Error	Access restricted	Modbus register is not writeable

10.6 Command #142: Read Unit Related Parameter(s)

Operation: READ

This command is a general read access command, used to read one or more parameters from the device in a specified unit (only for float-types, has no effect on other parameter types). The parameters to read are specified by MODBUS registers that are provided in the request data.

Request Data Bytes

Byte	Format	Description
0..1	Unsigned-16	MODBUS register of parameter 1
2	Unsigned-8	Unit Classification to read parameter 1
3	Unsigned-8	Unit Code to read parameter 1
4...5	Unsigned-16	MODBUS register of parameter 2
6	Unsigned-8	Unit Classification to read parameter 2
7	Unsigned-8	Unit Code to read parameter 2
		...
4*n-4... 4*n-3	Unsigned-16	MODBUS register of parameter <i>n</i>
4*n-2	Unsigned-8	Unit Classification to read parameter <i>n</i>
4*n-1	Unsigned-8	Unit Code to read parameter <i>n</i>

Response Data Bytes

Byte	Format	Description
0...?	<parameter-specific>	Value of parameter 1
	<parameter-specific>	Value of parameter 2
		...
	<parameter-specific>	Value of parameter <i>n</i>

Command-Specific Response Codes

Code	Class	Description	Explanation
0	Success	No command-specific errors	
2	Error	Invalid selection	• Register does not exist • Register is not readable • Invalid unit classification/unit code combination
5	Error	Too few data bytes received	Not enough data for a Modbus register
6	Error	Device specific command error	
30	Error	Command response truncated	Response would be too large

The product ignores the Unit Classification request bytes. They are kept for compatibility reasons. The supported unit codes are listed in chapter 11 Supported Engineering Units.

10.7 Command #143: Write Unit Related Parameter(s)

Operation: WRITE

This command is a general write access command, used to write one or more parameters into the device in a specified unit (only for float-types, has no effect on other parameter types). The parameters to write are specified by MODBUS registers that are provided in the request data.

Request Data Bytes

Byte	Format	Description
0...1	Unsigned-16	MODBUS register of parameter 1
2	Unsigned-8	Unit Classification to write parameter 1
3	Unsigned-8	Unit Code to write parameter 1
4...x	<parameter-specific>	value of parameter 1 to be written
	<i>Unsigned-16</i>	<i>MODBUS register of parameter 2</i>
	<i>Unsigned-8</i>	<i>Unit Classification to write parameter 2</i>
	<i>Unsigned-8</i>	<i>Unit Code to write parameter 2</i>
	<parameter-specific>	<i>value of parameter 2 to be written</i>
		...
	<i>Unsigned-16</i>	<i>MODBUS register of parameter n</i>
	<i>Unsigned-8</i>	<i>Unit Classification to write parameter n</i>
	<i>Unsigned-8</i>	<i>Unit Code to write parameter n</i>
	<parameter-specific>	<i>value of parameter n to be written</i>

Response Data Bytes

Byte	Format	Description
0...1	Unsigned-16	MODBUS register of parameter 1
2	Unsigned-8	Unit Classification of written parameter 1
3	Unsigned-8	Unit Code of written parameter 1
4...x	<parameter-specific>	value of parameter 1 as stored
	<i>Unsigned-16</i>	<i>MODBUS register of parameter 2</i>
	<i>Unsigned-8</i>	<i>Unit Classification of written parameter 2</i>
	<i>Unsigned-8</i>	<i>Unit Code of written parameter 2</i>
	<parameter-specific>	<i>value of parameter 2 as stored</i>
		...
	<i>Unsigned-16</i>	<i>MODBUS register of parameter n</i>
	<i>Unsigned-8</i>	<i>Unit Classification of written parameter n</i>
	<i>Unsigned-8</i>	<i>Unit Code of written parameter n</i>
	<parameter-specific>	<i>value of parameter n as stored</i>

Command-Specific Response Codes

Code	Class	Description	Explanation
0	Success	No Command-Specific Errors	
2	Error	Invalid Selection	• Register does not exist or • Invalid unit classification/unit code combination
3	Error	Parameter too large	Provided TRN parameter value is too large
4	Error	Parameter too small	Provided TRN parameter value is too small
5	Error	Too Few Data Bytes Received	Not enough data for a Modbus register with data
6	Error	Device Specific Command Error	Invalid value of SEN parameter
7	Error	Write Protected	Device is in write-protect-mode
8	Warning	Set to Nearest Possible Value	Value was adapted
16	Error	Access Restricted	Modbus register is not writeable

The product ignores the Unit Classification request bytes. Those bytes are kept for compatibility reasons.

The supported unit codes are listed in chapter 11 Supported Engineering Units.

The unit code is only evaluated if the specified parameter is a floating-point parameter. If a unit code unequal to 0 is used for another data type the request is responded with an error.

10.8 Command #144: Read Device Variable Information

Operation: READ

The request is analog to HART Universal Command 9: For each requested PV send one byte defining the PV of interest, incl. the dynamic variables (see Common Table 34).

This command can be used to get the required information to use Commands 142+143 properly.

Request Data Bytes

Byte	Format	Description
0	Unsigned-8	Device Variable Number for Slot 1
1	Unsigned-8	Device Variable Number for Slot 2
		...
<i>n-1</i>	Unsigned-8	Device Variable Number for Slot <i>n</i>

Response Data Bytes

Byte	Format	Description
0...1	Unsigned-16	MODBUS register of process value
2...3	Unsigned-16	MODBUS register of process value unit
4...5	Unsigned-16	MODBUS register of process value status
6	Unsigned-8	Unit Classification
7	Unsigned-8	Unit Code
8...11	Float	Process value related to the unit code
12	Unsigned-8	Process value status
13...16	Float	Lower process value limit related to the unit code
17...20	Float	Upper process value limit related to the unit code
21..41	<See 0...20>	Slot 2
		...
(<i>n-1</i>)*21 ...(n*21)-1	<See 0...20>	Slot <i>n</i>

Command-Specific Response Codes

Code	Class	Description	Explanation
0	Success	No Command-Specific Errors	
2	Error	Invalid Selection	Device Variable does not exist
5	Error	Too Few Data Bytes Received	At least one variable must be requested
6	Error	Device Specific Command Error	
30	Error	Command Response Truncated	Response would be too large

10.9 Command #145: Read Unit Related Parameter(s)

New command in release 3

Operation: READ

This command is a general read access command, used to read one or more parameters from the device. Each unit related parameter has a reference to a unit parameter that is valid for the HART interface. The currently set unit is used to convert the returned parameter value (only for float-types, has no effect on other parameter types). The parameters to read are specified by MODBUS registers that are provided in the request data.

Request Data Bytes

Byte	Format	Description
0..1	Unsigned-16	MODBUS register of parameter 1
2..3	Unsigned-16	MODBUS register of parameter 2
		...
2*n-2... 2*n-1	Unsigned-16	MODBUS register of parameter <i>n</i>

Response Data Bytes

Byte	Format	Description
0...?	<parameter-specific>	Value of parameter 1
	<parameter-specific>	Value of parameter 2
		...
	<parameter-specific>	Value of parameter <i>n</i>

Command-Specific Response Codes

Code	Class	Description	Explanation
0	Success	No Command-Specific Errors	
2	Error	Invalid Selection	Register does not exist
5	Error	Too Few Data Bytes Received	Not enough data for a Modbus register
6	Error	Device Specific Command Error	
16	Error	Access Restricted	Modbus register is not readable
30	Error	Command Response Truncated	Response would be too large

10.10 Command #146: Write Unit Related Parameter(s)

New command since SITRANS FC Release 3

Operation: WRITE

This command is a general write access command, used to write one or more parameters into the device. Each unit related parameter has a reference to a unit parameter that is valid for the HART interface. The currently set unit is used to convert the provided parameter value to the device internal base unit (only for float-types, has no effect on other parameter types). The parameters to write are specified by MODBUS registers that are provided in the request data.

In case the unit AND a parameter that is related to this unit is written within one request, the written unit is used for conversion and not the currently set unit value if the unit parameter is located BEFORE the unit related parameter value in the request. If the unit parameter is located AFTER the unit related parameter is converted according the currently set unit and not the unit value that is part of the request.

Request Data Bytes

Byte	Format	Description
0...1	Unsigned-16	MODBUS register of parameter 1
2...x	<parameter-specific>	value of parameter 1 to be written
	<i>Unsigned-16</i>	<i>MODBUS register of parameter 2</i>
	<parameter-specific>	<i>value of parameter 2 to be written</i>
		...
	<i>Unsigned-16</i>	<i>MODBUS register of parameter n</i>
	<parameter-specific>	<i>value of parameter n to be written</i>

Response Data Bytes

Byte	Format	Description
0...1	Unsigned-16	MODBUS register of parameter 1
2...x	<parameter-specific>	value of parameter 1 as stored
	<i>Unsigned-16</i>	<i>MODBUS register of parameter 2</i>
	<parameter-specific>	<i>value of parameter 2 as stored</i>
		...
	<i>Unsigned-16</i>	<i>MODBUS register of parameter n</i>
	<parameter-specific>	<i>value of parameter n as stored</i>

Command-Specific Response Codes

Code	Class	Description	Explanation
0	Success	No Command-Specific Errors	
2	Error	Invalid Selection	- Register does not exist - Invalid value for enumerated TRN parameter
3	Error	Parameter too large	provided TRN parameter value is too large
4	Error	Parameter too small	provided TRN parameter value is too small
5	Error	Too Few Data Bytes Received	not enough data for a Modbus register with data
6	Error	Device Specific Command Error	Invalid value of SEN parameter
7	Error	Write Protected	Device is in write-protect-mode
8	Warning	Set to Nearest Possible Value	Value was adapted
16	Error	Access Restricted	Modbus register is not writeable

11 Supported Engineering Units

This chapter provides information of the supported engineering units.

11.1 Temperature (Device Variable Classification 64)

Based on Table 2.64 of HART Communication Foundation Document HCF_SPEC-183

Unit code	Unit
32	degrees Celsius
33	degrees Fahrenheit
34	degrees Rankine
35	Kelvin

11.2 Volumetric Flow (Device Variable Classification 66)

Based on Table 2.66 of HART Communication Foundation Document HCF_SPEC-183

Volumetric Flow:

Unit code	Unit
15	cubic feet per minute
16	US gallons per minute
17	liters per minute
18	imperial gallons per minute
19	cubic meters per hour
22	US gallons per second
23	million US gallons per day
24	liters per second
25	million liters per day
26	cubic feet per second
27	cubic feet per day
28	cubic meters per second
29	cubic meters per day
30	imperial gallons per hour
31	imperial gallons per day
130	cubic feet per hour
131	cubic meters per minute
132	barrels (= 42 US gallons) per second
133	barrels (= 42 US gallons) per minute
134	barrels (= 42 US gallons) per hour
135	barrels (= 42 US gallons) per day
136	US gallons per hour
137	imperial gallons per second
138	liters per hour
170	beer barrel per second
171	beer barrel per minute
172	beer barrel per hour
173	beer barrel per day
235	US gallons per day
253	Custom unit

11.3 Volume (Device Variable Classification 68)

Based on Table 2.68 of HART Communication Foundation Document HCF_SPEC-183

Volume:

Unit code	Unit
40	US gallons
41	liters
42	imperial gallons
43	cubic meters
46	barrels (= 42 US gallons)
110	bushel
111	cubic yards
112	cubic feet
113	cubic inches
124	liquid barrels (= 31.5 US gallons)
170	beer barrel
236	hectoliters
253	Custom unit

11.4 Length (Device Variable Classification 69)

Based on Table 2.69 of HART Communication Foundation Document HCF_SPEC-183

Unit code	Unit
44	feet
45	meters
47	Inches
48	centimeters
49	millimeters

11.5 Time (Device Variable Classification 70)

Based on Table 2.70 of HART Communication Foundation Document HCF_SPEC-183

Unit code	Unit
50	minutes
51	seconds
52	hours
53	days
170	milliseconds
171	microseconds
172	nanoseconds

11.6 Current (Device Variable Classification 84)

Based on Table 2.84 of HART Communication Foundation Document HCF_SPEC-183

Unit code	Unit
39	milliamperes
170	nanoamperes
171	microamperes

11.7 Custom Units

For selected unit classifications, the custom unit code 253 is also valid. With custom units, the user can configure the unit text as well as a factor related to the base unit.

The following unit classifications support the customizable units:

Unit Classification	Base Unit
Volumetric flow	cubic meter per second
Volume	cubic meter

During HART certification, the usage of the unit code 253 is reported as "INSPECT: Possible illegal use of Unit Code 253 in PV". Therefore, a ticket has been raised to the FieldComm Group to request the allowance of the usage because of compatibility to previously certified HART devices based on the 4WTP transmitter i.e. SITRANS FC430. The ticket number was #2587.

The answer of the FCG to this ticket was:

"Please include specific information about code 253 used by your device in the Field Device Specification (LIT-018) when submitting it for testing and registration with FieldComm Group.

Kind regards,
FieldComm Group Support Team

Heather Whilden
QA Manager | FieldComm Group
+1-512-792-2300 | hwhilden@fieldcommgroup.org | www.fieldcommgroup.org "

The requested information is hereby given.

12 Parameters and Enumerations

12.1 Parameters

Table of parameters with LUI Descriptions, Modbus address, Data Type, Access, Enumeration references

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
1	Quick start					
1.1	Quick commissioning					
1.2	Pump control					
2	Setup					
2.1	Sensor					
2.1.1	Type	3791	unsigned8	RW	PAR_TB_LEVEL_SOURCE_1	Level Source
2.1.2	Frequency	5405	unsigned8	RW	PAR_LR_RADAR_REGION	Radar Region
2.1.3	Input mode	3761	unsigned8	RW	PAR_TB_SMART_SENSOR_MODE_1	Sensor Mode
2.1.4	Enter PIN	4746	string16	RW	PAR_TB_SS_STRING_USER_PIN_1	For LR1xx
2.1.4	Enter PIN	4717	unsigned16	RW	PAR_TB_SS_USER_PIN_1	For LU240
2.1.5	Material type	3834	unsigned16	RW	PAR_TB_MATERIAL_TYPE_1	Material Type
2.1.6	Calibration					
2.1.6.1	Lower calibration point	3465	float32	RW	PAR_TB_CAL_LO_1	
2.1.6.2	Upper calibration point	3469	float32	RW	PAR_TB_CAL_HI_1	
2.1.6.3	Current at lower calibration point	3783	float32	RW	PAR_TB_MA_IN_MA_AT_LO_1	
2.1.6.4	Current at upper calibration point	3787	float32	RW	PAR_TB_MA_IN_MA_AT_HI_1	
2.1.6.5	Lower level point	3771	float32	RW	PAR_TB_LEVEL_LO_1	
2.1.6.6	Upper level point	3767	float32	RW	PAR_TB_LEVEL_HI_1	
2.1.6.7	Level offset	3775	float32	RW	PAR_TB_LEVEL_OFFSET_1	
2.1.6.8	Sensor offset	3763	float32	RW	PAR_TB_SENSOR_OFFSET_1	
2.1.6.9	Near range	3473	float32	RW	PAR_TB_NEAR_RANGE_1	
2.1.6.10	Far range	3477	float32	RW	PAR_TB_FAR_RANGE_1	
2.1.7	Fail-safe LOE timer	5380	float32	RW	PAR_TB_LOE_TIMER_1	
2.1.8	Rate					
2.1.8.1	Rate of change	3823	float32	R	PAR_TB_CHANGE_RATE_MPERMIN_1	
2.1.8.2	Fill rate indicator limit	4453	float32	RW	PAR_TB_FILL_RATE_THRESHOLD_1	
2.1.8.3	Empty rate indicator limit	4457	float32	RW	PAR_TB_EMPTY_RATE_THRESHOLD_1	
2.1.8.4	Fill rate alarm limit	4738	float32	RW	PAR_TB_FILL_RATE_DIAGNOSTIC_THRESHOLD_1	
2.1.8.5	Empty rate alarm limit	4742	float32	RW	PAR_TB_EMPTY_RATE_DIAGNOSTIC_THRESHOLD_1	
2.1.8.6	Fill rate	4445	float32	RW	PAR_TB_FILL_RATE_1	
2.1.8.7	Empty rate	4449	float32	RW	PAR_TB_EMPTY_RATE_1	
2.1.8.8	Sensor damping value	4362	float32	RW	PAR_TB_FOLF_TIME_CONSTANT_1	
2.1.9	Auto false echo suppression					

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.1.9.1	Mode					
2.1.9.2	Range					
2.1.9.3	Learn					
2.1.9.4	Enable					
2.1.9.5	Disable					
2.1.10	Custom TVT shaper mode	5412	unsigned8	RW	PAR_TB_TVT_SHAPER_MODE_1	Disable Enable
2.1.11	Custom TVT breakpoints					
2.1.11.1 – 2.1.11.40	Breakpoint <n>	5414 - 5492	float32	RW	PAR_TB_TVT_SHAPER_1_<n>	
2.1.12	Sensor override input	4433	unsigned8	RW	PAR_TB_BLO_ENABLED_1	Disable Enable
2.1.12	Sensor override input	4436	unsigned8	RW	PAR_TB_BLO_DI_1	
2.1.13	Sensor override value	4434	float32	RW	PAR_TB_BLO_LEVEL_1	
2.1.14	Sensor override time delay	4437	float32	RW	PAR_TB_BLO_TIME_DELAY_SECONDS_1	
2.1.15	Enable low level cut-off	3827	unsigned8	RW	PAR_TB_LOW_LEVEL_CUTOFF_ENABLED_1	Disable Enable
2.1.16	Low level cut-off	3779	float32	RW	PAR_TB_LOW_LEVEL_CUTOFF_LEVEL_1	
2.1.17	Preconfigured	4431	unsigned8	RW	PAR_TB_SS_CONFIGURATION_STRATEGY_1	Yes No
2.1.18	Enable diagnostics	6266	unsigned32	RW	PID_ALARM_STATUS_1_MASK	Alarm Status 1
		6268	unsigned32	RW	PID_ALARM_STATUS_2_MASK	Alarm Status 2
		6270	unsigned32	RW	PID_ALARM_STATUS_3_MASK	Alarm Status 3
2.1.19	Fail-safe diagnostics	12959 (diags 0-31)	unsigned32	RW	PID_PT1_FAIL_MODE_ALARM_STATUS_1_MASK	
		12961 (diags 32-63)			PID_PT1_FAIL_MODE_ALARM_STATUS_2_MASK	
		13085 (diags 64-95)			PID_PT1_FAIL_MODE_ALARM_STATUS_3_MASK	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.1.20	Measurement point 2					
2.1.20.1	Type	3792	unsigned8	RW	PAR_TB_LEVEL_SOURCE_2	Level Source
2.1.20.3	Input mode	3762	unsigned8	RW	PAR_TB_SMART_SENSOR_MODE_2	Sensor Mode
2.1.20.4	Enter PIN	4754	string16	RW	PAR_TB_SS_STRING_USER_PIN_2	For LR1xx
2.1.20.4	Enter PIN	4718	unsigned16	RW	PAR_TB_SS_USER_PIN_2	For LU240
2.1.20.5	Material type	3835	unsigned16	RW	PAR_TB_MATERIAL_TYPE_2	Material Type
2.1.20.6	Calibration					
2.1.20.6.1	Lower calibration point	3467	float32	RW	PAR_TB_CAL_LO_2	
2.1.20.6.2	Upper calibration point	3471	float32	RW	PAR_TB_CAL_HI_2	
2.1.20.6.3	Current at lower calibration point	3785	float32	RW	PAR_TB_MA_IN_MA_AT_LO_2	
2.1.20.6.4	Current at upper calibration point	3789	float32	RW	PAR_TB_MA_IN_MA_AT_HI_2	
2.1.20.6.5	Lower level point	3773	float32	RW	PAR_TB_LEVEL_LO_2	
2.1.20.6.6	Upper level point	3769	float32	RW	PAR_TB_LEVEL_HI_2	
2.1.20.6.7	Level offset	3777	float32	RW	PAR_TB_LEVEL_OFFSET_2	
2.1.20.6.8	Sensor offset	3765	float32	RW	PAR_TB_SENSOR_OFFSET_2	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.1.20.6.9	Near range	3475	float32	RW	PAR_TB_NEAR_RANGE_2	
2.1.20.6.10	Far range	3479	float32	RW	PAR_TB_FAR_RANGE_2	
2.1.20.7	Fail-safe LOE timer	5382	float32	RW	PAR_TB_LOE_TIMER_2	
2.1.20.8	Rate					
2.1.20.8.1	Rate of change	3836	float32	R	PAR_TB_CHANGE_RATE_MPER MIN_2	
2.1.20.8.2	Fill rate indicator limit	4455	float32	RW	PAR_TB_FILL_RATE_THRESHO LD_2	
2.1.20.8.3	Empty rate indicator limit	4459	float32	RW	PAR_TB_EMPTY_RATE_THRES HOLD_2	
2.1.20.8.4	Fill rate alarm limit	4740	float32	RW	PAR_TB_FILL_RATE_DIAGNOST IC_THRESHOLD_2	
2.1.20.8.5	Empty rate alarm limit	4744	float32	RW	PAR_TB_EMPTY_RATE_DIAGN OSTIC_THRESHOLD_2	
2.1.20.8.6	Fill rate limit	4447	float32	RW	PAR_TB_FILL_RATE_2	
2.1.20.8.7	Empty rate limit	4451	float32	RW	PAR_TB_EMPTY_RATE_2	
2.1.20.8.8	Sensor damping value	4364	float32	RW	PAR_FOLF_TIME_CONSTANT_2	
2.1.20.9	Auto false echo suppression					
2.1.20.9.1	Mode					
2.1.20.9.2	Range					
2.1.20.9.3	Learn					
2.1. 20.9.4	Enable					
2.1. 20.9.5	Disable					
2.1.20.10	Custom TVT shaper mode	5413	unsigned8	RW	PAR_TB_TVT_SHAPER_MODE_2	
2.1.20.11	Custom TVT shaper breakpoints					
2.1.20.11.1 – 2.1.20.11.40	Breakpoint <n>	5494 – 5572	float32	RW	PAR_TB_TVT_SHAPER_2_<n>	
2.1.20.12	Sensor override input	4439	unsigned8	RW	PAR_TB_BLO_ENABLED_2	Disable Enable
2.1.20.12	Sensor override input	4442	unsigned8	RW	PAR_TB_BLO_DI_2	
2.1.20.13	Sensor override value	4440	float32	RW	PAR_TB_BLO_LEVEL_2	
2.1.20.14	Sensor override time delay	4443	float32	RW	PAR_TB_BLO_TIME_DELAY_SE CONDS_2	
2.1.20.15	Enable low level cut-off	3828	unsigned8	RW	PAR_TB_LOW_LEVEL_CUTOFF_ENABLED_2	Disable Enable
2.1.20.16	Low level cut-off	3781	float32	RW	PAR_TB_LOW_LEVEL_CUTOFF_LEVEL_2	
2.1.20.17	Preconfigured	4432	unsigned8	RW	PAR_TB_SS_CONFIGURATION_STRATEGY_2	Yes No
2.1.20.18	Enable diagnostics	6266	unsigned32	RW	PID_ALARM_STATUS_1_MASK	Alarm Status 1
		6268	unsigned32	RW	PID_ALARM_STATUS_2_MASK	Alarm Status 2
		6270	unsigned32	RW	PID_ALARM_STATUS_3_MASK	Alarm Status 3
2.1.20.19	Fail-safe diagnostics	12963 (diags 0-31)	unsigned32	RW	PID_PT2_FAIL_MODE_ALARM_STATUS_1_MASK	
		12965 (diags 32-63)			PID_PT2_FAIL_MODE_ALARM_STATUS_2_MASK	
		13087 (diags 64-95)			PID_PT3_FAIL_MODE_ALARM_STATUS_3_MASK	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.2	Process values					
2.2.1	Level (point 1)					
2.2.1.1	Units	8557	unsigned8	RW	PID_LUI_LENGTH_UNIT	Length Unit
2.2.1.2	Decimal places	6444	unsigned8	RW	PID_LUI_LENGTH_DEC_POINT	Decimal Point
2.2.1.3	Enable alarms	7012	unsigned32	RW	PID_ALARM_STATUS_11_MASK	Alarm Status 11
2.2.1.3	Enable alarms	7054	unsigned32	RW	PID_ALARM_STATUS_13_MASK	Alarm Status 13
2.2.1.4	Upper alarm limit	11981	float32	RW	PID_LEVEL_1_UPPER_ALARM_LIMIT	
2.2.1.5	Upper warning limit	11983	float32	RW	PID_LEVEL_1_UPPER_WARNIN G_LIMIT	
2.2.1.6	Lower warning limit	11985	float32	RW	PID_LEVEL_1_LOWER_WARNIN G_LIMIT	
2.2.1.7	Lower alarm limit	11987	float32	RW	PID_LEVEL_1_LOWER_ALARM_LIMIT	
2.2.1.8	Hysteresis	11989	float32	RW	PID_LEVEL_1_ALARM_HYSTER ESIS	
2.2.2	Space (point 1)					
2.2.2.1	Units	8557	unsigned8	RW	PID_LUI_LENGTH_UNIT	Length Unit
2.2.2.2	Decimal places	6444	unsigned8	RW	PID_LUI_LENGTH_DEC_POINT	Decimal Point
2.2.2.3	Enable alarms	7012	unsigned32	RW	PID_ALARM_STATUS_11_MASK	Alarm Status 11
2.2.2.4	Upper alarm limit	12075	float32	RW	PID_SPACE_1_UPPER_ALARM_LIMIT	
2.2.2.5	Upper warning limit	12077	float32	RW	PID_SPACE_1_UPPER_WARNIN G_LIMIT	
2.2.2.6	Lower warning limit	12079	float32	RW	PID_SPACE_1_LOWER_WARNI NG_LIMIT	
2.2.2.7	Lower alarm limit	12081	float32	RW	PID_SPACE_1_LOWER_ALARM_LIMIT	
2.2.2.8	Hysteresis	12083	float32	RW	PID_SPACE_1_ALARM_HYSTER ESIS	
2.2.3	Distance (point 1)					
2.2.3.1	Units	8557	unsigned8	RW	PID_LUI_LENGTH_UNIT	Length Unit
2.2.3.2	Decimal places	6444	unsigned8	RW	PID_LUI_LENGTH_DEC_POINT	Decimal Point
2.2.3.3	Enable alarms	7012	unsigned32	RW	PID_ALARM_STATUS_11_MASK	Alarm Status 11
2.2.3.4	Upper alarm limit	12055	float32	RW	PID_DISTANCE_1_UPPER_ALA RM_LIMIT	
2.2.3.5	Upper warning limit	12057	float32	RW	PID_DISTANCE_1_UPPER_WAR NING_LIMIT	
2.2.3.6	Lower warning limit	12059	float32	RW	PID_DISTANCE_1_LOWER_WA RNING_LIMIT	
2.2.3.7	Lower alarm limit	12061	float32	RW	PID_DISTANCE_1_LOWER_ALA RM_LIMIT	
2.2.3.8	Hysteresis	12063	float32	RW	PID_DISTANCE_1_ALARM_HYS TERESIS	
2.2.4	Head (point 1)					
2.2.4.1	Units	8557	unsigned8	RW	PID_LUI_LENGTH_UNIT	Length Unit
2.2.4.2	Decimal places	6444	unsigned8	RW	PID_LUI_LENGTH_DEC_POINT	Decimal Point
2.2.4.3	Enable alarms	7012	unsigned32	RW	PID_ALARM_STATUS_11_MASK	Alarm Status 11
2.2.4.4	Upper alarm limit	12095	float32	RW	PID_HEAD_1_UPPER_ALARM_L IMIT	
2.2.4.5	Upper warning limit	12097	float32	RW	PID_HEAD_1_UPPER_WARNIN G_LIMIT	
2.2.4.6	Lower warning limit	12153	float32	RW	PID_HEAD_1_LOWER_WARNIN G_LIMIT	
2.2.4.7	Lower alarm limit	12155	float32	RW	PID_HEAD_1_LOWER_ALARM_L IMIT	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.2.4.8	Hysteresis	12157	float32	RW	PID_HEAD_1_ALARM_HYSTERE SIS	
2.2.5	Volume (point 1)					
2.2.5.1	Units	8280	unsigned8	RW	PID_LUI_VOLUME_UNIT	Volume Unit
2.2.5.2	Custom units	8452	string8	RW	PID_CUSTOM_UNIT_STRING_V OLUME	
2.2.5.3	Custom conversion factor	8450	float32	RW	PID_CUSTOM_UNIT_FACTOR_V OLUME	
2.2.5.4	Decimal places	11861	unsigned8	RW	PID_LUI_VOLUME_DEC_POINT	Decimal Point
2.2.5.5	Enable alarms	7012	unsigned32	RW	PID_ALARM_STATUS_11_MASK	Alarm Status 11
2.2.5.6	Upper alarm limit	12177	float32	RW	PID_VOLUME_1_UPPER_ALAR M_LIMIT	
2.2.5.7	Upper warning limit	12179	float32	RW	PID_VOLUME_1_UPPER_WARNI NG_LIMIT	
2.2.5.8	Lower warning limit	12181	float32	RW	PID_VOLUME_1_LOWER_WARN ING_LIMIT	
2.2.5.9	Lower alarm limit	12183	float32	RW	PID_VOLUME_1_LOWER_ALAR M_LIMIT	
2.2.5.10	Hysteresis	12185	float32	RW	PID_VOLUME_1_ALARM_HYSTE RESIS	
2.2.6	Volume flow (point 1)					
2.2.6.1	Units	8996	unsigned16	RW	PID_LUI_VOLUME_FLOW_UNIT_ PA	Volume Flow Unit
2.2.6.2	Custom units	7518	string8	RW	PID_CUSTOM_UNIT_STRING_V OLUME_FLOW	
2.2.6.3	Custom conversion factor	7516	float32	RW	PID_CUSTOM_UNIT_FACTOR_V OLUME_FLOW	
2.2.6.4	Decimal places	7551	unsigned8	RW	PID_LUI_VOLUME_FLOW_DEC_ POINT	Decimal Point
2.2.6.5	Enable alarms	6272	unsigned32	RW	PID_ALARM_STATUS_4_MASK	Alarm Status 4
2.2.6.6	Upper alarm limit	7501	float32	RW	PID_VOLUME_FLOW_UPPER_A LARM_LIMIT	
2.2.6.7	Upper warning limit	7503	float32	RW	PID_VOLUME_FLOW_UPPER_W ARNING_LIMIT	
2.2.6.8	Lower warning limit	7505	float32	RW	PID_VOLUME_FLOW_LOWER_ WARNING_LIMIT	
2.2.6.9	Lower alarm limit	7507	float32	RW	PID_VOLUME_FLOW_LOWER_A LARM_LIMIT	
2.2.6.10	Hysteresis	7512	float32	RW	PID_VOLUME_FLOW_ALARM_H YSTERESIS	
2.2.7	Sensor temperature (point 1)					
2.2.7.1	Units	9006	unsigned8	RW	PID_LUI_TEMPERATURE_UNIT	Temperature Unit
2.2.7.2	Decimal places	7553	unsigned8	RW	PID_LUI_TEMPERATURE_DEC_ POINT	Decimal Point
2.2.7.3	Enable alarms	6272	unsigned32	RW	PID_ALARM_STATUS_4_MASK	Alarm Status 4
2.2.7.4	Upper alarm limit	7701	float32	RW	PID_FLOW_MEDIA TEMPERAT URE_UPPER_ALARM_LIMIT	
2.2.7.5	Upper warning limit	7703	float32	RW	PID_FLOW_MEDIA TEMPERAT URE_UPPER_WARNING_LIMIT	
2.2.7.6	Lower warning limit	7705	float32	RW	PID_FLOW_MEDIA TEMPERAT URE_LOWER_WARNING_LIMIT	
2.2.7.7	Lower alarm limit	7707	float32	RW	PID_FLOW_MEDIA TEMPERAT URE_LOWER_ALARM_LIMIT	
2.2.7.8	Hysteresis	7712	float32	RW	PID_FLOW_MEDIA TEMPERAT URE_ALARM_HYSTERESIS	
2.2.8	Level (point 2)					
2.2.8.1	Units	8557	unsigned8	RW	PID_LUI_LENGTH_UNIT	Length Unit
2.2.8.2	Decimal places	6444	unsigned8	RW	PID_LUI_LENGTH_DEC_POINT	Decimal Point
2.2.8.3	Enable alarms	7012	unsigned32	RW	PID_ALARM_STATUS_11_MASK	Alarm Status 11
2.2.8.3	Enable alarms	7054	unsigned32	RW	PID_ALARM_STATUS_13_MASK	Alarm Status 13

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.2.8.4	Upper alarm limit	11991	float32	RW	PID_LEVEL_2_UPPER_ALARM_LIMIT	
2.2.8.5	Upper warning limit	11993	float32	RW	PID_LEVEL_2_UPPER_WARNIN G_LIMIT	
2.2.8.6	Lower warning limit	11995	float32	RW	PID_LEVEL_2_LOWER_WARNIN G_LIMIT	
2.2.8.7	Lower alarm limit	11997	float32	RW	PID_LEVEL_2_LOWER_ALARM_LIMIT	
2.2.8.8	Hysteresis	12053	float32	RW	PID_LEVEL_2_ALARM_HYSTER ESIS	
2.2.9	Space (point 2)					
2.2.9.1	Units	8557	unsigned8	RW	PID_LUI_LENGTH_UNIT	Length Unit
2.2.9.2	Decimal places	6444	unsigned8	RW	PID_LUI_LENGTH_DEC_POINT	Decimal Point
2.2.9.3	Enable alarms	7012	unsigned32	RW	PID_ALARM_STATUS_11_MASK	Alarm Status 11
2.2.9.4	Upper alarm limit	12085	float32	RW	PID_SPACE_2_UPPER_ALARM_LIMIT	
2.2.9.5	Upper warning limit	12087	float32	RW	PID_SPACE_2_UPPER_WARNIN G_LIMIT	
2.2.9.6	Lower warning limit	12089	float32	RW	PID_SPACE_2_LOWER_WARNI NG_LIMIT	
2.2.9.7	Lower alarm limit	12091	float32	RW	PID_SPACE_2_LOWER_ALARM LIMIT	
2.2.9.8	Hysteresis	12093	float32	RW	PID_SPACE_2_ALARM_HYSTER ESIS	
2.2.10	Distance (point 2)					
2.2.10.1	Units	8557	unsigned8	RW	PID_LUI_LENGTH_UNIT	Length Unit
2.2.10.2	Decimal places	6444	unsigned8	RW	PID_LUI_LENGTH_DEC_POINT	Decimal Point
2.2.10.3	Enable alarms	7012	unsigned32	RW	PID_ALARM_STATUS_11_MASK	Alarm Status 11
2.2.10.4	Upper alarm limit	12065	float32	RW	PID_DISTANCE_2_UPPER_ALA RM_LIMIT	
2.2.10.5	Upper warning limit	12067	float32	RW	PID_DISTANCE_2_UPPER_WAR NING_LIMIT	
2.2.10.6	Lower warning limit	12069	float32	RW	PID_DISTANCE_2_LOWER_WA RNING_LIMIT	
2.2.10.7	Lower alarm limit	12071	float32	RW	PID_DISTANCE_2_LOWER_ALA RM_LIMIT	
2.2.10.8	Hysteresis	12073	float32	RW	PID_DISTANCE_2_ALARM_HYS TERESIS	
2.2.11	Head (point 2)					
2.2.11.1	Units	8557	unsigned8	RW	PID_LUI_LENGTH_UNIT	Length Unit
2.2.11.2	Decimal places	6444	unsigned8	RW	PID_LUI_LENGTH_DEC_POINT	Decimal Point
2.2.11.3	Enable alarms	7014	unsigned32	RW	PID_ALARM_STATUS_12_MASK	Alarm Status 12
2.2.11.4	Upper alarm limit	12159	float32	RW	PID_HEAD_2_UPPER_ALARM_L IMIT	
2.2.11.5	Upper warning limit	12161	float32	RW	PID_HEAD_2_UPPER_WARNIN G_LIMIT	
2.2.11.6	Lower warning limit	12163	float32	RW	PID_HEAD_2_LOWER_WARNIN G_LIMIT	
2.2.11.7	Lower alarm limit	12165	float32	RW	PID_HEAD_2_LOWER_ALARM_L IMIT	
2.2.11.8	Hysteresis	12167	float32	RW	PID_HEAD_2_ALARM_HYSTERE SIS	
2.2.12	Volume (point 2)					
2.2.12.1	Units	8280	unsigned8	RW	PID_LUI_VOLUME_UNIT	Volume Unit
2.2.12.2	Decimal places	11861	unsigned8	RW	PID_LUI_VOLUME_DEC_POINT	Decimal Point
2.2.12.3	Enable alarms	7014	unsigned32	RW	PID_ALARM_STATUS_12_MASK	Alarm Status 12
2.2.12.4	Upper alarm limit	12187	float32	RW	PID_VOLUME_2_UPPER_ALAR M_LIMIT	

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2.2.12.5	Upper warning limit	12189	float32	RW	PID_VOLUME_2_UPPER_WARNI NG_LIMIT	
2.2.12.6	Lower warning limit	12191	float32	RW	PID_VOLUME_2_LOWER_WARN ING_LIMIT	
2.2.12.7	Lower alarm limit	12193	float32	RW	PID_VOLUME_2_LOWER_ALAR M_LIMIT	
2.2.12.8	Hysteresis	12195	float32	RW	PID_VOLUME_2_ALARM_HYSTE RESIS	
2.2.13	Volume flow (point 2)					
2.2.13.1	Units	8996	unsigned16	RW	PID_LUI_VOLUME_FLOW_UNIT_ PA	Volume Flow Unit
2.2.13.2	Decimal places	7551	unsigned8	RW	PID_LUI_VOLUME_FLOW_DEC_ POINT	Decimal Point
2.2.13.3	Enable alarms	7014	unsigned32	RW	PID_ALARM_STATUS_12_MASK	Alarm Status 12
2.2.13.4	Upper alarm limit	11953	float32	RW	PID_VOLUME_FLOW_2_UPPER ALARM_LIMIT	
2.2.13.5	Upper warning limit	11955	float32	RW	PID_VOLUME_FLOW_2_UPPER WARNING_LIMIT	
2.2.13.6	Lower warning limit	11957	float32	RW	PID_VOLUME_FLOW_2_LOWER WARNING_LIMIT	
2.2.13.7	Lower alarm limit	11959	float32	RW	PID_VOLUME_FLOW_2_LOWER ALARM_LIMIT	
2.2.13.8	Hysteresis	11961	float32	RW	PID_VOLUME_FLOW_2_ALARM _HYSTERESIS	
2.2.14	Sensor temperature (point 2)					
2.2.14.1	Units	9006	unsigned8	RW	PID_LUI_TEMPERATURE_UNIT	Temperature Unit
2.2.14.2	Decimal places	7553	unsigned8	RW	PID_LUI_TEMPERATURE_DEC_ POINT	Decimal Point
2.2.14.3	Enable alarms	7014	unsigned32	RW	PID_ALARM_STATUS_12_MASK	Alarm Status 12
2.2.14.4	Upper alarm limit	11963	float32	RW	PID_MEDIUM_TEMPERATURE_ 2_UPPER_ALARM_LIMIT	
2.2.14.5	Upper warning limit	11965	float32	RW	PID_MEDIUM_TEMPERATURE_ 2_UPPER_WARNING_LIMIT	
2.2.14.6	Lower warning limit	11967	float32	RW	PID_MEDIUM_TEMPERATURE_ 2_LOWER_WARNING_LIMIT	
2.2.14.7	Lower alarm limit	11969	float32	RW	PID_MEDIUM_TEMPERATURE_ 2_LOWER_ALARM_LIMIT	
2.2.14.8	Hysteresis	11971	float32	RW	PID_MEDIUM_TEMPERATURE_ 2_ALARM_HYSTERESIS	
2.2.15	Level difference					
2.2.15.1	Units	8557	unsigned8	RW	PID_LUI_LENGTH_UNIT	Length Unit
2.2.15.2	Decimal places	6444	unsigned8	RW	PID_LUI_LENGTH_DEC_POINT	Decimal Point
2.2.15.3	Enable alarms	7014	unsigned32	RW	PID_ALARM_STATUS_12_MASK	Alarm Status 12
2.2.15.4	Upper alarm limit	12256	float32	RW	PID_DUAL_POINT_DELTA_UPP ER_ALARM_LIMIT	
2.2.15.5	Upper warning limit	12258	float32	RW	PID_DUAL_POINT_DELTA_UPP ER_WARNING_LIMIT	
2.2.15.6	Lower warning limit	12260	float32	RW	PID_DUAL_POINT_DELTA_LOW ER_WARNING_LIMIT	
2.2.15.7	Lower alarm limit	12262	float32	RW	PID_DUAL_POINT_DELTA_LOW ER_ALARM_LIMIT	
2.2.15.8	Hysteresis	12264	float32	RW	PID_DUAL_POINT_DELTA_ALAR M_HYSTERESIS	
2.2.16	Level average					
2.2.16.1	Units	8557	unsigned8	RW	PID_LUI_LENGTH_UNIT	Length Unit
2.2.16.2	Decimal places	6444	unsigned8	RW	PID_LUI_LENGTH_DEC_POINT	Decimal Point
2.2.16.3	Enable alarms	7014	unsigned32	RW	PID_ALARM_STATUS_12_MASK	Alarm Status 12
2.2.16.4	Upper alarm limit	12266	float32	RW	PID_DUAL_POINT_AVERAGE_U PPER_ALARM_LIMIT	

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2.2.16.5	Upper warning limit	12268	float32	RW	PID_DUAL_POINT_AVERAGE_UPPER_WARNING_LIMIT	
2.2.16.6	Lower warning limit	12270	float32	RW	PID_DUAL_POINT_AVERAGE_LOWER_WARNING_LIMIT	
2.2.16.7	Lower alarm limit	12272	float32	RW	PID_DUAL_POINT_AVERAGE_LOWER_ALARM_LIMIT	
2.2.16.8	Hysteresis	12274	float32	RW	PID_DUAL_POINT_AVERAGE_ALARM_HYSTERESIS	
2.3	Totalizers					
2.3.1	Totalizer 1					
2.3.1.1	Process value	8305	unsigned8	RW	PID_TOT1_CHANNEL	Totalizer Channel
2.3.1.2	Units	9058	unsigned8	RW	PID_LUI_TOT1_VOLUME_UNIT	Volume Unit
2.3.1.4	Custom units	8452	string8	RW	PID_CUSTOM_UNIT_STRING_VOLUME	
2.3.1.5	Custom conversion factor	8450	float32	RW	PID_CUSTOM_UNIT_FACTOR_VOLUME	
2.3.1.6	Decimal places	7559	unsigned8	RW	PID_LUI_TOT1_VOLUME_DEC_POINT	Decimal Point
2.3.1.8	Fail-safe behavior	8302	unsigned8	RW	PID_TOT1_FAIL_TOT	Totalizer Fail-safe Mode
2.3.1.9	Reset					
2.3.1.10	Preset value	8316	float32	RW	PID_TOT1_PRESET_VALUE	
2.3.1.11	Preset					
2.3.1.12	Limit monitoring					
2.3.1.12.1	Enable alarms	6274	unsigned32	RW	PID_ALARM_STATUS_5_MASK	Alarm Status 5
2.3.1.12.2	Upper alarm limit	8323	float32	RW	PID_TOT1_VOLUME_UPPER_ALARM_LIMIT	
2.3.1.12.3	Upper warning limit	8325	float32	RW	PID_TOT1_VOLUME_UPPER_WARNING_LIMIT	
2.3.1.12.4	Lower warning limit	8327	float32	RW	PID_TOT1_VOLUME_LOWER_WARNING_LIMIT	
2.3.1.12.5	Lower alarm limit	8329	float32	RW	PID_TOT1_VOLUME_LOWER_ALARM_LIMIT	
2.3.1.12.6	Hysteresis	8331	float32	RW	PID_TOT1_VOLUME_ALARM_HYSTERESIS	
2.3.1.13	Daily reset (at midnight)	13538	unsigned8	RW	PID_TOT1_AUTO_RESET	Disable Enable
2.3.1.14	Auto reset	12885	unsigned8	RW	PID_TOT1_OVERFLOW_ENABLE	Disable Enable
2.3.1.15	Auto reset limit	12869	float32	RW	PID_TOT1_OVERFLOW_VALUE	
2.3.2	Totalizer 2					
2.3.2.1	Process value	8405	unsigned8	RW	PID_TOT2_CHANNEL	Totalizer Input Value
2.3.2.2	Units	9060	unsigned8	RW	PID_LUI_TOT2_VOLUME_UNIT	Volume Unit
2.3.2.4	Custom units	8452	string8	RW	PID_CUSTOM_UNIT_STRING_VOLUME	
2.3.2.5	Custom conversion factor	8450	float32	RW	PID_CUSTOM_UNIT_FACTOR_VOLUME	
2.3.2.6	Decimal places	7562	unsigned8	RW	PID_LUI_TOT2_VOLUME_DEC_POINT	Decimal Point
2.3.2.8	Fail-safe behavior	8402	unsigned8	RW	PID_TOT2_FAIL_TOT	Totalizer Fail-safe Mode
2.3.2.9	Reset					
2.3.2.10	Preset value	8416	float32	RW	PID_TOT2_PRESET_VALUE	
2.3.2.11	Preset					
2.3.2.12	Limit monitoring					
2.3.2.12.1	Enable alarms	6274	unsigned32	RW	PID_ALARM_STATUS_5_MASK	Alarm Status 5

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.3.2.12.2	Upper alarm limit	8423	float32	RW	PID_TOT2_VOLUME_UPPER_ALARM_LIMIT	
2.3.2.12.3	Upper warning limit	8425	float32	RW	PID_TOT2_VOLUME_UPPER_WARNING_LIMIT	
2.3.2.12.4	Lower warning limit	8427	float32	RW	PID_TOT2_VOLUME_LOWER_WARNING_LIMIT	
2.3.2.12.5	Lower alarm limit	8429	float32	RW	PID_TOT2_VOLUME_LOWER_ALARM_LIMIT	
2.3.2.12.6	Hysteresis	8431	float32	RW	PID_TOT2_VOLUME_ALARM_HYSTeresis	
2.3.2.13	Daily reset (at midnight)	13544	unsigned8	RW	PID_TOT2_AUTO_RESET	Disable Enable
2.3.2.14	Auto reset	12886	unsigned8	RW	PID_TOT2_OVERFLOW_ENABLE	Disable Enable
2.3.2.15	Auto reset limit	12873	float32	RW	PID_TOT2_OVERFLOW_VALUE	
2.3.3	Totalizer 3					
2.3.3.1	Process value	8505	unsigned8	RW	PID_TOT3_CHANNEL	Totalizer Input Value
2.3.3.2	Units	9062	unsigned8	RW	PID_LUI_TOT3_VOLUME_UNIT	Volume Unit
2.3.3.4	Custom units	8452	string8	RW	PID_CUSTOM_UNIT_STRING_VOLUME	
2.3.3.5	Custom conversion factor	8450	float32	RW	PID_CUSTOM_UNIT_FACTOR_VOLUME	
2.3.3.6	Decimal places	7565	unsigned8	RW	PID_LUI_TOT3_VOLUME_DEC_POINT	Decimal Point
2.3.3.8	Fail-safe behavior	8502	unsigned8	RW	PID_TOT3_FAIL_TOT	Totalizer Fail-safe Mode
2.3.3.9	Reset					
2.3.3.10	Preset value	8516	float32	RW	PID_TOT3_PRESET_VALUE	
2.3.3.11	Preset					
2.3.3.12	Limit monitoring					
2.3.3.12.1	Enable alarms	6274	unsigned32	RW	PID_ALARM_STATUS_5_MASK	Alarm Status 5
2.3.3.12.2	Upper alarm limit	8523	float32	RW	PID_TOT3_VOLUME_UPPER_ALARM_LIMIT	
2.3.3.12.3	Upper warning limit	8525	float32	RW	PID_TOT3_VOLUME_UPPER_WARNING_LIMIT	
2.3.3.12.4	Lower warning limit	8527	float32	RW	PID_TOT3_VOLUME_LOWER_WARNING_LIMIT	
2.3.3.12.5	Lower alarm limit	8529	float32	RW	PID_TOT3_VOLUME_LOWER_ALARM_LIMIT	
2.3.3.12.6	Hysteresis	8531	float32	RW	PID_TOT3_VOLUME_ALARM_HYSTeresis	
2.3.3.13	Daily reset (at midnight)	13588	unsigned8	RW	PID_TOT3_AUTO_RESET	Disable Enable
2.3.3.14	Auto reset	12887	unsigned8	RW	PID_TOT3_OVERFLOW_ENABLE	Disable Enable
2.3.3.15	Auto reset limit	12877	float32	RW	PID_TOT3_OVERFLOW_VALUE	
2.3.4	Totalizer 4					
2.3.4.1	Process value	13600	unsigned8	RW	PID_TOT4_CHANNEL	Totalizer Input Value
2.3.4.2	Units	13672	unsigned8	RW	PID_LUI_TOT4_VOLUME_UNIT	Volume Unit
2.3.4.4	Custom units	8452	string8	RW	PID_CUSTOM_UNIT_STRING_VOLUME	
2.3.4.5	Custom conversion factor	8450	float32	RW	PID_CUSTOM_UNIT_FACTOR_VOLUME	
2.3.4.6	Decimal places	13684	unsigned8	RW	PID_LUI_TOT4_VOLUME_DEC_POINT	Decimal Point
2.3.4.8	Fail-safe behavior	13609	unsigned8	RW	PID_TOT4_FAIL_TOT	Totalizer Fail-safe Mode
2.3.4.9	Reset					
2.3.4.10	Preset value	13612	float32	RW	PID_TOT4_PRESET_VALUE	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.3.4.11	Preset					
2.3.4.12	Limit monitoring					
2.3.4.12.1	Enable alarms	7010	unsigned32	RW	PID_ALARM_STATUS_10_MASK	Alarm Status 10
2.3.4.12.2	Upper alarm limit	13641	float32	RW	PID_TOT4_VOLUME_UPPER_ALARM_LIMIT	
2.3.4.12.3	Upper warning limit	13643	float32	RW	PID_TOT4_VOLUME_UPPER_WARNING_LIMIT	
2.3.4.12.4	Lower warning limit	13645	float32	RW	PID_TOT4_VOLUME_LOWER_WARNING_LIMIT	
2.3.4.12.5	Lower alarm limit	13647	float32	RW	PID_TOT4_VOLUME_LOWER_ALARM_LIMIT	
2.3.4.12.6	Hysteresis	13649	float32	RW	PID_TOT4_VOLUME_ALARM_HYSTeresis	
2.3.4.13	Daily reset (at midnight)	13594	unsigned8	RW	PID_TOT4_AUTO_RESET	Disable Enable
2.3.4.14	Auto reset	12888	unsigned8	RW	PID_TOT4_OVERFLOW_ENABLE	Disable Enable
2.3.4.15	Auto reset limit	12881	float32	RW	PID_TOT4_OVERFLOW_VALUE	
2.3.5	Reset all totalizers					

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.4	Inputs and outputs					
2.4.1	Current output (HART)					
2.4.1.1	Loop current mode	7110	unsigned8	RW	PID_LOOP_CURRENT_MODE	Loop Current Mode
2.4.1.2	Loop current scale	7216	unsigned8	RW	PID_CURRENT_MODE	Current Mode
2.4.1.3	Active operation	7211	unsigned8	R	PID_CH1_HART_ACTIVE_POSSIBLE	Hart Active
2.4.1.4	Process value	7200	unsigned8	RW	PID_PV_SELECTOR	Input Selector
2.4.1.6	Upper range value	7132	float32	RW	PID_UPPER_RANGE_TEMPERATURE	
2.4.1.6	Upper range value	7217	float32	RW	PID_UPPER_RANGE_VOLUME_FLOW	
2.4.1.6	Upper range value	11888	float32	RW	PID_UPPER_RANGE_VOLUME	
2.4.1.6	Upper range value	11884	float32	RW	PID_UPPER_RANGE_LENGTH	
2.4.1.7	Lower range value	11890	float32	RW	PID_LOWER_RANGE_VOLUME	
2.4.1.7	Lower range value	11886	float32	RW	PID_LOWER_RANGE_LENGTH	
2.4.1.7	Lower range value	7134	float32	RW	PID_LOWER_RANGE_TEMPERATURE	
2.4.1.7	Lower range value	7219	float32	RW	PID_LOWER_RANGE_VOLUME_FLOW	
2.4.1.8	Damping value	7204	float32	RW	PID_PV_DAMPING_VALUE	
2.4.1.9	Fail-safe behavior	7213	unsigned8	RW	PID_FAIL_SAFE_MODE	Fail-safe Mode
2.4.1.10	Fail-safe behavior activation condition	6297	unsigned8	RW	PID_FAIL_SAFE_ACTIVATION_MODE	Fail-safe Activation Mode
2.4.1.11	Fail-safe behaviour suppression time	12865	float32	RW	PID_FAIL_VALUE_DELAY_TIME	
2.4.1.12	Fail-safe behavior minimum duration	7167	unsigned16	RW	PID_MIN_FAIL_VALUE_HOLD_TIME	
2.4.1.13	Fail-safe value	7214	float32	RW	PID_FAIL_SAFE_VALUE	
2.4.1.14	Forced value	6298	float32	RW	PID_CH1_FORCE_VALUE	
2.4.1.15	Enable diagnostics	6274	unsigned32	RW	PID_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.2	Current output 1					
2.4.2.2	Loop current scale	8806	unsigned8	RW	PID_CH2_C_OUTPUT_MODE	Current Mode

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2.4.2.4	Process value	8802	unsigned8	RW	PID_CH2_C_INPUT_SELECTOR	Input Selector
2.4.2.6	Upper range value	8874	float32	RW	PID_CH2_C_UPPER_RANGE_TEMPERATURE_VALUE	
2.4.2.6	Upper range value	8866	float32	RW	PID_CH2_C_UPPER_RANGE_VOLUME_FLOW_VALUE	
2.4.2.6	Upper range value	11896	float32	RW	PID_CH2_C_UPPER_RANGE_VOLUME	
2.4.2.6	Upper range value	11892	float32	RW	PID_CH2_C_UPPER_RANGE_LENGTH	
2.4.2.7	Lower range value	8876	float32	RW	PID_CH2_C_LOWER_RANGE_TEMPERATURE_VALUE	
2.4.2.7	Lower range value	8868	float32	RW	PID_CH2_C_LOWER_RANGE_VOLUME_FLOW_VALUE	
2.4.2.7	Lower range value	11898	float32	RW	PID_CH2_C_LOWER_RANGE_VOLUME	
2.4.2.7	Lower range value	11894	float32	RW	PID_CH2_C_LOWER_RANGE_LENGTH	
2.4.2.8	Damping value	8807	float32	RW	PID_CH2_C_FILTER_TIME	
2.4.2.9	Fail-safe behavior	8814	unsigned8	RW	PID_CH2_C_FAIL_MODE	Fail-safe Mode
2.4.2.10	Fail-safe behavior activation condition	9590	unsigned8	RW	PID_CH2_FAIL_SAFE_ACTIVATION_MODE	Fail-safe Activation Mode
2.4.2.11	Fail-safe behavior suppression time	12866	unsigned16	RW	PID_CH2_FAIL_VALUE_DELAY_TIME	
2.4.2.12	Fail-safe behavior minimum duration	8981	unsigned16	RW	PID_CH2_MIN_FAIL_VALUE_HOLD_TIME	
2.4.2.13	Fail-safe value	8815	float32	RW	PID_CH2_C_FAIL_VALUE	
2.4.2.14	Forced value	7146	float32	RW	PID_CH2_C_FORCE_VALUE	
2.4.2.15	Enable diagnostics	6278	unsigned32	RW	PID_ALARM_STATUS_7_MASK	Alarm Status 7
2.4.3	Current output 2					
2.4.3.2	Loop current scale	9106	unsigned8	RW	PID_CH3_C_OUTPUT_MODE	Current Mode
2.4.3.4	Process value	9102	unsigned8	RW	PID_CH3_C_INPUT_SELECTOR	Input Selector
2.4.3.6	Upper range value	13524	float32	RW	PID_CH3_C_UPPER_RANGE_VOLUME	
2.4.3.6	Upper range value	9174	float32	RW	PID_CH3_C_UPPER_RANGE_TEMPERATURE_VALUE	
2.4.3.6	Upper range value	9166	float32	RW	PID_CH3_C_UPPER_RANGE_VOLUME_FLOW_VALUE	
2.4.3.6	Upper range value	13520	float32	RW	PID_CH3_C_UPPER_RANGE_LENGTH	
2.4.3.7	Lower range value	9168	float32	RW	PID_CH3_C_LOWER_RANGE_VOLUME_FLOW_VALUE	
2.4.3.7	Lower range value	9176	float32	RW	PID_CH3_C_LOWER_RANGE_TEMPERATURE_VALUE	
2.4.3.7	Lower range value	13522	float32	RW	PID_CH3_C_LOWER_RANGE_LENGTH	
2.4.3.7	Lower range value	13526	float32	RW	PID_CH3_C_LOWER_RANGE_VOLUME	
2.4.3.8	Damping value	9107	float32	RW	PID_CH3_C_FILTER_TIME	
2.4.3.9	Fail-safe behavior	9114	unsigned8	RW	PID_CH3_C_FAIL_MODE	Fail-safe Mode
2.4.3.10	Fail-safe behavior activation condition	9591	unsigned8	RW	PID_CH3_FAIL_SAFE_ACTIVATION_MODE	Fail-safe Activation Mode
2.4.3.11	Fail-safe behavior suppression time	12867	unsigned16	RW	PID_CH3_FAIL_VALUE_DELAY_TIME	
2.4.3.12	Fail-safe behavior minimum duration	9281	unsigned16	RW	PID_CH3_MIN_FAIL_VALUE_HOLD_TIME	
2.4.3.13	Fail-safe value	9115	float32	RW	PID_CH3_C_FAIL_VALUE	
2.4.3.14	Forced value	7153	float32	RW	PID_CH3_C_FORCE_VALUE	
2.4.3.15	Enable diagnostics	6278	unsigned32	RW	PID_ALARM_STATUS_7_MASK	Alarm Status 7

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.4.4	Digital input 1					
2.4.4.1	Input function	10563	unsigned16	RW	PID_CH7_I_FUNCTION	Discrete Input Function
2.4.4.2	Polarity	10566	unsigned8	RW	PID_CH7_I_POLARITY	Signal Inversion
2.4.5	Digital input 2					
2.4.5.1	Input function	10663	unsigned16	RW	PID_CH8_I_FUNCTION	Discrete Input Function
2.4.5.2	Polarity	10666	unsigned8	RW	PID_CH8_I_POLARITY	Signal Inversion
2.4.6	Relay output 1					
2.4.6.1	Mode	12353	unsigned8	R	PID_CH9_SEN_MODE_ENABLE D	Channel Sensor Mode Enable
2.4.6.1	Mode	10685	unsigned8	RW	PID_CH9_S_INPUT_SELECTOR	Sensor Mode Select
2.4.6.2	Status signals	11799	unsigned16	RW	PID_CH9_S_GLOBAL_ALARM_S TATUS_MASK	Global Alarm Status
2.4.6.2	Status signals	11855	unsigned16	RW	PID_CH9_S_GLOBAL_NAMUR_S TATUS_MASK	Global Namur Status
2.4.6.3	Sensor diagnostics					
2.4.6.3.1	Measurement point 1	10686	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 MASK	Alarm Status 1
2.4.6.3.2	Measurement point 2	10686	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 MASK	Alarm Status 1
2.4.6.3.2	Measurement point 2	10688	unsigned32	RW	PID_CH9_S_ALARM_STATUS_2 MASK	Alarm Status 2
2.4.6.4	Process alarms					
2.4.6.4.1	Level (point 1)	11797	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 1 MASK	Alarm Status 11
2.4.6.4.1	Level (point 1)	7082	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 3 MASK	Alarm Status 13
2.4.6.4.2	Space (point 1)	11797	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 1 MASK	Alarm Status 11
2.4.6.4.3	Distance (point 1)	11797	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 1 MASK	Alarm Status 11
2.4.6.4.4	Head (point 1)	11797	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 1 MASK	Alarm Status 11
2.4.6.4.5	Volume (point 1)	11797	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 1 MASK	Alarm Status 11
2.4.6.4.6	Volume flow (point 1)	10692	unsigned32	RW	PID_CH9_S_ALARM_STATUS_4 MASK	Alarm Status 4
2.4.6.4.7	Sensor temperature (point 1)	10692	unsigned32	RW	PID_CH9_S_ALARM_STATUS_4 MASK	Alarm Status 4
2.4.6.4.8	Level (point 2)	11797	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 1 MASK	Alarm Status 11
2.4.6.4.8	Level (point 2)	7082	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 3 MASK	Alarm Status 13
2.4.6.4.9	Space (point 2)	11797	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 1 MASK	Alarm Status 11
2.4.6.4.10	Distance (point 2)	11797	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 1 MASK	Alarm Status 11
2.4.6.4.11	Head (point 2)	11853	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 2 MASK	Alarm Status 12
2.4.6.4.12	Volume (point 2)	11853	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 2 MASK	Alarm Status 12
2.4.6.4.13	Volume flow (point 2)	11853	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 2 MASK	Alarm Status 12
2.4.6.4.14	Sensor temperature (point 2)	11853	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 2 MASK	Alarm Status 12
2.4.6.4.15	Level difference	11853	unsigned32	RW	PID_CH9_S_ALARM_STATUS_1 2 MASK	Alarm Status 12

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.4.6.4.16	Level average	11853	unsigned32	RW	PID_CH9_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.6.5	Totalizer alarms					
2.4.6.5.1	Totalizer 1	10694	unsigned32	RW	PID_CH9_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.6.5.2	Totalizer 2	10694	unsigned32	RW	PID_CH9_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.6.5.3	Totalizer 3	10694	unsigned32	RW	PID_CH9_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.6.5.4	Totalizer 4	11795	unsigned32	RW	PID_CH9_S_ALARM_STATUS_10_MASK	Alarm Status 10
2.4.6.6	Input and output diagnostics					
2.4.6.6.1	Current output (HART)	10694	unsigned32	RW	PID_CH9_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.6.6.2	Current output 1	10698	unsigned32	RW	PID_CH9_S_ALARM_STATUS_7_MASK	Alarm Status 7
2.4.6.6.3	Current output 2	10698	unsigned32	RW	PID_CH9_S_ALARM_STATUS_7_MASK	Alarm Status 7
2.4.6.7	Memory card diagnostics					
2.4.6.7.1	Data logging	11793	unsigned32	RW	PID_CH9_S_ALARM_STATUS_9_MASK	Alarm Status 9
2.4.6.8	Process value	12358	unsigned8	RW	PID_CH9_S_PROCESS_VALUE	Totalizer Input Value
2.4.6.9	Units	12360	unsigned8	RW	PID_CH9_S_LUI_VOLUME_UNIT	Volume Unit
2.4.6.10	Amount	12354	float32	RW	PID_CH9_S_AMOUNT	
2.4.6.11	Interval	12453	float32	RW	PID_CH9_S_SAMPLER_INTERVAL	
2.4.6.12	Fail-safe behavior	13688	unsigned8	RW	PID_CH9_FAIL_MODE	Totalizer Fail-safe Mode
2.4.6.13	Fail-safe behavior source	12967	unsigned8	RW	PID_CH9_S_FAIL_MODE_SOURCE	
2.4.6.14	Polarity	11856	unsigned8	RW	PID_CH9_S_POLARITY	Signal Inversion
2.4.6.15	On-delay	11857	float32	RW	PID_CH9_S_ON_DELAY	
2.4.6.16	Off-delay	11143	float32	RW	PID_CH9_S_OFF_DELAY	
2.4.6.17	Forced value	11860	unsigned8	RW	PID_CH9_S_FORCE_VALUE	
2.4.7	Relay output 2					
2.4.7.1	Mode	13706	unsigned8	RW	PID_CH10_S_INPUT_SELECTOR	Sensor Mode Select
2.4.7.1	Mode	12363	unsigned8	R	PID_CH10_SEN_MODE_ENABLE	Channel Sensor Mode Enable
2.4.7.2	Status signals	13732	unsigned16	RW	PID_CH10_S_GLOBAL_NAMUR_STATUS_MASK	Global Namur Status
2.4.7.2	Status signals	13731	unsigned16	RW	PID_CH10_S_GLOBAL_ALARM_STATUS_MASK	Global Alarm Status
2.4.7.3	Sensor diagnostics					
2.4.7.3.1	Measurement point 1	13707	unsigned32	RW	PID_CH10_S_ALARM_STATUS_1_MASK	Alarm Status 1
2.4.7.3.2	Measurement point 2	13707	unsigned32	RW	PID_CH10_S_ALARM_STATUS_1_MASK	Alarm Status 1
2.4.7.3.2	Measurement point 2	13709	unsigned32	RW	PID_CH10_S_ALARM_STATUS_2_MASK	Alarm Status 2
2.4.7.4	Process alarms					
2.4.7.4.1	Level (point 1)	13727	unsigned32	RW	PID_CH10_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.7.4.1	Level (point 1)	7086	unsigned32	RW	PID_CH10_S_ALARM_STATUS_13_MASK	Alarm Status 13
2.4.7.4.2	Space (point 1)	13727	unsigned32	RW	PID_CH10_S_ALARM_STATUS_11_MASK	Alarm Status 11

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.4.7.4.3	Distance (point 1)	13727	unsigned32	RW	PID_CH10_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.7.4.4	Head (point 1)	13727	unsigned32	RW	PID_CH10_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.7.4.5	Volume (point 1)	13727	unsigned32	RW	PID_CH10_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.7.4.6	Volume flow (point 1)	13713	unsigned32	RW	PID_CH10_S_ALARM_STATUS_4_MASK	Alarm Status 4
2.4.7.4.7	Sensor temperature (point 1)	13713	unsigned32	RW	PID_CH10_S_ALARM_STATUS_4_MASK	Alarm Status 4
2.4.7.4.8	Level (point 2)	13727	unsigned32	RW	PID_CH10_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.7.4.8	Level (point 2)	7086	unsigned32	RW	PID_CH10_S_ALARM_STATUS_13_MASK	Alarm Status 13
2.4.7.4.9	Space (point 2)	13727	unsigned32	RW	PID_CH10_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.7.4.10	Distance (point 2)	13727	unsigned32	RW	PID_CH10_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.7.4.11	Head (point 2)	13729	unsigned32	RW	PID_CH10_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.7.4.12	Volume (point 2)	13729	unsigned32	RW	PID_CH10_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.7.4.13	Volume flow (point 2)	13729	unsigned32	RW	PID_CH10_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.7.4.14	Sensor temperature (point 2)	13729	unsigned32	RW	PID_CH10_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.7.4.15	Level difference	13729	unsigned32	RW	PID_CH10_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.7.4.16	Level average	13729	unsigned32	RW	PID_CH10_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.7.5	Totalizer alarms					
2.4.7.5.1	Totalizer 1	13715	unsigned32	RW	PID_CH10_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.7.5.2	Totalizer 2	13715	unsigned32	RW	PID_CH10_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.7.5.3	Totalizer 3	13715	unsigned32	RW	PID_CH10_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.7.5.4	Totalizer 4	13725	unsigned32	RW	PID_CH10_S_ALARM_STATUS_10_MASK	Alarm Status 10
2.4.7.6	Input and output diagnostics					
2.4.7.6.1	Current output (HART)	13715	unsigned32	RW	PID_CH10_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.7.6.2	Current output 1	13719	unsigned32	RW	PID_CH10_S_ALARM_STATUS_7_MASK	Alarm Status 7
2.4.7.6.3	Current output 2	13719	unsigned32	RW	PID_CH10_S_ALARM_STATUS_7_MASK	Alarm Status 7
2.4.7.7	Memory card diagnostics					
2.4.7.7.1	Data logging	13723	unsigned32	RW	PID_CH10_S_ALARM_STATUS_9_MASK	Alarm Status 9
2.4.7.8	Process value	12364	unsigned8	RW	PID_CH10_S_PROCESS_VALUE	Process Selector
2.4.7.9	Units	12366	unsigned8	RW	PID_CH10_S_LUI_VOLUME_UNIT	Volume Unit
2.4.7.10	Amount	12369	float32	RW	PID_CH10_S_AMOUNT	
2.4.7.11	Interval	12455	float32	RW	PID_CH10_S_SAMPLER_INTERVAL	
2.4.7.12	Fail-safe behavior	13689	unsigned8	RW	PID_CH10_FAIL_MODE	Totalizer Fail-safe Mode
2.4.7.13	Fail-safe behavior source	12968	unsigned8	RW	PID_CH10_S_FAIL_MODE_SOURCE	
2.4.7.14	Polarity	13733	unsigned8	RW	PID_CH10_S_POLARITY	Signal Inversion
2.4.7.15	On-delay	13734	float32	RW	PID_CH10_S_ON_DELAY	
2.4.7.16	Off-delay	13736	float32	RW	PID_CH10_S_OFF_DELAY	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.4.7.17	Forced value	13740	unsigned8	RW	PID_CH10_S_FORCE_VALUE	
2.4.8	Relay output 3					
2.4.8.1	Mode	13748	unsigned8	RW	PID_CH11_S_INPUT_SELECTO R	Sensor Mode Select
2.4.8.1	Mode	12372	unsigned8	R	PID_CH11_SEN_MODE_ENABLE D	Channel Sensor Mode Enable
2.4.8.2	Status signals	13774	unsigned16	RW	PID_CH11_S_GLOBAL_NAMUR_ STATUS_MASK	Global Namur Status
2.4.8.2	Status signals	13773	unsigned16	RW	PID_CH11_S_GLOBAL_ALARM_ STATUS_MASK	Global Alarm Status
2.4.8.3	Sensor diagnostics					
2.4.8.3.1	Measurement point 1	13749	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 1_MASK	Alarm Status 1
2.4.8.3.2	Measurement point 2	13749	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 1_MASK	Alarm Status 1
2.4.8.3.2	Measurement point 2	13751	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 2_MASK	Alarm Status 2
2.4.8.4	Process alarms					
2.4.8.4.1	Level (point 1)	13769	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 11_MASK	Alarm Status 11
2.4.8.4.1	Level (point 1)	7090	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 13_MASK	Alarm Status 13
2.4.8.4.2	Space (point 1)	13769	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 11_MASK	Alarm Status 11
2.4.8.4.3	Distance (point 1)	13769	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 11_MASK	Alarm Status 11
2.4.8.4.4	Head (point 1)	13769	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 11_MASK	Alarm Status 11
2.4.8.4.5	Volume (point 1)	13769	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 11_MASK	Alarm Status 11
2.4.8.4.6	Volume flow (point 1)	13755	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 4_MASK	Alarm Status 4
2.4.8.4.7	Sensor temperature (point 1)	13755	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 4_MASK	Alarm Status 4
2.4.8.4.8	Level (point 2)	13769	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 11_MASK	Alarm Status 11
2.4.8.4.8	Level (point 2)	7090	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 13_MASK	Alarm Status 13
2.4.8.4.9	Space (point 2)	13769	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 11_MASK	Alarm Status 11
2.4.8.4.10	Distance (point 2)	13769	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 11_MASK	Alarm Status 11
2.4.8.4.11	Head (point 2)	13771	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 12_MASK	Alarm Status 12
2.4.8.4.12	Volume (point 2)	13771	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 12_MASK	Alarm Status 12
2.4.8.4.13	Volume flow (point 2)	13771	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 12_MASK	Alarm Status 12
2.4.8.4.14	Sensor temperature (point 2)	13771	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 12_MASK	Alarm Status 12
2.4.8.4.15	Level difference	13771	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 12_MASK	Alarm Status 12
2.4.8.4.16	Level average	13771	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 12_MASK	Alarm Status 12
2.4.8.5	Totalizer alarms					
2.4.8.5.1	Totalizer 1	13757	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 5_MASK	Alarm Status 5
2.4.8.5.2	Totalizer 2	13757	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 5_MASK	Alarm Status 5
2.4.8.5.3	Totalizer 3	13757	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 5_MASK	Alarm Status 5
2.4.8.5.4	Totalizer 4	13767	unsigned32	RW	PID_CH11_S_ALARM_STATUS_ 10_MASK	Alarm Status 10

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.4.8.6	Input and output diagnostics					
2.4.8.6.1	Current output (HART)	13757	unsigned32	RW	PID_CH11_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.8.6.2	Current output 1	13761	unsigned32	RW	PID_CH11_S_ALARM_STATUS_7_MASK	Alarm Status 7
2.4.8.6.3	Current output 2	13761	unsigned32	RW	PID_CH11_S_ALARM_STATUS_7_MASK	Alarm Status 7
2.4.8.7	Memory card diagnostics					
2.4.8.7.1	Data logging	13765	unsigned32	RW	PID_CH11_S_ALARM_STATUS_9_MASK	Alarm Status 9
2.4.8.8	Process value	12373	unsigned8	RW	PID_CH11_S_PROCESS_VALUE	Process Value
2.4.8.9	Units	12375	unsigned8	RW	PID_CH11_S_LUI_VOLUME_UNIT	Volume Unit
2.4.8.10	Amount	12378	float32	RW	PID_CH11_S_AMOUNT	
2.4.8.11	Interval	12457	float32	RW	PID_CH11_S_SAMPLER_INTERVAL	
2.4.8.12	Fail-safe behavior	13690	unsigned8	RW	PID_CH11_FAIL_MODE	Totalizer Fail-safe Mode
2.4.8.13	Fail-safe behavior source	12969	unsigned8	RW	PID_CH11_S_FAIL_MODE_SOURCE	
2.4.8.14	Polarity	13775	unsigned8	RW	PID_CH11_S_POLARITY	Signal Inversion
2.4.8.15	On-delay	13776	float32	RW	PID_CH11_S_ON_DELAY	
2.4.8.16	Off-delay	13778	float32	RW	PID_CH11_S_OFF_DELAY	
2.4.8.17	Forced value	13782	unsigned8	RW	PID_CH11_S_FORCE_VALUE	
2.4.9	Relay output 4					
2.4.9.1	Mode	13789	unsigned8	RW	PID_CH12_S_INPUT_SELECTOR	Sensor Mode Select
2.4.9.1	Mode	12381	unsigned8	R	PID_CH12_SEN_MODE_ENABLE	Channel Sensor Mode Enable
2.4.9.2	Status signals	13815	unsigned16	RW	PID_CH12_S_GLOBAL_NAMUR_STATUS_MASK	Global Namur Status
2.4.9.2	Status signals	13814	unsigned16	RW	PID_CH12_S_GLOBAL_ALARM_STATUS_MASK	Global Alarm Status
2.4.9.3	Sensor diagnostics					
2.4.9.3.1	Measurement point 1	13790	unsigned32	RW	PID_CH12_S_ALARM_STATUS_1_MASK	Alarm Status 1
2.4.9.3.2	Measurement point 2	13790	unsigned32	RW	PID_CH12_S_ALARM_STATUS_1_MASK	Alarm Status 1
2.4.9.3.2	Measurement point 2	13792	unsigned32	RW	PID_CH12_S_ALARM_STATUS_2_MASK	Alarm Status 2
2.4.9.4	Process alarms					
2.4.9.4.1	Level (point 1)	13810	unsigned32	RW	PID_CH12_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.9.4.1	Level (point 1)	7094	unsigned32	RW	PID_CH12_S_ALARM_STATUS_13_MASK	Alarm Status 13
2.4.9.4.2	Space (point 1)	13810	unsigned32	RW	PID_CH12_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.9.4.3	Distance (point 1)	13810	unsigned32	RW	PID_CH12_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.9.4.4	Head (point 1)	13810	unsigned32	RW	PID_CH12_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.9.4.5	Volume (point 1)	13810	unsigned32	RW	PID_CH12_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.9.4.6	Volume flow (point 1)	13796	unsigned32	RW	PID_CH12_S_ALARM_STATUS_4_MASK	Alarm Status 4
2.4.9.4.7	Sensor temperature (point 1)	13796	unsigned32	RW	PID_CH12_S_ALARM_STATUS_4_MASK	Alarm Status 4
2.4.9.4.8	Level (point 2)	13810	unsigned32	RW	PID_CH12_S_ALARM_STATUS_11_MASK	Alarm Status 11

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2.4.9.4.8	Level (point 2)	7094	unsigned32	RW	PID_CH12_S_ALARM_STATUS_13_MASK	Alarm Status 13
2.4.9.4.9	Space (point 2)	13810	unsigned32	RW	PID_CH12_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.9.4.10	Distance (point 2)	13810	unsigned32	RW	PID_CH12_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.9.4.11	Head (point 2)	13812	unsigned32	RW	PID_CH12_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.9.4.12	Volume (point 2)	13812	unsigned32	RW	PID_CH12_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.9.4.13	Volume flow (point 2)	13812	unsigned32	RW	PID_CH12_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.9.4.14	Sensor temperature (point 2)	13812	unsigned32	RW	PID_CH12_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.9.4.15	Level difference	13812	unsigned32	RW	PID_CH12_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.9.4.16	Level average	13812	unsigned32	RW	PID_CH12_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.9.5	Totalizer alarms					
2.4.9.5.1	Totalizer 1	13798	unsigned32	RW	PID_CH12_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.9.5.2	Totalizer 2	13798	unsigned32	RW	PID_CH12_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.9.5.3	Totalizer 3	13798	unsigned32	RW	PID_CH12_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.9.5.4	Totalizer 4	13808	unsigned32	RW	PID_CH12_S_ALARM_STATUS_10_MASK	Alarm Status 10
2.4.9.6	Input and output diagnostics					
2.4.9.6.1	Current output (HART)	13798	unsigned32	RW	PID_CH12_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.9.6.2	Current output 1	13802	unsigned32	RW	PID_CH12_S_ALARM_STATUS_7_MASK	Alarm Status 7
2.4.9.6.3	Current output 2	13802	unsigned32	RW	PID_CH12_S_ALARM_STATUS_7_MASK	Alarm Status 7
2.4.9.7	Memory card diagnostics					
2.4.9.7.1	Data logging	13806	unsigned32	RW	PID_CH12_S_ALARM_STATUS_9_MASK	Alarm Status 9
2.4.9.8	Process value	12382	unsigned8	RW	PID_CH12_S_PROCESS_VALUE	Totalizer Input Value
2.4.9.9	Units	12384	unsigned8	RW	PID_CH12_S_LUI_VOLUME_UNIT	Volume Unit
2.4.9.10	Amount	12387	float32	RW	PID_CH12_S_AMOUNT	
2.4.9.11	Interval	12459	float32	RW	PID_CH12_S_SAMPLER_INTERVAL	
2.4.9.12	Fail-safe behavior	13691	unsigned8	RW	PID_CH12_FAIL_MODE	Totalizer Fail-safe Mode
2.4.9.13	Fail-safe behavior source	12970	unsigned8	RW	PID_CH12_S_FAIL_MODE_SOURCE	
2.4.9.14	Polarity	13816	unsigned8	RW	PID_CH12_S_POLARITY	Signal Inversion
2.4.9.15	On-delay	13817	float32	RW	PID_CH12_S_ON_DELAY	
2.4.9.16	Off-delay	13819	float32	RW	PID_CH12_S_OFF_DELAY	
2.4.9.17	Forced value	13823	unsigned8	RW	PID_CH12_S_FORCE_VALUE	
2.4.10	Relay output 5					
2.4.10.1	Mode	13830	unsigned8	RW	PID_CH13_S_INPUT_SELECTOR	Sensor Mode Select
2.4.10.1	Mode	12390	unsigned8	R	PID_CH13_SEN_MODE_ENABLE	Channel Sensor Mode Enable
2.4.10.2	Status signals	13856	unsigned16	RW	PID_CH13_S_GLOBAL_NAMUR_STATUS_MASK	Global Namur Status
2.4.10.2	Status signals	13855	unsigned16	RW	PID_CH13_S_GLOBAL_ALARM_STATUS_MASK	Global Alarm Status

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.4.10.3	Sensor diagnostics					
2.4.10.3.1	Measurement point 1	13831	unsigned32	RW	PID_CH13_S_ALARM_STATUS_1_MASK	Alarm Status 1
2.4.10.3.2	Measurement point 2	13831	unsigned32	RW	PID_CH13_S_ALARM_STATUS_1_MASK	Alarm Status 1
2.4.10.3.2	Measurement point 2	13833	unsigned32	RW	PID_CH13_S_ALARM_STATUS_2_MASK	Alarm Status 2
2.4.10.4	Process alarms					
2.4.10.4.1	Level (point 1)	13851	unsigned32	RW	PID_CH13_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.10.4.1	Level (point 1)	7394	unsigned32	RW	PID_CH13_S_ALARM_STATUS_13_MASK	Alarm Status 13
2.4.10.4.2	Space (point 1)	13851	unsigned32	RW	PID_CH13_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.10.4.3	Distance (point 1)	13851	unsigned32	RW	PID_CH13_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.10.4.4	Head (point 1)	13851	unsigned32	RW	PID_CH13_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.10.4.5	Volume (point 1)	13851	unsigned32	RW	PID_CH13_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.10.4.6	Volume flow (point 1)	13837	unsigned32	RW	PID_CH13_S_ALARM_STATUS_4_MASK	Alarm Status 4
2.4.10.4.7	Sensor temperature (point 1)	13837	unsigned32	RW	PID_CH13_S_ALARM_STATUS_4_MASK	Alarm Status 4
2.4.10.4.8	Level (point 2)	13851	unsigned32	RW	PID_CH13_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.10.4.8	Level (point 2)	7394	unsigned32	RW	PID_CH13_S_ALARM_STATUS_13_MASK	Alarm Status 13
2.4.10.4.9	Space (point 2)	13851	unsigned32	RW	PID_CH13_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.10.4.10	Distance (point 2)	13851	unsigned32	RW	PID_CH13_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.10.4.11	Head (point 2)	13853	unsigned32	RW	PID_CH13_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.10.4.12	Volume (point 2)	13853	unsigned32	RW	PID_CH13_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.10.4.13	Volume flow (point 2)	13853	unsigned32	RW	PID_CH13_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.10.4.14	Sensor temperature (point 2)	13853	unsigned32	RW	PID_CH13_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.10.4.15	Level difference	13853	unsigned32	RW	PID_CH13_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.10.4.16	Level average	13853	unsigned32	RW	PID_CH13_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.10.5	Totalizer alarms					
2.4.10.5.1	Totalizer 1	13839	unsigned32	RW	PID_CH13_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.10.5.2	Totalizer 2	13839	unsigned32	RW	PID_CH13_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.10.5.3	Totalizer 3	13839	unsigned32	RW	PID_CH13_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.10.5.4	Totalizer 4	13849	unsigned32	RW	PID_CH13_S_ALARM_STATUS_10_MASK	Alarm Status 10
2.4.10.6	Input and output diagnostics					
2.4.10.6.1	Current output (HART)	13839	unsigned32	RW	PID_CH13_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.10.6.2	Current output 1	13843	unsigned32	RW	PID_CH13_S_ALARM_STATUS_7_MASK	Alarm Status 7
2.4.10.6.3	Current output 2	13843	unsigned32	RW	PID_CH13_S_ALARM_STATUS_7_MASK	Alarm Status 7
2.4.10.7	Memory card diagnostics					
2.4.10.7.1	Data logging	13847	unsigned32	RW	PID_CH13_S_ALARM_STATUS_9_MASK	Alarm Status 9
2.4.10.8	Process value	12391	unsigned8	RW	PID_CH13_S_PROCESS_VALUE	Totalizer Input Value

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2.4.10.9	Units	12393	unsigned8	RW	PID_CH13_S_LUI_VOLUME_UNIT	Volume Unit
2.4.10.10	Amount	12396	float32	RW	PID_CH13_S_AMOUNT	
2.4.10.11	Interval	12461	float32	RW	PID_CH13_S_SAMPLER_INTERVAL	
2.4.10.12	Fail-safe behavior	13692	unsigned8	RW	PID_CH13_FAIL_MODE	Totalizer Fail-safe Mode
2.4.10.13	Fail-safe behavior source	12971	unsigned8	RW	PID_CH13_S_FAIL_MODE_SOURCE	
2.4.10.14	Polarity	13857	unsigned8	RW	PID_CH13_S_POLARITY	Signal Inversion
2.4.10.15	On-delay	13858	float32	RW	PID_CH13_S_ON_DELAY	
2.4.10.16	Off-delay	13860	float32	RW	PID_CH13_S_OFF_DELAY	
2.4.10.17	Forced value	13864	unsigned8	RW	PID_CH13_S_FORCE_VALUE	
2.4.11	Relay output 6					
2.4.11.1	Mode	12290	unsigned8	R	PID_CH14_SEN_MODE_ENABLE	Channel Sensor Mode Enable
2.4.11.1	Mode	13871	unsigned8	RW	PID_CH14_S_INPUT_SELECTOR	Sensor Mode Select
2.4.11.2	Status signals	13897	unsigned16	RW	PID_CH14_S_GLOBAL_NAMUR_STATUS_MASK	Global Namur Status
2.4.11.2	Status signals	13896	unsigned16	RW	PID_CH14_S_GLOBAL_ALARM_STATUS_MASK	Global Alarm Status
2.4.11.3	Sensor diagnostics					
2.4.11.3.1	Measurement point 1	13872	unsigned32	RW	PID_CH14_S_ALARM_STATUS_1_MASK	Alarm Status 1
2.4.11.3.2	Measurement point 2	13872	unsigned32	RW	PID_CH14_S_ALARM_STATUS_1_MASK	Alarm Status 1
2.4.11.3.2	Measurement point 2	13874	unsigned32	RW	PID_CH14_S_ALARM_STATUS_2_MASK	Alarm Status 2
2.4.11.4	Process alarms					
2.4.11.4.1	Level (point 1)	13892	unsigned32	RW	PID_CH14_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.11.4.1	Level (point 1)	7444	unsigned32	RW	PID_CH14_S_ALARM_STATUS_13_MASK	Alarm Status 13
2.4.11.4.2	Space (point 1)	13892	unsigned32	RW	PID_CH14_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.11.4.3	Distance (point 1)	13892	unsigned32	RW	PID_CH14_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.11.4.4	Head (point 1)	13892	unsigned32	RW	PID_CH14_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.11.4.5	Volume (point 1)	13892	unsigned32	RW	PID_CH14_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.11.4.6	Volume flow (point 1)	13878	unsigned32	RW	PID_CH14_S_ALARM_STATUS_4_MASK	Alarm Status 4
2.4.11.4.7	Sensor temperature (point 1)	13878	unsigned32	RW	PID_CH14_S_ALARM_STATUS_4_MASK	Alarm Status 4
2.4.11.4.8	Level (point 2)	13892	unsigned32	RW	PID_CH14_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.11.4.8	Level (point 2)	7444	unsigned32	RW	PID_CH14_S_ALARM_STATUS_13_MASK	Alarm Status 13
2.4.11.4.9	Space (point 2)	13892	unsigned32	RW	PID_CH14_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.11.4.10	Distance (point 2)	13892	unsigned32	RW	PID_CH14_S_ALARM_STATUS_11_MASK	Alarm Status 11
2.4.11.4.11	Head (point 2)	13894	unsigned32	RW	PID_CH14_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.11.4.12	Volume (point 2)	13894	unsigned32	RW	PID_CH14_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.11.4.13	Volume flow (point 2)	13894	unsigned32	RW	PID_CH14_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.11.4.14	Sensor temperature (point 2)	13894	unsigned32	RW	PID_CH14_S_ALARM_STATUS_12_MASK	Alarm Status 12

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.4.11.4.1 5	Level difference	13894	unsigned32	RW	PID_CH14_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.11.4.1 6	Level average	13894	unsigned32	RW	PID_CH14_S_ALARM_STATUS_12_MASK	Alarm Status 12
2.4.11.5	Totalizer alarms					
2.4.11.5.1	Totalizer 1	13880	unsigned32	RW	PID_CH14_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.11.5.2	Totalizer 2	13880	unsigned32	RW	PID_CH14_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.11.5.3	Totalizer 3	13880	unsigned32	RW	PID_CH14_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.11.5.4	Totalizer 4	13890	unsigned32	RW	PID_CH14_S_ALARM_STATUS_10_MASK	Alarm Status 10
2.4.11.6	Input and output diagnostics					
2.4.11.6.1	Current output (HART)	13880	unsigned32	RW	PID_CH14_S_ALARM_STATUS_5_MASK	Alarm Status 5
2.4.11.6.2	Current output 1	13884	unsigned32	RW	PID_CH14_S_ALARM_STATUS_7_MASK	Alarm Status 7
2.4.11.6.3	Current output 2	13884	unsigned32	RW	PID_CH14_S_ALARM_STATUS_7_MASK	Alarm Status 7
2.4.11.7	Memory card diagnostics					
2.4.11.7.1	Data logging	13888	unsigned32	RW	PID_CH14_S_ALARM_STATUS_9_MASK	Alarm Status 9
2.4.11.8	Process value	12291	unsigned8	RW	PID_CH14_S_PROCESS_VALUE	Totalizer Input Value
2.4.11.9	Units	12293	unsigned8	RW	PID_CH14_S_LUI_VOLUME_UNIT	Volume Unit
2.4.11.10	Amount	12296	float32	RW	PID_CH14_S_AMOUNT	
2.4.11.11	Interval	12463	float32	RW	PID_CH14_S_SAMPLER_INTERVAL	
2.4.11.12	Fail-safe behavior	13693	unsigned8	RW	PID_CH14_FAIL_MODE	Totalizer Input Mode
2.4.11.13	Fail-safe behavior source	12972	unsigned8	RW	PID_CH14_S_FAIL_MODE_SOURCE	
2.4.11.14	Polarity	13898	unsigned8	RW	PID_CH14_S_POLARITY	Signal Inversion
2.4.11.15	On-delay	13899	float32	RW	PID_CH14_S_ON_DELAY	
2.4.11.16	Off-delay	13901	float32	RW	PID_CH14_S_OFF_DELAY	
2.4.11.17	Forced value	13905	unsigned8	RW	PID_CH14_S_FORCE_VALUE	

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2.5	Application					
2.5.1	Volume					
2.5.1.1	Vessel shape	3497	unsigned8	RW	PAR_TB_LIN_TYPE_1	Vessel Shape
2.5.1.2	Maximum volume	3495	float32	RW	PAR_TB_LIN_VOLUME_1	
2.5.1.3	Vessel dimension A	3491	float32	RW	PAR_TB_DIM_A_1	
2.5.1.4	Vessel dimension L	3493	float32	RW	PAR_TB_DIM_L_1	
2.5.2	Custom volume table (1...16)					
2.5.2.1	X-value 1	3505	float32	RW	PAR_TB_TABLE_X_1_1	
2.5.2.2	Y-value 1	3569	float32	RW	PAR_TB_TABLE_Y_1_1	
2.5.2.3	X-value 2	3507	float32	RW	PAR_TB_TABLE_X_1_2	
2.5.2.4	Y-value 2	3571	float32	RW	PAR_TB_TABLE_Y_1_2	
2.5.2.5	X-value 3	3509	float32	RW	PAR_TB_TABLE_X_1_3	
2.5.2.6	Y-value 3	3573	float32	RW	PAR_TB_TABLE_Y_1_3	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.5.2.7	X-value 4	3511	float32	RW	PAR_TB_TABLE_X_1_4	
2.5.2.8	Y-value 4	3575	float32	RW	PAR_TB_TABLE_Y_1_4	
2.5.2.9	X-value 5	3513	float32	RW	PAR_TB_TABLE_X_1_5	
2.5.2.10	Y-value 5	3577	float32	RW	PAR_TB_TABLE_Y_1_5	
2.5.2.11	X-value 6	3515	float32	RW	PAR_TB_TABLE_X_1_6	
2.5.2.12	Y-value 6	3579	float32	RW	PAR_TB_TABLE_Y_1_6	
2.5.2.13	X-value 7	3517	float32	RW	PAR_TB_TABLE_X_1_7	
2.5.2.14	Y-value 7	3581	float32	RW	PAR_TB_TABLE_Y_1_7	
2.5.2.15	X-value 8	3519	float32	RW	PAR_TB_TABLE_X_1_8	
2.5.2.16	Y-value 8	3583	float32	RW	PAR_TB_TABLE_Y_1_8	
2.5.2.17	X-value 9	3521	float32	RW	PAR_TB_TABLE_X_1_9	
2.5.2.18	Y-value 9	3585	float32	RW	PAR_TB_TABLE_Y_1_9	
2.5.2.19	X-value 10	3523	float32	RW	PAR_TB_TABLE_X_1_10	
2.5.2.20	Y-value 10	3587	float32	RW	PAR_TB_TABLE_Y_1_10	
2.5.2.21	X-value 11	3525	float32	RW	PAR_TB_TABLE_X_1_11	
2.5.2.22	Y-value 11	3589	float32	RW	PAR_TB_TABLE_Y_1_11	
2.5.2.23	X-value 12	3527	float32	RW	PAR_TB_TABLE_X_1_12	
2.5.2.24	Y-value 12	3591	float32	RW	PAR_TB_TABLE_Y_1_12	
2.5.2.25	X-value 13	3529	float32	RW	PAR_TB_TABLE_X_1_13	
2.5.2.26	Y-value 13	3593	float32	RW	PAR_TB_TABLE_Y_1_13	
2.5.2.27	X-value 14	3531	float32	RW	PAR_TB_TABLE_X_1_14	
2.5.2.28	Y-value 14	3595	float32	RW	PAR_TB_TABLE_Y_1_14	
2.5.2.29	X-value 15	3533	float32	RW	PAR_TB_TABLE_X_1_15	
2.5.2.30	Y-value 15	3597	float32	RW	PAR_TB_TABLE_Y_1_15	
2.5.2.31	X-value 16	3535	float32	RW	PAR_TB_TABLE_X_1_16	
2.5.2.32	Y-value 16	3599	float32	RW	PAR_TB_TABLE_Y_1_16	
2.5.3	Custom volume table (17...32)					
2.5.3.1	X-value 17	3537	float32	RW	PAR_TB_TABLE_X_1_17	
2.5.3.2	Y-value 17	3601	float32	RW	PAR_TB_TABLE_Y_1_17	
2.5.3.3	X-value 18	3539	float32	RW	PAR_TB_TABLE_X_1_18	
2.5.3.4	Y-value 18	3603	float32	RW	PAR_TB_TABLE_Y_1_18	
2.5.3.5	X-value 19	3541	float32	RW	PAR_TB_TABLE_X_1_19	
2.5.3.6	Y-value 19	3605	float32	RW	PAR_TB_TABLE_Y_1_19	
2.5.3.7	X-value 20	3543	float32	RW	PAR_TB_TABLE_X_1_20	
2.5.3.8	Y-value 20	3607	float32	RW	PAR_TB_TABLE_Y_1_20	
2.5.3.9	X-value 21	3545	float32	RW	PAR_TB_TABLE_X_1_21	
2.5.3.10	Y-value 21	3609	float32	RW	PAR_TB_TABLE_Y_1_21	
2.5.3.11	X-value 22	3547	float32	RW	PAR_TB_TABLE_X_1_22	
2.5.3.12	Y-value 22	3611	float32	RW	PAR_TB_TABLE_Y_1_22	
2.5.3.13	X-value 23	3549	float32	RW	PAR_TB_TABLE_X_1_23	
2.5.3.14	Y-value 23	3613	float32	RW	PAR_TB_TABLE_Y_1_23	
2.5.3.15	X-value 24	3551	float32	RW	PAR_TB_TABLE_X_1_24	

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2.5.3.16	Y-value 24	3615	float32	RW	PAR_TB_TABLE_Y_1_24	
2.5.3.17	X-value 25	3553	float32	RW	PAR_TB_TABLE_X_1_25	
2.5.3.18	Y-value 25	3617	float32	RW	PAR_TB_TABLE_Y_1_25	
2.5.3.19	X-value 26	3555	float32	RW	PAR_TB_TABLE_X_1_26	
2.5.3.20	Y-value 26	3619	float32	RW	PAR_TB_TABLE_Y_1_26	
2.5.3.21	X-value 27	3557	float32	RW	PAR_TB_TABLE_X_1_27	
2.5.3.22	Y-value 27	3621	float32	RW	PAR_TB_TABLE_Y_1_27	
2.5.3.23	X-value 28	3559	float32	RW	PAR_TB_TABLE_X_1_28	
2.5.3.24	Y-value 28	3623	float32	RW	PAR_TB_TABLE_Y_1_28	
2.5.3.25	X-value 29	3561	float32	RW	PAR_TB_TABLE_X_1_29	
2.5.3.26	Y-value 29	3625	float32	RW	PAR_TB_TABLE_Y_1_29	
2.5.3.27	X-value 30	3563	float32	RW	PAR_TB_TABLE_X_1_30	
2.5.3.28	Y-value 30	3627	float32	RW	PAR_TB_TABLE_Y_1_30	
2.5.3.29	X-value 31	3565	float32	RW	PAR_TB_TABLE_X_1_31	
2.5.3.30	Y-value 31	3629	float32	RW	PAR_TB_TABLE_Y_1_31	
2.5.3.31	X-value 32	3567	float32	RW	PAR_TB_TABLE_X_1_32	
2.5.3.32	Y-value 32	3631	float32	RW	PAR_TB_TABLE_Y_1_32	
2.5.4	Pump control					
2.5.4.1	Mode	4200	unsigned8	RW	PAR_TB_CF_VESSEL_ENABLED_1	Disable Enable
2.5.4.1	Mode	4202	unsigned8	RW	PAR_TB_CF_VESSEL_REGIME_1	Pump Control
2.5.4.2	Process value	3898	unsigned8	RW	PAR_TB_CF_CONTROL_SOURCE_1	Pump Level Source
2.5.4.3	Enable wall cling reduction	4421	unsigned8	RW	PAR_TB_CF_WALL_CLING_ENABLED_1	Disable Enable
2.5.4.4	Wall cling variation	4422	float32	RW	PAR_TB_CF_WALL_CLING_VALUE_1	
2.5.4.5	Inflow/discharge adjustment	3822	unsigned8	RW	PAR_TB_PUMPED_VOLUME_ADJUSTMENT	Pumped Volume Adjust
2.5.4.6	Enable pump run-on	4394	unsigned8	RW	PAR_TB_CF_PUMP_RUN_ON_ENABLED_1	Disable Enable
2.5.4.7	Pump run-on interval	4395	float32	RW	PAR_TB_CF_PUMP_RUN_ON_INTERVAL_1	
2.5.4.8	Delay between starts	4390	float32	RW	PAR_TB_CF_PUMP_START_DELAY	
2.5.4.9	Power resumption delay	4392	float32	RW	PAR_TB_CF_POWER_RESUMPTION_DELAY	
2.5.4.10	Enable exercise guard	5193	unsigned8	RW	PAR_TB_CF_PUMP_EXER_SAFE_ENABLE_1	Disable Enable
2.5.4.11	Exercise guard level	5195	float32	RW	PAR_TB_CF_PUMP_EXER_SAFE_LEVEL_1	
2.5.4.12	Pump 1	4204	unsigned8	RW	PAR_TB_CF_PUMP_DO_1_1	Relay Select
2.5.4.13	On setpoint pump 1	4216	float32	RW	PAR_TB_CF_ON_1_1	
2.5.4.14	Off setpoint pump 1	4240	float32	RW	PAR_TB_CF_OFF_1_1	
2.5.4.15	Service ratio pump 1	4264	unsigned8	RW	PAR_TB_CF_PUMP_RRS_1_1	
2.5.4.16	Run-on duration pump 1	4397	float32	RW	PAR_TB_CF_PUMP_RUN_ON_DURATION_1_1	
2.5.4.17	Interlock pump 1	4366	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_DISABLED_1_1	Disable Enable
2.5.4.17	Interlock pump 1	4378	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_DI_1_1	Digital Input
2.5.4.18	Enable exercise pump 1	5121	unsigned8	RW	PAR_TB_CF_PUMP_EXER_ENABLED_1_1	Disable Enable

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2.5.4.19	Exercise interval pump 1	5145	float32	RW	PAR_TB_CF_PUMP_EXER_INT_1_1	
2.5.4.20	Exercise duration pump 1	5169	float32	RW	PAR_TB_CF_PUMP_EXER_DUR_1_1	
2.5.4.21	Pump 2	4205	unsigned8	RW	PAR_TB_CF_PUMP_DO_1_2	Relay Select
2.5.4.22	On setpoint pump 2	4218	float32	RW	PAR_TB_CF_ON_1_2	
2.5.4.23	Off setpoint pump 2	4242	float32	RW	PAR_TB_CF_OFF_1_2	
2.5.4.24	Service ratio pump 2	4265	unsigned8	RW	PAR_TB_CF_PUMP_RRS_1_2	
2.5.4.25	Run-on duration pump 2	4399	float32	RW	PAR_TB_CF_PUMP_RUN_ON_DUR_1_2	
2.5.4.26	Interlock pump 2	4367	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_D_ENABLED_1_2	Disable Enable
2.5.4.26	Interlock pump 2	4379	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_DI_1_2	Digital Input
2.5.4.27	Enable exercise pump 2	5122	unsigned8	RW	PAR_TB_CF_PUMP_EXER_ENABLE_1_2	Disable Enable
2.5.4.28	Exercise interval pump 2	5147	float32	RW	PAR_TB_CF_PUMP_EXER_INT_1_2	
2.5.4.29	Exercise duration pump 2	5171	float32	RW	PAR_TB_CF_PUMP_EXER_DUR_1_2	
2.5.4.30	Pump 3	4206	unsigned8	RW	PAR_TB_CF_PUMP_DO_1_3	Relay Select
2.5.4.31	On setpoint pump 3	4220	float32	RW	PAR_TB_CF_ON_1_3	
2.5.4.32	Off setpoint pump 3	4244	float32	RW	PAR_TB_CF_OFF_1_3	
2.5.4.33	Service ratio pump 3	4266	unsigned8	RW	PAR_TB_CF_PUMP_RRS_1_3	
2.5.4.34	Run-on duration pump 3	4401	float32	RW	PAR_TB_CF_PUMP_RUN_ON_DUR_1_3	
2.5.4.35	Interlock pump 3	4368	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_D_ENABLED_1_3	Disable Enable
2.5.4.35	Interlock pump 3	4380	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_DI_1_3	Digital Input
2.5.4.36	Enable exercise pump 3	5123	unsigned8	RW	PAR_TB_CF_PUMP_EXER_ENABLE_1_3	Disable Enable
2.5.4.37	Exercise interval pump 3	5149	float32	RW	PAR_TB_CF_PUMP_EXER_INT_1_3	
2.5.4.38	Exercise duration pump 3	5173	float32	RW	PAR_TB_CF_PUMP_EXER_DUR_1_3	
2.5.4.39	Pump 4	4207	unsigned8	RW	PAR_TB_CF_PUMP_DO_1_4	Relay Select
2.5.4.40	On setpoint pump 4	4222	float32	RW	PAR_TB_CF_ON_1_4	
2.5.4.41	Off setpoint pump 4	4246	float32	RW	PAR_TB_CF_OFF_1_4	
2.5.4.42	Service ratio pump 4	4267	unsigned8	RW	PAR_TB_CF_PUMP_RRS_1_4	
2.5.4.43	Run-on duration pump 4	4403	float32	RW	PAR_TB_CF_PUMP_RUN_ON_DUR_1_4	
2.5.4.44	Interlock pump 4	4369	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_D_ENABLED_1_4	Disable Enable
2.5.4.44	Interlock pump 4	4381	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_DI_1_4	Digital Input
2.5.4.45	Enable exercise pump 4	5124	unsigned8	RW	PAR_TB_CF_PUMP_EXER_ENABLE_1_4	Disable Enable
2.5.4.46	Exercise interval pump 4	5151	float32	RW	PAR_TB_CF_PUMP_EXER_INT_1_4	
2.5.4.47	Exercise duration pump 4	5175	float32	RW	PAR_TB_CF_PUMP_EXER_DUR_1_4	
2.5.4.48	Pump 5	4208	unsigned8	RW	PAR_TB_CF_PUMP_DO_1_5	Relay Select

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2.5.4.49	On setpoint pump 5	4224	float32	RW	PAR_TB_CF_ON_1_5	
2.5.4.50	Off setpoint pump 5	4248	float32	RW	PAR_TB_CF_OFF_1_5	
2.5.4.51	Service ratio pump 5	4268	unsigned8	RW	PAR_TB_CF_PUMP_RRS_1_5	
2.5.4.52	Run-on duration pump 5	4405	float32	RW	PAR_TB_CF_PUMP_RUN_ON_DUR_1_5	
2.5.4.53	Interlock pump 5	4370	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_DISABLE_1_5	Disable Enable
2.5.4.53	Interlock pump 5	4382	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_DI_1_5	Digital Input
2.5.4.54	Enable exercise pump 5	5124	unsigned8	RW	PAR_TB_CF_PUMP_EXER_ENABLE_1_5	Disable Enable
2.5.4.55	Exercise interval pump 5	5151	float32	RW	PAR_TB_CF_PUMP_EXER_INT_1_5	
2.5.4.56	Exercise duration pump 5	5175	float32	RW	PAR_TB_CF_PUMP_EXER_DUR_1_5	
2.5.4.57	Pump 6	4209	unsigned8	RW	PAR_TB_CF_PUMP_DO_1_6	Relay Select
2.5.4.58	On setpoint pump 6	4226	float32	RW	PAR_TB_CF_ON_1_6	
2.5.4.59	Off setpoint pump 6	4250	float32	RW	PAR_TB_CF_OFF_1_6	
2.5.4.60	Service ratio pump 6	4269	unsigned8	RW	PAR_TB_CF_PUMP_RRS_1_6	
2.5.4.61	Run-on duration pump 6	4407	float32	RW	PAR_TB_CF_PUMP_RUN_ON_DUR_1_6	
2.5.4.62	Interlock pump 6	4371	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_DISABLE_1_6	Disable Enable
2.5.4.62	Interlock pump 6	4383	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_DI_1_6	Digital Input
2.5.4.63	Enable exercise pump 6	5126	unsigned8	RW	PAR_TB_CF_PUMP_EXER_ENABLE_1_6	Disable Enable
2.5.4.64	Exercise interval pump 6	5155	float32	RW	PAR_TB_CF_PUMP_EXER_INT_1_6	
2.5.4.65	Exercise duration pump 6	5179	float32	RW	PAR_TB_CF_PUMP_EXER_DUR_1_6	
2.5.5	Pump energy savings					
2.5.5.1	Enable	4288	unsigned8	RW	PAR_TB_CF_ENERGY_ENABLE_D	Disable Enable
2.5.5.2	Peak lead time	4289	float32	RW	PAR_TB_CF_PEAK_LEAD	
2.5.5.3	Peak 1 start time	4291	float32	RW	PAR_TB_CF_PEAK_START_1	
2.5.5.4	Peak 1 end time	4301	float32	RW	PAR_TB_CF_PEAK_END_1	
2.5.5.5	Peak 2 start time	4293	float32	RW	PAR_TB_CF_PEAK_START_2	
2.5.5.6	Peak 2 end time	4303	float32	RW	PAR_TB_CF_PEAK_END_2	
2.5.5.7	Peak 3 start time	4295	float32	RW	PAR_TB_CF_PEAK_START_3	
2.5.5.8	Peak 3 end time	4305	float32	RW	PAR_TB_CF_PEAK_END_3	
2.5.5.9	Peak 4 start time	4297	float32	RW	PAR_TB_CF_PEAK_START_4	
2.5.5.10	Peak 4 end time	4307	float32	RW	PAR_TB_CF_PEAK_END_4	
2.5.5.11	Peak 5 start time	4299	float32	RW	PAR_TB_CF_PEAK_START_5	
2.5.5.12	Peak 5 end time	4309	float32	RW	PAR_TB_CF_PEAK_END_5	
2.5.5.13	Peak on setpoint pump 1	4311	float32	RW	PAR_TB_CF_PEAK_ON_1_1	
2.5.5.14	Peak off setpoint pump 1	4335	float32	RW	PAR_TB_CF_PEAK_OFF_1_1	
2.5.5.15	Peak on setpoint pump 2	4313	float32	RW	PAR_TB_CF_PEAK_ON_1_2	
2.5.5.16	Peak off setpoint pump 2	4337	float32	RW	PAR_TB_CF_PEAK_OFF_1_2	

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2.5.5.17	Peak on setpoint pump 3	4315	float32	RW	PAR_TB_CF_PEAK_ON_1_3	
2.5.5.18	Peak off setpoint pump 3	4339	float32	RW	PAR_TB_CF_PEAK_OFF_1_3	
2.5.5.19	Peak on setpoint pump 4	4317	float32	RW	PAR_TB_CF_PEAK_ON_1_4	
2.5.5.20	Peak off setpoint pump 4	4341	float32	RW	PAR_TB_CF_PEAK_OFF_1_4	
2.5.5.21	Peak on setpoint pump 5	4319	float32	RW	PAR_TB_CF_PEAK_ON_1_5	
2.5.5.22	Peak off setpoint pump 5	4343	float32	RW	PAR_TB_CF_PEAK_OFF_1_5	
2.5.5.23	Peak on setpoint pump 6	4321	float32	RW	PAR_TB_CF_PEAK_ON_1_6	
2.5.5.24	Peak off setpoint pump 6	4345	float32	RW	PAR_TB_CF_PEAK_OFF_1_6	
2.5.6	Volume flow					
2.5.6.1	Primary measuring device	4804	unsigned8	RW	PAR_TB_OCM_PRIMARY_ELEMENT_1	OCM Primary Element
2.5.6.2	Method of flow calculation	4842	unsigned8	RW	PAR_TB_OCM_METHOD_1	OCM Method
2.5.6.3	Flow exponent	4806	float32	RW	PAR_TB_OCM_EXPONENT_1	
2.5.6.4	Maximum head	4844	float32	RW	PAR_TB_OCM_MAX_HEAD_1	
2.5.6.5	Maximum flow	4848	float32	R	PAR_TB_OCM_MAX_FLOW_READ_ONLY_1	
2.5.6.6	Maximum flow	4800	float32	RW	PAR_TB_OCM_MAX_FLOW_1	
2.5.6.7	Zero head offset wizard					
2.5.6.8	Zero head offset	4852	float32	RW	PAR_TB_OCM_ZERO_HEAD_OFFSET_1	
2.5.6.9	Enable low flow cut-off	4860	unsigned8	RW	PAR_TB_LOW_FLOW_CUTOFF_ENABLED_1	Disable Enable
2.5.6.10	Low flow cut-off	4862	float32	RW	PAR_TB_LOW_FLOW_CUTOFF_FLOW_1	
2.5.6.11	K-factor	13785	float32	RW	PID_K_FACTOR_1_LUI	
2.5.6.12	V-notch angle	4814	float32	RW	PAR_TB_OCM_V_NOTCH_1	
2.5.6.13	Slope	4818	float32	RW	PAR_TB_OCM_SLOPE_1	
2.5.6.14	Roughness coefficient	4822	float32	RW	PAR_TB_OCM_ROUGHNESS_COEF_1	
2.5.6.15	Maximum flume width	4826	float32	RW	PAR_TB_OCM_DIMENSION_A_1	
2.5.6.15	Flume height	4826	float32	RW	PAR_TB_OCM_DIMENSION_A_1	
2.5.6.15	Approach diameter	4826	float32	RW	PAR_TB_OCM_DIMENSION_A_1	
2.5.6.15	Approach width	4826	float32	RW	PAR_TB_OCM_DIMENSION_A_1	
2.5.6.15	Crest width	4826	float32	RW	PAR_TB_OCM_DIMENSION_A_1	
2.5.6.15	Pipe diameter	4826	float32	RW	PAR_TB_OCM_DIMENSION_A_1	
2.5.6.16	Crest width	4830	float32	RW	PAR_TB_OCM_DIMENSION_B_1	
2.5.6.16	Throat diameter	4830	float32	RW	PAR_TB_OCM_DIMENSION_B_1	
2.5.6.16	Throat width	4830	float32	RW	PAR_TB_OCM_DIMENSION_B_1	
2.5.6.16	Crest height	4830	float32	RW	PAR_TB_OCM_DIMENSION_B_1	
2.5.6.17	Crest height	4834	float32	RW	PAR_TB_OCM_DIMENSION_C_1	
2.5.6.17	Hump height	4834	float32	RW	PAR_TB_OCM_DIMENSION_C_1	
2.5.6.17	Crest length	4834	float32	RW	PAR_TB_OCM_DIMENSION_C_1	
2.5.6.18	Throat length	4838	float32	RW	PAR_TB_OCM_DIMENSION_D_1	

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2.5.7	Custom volume flow table (1...16)					
2.5.7.1	X-value 1	4461	float32	RW	PAR_TB_FLOW_TABLE_X_1_1	
2.5.7.2	Y-value 1	4525	float32	RW	PAR_TB_FLOW_TABLE_Y_1_1	
2.5.7.3	X-value 2	4463	float32	RW	PAR_TB_FLOW_TABLE_X_1_2	
2.5.7.4	Y-value 2	4527	float32	RW	PAR_TB_FLOW_TABLE_Y_1_2	
2.5.7.5	X-value 3	4465	float32	RW	PAR_TB_FLOW_TABLE_X_1_3	
2.5.7.6	Y-value 3	4529	float32	RW	PAR_TB_FLOW_TABLE_Y_1_3	
2.5.7.7	X-value 4	4467	float32	RW	PAR_TB_FLOW_TABLE_X_1_4	
2.5.7.8	Y-value 4	4531	float32	RW	PAR_TB_FLOW_TABLE_Y_1_4	
2.5.7.9	X-value 5	4469	float32	RW	PAR_TB_FLOW_TABLE_X_1_5	
2.5.7.10	Y-value 5	4533	float32	RW	PAR_TB_FLOW_TABLE_Y_1_5	
2.5.7.11	X-value 6	4471	float32	RW	PAR_TB_FLOW_TABLE_X_1_6	
2.5.7.12	Y-value 6	4535	float32	RW	PAR_TB_FLOW_TABLE_Y_1_6	
2.5.7.13	X-value 7	4473	float32	RW	PAR_TB_FLOW_TABLE_X_1_7	
2.5.7.14	Y-value 7	4537	float32	RW	PAR_TB_FLOW_TABLE_Y_1_7	
2.5.7.15	X-value 8	4475	float32	RW	PAR_TB_FLOW_TABLE_X_1_8	
2.5.7.16	Y-value 8	4539	float32	RW	PAR_TB_FLOW_TABLE_Y_1_8	
2.5.7.17	X-value 9	4477	float32	RW	PAR_TB_FLOW_TABLE_X_1_9	
2.5.7.18	Y-value 9	4541	float32	RW	PAR_TB_FLOW_TABLE_Y_1_9	
2.5.7.19	X-value 10	4479	float32	RW	PAR_TB_FLOW_TABLE_X_1_10	
2.5.7.20	Y-value 10	4543	float32	RW	PAR_TB_FLOW_TABLE_Y_1_10	
2.5.7.21	X-value 11	4481	float32	RW	PAR_TB_FLOW_TABLE_X_1_11	
2.5.7.22	Y-value 11	4545	float32	RW	PAR_TB_FLOW_TABLE_Y_1_11	
2.5.7.23	X-value 12	4483	float32	RW	PAR_TB_FLOW_TABLE_X_1_12	
2.5.7.24	Y-value 12	4547	float32	RW	PAR_TB_FLOW_TABLE_Y_1_12	
2.5.7.25	X-value 13	4485	float32	RW	PAR_TB_FLOW_TABLE_X_1_13	
2.5.7.26	Y-value 13	4549	float32	RW	PAR_TB_FLOW_TABLE_Y_1_13	
2.5.7.27	X-value 14	4487	float32	RW	PAR_TB_FLOW_TABLE_X_1_14	
2.5.7.28	Y-value 14	4551	float32	RW	PAR_TB_FLOW_TABLE_Y_1_14	
2.5.7.29	X-value 15	4489	float32	RW	PAR_TB_FLOW_TABLE_X_1_15	
2.5.7.30	Y-value 15	4553	float32	RW	PAR_TB_FLOW_TABLE_Y_1_15	
2.5.7.31	X-value 16	4491	float32	RW	PAR_TB_FLOW_TABLE_X_1_16	
2.5.7.32	Y-value 16	4555	float32	RW	PAR_TB_FLOW_TABLE_Y_1_16	
2.5.8	Custom volume flow table (17...32)					
2.5.8.1	X-value 17	4493	float32	RW	PAR_TB_FLOW_TABLE_X_1_17	
2.5.8.2	Y-value 17	4557	float32	RW	PAR_TB_FLOW_TABLE_Y_1_17	
2.5.8.3	X-value 18	4495	float32	RW	PAR_TB_FLOW_TABLE_X_1_18	
2.5.8.4	Y-value 18	4559	float32	RW	PAR_TB_FLOW_TABLE_Y_1_18	
2.5.8.5	X-value 19	4497	float32	RW	PAR_TB_FLOW_TABLE_X_1_19	
2.5.8.6	Y-value 19	4561	float32	RW	PAR_TB_FLOW_TABLE_Y_1_19	

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2.5.8.7	X-value 20	4499	float32	RW	PAR_TB_FLOW_TABLE_X_1_20	
2.5.8.8	Y-value 20	4563	float32	RW	PAR_TB_FLOW_TABLE_Y_1_20	
2.5.8.9	X-value 21	4501	float32	RW	PAR_TB_FLOW_TABLE_X_1_21	
2.5.8.10	Y-value 21	4565	float32	RW	PAR_TB_FLOW_TABLE_Y_1_21	
2.5.8.11	X-value 22	4503	float32	RW	PAR_TB_FLOW_TABLE_X_1_22	
2.5.8.12	Y-value 22	4567	float32	RW	PAR_TB_FLOW_TABLE_Y_1_22	
2.5.8.13	X-value 23	4505	float32	RW	PAR_TB_FLOW_TABLE_X_1_23	
2.5.8.14	Y-value 23	4569	float32	RW	PAR_TB_FLOW_TABLE_Y_1_23	
2.5.8.15	X-value 24	4507	float32	RW	PAR_TB_FLOW_TABLE_X_1_24	
2.5.8.16	Y-value 24	4571	float32	RW	PAR_TB_FLOW_TABLE_Y_1_24	
2.5.8.17	X-value 25	4509	float32	RW	PAR_TB_FLOW_TABLE_X_1_25	
2.5.8.18	Y-value 25	4573	float32	RW	PAR_TB_FLOW_TABLE_Y_1_25	
2.5.8.19	X-value 26	4511	float32	RW	PAR_TB_FLOW_TABLE_X_1_26	
2.5.8.20	Y-value 26	4575	float32	RW	PAR_TB_FLOW_TABLE_Y_1_26	
2.5.8.21	X-value 27	4513	float32	RW	PAR_TB_FLOW_TABLE_X_1_27	
2.5.8.22	Y-value 27	4577	float32	RW	PAR_TB_FLOW_TABLE_Y_1_27	
2.5.8.23	X-value 28	4515	float32	RW	PAR_TB_FLOW_TABLE_X_1_28	
2.5.8.24	Y-value 28	4579	float32	RW	PAR_TB_FLOW_TABLE_Y_1_28	
2.5.8.25	X-value 29	4517	float32	RW	PAR_TB_FLOW_TABLE_X_1_29	
2.5.8.26	Y-value 29	4581	float32	RW	PAR_TB_FLOW_TABLE_Y_1_29	
2.5.8.27	X-value 30	4519	float32	RW	PAR_TB_FLOW_TABLE_X_1_30	
2.5.8.28	Y-value 30	4583	float32	RW	PAR_TB_FLOW_TABLE_Y_1_30	
2.5.8.29	X-value 31	4521	float32	RW	PAR_TB_FLOW_TABLE_X_1_31	
2.5.8.30	Y-value 31	4585	float32	RW	PAR_TB_FLOW_TABLE_Y_1_31	
2.5.8.31	X-value 32	4523	float32	RW	PAR_TB_FLOW_TABLE_X_1_32	
2.5.8.32	Y-value 32	4587	float32	RW	PAR_TB_FLOW_TABLE_Y_1_32	
2.5.9	Time to spill					
2.5.9.1	Time to spill threshold	4906	float32	RW	PAR_TB_TIME_TO_SPILL_THRESHOLD_1	
2.5.9.2	Level to spill	4894	float32	RW	PAR_TB_LEVEL_TO_SPILL_1	
2.5.9.3	Level threshold	4902	float32	RW	PAR_TB_LEVEL_TO_SPILL_THRESHOLD_1	
2.5.10	Time of day relay					
2.5.10.1	Assigned relay	4424	unsigned8	RW	PAR_TB_CF_TIME_RELAY_ENABLED	Disable Enable
2.5.10.1	Assigned relay	4429	unsigned8	RW	PAR_TB_CF_TIME_RELAY_DO	Relay Select
2.5.10.2	Activation time	4425	float32	RW	PAR_TB_CF_TIME_RELAY_TIME	
2.5.10.3	Duration	4427	float32	RW	PAR_TB_CF_TIME_RELAY_DURATION	
2.5.11	Basic control					
2.5.11.1	Relay output 1					
2.5.11.1.1	Control source	4785	unsigned8	RW	PAR_TB_CRF_CONTROL_SOURCE_1	Control Source

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2.5.11.1.2	On setpoint	4870	float32	RW	PAR_TB_CRF_RELAY_ON_1	
2.5.11.1.3	Off setpoint	4882	float32	RW	PAR_TB_CRF_RELAY_OFF_1	
2.5.11.2	Relay output 2					
2.5.11.2.1	Control source	4786	unsigned8	RW	PAR_TB_CRF_CONTROL_SOURCE_2	Control Source
2.5.11.2.2	On setpoint	4872	float32	RW	PAR_TB_CRF_RELAY_ON_2	
2.5.11.2.3	Off setpoint	4884	float32	RW	PAR_TB_CRF_RELAY_OFF_2	
2.5.11.3	Relay output 3					
2.5.11.3.1	Control source	4787	unsigned8	RW	PAR_TB_CRF_CONTROL_SOURCE_3	Control Source
2.5.11.3.2	On setpoint	4874	float32	RW	PAR_TB_CRF_RELAY_ON_3	
2.5.11.3.3	Off setpoint	4886	float32	RW	PAR_TB_CRF_RELAY_OFF_3	
2.5.11.4	Relay output 4					
2.5.11.4.1	Control source	4788	unsigned8	RW	PAR_TB_CRF_CONTROL_SOURCE_4	Control Source
2.5.11.4.2	On setpoint	4876	float32	RW	PAR_TB_CRF_RELAY_ON_4	
2.5.11.4.3	Off setpoint	4888	float32	RW	PAR_TB_CRF_RELAY_OFF_4	
2.5.11.5	Relay output 5					
2.5.11.5.1	Control source	4789	unsigned8	RW	PAR_TB_CRF_CONTROL_SOURCE_5	Control Source
2.5.11.5.2	On setpoint	4878	float32	RW	PAR_TB_CRF_RELAY_ON_5	
2.5.11.5.3	Off setpoint	4890	float32	RW	PAR_TB_CRF_RELAY_OFF_5	
2.5.11.6	Relay output 6					
2.5.11.6.1	Control source	4790	unsigned8	RW	PAR_TB_CRF_CONTROL_SOURCE_6	Control Source
2.5.11.6.2	On setpoint	4880	float32	RW	PAR_TB_CRF_RELAY_ON_6	
2.5.11.6.3	Off setpoint	4892	float32	RW	PAR_TB_CRF_RELAY_OFF_6	
2.5.12	Measurement point 2					
2.5.12.1	Volume					
2.5.12.1.1	Vessel shape	3504	unsigned8	RW	PAR_TB_LIN_TYPE_2	Vessel Shape
2.5.12.1.2	Maximum volume	3502	float32	RW	PAR_TB_LIN_VOLUME_2	
2.5.12.1.3	Vessel dimension A	3498	float32	RW	PAR_TB_DIM_A_2	
2.5.12.1.4	Vessel dimension L	3500	float32	RW	PAR_TB_DIM_L_2	
2.5.12.2	Custom volume table (1...16)					
2.5.12.2.1	X-value 1	3633	float32	RW	PAR_TB_TABLE_X_2_1	
2.5.12.2.2	Y-value 1	3697	float32	RW	PAR_TB_TABLE_Y_2_1	
2.5.12.2.3	X-value 2	3635	float32	RW	PAR_TB_TABLE_X_2_2	
2.5.12.2.4	Y-value 2	3699	float32	RW	PAR_TB_TABLE_Y_2_2	
2.5.12.2.5	X-value 3	3637	float32	RW	PAR_TB_TABLE_X_2_3	
2.5.12.2.6	Y-value 3	3701	float32	RW	PAR_TB_TABLE_Y_2_3	
2.5.12.2.7	X-value 4	3639	float32	RW	PAR_TB_TABLE_X_2_4	
2.5.12.2.8	Y-value 4	3703	float32	RW	PAR_TB_TABLE_Y_2_4	
2.5.12.2.9	X-value 5	3641	float32	RW	PAR_TB_TABLE_X_2_5	
2.5.12.2.10	Y-value 5	3705	float32	RW	PAR_TB_TABLE_Y_2_5	
2.5.12.2.11	X-value 6	3643	float32	RW	PAR_TB_TABLE_X_2_6	

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2.5.12.2.12	Y-value 6	3707	float32	RW	PAR_TB_TABLE_Y_2_6	
2.5.12.2.13	X-value 7	3645	float32	RW	PAR_TB_TABLE_X_2_7	
2.5.12.2.14	Y-value 7	3709	float32	RW	PAR_TB_TABLE_Y_2_7	
2.5.12.2.15	X-value 8	3647	float32	RW	PAR_TB_TABLE_X_2_8	
2.5.12.2.16	Y-value 8	3711	float32	RW	PAR_TB_TABLE_Y_2_8	
2.5.12.2.17	X-value 9	3649	float32	RW	PAR_TB_TABLE_X_2_9	
2.5.12.2.18	Y-value 9	3713	float32	RW	PAR_TB_TABLE_Y_2_9	
2.5.12.2.19	X-value 10	3651	float32	RW	PAR_TB_TABLE_X_2_10	
2.5.12.2.20	Y-value 10	3715	float32	RW	PAR_TB_TABLE_Y_2_10	
2.5.12.2.21	X-value 11	3653	float32	RW	PAR_TB_TABLE_X_2_11	
2.5.12.2.22	Y-value 11	3717	float32	RW	PAR_TB_TABLE_Y_2_11	
2.5.12.2.23	X-value 12	3655	float32	RW	PAR_TB_TABLE_X_2_12	
2.5.12.2.24	Y-value 12	3719	float32	RW	PAR_TB_TABLE_Y_2_12	
2.5.12.2.25	X-value 13	3657	float32	RW	PAR_TB_TABLE_X_2_13	
2.5.12.2.26	Y-value 13	3721	float32	RW	PAR_TB_TABLE_Y_2_13	
2.5.12.2.27	X-value 14	3659	float32	RW	PAR_TB_TABLE_X_2_14	
2.5.12.2.28	Y-value 14	3723	float32	RW	PAR_TB_TABLE_Y_2_14	
2.5.12.2.29	X-value 15	3661	float32	RW	PAR_TB_TABLE_X_2_15	
2.5.12.2.30	Y-value 15	3725	float32	RW	PAR_TB_TABLE_Y_2_15	
2.5.12.2.31	X-value 16	3663	float32	RW	PAR_TB_TABLE_X_2_16	
2.5.12.2.32	Y-value 16	3727	float32	RW	PAR_TB_TABLE_Y_2_16	
2.5.12.3	Custom volume table (17...32)					
2.5.12.3.1	X-value 17	3665	float32	RW	PAR_TB_TABLE_X_2_17	
2.5.12.3.2	Y-value 17	3729	float32	RW	PAR_TB_TABLE_Y_2_17	
2.5.12.3.3	X-value 18	3667	float32	RW	PAR_TB_TABLE_X_2_18	
2.5.12.3.4	Y-value 18	3731	float32	RW	PAR_TB_TABLE_Y_2_18	
2.5.12.3.5	X-value 19	3669	float32	RW	PAR_TB_TABLE_X_2_19	
2.5.12.3.6	Y-value 19	3733	float32	RW	PAR_TB_TABLE_Y_2_19	
2.5.12.3.7	X-value 20	3671	float32	RW	PAR_TB_TABLE_X_2_20	
2.5.12.3.8	Y-value 20	3735	float32	RW	PAR_TB_TABLE_Y_2_20	
2.5.12.3.9	X-value 21	3673	float32	RW	PAR_TB_TABLE_X_2_21	
2.5.12.3.10	Y-value 21	3737	float32	RW	PAR_TB_TABLE_Y_2_21	
2.5.12.3.11	X-value 22	3675	float32	RW	PAR_TB_TABLE_X_2_22	
2.5.12.3.12	Y-value 22	3739	float32	RW	PAR_TB_TABLE_Y_2_22	
2.5.12.3.13	X-value 23	3677	float32	RW	PAR_TB_TABLE_X_2_23	
2.5.12.3.14	Y-value 23	3741	float32	RW	PAR_TB_TABLE_Y_2_23	
2.5.12.3.15	X-value 24	3679	float32	RW	PAR_TB_TABLE_X_2_24	
2.5.12.3.16	Y-value 24	3743	float32	RW	PAR_TB_TABLE_Y_2_24	
2.5.12.3.17	X-value 25	3681	float32	RW	PAR_TB_TABLE_X_2_25	
2.5.12.3.18	Y-value 25	3745	float32	RW	PAR_TB_TABLE_Y_2_25	
2.5.12.3.19	X-value 26	3683	float32	RW	PAR_TB_TABLE_X_2_26	
2.5.12.3.20	Y-value 26	3747	float32	RW	PAR_TB_TABLE_Y_2_26	

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2.5.12.3.21	X-value 27	3685	float32	RW	PAR_TB_TABLE_X_2_27	
2.5.12.3.22	Y-value 27	3749	float32	RW	PAR_TB_TABLE_Y_2_27	
2.5.12.3.23	X-value 28	3687	float32	RW	PAR_TB_TABLE_X_2_28	
2.5.12.3.24	Y-value 28	3751	float32	RW	PAR_TB_TABLE_Y_2_28	
2.5.12.3.25	X-value 29	3689	float32	RW	PAR_TB_TABLE_X_2_29	
2.5.12.3.26	Y-value 29	3753	float32	RW	PAR_TB_TABLE_Y_2_29	
2.5.12.3.27	X-value 30	3691	float32	RW	PAR_TB_TABLE_X_2_30	
2.5.12.3.28	Y-value 30	3755	float32	RW	PAR_TB_TABLE_Y_2_30	
2.5.12.3.29	X-value 31	3693	float32	RW	PAR_TB_TABLE_X_2_31	
2.5.12.3.30	Y-value 31	3757	float32	RW	PAR_TB_TABLE_Y_2_31	
2.5.12.3.31	X-value 32	3695	float32	RW	PAR_TB_TABLE_X_2_32	
2.5.12.3.32	Y-value 32	3759	float32	RW	PAR_TB_TABLE_Y_2_32	
2.5.12.4	Pump control					
2.5.12.4.1	Mode	4201	unsigned8	RW	PAR_TB_CF_VESSEL_ENABLED_2	Disable Enable
2.5.12.4.1	Mode	4203	unsigned8	RW	PAR_TB_CF_VESSEL_REGIME_2	Pump Control
2.5.12.4.2	Process value	3899	unsigned8	RW	PAR_TB_CF_CONTROL_SOURCE_2	Pump Level Source
2.5.12.4.3	Enable wall cling reduction	4735	unsigned8	RW	PAR_TB_CF_WALL_CLING_ENABLED_2	Disable Enable
2.5.12.4.4	Wall cling variation	4736	float32	RW	PAR_TB_CF_WALL_CLING_VALUE_2	
2.5.12.4.6	Enable pump run-on	4762	unsigned8	RW	PAR_TB_CF_PUMP_RUN_ON_ENABLED_2	Disable Enable
2.5.12.4.7	Pump run-on interval	4763	float32	RW	PAR_TB_CF_PUMP_RUN_ON_INTERVAL_2	
2.5.12.4.10	Enable exercise guard	5194	unsigned8	RW	PAR_TB_CF_PUMP_EXER_SAFE_ENABLE_2	Disable Enable
2.5.12.4.11	Exercise guard level	5197	float32	RW	PAR_TB_CF_PUMP_EXER_SAFE_LEVEL_2	
2.5.12.4.12	Pump 1	4210	unsigned8	RW	PAR_TB_CF_PUMP_DO_2_1	Relay Select
2.5.12.4.13	On setpoint pump 1	4228	float32	RW	PAR_TB_CF_ON_2_1	
2.5.12.4.14	Off setpoint pump 1	4252	float32	RW	PAR_TB_CF_OFF_2_1	
2.5.12.4.15	Service ratio pump 1	4270	unsigned8	RW	PAR_TB_CF_PUMP_RRS_2_1	
2.5.12.4.16	Run-on duration pump 1	4409	float32	RW	PAR_TB_CF_PUMP_RUN_ON_DURATION_2_1	
2.5.12.4.17	Interlock pump 1	4372	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_DISABLED_2_1	Disable Enable
2.5.12.4.17	Interlock pump 1	4384	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_DI_2_1	Digital Input
2.5.12.4.18	Enable exercise pump 1	5127	unsigned8	RW	PAR_TB_CF_PUMP_EXER_ENABLED_2_1	Disable Enable
2.5.12.4.19	Exercise interval pump 1	5157	float32	RW	PAR_TB_CF_PUMP_EXER_INT_2_1	
2.5.12.4.20	Exercise duration pump 1	5181	float32	RW	PAR_TB_CF_PUMP_EXER_DURATION_2_1	
2.5.12.4.21	Pump 2	4211	unsigned8	RW	PAR_TB_CF_PUMP_DO_2_2	Relay Select
2.5.12.4.22	On setpoint pump 2	4230	float32	RW	PAR_TB_CF_ON_2_2	
2.5.12.4.23	Off setpoint pump 2	4254	float32	RW	PAR_TB_CF_OFF_2_2	
2.5.12.4.24	Service ratio pump 2	4271	unsigned8	RW	PAR_TB_CF_PUMP_RRS_2_2	
2.5.12.4.25	Run-on duration pump 2	4411	float32	RW	PAR_TB_CF_PUMP_RUN_ON_DURATION_2_2	

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2.5.12.4.26	Interlock pump 2	4373	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_D_ENABLED_2_2	Disable Enable
2.5.12.4.26	Interlock pump 2	4385	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_D_DI_2_2	Digital Input
2.5.12.4.27	Enable exercise pump 2	5128	unsigned8	RW	PAR_TB_CF_PUMP_EXER_ENABLED_2_2	Disable Enable
2.5.12.4.28	Exercise interval pump 2	5159	float32	RW	PAR_TB_CF_PUMP_EXER_INT_2_2	
2.5.12.4.29	Exercise duration pump 2	5183	float32	RW	PAR_TB_CF_PUMP_EXER_DUR_2_2	
2.5.12.4.30	Pump 3	4212	unsigned8	RW	PAR_TB_CF_PUMP_DO_2_3	Relay Select
2.5.12.4.31	On setpoint pump 3	4232	float32	RW	PAR_TB_CF_ON_2_3	
2.5.12.4.32	Off setpoint pump 3	4256	float32	RW	PAR_TB_CF_OFF_2_3	
2.5.12.4.33	Service ratio pump 3	4272	unsigned8	RW	PAR_TB_CF_PUMP_RRS_2_3	
2.5.12.4.34	Run-on duration pump 3	4413	float32	RW	PAR_TB_CF_PUMP_RUN_ON_DUR_2_3	
2.5.12.4.35	Interlock pump 3	4374	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_D_ENABLED_2_3	Disable Enable
2.5.12.4.35	Interlock pump 3	4386	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_D_DI_2_3	Digital Input
2.5.12.4.36	Enable exercise pump 3	5129	unsigned8	RW	PAR_TB_CF_PUMP_EXER_ENABLED_2_3	Disable Enable
2.5.12.4.37	Exercise interval pump 3	5161	float32	RW	PAR_TB_CF_PUMP_EXER_INT_2_3	
2.5.12.4.38	Exercise duration pump 3	5185	float32	RW	PAR_TB_CF_PUMP_EXER_DUR_2_3	
2.5.12.4.39	Pump 4	4213	unsigned8	RW	PAR_TB_CF_PUMP_DO_2_4	Relay Select
2.5.12.4.40	On setpoint pump 4	4234	float32	RW	PAR_TB_CF_ON_2_4	
2.5.12.4.41	Off setpoint pump 4	4258	float32	RW	PAR_TB_CF_OFF_2_4	
2.5.12.4.42	Service ratio pump 4	4273	unsigned8	RW	PAR_TB_CF_PUMP_RRS_2_4	
2.5.12.4.43	Run-on duration pump 4	4415	float32	RW	PAR_TB_CF_PUMP_RUN_ON_DUR_2_4	
2.5.12.4.44	Interlock pump 4	4375	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_D_ENABLED_2_4	Disable Enable
2.5.12.4.44	Interlock pump 4	4387	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_D_DI_2_4	Digital Input
2.5.12.4.45	Enable exercise pump 4	5130	unsigned8	RW	PAR_TB_CF_PUMP_EXER_ENABLED_2_4	Disable Enable
2.5.12.4.46	Exercise interval pump 4	5163	float32	RW	PAR_TB_CF_PUMP_EXER_INT_2_4	
2.5.12.4.47	Exercise duration pump 4	5187	float32	RW	PAR_TB_CF_PUMP_EXER_DUR_2_4	
2.5.12.4.48	Pump 5	4214	unsigned8	RW	PAR_TB_CF_PUMP_DO_2_5	Relay Select
2.5.12.4.49	On setpoint pump 5	4236	float32	RW	PAR_TB_CF_ON_2_5	
2.5.12.4.50	Off setpoint pump 5	4260	float32	RW	PAR_TB_CF_OFF_2_5	
2.5.12.4.51	Service ratio pump 5	4274	unsigned8	RW	PAR_TB_CF_PUMP_RRS_2_5	
2.5.12.4.52	Run-on duration pump 5	4417	float32	RW	PAR_TB_CF_PUMP_RUN_ON_DUR_2_5	
2.5.12.4.53	Interlock pump 5	4376	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_D_ENABLED_2_5	Disable Enable
2.5.12.4.53	Interlock pump 5	4388	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_D_DI_2_5	Digital Input
2.5.12.4.54	Enable exercise pump 5	5131	unsigned8	RW	PAR_TB_CF_PUMP_EXER_ENABLED_2_5	Disable Enable
2.5.12.4.55	Exercise interval pump 5	5165	float32	RW	PAR_TB_CF_PUMP_EXER_INT_2_5	

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2.5.12.4.56	Exercise duration pump 5	5189	float32	RW	PAR_TB_CF_PUMP_EXER_DUR_2_5	
2.5.12.4.57	Pump 6	4215	unsigned8	RW	PAR_TB_CF_PUMP_DO_2_6	Relay Select
2.5.12.4.58	On setpoint pump 6	4238	float32	RW	PAR_TB_CF_ON_2_6	
2.5.12.4.59	Off setpoint pump 6	4262	float32	RW	PAR_TB_CF_OFF_2_6	
2.5.12.4.60	Service ratio pump 6	4275	unsigned8	RW	PAR_TB_CF_PUMP_RRS_2_6	
2.5.12.4.61	Run-on duration pump 6	4419	float32	RW	PAR_TB_CF_PUMP_RUN_ON_DUR_2_6	
2.5.12.4.62	Interlock pump 6	4377	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_DISABLE_2_6	Disable Enable
2.5.12.4.62	Interlock pump 6	4389	unsigned8	RW	PAR_TB_CF_PUMP_FAULT_DI_2_6	Digital Input
2.5.12.4.63	Enable exercise pump 6	5133	unsigned8	RW	PAR_TB_CF_PUMP_EXER_ENABLE_2_6	Disable Enable
2.5.12.4.64	Exercise interval pump 6	5167	float32	RW	PAR_TB_CF_PUMP_EXER_INT_2_6	
2.5.12.4.65	Exercise duration pump 6	5191	float32	RW	PAR_TB_CF_PUMP_EXER_DUR_2_6	
2.5.12.5	Pump energy savings					
2.5.12.5.1	Peak on setpoint pump 1	4323	float32	RW	PAR_TB_CF_PEAK_ON_2_1	
2.5.12.5.2	Peak off setpoint pump 1	4347	float32	RW	PAR_TB_CF_PEAK_OFF_2_1	
2.5.12.5.3	Peak on setpoint pump 2	4325	float32	RW	PAR_TB_CF_PEAK_ON_2_2	
2.5.12.5.4	Peak off setpoint pump 2	4349	float32	RW	PAR_TB_CF_PEAK_OFF_2_2	
2.5.12.5.5	Peak on setpoint pump 3	4327	float32	RW	PAR_TB_CF_PEAK_ON_2_3	
2.5.12.5.6	Peak off setpoint pump 3	4351	float32	RW	PAR_TB_CF_PEAK_OFF_2_3	
2.5.12.5.7	Peak on setpoint pump 4	4329	float32	RW	PAR_TB_CF_PEAK_ON_2_4	
2.5.12.5.8	Peak off setpoint pump 4	4353	float32	RW	PAR_TB_CF_PEAK_OFF_2_4	
2.5.12.5.9	Peak on setpoint pump 5	4331	float32	RW	PAR_TB_CF_PEAK_ON_2_5	
2.5.12.5.10	Peak off setpoint pump 5	4355	float32	RW	PAR_TB_CF_PEAK_OFF_2_5	
2.5.12.5.11	Peak on setpoint pump 6	4333	float32	RW	PAR_TB_CF_PEAK_ON_2_6	
2.5.12.5.12	Peak off setpoint pump 6	4357	float32	RW	PAR_TB_CF_PEAK_OFF_2_6	
2.5.12.6	Volume flow					
2.5.12.6.1	Primary measuring device	4805	unsigned8	RW	PAR_TB_OCM_PRIMARY_ELEMENT_2	OCM Primary Element
2.5.12.6.2	Method of flow calculation	4843	unsigned8	RW	PAR_TB_OCM_METHOD_2	OCM Method
2.5.12.6.3	Flow exponent	4808	float32	RW	PAR_TB_OCM_EXPONENT_2	
2.5.12.6.4	Maximum head	4846	float32	RW	PAR_TB_OCM_MAX_HEAD_2	
2.5.12.6.5	Maximum flow	4850	float32	R	PAR_TB_OCM_MAX_FLOW_READ_ONLY_2	
2.5.12.6.6	Maximum flow	4802	float32	RW	PAR_TB_OCM_MAX_FLOW_2	
2.5.12.6.7	Zero head offset wizard					
2.5.12.6.8	Zero head offset	4854	float32	RW	PAR_TB_OCM_ZERO_HEAD_OFFSET_2	

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2.5.12.6.9	Enable low flow cut-off	4861	unsigned8	RW	PAR_TB_LOW_FLOW_CUTOFF_ENABLED_2	Disable Enable
2.5.12.6.10	Low flow cut-off	4864	float32	RW	PAR_TB_LOW_FLOW_CUTOFF_FLOW_2	
2.5.12.6.11	K-factor	13826	float32	RW	PID_K_FACTOR_2_LUI	
2.5.12.6.12	V-notch angle	4816	float32	RW	PAR_TB_OCM_V_NOTCH_2	
2.5.12.6.13	Slope	4820	float32	RW	PAR_TB_OCM_SLOPE_2	
2.5.12.6.14	Roughness coefficient	4824	float32	RW	PAR_TB_OCM_ROUGHNESS_COEF_2	
2.5.12.6.15	Maximum flume width	4828	float32	RW	PAR_TB_OCM_DIMENSION_A_2	
2.5.12.6.15	Flume height	4828	float32	RW	PAR_TB_OCM_DIMENSION_A_2	
2.5.12.6.15	Crest width	4828	float32	RW	PAR_TB_OCM_DIMENSION_A_2	
2.5.12.6.15	Approach width	4828	float32	RW	PAR_TB_OCM_DIMENSION_A_2	
2.5.12.6.15	Approach diameter	4828	float32	RW	PAR_TB_OCM_DIMENSION_A_2	
2.5.12.6.15	Pipe diameter	4828	float32	RW	PAR_TB_OCM_DIMENSION_A_2	
2.5.12.6.16	Throat diameter	4832	float32	RW	PAR_TB_OCM_DIMENSION_B_2	
2.5.12.6.16	Crest height	4832	float32	RW	PAR_TB_OCM_DIMENSION_B_2	
2.5.12.6.16	Throat width	4832	float32	RW	PAR_TB_OCM_DIMENSION_B_2	
2.5.12.6.16	Crest width	4832	float32	RW	PAR_TB_OCM_DIMENSION_B_2	
2.5.12.6.17	Crest length	4836	float32	RW	PAR_TB_OCM_DIMENSION_C_2	
2.5.12.6.17	Crest height	4836	float32	RW	PAR_TB_OCM_DIMENSION_C_2	
2.5.12.6.17	Hump height	4836	float32	RW	PAR_TB_OCM_DIMENSION_C_2	
2.5.12.6.18	Throat length	4840	float32	RW	PAR_TB_OCM_DIMENSION_D_2	
2.5.12.7	Custom volume flow table (1...16)					
2.5.12.7.1	X-value 1	4589	float32	RW	PAR_TB_FLOW_TABLE_X_2_1	
2.5.12.7.2	Y-value 1	4653	float32	RW	PAR_TB_FLOW_TABLE_Y_2_1	
2.5.12.7.3	X-value 2	4591	float32	RW	PAR_TB_FLOW_TABLE_X_2_2	
2.5.12.7.4	Y-value 2	4655	float32	RW	PAR_TB_FLOW_TABLE_Y_2_2	
2.5.12.7.5	X-value 3	4593	float32	RW	PAR_TB_FLOW_TABLE_X_2_3	
2.5.12.7.6	Y-value 3	4657	float32	RW	PAR_TB_FLOW_TABLE_Y_2_3	
2.5.12.7.7	X-value 4	4595	float32	RW	PAR_TB_FLOW_TABLE_X_2_4	
2.5.12.7.8	Y-value 4	4659	float32	RW	PAR_TB_FLOW_TABLE_Y_2_4	
2.5.12.7.9	X-value 5	4597	float32	RW	PAR_TB_FLOW_TABLE_X_2_5	
2.5.12.7.10	Y-value 5	4661	float32	RW	PAR_TB_FLOW_TABLE_Y_2_5	
2.5.12.7.11	X-value 6	4599	float32	RW	PAR_TB_FLOW_TABLE_X_2_6	
2.5.12.7.12	Y-value 6	4663	float32	RW	PAR_TB_FLOW_TABLE_Y_2_6	
2.5.12.7.13	X-value 7	4601	float32	RW	PAR_TB_FLOW_TABLE_X_2_7	
2.5.12.7.14	Y-value 7	4665	float32	RW	PAR_TB_FLOW_TABLE_Y_2_7	
2.5.12.7.15	X-value 8	4603	float32	RW	PAR_TB_FLOW_TABLE_X_2_8	
2.5.12.7.16	Y-value 8	4667	float32	RW	PAR_TB_FLOW_TABLE_Y_2_8	
2.5.12.7.17	X-value 9	4605	float32	RW	PAR_TB_FLOW_TABLE_X_2_9	
2.5.12.7.18	Y-value 9	4669	float32	RW	PAR_TB_FLOW_TABLE_Y_2_9	
2.5.12.7.19	X-value 10	4607	float32	RW	PAR_TB_FLOW_TABLE_X_2_10	

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2.5.12.7.20	Y-value 10	4671	float32	RW	PAR_TB_FLOW_TABLE_Y_2_10	
2.5.12.7.21	X-value 11	4609	float32	RW	PAR_TB_FLOW_TABLE_X_2_11	
2.5.12.7.22	Y-value 11	4673	float32	RW	PAR_TB_FLOW_TABLE_Y_2_11	
2.5.12.7.23	X-value 12	4611	float32	RW	PAR_TB_FLOW_TABLE_X_2_12	
2.5.12.7.24	Y-value 12	4675	float32	RW	PAR_TB_FLOW_TABLE_Y_2_12	
2.5.12.7.25	X-value 13	4613	float32	RW	PAR_TB_FLOW_TABLE_X_2_13	
2.5.12.7.26	Y-value 13	4677	float32	RW	PAR_TB_FLOW_TABLE_Y_2_13	
2.5.12.7.27	X-value 14	4615	float32	RW	PAR_TB_FLOW_TABLE_X_2_14	
2.5.12.7.28	Y-value 14	4679	float32	RW	PAR_TB_FLOW_TABLE_Y_2_14	
2.5.12.7.29	X-value 15	4617	float32	RW	PAR_TB_FLOW_TABLE_X_2_15	
2.5.12.7.30	Y-value 15	4681	float32	RW	PAR_TB_FLOW_TABLE_Y_2_15	
2.5.12.7.31	X-value 16	4619	float32	RW	PAR_TB_FLOW_TABLE_X_2_16	
2.5.12.7.32	Y-value 16	4683	float32	RW	PAR_TB_FLOW_TABLE_Y_2_16	
2.5.12.8	Custom volume flow table (17...32)					
2.5.12.8.1	X-value 17	4621	float32	RW	PAR_TB_FLOW_TABLE_X_2_17	
2.5.12.8.2	Y-value 17	4685	float32	RW	PAR_TB_FLOW_TABLE_Y_2_17	
2.5.12.8.3	X-value 18	4623	float32	RW	PAR_TB_FLOW_TABLE_X_2_18	
2.5.12.8.4	Y-value 18	4687	float32	RW	PAR_TB_FLOW_TABLE_Y_2_18	
2.5.12.8.5	X-value 19	4625	float32	RW	PAR_TB_FLOW_TABLE_X_2_19	
2.5.12.8.6	Y-value 19	4689	float32	RW	PAR_TB_FLOW_TABLE_Y_2_19	
2.5.12.8.7	X-value 20	4627	float32	RW	PAR_TB_FLOW_TABLE_X_2_20	
2.5.12.8.8	Y-value 20	4691	float32	RW	PAR_TB_FLOW_TABLE_Y_2_20	
2.5.12.8.9	X-value 21	4629	float32	RW	PAR_TB_FLOW_TABLE_X_2_21	
2.5.12.8.10	Y-value 21	4693	float32	RW	PAR_TB_FLOW_TABLE_Y_2_21	
2.5.12.8.11	X-value 22	4631	float32	RW	PAR_TB_FLOW_TABLE_X_2_22	
2.5.12.8.12	Y-value 22	4695	float32	RW	PAR_TB_FLOW_TABLE_Y_2_22	
2.5.12.8.13	X-value 23	4633	float32	RW	PAR_TB_FLOW_TABLE_X_2_23	
2.5.12.8.14	Y-value 23	4697	float32	RW	PAR_TB_FLOW_TABLE_Y_2_23	
2.5.12.8.15	X-value 24	4635	float32	RW	PAR_TB_FLOW_TABLE_X_2_24	
2.5.12.8.16	Y-value 24	4699	float32	RW	PAR_TB_FLOW_TABLE_Y_2_24	
2.5.12.8.17	X-value 25	4637	float32	RW	PAR_TB_FLOW_TABLE_X_2_25	
2.5.12.8.18	Y-value 25	4701	float32	RW	PAR_TB_FLOW_TABLE_Y_2_25	
2.5.12.8.19	X-value 26	4639	float32	RW	PAR_TB_FLOW_TABLE_X_2_26	
2.5.12.8.20	Y-value 26	4703	float32	RW	PAR_TB_FLOW_TABLE_Y_2_26	
2.5.12.8.21	X-value 27	4641	float32	RW	PAR_TB_FLOW_TABLE_X_2_27	
2.5.12.8.22	Y-value 27	4705	float32	RW	PAR_TB_FLOW_TABLE_Y_2_27	
2.5.12.8.23	X-value 28	4643	float32	RW	PAR_TB_FLOW_TABLE_X_2_28	
2.5.12.8.24	Y-value 28	4707	float32	RW	PAR_TB_FLOW_TABLE_Y_2_28	
2.5.12.8.25	X-value 29	4645	float32	RW	PAR_TB_FLOW_TABLE_X_2_29	
2.5.12.8.26	Y-value 29	4709	float32	RW	PAR_TB_FLOW_TABLE_Y_2_29	
2.5.12.8.27	X-value 30	4647	float32	RW	PAR_TB_FLOW_TABLE_X_2_30	
2.5.12.8.28	Y-value 30	4711	float32	RW	PAR_TB_FLOW_TABLE_Y_2_30	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.5.12.8.29	X-value 31	4649	float32	RW	PAR_TB_FLOW_TABLE_X_2_31	
2.5.12.8.30	Y-value 31	4713	float32	RW	PAR_TB_FLOW_TABLE_Y_2_31	
2.5.12.8.31	X-value 32	4651	float32	RW	PAR_TB_FLOW_TABLE_X_2_32	
2.5.12.8.32	Y-value 32	4715	float32	RW	PAR_TB_FLOW_TABLE_Y_2_32	
2.5.12.9	Time to spill					
2.5.12.9.1	Time to spill threshold	4932	float32	RW	PAR_TB_TIME_TO_SPILL_THRESHOLD_2	
2.5.12.9.2	Level to spill	4896	float32	RW	PAR_TB_LEVEL_TO_SPILL_2	
2.5.12.9.3	Level threshold	4904	float32	RW	PAR_TB_LEVEL_TO_SPILL_THRESHOLD_2	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.7	Date and time					
2.7.1	Current date and time	6190	string16	R	PID_CURRENT_DATE_TIME	
2.7.2	Set date and time	6184	unsigned8	W	PID_DATE_TIME_CMD_GET	Get Time
2.7.2	Set date and time	6198	unsigned8	W	PID_DATE_TIME_CMD_SET	Set Time
2.7.2	Set date and time	6185	unsigned16	RW	PID_DATE_YEAR	
2.7.2	Set date and time	6186	unsigned8	RW	PID_DATE_MONTH	
2.7.2	Set date and time	6187	unsigned8	RW	PID_DATE_DAY	
2.7.2	Set date and time	6188	unsigned8	RW	PID_TIME_HOURS	
2.7.2	Set date and time	6189	unsigned8	RW	PID_TIME_MINUTES	
2.8	Local display					
2.8.1	Brightness	9001	unsigned8	RW	PID_LUI_BACKLIGHT_LEVEL	
2.8.2	Backlight	9098	unsigned8	RW	PID_LUI_BACKLIGHT_TIMEOUT	
2.8.3	Contrast	9000	unsigned8	RW	PID_LUI_CONTRAST_LEVEL	
2.8.4	Process value damping					
2.8.4.1	Damping value	6409	float32	RW	PID_LUI_DAMPING_FILTER_TIME	
2.8.4.2	Process values					
2.8.5	View 1					
2.8.5.1	Type	9007	unsigned8	RW	PID_TLV1_TYPE	Top Level View Type 1
2.8.5.2	1st value	9018	unsigned8	RW	PID_TLV1_PVALUE	Input Selector
2.8.5.3	2nd value	9019	unsigned8	RW	PID_TLV1_SVALUE	Input Selector
2.8.5.4	3rd value	9020	unsigned8	RW	PID_TLV1_TVALUE	Input Selector
2.8.5.5	4th value	9075	unsigned8	RW	PID_TLV1_4VALUE	Input Selector
2.8.5.6	5th value	9076	unsigned8	RW	PID_TLV1_5VALUE	Input Selector
2.8.5.7	6th value	9077	unsigned8	RW	PID_TLV1_6VALUE	Input Selector
2.8.5.8	Graph axis scaling mode	8050	unsigned8	RW	PID_TLV1_GRAPH_SCALE_MODE	Graph Scale Mode
2.8.5.9	Graph log time window	8051	unsigned8	RW	PID_TLV1_GRAPH_LOG_TIME	Graph Log Time
2.8.5.10	Graph scale upper limit	8054	float32	RW	PID_TLV1_GRAPH_UPPER_LIMIT	
2.8.5.11	Graph scale lower limit	8052	float32	RW	PID_TLV1_GRAPH_LOWER_LIMIT	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.8.6	View 2					
2.8.6.1	Visibility	9013	unsigned8	RW	PID_TLV2_ENABLED	Disable Enable
2.8.6.2	Type	9008	unsigned8	RW	PID_TLV2_TYPE	Top Level View Type 2,3,4,5,6
2.8.6.3	1st value	9021	unsigned8	RW	PID_TLV2_PVALUE	Input Selector
2.8.6.4	2nd value	9022	unsigned8	RW	PID_TLV2_SVALUE	Input Selector
2.8.6.5	3rd value	9023	unsigned8	RW	PID_TLV2_TVALUE	Input Selector
2.8.6.6	4th value	9078	unsigned8	RW	PID_TLV2_4VALUE	Input Selector
2.8.6.7	5th value	9079	unsigned8	RW	PID_TLV2_5VALUE	Input Selector
2.8.6.8	6th value	9080	unsigned8	RW	PID_TLV2_6VALUE	Input Selector
2.8.6.9	Graph axis scaling mode	8056	unsigned8	RW	PID_TLV2_GRAPH_SCALE_MODE	Graph Scale Mode
2.8.6.10	Graph log time window	8057	unsigned8	RW	PID_TLV2_GRAPH_LOG_TIME	Graph Log Time
2.8.6.11	Graph scale upper limit	8060	float32	RW	PID_TLV2_GRAPH_UPPER_LIMIT	
2.8.6.12	Graph scale lower limit	8058	float32	RW	PID_TLV2_GRAPH_LOWER_LIMIT	
2.8.7	View 3					
2.8.7.1	Visibility	9014	unsigned8	RW	PID_TLV3_ENABLED	Disable Enable
2.8.7.2	Type	9009	unsigned8	RW	PID_TLV3_TYPE	Top Level View Type 2,3,4,5,6
2.8.7.3	1st value	9024	unsigned8	RW	PID_TLV3_PVALUE	Input Selector
2.8.7.4	2nd value	9025	unsigned8	RW	PID_TLV3_SVALUE	Input Selector
2.8.7.5	3rd value	9026	unsigned8	RW	PID_TLV3_TVALUE	Input Selector
2.8.7.6	4th value	9081	unsigned8	RW	PID_TLV3_4VALUE	Input Selector
2.8.7.7	5th value	9082	unsigned8	RW	PID_TLV3_5VALUE	Input Selector
2.8.7.8	6th value	9083	unsigned8	RW	PID_TLV3_6VALUE	Input Selector
2.8.7.9	Graph axis scaling mode	8062	unsigned8	RW	PID_TLV3_GRAPH_SCALE_MODE	Graph Scale Mode
2.8.7.10	Graph log time window	8063	unsigned8	RW	PID_TLV3_GRAPH_LOG_TIME	Graph Log Time
2.8.7.11	Graph scale upper limit	8066	float32	RW	PID_TLV3_GRAPH_UPPER_LIMIT	
2.8.7.12	Graph scale lower limit	8064	float32	RW	PID_TLV3_GRAPH_LOWER_LIMIT	
2.8.8	View 4					
2.8.8.1	Visibility	9015	unsigned8	RW	PID_TLV4_ENABLED	Disable Enable
2.8.8.2	Type	9010	unsigned8	RW	PID_TLV4_TYPE	Top Level View Type 2,3,4,5,6
2.8.8.3	1st value	9027	unsigned8	RW	PID_TLV4_PVALUE	Input Selector
2.8.8.4	2nd value	9028	unsigned8	RW	PID_TLV4_SVALUE	Input Selector
2.8.8.5	3rd value	9029	unsigned8	RW	PID_TLV4_TVALUE	Input Selector
2.8.8.6	4th value	9084	unsigned8	RW	PID_TLV4_4VALUE	Input Selector
2.8.8.7	5th value	9085	unsigned8	RW	PID_TLV4_5VALUE	Input Selector
2.8.8.8	6th value	9086	unsigned8	RW	PID_TLV4_6VALUE	Input Selector
2.8.8.9	Graph axis scaling mode	8068	unsigned8	RW	PID_TLV4_GRAPH_SCALE_MODE	Graph Scale Mode
2.8.8.10	Graph log time window	8069	unsigned8	RW	PID_TLV4_GRAPH_LOG_TIME	Graph Log Time
2.8.8.11	Graph scale upper limit	8072	float32	RW	PID_TLV4_GRAPH_UPPER_LIMIT	
2.8.8.12	Graph scale lower limit	8070	float32	RW	PID_TLV4_GRAPH_LOWER_LIMIT	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
2.8.9	View 5					
2.8.9.1	Visibility	9016	unsigned8	RW	PID_TLV5_ENABLED	Disable Enable
2.8.9.2	Type	9011	unsigned8	RW	PID_TLV5_TYPE	Top Level View Type 2,3,4,5,6
2.8.9.3	1st value	9030	unsigned8	RW	PID_TLV5_PVALUE	Input Selector
2.8.9.4	2nd value	9031	unsigned8	RW	PID_TLV5_SVALUE	Input Selector
2.8.9.5	3rd value	9032	unsigned8	RW	PID_TLV5_TVALUE	Input Selector
2.8.9.6	4th value	9087	unsigned8	RW	PID_TLV5_4VALUE	Input Selector
2.8.9.7	5th value	9088	unsigned8	RW	PID_TLV5_5VALUE	Input Selector
2.8.9.8	6th value	9089	unsigned8	RW	PID_TLV5_6VALUE	Input Selector
2.8.9.9	Graph axis scaling mode	8074	unsigned8	RW	PID_TLV5_GRAPH_SCALE_MODE	Graph Scale Mode
2.8.9.10	Graph log time window	8075	unsigned8	RW	PID_TLV5_GRAPH_LOG_TIME	Graph Log Time
2.8.9.11	Graph scale upper limit	8078	float32	RW	PID_TLV5_GRAPH_UPPER_LIMIT	
2.8.9.12	Graph scale lower limit	8076	float32	RW	PID_TLV5_GRAPH_LOWER_LIMIT	
2.8.10	View 6					
2.8.10.1	Visibility	9017	unsigned8	RW	PID_TLV6_ENABLED	Disable Enable
2.8.10.2	Type	9012	unsigned8	RW	PID_TLV6_TYPE	Top Level View Type 2,3,4,5,6
2.8.10.3	1st value	9033	unsigned8	RW	PID_TLV6_PVALUE	Input Selector
2.8.10.4	2nd value	9034	unsigned8	RW	PID_TLV6_SVALUE	Input Selector
2.8.10.5	3rd value	9035	unsigned8	RW	PID_TLV6_TVALUE	Input Selector
2.8.10.6	4th value	9090	unsigned8	RW	PID_TLV6_4VALUE	Input Selector
2.8.10.7	5th value	9091	unsigned8	RW	PID_TLV6_5VALUE	Input Selector
2.8.10.8	6th value	9092	unsigned8	RW	PID_TLV6_6VALUE	Input Selector
2.8.10.9	Graph axis scaling mode	8080	unsigned8	RW	PID_TLV6_GRAPH_SCALE_MODE	Graph Scale Mode
2.8.10.10	Graph log time window	8081	unsigned8	RW	PID_TLV6_GRAPH_LOG_TIME	Graph Log Time
2.8.10.11	Graph scale upper limit	8084	float32	RW	PID_TLV6_GRAPH_UPPER_LIMIT	
2.8.10.12	Graph scale lower limit	8082	float32	RW	PID_TLV6_GRAPH_LOWER_LIMIT	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
3	Maintenance and diagnostics					
3.1	Identification					
3.1.1	Time of last modification	6642	string16	R	PID_LATEST_CHANGE	
3.1.2	Configuration change counter	6004	unsigned32	RW	PID_CONFIG_COUNTER	
3.1.3	Long tag	8120	string32	RW	PID_LONG_TAG	
3.1.4	Descriptor	8176	string16	RW	PID_DESCRIPTOR	
3.1.5	Message	8136	string32	RW	PID_MESSAGE	
3.1.6	Location	8152	string32	RW	PID_LOCATION	
3.1.7	Installation date	8168	string16	RW	PID_INSTALLATION_DATE	
3.1.8	Manufacturer	6592	string12	RW	PID_MANUFACTURER_ID_STRING	
3.1.9	Product name	6104	string32	RW	PID_PRODUCT_NAME	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
3.1.10	Article number	6120	string32	RW	PID_ORDER_NUMBER	
3.1.10	Article number	7236	string32	RW	PID_ORDER_NUMBER_ADDON1	
3.1.10	Article number	7268	string32	RW	PID_ORDER_NUMBER_ADDON2	
3.1.11	Serial number	6576	string32	RW	PID_PRODUCT_SERIAL_NUMBER	
3.1.12	FW version	9500	string16	RW	PID_CURRENT_PRODUCT_FW_VERSION	
3.1.13	HW version	6334	string16	RW	PID_PRODUCT_HW_VERSION	
3.1.14	Final assembly number	6088	unsigned32	RW	PID_FINAL_ASSEMBLY_NUMBER	
3.1.15	Transmitter					
3.1.15.1	HW version	6136	string16	R	PID_TRN_HW_VERSION	
3.1.15.2	FW version	6040	string16	R	PID_TRN_FW_VERSION	
3.1.15.3	Serial number	7326	string16	R	PID_TRN_SERIAL_NUMBER	
3.1.15.4	Article number	8104	string32	R	PID_TRANSMITTER_MLFB	
3.1.15.4	Article number	7310	string32	R	PID_TRANSMITTER_MLFB_ADDON1	
3.1.15.4	Article number	7342	string32	R	PID_TRANSMITTER_MLFB_ADDON2	
3.1.16	Local display					
3.1.16.1	HW version	9041	string16	R	PID_LUI_HW_VERSION	
3.1.16.2	FW version	9063	string16	R	PID_LUI_FW_VERSION	
3.1.16.3	Menu structure version	7475	string16	R	PID_LUI_CFG_VERSION	
3.1.17	Communication interface					
3.1.17.1	HW version	7386	string16	R	PID_COMM_MODULE_HW_VERSION	
3.1.17.2	FW version	7334	string16	R	PID_COMM_MODULE_FW_VERSION	
3.1.17.3	Serial number	7358	string16	R	PID_COMM_MODULE_SERIAL_NUMBER	
3.1.19	Sensor					
3.1.19.1	Revision counter (point 1)	3481	unsigned16	RW	PAR_PB_CONFIG_COUNTER_1	
3.1.19.2	Revision counter (point 2)	3482	unsigned16	RW	PAR_PB_CONFIG_COUNTER_2	
3.2	Diagnostics					
3.2.1	Device status					
3.2.2	Diagnostic log					
3.2.3	Clear diagnostic log					
3.2.4	Acknowledge mode	6248	unsigned8	RW	PID_ALARM_AUTO_ACKNOWLEDGE	Alarms Acknowledge Mode
3.2.5	Suppression time	6749	unsigned16	RW	PID_ALARM_SUPPRESSION_TIME	
3.2.6	Status signal mode	9040	unsigned8	RW	PID_LUI_ICON_SELECTION	Display Alarm Icon Type
3.2.8	LR1xx TVT selection	5404	unsigned16	RW	PAR_LR_ECHO_TVT_SELECTION	LR1xx TVT selection

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
3.2.9	Echo profile					
3.2.9.1	Enable echo profile	3831	unsigned8	RW	PAR_TB_ECHO_PROFILE_AUT_OBUFFER	Disable Enable
3.2.9.2	Echo profile timeout	4783	float32	RW	PAR_TB_ECHO_PROFILE_AB_TIMEOUT	
3.2.9.3	View echo profile					
3.2.10	Saved echo profiles					
3.2.10.1	Enable	5002	unsigned8	RW	PAR_PB_PROFILE_STORAGE_ENABLED	
3.2.10.2	Behavior at full memory	3949	unsigned8	RW	PAR_PB_CATALOG_POLICY	Catalog policy
3.2.10.3	Save manually					
3.2.10.4	Save automatically by diagnostics	4946 – 4972	unsigned32	RW	PAR_TB_PROFILE_CAPTURE_T RIG_BITS_1_1 -- PAR_TB_PROFILE_CAPTURE_T RIG_BITS_1_14	One unsigned 32 for each of the 14 alarm words
3.2.10.5	Save automatically by alarms					See above, same 14 alarm words are used
3.2.10.6	Save automatically by dual-point alarms					See above, same 14 alarm words are used
3.2.10.7	Number of saved echo profiles	5408	unsigned8	RW	PAR_TB_CATALOG_NUM_ENTRIES_1	
3.2.10.8	Delete all saved echo profiles					
3.2.10.9	View saved echo profile					
3.2.11	Echo signal strength	4938	float32	R	PAR_TB_SS_STRENGTH_1	
3.2.12	Confidence	4942	float32	R	PAR_TB_SS_RELIABILITY_1	
3.2.13	Short shot confidence	4934	float32	R	PAR_TB_SS_CONF_SHORT_1	
3.2.14.9	Echo profile					
3.2.14.9.1	Enable echo profile	3831	unsigned8	RW	PAR_TB_ECHO_PROFILE_AUT_OBUFFER	Disable Enable
3.2.14.9.2	Echo profile timeout	4783	float32	RW	PAR_TB_ECHO_PROFILE_AB_TIMEOUT	
3.2.14.9.3	View echo profile					
3.2.14.10	Saved echo profiles					
3.2.14.10.3	Save manually					
3.2.14.10.4	Save automatically by diagnostics	4974 – 5000	unsigned32	RW	PAR_TB_PROFILE_CAPTURE_T RIG_BITS_2_1 -- PAR_TB_PROFILE_CAPTURE_T RIG_BITS_2_14	One unsigned 32 for each of the 14 alarm words
3.2.14.10.5	Save automatically by alarms					See above, same 14 alarm words are used
3.2.14.10.6	Save automatically by dual-point alarms					See above, same 14 alarm words are used
3.2.14.10.7	Number of saved echo profiles	5409	unsigned8	RW	PAR_TB_CATALOG_NUM_ENTRIES_2	
3.2.14.10.8	Delete all saved echo profiles					
3.2.14.10.9	View saved echo profile					

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
3.2.14.11	Echo signal strength	4940	float32	R	PAR_TB_SS_STRENGTH_2	
3.2.14.12	Confidence	4937	float32	R	PAR_TB_SS_RELIABILITY_2	
3.2.14.13	Short shot confidence	4935	float32	R	PAR_TB_SS_CONF_SHORT_2	
3.3	Maintenance					
3.3.1	Operating time					
3.3.1.1	Time since last power on	6162	unsigned32	RW	PID_OPERATING_HOURS_SINCE_STARTUP	
3.3.1.2	Total runtime	6160	unsigned32	RW	PID_OPERATING_HOURS_TOTAL	
3.3.1.3	Total runtime sensor (point 1)	4856	float32	R	PAR_TB_SS_POWERED_HOURS_1	
3.3.1.4	Total runtime sensor (point 2)	4858	float32	R	PAR_TB_SS_POWERED_HOURS_2	
3.3.2	Scheduled maintenance					
3.3.2.1	Device					
3.3.2.1.1	Monitoring	12661	unsigned8	RW	PID_SCHEDULE_TIMER_1_MODE	
3.3.2.1.2	Units	12653	unsigned16	RW	PID_SCHEDULE_TIMER_1_UNIT	
3.3.2.1.3	Expected lifetime	12654	float32	RW	PID_SCHEDULE_TIMER_1_EXPECTED_TIME	
3.3.2.1.4	Elapsed time	12656	float32	R	PID_SCHEDULE_TIMER_1_ELAPSED_TIME	
3.3.2.1.5	Remaining time	12658	float32	R	PID_SCHEDULE_TIMER_1_REMAINING_TIME	
3.3.2.1.6	Maintenance required	12662	float32	RW	PID_SCHEDULE_TIMER_1_MAINTENANCE_REQUIRED_TIME	
3.3.2.1.7	Maintenance demanded	12664	float32	RW	PID_SCHEDULE_TIMER_1_MAINTENANCE_DEMANDED_TIME	
3.3.2.1.8	Reset elapsed time					
3.3.2.2	Service					
3.3.2.2.1	Monitoring	12676	unsigned8	RW	PID_SCHEDULE_TIMER_2_MODE	
3.3.2.2.2	Units	12668	unsigned16	RW	PID_SCHEDULE_TIMER_2_UNIT	
3.3.2.2.3	Interval	12669	float32	RW	PID_SCHEDULE_TIMER_2_EXPECTED_TIME	
3.3.2.2.4	Elapsed time	12671	float32	R	PID_SCHEDULE_TIMER_2_ELAPSED_TIME	
3.3.2.2.5	Remaining time	12673	float32	R	PID_SCHEDULE_TIMER_2_REMAINING_TIME	
3.3.2.2.6	Maintenance required	12677	float32	RW	PID_SCHEDULE_TIMER_2_MAINTENANCE_REQUIRED_TIME	
3.3.2.2.7	Maintenance demanded	12679	float32	RW	PID_SCHEDULE_TIMER_2_MAINTENANCE_DEMANDED_TIME	
3.3.2.2.8	Reset elapsed time					
3.3.2.3	Calibration					
3.3.2.3.1	Monitoring	12691	unsigned8	RW	PID_SCHEDULE_TIMER_3_MODE	
3.3.2.3.2	Units	12683	unsigned16	RW	PID_SCHEDULE_TIMER_3_UNIT	
3.3.2.3.3	Interval	12684	float32	RW	PID_SCHEDULE_TIMER_3_EXPECTED_TIME	
3.3.2.3.4	Elapsed time	12686	float32	R	PID_SCHEDULE_TIMER_3_ELAPSED_TIME	
3.3.2.3.5	Remaining time	12688	float32	R	PID_SCHEDULE_TIMER_3_REMAINING_TIME	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
3.3.2.3.6	Maintenance required	12692	float32	RW	PID_SCHEDULE_TIMER_3_MAINTENANCE_REQUIRED_TIME	
3.3.2.3.7	Maintenance demanded	12694	float32	RW	PID_SCHEDULE_TIMER_3_MAINTENANCE_DEMANDED_TIME	
3.3.2.3.8	Reset elapsed time					
3.3.3	Service monitoring					
3.3.3.1	Parameter ID	6747	unsigned16	RW	PID_PARAMETER_REGISTER	
3.3.3.2	Value	12753	string32	R	PID_PARAMETER_VALUE_STRING	
3.4	Monitoring					
3.4.1	Sensor					
3.4.1.1	Input current	3801	float32	R	PAR_TB_MA_IN_1	
3.4.1.2	Minimum temperature	4719	float32	R	PAR_TB_SS_TEMPERATURE_MIN_VALUE_1	
3.4.1.3	Maximum temperature	4721	float32	R	PAR_TB_SS_TEMPERATURE_MAX_VALUE_1	
3.4.1.4	Minutes to spill	4898	float32	R	PAR_TB_TIME_TO_SPILL_1	
3.4.1.5	Measurement point 2					
3.4.1.5.1	Input current	3803	float32	R	PAR_TB_MA_IN_2	
3.4.1.5.2	Minimum temperature	4723	float32	R	PAR_TB_SS_TEMPERATURE_MIN_VALUE_2	
3.4.1.5.3	Maximum temperature	4725	float32	R	PAR_TB_SS_TEMPERATURE_MAX_VALUE_2	
3.4.2	Process values					
3.4.2.1	Level (point 1)	3000	float32	R	PID_Level1	
3.4.2.2	Space (point 1)	3200	float32	R	PAR_TB_SPACE_1	
3.4.2.3	Distance (point 1)	3202	float32	R	PAR_TB_DISTANCE_1	
3.4.2.4	Head (point 1)	3206	float32	R	PAR_TB_HEAD_1	
3.4.2.5	Volume (point 1)	3204	float32	R	PAR_TB_VOLUME_1	
3.4.2.6	Volume flow (point 1)	3014	float32	R	PID_VolumeFlow_1	
3.4.2.7	Sensor temperature (point 1)	3208	float32	R	PAR_TB_TEMPERATURE_1	
3.4.2.8	Level (point 2)	3002	float32	R	PID_Level2	
3.4.2.9	Space (point 2)	3210	float32	R	PAR_TB_SPACE_2	
3.4.2.10	Distance (point 2)	3212	float32	R	PAR_TB_DISTANCE_2	
3.4.2.11	Head (point 2)	3216	float32	R	PAR_TB_HEAD_2	
3.4.2.12	Volume (point 2)	3214	float32	R	PAR_TB_VOLUME_2	
3.4.2.13	Volume flow (point 2)	3018	float32	R	PID_VolumeFlow_2	
3.4.2.14	Sensor temperature (point 2)	3218	float32	R	PAR_TB_TEMPERATURE_2	
3.4.2.15	Level difference	3220	float32	R	PAR_TB_DIFFERENCE	
3.4.2.16	Level average	3222	float32	R	PAR_TB_AVERAGE	
3.4.3	Totalizers					
3.4.3.1	Totalizer 1					
3.4.3.1.1	Totalized amount	10672	float64	R	PID_TOT1_TOTAL64	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
3.4.3.1.2	Auto reset limit	12869	float32	RW	PID_TOT1_OVERFLOW_VALUE	
3.4.3.1.3	Number of auto resets	12871	unsigned32	R	PID_TOT1_OVERFLOW_COUNTER	
3.4.3.2	Totalizer 2					
3.4.3.2.1	Totalized amount	10676	float64	R	PID_TOT2_TOTAL64	
3.4.3.2.2	Auto reset limit	12873	float32	RW	PID_TOT2_OVERFLOW_VALUE	
3.4.3.2.3	Number of auto resets	12875	unsigned32	R	PID_TOT2_OVERFLOW_COUNTER	
3.4.3.3	Totalizer 3					
3.4.3.3.1	Totalized amount	10680	float64	R	PID_TOT3_TOTAL64	
3.4.3.3.2	Auto reset limit	12877	float32	RW	PID_TOT3_OVERFLOW_VALUE	
3.4.3.3.3	Number of auto resets	12879	unsigned32	R	PID_TOT3_OVERFLOW_COUNTER	
3.4.3.4	Totalizer 4					
3.4.3.4.1	Totalized amount	13603	float64	R	PID_TOT4_TOTAL64	
3.4.3.4.2	Auto reset limit	12881	float32	RW	PID_TOT4_OVERFLOW_VALUE	
3.4.3.4.3	Number of auto resets	12883	unsigned32	R	PID_TOT4_OVERFLOW_COUNTER	
3.4.4	Inputs and outputs					
3.4.4.1	Current output (HART)					
3.4.4.1.1	Loop current	6100	float32	R	PID_LOOP_CURRENT	
3.4.4.1.2	Diagnostics	7121	unsigned8	R	PID_LOOP_CURRENT_FAULT_STATUS	
3.4.4.2	Loop current 1	8803	float32	R	PID_CH2_C_OUTPUT	
3.4.4.3	Loop current 2	9103	float32	R	PID_CH3_C_OUTPUT	
3.4.4.4	Digital input 1	10561	unsigned8	R	PID_CH7_I_VALUE	
3.4.4.5	Digital input 2	10661	unsigned8	R	PID_CH8_I_VALUE	
3.4.4.6	Relay output 1	10684	unsigned8	R	PID_CH9_S_LOGICAL_OUTPUT	
3.4.4.7	Relay output 2	13705	unsigned8	R	PID_CH10_S_LOGICAL_OUTPUT	
3.4.4.8	Relay output 3	13747	unsigned8	R	PID_CH11_S_LOGICAL_OUTPUT	
3.4.4.9	Relay output 4	13788	unsigned8	R	PID_CH12_S_LOGICAL_OUTPUT	
3.4.4.10	Relay output 5	13829	unsigned8	R	PID_CH13_S_LOGICAL_OUTPUT	
3.4.4.11	Relay output 6	13870	unsigned8	R	PID_CH14_S_LOGICAL_OUTPUT	
3.4.5	Electronics temperature					
3.4.5.1	Current value	8200	float32	R	PID_TRN_PCB_TEMPERATURE	
3.4.5.2	Minimum	10900	float32	RW	PID_TRN_PCB_TEMPERATURE_MIN_VALUE	
3.4.5.3	Timestamp at minimum	10902	string32	RW	PID_TRN_PCB_TEMPERATURE_MIN_TIMESTAMP	
3.4.5.4	Maximum	10918	float32	RW	PID_TRN_PCB_TEMPERATURE_MAX_VALUE	
3.4.5.5	Timestamp at maximum	10920	string32	RW	PID_TRN_PCB_TEMPERATURE_MAX_TIMESTAMP	
3.4.6	Pump control					

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
3.4.6.1	Runtime relay 1	4276	float32	RW	PAR_TB_CF_RELAY_RUNTIME_H 1	
3.4.6.2	Runtime relay 2	4278	float32	RW	PAR_TB_CF_RELAY_RUNTIME_H 2	
3.4.6.3	Runtime relay 3	4280	float32	RW	PAR_TB_CF_RELAY_RUNTIME_H 3	
3.4.6.4	Runtime relay 4	4282	float32	RW	PAR_TB_CF_RELAY_RUNTIME_H 4	
3.4.6.5	Runtime relay 5	4284	float32	RW	PAR_TB_CF_RELAY_RUNTIME_H 5	
3.4.6.6	Runtime relay 6	4286	float32	RW	PAR_TB_CF_RELAY_RUNTIME_H 6	
3.4.6.7	Last time used relay 1	5133	unsigned32	RW	PAR_TB_CF_RELAY_LAST_USE D 1	
3.4.6.8	Last time used relay 2	5135	unsigned32	RW	PAR_TB_CF_RELAY_LAST_USE D 2	
3.4.6.9	Last time used relay 3	5137	unsigned32	RW	PAR_TB_CF_RELAY_LAST_USE D 3	
3.4.6.10	Last time used relay 4	5139	unsigned32	RW	PAR_TB_CF_RELAY_LAST_USE D 4	
3.4.6.11	Last time used relay 5	5141	unsigned32	RW	PAR_TB_CF_RELAY_LAST_USE D 5	
3.4.6.12	Last time used relay 6	5143	unsigned32	RW	PAR_TB_CF_RELAY_LAST_USE D 6	
3.5	Peak values					
3.5.1	Peak value 1					
3.5.1.1	Process value	11200	unsigned16	RW	PID_MINMAX_1_REGISTER	
3.5.1.2	Minimum	11208	float32	RW	PID_MINMAX_1_MIN_VALUE	
3.5.1.3	Timestamp at minimum	11210	string32	RW	PID_MINMAX_1_MIN_TIMESTAM P	
3.5.1.4	Maximum	11226	float32	RW	PID_MINMAX_1_MAX_VALUE	
3.5.1.5	Timestamp at maximum	11228	string32	RW	PID_MINMAX_1_MAX_TIMESTA MP	
3.5.1.6	Reset					
3.5.2	Peak value 2					
3.5.2.1	Process value	11201	unsigned16	RW	PID_MINMAX_2_REGISTER	
3.5.2.2	Minimum	11244	float32	RW	PID_MINMAX_2_MIN_VALUE	
3.5.2.3	Timestamp at minimum	11246	string32	RW	PID_MINMAX_2_MIN_TIMESTAM P	
3.5.2.4	Maximum	11262	float32	RW	PID_MINMAX_2_MAX_VALUE	
3.5.2.5	Timestamp at maximum	11264	string32	RW	PID_MINMAX_2_MAX_TIMESTA MP	
3.5.2.6	Reset					
3.5.3	Peak value 3					
3.5.3.1	Process value	11202	unsigned16	RW	PID_MINMAX_3_REGISTER	
3.5.3.2	Minimum	11280	float32	RW	PID_MINMAX_3_MIN_VALUE	
3.5.3.3	Timestamp at minimum	11282	string32	RW	PID_MINMAX_3_MIN_TIMESTAM P	
3.5.3.4	Maximum	11298	float32	RW	PID_MINMAX_3_MAX_VALUE	
3.5.3.5	Timestamp at maximum	11300	string32	RW	PID_MINMAX_3_MAX_TIMESTA MP	
3.5.3.6	Reset					
3.5.4	Peak value 4					
3.5.4.1	Process value	11203	unsigned16	RW	PID_MINMAX_4_REGISTER	
3.5.4.2	Minimum	11316	float32	RW	PID_MINMAX_4_MIN_VALUE	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
3.5.4.3	Timestamp at minimum	11318	string32	RW	PID_MINMAX_4_MIN_TIMESTAM P	
3.5.4.4	Maximum	11334	float32	RW	PID_MINMAX_4_MAX_VALUE	
3.5.4.5	Timestamp at maximum	11336	string32	RW	PID_MINMAX_4_MAX_TIMESTA MP	
3.5.4.6	Reset					
3.7	Memory card					
3.7.1	Installed	6164	unsigned8	R	PID_SENSORPROM_AVAILABLE	
3.7.2	Mass storage device (MSD)					
3.7.2.1	Auto connection					
3.7.2.2	Connect/disconnect					
3.7.3	Capacity	6564	string12	R	PID_SENSORPROM_SIZE_STRI NG	
3.7.4	Free space	6570	string12	R	PID_SENSORPROM_FREE_SPA CE_STRING	
3.7.5	Data logging					
3.7.5.1	Mode	11401	unsigned8	RW	PID_DATALOG_MODE	Data Logging Mode
3.7.5.2	Logging interval	11402	unsigned32	RW	PID_DATALOG_INTERVAL	
3.7.5.3	Process values					
3.7.5.3.1	Logging value 1	11404	unsigned16	RW	PID_DATALOG_REGISTER01	
3.7.5.3.2	Logging value 2	11405	unsigned16	RW	PID_DATALOG_REGISTER02	
3.7.5.3.3	Logging value 3	11406	unsigned16	RW	PID_DATALOG_REGISTER03	
3.7.5.3.4	Logging value 4	11407	unsigned16	RW	PID_DATALOG_REGISTER04	
3.7.5.3.5	Logging value 5	11408	unsigned16	RW	PID_DATALOG_REGISTER05	
3.7.5.3.6	Logging value 6	11409	unsigned16	RW	PID_DATALOG_REGISTER06	
3.7.5.3.7	Logging value 7	11410	unsigned16	RW	PID_DATALOG_REGISTER07	
3.7.5.3.8	Logging value 8	11411	unsigned16	RW	PID_DATALOG_REGISTER08	
3.7.5.3.9	Logging value 9	11412	unsigned16	RW	PID_DATALOG_REGISTER09	
3.7.5.3.10	Logging value 10	11412	unsigned16	RW	PID_DATALOG_REGISTER10	
3.7.5.3.11	Logging value 11	11412	unsigned16	RW	PID_DATALOG_REGISTER11	
3.7.5.3.12	Logging value 12	11412	unsigned16	RW	PID_DATALOG_REGISTER12	
3.7.5.3.13	Logging value 13	11412	unsigned16	RW	PID_DATALOG_REGISTER13	
3.7.5.3.14	Logging value 14	11412	unsigned16	RW	PID_DATALOG_REGISTER14	
3.7.5.3.15	Logging value 15	11412	unsigned16	RW	PID_DATALOG_REGISTER15	
3.7.5.3.16	Logging value 16	11412	unsigned16	RW	PID_DATALOG_REGISTER16	
3.7.5.3.17	Logging value 17	11412	unsigned16	RW	PID_DATALOG_REGISTER17	
3.7.5.3.18	Logging value 18	11412	unsigned16	RW	PID_DATALOG_REGISTER18	
3.7.5.3.19	Logging value 19	11412	unsigned16	RW	PID_DATALOG_REGISTER19	
3.7.5.3.20	Logging value 20	11412	unsigned16	RW	PID_DATALOG_REGISTER20	
3.7.5.4	Advanced logging					
3.7.5.4.1	Register 1	11404	unsigned16	RW	PID_DATALOG_REGISTER01	
3.7.5.4.2	Register 2	11405	unsigned16	RW	PID_DATALOG_REGISTER02	
3.7.5.4.3	Register 3	11406	unsigned16	RW	PID_DATALOG_REGISTER03	

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3.7.5.4.4	Register 4	11407	unsigned16	RW	PID_DATALOG_REGISTER04	
3.7.5.4.5	Register 5	11408	unsigned16	RW	PID_DATALOG_REGISTER05	
3.7.5.4.6	Register 6	11409	unsigned16	RW	PID_DATALOG_REGISTER06	
3.7.5.4.7	Register 7	11410	unsigned16	RW	PID_DATALOG_REGISTER07	
3.7.5.4.8	Register 8	11411	unsigned16	RW	PID_DATALOG_REGISTER08	
3.7.5.4.9	Register 9	11412	unsigned16	RW	PID_DATALOG_REGISTER09	
3.7.5.4.10	Register 10	11413	unsigned16	RW	PID_DATALOG_REGISTER10	
3.7.5.4.11	Register 11	11414	unsigned16	RW	PID_DATALOG_REGISTER11	
3.7.5.4.12	Register 12	11415	unsigned16	RW	PID_DATALOG_REGISTER12	
3.7.5.4.13	Register 13	11416	unsigned16	RW	PID_DATALOG_REGISTER13	
3.7.5.4.14	Register 14	11417	unsigned16	RW	PID_DATALOG_REGISTER14	
3.7.5.4.15	Register 15	11418	unsigned16	RW	PID_DATALOG_REGISTER15	
3.7.5.4.16	Register 16	11419	unsigned16	RW	PID_DATALOG_REGISTER16	
3.7.5.4.17	Register 17	11420	unsigned16	RW	PID_DATALOG_REGISTER17	
3.7.5.4.18	Register 18	11421	unsigned16	RW	PID_DATALOG_REGISTER18	
3.7.5.4.19	Register 19	11422	unsigned16	RW	PID_DATALOG_REGISTER19	
3.7.5.4.20	Register 20	11423	unsigned16	RW	PID_DATALOG_REGISTER20	
3.7.5.4.21	Register 21	11424	unsigned16	RW	PID_DATALOG_REGISTER21	
3.7.5.4.22	Register 22	11425	unsigned16	RW	PID_DATALOG_REGISTER22	
3.7.5.4.23	Register 23	11426	unsigned16	RW	PID_DATALOG_REGISTER23	
3.7.5.4.24	Register 24	11427	unsigned16	RW	PID_DATALOG_REGISTER24	
3.7.5.4.25	Register 25	11428	unsigned16	RW	PID_DATALOG_REGISTER25	
3.7.5.4.26	Register 26	11429	unsigned16	RW	PID_DATALOG_REGISTER26	
3.7.5.4.27	Register 27	11430	unsigned16	RW	PID_DATALOG_REGISTER27	
3.7.5.4.28	Register 28	11431	unsigned16	RW	PID_DATALOG_REGISTER28	
3.7.5.4.29	Register 29	11432	unsigned16	RW	PID_DATALOG_REGISTER29	
3.7.5.4.30	Register 30	11433	unsigned16	RW	PID_DATALOG_REGISTER30	
3.7.5.4.31	Register 31	11434	unsigned16	RW	PID_DATALOG_REGISTER31	
3.7.5.4.32	Register 32	11435	unsigned16	RW	PID_DATALOG_REGISTER32	
3.7.5.4.33	Register 33	11436	unsigned16	RW	PID_DATALOG_REGISTER33	
3.7.5.4.34	Register 34	11437	unsigned16	RW	PID_DATALOG_REGISTER34	
3.7.5.4.35	Register 35	11438	unsigned16	RW	PID_DATALOG_REGISTER35	
3.7.5.4.36	Register 36	11439	unsigned16	RW	PID_DATALOG_REGISTER36	
3.7.5.4.37	Register 37	11440	unsigned16	RW	PID_DATALOG_REGISTER37	
3.7.5.4.38	Register 38	11441	unsigned16	RW	PID_DATALOG_REGISTER38	
3.7.5.4.39	Register 39	11442	unsigned16	RW	PID_DATALOG_REGISTER39	
3.7.5.4.40	Register 40	11443	unsigned16	RW	PID_DATALOG_REGISTER40	
3.7.5.4.41	Register 41	11444	unsigned16	RW	PID_DATALOG_REGISTER41	
3.7.5.4.42	Register 42	11445	unsigned16	RW	PID_DATALOG_REGISTER42	
3.7.5.4.43	Register 43	11446	unsigned16	RW	PID_DATALOG_REGISTER43	
3.7.5.4.44	Register 44	11447	unsigned16	RW	PID_DATALOG_REGISTER44	
3.7.5.4.45	Register 45	11448	unsigned16	RW	PID_DATALOG_REGISTER45	

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3.7.5.4.46	Register 46	11449	unsigned16	RW	PID_DATALOG_REGISTER46	
3.7.5.4.47	Register 47	11450	unsigned16	RW	PID_DATALOG_REGISTER47	
3.7.5.4.48	Register 48	11451	unsigned16	RW	PID_DATALOG_REGISTER48	
3.7.5.4.49	Register 49	11452	unsigned16	RW	PID_DATALOG_REGISTER49	
3.7.5.4.50	Register 50	11453	unsigned16	RW	PID_DATALOG_REGISTER50	
3.7.5.4.51	Register 51	11454	unsigned16	RW	PID_DATALOG_REGISTER51	
3.7.5.4.52	Register 52	11455	unsigned16	RW	PID_DATALOG_REGISTER52	
3.7.5.4.53	Register 53	11456	unsigned16	RW	PID_DATALOG_REGISTER53	
3.7.5.4.54	Register 54	11457	unsigned16	RW	PID_DATALOG_REGISTER54	
3.7.5.4.55	Register 55	11458	unsigned16	RW	PID_DATALOG_REGISTER55	
3.7.5.4.56	Register 56	11459	unsigned16	RW	PID_DATALOG_REGISTER56	
3.7.5.4.57	Register 57	11460	unsigned16	RW	PID_DATALOG_REGISTER57	
3.7.5.4.58	Register 58	11461	unsigned16	RW	PID_DATALOG_REGISTER58	
3.7.5.4.59	Register 59	11462	unsigned16	RW	PID_DATALOG_REGISTER59	
3.7.5.4.60	Register 60	11463	unsigned16	RW	PID_DATALOG_REGISTER60	
3.7.5.4.61	Register 61	11464	unsigned16	RW	PID_DATALOG_REGISTER61	
3.7.5.4.62	Register 62	11465	unsigned16	RW	PID_DATALOG_REGISTER62	
3.7.5.4.63	Register 63	11466	unsigned16	RW	PID_DATALOG_REGISTER63	
3.7.5.4.64	Register 64	11467	unsigned16	RW	PID_DATALOG_REGISTER64	
3.7.5.4.65	Register 65	11468	unsigned16	RW	PID_DATALOG_REGISTER65	
3.7.5.4.66	Register 66	11469	unsigned16	RW	PID_DATALOG_REGISTER66	
3.7.5.4.67	Register 67	11470	unsigned16	RW	PID_DATALOG_REGISTER67	
3.7.5.4.68	Register 68	11471	unsigned16	RW	PID_DATALOG_REGISTER68	
3.7.5.4.69	Register 69	11472	unsigned16	RW	PID_DATALOG_REGISTER69	
3.7.5.4.70	Register 70	11473	unsigned16	RW	PID_DATALOG_REGISTER70	
3.7.5.4.71	Register 71	11474	unsigned16	RW	PID_DATALOG_REGISTER71	
3.7.5.4.72	Register 72	11475	unsigned16	RW	PID_DATALOG_REGISTER72	
3.7.5.4.73	Register 73	11476	unsigned16	RW	PID_DATALOG_REGISTER73	
3.7.5.4.74	Register 74	11477	unsigned16	RW	PID_DATALOG_REGISTER74	
3.7.5.4.75	Register 75	11478	unsigned16	RW	PID_DATALOG_REGISTER75	
3.7.5.4.76	Register 76	11479	unsigned16	RW	PID_DATALOG_REGISTER76	
3.7.5.4.77	Register 77	11480	unsigned16	RW	PID_DATALOG_REGISTER77	
3.7.5.4.78	Register 78	11481	unsigned16	RW	PID_DATALOG_REGISTER78	
3.7.5.4.79	Register 79	11482	unsigned16	RW	PID_DATALOG_REGISTER79	
3.7.5.4.80	Register 80	11483	unsigned16	RW	PID_DATALOG_REGISTER80	
3.7.5.4.81	Register 81	11484	unsigned16	RW	PID_DATALOG_REGISTER81	
3.7.5.4.82	Register 82	11485	unsigned16	RW	PID_DATALOG_REGISTER82	
3.7.5.4.83	Register 83	11486	unsigned16	RW	PID_DATALOG_REGISTER83	
3.7.5.4.84	Register 84	11487	unsigned16	RW	PID_DATALOG_REGISTER84	
3.7.5.4.85	Register 85	11488	unsigned16	RW	PID_DATALOG_REGISTER85	
3.7.5.4.86	Register 86	11489	unsigned16	RW	PID_DATALOG_REGISTER86	
3.7.5.4.87	Register 87	11490	unsigned16	RW	PID_DATALOG_REGISTER87	

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3.7.5.4.88	Register 88	11491	unsigned16	RW	PID_DATALOG_REGISTER88	
3.7.5.4.89	Register 89	11492	unsigned16	RW	PID_DATALOG_REGISTER89	
3.7.5.4.90	Register 90	11493	unsigned16	RW	PID_DATALOG_REGISTER90	
3.7.5.5	Behavior at full memory	11145	unsigned8	RW	PID_DATALOG_OVERWRITE_MODE	
3.7.5.6	Enable diagnostics	7008	unsigned32	RW	PID_ALARM_STATUS_9_MASK	Alarm Status 9
3.7.5.7	Decimal separator	10199	unsigned8	RW	PID_SDCARD_DECIMAL_POINT	SDCard Decimal Point Character
3.7.5.8	Enable data logging	11400	unsigned8	RW	PID_DATALOG_ENABLED	Enable Disable
3.8	Simulation					
3.8.1	Process values					
3.8.1.1	Level (point 1)					
3.8.1.1.1	Simulation mode	3838	unsigned8	RW	PAR_TB_RAW_LEVEL_SIM_TYPE_1	Simulation Type
3.8.1.1.1	Simulation mode	3813	unsigned8	RW	PAR_TB_RAW_LEVEL_OVERRIDE_FLAGS_1	Raw LevelOverride Flag
3.8.1.1.2	Simulation value	3815	float32	RW	PAR_TB_RAW_LEVEL_OVERRIDE_1	
3.8.1.1.3	Rate	3840	unsigned16	RW	PAR_TB_RAW_LEVEL_SIM_RATE_1	
3.8.1.8	Level (point 2)					
3.8.1.8.1	Simulation mode	3839	unsigned8	RW	PAR_TB_RAW_LEVEL_SIM_TYPE_2	Simulation Type
3.8.1.8.1	Simulation mode	3814	unsigned8	RW	PAR_TB_RAW_LEVEL_OVERRIDE_FLAGS_2	Raw LevelOverride Flag
3.8.1.8.2	Simulation value	3817	float32	RW	PAR_TB_RAW_LEVEL_OVERRIDE_2	
3.8.1.8.3	Rate	3841	unsigned16	RW	PAR_TB_RAW_LEVEL_SIM_RATE_2	
3.8.2	Totalizers					
3.8.2.1	Totalizer 1					
3.8.2.1.1	Simulation mode	8319	unsigned8	RW	PID_TOT1_TARGET_MODE	Totalizer Mode
3.8.2.1.2	Simulation value	8300	float32	RW	PID_TOT1_TOTAL	
3.8.2.2	Totalizer 2					
3.8.2.2.1	Simulation mode	8419	unsigned8	RW	PID_TOT2_TARGET_MODE	Totalizer Mode
3.8.2.2.2	Simulation value	8400	float32	RW	PID_TOT2_TOTAL	
3.8.2.3	Totalizer 3					
3.8.2.3.1	Simulation mode	8519	unsigned8	RW	PID_TOT3_TARGET_MODE	Totalizer Mode
3.8.2.3.2	Simulation value	8500	float32	RW	PID_TOT3_TOTAL	
3.8.2.4	Totalizer 4					
3.8.2.4.1	Simulation mode	13608	unsigned8	RW	PID_TOT4_TARGET_MODE	Totalizer Mode
3.8.2.4.2	Simulation value	13601	float32	RW	PID_TOT4_TOTAL	
3.8.3	Inputs and outputs					
3.8.3.1	Current output (HART)					
3.8.3.1.1	Simulation mode	7114	unsigned8	RW	PID_CH1_SIMULATION_MODE	Disable Enable
3.8.3.1.2	Simulation value	7112	float32	RW	PID_CH1_SIMULATION_VALUE	
3.8.3.2	Current output 1					
3.8.3.2.1	Simulation mode	8825	unsigned8	RW	PID_CH2_C_SIMULATION_MODE	Disable Enable

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3.8.3.2.2	Simulation value	8826	float32	RW	PID_CH2_C_SIMULATION_VALU E	
3.8.3.3	Current output 2					
3.8.3.3.1	Simulation mode	9125	unsigned8	RW	PID_CH3_C_SIMULATION_MOD E	Disable Enable
3.8.3.3.2	Simulation value	9126	float32	RW	PID_CH3_C_SIMULATION_VALU E	
3.8.3.4	Digital input 1					
3.8.3.4.1	Simulation mode	10567	unsigned8	RW	PID_CH7_I_SIMULATION_MODE	Disable Enable
3.8.3.4.2	Simulation value	10568	unsigned8	RW	PID_CH7_I_SIMULATION_VALU E	
3.8.3.5	Digital input 2					
3.8.3.5.1	Simulation mode	10667	unsigned8	RW	PID_CH8_I_SIMULATION_MODE	Disable Enable
3.8.3.5.2	Simulation value	10668	unsigned8	RW	PID_CH8_I_SIMULATION_VALU E	
3.8.3.6	Relay output 1					
3.8.3.6.1	Simulation mode	11142	unsigned8	RW	PID_CH9_S_SIMULATION_MOD E	Disable Enable
3.8.3.6.2	Simulation value	11859	unsigned8	RW	PID_CH9_S_SIMULATION_VALU E	
3.8.3.7	Relay output 2					
3.8.3.7.1	Simulation mode	13738	unsigned8	RW	PID_CH10_S_SIMULATION_MO DE	Disable Enable
3.8.3.7.2	Simulation value	13739	unsigned8	RW	PID_CH10_S_SIMULATION_VAL UE	
3.8.3.8	Relay output 3					
3.8.3.8.1	Simulation mode	13780	unsigned8	RW	PID_CH11_S_SIMULATION_MO DE	Disable Enable
3.8.3.8.2	Simulation value	13781	unsigned8	RW	PID_CH11_S_SIMULATION_VAL UE	
3.8.3.9	Relay output 4					
3.8.3.9.1	Simulation mode	13821	unsigned8	RW	PID_CH12_S_SIMULATION_MO DE	Disable Enable
3.8.3.9.2	Simulation value	13822	unsigned8	RW	PID_CH12_S_SIMULATION_VAL UE	
3.8.3.10	Relay output 5					
3.8.3.10.1	Simulation mode	13862	unsigned8	RW	PID_CH13_S_SIMULATION_MO DE	Disable Enable
3.8.3.10.2	Simulation value	13863	unsigned8	RW	PID_CH13_S_SIMULATION_VAL UE	
3.8.3.11	Relay output 6					
3.8.3.11.1	Simulation mode	13903	unsigned8	RW	PID_CH14_S_SIMULATION_MO DE	Disable Enable
3.8.3.11.2	Simulation value	13904	unsigned8	RW	PID_CH14_S_SIMULATION_VAL UE	
3.8.4	Alarms and diagnostics					
3.8.4.1	Simulation mode	6229	unsigned8	RW	PID_ALARM_SIMULATION_MOD E	Simulation Mode
3.8.4.2	Status signals	6249	unsigned16	RW	PID_GLOBAL_NAMUR_STATUS SIMULATION	
3.8.4.2	Status signals	6247	unsigned16	RW	PID_GLOBAL_ALARM_STATUS_ SIMULATION	
3.8.4.3	Sensor					
3.8.4.3.1	Measurement point 1	6230	unsigned32	RW	PID_ALARM_STATUS_1_SIMUL ATION	Alarm Status 1
3.8.4.3.2	Measurement point 2	6230	unsigned32	RW	PID_ALARM_STATUS_1_SIMUL ATION	Alarm Status 1
3.8.4.3.2	Measurement point 2	6232	unsigned32	RW	PID_ALARM_STATUS_2_SIMUL ATION	Alarm Status 2
3.8.4.4	Process alarms					

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
3.8.4.4.1	Level (point 1)	7036	unsigned32	RW	PID_ALARM_STATUS_11_SIMULATION	Alarm Status 11
3.8.4.4.1	Level (point 1)	7066	unsigned32	RW	PID_ALARM_STATUS_13_SIMULATION	Alarm Status 13
3.8.4.4.2	Space (point 1)	7036	unsigned32	RW	PID_ALARM_STATUS_11_SIMULATION	Alarm Status 11
3.8.4.4.3	Distance (point 1)	7036	unsigned32	RW	PID_ALARM_STATUS_11_SIMULATION	Alarm Status 11
3.8.4.4.4	Head (point 1)	7036	unsigned32	RW	PID_ALARM_STATUS_11_SIMULATION	Alarm Status 11
3.8.4.4.5	Volume (point 1)	7036	unsigned32	RW	PID_ALARM_STATUS_11_SIMULATION	Alarm Status 11
3.8.4.4.6	Volume flow (point 1)	6236	unsigned32	RW	PID_ALARM_STATUS_4_SIMULATION	Alarm Status 4
3.8.4.4.7	Sensor temperature (point 1)	6236	unsigned32	RW	PID_ALARM_STATUS_4_SIMULATION	Alarm Status 4
3.8.4.4.8	Level (point 2)	7036	unsigned32	RW	PID_ALARM_STATUS_11_SIMULATION	Alarm Status 11
3.8.4.4.8	Level (point 2)	7066	unsigned32	RW	PID_ALARM_STATUS_13_SIMULATION	Alarm Status 13
3.8.4.4.9	Space (point 2)	7036	unsigned32	RW	PID_ALARM_STATUS_11_SIMULATION	Alarm Status 11
3.8.4.4.10	Distance (point 2)	7036	unsigned32	RW	PID_ALARM_STATUS_11_SIMULATION	Alarm Status 11
3.8.4.4.11	Head (point 2)	7038	unsigned32	RW	PID_ALARM_STATUS_12_SIMULATION	Alarm Status 12
3.8.4.4.12	Volume (point 2)	7038	unsigned32	RW	PID_ALARM_STATUS_12_SIMULATION	Alarm Status 12
3.8.4.4.13	Volume flow (point 2)	7038	unsigned32	RW	PID_ALARM_STATUS_12_SIMULATION	Alarm Status 12
3.8.4.4.14	Sensor temperature (point 2)	7038	unsigned32	RW	PID_ALARM_STATUS_12_SIMULATION	Alarm Status 12
3.8.4.4.15	Level difference	7038	unsigned32	RW	PID_ALARM_STATUS_12_SIMULATION	Alarm Status 12
3.8.4.4.16	Level average	7038	unsigned32	RW	PID_ALARM_STATUS_12_SIMULATION	Alarm Status 12
3.8.4.5	Totalizer alarms					
3.8.4.5.1	Totalizer 1	6238	unsigned32	RW	PID_ALARM_STATUS_5_SIMULATION	Alarm Status 5
3.8.4.5.2	Totalizer 2	6238	unsigned32	RW	PID_ALARM_STATUS_5_SIMULATION	Alarm Status 5
3.8.4.5.3	Totalizer 3	6238	unsigned32	RW	PID_ALARM_STATUS_5_SIMULATION	Alarm Status 5
3.8.4.5.4	Totalizer 4	7034	unsigned32	RW	PID_ALARM_STATUS_10_SIMULATION	Alarm Status 10
3.8.4.6	Inputs and outputs					
3.8.4.6.1	Current output (HART)	6238	unsigned32	RW	PID_ALARM_STATUS_5_SIMULATION	Alarm Status 5
3.8.4.6.2	Current output 1	6242	unsigned32	RW	PID_ALARM_STATUS_7_SIMULATION	Alarm Status 7
3.8.4.6.3	Current output 2	6242	unsigned32	RW	PID_ALARM_STATUS_7_SIMULATION	Alarm Status 7
3.8.4.7	Memory card					
3.8.4.7.1	Data logging	7032	unsigned32	RW	PID_ALARM_STATUS_9_SIMULATION	Alarm Status 9
3.8.4.8	Device	6232	unsigned32	RW	PID_ALARM_STATUS_2_SIMULATION	Alarm Status 2
3.9	Audit trail					
3.9.1	Parameter change log					
3.9.2	Clear parameter change log					
3.9.3	FW update change log					
3.9.4	Clear FW update change log					

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
3.11	Resets					
3.11.1	Device restart					
3.11.2	Number of device restarts	8999	unsigned16	RW	PID_DEVICE_RESTART_COUNTER	
3.12	Restore setup					
3.12.1	Create restore point					
3.12.2	Restore					
3.12.3	Delete restore point					
3.12.8	Restore ordered configuration					
3.12.9	Restore auto saved configuration					
3.13	Firmware update					
4	Communication					
4.2	HART					
4.2.1	Polling address (SW)	8003	unsigned8	RW	PID_HART_POLLING_ADDRESS	
4.2.2	Polling address (HW)	8005	unsigned8	R	PID_FIELDBUS_ADDRESS_DIP_SWITCH	
4.2.3	HART device revision	6018	unsigned8	RW	PID_COMM_MODULE_HART_HARDWARE_REVISION_LEVEL	
4.2.4	Number of response preambles	8004	unsigned8	RW	PID_HART_RESPONSE_PREAMBLES	
4.2.5	Dynamic variable mapping					
4.2.5.1	PV selection	7200	unsigned8	RW	PID_PV_SELECTOR	Input Selector
4.2.5.2	SV selection	7300	unsigned8	RW	PID_HART_SV_SELECTOR	Input Selector
4.2.5.3	TV selection	7301	unsigned8	RW	PID_HART_TV_SELECTOR	Input Selector
4.2.5.4	QV selection	7302	unsigned8	RW	PID_HART_QV_SELECTOR	Input Selector
4.2.6	Units					
4.2.6.1	Process values					
4.2.6.1.1	Level	8556	unsigned8	RW	PID_FIELDBUS_LENGTH_UNIT	Length Unit
4.2.6.1.2	Volume	8281	unsigned8	RW	PID_FIELDBUS_VOLUME_UNIT	Volume Unit
4.2.6.1.3	Volume flow	7500	unsigned8	RW	PID_FIELDBUS_VOLUME_FLOW_UNIT	Volume Flow Unit
4.2.6.1.4	Temperature	7700	unsigned8	RW	PID_FIELDBUS_TEMPERATURE_UNIT	Temperature Unit
4.2.6.2	Totalizers					
4.2.6.2.1	Totalizer 1	8321	unsigned8	RW	PID_FIELDBUS_TOT1_VOLUME_UNIT	Volume Unit
4.2.6.2.2	Totalizer 2	8421	unsigned8	RW	PID_FIELDBUS_TOT2_VOLUME_UNIT	Volume Unit
4.2.6.2.3	Totalizer 3	8521	unsigned8	RW	PID_FIELDBUS_TOT3_VOLUME_UNIT	Volume Unit
4.2.6.2.4	Totalizer 4	13677	unsigned8	RW	PID_FIELDBUS_TOT4_VOLUME_UNIT	Volume Unit
4.2.7	Process value damping					

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
4.2.7.1	Damping value	6403	float32	RW	PID_FIELDBUS_DAMPING_FILTER_TIME	
4.2.7.2	Process values					
4.3	Modbus RTU					
4.3.1	Slave address (SW)	8297	unsigned8	RW	PID_MODBUS_ADDRESS	
4.3.3	Change Modbus settings					
4.3.4	Data rate	8298	unsigned8	RW	PID_MODBUS_BAUDRATE	
4.3.5	Parity and stopbits	8299	unsigned8	RW	PID_MODBUS_PARITY_FRAMING	
4.3.6	Floating point byte order	8296	unsigned8	RW	PID_MODBUS_FLOAT_BYTE_ORDER	Modbus Float Point Byte Order
4.3.7	Integer byte order	8295	unsigned8	RW	PID_MODBUS_INTEGER_BYTE_ORDER	Modbus Integer Byte Order
4.3.8	Register mapping					
4.3.8.1	Enable	10448	unsigned32	RW	PID_MODBUS_REGMAP_ENABLED	Modbus Register Mapping Enable
4.3.8.2	Source register 1	10450	unsigned16	RW	PID_MODBUS_REGMAP1_REGISTER	
4.3.8.3	Target register 1	10451	unsigned16	RW	PID_MODBUS_REGMAP1_TARGET	
4.3.8.4	Source register 2	10452	unsigned16	RW	PID_MODBUS_REGMAP2_REGISTER	
4.3.8.5	Target register 2	10453	unsigned16	RW	PID_MODBUS_REGMAP2_TARGET	
4.3.8.6	Source register 3	10454	unsigned16	RW	PID_MODBUS_REGMAP3_REGISTER	
4.3.8.7	Target register 3	10455	unsigned16	RW	PID_MODBUS_REGMAP3_TARGET	
4.3.8.8	Source register 4	10456	unsigned16	RW	PID_MODBUS_REGMAP4_REGISTER	
4.3.8.9	Target register 4	10457	unsigned16	RW	PID_MODBUS_REGMAP4_TARGET	
4.3.8.10	Source register 5	10458	unsigned16	RW	PID_MODBUS_REGMAP5_REGISTER	
4.3.8.11	Target register 5	10459	unsigned16	RW	PID_MODBUS_REGMAP5_TARGET	
4.3.8.12	Source register 6	10460	unsigned16	RW	PID_MODBUS_REGMAP6_REGISTER	
4.3.8.13	Target register 6	10461	unsigned16	RW	PID_MODBUS_REGMAP6_TARGET	
4.3.8.14	Source register 7	10462	unsigned16	RW	PID_MODBUS_REGMAP7_REGISTER	
4.3.8.15	Target register 7	10463	unsigned16	RW	PID_MODBUS_REGMAP7_TARGET	
4.3.8.16	Source register 8	10464	unsigned16	RW	PID_MODBUS_REGMAP8_REGISTER	
4.3.8.17	Target register 8	10465	unsigned16	RW	PID_MODBUS_REGMAP8_TARGET	
4.3.8.18	Source register 9	10466	unsigned16	RW	PID_MODBUS_REGMAP9_REGISTER	
4.3.8.19	Target register 9	10467	unsigned16	RW	PID_MODBUS_REGMAP9_TARGET	
4.3.8.20	Source register 10	10468	unsigned16	RW	PID_MODBUS_REGMAP10_REGISTER	
4.3.8.21	Target register 10	10469	unsigned16	RW	PID_MODBUS_REGMAP10_TARGET	
4.3.8.22	Source register 11	10470	unsigned16	RW	PID_MODBUS_REGMAP11_REGISTER	
4.3.8.23	Target register 11	10471	unsigned16	RW	PID_MODBUS_REGMAP11_TARGET	
4.3.8.24	Source register 12	10472	unsigned16	RW	PID_MODBUS_REGMAP12_REGISTER	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
4.3.8.25	Target register 12	10473	unsigned16	RW	PID_MODBUS_REGMAP12_TARGET	
4.3.8.26	Source register 13	10474	unsigned16	RW	PID_MODBUS_REGMAP13_REGISTER	
4.3.8.27	Target register 13	10475	unsigned16	RW	PID_MODBUS_REGMAP13_TARGET	
4.3.8.28	Source register 14	10476	unsigned16	RW	PID_MODBUS_REGMAP14_REGISTER	
4.3.8.29	Target register 14	10477	unsigned16	RW	PID_MODBUS_REGMAP14_TARGET	
4.3.8.30	Source register 15	10478	unsigned16	RW	PID_MODBUS_REGMAP15_REGISTER	
4.3.8.31	Target register 15	10479	unsigned16	RW	PID_MODBUS_REGMAP15_TARGET	
4.3.8.32	Source register 16	10480	unsigned16	RW	PID_MODBUS_REGMAP16_REGISTER	
4.3.8.33	Target register 16	10481	unsigned16	RW	PID_MODBUS_REGMAP16_TARGET	
4.3.8.34	Source register 17	10482	unsigned16	RW	PID_MODBUS_REGMAP17_REGISTER	
4.3.8.35	Target register 17	10483	unsigned16	RW	PID_MODBUS_REGMAP17_TARGET	
4.3.8.36	Source register 18	10484	unsigned16	RW	PID_MODBUS_REGMAP18_REGISTER	
4.3.8.37	Target register 18	10485	unsigned16	RW	PID_MODBUS_REGMAP18_TARGET	
4.3.8.38	Source register 19	10486	unsigned16	RW	PID_MODBUS_REGMAP19_REGISTER	
4.3.8.39	Target register 19	10487	unsigned16	RW	PID_MODBUS_REGMAP19_TARGET	
4.3.8.40	Source register 20	10488	unsigned16	RW	PID_MODBUS_REGMAP20_REGISTER	
4.3.8.41	Target register 20	10489	unsigned16	RW	PID_MODBUS_REGMAP20_TARGET	
4.3.9	Units					
4.3.9.1	Process values					
4.3.9.1.1	Level	8556	unsigned8	RW	PID_FIELDBUS_LENGTH_UNIT	Length Unit
4.3.9.1.2	Volume	8281	unsigned8	RW	PID_FIELDBUS_VOLUME_UNIT	Volume Unit
4.3.9.1.3	Volume flow	7500	unsigned8	RW	PID_FIELDBUS_VOLUME_FLOW_UNIT	Volume Flow Unit
4.3.9.1.4	Temperature	7700	unsigned8	RW	PID_FIELDBUS_TEMPERATURE_UNIT	Temperature Unit
4.3.9.2	Totalizers					
4.3.9.2.1	Totalizer 1	8321	unsigned8	RW	PID_FIELDBUS_TOT1_VOLUME_UNIT	Volume Unit
4.3.9.2.2	Totalizer 2	8421	unsigned8	RW	PID_FIELDBUS_TOT2_VOLUME_UNIT	Volume Unit
4.3.9.2.3	Totalizer 3	8521	unsigned8	RW	PID_FIELDBUS_TOT3_VOLUME_UNIT	Volume Unit
4.3.9.2.4	Totalizer 4	13677	unsigned8	RW	PID_FIELDBUS_TOT4_VOLUME_UNIT	Volume Unit
4.3.10	Process value damping					
4.3.10.1	Damping value	6403	float32	RW	PID_FIELDBUS_DAMPING_FILTER_TIME	
4.3.10.2	Process values					
4.4	PROFIBUS DP/PA					
4.4.1	Slave address	10880	unsigned8	RW	PID_PROFIBUS_SLAVE_ADDRESS	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
4.4.2	Change slave address					
4.4.3	GSD (General Station Description)	10983	unsigned8	RW	PID_PROFIBUS_PB_IDENT_NUMBER_SELECTOR	
4.4.4	Active GSD (General Station Description)	10966	unsigned8	RW	PID_PROFIBUS_ACTIVE_IDENT_NUMBER_SELECTION	
4.4.5	Units					
4.4.5.1	Process values					
4.4.5.1.1	Level	10409	unsigned16	RW	PID_FIELDBUS_LENGTH_UNIT_PA	Length Unit
4.4.5.1.2	Volume	8282	unsigned16	RW	PID_FIELDBUS_VOLUME_UNIT_PA	Volume Unit
4.4.5.1.3	Volume flow	11189	unsigned16	RW	PID_FIELDBUS_VOLUME_FLOW_UNIT_PA	Volume Flow Unit
4.4.5.1.4	Temperature	11195	unsigned16	RW	PID_FIELDBUS_TEMPERATURE_UNIT_PA	Temperature Unit
4.4.5.2	Totalizers					
4.4.5.2.1	Totalizer 1	10940	unsigned16	RW	PID_FIELDBUS_TOT1_VOLUME_UNIT_PA	Volume Unit
4.4.5.2.2	Totalizer 2	10944	unsigned16	RW	PID_FIELDBUS_TOT2_VOLUME_UNIT_PA	Volume Unit
4.4.5.2.3	Totalizer 3	10948	unsigned16	RW	PID_FIELDBUS_TOT3_VOLUME_UNIT_PA	Volume Unit
4.4.5.2.4	Totalizer 4	13680	unsigned16	RW	PID_FIELDBUS_TOT4_VOLUME_UNIT_PA	Volume Unit
4.4.5	Process value damping					
4.4.6.1	Level (point 1)	11150	float32	RW	PID_PROFIBUS_AI_SLOT1_DAMPING	
4.4.6.2	Space (point 1)	11168	float32	RW	PID_PROFIBUS_AI_SLOT3_DAMPING	
4.4.6.3	Distance (point 1)	11162	float32	RW	PID_PROFIBUS_AI_SLOT2_DAMPING	
4.4.6.4	Head (point 1)	11356	float32	RW	PID_PROFIBUS_AI_SLOT5_DAMPING	
4.4.6.5	Volume (point 1)	11354	float32	RW	PID_PROFIBUS_AI_SLOT4_DAMPING	
4.4.6.6	Volume flow (point 1)	11156	float32	RW	PID_PROFIBUS_AI_SLOT6_DAMPING	
4.4.6.7	Sensor temperature (point 1)	11352	float32	RW	PID_PROFIBUS_AI_SLOT7_DAMPING	
4.4.6.8	Level (point 2)	11174	float32	RW	PID_PROFIBUS_AI_SLOT12_DAMPING	
4.4.6.9	Space (point 2)	11362	float32	RW	PID_PROFIBUS_AI_SLOT14_DAMPING	
4.4.6.10	Distance (point 2)	11360	float32	RW	PID_PROFIBUS_AI_SLOT13_DAMPING	
4.4.6.11	Head (point 2)	11368	float32	RW	PID_PROFIBUS_AI_SLOT16_DAMPING	
4.4.6.12	Volume (point 2)	11366	float32	RW	PID_PROFIBUS_AI_SLOT15_DAMPING	
4.4.6.13	Volume flow (point 2)	10435	float32	RW	PID_PROFIBUS_AI_SLOT17_DAMPING	
4.4.6.14	Sensor temperature (point 2)	11560	float32	RW	PID_PROFIBUS_AI_SLOT18_DAMPING	
4.4.6.15	Level difference	11562	float32	RW	PID_PROFIBUS_AI_SLOT19_DAMPING	
4.4.6.16	Level average	11564	float32	RW	PID_PROFIBUS_AI_SLOT20_DAMPING	
4.5	PROFINET					

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
4.5.1	MAC address	8086	string20	R	PID_ETH_MAC_ADDRESS_FOR MATTED	
4.5.2	IP address	7692	string16	R	PID_ETH_IP_ADDRESS_FORMA TTED	
4.5.3	IP subnet mask	8022	string16	R	PID_ETH_SUBNET_MASK_FOR MATTED	
4.5.4	Default gateway	8030	string16	R	PID_ETH_DEFAULT_GATEWAY_ FORMATTED	
4.5.5	Device name	13400	string32	RW	PID_ETH_STATION_NAME_1	
4.5.5	Device name	13416	string32	RW	PID_ETH_STATION_NAME_2	
4.5.5	Device name	13432	string32	RW	PID_ETH_STATION_NAME_3	
4.5.5	Device name	13448	string32	RW	PID_ETH_STATION_NAME_4	
4.5.5	Device name	13464	string32	RW	PID_ETH_STATION_NAME_5	
4.5.5	Device name	13480	string32	RW	PID_ETH_STATION_NAME_6	
4.5.5	Device name	13496	string32	RW	PID_ETH_STATION_NAME_7	
4.5.5	Device name	13512	string16	RW	PID_ETH_STATION_NAME_8	
4.5.6	Units					
4.5.6.1	Process values					
4.5.6.1.1	Level	10409	unsigned16	RW	PID_FIELDBUS_LENGTH_UNIT_ PA	Length Unit
4.5.6.1.2	Volume	8282	unsigned16	RW	PID_FIELDBUS_VOLUME_UNIT_ PA	Volume Unit
4.5.6.1.3	Volume flow	11189	unsigned16	RW	PID_FIELDBUS_VOLUME_FLOW_ UNIT_PA	Volume Flow Unit
4.5.6.1.4	Temperature	11195	unsigned16	RW	PID_FIELDBUS_TEMPERATURE_ UNIT_PA	Temperature Unit
4.5.6.2	Totalizers					
4.5.6.2.1	Totalizer 1	10940	unsigned16	RW	PID_FIELDBUS_TOT1_VOLUME_ UNIT_PA	Volume Unit
4.5.6.2.2	Totalizer 2	10944	unsigned16	RW	PID_FIELDBUS_TOT2_VOLUME_ UNIT_PA	Volume Unit
4.5.6.2.3	Totalizer 3	10948	unsigned16	RW	PID_FIELDBUS_TOT3_VOLUME_ UNIT_PA	Volume Unit
4.5.6.2.4	Totalizer 4	13680	unsigned16	RW	PID_FIELDBUS_TOT4_VOLUME_ UNIT_PA	Volume Unit
4.5.7	Process value damping					
4.5.7.1	Level (point 1)	11150	float32	RW	PID_PROFIBUS_AI_SLOT1_DAM PING	
4.5.7.2	Space (point 1)	11168	float32	RW	PID_PROFIBUS_AI_SLOT3_DAM PING	
4.5.7.3	Distance (point 1)	11162	float32	RW	PID_PROFIBUS_AI_SLOT2_DAM PING	
4.5.7.4	Head (point 1)	11356	float32	RW	PID_PROFIBUS_AI_SLOT5_DAM PING	
4.5.7.5	Volume (point 1)	11354	float32	RW	PID_PROFIBUS_AI_SLOT4_DAM PING	
4.5.7.6	Volume flow (point 1)	11156	float32	RW	PID_PROFIBUS_AI_SLOT6_DAM PING	
4.5.7.7	Sensor temperature (point 1)	11352	float32	RW	PID_PROFIBUS_AI_SLOT7_DAM PING	
4.5.7.8	Level (point 2)	11174	float32	RW	PID_PROFIBUS_AI_SLOT12_DA MPING	
4.5.7.9	Space (point 2)	11362	float32	RW	PID_PROFIBUS_AI_SLOT14_DA MPING	
4.5.7.10	Distance (point 2)	11360	float32	RW	PID_PROFIBUS_AI_SLOT13_DA MPING	
4.5.7.11	Head (point 2)	11368	float32	RW	PID_PROFIBUS_AI_SLOT16_DA MPING	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
4.5.7.12	Volume (point 2)	11366	float32	RW	PID_PROFIBUS_AI_SLOT15_DAMPING	
4.5.7.13	Volume flow (point 2)	10435	float32	RW	PID_PROFIBUS_AI_SLOT17_DAMPING	
4.5.7.14	Sensor temperature (point 2)	11560	float32	RW	PID_PROFIBUS_AI_SLOT18_DAMPING	
4.5.7.15	Level difference	11562	float32	RW	PID_PROFIBUS_AI_SLOT19_DAMPING	
4.5.7.16	Level average	11564	float32	RW	PID_PROFIBUS_AI_SLOT20_DAMPING	
4.6	EtherNet/IP					
4.6.1	MAC address	8086	string20	R	PID_ETH_MAC_ADDRESS_FORMATTED	
4.6.2	IP address	7692	string16	R	PID_ETH_IP_ADDRESS_FORMATTED	
4.6.3	IP subnet mask	8022	string16	R	PID_ETH_SUBNET_MASK_FORMATTED	
4.6.4	Default gateway	8030	string16	R	PID_ETH_DEFAULT_GATEWAY_FORMATTED	
4.6.6	Units					
4.6.6.1	Process values					
4.6.6.1.1	Level	10409	unsigned16	RW	PID_FIELDBUS_LENGTH_UNIT_PA	Length Unit
4.6.6.1.2	Volume	8282	unsigned16	RW	PID_FIELDBUS_VOLUME_UNIT_PA	Volume Unit
4.6.6.1.3	Volume flow	11189	unsigned16	RW	PID_FIELDBUS_VOLUME_FLOW_UNIT_PA	Volume Flow Unit
4.6.6.1.4	Temperature	11195	unsigned16	RW	PID_FIELDBUS_TEMPERATURE_UNIT_PA	Temperature Unit
4.6.6.2	Totalizers					
4.6.6.2.1	Totalizer 1	10940	unsigned16	RW	PID_FIELDBUS_TOT1_VOLUME_UNIT_PA	Volume Unit
4.6.6.2.2	Totalizer 2	10944	unsigned16	RW	PID_FIELDBUS_TOT2_VOLUME_UNIT_PA	Volume Unit
4.6.6.2.3	Totalizer 3	10948	unsigned16	RW	PID_FIELDBUS_TOT3_VOLUME_UNIT_PA	Volume Unit
4.6.6.2.4	Totalizer 4	13680	unsigned16	RW	PID_FIELDBUS_TOT4_VOLUME_UNIT_PA	Volume Unit
4.6.7	Process value damping					
4.6.7.1	Level (point 1)	11150	float32	RW	PID_PROFIBUS_AI_SLOT1_DAMPING	
4.6.7.2	Space (point 1)	11168	float32	RW	PID_PROFIBUS_AI_SLOT3_DAMPING	
4.6.7.3	Distance (point 1)	11162	float32	RW	PID_PROFIBUS_AI_SLOT2_DAMPING	
4.6.7.4	Head (point 1)	11356	float32	RW	PID_PROFIBUS_AI_SLOT5_DAMPING	
4.6.7.5	Volume (point 1)	11354	float32	RW	PID_PROFIBUS_AI_SLOT4_DAMPING	
4.6.7.6	Volume flow (point 1)	11156	float32	RW	PID_PROFIBUS_AI_SLOT6_DAMPING	
4.6.7.7	Sensor temperature (point 1)	11352	float32	RW	PID_PROFIBUS_AI_SLOT7_DAMPING	
4.6.7.8	Level (point 2)	11174	float32	RW	PID_PROFIBUS_AI_SLOT12_DAMPING	
4.6.7.9	Space (point 2)	11362	float32	RW	PID_PROFIBUS_AI_SLOT14_DAMPING	
4.6.7.10	Distance (point 2)	11360	float32	RW	PID_PROFIBUS_AI_SLOT13_DAMPING	
4.6.7.11	Head (point 2)	11368	float32	RW	PID_PROFIBUS_AI_SLOT16_DAMPING	

HMI menu ID	Parameter	Modbus	Data Type	R/W	Internal parameter ID	Enumeration Table/Notes
4.6.7.12	Volume (point 2)	11366	float32	RW	PID_PROFIBUS_AI_SLOT15_DAMPING	
4.6.7.13	Volume flow (point 2)	10435	float32	RW	PID_PROFIBUS_AI_SLOT17_DAMPING	
4.6.7.14	Sensor temperature (point 2)	11560	float32	RW	PID_PROFIBUS_AI_SLOT18_DAMPING	
4.6.7.15	Level difference	11562	float32	RW	PID_PROFIBUS_AI_SLOT19_DAMPING	
4.6.7.16	Level average	11564	float32	RW	PID_PROFIBUS_AI_SLOT20_DAMPING	
5	Security					
5.1	Change user PIN					
5.2	Change expert PIN					
5.3	Recovery ID	7326	string16	RW	PID_TRN_SERIAL_NUMBER	
5.4	PIN recovery					
5.5	Enable user PIN					
5.6	Disable user PIN					
5.7	Auto logout	9095	unsigned8	RW	PID_LUI_AUTO_LOG_OFF	
5.8	Logout					
6	Language	9002	unsigned8	RW	PID_LUI_LANGUAGE	Current LUI Language
	Alarm Status 1	6200	unsigned32	R	PID_ALARM_STATUS_1	Alarm Status 1
	Alarm Status 2	6202	unsigned32	R	PID_ALARM_STATUS_2	Alarm Status 2
	Alarm Status 3	6204	unsigned32	R	PID_ALARM_STATUS_3	Alarm Status 3
	Alarm Status 4	6206	unsigned32	R	PID_ALARM_STATUS_4	Alarm Status 4
	Alarm Status 5	6208	unsigned32	R	PID_ALARM_STATUS_5	Alarm Status 5
	Alarm Status 6	6210	unsigned32	R	PID_ALARM_STATUS_6	Alarm Status 6
	Alarm Status 7	6212	unsigned32	R	PID_ALARM_STATUS_7	Alarm Status 7
	Alarm Status 8	6214	unsigned32	R	PID_ALARM_STATUS_8	Alarm Status 8
	Alarm Status 9	7000	unsigned32	R	PID_ALARM_STATUS_9	Alarm Status 9
	Alarm Status 10	7002	unsigned32	R	PID_ALARM_STATUS_10	Alarm Status 10
	Alarm Status 11	7004	unsigned32	R	PID_ALARM_STATUS_11	Alarm Status 11
	Alarm Status 12	7006	unsigned32	R	PID_ALARM_STATUS_12	Alarm Status 12
	Alarm Status 13	7050	unsigned32	R	PID_ALARM_STATUS_13	Alarm Status 13
	Alarm Status 14	7052	unsigned32	R	PID_ALARM_STATUS_14	Alarm Status 14

12.2 Level Source Table

Table of enumeration values

Level Source	
Disabled	0
Generic (4...20 mA)	1
SITRANS LR110	2
SITRANS LR120	3
SITRANS Probe LU240	4

12.3 Radar Region Table

Table of enumeration values

Radar Region	
Mode 1	0
Mode 2	1
Mode 3	2
Mode 4	3

12.4 Sensor Mode Table

Table of enumeration values

Sensor Mode	
Digital with failover	0
Digital	1
Analog	2

12.5 Material Type Table

Table of enumeration values

Material Type	
Liquid	0
Solid	1

12.6 Sensor Override Table

Table of enumeration values

Sensor Override	
Disabled	0
Digital input 1	1
Digital input 2	2

12.7 Disable Enable Table

Table of enumeration values

Disable Enable	
Disabled	0
Enabled	1

12.8 Yes No Table

Table of enumeration values

Yes No	
Yes	1
No	0

12.9 Unit Tables

Table of enumeration values

Temperature Unit
See Table 11.1
Volume Flow Unit
See Table 0
Volume Unit
See Table 0
Length Unit
See Table 11.4

12.10 Decimal Point Table

Table of enumeration values

Decimal Point	
Auto	255
None	0
1	1
2	2
3	3
4	4
5	5
6	6

12.11 Totalizer Fail-safe Mode Table

Table of enumeration values

Totalizer Fail-safe Mode	
Pause counting	1
Count latest good value	2

12.12 Totalizer Input Value Table

Table of enumeration values

Totalizer Input Value	
Volume flow (point 1)	1
Volume flow (point 2)	60
Pumped volume (point 1)	66
Pumped volume (point 2)	67

12.13 Loop Current Mode Table

Table of enumeration values

Loop Current Mode	
Disabled	0
4 ... 20 mA	1
Multidrop mode	2

12.14 Current Mode Table

Table of enumeration values

Current Mode	
4 ... 20 mA NAMUR	0
4 ... 20 mA US	1
0 ... 20 mA	2

12.15 Hart Active Table

Table of enumeration values

HART Active	
Channel is not actively powered, only passive operation possible	0
Channel is actively powered, active and passive operation is both possible	1

12.16 Input Selector Table

Table of enumeration values

Input Selector	
Level (point 1)	50
Space (point 1)	51
Distance (point 1)	52
Head (point 1)	54
Volume (point 1)	53
Volume flow (point 1)	1
Sensor temperature (point 1)	3
Level (point 2)	55
Space (point 2)	56
Distance (point 2)	57
Head (point 2)	59
Volume (point 2)	58
Volume flow (point 2)	60
Sensor temperature (point 2)	61
Level difference	63
Level average	64

12.17 Fail-safe Activation Mode Table

Table of enumeration values

Fail-safe Activation Mode	
A "bad" status delivered together with selected input process value activates the fail mode	0
Both "bad" status and an active maintenance alarm activate the fail mode	1

12.18 Fail-safe Mode Table

Table of enumeration values

Fail-safe Mode	
Lower fault current	0
Upper fault current	1
Last reliable value	2
Current value	3
Fail-safe value	4

12.19 Discrete Input Function Table

Table of enumeration values

Discrete Input Function	
None	0
Reset totalizer 1	6
Reset totalizer 2	7
Reset totalizer 3	8
Reset totalizer 4	22
Reset all totalizers	9
Pause/resume totalizer 1	3858
Pause/resume totalizer 2	4115
Pause/resume totalizer 3	4372
Pause/resume totalizer 4	5912
Force outputs	3339
Freeze process values	3340
Acknowledge diagnostics	21

12.20 Signal Inversion Table

Table of enumeration values

Signal Inversion	
Active high level	0
Active low level	1

12.21 Channel Sensor Mode Enable Table

Table of enumeration values

Channel Sensor Mode Enable	
Relay function according PID_CHx_S_INPUT_SELECTOR	0
Relay controlled by SEN	1

12.22 Sensor Mode Select Table

Table of enumeration values

Sensor Mode Select	
Status signals	1
Alarms and diagnostics	2
External totalizer	3
External sampler	4
Elapsed time	5
Application setup	6

12.23 Global Alarm Status Table

Table of enumeration values

Global Alarm Status	Set Bit
Process value alarm (NAMUR: Out of specification)	0
Process value warning (NAMUR: Out of specification)	1
Maintenance alarm (NAMUR: Failure)	2
Maintenance demanded (NAMUR: Maintenance Required)	3
Maintenance required (NAMUR: Maintenance Required)	4
Function check (NAMUR: Function check)	5

12.24 Global Namur Status Table

Table of enumeration values

Global Namur Status	
Out of specification	0
Failure	1
Maintenance required	2
Function check	3

12.25 Vessel Shape Table

Table of enumeration values

Vessel Shape	
None	0
Linear vessel	240
Conical bottom vessel	241
Parabolic bottom vessel	242
Half sphere bottom vessel	243
Flat sloped bottom vessel	244
Cylinder vessel	20
Parabolic ends vessel	245
Sphere vessel	21
Custom	247

12.26 Pump Control Table

Table of enumeration values

Pump Control	
Alternate duty assist	1
Alternate duty backup	2
Service ratio duty assist	3
Service ratio duty backup	4
Fixed duty assist	5
Fixed duty backup	6
Single pump	7

12.27 Pump Level Source Table

Table of enumeration values

Pump Level Source	
Level	0
Difference	1
Average	2

12.28 Pumped Volume Adjust Table

Table of enumeration values

Pumped Volume Adjust	
None	0
Based on rate estimation	1
Based on pump cycle	2

12.29 Digital Input Table

Table of enumeration values

Digital Input	
Digital input 1	1
Digital input 2	2

12.30 Relay Select Table

Table of enumeration values

Relay Select	
Relay output 1	1
Relay output 2	2
Relay output 3	3
Relay output 4	4
Relay output 5	5
Relay output 6	6

12.31 OCM Primary Element Table

Table of enumeration values

OCM Primary Element	
None	0
Exponential devices	1
Rectangular flume BS 3680/ISO 4373	2
Round nose horizontal crest weir BS 3680/ISO 4373	3
Trapezoidal flume BS 3680/ISO 4373	4
U-flume BS 3680/ISO 4373	5
Finite crest weir BS 3680/ISO 4373	6
Thin plate rectangular weir BS 3680/ISO 4373	7
Thin plate V-notch weir BS 3680/ISO 4373	8
Rectangular weir contracted	9
Round pipe	10
Palmer-Bowlus flume	11
H-flume	12
Custom	13

12.32 OCM Method Table

Table of enumeration values

OCM Method	
Absolute	0
Ratiometric	1

12.33 Control source Table

Table of enumeration values

Control source	
Disabled	0
Level (Point 1)	1
Level (Point 2)	2
Difference	3
Average	4

12.34 Graph Scale Mode Table

Table of enumeration values

Graph Scale Mode	
Automatic scaling	0
Fixed scaling using PID_TLV1_GRAPH_LOWER_LIMIT and PID_TLV1_GRAPH_UPPER_LIMIT	1

12.35 Graph Log Time Table

Table of enumeration values

Graph Log Time	
1 min	0
5 min	1
15 min	2
30 min	3
1 h	4
2 h	5
3 h	6

12.36 Simulation Type Table

Table of enumeration values

Simulation Type	
Fixed	0
Ramp	1

12.37 Raw Level Override Flag Table

Table of enumeration values

Raw Level Override Flag	
No override	0
Override level and status	1
Override level and status simulated	2

12.38 Level View Type 1 Table

Table of enumeration values

Top Level View Type 1	
1 value	1
1 value and horizontal bargraph	6
1 value, icons and vertical bargraph	12
1 value and trend chart	7
3 values and horizontal bargraph	3
3 values, icons and vertical bargraph	11
6 values	9

12.39 Level View Type 2,3,4,5,6 Table

Table of enumeration values

Top Level View Type 1	
1 value	1
1 value and horizontal bargraph	6
1 value, icons and vertical bargraph	12
1 value and trend chart	7
3 values and horizontal bargraph	3
3 values, icons and vertical bargraph	11
6 values	9
Totalizer	4
Diagnostics	2

12.40 Alarms Acknowledge Mode Table

Table of enumeration values

Alarms Acknowledge Mode	
Manual alarm acknowledge	0
Auto acknowledge	1

12.41 Display Alarm Icon Type Table

Table of enumeration values

Display Alarm Icon Type	
-------------------------	--

Standard (Siemens)	0
NAMUR	1

12.42 LR1xx TVT Selection Table

Table of enumeration values

TVT Selection	
Pull up filtered curve	2
Detection curve	4

12.43 Catalog Policy Table

Table of enumeration values

Catalog Policy	
Overwrite oldest	0
Fill-and-stop	1

12.44 Data Logging Mode Table

Table of enumeration values

Data Logging Mode	
Log instantaneous	0
Log average value calculated over past log interval	1

12.45 SD Card Decimal Point Character Table

Table of enumeration values

SD Card Decimal Point Character	
Comma (',')	0
Dot ('.')	1

12.46 Totalizer Mode Table

Table of enumeration values

Totalizer Mode	
Automatic (Auto), the totalizer algorithm is executed	8
Manual (Man), the TOTAL value can be written by the user, the totalizer algorithm is no longer executed	16
Out of Service (O/S), the totalizer algorithm is no longer executed	128

12.47 USB Mode Table

Table of enumeration values

USB Mode	
Communication device (CDC)	0

Communication device (CDC) + Mass storage device (MSD) (only available for factory users)	1
---	---

12.48 Modbus Float Point Byte Order Table

Table of enumeration values

Modbus Float Point Byte Order	
1-0-3-2	0
0-1-2-3	1
2-3-0-1	2
3-2-1-0	3

12.49 Modbus Integer Byte Order Table

Table of enumeration values

Modbus Integer Byte Order	
MSB - LSB (big endian)	0
LSB - MSB (little endian)	1

12.50 Modbus Register Mapping Enable Table

Table of enumeration values

Modbus Register Mapping Enable	Set Bit
PID_MODBUS_REGMAP1_REGISTER/TARGET	0
PID_MODBUS_REGMAP2_REGISTER/TARGET	1
PID_MODBUS_REGMAP3_REGISTER/TARGET	2
PID_MODBUS_REGMAP4_REGISTER/TARGET	3
PID_MODBUS_REGMAP5_REGISTER/TARGET	4
PID_MODBUS_REGMAP6_REGISTER/TARGET	5
PID_MODBUS_REGMAP7_REGISTER/TARGET	6
PID_MODBUS_REGMAP8_REGISTER/TARGET	7
PID_MODBUS_REGMAP9_REGISTER/TARGET	8
PID_MODBUS_REGMAP10_REGISTER/TARGET	9
PID_MODBUS_REGMAP11_REGISTER/TARGET	10
PID_MODBUS_REGMAP12_REGISTER/TARGET	11
PID_MODBUS_REGMAP13_REGISTER/TARGET	12
PID_MODBUS_REGMAP14_REGISTER/TARGET	13
PID_MODBUS_REGMAP15_REGISTER/TARGET	14
PID_MODBUS_REGMAP16_REGISTER/TARGET	15
PID_MODBUS_REGMAP17_REGISTER/TARGET	16
PID_MODBUS_REGMAP18_REGISTER/TARGET	17
PID_MODBUS_REGMAP19_REGISTER/TARGET	18
PID_MODBUS_REGMAP20_REGISTER/TARGET	19

12.51 Profibus ID Selector Table

Table of enumeration values

Profibus ID Selector	
PA profile 4 specific ident number	0
Device specific ident number defined by PID_PROFIBUS_IDENT_NUMBER_[DP/PA][CFG2/3/4]	1
Adaptation mode	127
Product Specific	128 ...

12.52 Current LUI Language Table

Table of enumeration values

Current LUI Language	
English	0
German	1
Italian	2
French	3
Spanish	4
Portuguese	5
Russian	6
Chinese	7
Polish	8
Danish	9
Swedish	10
Finnish	11
Dutch	12
Japanese	13

12.53 Get Time Table

Table of enumeration values

Get Time	
Do nothing	0
Get time	1

12.54 Set Time Table

Table of enumeration values

Set Time	
Do nothing	0
Set time	1

12.55 Alarm Status 1 Table

Table of enumeration values

Alarm Status 1	Bit
0: PT1 - Sensor not found.	0
1: PT1 - Sensor not supported.	1
2: PT1 - Invalid device configuration.	2
3: PT1 - Communication error.	3
4: PT1 - Sensor security lock error.	4
5: PT1 - Invalid pump configuration.	5
6: PT1 - Low level cut-off active.	6
7: PT1 - Sensor override active.	7
8: PT1 - Filling too quickly.	8
9: PT1 - Emptying too quickly.	9
10: PT1 - Sensor has changed.	10
11: PT1 - Sensor input not calibrated.	11
12: PT1 - Loss of echo.	12
13: PT1 - Internal error in sensor.	13
14: PT1 - Sensor failure.	14
15: PT1 - Invalid primary measuring device (PMD) configuration.	15
16: PT1 - Sensor type mismatch.	16
17: PT1 - Invalid application configuration.	17
18: PT1 - Sensor input mode changed.	18
19: PT1 - Sensor failure.	19
20: PT1 - One or more process values with bad status.	20
21: SEN alarm 21	21
22: PT2 - Sensor not found.	22
23: PT2 - Sensor not supported.	23
24: PT2 - Invalid device configuration.	24
25: PT2 - Communication error.	25
26: PT2 - Sensor security lock error.	26
27: PT2 - Invalid pump configuration.	27
28: PT2 - Low level cut-off active.	28
29: PT2 - Sensor override active.	29
30: PT2 - Filling too quickly.	30
31: PT2 - Emptying too quickly.	31

12.56 Alarm Status 2 Table

Table of enumeration values

Alarm Status 2	Bit
32: PT2 - Sensor has changed.	0
33: PT2 - Sensor input not calibrated.	1
34: PT2 - Loss of echo.	2
35: PT2 - Internal error in sensor.	3
36: PT2 - Sensor failure.	4
37: PT2 - Invalid primary measuring device (PMD) configuration.	5
38: PT2 - Sensor type mismatch.	6
39: PT2 - Invalid application configuration.	7
40: PT2 - Sensor input mode changed.	8
41: PT2 - Sensor failure.	9
42: PT2 - One or more process values with bad status.	10
43: SEN alarm 43	11
44: SEN alarm 44	12
45: SEN alarm 45	13
46: SEN alarm 46	14
47: SEN alarm 47	15
48: SEN alarm 48	16
49: SEN alarm 49	17
50: SEN alarm 50	18
51: SEN alarm 51	19
52: SEN alarm 52	20
53: SEN alarm 53	21
54: SEN alarm 54	22
55: SEN alarm 55	23
56: Internal error.	24
57: Internal error.	25
58: Internal error.	26
59: Invalid relay configuration.	27
60: Internal error.	28
61: Internal error.	29
62: Internal error.	30
63: Internal error.	31

12.57 Alarm Status 4 Table

Table of enumeration values

Alarm Status 4	Bit
96: MASS_FLOW_UPPER_ALARM	0
97: MASS_FLOW_UPPER_WARNING	1

98: MASS_FLOW_LOWER_WARNING	2
99: MASS_FLOW_LOWER_ALARM	3
100: Volume flow (point 1) above alarm limit.	4
101: Volume flow (point 1) above warning limit.	5
102: Volume flow (point 1) below warning limit.	6
103: Volume flow (point 1) below alarm limit.	7
104: DENSITY_UPPER_ALARM	8
105: DENSITY_UPPER_WARNING	9
106: DENSITY_LOWER_WARNING	10
107: DENSITY_LOWER_ALARM	11
108: Volume flow (point 1) above alarm limit.	12
109: Volume flow (point 1) above warning limit.	13
110: Volume flow (point 1) below warning limit.	14
111: Volume flow (point 1) below alarm limit.	15
112: FRACTIONAL_FLOW_PCT_A_UPPER_ALARM	16
113: FRACTIONAL_FLOW_PCT_A_UPPER_WARNING	17
114: FRACTIONAL_FLOW_PCT_A_LOWER_WARNING	18
115: FRACTIONAL_FLOW_PCT_A_LOWER_ALARM	19
116: FRACTIONAL_FLOW_PCT_B_UPPER_ALARM	20
117: FRACTIONAL_FLOW_PCT_B_UPPER_WARNING	21
118: FRACTIONAL_FLOW_PCT_B_LOWER_WARNING	22
119: FRACTIONAL_FLOW_PCT_B_LOWER_ALARM	23
120: FRACTIONAL_FLOW_A_UPPER_ALARM	24
121: FRACTIONAL_FLOW_A_UPPER_WARNING	25
122: FRACTIONAL_FLOW_A_LOWER_WARNING	26
124: FRACTIONAL_FLOW_B_UPPER_ALARM	27
123: FRACTIONAL_FLOW_A_LOWER_ALARM	28
125: FRACTIONAL_FLOW_B_UPPER_WARNING	29
126: FRACTIONAL_FLOW_B_LOWER_WARNING	30
127: FRACTIONAL_FLOW_B_LOWER_ALARM	31

12.58 Alarm Status 5 Table

Table of enumeration values

Alarm Status 5	Bit
128: REFERENCE_DENSITY_UPPER_ALARM	0
129: REFERENCE_DENSITY_UPPER_WARNING	1
130: REFERENCE_DENSITY_LOWER_WARNING	2
131: REFERENCE_DENSITY_LOWER_ALARM	3
132: CORRECTED_VOLUME_FLOW_UPPER_ALARM	4
133: CORRECTED_VOLUME_FLOW_UPPER_WARNING	5
134: CORRECTED_VOLUME_FLOW_LOWER_WARNING	6
135: CORRECTED_VOLUME_FLOW_LOWER_ALARM	7
136: Totalizer 1 above alarm limit.	8

137: Totalizer 1 above warning limit.	9
138: Totalizer 1 below warning limit.	10
139: Totalizer 1 below alarm limit.	11
140: Totalizer 2 above alarm limit.	12
141: Totalizer 2 above warning limit.	13
142: Totalizer 2 below warning limit.	14
143: Totalizer 2 below alarm limit.	15
144: Totalizer 3 above alarm limit.	16
145: Totalizer 3 above warning limit.	17
146: Totalizer 3 below warning limit.	18
147: Totalizer 3 below alarm limit.	19
148: Transmitter electronics temperature too high.	20
149: Transmitter electronics temperature too low.	21
150: Internal error.	22
151: Parameter backup disabled.	23
152: Parameter backup disabled.	24
153: Current output (HART) - Loop current in lower saturation.	25
154: Current output (HART) - Loop current in upper saturation.	26
155: Current output (HART) – Loop current error.	27
156: SIL_VALIDATION	28
157: SAFETY_ERROR	29
158: Cable break.	30
159: Internal error in transmitter.	31

12.59 Alarm Status 6 Table

Table of enumeration values

Alarm Status 6	Bit
160: MASS_FLOW_SIMULATED	0
161: VOLUME_FLOW_SIMULATED	1
162: DENSITY_SIMULATED	2
163: FLOW_MEDIA_TEMPERATURE_SIMULATED	3
164: FRACTIONAL_FLOW_SIMULATED	4
165: Totalizer 4 simulated.	5
166: CORRECTED_VOLUME_FLOW_SIMULATED	6
167: Totalizer 1 simulated.	7
168: Totalizer 2 simulated.	8
169: Totalizer 3 simulated.	9
170: Loop current simulated.	10
171: Reserved	11
172: Transmitter firmware incompatible.	12

173: Sensor firmware incompatible.	13
174: Firmware local operation incompatible.	14
175: ION_FW_VERSION_MISMATCH	15
176: SEN_TYPE_MISMATCH	16
177: Device startup.	17
178: Transmitter firmware incompatible.	18
179: Status signals simulated.	19
180: Internal error.	20
181: Memory card error.	21
182: Communication card firmware incompatible.	22
183: CH2_AI_UNDERFLOW	23
184: CH2_AI_OVERFLOW	24
185: CH2_AI_FAIL_CURRENT	25
186: CH3_AI_UNDERFLOW	26
187: CH3_AI_OVERFLOW	27
188: CH3_AI_FAIL_CURRENT	28
189: CH4_AI_UNDERFLOW	29
190: CH4_AI_OVERFLOW	30
191: CH4_AI_FAIL_CURRENT	31

12.60 Alarm Status 7 Table

Table of enumeration values

Alarm Status 7	Bit
192: BATCH_TIMEOUT	0
193: BATCH_OVERRUN	1
194: BATCH_INVALID_INPUT	2
195: Current output 1 – Loop current in lower saturation.	3
196: Current output 1 – Loop current in upper saturation.	4
197: CH2_CURRENT_CABLE_BREAK	5
198: CH2_FREQUENCY_UNDERFLOW	6
199: CH2_FREQUENCY_OVERFLOW	7
200: CH2_PULSE_OVERFLOW	8
201: Current output 2 – Loop current in lower saturation.	9
202: Current output 2 – Loop current in upper saturation.	10
203: CH3_CURRENT_CABLE_BREAK	11
204: CH3_FREQUENCY_UNDERFLOW	12
205: CH3_FREQUENCY_OVERFLOW	13
206: CH3_PULSE_OVERFLOW	14
207: CH4_CURRENT_UNDERFLOW	15
208: CH4_CURRENT_OVERFLOW	16
209: CH4_CURRENT_CABLE_BREAK	17
210: CH4_FREQUENCY_UNDERFLOW	18
211: CH4_FREQUENCY_OVERFLOW	19
212: CH4_PULSE_OVERFLOW	20
213: BATCH_INVALID_CONFIGURATION	21
214: Current output 1 simulated.	22
215: Current output 2 simulated.	23
216: CH4_SIMULATED	24
217: Process values frozen.	25
218: Output channels forced.	26
219: CH2_CURRENT_DEVIATION	27
220: CH3_CURRENT_DEVIATION	28
221: CH4_CURRENT_DEVIATION	29
222: Invalid Modbus register mapping.	30
223: Invalid Modbus coil configuration.	31

12.61 Alarm Status 9 Table

Table of enumeration values

Alarm Status 9	Bit
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256: BASE_DENSITY_UPPER_ALARM	0
257: BASE_DENSITY_UPPER_WARNING	1
258: BASE_DENSITY_LOWER_WARNING	2
259: BASE_DENSITY_LOWER_ALARM	3
260: API_GRAVITY_UPPER_ALARM	4
261: API_GRAVITY_UPPER_WARNING	5
262: API_GRAVITY_LOWER_WARNING	6
263: API_GRAVITY_LOWER_ALARM	7
264: BASE_API_GRAVITY_UPPER_ALARM	8
265: BASE_API_GRAVITY_UPPER_WARNING	9
266: BASE_API_GRAVITY_LOWER_WARNING	10
267: BASE_API_GRAVITY_LOWER_ALARM	11
268: SPECIFIC_GRAVITY_UPPER_ALARM	12
269: SPECIFIC_GRAVITY_UPPER_WARNING	13
270: SPECIFIC_GRAVITY_LOWER_WARNING	14
271: SPECIFIC_GRAVITY_LOWER_ALARM	15
272: BASE_SPECIFIC_GRAVITY_UPPER_ALARM	16
273: BASE_SPECIFIC_GRAVITY_UPPER_WARNING	17
274: BASE_SPECIFIC_GRAVITY_LOWER_WARNING	18
275: BASE_SPECIFIC_GRAVITY_LOWER_ALARM	19
276: LIQUIDENT_UPPER_ALARM	20
277: LIQUIDENT_UPPER_WARNING	21
278: LIQUIDENT_LOWER_WARNING	22
279: LIQUIDENT_LOWER_ALARM	23
280: CONDUCTIVITY_UPPER_ALARM	24
281: CONDUCTIVITY_UPPER_WARNING	25
282: CONDUCTIVITY_LOWER_WARNING	26
283: CONDUCTIVITY_LOWER_ALARM	27
284: Reserved	28
285: Data logging, < 30 days remaining.	29
286: Data logging, < 7 days remaining.	30
287: Data logging memory full.	31

12.62 Alarm Status 10 Table

Table of enumeration values

Alarm Status 10	Bit
288: FRAME_TEMPERATURE_SIMULATED	0
289: FLUID_SOUND_SPEED_SIMULATED	1
290: VELOCITY_SIMULATED	2
291: PROCESS_PRESSURE_SIMULATED	3
292: PROCESS_VISCOSITY_SIMULATED	4
293: RTD_TEMPERATURE_1_SIMULATED	5
294: RTD_TEMPERATURE_2_SIMULATED	6

295: MEDIUM_CONCENTRATION_SIMULATED	7
296: CURRENT_IN_CH5_SIMULATED	8
297: CURRENT_IN_CH6_SIMULATED	9
298: STANDARD_VOLUME_FLOW_SIMULATED	10
299: STANDARDIZING_FACTOR_SIMULATED	11
300: BASE_VISCOSITY_SIMULATED	12
301: BASE_DENSITY_SIMULATED	13
302: LIQUIDENT_SIMULATED	14
303: API_GRAVITY_SIMULATED	15
304: BASE_API_GRAVITY_SIMULATED	16
305: SPECIFIC_GRAVITY_SIMULATED	17
306: BASE_SPECIFIC_GRAVITY_SIMULATED	18
307: RATE_OF_CHANGE_SIMULATED	19
308: ENERGY_FLOW_SIMULATED	20
309: DELTA_TEMPERATURE_SIMULATED	21
310: ENERGY_EFFICIENCY_RATING_SIMULATED	22
311: PERFORMANCE_COEFFICIENT_SIMULATED	23
312: Digital input 1 simulated.	24
313: Digital input 2 simulated.	25
314: CONDUCTIVITY_SIMULATED	26
315: Reserved	27
316: Totalizer 4 above alarm limit.	28
317: Totalizer 4 above warning limit.	29
318: Totalizer 4 below warning limit.	30
319: Totalizer 4 below alarm limit.	31

12.63 Alarm Status 11 Table

Table of enumeration values

Alarm Status 11	Bit
320: Level (point 1) above alarm limit.	0
321: Level (point 1) above warning limit.	1
322: Level (point 1) below warning limit.	2
323: Level (point 1) below alarm limit.	3
324: Space (point 1) above alarm limit.	4
325: Space (point 1) above warning limit.	5
326: Space (point 1) below warning limit.	6
327: Space (point 1) below alarm limit.	7
328: Distance (point 1) above alarm limit.	8
329: Distance (point 1) above warning limit.	9
330: Distance (point 1) below warning limit.	10
331: Distance (point 1) below alarm limit.	11
332: Volume (point 1) above alarm limit.	12
333: Volume (point 1) above warning limit.	13

334: Volume (point 1) below warning limit.	14
335: Volume (point 1) below alarm limit.	15
336: Head (point 1) above alarm limit.	16
337: Head (point 1) above warning limit.	17
338: Head (point 1) below warning limit.	18
339: Head (point 1) below alarm limit.	19
340: Level (point 2) above alarm limit.	20
341: Level (point 2) above warning limit.	21
342: Level (point 2) below warning limit.	22
343: Level (point 2) below alarm limit.	23
344: Space (point 2) above alarm limit.	24
345: Space (point 2) above warning limit.	25
346: Space (point 2) below warning limit.	26
347: Space (point 2) below alarm limit.	27
348: Distance (point 2) above alarm limit.	28
349: Distance (point 2) above warning limit.	29
350: Distance (point 2) below warning limit.	30
351: Distance (point 2) below alarm limit.	31

12.64 Alarm Status 12 Table

Table of enumeration values

Alarm Status 12	Bit
352: Volume (point 2) above alarm limit.	0
353: Volume (point 2) above warning limit.	1
354: Volume (point 2) below warning limit.	2
355: Volume (point 2) below alarm limit.	3
356: Head (point 2) above alarm limit.	4
357: Head (point 2) above warning limit.	5
358: Head (point 2) below warning limit.	6
359: Head (point 2) below alarm limit.	7
360: Volume flow (point 2) above alarm limit.	8
361: Volume flow (point 2) above warning limit.	9
362: Volume flow (point 2) below warning limit.	10
363: Volume flow (point 2) below alarm limit.	11
364: Sensor temperature (point 2) above alarm limit.	12
365: Sensor temperature (point 2) above warning limit.	13
366: Sensor temperature (point 2) below warning limit.	14
367: Sensor temperature (point 2) below alarm limit.	15
368: Level difference above alarm limit.	16
369: Level difference above warning limit.	17
370: Level difference below warning limit.	18
371: Level difference below alarm limit.	19
372: Level average above alarm limit.	20

373: Level average above warning limit.	21
374: Level average below warning limit.	22
375: Level average below alarm limit.	23
376: AUX_TEMPERATURE_UPPER_ALARM	24
377: AUX_TEMPERATURE_UPPER_WARNING	25
378: AUX_TEMPERATURE_LOWER_WARNING	26
379: AUX_TEMPERATURE_LOWER_ALARM	27
380: Reserved	28
381: Reserved	29
382: Reserved	30
383: Reserved	31

12.65 Alarm Status 13 Table

Table of enumeration values

Alarm Status 13	Bit
384: Level (point 1) out-of-bounds alarm.	0
385: Level (point 1) in-bounds alarm.	1
386: Level (point 2) out-of-bounds alarm.	2
387: Level (point 2) in-bounds alarm.	3
388: Level (point 1) simulated.	4
389: Level (point 2) simulated.	5
390: Relay output 1 simulated.	6
391: Relay output 2 simulated.	7
392: Relay output 3 simulated.	8
393: Relay output 4 simulated.	9
394: Relay output 5 simulated.	10
395: Relay output 6 simulated.	11
396: Reserved	12
397: Reserved	13
398: Reserved	14
399: Reserved	15
400: Reserved	16
401: Reserved	17
402: Reserved	18
403: Reserved	19
404: Reserved	20
405: Reserved	21
406: Reserved	22
407: Reserved	23
408: Reserved	24
409: Reserved	25
410: Reserved	26
411: Reserved	27

412: Reserved	28
413: Reserved	29
414: Reserved	30
415: Reserved	31

12.66 Simulation Mode

Table of enumeration values

Simulation Mode	
Disabled	0
Alarms and diagnostics	1
Status signals	2

12.67 Pump Level Source

Table of enumeration values

Pump Level Source	
Level	0
Level difference	1
Level average	2

13 Performance

13.1 Sampling Rates

See [1] SITRANS LT500 with mA/HART Operating Instructions A5E48417538A

13.2 Power-Up

Upon power up, the transmitter goes through an internal initialization procedure. During this period, the device will not respond to HART commands, and the analog output is set to 0.0 mA. All the device variables will be set to “Bad status” until reliable values are available.

13.3 Device Reset

A HART master can perform a device reset by using HART Command 42 or by cycling the power.

13.4 Self-Test

Command 41 (Perform Self-Test) is not supported, as the device continuously monitors its own status.

13.5 Command Response Times

Minimum response time	5 ms
Typical response time	10 ms
Maximum response time	250 ms

13.6 Delayed Response

Delayed response mechanism is not used.

13.7 Long Message

The device supports messages with a payload of up to 255 bytes.

13.8 Non-Volatile Memory

This device contains non-volatile memory to store parameters.

NOTE: It can take up to 20 seconds until changed parameters are stored in non-volatile memory.

13.9 Modes

The product supports the fixed current mode by Command #40. A power loss or device reset clear this mode.

13.10 Write Protection

The device supports write protection. See chapter 14 Access Control

13.11 Damping

Damping is standard, affecting only the PV and the loop current signal.

14 Access Control

Access control manages whether the HART master is allowed to modify device parameters. The general access control rules are:

- The HART interface has an access level that can be changed by providing PIN information via the HART commands 130 and 132.
- Each parameter has a protection level assigned that specifies the required access level to modify the parameter via the HART interface
- If the access level of the HART interface is smaller than the protection level of the parameter that is desired to be modified, then the attempt to modify the parameter is rejected by the device.

Access level	Description
Restricted User Privilege (RUP)	Having this access level, the HART master is not able to modify the device configuration (setup parameters). The HART master is only able to execute commands, e.g. maintenance timers, start batch and reset totalizers.
End User Privilege (EUP)	Having this access level, the HART master is able to modify a subset of the device configuration. The HART master has to provide the correct end user password with HART command 132 to reach this access level. The actor is a normal user in the plant not having access to critical parts of the configuration.
Service User Privilege (SUP)	Having this access level, the HART master is able to modify the configuration of the device. The HART master has to provide the correct end user password with HART command 130 to reach this access level. The actor is either a service user at the plant (not Siemens service personnel) or Siemens service personnel.

Table 1: Access level definitions

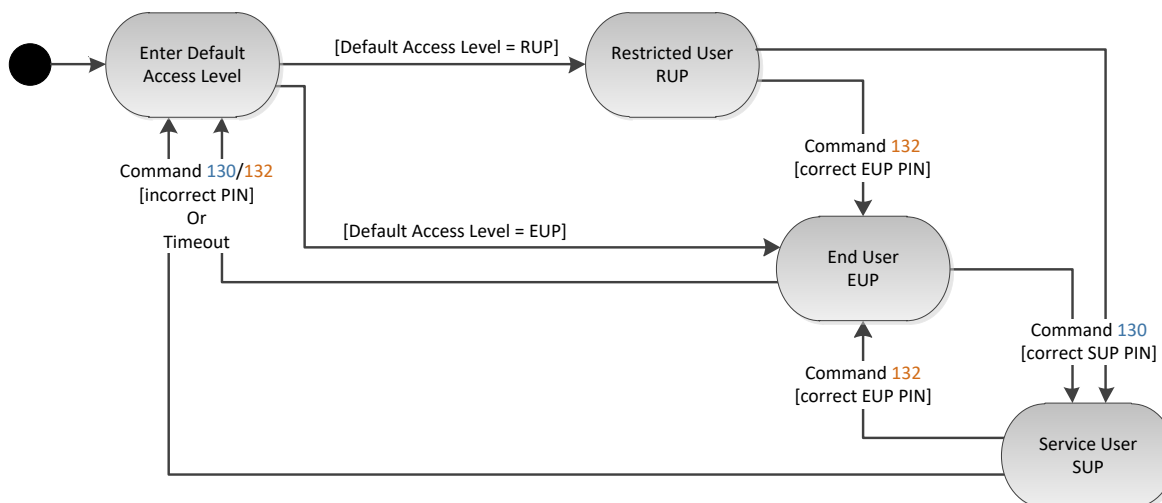


Figure 1: Access Level State machine

ANNEX A. CAPABILITY CHECKLIST

Manufacturer, model and revision	42 (0x2A) Siemens SITRANS LT500 Revision 1
Device type	41 (0x29)
HART revision	7.5
Device Description available	Yes
Number and type of sensors	2 (external level sensors)
Number and type of actuators	0
Number and type of host side signals	1: 4 - 20mA analog
Number of Device Variables	21
Number of Dynamic Variables	4
Mappable Dynamic Variables?	Yes
Number of common-practice commands	19
Number of device-specific commands	10
Bits of additional device status	8
Alternative operating modes?	No
Burst mode?	No
Write-protection?	Yes