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1. COMMAND #0 READ UNIQUE IDENTIFIER

This is a Data Link Layer Management Command.

Returns the Expanded Device Type Code, Revision Levels, and Device Identification Number.

This command is implemented by a Field Device in both Short and Extended Data Link Layer Frame Formats.

The Device Type Code will always be returned in the expanded three byte format. ("254", Manufacturer Identification Code, Manufacturer's Device Type Code)

The combination of Manufacturer Identification Code, Manufacturer's Device Type Code, and Device Identification Code make up the Unique Identifier required for the Extended Frame Format of the Data Link Layer.

REQUEST DATA BYTES

    NONE

RESPONSE DATA BYTES

DATA BYTES	#0 "254"	#1 MFR ID	#2 MFR'S DEVICE TYPE	
	#3 NUMBER RQUEST PREAM			
	#4 UNIV CMD REV	#5 TRANS SPEC REV	#6 SOFT REV	#7 HARD REV
	#8 FLAGS			
	#9 DEVICE ID NUMBER MSB	#10	#11 DEVICE ID NUMBER LSB	

Data Byte #0   Device Type Code for Expansion; "254", 8-bit unsigned integer

Data Byte #1   Manufacturer Identification Code, 8-bit unsigned integer, Refer to Table VIII; Manufacturer Identification Codes

Data Byte #2   Manufacturer's Device Type Code, 8-bit unsigned integer, Refer to the Device Type Codes Table of the manufacturer, Rosemount Device Type Codes are contained in Table I; Rosemount Device Type Codes

Data Byte #3   Number of Preambles required for the Request message from the Master to the Slave, Includes those contained in the Message Detect; 8-bit unsigned integer

Data Byte #4   Revision Level of the Universal Command Document implemented by this device, 8-bit unsigned integer, Levels 254 and 255 are Reserved.

Data Byte #5   Revision Level of the Transmitter-Specific Document implemented by this device, 8-bit unsigned integer, Levels 254 and 255 are Reserved

Data Byte #6   Software Revision Level of this device, 8-bit unsigned integer, Levels 254 and 255 are Reserved

Data Byte #7   Hardware Revision Level of the electronics in this device; does not necessarily trace component changes, 8-bit unsigned integer in the format of xxxxx.yyyB
x - Device Hardware Revision Level, 5-bit unsigned integer, Level 15 is Reserved
y - Physical Signaling Code, 3-bit unsigned integer, Refer to Table X; Physical Signaling Codes

Data Byte #8   Flags, 8-bit unsigned integer, Refer to Table XI; Flag Assignments

Data Byte #9 - #11   Device Identification Number, 24-bit unsigned integer

COMMAND-SPECIFIC RESPONSE CODES

0	No Command-Specific Errors
1 - 5	Undefined
6	Transmitter-Specific Command Error
7 - 15	Undefined
16	Access Restricted
17 - 127	Undefined

2. COMMAND #1 READ PRIMARY VARIABLE

Read the Primary Variable. The Primary Variable is returned in floating point format.

REQUEST DATA BYTES
    NONE

RESPONSE DATA BYTES

DATA BYTES	#0	#1	#3	#2	#4
	PV	PV			PV
	UNITS	MSB			LSB

Data Byte #0   Primary Variable Units Code, 8-bit unsigned integer, Refer to Table II; Unit Codes

Data Byte #1 - #4   Primary Variable, IEEE 754

COMMAND-SPECIFIC RESPONSE CODES

0	No Command-Specific Errors
1 - 5	Undefined
6	Transmitter-Specific Command Error
7	Undefined
8	Warning: Update Failure
9 - 15	Undefined
16	Access Restricted
17 - 127	Undefined

3. COMMAND #2 READ P. V. CURRENT AND PERCENT OF RANGE

Reads the Primary Variable as Current and a percent of the Primary Variable Range. The Primary Variable Current always matches the Analog Output current of the device including alarm conditions and set values. Percent of Range always follows the Primary Variable, even if the Primary Variable Current is in an alarm condition or set to a value. Also, the Percent of Range is not limited to values between 0% and 100%, but tracks the Primary Variable beyond the Range Values to the Sensor Limits when they are defined.

REQUEST DATA BYTES

NONE

RESPONSE DATA BYTES

DATA BYTES	#0	#1	#2	#3
	PV			PV
	CURR			CURR
	MSB			LSB
	#4	#5	#6	#7
	PV			PV
	PER			PER
	RANGE			RANGE
	MSB			LSB

Data Byte #0 - #3   Primary Variable Current, IEEE 754, Units of milliamperes

Data Byte #4 - #7   Primary Variable Percent of Range, IEEE 754, Units of percent

COMMAND-SPECIFIC RESPONSE CODES

0	No Command-Specific Errors
1 - 5	Undefined
6	Transmitter-Specific Command Error
7	Undefined
8	Warning: Update Failure
9 - 15	Undefined
16	Access Restricted
17 - 127	Undefined

4.   COMMAND #3 READ DYNAMIC VARIABLES AND P. V. CURRENT

Read the Primary Variable Current and up to four predefined Dynamic Variables. The Primary Variable Current always matches the Analog Output current of the device including alarm conditions and set values. The Secondary, Tertiary, and 4th Variables are defined by each device type (e.g. the Secondary Variable is the Sensor Temperature for the 3051 Pressure Transmitter).

REQUEST DATA BYTES

    NONE

RESPONSE DATA BYTES

DATA BYTES	#0 PV CURR MSB	#1	#2	#3 PV CURR LSB	
	#4 PV UNITS	#5 PV MSB	#6	#7	#8 PV LSB
	#9 SV UNITS	#10 SV MSB	#11	#12	#13 SV LSB
	#14 TV UNITS	#15 TV MSB	#16	#17	#18 TV LSB
	#19 4th V UNITS	#20 4th V MSB	#21	#22	#23 4th V LSB

    NOTE: Data string truncates after last variable supported by each device type.

Data Byte #0 - #3   Primary Variable Current, IEEE 754, Units of
                              milliamperes

Data Byte #4   Primary Variable Units Code, 8-bit unsigned integer,
                              Refer to Table II; Unit Codes

Data Byte #5 - #8   Primary Variable, IEEE 754

Data Byte #9   Secondary Variable Units Code, 8-bit unsigned integer,
                              Refer to Table II; Unit Codes

Data Byte #10 - #13   Secondary Variable, IEEE 754

Data Byte #14   Tertiary Variable Units Code, 8-bit unsigned integer,
                              Refer to Table II; Unit Codes

Data Byte #15 - #18   Tertiary Variable, IEEE 754

Data Byte #19   4th Variable Units Code, 8-bit unsigned integer, Refer to
                              Table II; Unit Codes

Data Byte #20 - #23   4th Variable, IEEE 754

COMMAND-SPECIFIC RESPONSE CODES

0	No Command-Specific Errors
1 - 5	Undefined
6	Transmitter-Specific Command Error
7	Undefined
8	Warning: Update Failure
9 - 15	Undefined
16	Access Restricted
17 - 127	Undefined

5.   COMMAND #4 RESERVED

Revisions 3 and 4 of this document included this command.

6. COMMAND #5 RESERVED

Revisions 3 and 4 of this document included this command.

7. COMMAND #6 WRITE POLLING ADDRESS

This is a Data Link Layer Management Command.

This command writes the Polling Address to the field device. The address is used to control the Primary Variable Analog Output and provide a means of device identification in Multidrop installations.

The Primary Variable Analog Output responds to the applied process only when the Polling Address of the device is set to 0. When the address assigned to a device is in the range from 1 through 15, the Analog Output is Not Active and does not respond to the applied process. While the Analog Output is Not Active, the Analog Output is set to its minimum; the Transmitter Status Bit #3, Primary Variable Analog Output Fixed, is set; and the Upscale/Downscale Alarm is disabled. If the Polling Address is changed back to 0, the Primary Variable Analog Output will gain become Active and respond to the applied process.

REQUEST DATA BYTES

       DATA BYTES   #0
                         POLL
                         ADDR

       Data Byte #0   Polling Address of Device, 8-bit unsigned integer

0	Analog Output Active
1 - 15	Analog Output Not Active
16 - 255	Invalid

RESPONSE DATA BYTES

       DATA BYTES   #0
                         POLL
                         ADDR

       Data Byte #0   Polling Address of Device, 8-bit unsigned integer

0	Analog Output Active
1 - 15	Analog Output Not Active
16 - 255	Invalid

COMMAND-SPECIFIC RESPONSE CODES

0	No Command-Specific Errors
1	Undefined
2	Invalid Selection
3 - 4	Undefined
5	Too Few Data Bytes Received
6	Transmitter-Specific Command Error
7	In Write Protect Mode
8 - 15	Undefined
16	Access Restricted
17 - 127	Undefined

8. COMMAND #11 READ UNIQUE IDENTIFIER ASSOCIATED WITH TAG

This is a Data Link Layer Management Command.

This command returns the Expanded Device Type Code, Revision Levels, and Device Identification Number of a device containing the devices Tag. It will be executed when either the devices Extended Address or the Broadcast Address is received. The Extended Address in the Response message is the same as the request.

This command is unique in that no response is made unless the Tag matches that of the device.

The Device Type Code returned in the Response Data Bytes will always be returned in the expanded three byte format. ("254", Manufacturer Identification Code, Manufacturer's Device Type Code)

REQUEST DATA BYTES

DATA BYTES	#0 TAG BYTE #0	· · ·	#5 TAG BYTE #5

Data Byte #0 - #5   Tag, Packed-ASCII

RESPONSE DATA BYTES

DATA BYTES	#0 "254"	#1 MFR ID	#2 MFR'S DEVICE TYPE	
	#3 NUMBER RQUEST PREAM			
	#4 UNIV CMD REV	#5 TRANS SPEC REV	#6 SOFT REV	#7 HARD REV
	#8 FLAGS			
	#9 DEVICE ID NUMBER MSB	#10	#11 DEVICE ID NUMBER LSB	

Data Byte #0	Device Type Code for Expansion; "254", 8-bit unsigned integer
Data Byte #1	Manufacturer Identification Code, 8-bit unsigned integer, Refer to Table VIII; Manufacturer Identification Codes
Data Byte #2	Manufacturer's Device Type Code, 8-bit unsigned integer, Refer to the Device Type Codes Table of the manufacturer, Rosemount Device Type Codes are contained in Table I; Rosemount Device Type Codes
Data Byte #3	Number of Preambles required for the Request message from the Master to the Slave, Includes those contained in the Message Detect; 8-bit unsigned integer
Data Byte #4	Revision Level of the Universal Command Document implemented by this device, 8-bit unsigned integer, Levels 254 and 255 are Reserved
Data Byte #5	Revision Level of the Transmitter-Specific Document implemented by this device, 8-bit unsigned integer, Levels 254 and 255 are Reserved
Data Byte #6	Software Revision Level of this device, 8-bit unsigned integer, Levels 254 and 255 are Reserved
Data Byte #7	Hardware Revision Level of the electronics in this device; does not necessarily trace component changes, 8-bit unsigned integer in the format of $xxxxx.yyy$B x - Device Hardware Revision Level, 5-bit unsigned integer, Level 15 is Reserved y - Physical Signaling Code, 3-bit unsigned integer, Refer to Table X; Physical Signaling Codes
Data Byte #8	Flags, 8-bit unsigned integer, Refer to Table XI; Flag Assignments
Data Byte #9 - #11	Device Identification Number, 24-bit unsigned integer

COMMAND-SPECIFIC RESPONSE CODES

0	No Command-Specific Errors
1 - 4	Undefined
5	Too Few Data Bytes Received [See Note]
6	Transmitter-Specific Command Error
7 - 15	Undefined
16	Access Restricted
17 - 127	Undefined

NOTE: This Response Code was placed here in error and it will not be returned in proper implementations of this command.

9. COMMAND #12 READ MESSAGE

Reads the Message contained within the device.

REQUEST DATA BYTES

NONE

RESPONSE DATA BYTES

DATA BYTES	#0		#5
	MESSAGE	• • •	MESSAGE
	BYTE #0		BYTE #23

Data Byte #0 - #23   Message, Packed-ASCII

COMMAND-SPECIFIC RESPONSE CODES

0	No Command-Specific Errors
1 - 5	Undefined
6	Transmitter-Specific Command Error
7 - 15	Undefined
16	Access Restricted
17 - 127	Undefined

10. COMMAND #13 READ TAG, DESCRIPTOR, DATE

Read the Tag, Descriptor, and Date contained within the device.

REQUEST DATA BYTES

    NONE

RESPONSE DATA BYTES

DATA BYTES	#0 TAG BYTE #0	• • •	#5 TAG BYTE #5
	#6 DESCR BYTE #0	• • •	#17 DESCR BYTE #11

	#18 DATE	#19 DATE	#20 DATE

Data Byte #0 - #5   Tag, Packed-ASCII

Data Byte #6 - #17   Descriptor, Packed-ASCII

Data Byte #18 - #20   Date, 8-bit unsigned integers, Respectively day, month, year-1900

NOTE: Those parameters not applicable to a device will be set to "250", Not Used.

COMMAND-SPECIFIC RESPONSE CODES

0	No Command-Specific Errors
1 - 5	Undefined
6	Transmitter-Specific Command Error
7 - 15	Undefined
16	Access Restricted
17 - 127	Undefined

11. COMMAND #14 READ PRIMARY VARIABLE SENSOR INFORMATION

Reads the Primary Variable Sensor Serial Number, Primary Variable Sensor Limits/Minimum Span Units Code, Primary Variable Upper Sensor Limit, Primary Variable Lower Sensor Limit, and Primary Variable Minimum Span for the sensor.

The Primary Variable Sensor Limits and Minimum Span Units will be the same as the Primary Variable Units.

REQUEST DATA BYTES

    NONE

RESPONSE DATA BYTES

DATA BYTES

#0	#1	#2
PV SENSOR SERIAL NUMBER MSB		PV SENSOR SERIAL NUMBER LSB

#3	#4	#5	#6	#7
PV SENSOR LIMITS/ MIN SPAN UNITS	PV UPPER SENSOR LIMIT MSB			PV UPPER SENSOR LIMIT LSB

#8	#9	#10	#11
PV LOWER SENSOR LIMIT MSB			PV LOWER SENSOR LIMIT LSB

#12	#13	#14	#15
PV MIN SPAN MSB			PV MIN SPAN LSB

Data Byte #0 - #2   Primary Variable Sensor Serial Number, 24-bit unsigned integer

Data Byte #3   Primary Variable Sensor Limits and Minimum Span Units Code, 8-bit unsigned integer, Refer to Table II; Unit Codes

Data Byte #4 - #7   Primary Variable Upper Sensor Limit, IEEE 754

Data Byte #8 - #11   Primary Variable Lower Sensor Limit, IEEE 754

Data Byte #12 - #15   Primary Variable Minimum Span, IEEE 754

NOTE: When the Sensor Serial Number is not applicable to the device or Primary Variable, it will be set to "0". The other parameters will be set to 7F A0 00 00, Not-a-Number, or "250", Not Used, when they are not applicable.

COMMAND-SPECIFIC RESPONSE CODES

0	No Command-Specific Errors
1 - 5	Undefined
6	Transmitter-Specific Command Error
7 - 15	Undefined
16	Access Restricted
17 - 127	Undefined

12. COMMAND #15 READ PRIMARY VARIABLE OUTPUT INFORMATION

Reads the Primary Variable Alarm Selection Code, Primary Variable Transfer Function Code, Primary Variable Range Values Units Code, Primary Variable Upper Range Value, Primary Variable Lower Range Value, Primary Variable Damping Value, Write Protect Code, and Private Label Distributor Code associated with the device or the Primary Variable.

The Primary Variable Damping Value is applied to both the Primary Variable Analog Output and the digital Primary Variable.

REQUEST DATA BYTES
NONE

RESPONSE DATA BYTES

DATA BYTES	#0 PV ALARM SELECT CODE	#1 PV XFER FNCT CODE	#2 PV RANGE VALUES UNITS CODES	
	#3 PV UPPER RANGE VALUE MSB	#4	#5	#6 PV UPPER RANGE VALUE LSB
	#7 PV LOWER RANGE VALUE MSB	#8	#9	#10 PV LOWER RANGE VALUE LSB
	#11 PV DAMP VALUE MSB	#12	#13	#14 PV DAMP VALUE LSB

<table>
<tr><td></td><td>#15
WRITE
PROT
CODE</td><td>#16
PVT
LABEL
DIST
CODE</td></tr>
</table>

Data Byte #0	Primary Variable Alarm Selection Code, 8-bit unsigned integer, Refer to Table VI; Alarm Selection Codes
Data Byte #1	Primary Variable Transfer Function Code, 8-bit unsigned integer, Refer to Table III; Transfer Function Codes
Data Byte #2	Primary Variable Upper and Lower Range Values Units Code, 8-bit unsigned integer, Refer to Table II; Unit Codes
Data Byte #3 - #6	Primary Variable Upper Range Value, IEEE 754
Data Byte #7 - #10	Primary Variable Lower Range Value, IEEE 754
Data Byte #11 - #14	Primary Variable Damping Value, IEEE 754, Units of seconds
Data Byte #15	Write Protect Code, 8-bit unsigned integer, Refer to Table VII; Write Protect Codes
Data Byte #16	Private Label Distributor Code, 8-bit unsigned integer, Refer to Table VIII; Manufacturer Identification Codes

NOTE: The Write Protect Code defaults to "251", None, (or "250", Not Used, for earlier model devices) when this feature has not been implemented by a device. The Private Label Distributor Code defaults to the primary manufacturer of the device (or "250", Not Used, for earlier model devices). The other parameters not applicable to a device or Primary Variable will be set to 7F A0 00 00, Not-a-Number, or "250", Not Used.

COMMAND-SPECIFIC RESPONSE CODES

0	No Command-Specific Errors
1 - 5	Undefined
6	Transmitter-Specific Command Error
7 - 15	Undefined
16	Access Restricted
17 - 127	Undefined

13. COMMAND #16 READ FINAL ASSEMBLY NUMBER

Read the Final Assembly Number associated with the device.

REQUEST DATA BYTES
> NONE

RESPONSE DATA BYTES

DATA BYTES	#0	#1	#2
	FINAL		FINAL
	ASSEMBLY		ASSEMBLY
	NUMBER		NUMBER
	MSB		LSB

> Data Byte #0 - #2   Final Assembly Number, 24-bit unsigned integer

NOTE: All data in the Response Packet is read from data memory.

COMMAND-SPECIFIC RESPONSE CODES

0	No Command-Specific Errors
1 - 5	Undefined
6	Transmitter-Specific Command Error
7 - 15	Undefined
16	Access Restricted
17 - 127	Undefined

14. COMMAND #17 WRITE MESSAGE

Write the Message into the device.

REQUEST DATA BYTES

DATA BYTES	#0 MESSAGE BYTE #0	• • •	#23 MESSAGE BYTE #23

Data Byte #0 - #23   Message, Packed-ASCII

RESPONSE DATA BYTES

DATA BYTES	#0 MESSAGE BYTE #0	• • •	#23 MESSAGE BYTE #23

Data Byte #0 - #23   Message, Packed-ASCII

NOTE: All data in the Response Packet is read from data memory.

COMMAND-SPECIFIC RESPONSE CODES

0	No Command-Specific Errors
1 - 4	Undefined
5	Too Few Data Bytes Received
6	Transmitter-Specific Command Error
7	In Write Protect Mode
8 - 15	Undefined
16	Access Restricted
17 - 127	Undefined

15. COMMAND #18 WRITE TAG, DESCRIPTOR, DATE

Write the Tag, Descriptor, and Date into the device.

REQUEST DATA BYTES

DATA BYTES	#0 TAG BYTE #0	$\cdots$	#5 TAG BYTE #5
	#6 DESCR BYTE #0	$\cdots$	#17 DESCR BYTE #11
	#18 DATE	#19 DATE	#20 DATE

Data Byte #0 - #5   Tag, Packed-ASCII

Data Byte #6 - #17   Descriptor, Packed-ASCII

Data Byte #18 - #20   Date, 8-bit unsigned integers, Respectively day', month, year-l900

RESPONSE DATA BYTES

DATA BYTES	#0 TAG BYTE #0	$\cdots$	#5 TAG BYTE #5
	#6 DESCR BYTE #0	$\cdots$	#17 DESCR BYTE #11
	#18 DATE	#19 DATE	#20 DATE

Data Byte #0 - #5   Tag, Packed-ASCII

Data Byte #6 - #17   Descriptor, Packed-ASCII

Data Byte #18 - #20   Date, 8-bit unsigned integers, Respectively day, month, year-l900

NOTE: All data in the Response Packet is read from data memory.

NOTE: Those parameters not applicable to a device will be set to "250", Not Used.

COMMAND-SPECIFIC RESPONSE CODES

0	No Command-Specific Errors
1 - 4	Undefined
5	Too Few Data Bytes Received
6	Transmitter-Specific Command Error
7	In Write Protect Mode
8 - 15	Undefined
16	Access Restricted
17 - 127	Undefined

16. COMMAND #19 WRITE FINAL ASSEMBLY NUMBER

Write Final Assembly Number into the device.

REQUEST DATA BYTES

DATA BYTES	#0	#1	#2
	FINAL ASSEMBLY NUMBER MSB		FINAL ASSEMBLY NUMBER LSB

Data Byte #0 - #2   Final Assembly Number, 24-bit unsigned integer

RESPONSE DATA BYTES

DATA BYTES	#0	#1	#2
	FINAL ASSEMBLY NUMBER MSB		FINAL ASSEMBLY NUMBER LSB

Data Byte #0 - #2   Final Assembly Number, 24-bit unsigned integer

NOTE: All data in the Response Packet is read from data memory.

COMMAND-SPECIFIC RESPONSE CODES

0	No Command-Specific Errors
1 - 4	Undefined
5	Too Few Data Bytes Received
6	Transmitter-Specific Command Error
7	In Write Protect Mode
8 - 15	Undefined
16	Access Restricted
17 - 127	Undefined

17. RELEASE NOTES

17.1. Major Modifications from Initial Rev 3 to Rev 4

- This Revision incorporates the Write Protect Mode.
- This Revision adds the Private Labeling capability.
  (Refer to document Revision 3, D8700028, and Revision 4, D8900037 for detailed information.)

17.2. Major Modifications from Rev 4 to Rev 5.0 - Final

- A decimal point and integer has been added to the HART document revision numbering system. This minor revision number is incremented each time corrections or changes are made to a previously approved document.
- Changed Rosemount Document Number from D8700028; Revision C to D8900038; Revision A. A different Rosemount Document Number is assigned to each major HART Document Revision Number.
- Increased the maximum Command-Specific Response Code number from 15 to 127 for all commands.
- This revision adds the Extended Frame Format and creates a separate command for each Block of Command #4 and #5.
- Added Command #11 - 19

17.3 Changes from Rev 5.0 - Final to Rev 5.1 - Final

- This revision includes modifications for devices with Multiple Analog Outputs and Analog Outputs other than Current.
- Summarized Release Notes from Rev 4 to Rev 5.0 - Final.

Page	Line	Change	Text
TP	4	Replace	"5.0" by "5.1"
TP	6	Replace	"8 February 1990" by "18 October 1990"
TP	7	Replace	"12 February 1990" by "18 October 1990"
TP	8	Replace	"A" by "8"
5	2	Insert	"P. V."
5	5	Insert	"Primary Variable"
5	8	Insert	"Primary Variable"
5	20	Insert	"PV PV"
5	25	Insert	"PV PV"
5	30	Replace	"Analog Output" by "Primary Variable"
5	34	Insert	"Primary Variable"
5	35	Replace	"IEEE 754," by "IEEE 754,"
6	2	Delete	"ALL"
6	2	Insert	"P. V."
6	4	Insert	"Primary Variable"
6	5	Insert	"Primary Variable"
6	18	Insert	"PV PV"
7	2	Replace	"Analog Output" by "Primary Variable"
10	7	Insert	"Primary Variable"
10	10	Insert	"Primary Variable"
10	14	Replace	"current" by "Analog Output"
10	15	Replace	"4 milliamperes;" by "its minimum"
10	16	Replace	"#4," by "#3, Primary Variable Analog"
10	17	Delete	"Current"
10	18	Insert	"Primary Variable"
14	6	Insert	"[See Note]"

Page	Line	Change	Text
14	13	Insert	"Note: This Response Code uas placed here in..."
17	4	Insert	"Primary Variable"
17	4	Insert	"Primary Variable"
17	5	Insert	"Primary Variable"
17	6	Insert	"Primary Variable"
17	7	Insert	"Primary Variable"
17	7	Insert	"sensor."
17	9	Replace	"sensor associated..." by "The"
17	9	Delete	"Variable."
17	9	Replace	"The" by "Variable"
17	20	Insert	"PV PV"
17	27	Insert	"PV PV PV"
17	35	Insert	"PV PV"
17	42	Insert	"PV PV"
18	2	Insert	"Primary Variable"
18	5	Insert	"Data Byte #3 Primary Variable Sensor Limits..."
18	21	Delete	"Data Byte #4 - #7 Upper Sensor Limit, IEEE..."
18	25	Insert	"Primary Variable"
19	2	Insert	"PRIMARY VARIABLE"
19	4	Insert	"Primary Variable"
19	4	Insert	"Primary Variable"
19	5	Replace	"Variable/Range" by "Variable Range Values"
19	6	Insert	"Primary Variable"
19	7	Insert	"Primary Variable"
19	7	Insert	"Primary Variable"
19	11	Insert	"Primary Variable"
19	11	Insert	"Primary Variable"
19	21	Insert	"PV PV PV"
19	22	Replace	"PV/" by "RANGE"
19	23	Replace	"RANGE" by "VALUES"
19	28	Insert	"PV PV"
19	35	Insert	"PV PV"
19	42	Insert	"PV PV"
20	2	Insert	"Primary Variable"
20	6	Delete	"Data Byte #1 Transfer Function Code, 8-bit..."
20	19	Move	"Data Byte" from page 18 line 17
20	19	Replace	"#3 Sensor Limits and..." by "#1 Primary..."
20	22	Replace	"II; Unit" by "III; Transfer Function"
20	25	Insert	"Data Byte #2 Primary Variable Upper and Lover..."
20	35	Insert	"Primary Variable"
24	10	Replace	"16 Transmitter-..." by "16 Access Restricted"

17.3 Changes from Rev 5.1 to Rev 5.2

The document was translated from a Multimate document to Microsoft Word. As a result of this translation the document format was altered. No other modifications were made to the document.

HART®
FIELD COMMUNICATION PROTOCOL

Document Title: HART® SMART Communications Protocol, Universal Command Specification

Document Revision: 5.2

HART® Communication Foundation Document Number: HCF_SPEC-127

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