Technical Note

HART Command Introduction

V 1.0

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1 Overview

1.1 Introduction

Through this technical note, the user can know about the format of the commonly used HART command ID1 and command ID3.
The user manual, configuration software and more documentation can be found and downloaded at www.sstautomation.com.

1.2 Revision History

Revision	Date	Chapter	Description
V1.0	6/6/2021	ALL	New release

2 HART Command

Notes: The front two bytes of the actual response data is the status info of the device. The data after two bytes are the device response data.

Command 1: Read Primary Variable

Return primary variable value in float data type.

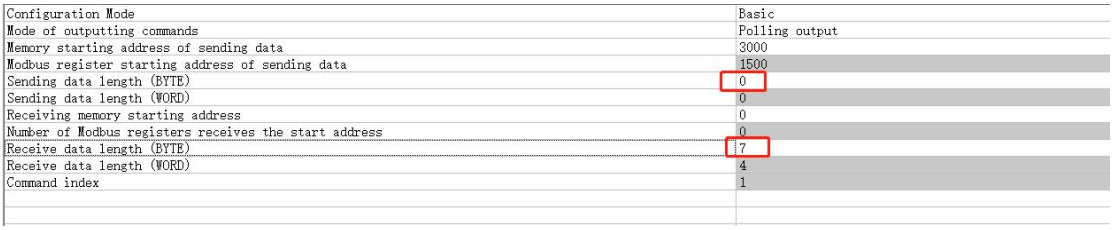
Request: None

Response:

Byte	Description
Byte 0	Primary Variable Units
Byte 1-4	Primary Variable

Because request is none, the user should fill in “Sending data length” as 0.

The total response data bytes (“Receive data length”) should be 2 status bytes + 5 device response bytes: 7.



Configuration Mode	Basic
Mode of outputting commands	Polling output
Memory starting address of sending data	3000
Modbus register starting address of sending data	1500
Sending data length (BYTE)	0
Sending data length (WORD)	0
Receiving memory starting address	0
Number of Modbus registers receives the start address	0
Receive data length (BYTE)	7
Receive data length (WORD)	4
Command index	1

Command 3: Read Dynamic Variable and Primary Variable Current

Read primary variable current and four (at most) pre-defined dynamic variable. The primary variable current always matches the AO output current of the device. A second, third or fourth variable is defined for each device type, for example: the second variable is the sensor temperature, etc.

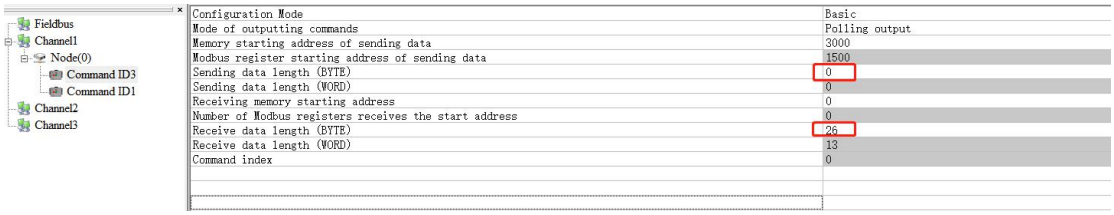
Request: None

Response:

Byte	Description
Byte 0-3	Primary Variable Loop Current（units of milli-amperes）
Byte 4	Primary Variable Units Code
Byte 5-8	Primary Variable
Byte 9	Secondary Variable Units Code
Byte 10-13	Secondary Variable
Byte 14	Tertiary Variable Units Code
Byte 15-18	Tertiary Variable
Byte 19	Quaternary Variable Units Code
Byte 20-23	Quaternary Variable

Because request is none, the user should fill in Sending data length as 0.

The total response data bytes (“Receive data length”) should be 2 status bytes + 24 device response bytes: 26.



If there is no need to map all the variables to the Modbus TCP registers. the user can also use Advanced mode shown as below. In this case, only the Primary Variable and Secondary Variable are selected for the device.