



Reading the temperature value

Selection of the additional information 1 "Temperature sensor 2"

The corresponding flow chart is shown in the appendix of the EnDat specifications.

Selection of the memory area of the temperature value

First the MRS code for the temperature sensor 2 must be sent to the encoder: "Encoder to send position values with additional information and selection of memory area" with the associated MRS code "4D_h".

mode commands type 2.2	address/parameters:	additional info 1	additional info 2	position value:
Encoder to send position values with additional information		----	----	----
Encoder to send position values with additional information and selection of the memory area	MRS-Code: 4D h Send temperature 2			----
Encoder to send position values with additional information and send parameters	address: 00 h			----
Encoder to send position values with additional information and receive parameters	address: 00 h parameter: 0000 h			----
Encoder to send position values with additional information and receive error reset				----
Encoder to send position values with additional information and receive test command	port address: 00 h parameter: 0000 h			----
Encoder to receive communication command	address: 00 h instruction: 0000 h			----

The returned position information is shown on the right edge of the screen.

mode commands type 2.2	address/parameters:	additional info 1	additional info 2	position value:
Encoder to send position values with additional information		----	----	----
Encoder to send position values with additional information and selection of the memory area	MRS-Code: 4D h Send temperature 2			30042339978
Encoder to send position values with additional information and send parameters	address: 00 h			----
Encoder to send position values with additional information and receive parameters	address: 00 h parameter: 0000 h			----
Encoder to send position values with additional information and receive error reset				----
Encoder to send position values with additional information and receive test command	port address: 00 h parameter: 0000 h			----
Encoder to receive communication command	address: 00 h instruction: 0000 h			----

Reading and converting the temperature value as additional information 1

Now the position value and the additional information 1 can be read with the "Encoder to send position values with additional information" mode command.

Returned parameters of the additional information 1

- "4D" stands for the MRS code for the temperature 2; this is returned by the encoder as confirmation.
- "0BAD" stands for the temperature information in Kelvin. To convert into °C, the K value must be converted to the decimal system (= 2989) and then scaled by 0.1 (= 298.9), and finally the absolute temperature of 273.1 K must be subtracted by (= 25.8). This means in this case that the encoder has returned a temperature value of 25.8 °C.

mode commands type 2.2	address/parameters:	additional info 1	additional info 2	position value:
Encoder to send position values with additional information		4D 0BAD h	----	30042339934
Encoder to send position values with additional information and selection of the memory area	MRS-Code: 4D h Send temperature 2			30042339978
Encoder to send position values with additional information and send parameters	address: 00 h			----
Encoder to send position values with additional information and receive parameters	address: 00 h parameter: 0000 h			----
Encoder to send position values with additional information and receive error reset				----
Encoder to send position values with additional information and receive test command	port address: 00 h parameter: 0000 h			----
Encoder to receive communication command	address: 00 h instruction: 0000 h			----

**Interrogation log**

The communication appears on the "Protocol" screen as follows:

```
EnDat 2.2 demonstration tool v1.1.15.79 © 2002-2004 DR. JOHANNES HEIDENHAIN GmbH
File
Initialization 5.00 V Power Frequency: 8000 kHz Transfer format: 37
Mode commands Protocol
Signal periods per revolution: 2048
Number of measuring steps per revolution: 33554432
Number of distinguishable revolutions: 4096
Interpolation factor: 16384
Max. permissible mechanical shaft speed [1/min]: 12000
Direction of rotation: clockwise -> increasing position values
Word 9 (OEM1/2-partitioning): 5053 h OEM1: 64..255 OEM2: 0..255
Word 10 (OEM3/4-partitioning): FF50 h OEM3: 0..255 OEM4: not available
Word 11 (COMP1/2-partitioning): FFFF h COMP1: not available COMP2: not available
Word 12 (COMP3/4-partitioning): 50FF h COMP3: not available COMP4: 0..255

-----
"Encoder to send position values with additional information and selection of the memory area (used MRS code: '4D h Send temperature 2')
transmitted!
mode command 11: "001 001"
Results:
Position value = 30042339978
additional information 1 = ----
additional information 2 = ----
Type(s) of received additional information:
additional information 1: <none>
additional information 2: <none>
error 1 occurred!
Currently activated type(s) of additional information:
"additional information 1"

"Encoder to send position values with additional information" transmitted!
mode command 70: "111 000"
Results:
Position value = 30042339934
additional information 1 = 4D 0BAD h
additional information 2 = ----
Type(s) of received additional information:
additional information 1: Temperature sensor 2
additional information 2: <none>
error 1 occurred!

Copy... Print... Save...
-> power off -> de-init -> close! error 1 occurred!
```

This example also shows that the error bit is set ("error 1 occurred!"). This is also shown in the status line. In this example, the error bit was set intentionally and has no effect on the returned parameter.

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