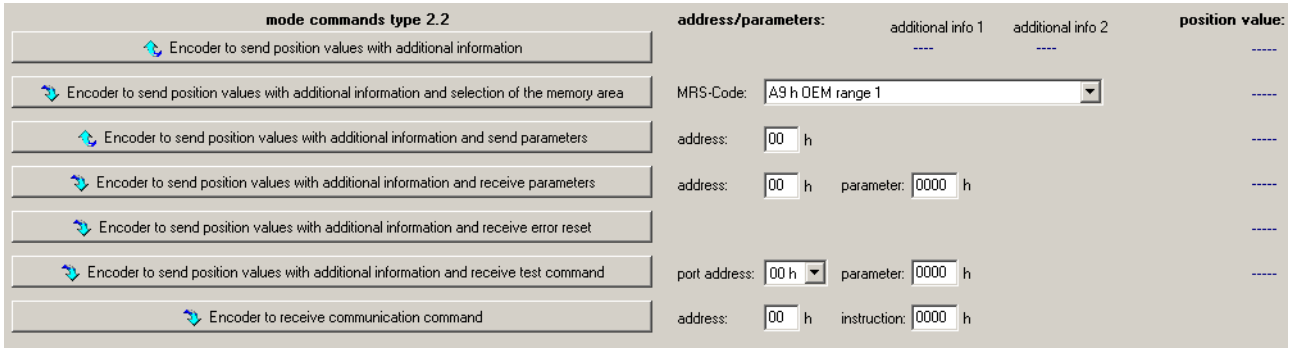
Reading the OEM Range

In this example, the address 128 (corresponds to 80_h) of the OEM range 1 is read out. The corresponding flow chart is shown in the appendix of the EnDat specifications.

Selection of memory area

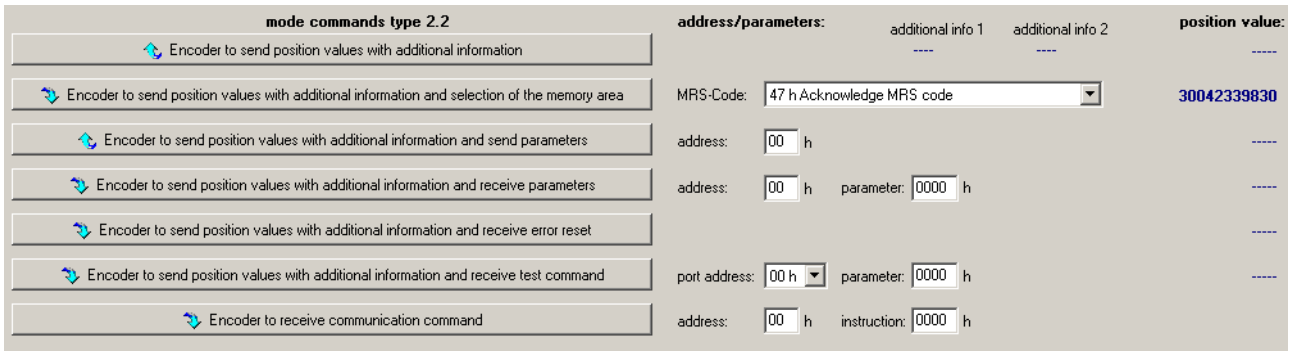
First you must select the memory area for the OEM range 1:



After you have selected the mode command, the software shows the current position on the right edge of the screen.

Acknowledgement of MRS code

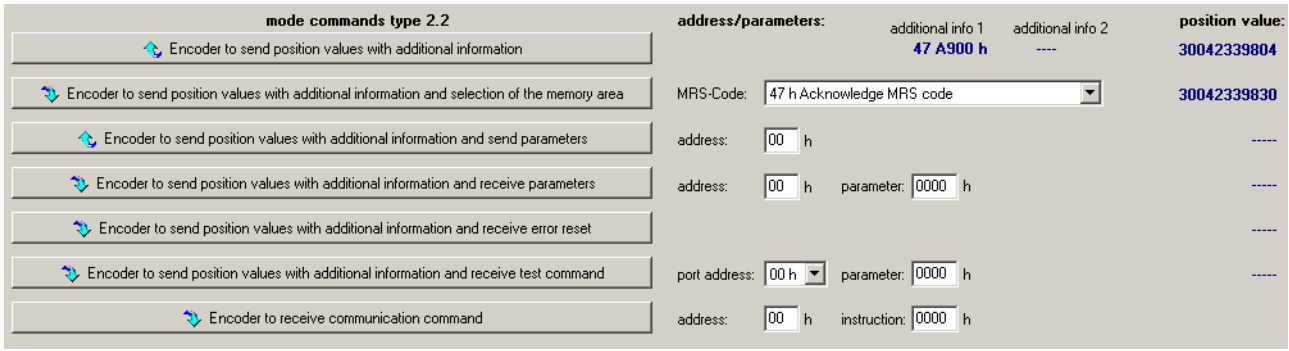
This is followed by a check of whether the encoder has correctly "understood" the MRS code (requesting acknowledgment of the MRS codes). This is done over the additional information 1.



After you have selected the mode command, the software shows the current position on the right edge of the screen.

Calling the additional information 1

After selection of the MRS code, additional information 1 can be called with the "Encoder to send position values with additional information" mode command.

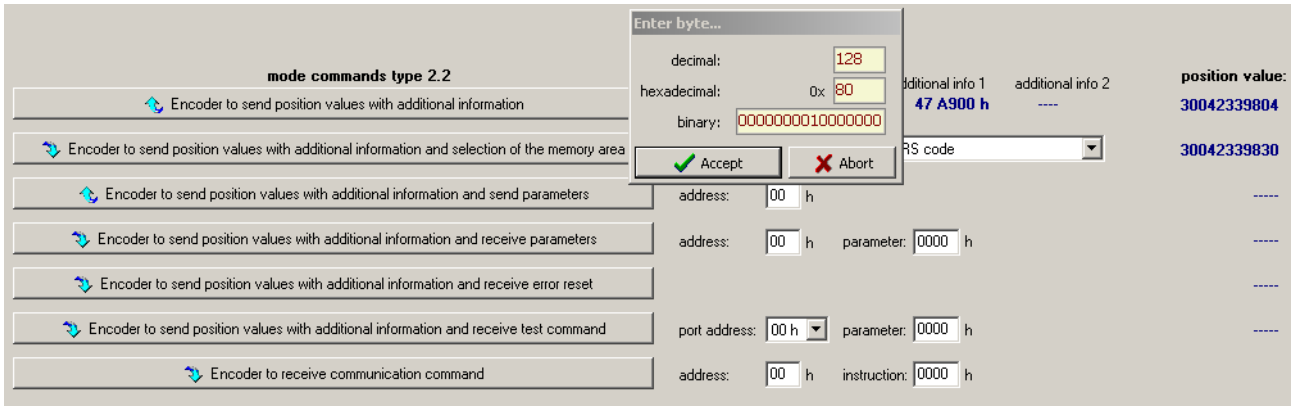


Parameter information returned:

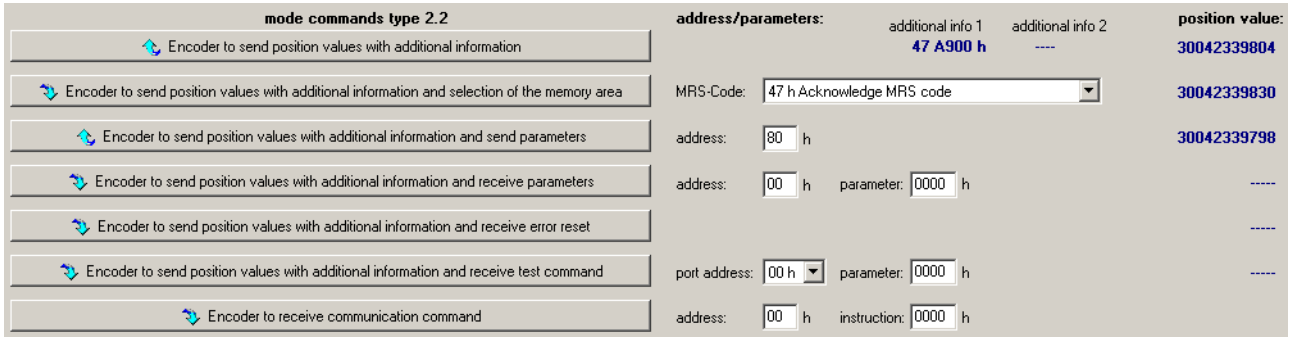
- "47" is for the MRS code for the acknowledgment of the MRS code; this is returned by the encoder as confirmation.
- "A9" is for the selected MRS code (see above); the third byte "00" has no significance.

Selecting the address of the memory area

As next step, the encoder receives the address to be read from; in this example the address 128. The figure shows the three different ways to enter the address.



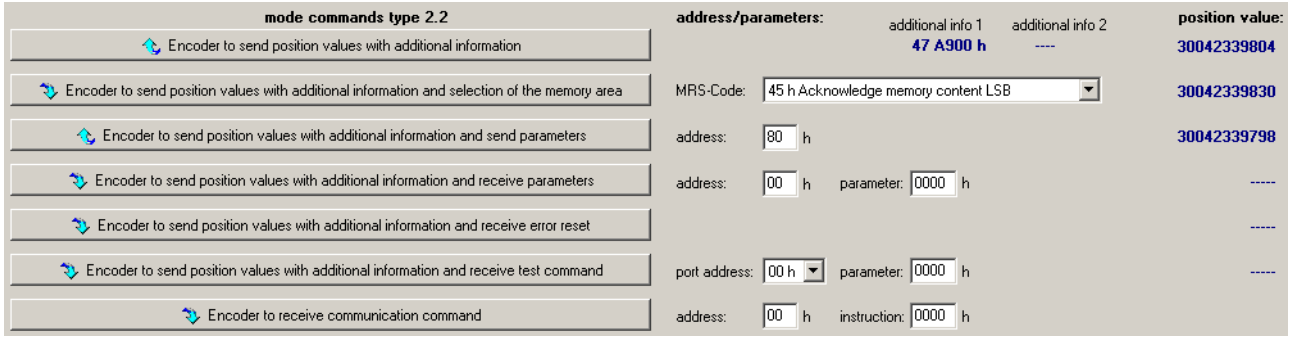
With the "Encoder to send position values with additional information and send parameters" command, the encoder is instructed to read a word from the memory address 128 in the OEM range 1.



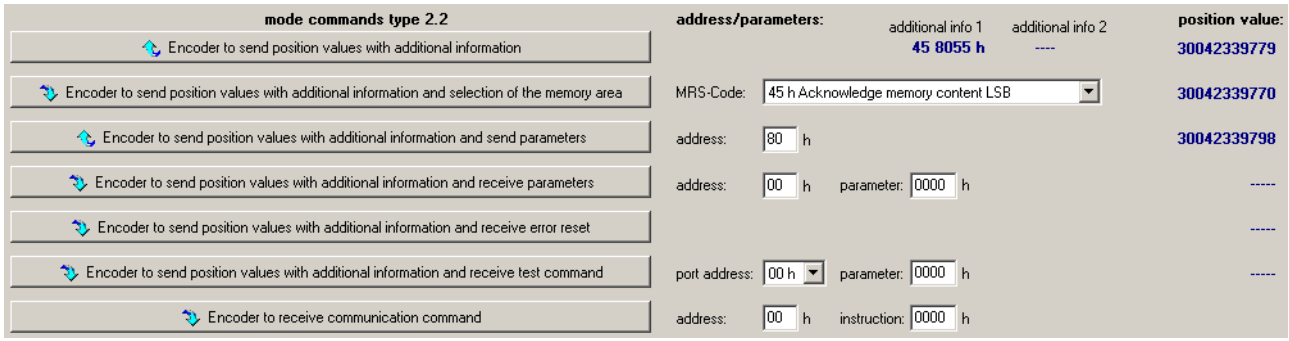
Reading the content of the memory area

The content of the memory location is not returned, however, because it claims access to the EEPROM for up to 12 ms. But because access under EnDat 2.2 must also be possible in the closed control loop, the information must be available before the EEPROM supplies it. Instead, the encoder interrogates the memory in the background and the busy bit is set. This bit can then be requested through the additional information and is then reset when the encoder has received the information from the memory. Of course, in a closed control loop this request of the busy bit is absolutely necessary. In this example, in which the mode command is entered by hand, the time intervals are naturally much larger than the 12 ms mentioned above. In this case, requesting the busy bit is useless.

The information is read through the additional information 1 "Acknowledge memory content LSB".



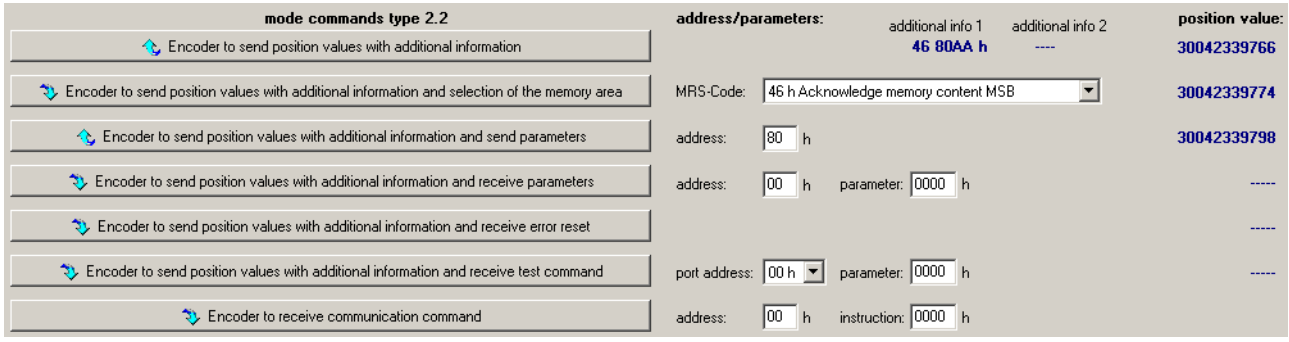
Selecting the MRS codes and then requesting the additional information provides the following result.



Parameter information returned:

- "45" stands for the MRS code for the acknowledgment of the LSB memory content; this is returned by the encoder as confirmation.
- "80" stands for the address of the memory location from which the information was read
- "55" stands for the LSB of the selected memory location

The MSB is requested in the same manner.



Parameter information returned:

- "46" stands for the MRS code for the acknowledgment of the MSB memory content; this is returned by the encoder as confirmation.
- "80" stands for the address of the memory location from which the information was read
- "AA" stands for the MSB of the selected memory location

Interrogation log

The communication was recorded on the log page:

```
"Encoder to send position values with additional information and selection of the memory
area (used MRS code: 'A9 h OEM range 1 ')" transmitted!
mode command 11: "001 001"
Results:
Position value = 30042339829
additional information 1 = ----
additional information 2 = ----
Type(s) of received additional information:
additional information 1: <none>
additional information 2: <none>
Position value valid!
Currently activated type(s) of additional information:
<none>
```

"Encoder to send position values with additional information and selection of the memory area (used MRS code: '47 h Acknowledge MRS code')" transmitted!
mode command 11: "001 001"
Results:
Position value = 30042339830
additional information 1 = ----
additional information 2 = ----
Type(s) of received additional information:
additional information 1: <none>
additional information 2: <none>
Position value valid!
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 = 30042339804
additional information 1 = 47 A900 h
additional information 2 = ----
Type(s) of received additional information:
additional information 1: Acknowledgement of MRS-Code
additional information 2: <none>
Position value valid!

"Encoder to send position values with additional information and send parameters" transmitted!
mode command 44: "100 100"
Parameter at address $80 was requested.
Results:
Position value = 30042339798
additional information 1 = 47 A900 h
additional information 2 = ----
Type(s) of received additional information:
additional information 1: Acknowledgement of MRS-Code
additional information 2: <none>
Position value valid!

"Encoder to send position values with additional information and selection of the memory area (used MRS code: '45 h Acknowledge memory content LSB')" transmitted!
mode command 11: "001 001"
Results:
Position value = 30042339770
additional information 1 = 47 A900 h
additional information 2 = ----

additional information 2 = ----
Type(s) of received additional information:
additional information 1: Acknowledgement of MRS-Code
additional information 2: <none>
Position value valid!
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 = 30042339779
additional information 1 = 45 8055 h
additional information 2 = ----
Type(s) of received additional information:
additional information 1: Memory parameter LSB
additional information 2: <none>
Position value valid!

"Encoder to send position values with additional information and selection of the memory
area (used MRS code: '46 h Acknowledge memory content MSB')" transmitted!
mode command 11: "001 001"
Results:
Position value = 30042339774
additional information 1 = 45 8055 h
additional information 2 = ----
Type(s) of received additional information:
additional information 1: Memory parameter LSB
additional information 2: <none>
Position value valid!
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 = 30042339766
additional information 1 = 46 80AA h
additional information 2 = ----
Type(s) of received additional information:
additional information 1: Memory parameter MSB
additional information 2: <none>
Position value valid!
```

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