

Configuration and Parameter Assignment Frame for the CPU 31x-2

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You **don't** need the information contained in this chapter if you configure and parameterize the CPU 31x-2 with *STEP 7* or with *COM PROFIBUS*.

You **don't** need the information contained in this chapter if you integrate the device master file of the CPU 31-x in your configuration tool, and then configure and parameterize the CPU 31x-2 using the configuration tool.

You **need** the information only in the following cases:

- If you don't use a configuration tool to create the configuration and parameter assignment frame.
- If you want to monitor the configuration and parameter assignment frame with a bus monitor.

In This Chapter

In this chapter you will find all the information you need to configure and parameterize the address areas of the intermediate memory with a software tool.

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1.1 Structure of the Parameter Assignment Frame

Definition: Parameter Assignment Frame

The parameter assignment frame contains all the parameterizable values of a DP slave. The parameter assignment frame has a maximum length of 244 bytes.

Structure of the Parameter Assignment Frame

The length of the parameter assignment frame for the CPU 31x-2 is 10 bytes:

- Standard part (bytes 0 to 6)
- Parameters of the CPU 31x-2 (bytes 7 to 9)

Standard Part

The first 7 bytes of the parameter assignment frame are standardized to EN 50170 and can, for example, have the following contents for the CPU 315-2:

Byte 0	88 _H	Station status
Byte 1	01 _H	WD factor 1
Byte 2	06 _H	WD factor 2
Byte 3	0B _H	minTsd
Byte 4	80 _H	Manufacturer ID, high byte;
Byte 5	2F _H	Manufacturer ID, low byte
Byte 6	00 _H	Group ID

Figure 1-1 Standard Part of the Parameter Assignment Frame (Example)

Structure of the Parameters for the CPU 31x-2

The length of the parameters for the CPU 31x-2 is 3 bytes: The default setting of these 3 bytes is as follows: C0_H 60_H 00_H.

The parameters have the following meaning:

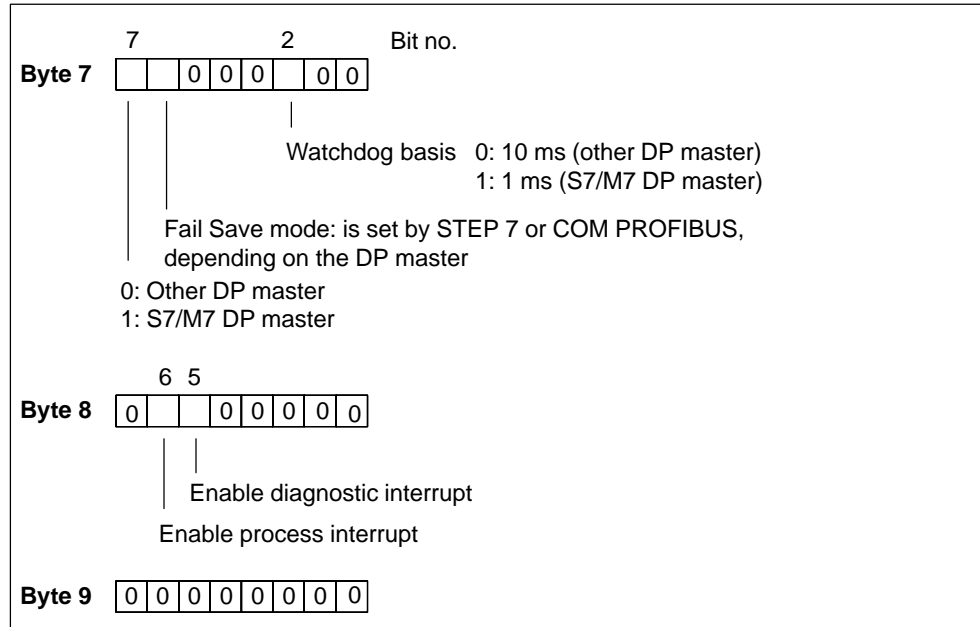


Figure 1-2 Parameters for the CPU 31x-2

1.2 Structure of the Configuration Frame (S7 Format)

Structure of the Configuration Frame

The length of the configuration frame is dependent on the number of configured address areas of the intermediate memory of the CPU. The first 15 bytes of the configuration frame are permanently occupied. The structure of the configuration frame is as follows:

Table 1-1 Structure of the Configuration Frame

Configured Address Area	Byte				
	n	n + 1	n + 2	n + 3	n + 4
These bytes are permanently occupied:	04	00	00	AD	C4
	04	00	00	8B	41
	04	00	00	8F	C0
1st configured address area (n = 15)	See Table 1-2				
2nd configured address area (n = 20)					
...					
32nd configured address area (n = 170)					

Identifiers for the Address Areas

The configuration identifiers are dependent on the type of address area. Table 1-2 shows all the identifiers for the address areas.

Table 1-2 Identifiers for the Address Areas of the Intermediate Memory

Address Area	Identifiers (Hexadecimal)				
	Special Identifier Format	Length Byte	Manufacturer-Specific Data (Comment length=3)		
	Byte 0	Byte 1	Byte 2	Byte 3	Byte 4
Input	See Figure 1-3	See Figure 1-4	00 _H	83 _H	40 _H
Output			00 _H	93 _H	40 _H

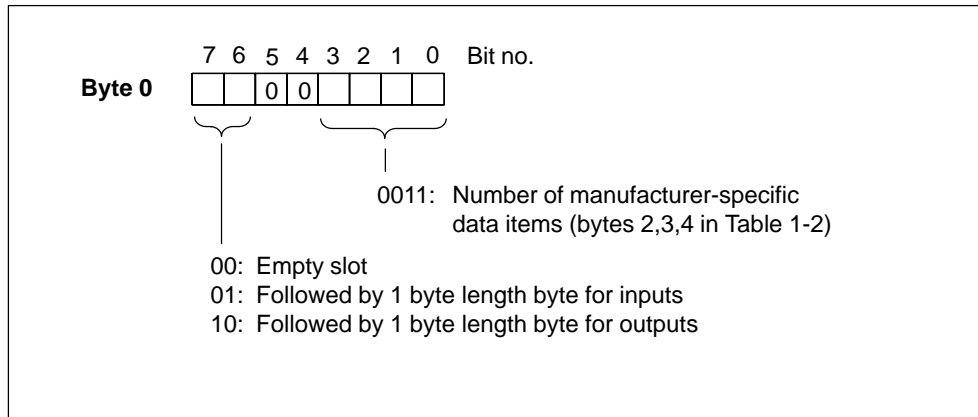


Figure 1-3 Meaning of the 0 Byte of the Address Area Identifiers of the CPU

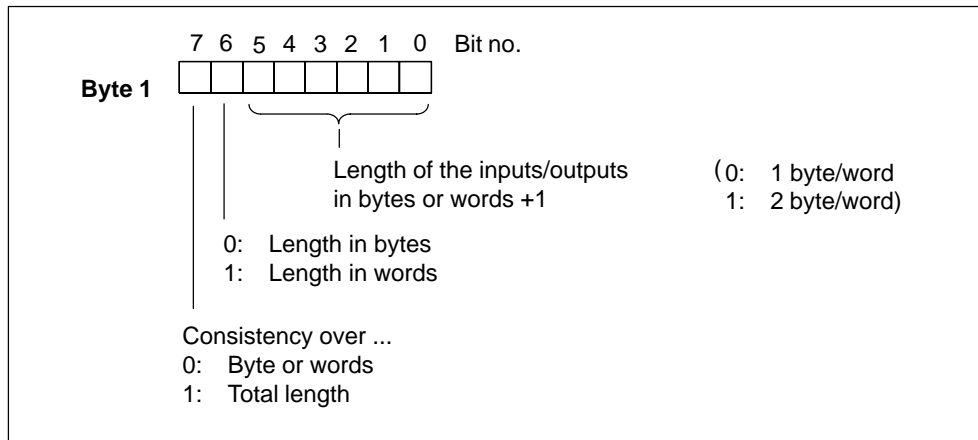


Figure 1-4 Meaning of Byte 1 of the Address Area Identifiers of the CPU

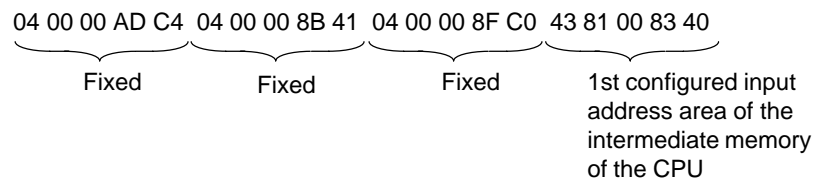
Example of a Configuration Frame

Here is an example of a configuration frame for the CPU 315-2 DP:

Structure:

- A power supply
- The CPU 315-2 DP
- An input address area of the DP master (= output address area of the DP slave) with a length of 2 bytes and a consistency over the whole area

The configuration frame thus consists of 20 bytes and has the following structure:



1.3 Structure of the Configuration Frame for Non-S7 DP Masters

Type/Device Master File

If your DP master does not support the configuration frame in S7 format (see Section 1.2), then you can obtain a type file/device master file in non-S7 format from the **SchnittStellenCenter** in Fürth.

You can obtain the device master file via modem from the **SchnittStellenCenter** in Fürth under the telephone number 0911/737972.

Structure of the Configuration Frame

The length of the configuration frame is dependent on the number of configured address areas of the intermediate memory of the CPU. The first 3 bytes of the configuration frame are permanently occupied with 0. The structure of the configuration frame is as follows:

You can only configure a maximum length of 16 bytes or 16 words in this format. At a length of 32 bytes, you therefore configure a length of 16 words.

Table 1-3 Structure of the Configuration Frame for Non-S7 DP Masters

Configured Address Areas	Byte
1st	0 0 0 0 0 0 0 0
2nd	0 0 0 0 0 0 0 0
3rd	0 0 0 0 0 0 0 0
4th	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">7 6 5 4 3 2 1 0</div> <div style="margin-right: 10px;">Bit no.</div> </div> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 60px; height: 20px; display: flex; justify-content: space-around;"> </div> <div style="margin-left: 10px;">In bytes or words</div> </div> <div style="margin-top: 10px;"> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> </div> <div style="margin-left: 10px;"> <p>Length of the inputs/outputs in bytes or words</p> <p>01: Inputs</p> <p>10: Outputs</p> <p>0: Length in bytes</p> <p>1: Length in words</p> </div> </div> <div style="margin-top: 10px;"> <p>Consistency across</p> <p>...</p> <p>0: Byte or word</p> <p>1: Total length</p> </div>
:	
:	
32nd	

