

# **CAN-CBM-DP**

## **PROFIBUS-DP / CAN-Gateway**

### *Manual Configuration with Hex-Parameters via PROFIBUS-DP*

## **Software Manual Appendix**

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### Changes in the software and/or the documentation

Changes in this manual versus previous version	Changes in the software	Changes in the documentation
First issue.	-	-
-	-	-

Technical data are subject to change without notice.

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# 1. Overview

Customers that does not work with the Siemens SIMATIC manager as described in the software manual have to send the configuration parameters as hexadecimal values in a so called 'parameter telegram' to the CAN-CBM-DP module

This manual appendix describes the meaning of the parameter telegrams hexadecimal values. It replaces the first part of chapter 5 'Configuration with the SIMATIC Manager' of the CAN-CBM-DP software manual.

## 2. Configuration Sequence

The following steps has to be executed to configure the CAN-CBM-DP module:

### 2.1 Load GSD-File

To apply the CAN-CBM-DP module to the PLC, the GSD-file that comes with the CAN-CBM-DP modules has to be loaded. The actual GSD-file can also be loaded from our homepage:

<http://www.esd-electronics.com>

### 2.2 Insert the CAN-CBM-DP as a PROFIBUS-DP Slave Module

The way to insert a PROFIBUS-DP slave module depends on the used software tool for the PROFIBUS-DP configuration.

### 2.3 Set PROFIBUS-DP Slave Address

The way to set the address of a PROFIBUS-DP slave module depends on the used software tool for the PROFIBUS-DP configuration. Normally the setting has to be done while the slave is inserted.

**Attention!!**

Here the *hexadecimal* address value that has been set at the coding switches has to be entered. Before the value is entered, it may be necessary to convert the hexadecimal value into a decimal value!

## 2.4 Parameter Telegram

After inserting the CAN-CBM-DP module, several configuration parameter can be set by the parameter telegram.

### 2.4.1 Structure

Byte ->	1	2	3	4	5	6	7	8	9
Content ->	<i>always '00'</i>	<i>Bitrate</i>	<i>General</i>	<i>Module-ID</i>	<i>reserved</i>	<i>reserved</i>	<i>Wakeup Time</i>	<i>Sync Time_L</i>	<i>Sync Time_H</i>

The first byte of the setting data has always to be set to '00'. In the second byte *Bitrate* is set. In the third byte various configuration bits can be set. In the fourth byte the module ID of the gateway is specified, if it is operated as CANopen slave.

Bytes 5 and 6 are reserved for future applications.

In byte 7 the *Wakeup Time* of the module can be changed. In bytes 8 and 9 the *SYNC Time* can be changed.

### 2.4.2 Bitrate

The value of the bit rate is coded as follows:

Value of Byte <i>Bitrate</i>	Bit Rate [kbit/s]
0	1000
1	666.6
2	500
3	333.3
4	250
5	166
6	125
7	100
8	66.6
9	50
A	33.3
B	20
C	12.5
D	10

**Table 2.4.1:** Setting the bit rate in 14 steps

### 2.4.3 General Configuration

Byte 3 of the configuration data is evaluated bit by bit:

Bit No.	Name	Status after reset	Description	Level assignment	
7	CW	0	Activate Communication Window in Page Mode.	0	no Communication Window
				1	Communication Window active
6	-	0	Reserved (bit must always be set to 0).	-	
5		0			
4	NR	0	Transmit RTR-frames for the Rx-identifiers configured via PROFIBUS.	0	RTR-frames are transmitted
				1	no RTR-frames are transmitted
3	CS	0	Configure gateway as CANopen slave.	0	no CANopen slave
				1	CANopen slave
2	CM	0	Configure gateway as CANopen master.	0	no CANopen master
				1	CANopen master
1	AS	0	After wake-up time has expired, a start frame is transmitted, if the gateway is a master (autostart).	0	no start frame after wake-up time
				1	start frame after wake-up time
0	PM	0	Activate Page Mode.	0	no Page Mode
				1	Page Mode active

**Table 2.4.2:** General parameter data in byte 3

Permissible combinations:

Bit								Meaning
7	6	5	4	3	2	1	0	
CW	-	-	NR	CS	CM	AS	PM	
x	x	x	0	1	0	x	0	- after wake-up time the module automatically transmits <i>128 dec + Module-No.</i> and is in 'Pre-Operational' status - after a start frame has been received: put out TxId, transmit RTR-frames on RxId
x	x	x	1	1	0	x	0	- after wake-up time the module automatically transmits <i>128 dec + Module-No.</i> and is in 'Pre-Operational' status - after a start frame has been received: put out TxId
x	x	x	0	0	1	0	0	- after wake-up time, put out TxId - transmit RTR-frames on RxId
x	x	x	1	0	1	0	0	- after wake-up time, put out TxId
x	x	x	0	0	1	1	0	- after wake-up time start frame, put out TxId, transmit RTR-frames on RxId
x	x	x	1	0	1	1	0	- after wake-up time start frame, put out TxId

**Table 2.4.3:** Example for permissible settings of byte 3

#### **2.4.4 *Module-ID* of Gateways as CANopen Slave**

The *Module-ID* under which the gateway is addressed is set via this byte, if the gateway has been configured as CANopen slave.

Value range: 01 ... 7F hex (1...127 decimal)

#### **2.4.5 Parameter Data Byte 5 and 6: Reserved for Future Applications**

Bytes 5 and 6 of the configuration data is without any function at the moment. It is reserved for future applications and should always be set to '0'.

### 2.4.6 Wakeup Time

Via parameter *Wakeup Time* a delay in seconds is specified. It determines the time a module has to wait after a RESET or power-on, before it starts to transmit data to the CAN.

The *Wakeup Time* specified here, overwrites the value of *Wakeup Time* stored previously in the CAN-CBM-DP gateway, if another value than 'FF' was specified. If 'FF' is specified, the value stored in the gateway will be used.

If parameter *Wakeup Time* is set to '0', the module does not wait, but start the transmission of data as soon as there are available.

The *Wakeup Time* is specified as a hexadecimal value, here.

Parameter	Value range [hex] in [s]	Explanations
<i>Wakeup Time</i>	0	Wakeup-Time function off
	1...FE	Wakeup Time in seconds
	FF	Use current value from gateway (default)

**Table 2.4.4:** Function of parameter *Wakeup Time*

**Attention:** *Wakeup Time* can be set in two different ways:

1. Via byte 7 of the configuration data, as described above.
2. Via the configuration tool *CICT* (refer to CAN-CBM-DP software manual)

Both entries are equal. That means that the last specification is valid!

### 2.4.7 SYNC Time

The CAN-CBM-DP module can cyclically transmit the commands SYNC and START for simple CANopen applications. The cycle for the transmission can be specified via bytes 8 and 9 or the Communication Window. The cyclical transmissions of SYNC and START can only be activated via the Communication Window (see CAN-CBM-DP software manual)!

The cycle is specified in bytes 8 and 9. The specified cycle is used for the SYNC command as well as the START command. It is specified in milliseconds.

*SYNC Time* is specified as a hexadecimal value, here.

Parameter	Value range [hex] in [ms]	Explanations
<i>SYNC Time</i>	0 1...FFFE FFFF	No SYNC and Start transmissions possible SYNC Time and Start Time in milliseconds (1...65534 ms) Use current value from gateway (default)

**Table 2.4.5:** Function of parameter *SYNC Time*

**Attention:** *SYNC Time* can be set in two different ways:

1. Via bytes 8 and 9 of the configuration data as described above.
2. Via bytes 4 and 5 of the Communication Window (refer to CAN-CBM software manual)

Both specifications are equal. That means that the last specification is valid!  
The cyclical transmission can *only* be activated via the Communication Window!

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