



PTD PA13

Power Transmission and Distribution

Power Automation

Power Quality

SIMEAS P

Operating instructions

Integration of SIMEAS P in a SIMATIC Project

Edition 1.0, February 2003

Contents

1 **Safety information** **3**

2 **Requirements**..... **4**

3 **Proceeding** **5**

4 **Further information** **13**

1 Safety information

This manual does not contain a full list of the safety measures for operation of the equipment (module, device) because special operating conditions may necessitate further measures. However, it does contain information which must be adhered to in the interests of your own personal safety and to avoid material damages. This information is highlighted by a warning triangle and are represented as follows, depending on the degree of potential danger:



Warning

means that failure to take the necessary safety precautions can result in death, serious injury or considerable material damage

Caution

means that failure to take the necessary safety precautions will result in death, serious injury or considerable material damage

Qualified personnel

Commissioning and operation of the equipment (module, device) described in this manual may only be performed by qualified personnel. Qualified personnel in the sense of the safety information contained in this manual are persons who are authorized to commission, start up, ground and label devices, systems and circuits according to safety standards.

Use for the intended purpose

The equipment (device, module) may only be used for the application cases specified in the catalog and the technical manual and only in connection with OEM devices and components recommended and approved by Siemens.

The prerequisites for perfect, reliable operation of the product are proper transport, proper storage, installation and assembly, as well as proper operation and maintenance.

When operating electrical equipment, certain parts of this equipment automatically carry dangerous voltages. Improper handling can therefore result in serious injury or material damage:

- The equipment must be grounded at the PE terminal before making any connections whatsoever.
- Dangerous voltages may occur in all circuit components connected to the power supply.
- Dangerous voltages may still exist in the equipment even after it has been disconnected from the power supply (capacitor memory)
- Equipment with current transformer circuits may not be operated in an open state.
- The limit values specified in the manual and in the operating instructions must not be exceeded; this must also be taken into account during inspection and commissioning

Exclusion of liability

We have checked the contents of this publication and every effort has been made to ensure that the descriptions of both hardware and software are as accurate as possible. However, deviations from the description cannot be completely ruled out, so that no liability can be accepted for any errors or omissions contained in the information given.

The data in this manual are checked regularly and the necessary corrections are included in subsequent editions. We are grateful for any improvements that you care to suggest.

Subject to technical modifications without notice.

Copyright

Copyright © Siemens AG February 28, 2003 4:01 a1/p1 All Rights Reserved

It is prohibited to pass on or copy this document or to use or disclose its contents without our express permission. Any duplication is a violation of the law and subject to criminal and civil penalties. All rights reserved, particularly in the event of a patent award or utility model registration.

Registered trademarks

SIMATIC®, SIMATIC NET®, SINAUT® and SICAM® are registered trademarks of the SIEMENS AG. The other names appearing in this manual may be trade names the use of which by third parties for their own purposes may infringe the rights of the owners.

2 Requirements

For the integration of one or more SIMEAS P in a SIMATIC project the following conditions have to be met:

- ☐ Availability of a the SIMATIC configuration software „SIMATIC Manager“.
- ☐ Profibus-network with profibus-master.
- ☐ One or more SIMEAS P.
- ☐ GSD-file for the SIMEAS P.

3 Proceeding

For integration of a SIMEAS P in a SIMATIC project please proceed as following:

1. Install the SIMEAS P GSD-file (device specific file) in your system by using the menu **Options -> Install new GSD...** in the module **HW-Config** of the configuration software **SIMATIC Manager**.

Note: Please mind that you use the current released GSD-file of the SIMEAS P. You can download the current release from our internet download area www.powerquality.de or www.simeas.com for free.

After you have successfully integrated the GSD-file, the device should be present in the hardware catalog browser on the right hand side (see: figure 1: SIMEAS P integration).

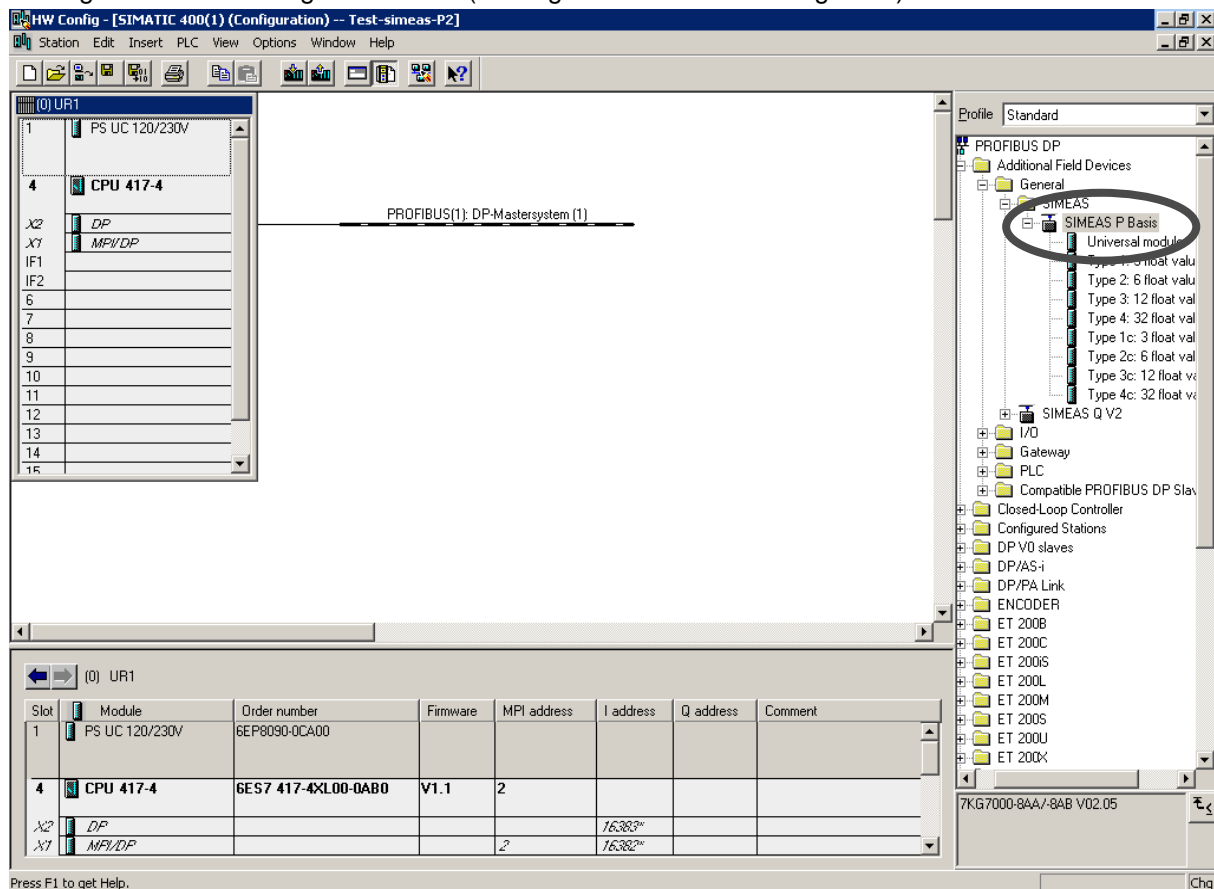


figure 1: SIMEAS P integration

Under the folder **SIMEAS P Basis** you can find different types of transmission for the data transfer to the master station. The following types are available:

- ☐ **Typ 1: 3 values**
1-3 selectable parameters
- ☐ **Typ 2: 6 values**
2-6 selectable parameters
- ☐ **Typ 3: 12 values**
3-12 selectable parameters
- etc.**

- Define a SIMEAS P in your SIMATIC Project afterwards, by using the drag and drop functionality. Select the device folder SIMEAS P Basis in the hardware catalog on the right hand side and drag it into the configuration window (see: figure 2: Definition of a SIMEAS P in a Profibus network). Afterwards a SIMEAS P will be shown in the window.

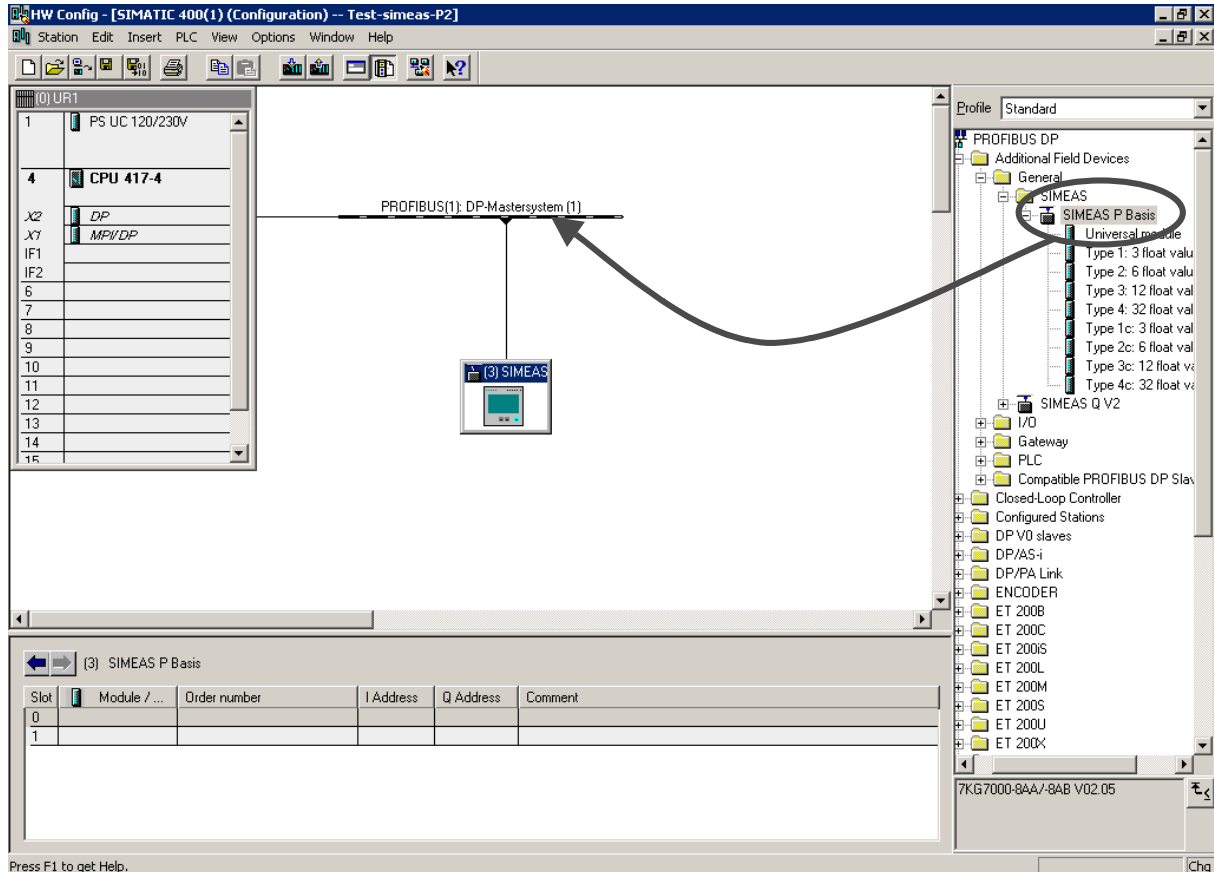


figure 2: Definition of a SIMEAS P in a Profibus network

- Please assign a Profibus address to the device.

Note: Please mind that you assign a unique device address for each Profibus slave in your profibus network. Furthermore we recommend to use a device address numbers higher than 3. You can find additional information regarding this topic in the SIMEAS P Manual.

- Define the type of data transmission for the number of measured values you would like to transmit to the master station. Select the desired data transmission type in the hardware catalog and drag it into the station window below. (see figure 3: Definition of the data transmission type).

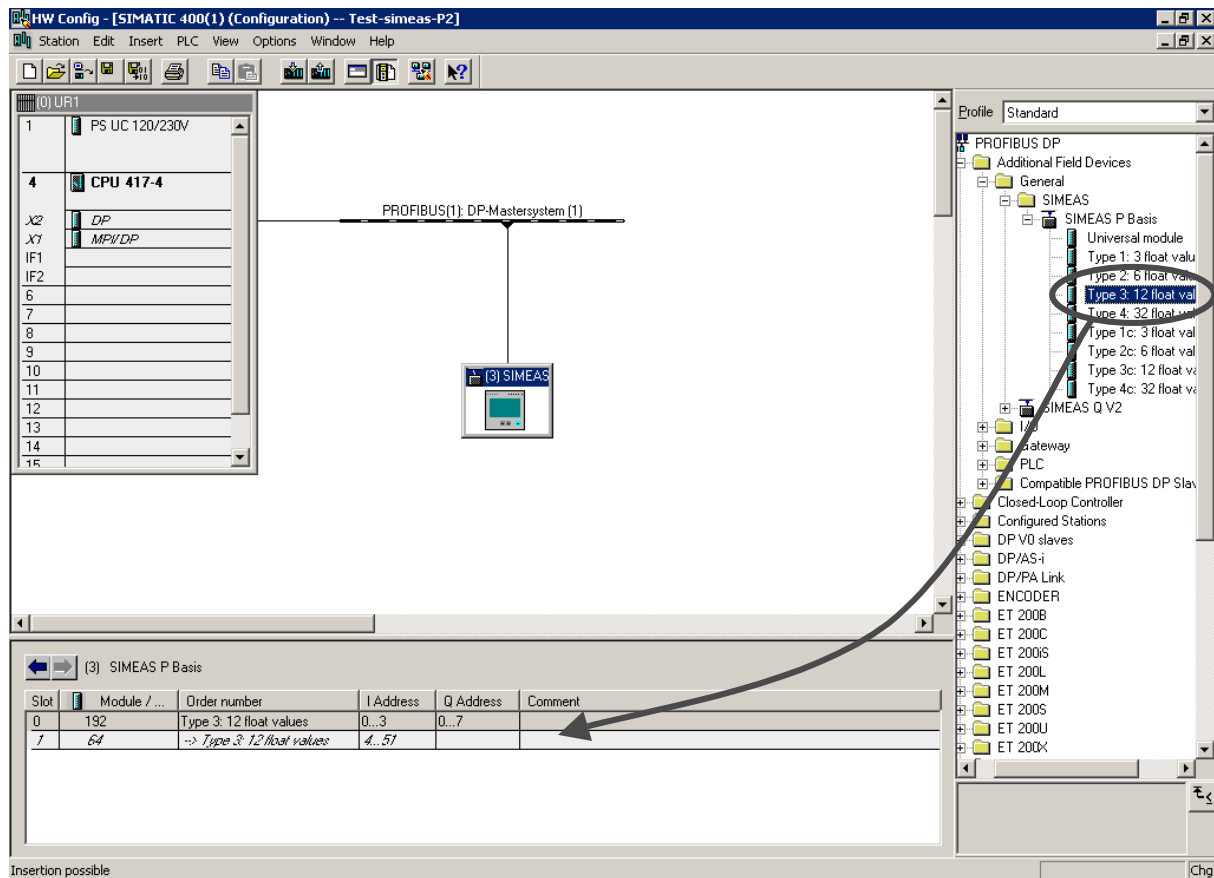


figure 3: Definition of the data transmission type

5. Configure the settings of the DP-slave (see: figure 4: DP-slave setting):

- ☐ Select the parameter from the pull-down menu (e.g. voltage).
- ☐ Select the phase from the pull-down menu.
- ☐ The index parameter is necessary if you want to measure harmonics. In that case you have to select the harmonic you want to measure.

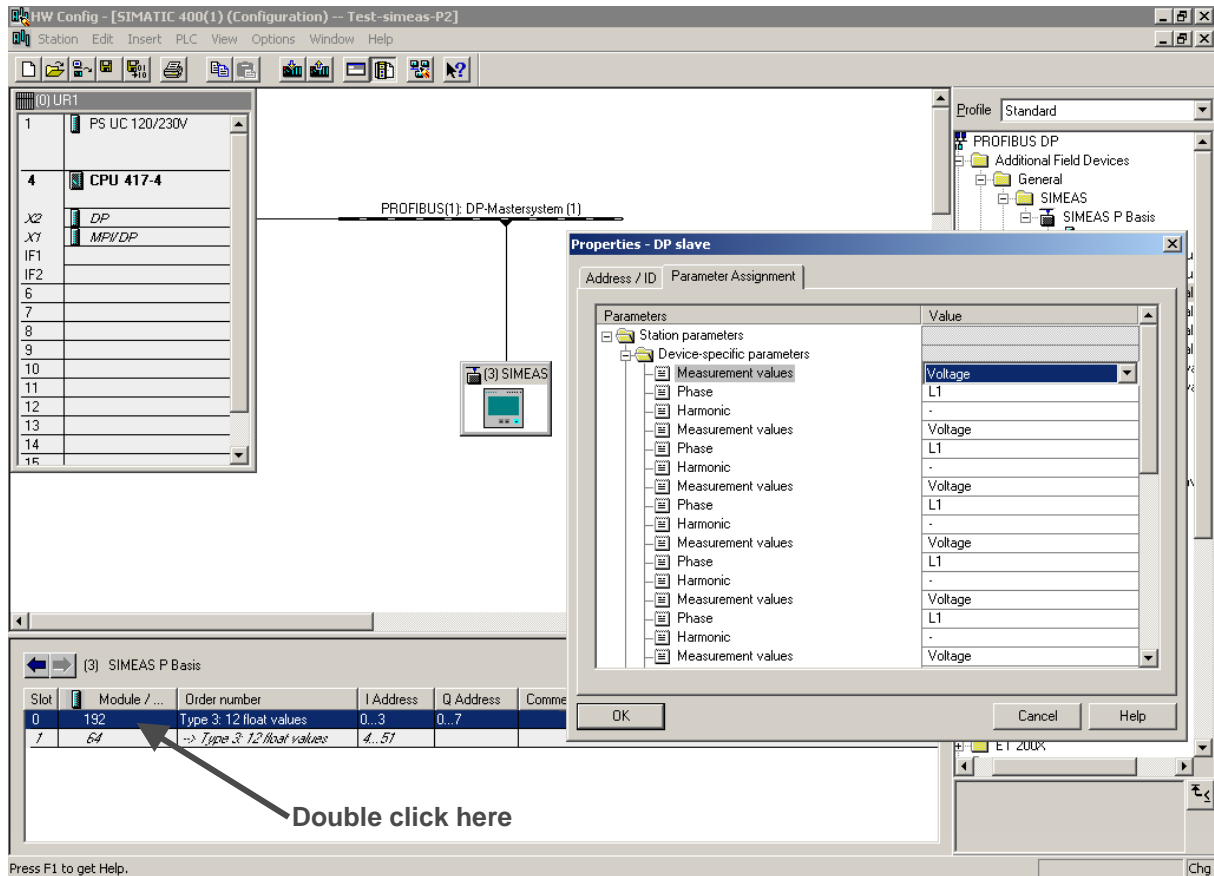
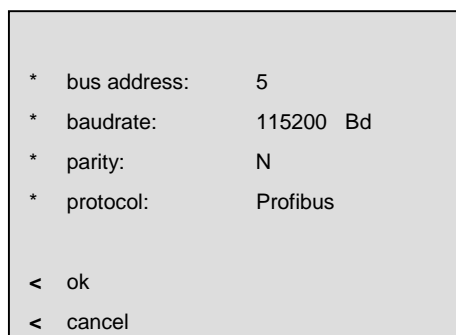


figure 4: DP-slave setting

6. Configuration of the communication

The SIMEAS P need to be driven with Profibus protocol. Furthermore you have to assign a unique address to the device.

Note: In this context we recommend to use a device address numbers higher than 3. You can find additional information regarding this topic in the SIMEAS P manual.



A screenshot of a device configuration menu. The menu is displayed on a light gray background with black text. It lists four communication parameters, each preceded by an asterisk (*): 'bus address:' with the value '5', 'baudrate:' with the value '115200 Bd', 'parity:' with the value 'N', and 'protocol:' with the value 'Profibus'. At the bottom of the menu, there are two options: '< ok' and '< cancel', each preceded by a less-than sign (<).

* bus address:	5
* baudrate:	115200 Bd
* parity:	N
* protocol:	Profibus
< ok	
< cancel	

figure 5: Communication setting at the device

7. Please check the profibus network, whether all devices are working properly. One possibility to do this, is to switch the HW-config into online mode. Incorrect working slaves will be shown with a red symbol. After a successful configuration of the network the HW-config should look like the following figure. (see: figure 6: HW-config online mode).

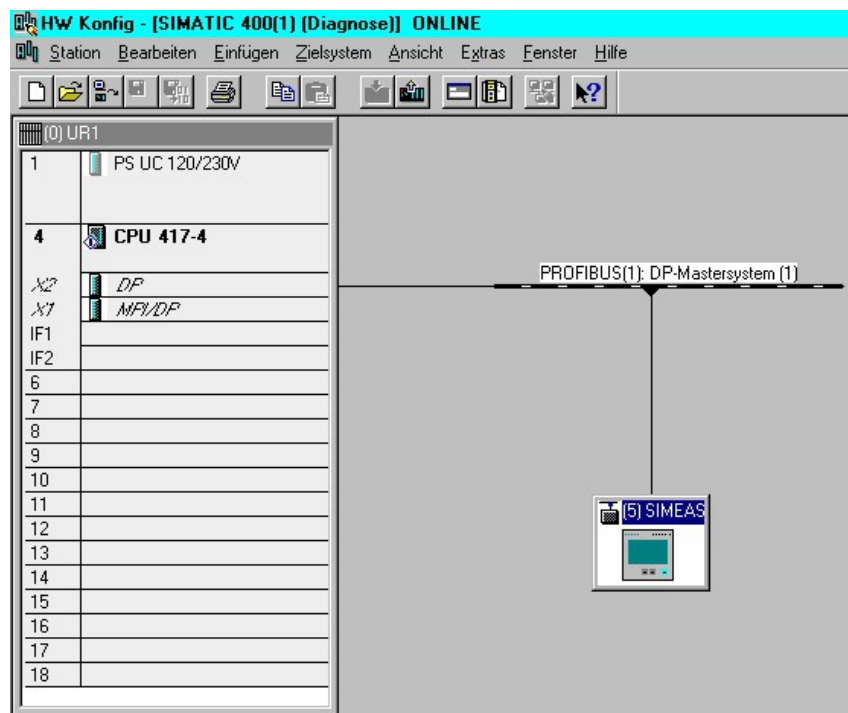


figure 6: HW-config online mode

8. Define the parameter-table and configure it similar to the following example (see: figure 7: parameter table). You can find additional information in the SIMEAS P Manual).

VAT1 -- Test-simeas-P2\SIMATIC 400(1)\CPU 417-4\57-Programm(5)					
	Address	Symbol	Display format	Status value	Modify value
1					
2	IB 1		BIN		
3	IB 2		BIN		
4	IB 3	"Binary output 1/2"	BIN		
5	ID 4	"VL1"	FLOATING_POINT		
6	ID 8	"IL1"	FLOATING_POINT		
7	ID 12	"Frequency"	FLOATING_POINT		
8	ID 16	"Active power sum"	FLOATING_POINT		
9	ID 20	"Reactive power sum"	FLOATING_POINT		
10	ID 24	"Apparent power sum"	FLOATING_POINT		
11	ID 28	"Phase angle"	FLOATING_POINT		
12	ID 32	"Harmonics V"	FLOATING_POINT		
13	ID 36	"Energie import"	FLOATING_POINT		
14	ID 40	"Energie sum"	FLOATING_POINT		
15	ID 44		FLOATING_POINT		
16	ID 48		FLOATING_POINT		
17	ID 136		FLOATING_POINT		
18	ID 140		FLOATING_POINT		
19	PQW 0	"Command input"	HEX		W#16#0000
20	PQW 2		HEX		W#16#0000
21	PQW 4		HEX		W#16#0000
22	PQW 6		HEX		W#16#0000
23					

Byte 0, 1

Byte 2...7

figure 7: parameter table

Enter the operand PQW 0. Display format has to be HEX, since all data are in hexadecimal format. The modify value consists of 3 sections.

- a. W#16# (display format HEX)
- b. Byte 0 (see table)
- c. Byte 1 (see table)

In line PQW 0 specific control commandos can be configured:

„Reset command“, „Reset of min- max- average values“, „alarm counters“, (only bytes 0 and 1 is required)

Command	Byte							
	0	1	2	3	4	5	6	7
Reset command	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00
Reset min-aver.-max	0x10	0x01	0x00	0x00	0x00	0x00	0x00	0x00
Reset energy values	0x10	0x02	0x00	0x00	0x00	0x00	0x00	0x00
Reset min-aver.-max and energy values	0x10	0x03	0x00	0x00	0x00	0x00	0x00	0x00
Date and time = 12.09.02, 14:52:00	0x20	0x0C	0x09	0x02	0x0E	0x34	0x00	0x00

figure 1 : commands

For the command „date and time setting“ bytes 0...7 will be used.

Note: After each command a “null” command has to follow, otherwise the command will be transmitted several times!

4 Further information

Further information regarding SIMEAS P are available at our internet download area:

<http://www.powerquality.de> or <http://www.simeas.com>

If you have question or problems in operating the SIMEAS P please contact our hotline:

Services@ptd.siemens.de

Tel.: +49 180 524 7000