

## Profibus DP Interface for UPS Systems

### Operating Instructions

AEG Power Solutions GmbH, Warstein-Belecke

Department: R&D SUP

Revision: 06

Editor: 09.07.2018 / Schenuit

Release: 09.07.2018 / Brandt

Document No. 8000013221 BAL, en



**Revision**

Status	Change	Date	Name
05	modified	11.04.2016	Peck
06	CN 30010979	09.07.2018	Schenuit



**AEG Power Solutions GmbH**

Emil-Siepmann-Straße 32

59581 Warstein

Germany



+49 2902 763 100

Fax: +49 2902 763 645

E-Mail: [service.de@aegps.com](mailto:service.de@aegps.com)

Internet: <http://www.aegps.com>

© Copyright 2018 AEG Power Solutions GmbH, Warstein-Belecke, Germany. All rights reserved.

This document must not be reproduced, either in whole or in part, without the express permission of AEG Power Solutions GmbH.

AEG is a registered trademark used under licence from AB Electrolux.

## TABLE OF CONTENTS

<b>1.</b>	<b>GENERAL .....</b>	<b>4</b>
<b>2.</b>	<b>DESIGN.....</b>	<b>5</b>
2.1	Structure of the Assembly .....	5
2.2	Structure of the Wiring .....	7
<b>3.</b>	<b>INSTALLATION .....</b>	<b>9</b>
<b>4.</b>	<b>CONFIGURATION .....</b>	<b>11</b>
<b>5.</b>	<b>UPS UNIT PROFILE.....</b>	<b>13</b>
5.1	General.....	13
5.2	Unit Profile of a Three-Phase UPS.....	15
5.3	Unit Profile of a Single-Phase UPS .....	18
5.4	Unit Profile of a Three-Phase Inverter.....	21
5.5	Unit Profile of a Single-Phase Inverter .....	23
5.6	Unit Profile of a Three-Phase Converter .....	25
5.7	Unit Profile of a Single-Phase Converter.....	28
5.8	Unit Profile of a Rectifier .....	30
5.9	Device Profile for Three-Phase Protect blue UPS System	32

## 1. GENERAL

The Profibus DP interface is the fieldbus interface for UPS units in a Profibus DP network. This interface is configured as a Profibus DP slave. The Profibus DP fieldbus protocol is used in production engineering and, increasingly, also in building systems automation (DP stands for Distributed Periphery).

With one RS485 Profibus cable, it is possible to integrate and monitor up to 31 UPS units and inverters with different power ratings (1-phase and 3-phase) in one SCADA system.

The interface in the UPS provides the Profibus DP master with status messages, alarms as well as relevant measured values. Writing or controlling via the Profibus DP slave is not permitted for safety reasons, and therefore cannot be performed.

The Profibus DP interface also features a CAN connection for a remote panel and an RS232 interface for the CompuWatch shutdown software or our SNMP adapter.

The RS232 interface (X2) is used for configuration.

### **Package content:**

- 1 x operating instructions
- 1 x CCC data line for configuration
- 1 x Profibus DP bus interface connector
- 1 x terminating resistor 120R
- 1 x shield terminal block

### **Prerequisites...**

#### **for personnel:**

The "Design", "Installation" and "Configuration" chapters assume technical qualifications as an electrician. These qualifications may take the form of a completed professional training course in an electrical profession or an additional qualification as an "Elektrofachkraft für festgelegte Tätigkeiten" ("Skilled person for defined electrical work") offered by a Chamber of Industry and Commerce (CIC).

#### **for the UPS system:**

- 1 x Protect series UPS system
- 1 x RS485 data line for connecting to Profibus DP master
- 1 x GSD file "PSS108BF.GSD"  
(can be downloaded from <http://www.aegpss.de>)

### **Technical data:**

#### **Profibus DP:**

Protocol:	Profibus DP Version 1
Profibus DP identity no.:	0x08BF
Configuration data:	Acc. to GSD file
Synchronisation:	Supported
Freeze:	Supported
Transmission rate:	Up to 12 Mbps (autobaud)

#### **RS485:**

Max. line length: 1200 m (depending on the transmission rate),  
max. 32 bus stations

Data line: Shielded 1:1 data line (2 x 0.22; twisted pair) e.g.  
Lapp "UNITRONIC-BUS LD"

## 2. DESIGN

### 2.1 Structure of the Assembly

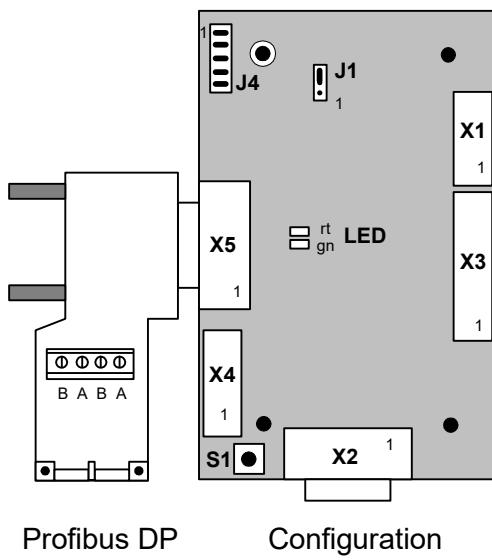


Figure 1 Profibus DP interface (top view)

#### Configuration jumpers:

**J1:** 1-2: firmware update; 2-3: (factory setting)

**J4:** All closed: (factory setting)

#### Connections:

**X1:** Internal UPS bus and power supply

**X2:** Potential-free RS232 serial interface

**X3:** Triggering of "CCC remote signalling" (optional)

**X4:** Additional UPS devices or remote indicator boards can be connected to this potential-free CAN interface.

**X5:** Potential-free RS232/RS485 serial interface

#### Button:

**S1:** Button for starting the configuration

#### LED signals:

**green/red flashes:** Configuration mode, slave address can be set (up to 30 seconds after restarting)

**green on:** Profibus network not active, no communication on the serial interfaces<sub>SEPII</sub> (connector X2 or connector X5)

**green flashes:** Profibus DP in data exchange status  
Data transmission on the serial interfaces (connector X2 and/or connector X5)

**red on:** General Profibus error or bus error  
Error on the serial interfaces (connector X2 and/or connector X5)

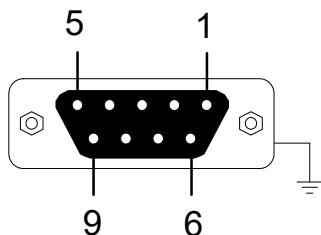
**Interfaces X2 and X5:**

Figure 4 Serial D-SUB connector X2/X5

**X2: RS232 pin assignment for configuration**

Pin number	Signal	Description
2	RxD	PC receiving data from the CCC
3	TxD	PC sending data to the CCC
5	GND	Interface reference potential
Housing		UPS housing potential

**X5: RS485 pin assignment for Profibus DP connection**

Pin number	Signal	Description
1		Shield
3	B	High data
5	GND	Interface reference potential
6		5 V supply voltage
8	A	Low data
Housing		UPS housing potential

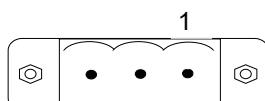
**Interface X4:**

Figure 5 Connector X4

**X4: CAN pin assignment for system expansion**

Pin number	Signal	Description
1	GND	Interface reference potential
2	CANL	Low data
3	CANH	High data

## 2.2 Structure of the Wiring

### RS485 bus line at X5:

Connect the two RS485 wires of the data line to the bus interface connector. You must terminate the end of the bus by fitting the enclosed 120R resistor between connections A and B.

The data line is configured as follows:

9-pin D-sub socket (SCADA system)	9-pin D-sub male (MultiCom)	Terminal block (signal)
3	3	B
8	8	A

### Shield connection of the RS485 bus line:

**Shielding** is a means of weakening (attenuating) magnetic, electrical or electromagnetic interference fields.

Interference currents on line shields are dissipated to earth by means of the shield busbar that has a conductive connection to the housing. A low-impedance connection to the PE conductor is especially important to prevent these interference currents from becoming a source of interference themselves.

If possible, only use lines with a braided shield. The shield coverage should be at least 80%. Avoid using lines with a foil shield because tensile and compressive stresses applied when fastening the line can easily damage the foil, resulting in a reduction in the shielding effect.

Please bear the following points in mind when handling the shield:

- Use cable clips or shield terminals made of metal to secure the braided shields. The clips must surround the shield and make good contact with it over a large area.
- Attach the shield to a shield busbar right after the line enters the cabinet. Run the shield right up to the assembly; however, ensure that it does not make contact there!

You can achieve **effective interference suppression** in the high-frequency range by **connecting the shield at both ends**. You should **therefore always** connect the shield at both ends.

If there is a potential difference between the earthing points, an equalising current can flow along the shield that is connected at both ends. In this case, you should route an additional potential equalising line.

**By connecting the shield at one end**, you can **only attenuate the low frequencies**. You should **therefore only** connect the shield at one end in **exceptional circumstances, namely if:**

- potential differences exist and you cannot route a potential equalising line,
- foil shields (static shields) are used

**On the UPS side**, you must connect the **line screen** to the **housing potential of the UPS unit** via the enclosed screen terminal block. Openings are provided in the plate of the UPS for installation in the connection room area. Remove

approximately 20 mm of the sheath at this point and fasten the line with the screen terminal block.

Ensure good contact between the terminal, the line shield and the UPS housing!



**CAUTION:**

You must route the shield up to the assembly. It must not be connected to the bus interface connector.

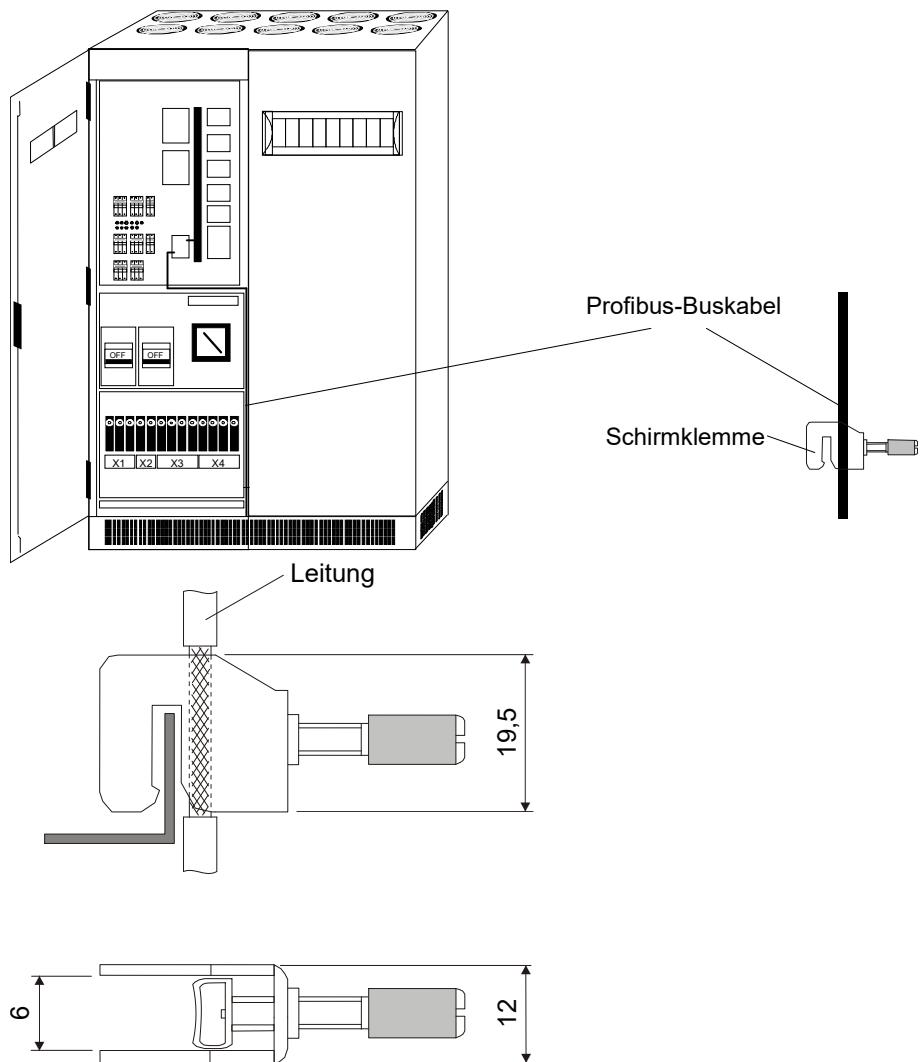


Figure 6 Shield connection

Profibus-Buskabel	Profibus bus cable
Schirmklemme	Screen terminal block
Leitung	Line

**Configuration line for X2:**

The enclosed data line is required to configure the PC via the RS232 interface X2.

**Controller Area Network (CAN) at X4**

Additional UPS units or remote panels can be connected to the potential-free CAN interface (refer to the Operating Instructions for the MultiCom interface for UPS units or the remote panel).

### 3. INSTALLATION

The Profibus DP interface can be installed when the unit is switched on. **Position A29** is reserved for the **Profibus DP interface**. This position is located on the pivot plate, directly behind the cubicle door. You can install one MultiCom interface and one Profibus DP interface simultaneously in some unit types. In this case, you must install the first assembly at position A29.1 and the additional Profibus DP interface at position A29.2. If only one position is available or if only one communication interface assembly is required, the Profibus DP interface must be installed at position A29.1.

Figure 2 shows a typical cubicle design. Please refer to the **operating instructions of your unit** for the **exact position** of A29.

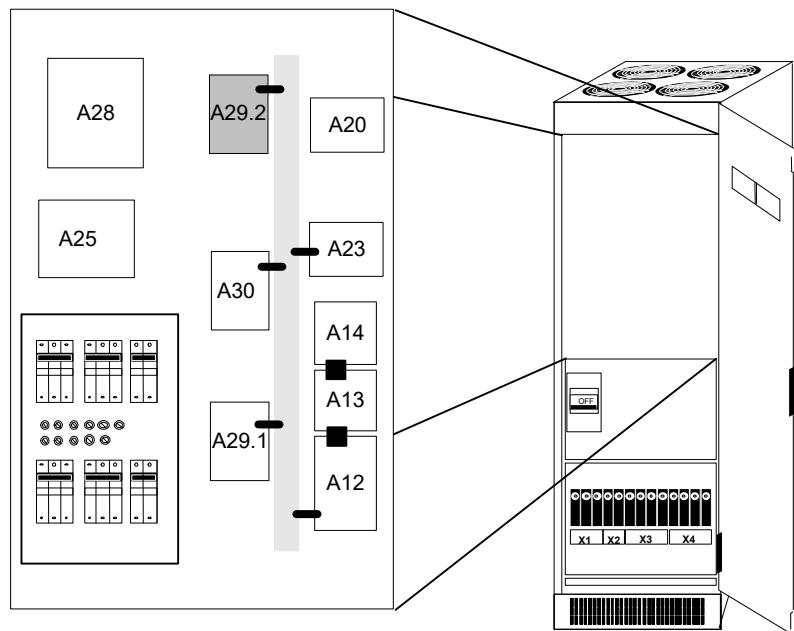


Figure 2 System / pivot plate arrangement of the UPS (example)

**A29.1: MultiCom interface or Profibus DP interface**

**A29.2: Profibus DP interface**

### Uninstalling old printed circuit boards:

- If only one communication assembly is required and an old communication assembly (e.g. an RS232 bridge) that is no longer required is already inserted at position A29.1, you must uninstall this printed circuit board. Disconnect connector X1 from this PCB, then uninstall the PCB.
- If you still need the PCB at position A29.1, you must install the Profibus DP interface at position A29.2.

### To install:

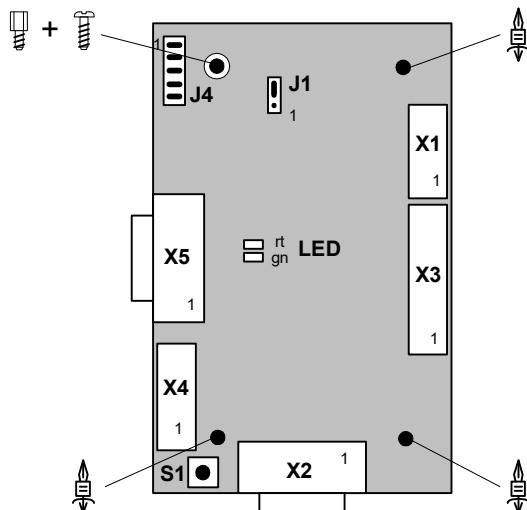


Figure 3 Printed circuit board attachments (top view)

- Insert the three plastic PCB holders and screw the metal spacer bolts into the holes at position A29 (assuming they are not already screwed in).
- Attach assembly A29 to the PCB holders. When doing this, make sure connector X1 is pointing towards the cable duct.
- Screw the fourth PCB holder securely onto the spacer bolts. This causes the data line screen to be earthed.
- Now carefully open the cable duct.



### CAUTION:

**When working on the cable duct, it is essential to proceed with caution since there is nominal voltage (230 V) at the green CombiCon connectors when the unit is supplied with power!**

- Plug the 10-pin flat-ribbon cable (labelled A29-X1) into connector X1 of the Profibus DP interface.
- The Profibus DP interface is ready.
- Close the cable duct.
- Install the Profibus line at X5.
- Fasten the control and signal lines using cable tie holders.
- The installation is now complete.

## 4. CONFIGURATION

When you configure the Profibus DP slave, you simply need to **set** your **Profibus address**. The Profibus DP interface has an autobaud detection function, i.e. the transmission rate is automatically specified by the Profibus DP master.

For this configuration, you must connect the **PC** to the **Profibus DP interface** (X2) via the enclosed **data cable** and **start a terminal program**, e.g. Hyperterminal, on the PC.

### Setting the terminal program:

**Data transmission:** COMx, 9600 baud/8 data bits/1 stop bit

No parity/no protocol

**Terminal emulation:** VT100

You can then **start the configuration by pressing the "S1" button** on the Profibus DP interface. You must make sure that no communication has taken place via the X2/X5 interface for at least the previous 10 seconds. Initiation of the configuration is displayed by the two **LEDs flashing** on the interface and the following display on the terminal:

**"PRESS <CR> FOR CONFIGURATION WHILE LED IS FLASHING"**

The **configuration starts**, providing you **press the <ENTER> key (<CR>)** within **30 seconds**. The configuration main menu opens:

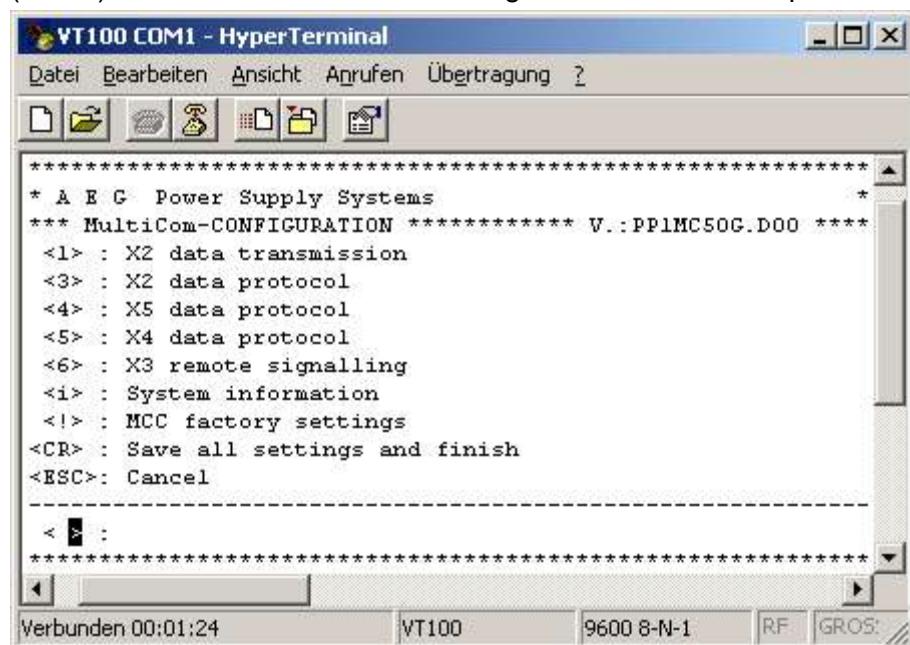


Figure 7 Configuration main menu

If the configuration does not start, you must wait for 10 seconds and then repeat the procedure. Make sure that no data is received via the X2/X5 interfaces during this time.

Press one of the following keys in the **main menu**:

- <CR> to **save the set values**, exit the configuration **and activate the MultiCom interface**.
- <ESC> to **cancel** the configuration.
- <1> to access the **data transmission configuration**.
- <3-5> to access the **data protocol configuration**.
- <6> to access the **remote signalling configuration**.
- <i> to show the **system properties**.

The possible keyboard actions are shown in the menu in "< >".

The following **special keys** can be used in all menus:

- |        |                                  |
|--------|----------------------------------|
| <CR>:  | Carriage Return (↓) or ENTER key |
| <ESC>: | Escape key                       |
| <TAB>: | Tabulator (→) key                |
| <BS>:  | Backspace (←) or rubout key      |
| < >:   | Space bar                        |

### X5 data protocol configuration

To access the **X5 data protocol configuration**, you must **press <4> in the main menu**. This opens the Profibus DP configuration window:

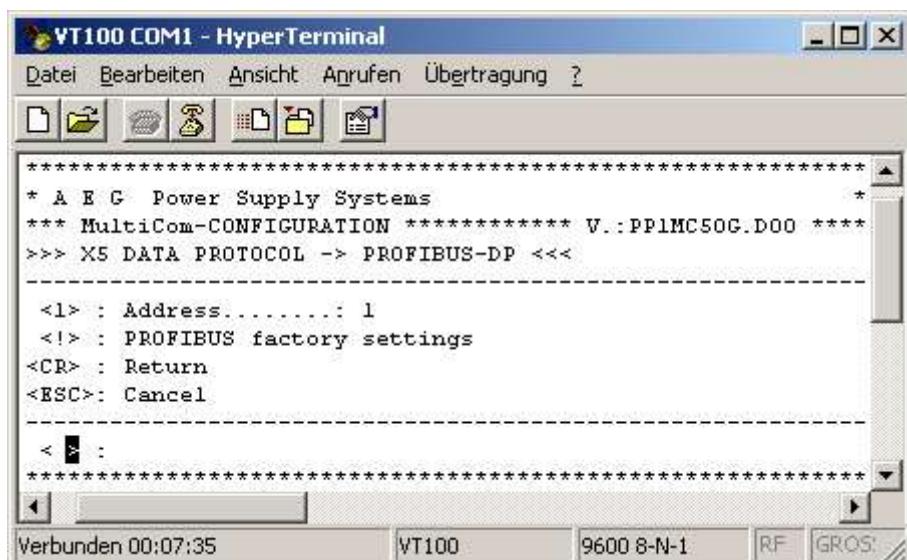


Figure 8 X5 data protocol configuration menu

Press one of the following keys in the "**X5 Data Protocol**" menu:

- <1> to **set the Profibus DP address**.
- <!> to **load the factory setting**.
- <CR>, to **apply the settings**. The configuration is finished and the main menu is opened again.
- <ESC> to **cancel** the configuration. This opens the main menu.

## 5. UPS UNIT PROFILE

### 5.1 General

Every standardised Profibus DP master can exchange data with the Profibus DP interface. After the parameters have been set, the master must send a configuration message to the corresponding slave. The configuration message provides the slave with information about the length of the output data as well as the baud rate parameters. The user assembles the configuration message in the project planning tool. To do this, you must load the GSD file in your project planning tool and select a module (equivalent to the UPS unit type).

You can **download** the **GSD file** from the AEG SVS Power Supply Systems GmbH **homepage**.

Homepage: <http://www.aegps.com>

The following **data types** are used in the UPS profile:

**BYTE** is either an 8-bit integer between 0 and 255 or a bit-coded number where each bit indicates a status.

**WORD** is a 16-bit integer between 0 and 65535. The value to be displayed is a number between 0 and 65535.  
The value is transmitted in the order high byte/low byte.

**WORD10** is a 16-bit integer in the value range from 0 to 65535.  
The value to be displayed is a number between 0.0 and 6553.5.  
The number transmitted must be divided by 10 to obtain this value.  
The value is transmitted in the order high byte/low byte.

**INT** is a 16-bit signed integer in the value range from -32768 to +32767. The value to be displayed is a number between -32768 and +32767.  
The value is transmitted in the order high byte/low byte.

**INT10** is a 16-bit signed integer in the value range from -32768 to +32767. The value to be displayed is a number between -3276.8 and +3276.7. The number transmitted must be divided by 10 to obtain this value.  
The value is transmitted in the order high byte/low byte.

**INT100** is a 16-bit signed integer in the value range from -32768 to +32767. The value to be displayed is a number between -327.68 and +327.67. The number transmitted must be divided by 100 to obtain this value.  
The value is transmitted in the order high byte/low byte.

The modules in the **GSD file** support the following **unit types**:

- **UPS 3in 3out ( +LifeCheck) ( +AUX)**  
UPS units with a three-phase input and a three-phase output
- **UPS 3in 1out ( +LifeCheck) ( +AUX)**  
UPS units with a three-phase input and a single-phase output
- **Inverter 3out ( +LifeCheck) ( +AUX)**  
Inverters with a three-phase output
- **Inverter 1out ( +LifeCheck) ( +AUX)**  
Inverters with a single-phase output
- **Converter 3out ( +AUX)**  
Converters with a three-phase output
- **Converter 1out ( +AUX)**  
Converters with a single-phase output
- **Rectifier**  
Rectifier

(**+LifeCheck**: with additional LifeCheck toggle bit)

(**+AUX**: with additional user-defined auxiliary messages)

- **UPS PT blue System**  
UPS Protect blue unit with a three-phase input and a three-phase output  
(this contains all relevant data for the entire system.)
- **UPS PT blue System + n PBs**  
UPS Protect blue unit with a three-phase input and a three-phase output  
(this contains all relevant data for the entire system + additional data from the individual power blocks.)

The following **abbreviations** are used:

**O**: Optional

**A**: Alarm, fault or error that causes the assembly to be deactivated

**W**: Warning, self-acknowledging fault

**I**: Information

The data of a device type are numbered consecutively from 1 to n in the "**Index**" column.

The slot number with address offset (slot.address offset) is stated in the "**Slot**" column. This allows you to localise our device values in your PLC programming environment once you have integrated the Profibus DP interface via the GSD file, selected the device type and inserted the device profile as of slot 1.

## 5.2 Unit Profile of a Three-Phase UPS

### GSD file: UPS 3in 3out (+LifeCheck) (+AUX)

#### Status:

Index	Slot	Type	Name	Description
1	1.0	BYTE	UPSStatus	UPS status: 1=Normal mode 2=Bypass mode 3=Battery mode 4=Eco mode 6=Deactivation is imminent 7=Off "0"

#### Alarms (1=active):

Index	Slot	Type	Bit no.	Name	Description
2	2.0	BYTE	0	NonCriticalFault	W: Collective warning
			1	CriticalFault	A: Collective alarm
			2	Userdef_DigIn1Active	W: "0"
			3	Userdef_DigIn2Active	W: "0"
			4	Userdef_DigIn3Active	W: "0"
			5	EmergencySwitchOff	A: UPS output off "0"
			7	DouCanFault	W: DOU CAN fault
3	2.1	BYTE	0	MainsFault	W: Rectifier/bypass mains fault
			1	RectifierWarning	W: Rectifier warning
			2	RectifierFault	A: Rectifier fault
			3	BatteryAlarm	A: Battery fault
			4	InverterWarning	W: Inverter warning
			5	InverterFault	W: Inverter fault
			6	SBSWarning	W: Bypass warning
4	2.2	BYTE	0	EqualisingCharge	I: Charger status – equalising charging
			1	Charge	I: Charger status – charging
			2	TrickleCharge	I: Charger status – trickle charging
			3	GenSetOperation	I: Charger status: Em. power supply "0"
			4	BattTemp.SensFault	W: Battery temp. sensor "0"
			5	BatteryTemp.ToHigh	W: Battery temp. too high "0"
			6	CircuitBreaker	W: Circuit-breaker tripped "0"
5	2.3	BYTE	0	BatteryLow	W: Battery undervoltage
			1	Overload	W: Inverter overload
			2	FanFault	W: Fan fault
			3	Overload	A: Inverter overload
			4	ShortCircuit	A: Inverter short-circuit
			5	DcUnderVoltage	A: Inverter DC undervoltage
			6	DcOverVoltage	A: Inverter DC overvoltage
6	2.4	BYTE	0	SBSReady	I: Bypass ready
			1	SBSMainsFault	W: Bypass mains fault
			2	SBSBlocked	W: Bypass blocked
7	2.5	BYTE	0	RectifierOn	I: Rectifier on
			1	InverterOn	I: Inverter on
			2	SBSOn	I: Bypass on

**GSD file: UPS 3in 3out (+LifeCheck) (+AUX)****Measured values:****Rectifier mains:**

Index	Slot	Type	Name	Value range
8	3.0	WORD10	RectMainsFreq.	0.0 – 99.0 Hz
10	3.2	WORD	RectMainsVoltL1	0 – 999 V
12	3.4	WORD	RectMainsVoltL2	0 – 999 V
14	3.6	WORD	RectMainsVoltL3	0 – 999 V

**Bypass mains:**

Index	Slot	Type	Name	Value range
16	4.0	WORD10	SBSMainsFreq.	0.0 - 99.9 Hz
18	4.2	WORD	SBSMainsVoltL1	0 - 999 V
20	5.0	WORD	SBSMainsVoltL2	0 - 999 V
22	5.2	WORD	SBSMainsVoltL3	0 - 999 V

**Battery values:**

Index	Slot	Type	Name	Value range
24	6.0	WORD	BatteryVoltage	0 - 999 V
26	7.0	INT10	BatteryCurrent	+ - 0.0 – 3000.0 A
28	7.2	WORD10	AutonomyTime	0.0 – 999.0 min
30	7.4	WORD	BatteryCapacity	0 – 100 %
32	7.6	INT10	BatteryTemperature	+ - 0.0 – 99.9 °C “0”

**UPS output:**

Index	Slot	Type	Name	Value range
34	8.0	WORD10	OutputFreq.	0.0 - 99.0 Hz
36	8.2	WORD	OutputVoltageL1	0 - 999 V
38	8.4	WORD	OutputLoadL1	0 - 100 %
40	8.6	WORD	OutputCurrentL1	0 - 9999 A
42	8.8	WORD10	OutputPowerL1	0.0 - 1000.0 kW
44	9.0	WORD	OutputVoltageL2	0 - 999 V
46	9.2	WORD	OutputLoadL2	0 - 100 %
48	9.4	WORD	OutputCurrentL2	0 - 9999 A
50	9.6	WORD10	OutputPowerL2	0.0 - 1000.0 kW
52	9.8	WORD	OutputVoltageL3	0 - 999 V
54	9.10	WORD	OutputLoadL3	0 - 100 %
56	9.12	WORD	OutputCurrentL3	0 - 9999 A
58	9.14	WORD10	OutputPowerL3	0.0 - 1000.0 kW

**(+ LifeCheck) (Only modules with LifeCheck):**

Index	Slot	Type	Name	Description
60	10.0	BYTE	LifeCheck	Bit 0-1 toggled 1x per minute

**( +AUX) Auxiliary signals (for units with customisable signals) (1=active):**

Index	Slot	Type	Bit no.	Name	Description
61	11.0	BYTE	0	Userdef_AUX1 – Rec.	"0"
			1	Userdef_AUX2 – Rec.	"0"
			2	Userdef_AUX3 – Rec.	"0"
			3	Userdef_AUX4 – Rec.	"0"
			4	Userdef_AUX5 – Rec.	"0"
			5	Userdef_AUX6 – Rec.	"0"
			6	Userdef_AUX7 – Rec.	"0"
62	11.1	BYTE	0	Userdef_AUX1 – Inv.	"0"
			1	Userdef_AUX2 – Inv.	"0"
			2	Userdef_AUX3 – Inv.	"0"
			3	Userdef_AUX4 – Inv.	"0"
			4	Userdef_AUX5 – Inv.	"0"
			5	Userdef_AUX6 – Inv.	"0"
			6	Userdef_AUX7 – Inv.	"0"
63	11.2	BYTE	0	Userdef_AUX1 – SBS	"0"
			1	Userdef_AUX2 – SBS	"0"
			2	Userdef_AUX3 – SBS	"0"
			3	Userdef_AUX4 – SBS	"0"
			4	Userdef_AUX5 – SBS	"0"
			5	Userdef_AUX6 – SBS	"0"
			6	Userdef_AUX7 – SBS	"0"

## 5.3 Unit Profile of a Single-Phase UPS

### GSD file: UPS 3in 1out (+LifeCheck) (+AUX)

#### Status:

Index	Slot	Type	Name	Description
1	1.0	BYTE	UPSStatus	UPS status: 1=Normal mode 2=Bypass mode 3=Battery mode 4=Eco mode 6=Deactivation is imminent 7=Off "0"

#### Alarms (1=active):

Index	Slot	Type	Bit no.	Name	Description
2	2.0	BYTE	0	NonCriticalFault	W: Collective warning
			1	CriticalFault	A: Collective alarm
			2	Userdef_DigIn1Active	W: "0"
			3	Userdef_DigIn2Active	W: "0"
			4	Userdef_DigIn3Active	W: "0"
			5	EmergencySwitchOff	A: UPS output off "0"
			7	DouCanFault	W: DOU CAN fault
3	2.1	BYTE	0	MainsFault	W: Rectifier/bypass mains fault
			1	RectifierWarning	W: Rectifier warning
			2	RectifierFault	A: Rectifier fault
			3	BatteryAlarm	A: Battery fault
			4	InverterWarning	W: Inverter warning
			5	InverterFault	W: Inverter fault
			6	SBSWarning	W: Bypass warning
4	2.2	BYTE	0	EqualisingCharge	I: Charger status – equalising charging
			1	Charge	I: Charger status – charging
			2	TrickleCharge	I: Charger status – trickle charging
			3	GenSetOperation	I: Charger status: Em. power supply "0"
			4	BattTemp.SensFault	W: Battery temp. sensor "0"
			5	BatteryTemp.ToHigh	W: Battery temp. too high "0"
			6	CircuitBreaker	W: Circuit-breaker tripped "0"
5	2.3	BYTE	0	BatteryLow	W: Battery undervoltage
			1	Overload	W: Inverter overload
			2	FanFault	W: Fan fault
			3	Overload	A: Inverter overload
			4	ShortCircuit	A: Inverter short-circuit
			5	DcUnderVoltage	A: Inverter DC undervoltage
			6	DcOverVoltage	A: Inverter DC overvoltage
6	2.4	BYTE	0	SBSReady	I: Bypass ready
			1	SBSMainsFault	W: Bypass mains fault
			2	SBSBlocked	W: Bypass blocked
7	2.5	BYTE	0	RectifierOn	I: Rectifier on
			1	InverterOn	I: Inverter on
			2	SBSOn	I: Bypass on

**GSD file: UPS 3in 1out (+LifeCheck) (+AUX)****Measured values:****Rectifier mains:**

Index	Slot	Type	Name	Value range
8	3.0	WORD10	RectMainsFreq.	0.0 - 99.0 Hz
10	3.2	WORD	RectMainsVoltL1	0 - 999 V
12	3.4	WORD	RectMainsVoltL2	0 - 999 V
14	3.6	WORD	RectMainsVoltL3	0 - 999 V

**Bypass mains:**

Index	Slot	Type	Name	Value range
16	4.0	WORD10	SBSMainsFreq.	0.0 – 99.9 Hz
18	4.2	WORD	SBSMainsVoltL1	0 – 999 V

**Battery values:**

Index	Slot	Type	Name	Value range
20	5.0	WORD	BatteryVoltage	0 – 999 V
22	6.0	INT10	BatteryCurrent	+ - 0.0 – 3000.0 A
24	6.2	WORD10	AutonomyTime	0.0 – 999.0 min
26	6.4	WORD	BatteryCapacity	0 – 100 %
28	6.6	INT10	BatteryTemperature	+ - 0.0 – 99.9 °C "0"

**UPS output:**

Index	Slot	Type	Name	Value range
30	7.0	WORD10	OutputFreq.	0.0 - 99.0 Hz
32	7.2	WORD	OutputVoltageL1	0 - 999 V
34	7.4	WORD	OutputLoadL1	0 - 100 %
36	7.6	WORD	OutputCurrentL1	0 - 9999 A
38	7.8	WORD10	OutputPowerL1	0.0 - 1000.0 kW

**(+ LifeCheck) (Only modules with LifeCheck):**

Index	Slot	Type	Name	Description
40	8.0	BYTE	LifeCheck	Bit 0-1 toggled 1x per minute

**( +AUX) Auxiliary signals (for units with customisable signals) (1=active):**

Index	Slot	Type	Bit no.	Name	Description
41	9.0	BYTE	0	Userdef_AUX1 – Rec.	"0"
			1	Userdef_AUX2 – Rec.	"0"
			2	Userdef_AUX3 – Rec.	"0"
			3	Userdef_AUX4 – Rec.	"0"
			4	Userdef_AUX5 – Rec.	"0"
			5	Userdef_AUX6 – Rec.	"0"
			6	Userdef_AUX7 – Rec.	"0"
42	9.1	BYTE	0	Userdef_AUX1 – Inv.	"0"
			1	Userdef_AUX2 – Inv.	"0"
			2	Userdef_AUX3 – Inv.	"0"
			3	Userdef_AUX4 – Inv.	"0"
			4	Userdef_AUX5 – Inv.	"0"
			5	Userdef_AUX6 – Inv.	"0"
			6	Userdef_AUX7 – Inv.	"0"
43	9.2	BYTE	0	Userdef_AUX1 – SBS	"0"
			1	Userdef_AUX2 – SBS	"0"
			2	Userdef_AUX3 – SBS	"0"
			3	Userdef_AUX4 – SBS	"0"
			4	Userdef_AUX5 – SBS	"0"
			5	Userdef_AUX6 – SBS	"0"
			6	Userdef_AUX7 – SBS	"0"

## 5.4 Unit Profile of a Three-Phase Inverter

### GSD file: Inverter 3out (+LifeCheck) (+AUX)

#### Status:

Index	Slot	Type	Name	Description
1	1.0	BYTE	InverterStatus	UPS status: 1=Normal mode 2=Bypass mode 4=Eco mode 7=Off "0"

#### Alarms (1=active):

Index	Slot	Type	Bit no.	Name	Description
2	2.0	BYTE	0	NonCriticalFault	W: Collective warning
			1	CriticalFault	A: Collective alarm
			2	Userdef_DigIn1Active	W: "0"
			3	Userdef_DigIn2Active	W: "0"
			4	Userdef_DigIn3Active	W: "0"
			5	EmergencySwitchOff	A: UPS output off "0"
			7	DouCanFault	W: DOU CAN fault
3	2.1	BYTE	4	InverterWarning	W: Inverter warning
			5	InverterFault	W: Inverter fault
			6	SBSWarning	W: Bypass warning
			7	SBSFault	A: Bypass fault
4	2.2	-	-	-	-
5	2.3	BYTE	0	BatteryLow	W: Battery undervoltage
			1	Overload	W: Inverter overload
			2	FanFault	W: Fan fault
			3	Overload	A: Inverter overload
			4	ShortCircuit	A: Inverter short-circuit
			5	DcUnderVoltage	A: Inverter DC undervoltage
			6	DcOverVoltage	A: Inverter DC overvoltage
6	2.4	BYTE	0	SBSReady	I: Bypass ready
			1	SBSMainsFault	W: Bypass mains fault
			2	SBSBlocked	W: Bypass blocked
7	2.5	BYTE	1	InverterOn	I: Inverter on
			2	SBSOn	I: Bypass on

**GSD file: Inverter 3out (+LifeCheck) (+AUX)****Measured values:****Bypass mains:**

Index	Slot	Type	Name	Value range
8	3.0	WORD10	SBSMainsFreq.	0.0 - 99.9 Hz
10	3.2	WORD	SBSMainsVoltL1	0 - 999 V
12	4.0	WORD	SBSMainsVoltL2	0 - 999 V
14	4.2	WORD	SBSMainsVoltL3	0 - 999 V

**DC voltage:**

Index	Slot	Type	Name	Value range
16	5.0	WORD	DCVoltage	0 - 999 V

**Inverter output:**

Index	Slot	Type	Name	Value range
18	6.0	WORD10	OutputFreq.	0.0 - 99.0 Hz
20	6.2	WORD	OutputVoltageL1	0 - 999 V
22	6.4	WORD	OutputLoadL1	0 - 100 %
24	6.6	WORD	OutputCurrentL1	0 - 9999 A
26	6.8	WORD10	OutputPowerL1	0.0 - 1000.0 kW
28	7.0	WORD	OutputVoltageL2	0 - 999 V
30	7.2	WORD	OutputLoadL2	0 - 100 %
32	7.4	WORD	OutputCurrentL2	0 - 9999 A
34	7.6	WORD10	OutputPowerL2	0.0 - 1000.0 kW
36	7.8	WORD	OutputVoltageL3	0 - 999 V
38	7.10	WORD	OutputLoadL3	0 - 100 %
40	7.12	WORD	OutputCurrentL3	0 - 9999 A
42	7.14	WORD10	OutputPowerL3	0.0 - 1000.0 kW

**(+ LifeCheck) (Only modules with LifeCheck):**

Index	Slot	Type	Name	Description
44	8.0	BYTE	LifeCheck	Bit 0-1 toggled 1x per minute

**( +AUX) Auxiliary signals (for units with customisable signals) (1=active):**

Index	Slot	Type	Bit no.	Name	Description
45	9.0	BYTE	0	Userdef_AUX1 – Inv.	"0"
			1	Userdef_AUX2 – Inv.	"0"
			2	Userdef_AUX3 – Inv.	"0"
			3	Userdef_AUX4 – Inv.	"0"
			4	Userdef_AUX5 – Inv.	"0"
			5	Userdef_AUX6 – Inv.	"0"
			6	Userdef_AUX7 – Inv.	"0"
46	9.1	BYTE	0	Userdef_AUX1 – SBS	"0"
			1	Userdef_AUX2 – SBS	"0"
			2	Userdef_AUX3 – SBS	"0"
			3	Userdef_AUX4 – SBS	"0"
			4	Userdef_AUX5 – SBS	"0"
			5	Userdef_AUX6 – SBS	"0"
			6	Userdef_AUX7 – SBS	"0"

## 5.5 Unit Profile of a Single-Phase Inverter

GSD file: Inverter 1out (+LifeCheck) (+AUX)

### Status:

Index	Slot	Type	Name	Description
1	1.0	BYTE	InverterStatus	UPS status: 1=Normal mode 2=Bypass mode 4=Eco mode 7=Off "0"

### Alarms (1=active):

Index	Slot	Type	Bit no.	Name	Description
2	2.0	BYTE	0	NonCriticalFault	W: Collective warning
			1	CriticalFault	A: Collective alarm
			2	Userdef_DigIn1Active	W: "0"
			3	Userdef_DigIn2Active	W: "0"
			4	Userdef_DigIn3Active	W: "0"
			5	EmergencySwitchOff	A: UPS output off "0"
			7	DouCanFault	W: DOU CAN fault
3	2.1	BYTE	4	InverterWarning	W: Inverter warning
			5	InverterFault	W: Inverter fault
			6	SBSWarning	W: Bypass warning
			7	SBSFault	A: Bypass fault
4	2.2	-	-	-	-
5	2.3	BYTE	0	BatteryLow	W: Battery undervoltage
			1	Overload	W: Inverter overload
			2	FanFault	W: Fan fault
			3	Overload	A: Inverter overload
			4	ShortCircuit	A: Inverter short-circuit
			5	DcUnderVoltage	A: Inverter DC undervoltage
			6	DcOverVoltage	A: Inverter DC overvoltage
6	2.4	BYTE	0	SBSReady	I: Bypass ready
			1	SBSMainsFault	W: Bypass mains fault
			2	SBSBlocked	W: Bypass blocked
7	2.5	BYTE	1	InverterOn	I: Inverter on
			2	SBSOn	I: Bypass on

**GSD file: Inverter 1out (+LifeCheck) (+AUX)****Measured values:****Bypass mains:**

Index	Slot	Type	Name	Value range
8	3.0	WORD10	SBSMainsFreq.	0.0 - 99.9 Hz
10	3.2	WORD	SBSMainsVoltL1	0 - 999 V

**DC voltage:**

Index	Slot	Type	Name	Value range
12	4.0	WORD	DCVoltage	0 - 999 V

**Inverter output:**

Index	Slot	Type	Name	Value range
14	5.0	WORD10	OutputFreq.	0.0 - 99.0 Hz
16	5.2	WORD	OutputVoltageL1	0 - 999 V
18	5.4	WORD	OutputLoadL1	0 - 100 %
20	5.6	WORD	OutputCurrentL1	0 - 9999 A
22	5.8	WORD10	OutputPowerL1	0.0 - 1000.0 kW

**(+ LifeCheck) (Only modules with LifeCheck):**

Index	Slot	Type	Name	Description
24	6.0	BYTE	LifeCheck	Bit 0-1 toggled 1x per minute

**( +AUX) Auxiliary signals (for units with customisable signals) (1=active):**

Index	Slot	Type	Bit no.	Name	Description
25	7.0	BYTE	0	Userdef_AUX1 – Inv.	"0"
			1	Userdef_AUX2 – Inv.	"0"
			2	Userdef_AUX3 – Inv.	"0"
			3	Userdef_AUX4 – Inv.	"0"
			4	Userdef_AUX5 – Inv.	"0"
			5	Userdef_AUX6 – Inv.	"0"
			6	Userdef_AUX7 – Inv.	"0"
26	7.1	BYTE	0	Userdef_AUX1 – SBS	"0"
			1	Userdef_AUX2 – SBS	"0"
			2	Userdef_AUX3 – SBS	"0"
			3	Userdef_AUX4 – SBS	"0"
			4	Userdef_AUX5 – SBS	"0"
			5	Userdef_AUX6 – SBS	"0"
			6	Userdef_AUX7 – SBS	"0"

## 5.6 Unit Profile of a Three-Phase Converter

**GSD file: Converter 3in 3out +Lifecheck (+AUX)**

**Status:**

Index	Slot	Type	Name	Description
1	1.0	BYTE	UPSStatus	INV Status: 1=Normal mode 3=Battery mode 6=Deactivation is imminent 7=Off

**Alarms (1=active):**

Index	Slot	Type	Bit no.	Name	Description
2	2.0	BYTE	0	NonCriticalFault	W: Collective warning
			1	CriticalFault	A: Collective alarm
			2	Userdef_DigIn1Active	W: "0"
			3	Userdef_DigIn2Active	W: "0"
			4	Userdef_DigIn3Active	W: "0"
			5	EmergencySwitchOff	A: INV output off "0"
			7	DouCanFault	W: DOU CAN fault
3	2.1	BYTE	0	MainsFault	W: Rectifier mains fault
			1	RectifierWarning	W: Rectifier warning
			2	RectifierFault	A: Rectifier fault
			3	BatteryAlarm	A: Battery fault
			4	InverterWarning	W: Inverter warning
			5	InverterFault	W: Inverter fault
4	2.2	BYTE	0	EqualisingCharge	I: Charger status – equalising charging
			1	Charge	I: Charger status – charging
			2	TrickleCharge	I: Charger status – trickle charging
			3	GenSetOperation	I: Charger status: Em. power supply "0"
			4	BattTemp.SensFault	W: Battery temp. sensor "0"
			5	BatteryTemp.ToHigh	W: Battery temp. too high "0"
			6	CircuitBreaker	W: Circuit-breaker tripped "0"
5	2.3	BYTE	0	BatteryLow	W: Battery undervoltage
			1	Overload	W: Inverter overload
			2	FanFault	W: Fan fault
			3	Overload	A: Inverter overload
			4	ShortCircuit	A: Inverter short-circuit
			5	DcUnderVoltage	A: Inverter DC undervoltage
			6	DcOverVoltage	A: Inverter DC overvoltage
6	2.4	-	-	-	-
			-	-	-
7	2.5	BYTE	0	RectifierOn	I: Rectifier on
			1	InverterOn	I: Inverter on

**GSD file: Converter 3in 3out +LifeCheck****Measured values:****Rectifier mains:**

Index	Slot	Type	Name	Value range
8	3.0	WORD10	RectMainsFreq.	0.0 – 99.0 Hz
10	3.2	WORD	RectMainsVoltL1	0 – 999 V
12	3.4	WORD	RectMainsVoltL2	0 – 999 V
14	3.6	WORD	RectMainsVoltL3	0 – 999 V

**Battery values:**

Index	Slot	Type	Name	Value range
16	4.0	WORD	BatteryVoltage	0 – 999 V
18	4.2	INT10	BatteryCurrent	+ - 0.0 – 3000.0 A
20	4.4	WORD10	AutonomyTime	0.0 – 999.0 min
22	4.6	WORD	BatteryCapacity	0 – 100 %
24	4.8	INT10	BatteryTemperature	+ - 0.0 – 99.9 °C      "0"

**INV output:**

Index	Slot	Type	Name	Value range
26	5.0	WORD10	OutputFreq.	0.0 - 99.0 Hz
28	5.2	WORD	OutputVoltageL1	0 - 999 V
30	5.4	WORD	OutputLoadL1	0 - 100 %
32	5.6	WORD	OutputCurrentL1	0 - 9999 A
34	5.8	WORD10	OutputPowerL1	0.0 - 1000.0 kW
36	5.10	WORD	OutputVoltageL2	0 - 999 V
38	5.12	WORD	OutputLoadL2	0 - 100 %
40	5.14	WORD	OutputCurrentL2	0 - 9999 A
42	5.16	WORD10	OutputPowerL2	0.0 - 1000.0 kW
44	5.18	WORD	OutputVoltageL3	0 - 999 V
46	5.20	WORD	OutputLoadL3	0 - 100 %
48	5.22	WORD	OutputCurrentL3	0 - 9999 A
50	5.24	WORD10	OutputPowerL3	0.0 - 1000.0 kW

**LifeCheck:**

Index	Slot	Type	Name	Description
52	6.0	BYTE	LifeCheck	Bit 0-1 toggled 1x per minute

**( +AUX) Auxiliary signals (for units with customisable signals) (1=active):**

Index	Slot	Type	Bit no.	Name	Description
53	7.0	BYTE	0	Userdef_AUX1 – Rect.	"0"
			1	Userdef_AUX2 – Rect.	"0"
			2	Userdef_AUX3 – Rect.	"0"
			3	Userdef_AUX4 – Rect.	"0"
			4	Userdef_AUX5 – Rect.	"0"
			5	Userdef_AUX6 – Rect.	"0"
			6	Userdef_AUX7 – Rect.	"0"
54	7.1	BYTE	0	Userdef_AUX1 – Inv.	"0"
			1	Userdef_AUX2 – Inv.	"0"
			2	Userdef_AUX3 – Inv.	"0"
			3	Userdef_AUX4 – Inv.	"0"
			4	Userdef_AUX5 – Inv.	"0"
			5	Userdef_AUX6 – Inv.	"0"
			6	Userdef_AUX7 – Inv.	"0"

## 5.7 Unit Profile of a Single-Phase Converter

### GSD file: Converter 3in 1out +Lifecheck (+AUX)

#### Status:

Index	Slot	Type	Name	Description
1	1.0	BYTE	UPSStatus	INV Status: 1=Normal mode 3=Battery mode 6=Deactivation is imminent 7=Off

#### Alarms (1=active):

Index	Slot	Type	Bit no.	Name	Description
2	2.0	BYTE	0	NonCriticalFault	W: Collective warning
			1	CriticalFault	A: Collective alarm
			2	Userdef_DigIn1Active	W: "0"
			3	Userdef_DigIn2Active	W: "0"
			4	Userdef_DigIn3Active	W: "0"
			5	EmergencySwitchOff	A: UPS output off "0"
			7	DouCanFault	W: DOU CAN fault
3	2.1	BYTE	0	MainsFault	W: Rectifier/bypass mains fault
			1	RectifierWarning	W: Rectifier warning
			2	RectifierFault	A: Rectifier fault
			3	BatteryAlarm	A: Battery fault
			4	InverterWarning	W: Inverter warning
			5	InverterFault	W: Inverter fault
4	2.2	BYTE	0	EqualisingCharge	I: Charger status – equalising charging
			1	Charge	I: Charger status – charging
			2	TrickleCharge	I: Charger status – trickle charging
			3	GenSetOperation	I: Charger status: Em. power supply "0"
			4	BattTemp.SensFault	W: Battery temp. sensor "0"
			5	BatteryTemp.ToHigh	W: Battery temp. too high "0"
			6	CircuitBreaker	W: Circuit-breaker tripped "0"
5	2.3	BYTE	0	BatteryLow	W: Battery undervoltage
			1	Overload	W: Inverter overload
			2	FanFault	W: Fan fault
			3	Overload	A: Inverter overload
			4	ShortCircuit	A: Inverter short-circuit
			5	DcUnderVoltage	A: Inverter DC undervoltage
			6	DcOverVoltage	A: Inverter DC overvoltage
6	2.4	-	-	-	-
			-	-	-
7	2.5	BYTE	0	RectifierOn	I: Rectifier on
			1	InverterOn	I: Inverter on

**GSD file: Converter 3in 1out +LifeCheck****Measured values:****Rectifier mains:**

Index	Slot	Type	Name	Value range
8	3.0	WORD10	RectMainsFreq.	0.0 - 99.0 Hz
10	3.2	WORD	RectMainsVoltL1	0 - 999 V
12	3.4	WORD	RectMainsVoltL2	0 - 999 V
14	3.6	WORD	RectMainsVoltL3	0 - 999 V

**Battery values:**

Index	Slot	Type	Name	Value range
16	4.0	WORD	BatteryVoltage	0 - 999 V
18	4.2	INT10	BatteryCurrent	+ - 0.0 - 3000.0 A
20	4.4	WORD10	AutonomyTime	0.0 - 999.0 min
22	4.6	WORD	BatteryCapacity	0 - 100 %
24	4.8	INT10	BatteryTemperature	+ - 0.0 - 99.9 °C "0"

**UPS output:**

Index	Slot	Type	Name	Value range
26	5.0	WORD10	OutputFreq.	0.0 - 99.0 Hz
28	5.2	WORD	OutputVoltageL1	0 - 999 V
30	5.4	WORD	OutputLoadL1	0 - 100 %
32	5.6	WORD	OutputCurrentL1	0 - 9999 A
34	5.8	WORD10	OutputPowerL1	0.0 - 1000.0 kW

**LifeCheck:**

Index	Slot	Type	Name	Description
36	6.0	BYTE	LifeCheck	Bit 0-1 toggled 1x per minute

**( +AUX) Auxiliary signals (for units with customisable signals) (1=active):**

Index	Slot	Type	Bit no.	Name	Description
37	7.0	BYTE	0	Userdef_AUX1 – Rect.	"0"
			1	Userdef_AUX2 – Rect.	"0"
			2	Userdef_AUX3 – Rect.	"0"
			3	Userdef_AUX4 – Rect.	"0"
			4	Userdef_AUX5 – Rect.	"0"
			5	Userdef_AUX6 – Rect.	"0"
			6	Userdef_AUX7 – Rect.	"0"
38	7.1	BYTE	0	Userdef_AUX1 – Inv.	"0"
			1	Userdef_AUX2 – Inv.	"0"
			2	Userdef_AUX3 – Inv.	"0"
			3	Userdef_AUX4 – Inv.	"0"
			4	Userdef_AUX5 – Inv.	"0"
			5	Userdef_AUX6 – Inv.	"0"
			6	Userdef_AUX7 – Inv.	"0"

## 5.8 Unit Profile of a Rectifier

### GSD file: Rectifier

#### Status:

Index	Slot	Type	Name	Description
1	1.0	BYTE	RectStatus	0 = Off 1 = On 2 = Remote off
2	1.1	BYTE	RectOperationMode	0 = Off 1 = Equalising charging 2 = Charging 3 = Trickle charging 6 = Discharging 7 = Battery test 16= no battery

#### Alarms (1=active):

Index	Slot	Type	Bit no.	Name	Description
3	2.0	BYTE	0	NonCriticalFault	W: Collective warning
			1	CriticalFault	A: Collective alarm
4	2.1	BYTE	0	RectMainsFault	W: Rectifier mains fault
			1	RectifierWarning	W: Rectifier warning
			2	RectifierFault	A: Rectifier fault
			3	FanFault	W: Fan fault
			4	StackTempHigh	W: Stack overtemperature
			5	DcEarthFault	W: Earth fault message from ext. mon. "0"
			6	DouCanFault	W: DOU CAN fault
5	2.2	BYTE	0	BatteryWarning	W: Battery warning
			1	BatteryAlarm	A: Battery fault
			2	BatteryTemp.ToHigh	W: Battery temp. too high "0"
6	2.3	BYTE	0	Userdef_DigIn1Active	W: "0"
			1	Userdef_DigIn2Active	W: "0"
			2	Userdef_DigIn3Active	W: "0"

**GSD file: Rectifier****Measured values:****Rectifier mains:**

Index	Slot	Type	Name	Value range
7	3.0	WORD10	RectMainsFreq.	0 - 99.0 Hz
9	3.2	WORD	RectMainsVoltL1	0 - 999 V
11	3.4	WORD	RectMainsVoltL2	0 - 999 V
13	3.6	WORD	RectMainsVoltL3	0 - 999 V
15	3.8	WORD	RectMainsCurrentL1	0 - 9999 A
17	3.10	WORD	RectMainsCurrentL2	0 - 9999 A
19	3.12	WORD	RectMainsCurrentL3	0 - 9999 A

**REC:**

Index	Slot	Type	Name	Value range
21	4.0	WORD	RectVoltage	0 - 999 V
23	4.2	WORD	RectCurrent	0 - 9999 A
25	4.4	WORD10	RectPower	0.0 - 1000.0 kW

**Battery values:**

Index	Slot	Type	Name	Value range
27	5.0	WORD	BatteryVoltage	0 - 999 V
29	5.2	INT10	BatteryCurrent	+ - 0.0 - 3000.0 A "0"
31	5.4	WORD	BatteryCapacity	0 - 100 % "0"
33	5.6	INT10	BatteryRoomTemp.	+ - 0.0 - 99.0 °C "0"

**LifeCheck:**

Index	Slot	Type	Name	Description
35	6.0	BYTE	LifeCheck	Bit 0-1 toggled 1x per minute

**Auxiliary Signals (1=active):**

Index	Slot	Type	Bit no.	Name	Description
36	7.0	BYTE	0	Userdef_AUX1 – Rect.	"0"
			1	Userdef_AUX2 – Rect.	"0"
			2	Userdef_AUX3 – Rect.	"0"
			3	Userdef_AUX4 – Rect.	"0"
			4	Userdef_AUX5 – Rect.	"0"
			5	Userdef_AUX6 – Rect.	"0"
			6	Userdef_AUX7 – Rect.	"0"

## 5.9 Device Profile for Three-Phase Protect blue UPS System

### GSD file: UPS PT blue System

#### UPS system: Status

Index	Slot	Type	Name	Description
1	1.0	BYTE	UPSStatus	UPS status: 1 = normal operation 2 = bypass operation 3 = battery operation 4 = Eco operation 7 = UPS off 8 = UPS off due to fault signalling contact "0"
2	1.1	BYTE	CurrentRedundanz	0 = no redundant PB 1 = one redundant PB 2 = two redundant PBs 3 = three redundant PBs 4 = four redundant PBs

#### UPS system: Information, warnings, alarms (1=active)

Index	Slot	Type	Bit no.	Name	Description
3	2.0	BYTE	0	SystemGeneralWarning	W: UPS system collective warning
4	2.1	BYTE	0	SystemGeneralFault	A: UPS system collective alarm
5	2.2	BYTE	0	Userdef_DigIn1Active	W: "0"
6	2.3	BYTE	0	Userdef_DigIn2Active	W: "0"
7	2.4	BYTE	0	Userdef_DigIn3Active	W: "0"
8	2.5	BYTE	0	RedundancyLost	W: Redundancy of the UPS system lost
9	2.6	BYTE	0	Overloadwarning	W: UPS system is overloaded
10	2.7	BYTE	7-0	FanFault	W: Fan fault in a power block Transfer of the PB no. (bit coded)
11	2.8	BYTE	7-0	RecChaBattWarning	W: Collective warning for rectifiers, chargers, batteries Transfer of the PB no. (bit coded)
12	2.9	BYTE	7-0	RecChaBattFault	A: Collective alarm for rectifiers, chargers, batteries Transfer of the PB no. (bit coded)
13	2.10	BYTE	7-0	InvBoostWarning	W: Collective warning for inverters, boosters Transfer of the PB no. (bit coded)
14	2.11	BYTE	7-0	InvBoostFault	A: Collective alarm for inverters, boosters Transfer of the PB no. (bit coded)
15	2.12	BYTE	7-0	SbsWarning	W: Collective warning for bypass Transfer of the PB no. (bit coded)
16	2.13	BYTE	7-0	SbsFault	A: Collective alarm for bypass Transfer of the PB no. (bit coded)

17	3.0	BYTE	7-0	RectMainsFault	W: Rectifier mains fault Transfer of the PB no. (bit coded)
18	3.1	BYTE	7-0	SbsMainsFault	W: Bypass mains fault Transfer of the PB no. (bit coded)
19	3.2	BYTE	3-0	BattCharMode	I: Status mode of the battery charger (total status) 0 = at least 1 battery not present 1 = at least 1 charger off 2 = trickle charging 3 = charging 4 = equalising charging 5 = start-up charging 6 = diesel operating mode 7 = battery charging circuit test 8 = battery check 9 = battery capacity check
20	3.3	BYTE	7-0	BatteryWarning	W: 1 = battery warning Transfer of the PB no. (bit coded)
21	3.4	BYTE	7-0	BatteryAlarm	A: battery alarm Transfer of the PB no. (bit coded)
22	3.5	BYTE	7-0	BatteryLow	W: battery undervoltage message Transfer of the PB no. (bit coded)
23	3.6	BYTE	7-0	RectifierON	I: rectifier operation Transfer of the PB no. (bit coded)
24	3.7	BYTE	7-0	InverterON	I: inverter operation Transfer of the PB no. (bit coded)
25	3.8	BYTE	7-0	BypassON	I: bypass operation Transfer of the PB no. (bit coded)
26	3.9	BYTE	7-0	BypassBlocked	I: bypass blocked Transfer of the PB no. (bit coded)

Transfer of the PB no. (bit coded): Bit0 = PB1, Bit1 = PB2, ...

**UPS system measured values: Rectifier mains:**

Index	Slot	Type	Name	Value range
27	4.0	WORD10	RectMainsFrequency	0.0 - 99.0 Hz
29	4.2	WORD	RectMainsVoltL1	0 - 999 V
31	4.4	WORD	RectMainsVoltL2	0 - 999 V
33	4.6	WORD	RectMainsVoltL3	0 - 999 V
35	4.8	INT	RectMainsCurrentL1	+0 - 9999 A
37	4.10	INT	RectMainsCurrentL2	+0 - 9999 A
39	4.12	INT	RectMainsCurrentL3	+0 - 9999 A
41	5.0	WORD	RectMainsApparentPowerL1	0 - 9999 kVA
43	5.2	WORD	RectMainsApparentPowerL2	0 - 9999 kVA
45	5.4	WORD	RectMainsApparentPowerL3	0 - 9999 kVA
47	5.6	INT	RectMainsRealPowerL1	+0 - 9999 kW
49	5.8	INT	RectMainsRealPowerL2	+0 - 9999 kW
51	5.10	INT	RectMainsRealPowerL3	+0 - 9999 kW
53	5.12	INT	RectMainsReactivePowerL1	+0 - 9999 kvar
55	5.14	INT	RectMainsReactivePowerL2	+0 - 9999 kvar
57	5.16	INT	RectMainsReactivePowerL3	+0 - 9999 kvar
59	6.0	INT100	RectMainsCosPhiL1	+0 - 1.00
61	6.2	INT100	RectMainsCosPhiL2	+0 - 1.00
63	6.4	INT100	RectMainsCosPhiL3	+0 - 1.00
65	6.6	WORD100	RectMainsPowerFactorL1	0.00 - 1.00
67	6.8	WORD100	RectMainsPowerFactorL2	0.00 - 1.00
69	6.10	WORD100	RectMainsPowerFactorL3	0.00 - 1.00

**UPS system measured values: Bypass mains:**

Index	Slot	Type	Name	Value range
71	7.0	WORD10	SBSMainsFrequency	0.0 – 99.9 Hz
73	7.2	WORD	SBSMainsVoltL1	0 – 999 V
75	7.4	WORD	SBSMainsVoltL2	0 – 999 V
77	7.6	WORD	SBSMainsVoltL3	0 – 999 V

**UPS system measured values: Battery values:**

Index	Slot	Type	Name	Value range
79	8.0	WORD	BatteryVoltage	0 - 999 V
81	8.2	INT	BatteryCurrent	+0 - 3276 A
83	8.4	INT	BatteryPower	+0 - 3276 kW
85	8.6	WORD	AutonomyTime	0 - 999 min
87	8.8	WORD	StateOfCharge	0 – 100 %
89	8.10	INT10	BatteryTemperature	+0.0 - 99.9 °C "0"

**UPS system measured values: UPS output:**

Index	Slot	Type	Name	Value range
91	9.0	WORD10	OutputFrequency	0.0 – 99.0 Hz
93	9.2	WORD	OutputVoltageL1	0 – 999 V
95	9.4	WORD	OutputVoltageL2	0 – 999 V
97	9.6	WORD	OutputVoltageL3	0 – 999 V
99	9.8	WORD	OutputLoadL1	0 – 100 %
101	9.10	WORD	OutputLoadL2	0 – 100 %
103	9.12	WORD	OutputLoadL3	0 – 100 %
105	9.14	WORD	OutputCurrentL1	0 – 9999 A
107	9.16	WORD	OutputCurrentL2	0 – 9999 A
109	9.18	WORD	OutputCurrentL3	0 – 9999 A
111	10.0	WORD	OutputApparentPowerL1	0 – 9999 kVA
113	10.2	WORD	OutputApparentPowerL2	0 – 9999 kVA
115	10.4	WORD	OutputApparentPowerL3	0 – 9999 kVA
117	10.6	WORD	OutputRealPowerL1	0 – 9999 kW
119	10.8	WORD	OutputRealPowerL2	0 – 9999 kW
121	10.10	WORD	OutputRealPowerL3	0 – 9999 kW
123	10.12	WORD	OutputReactivePowerL1	0 – 9999 kvar
125	10.14	WORD	OutputReactivePowerL2	0 – 9999 kvar
127	10.16	WORD	OutputReactivePowerL3	0 – 9999 kvar
129	11.0	INT100	OutputCosPhiL1	+0.00 – 1.00
131	11.2	INT100	OutputCosPhiL2	+0.00 – 1.00
133	11.4	INT100	OutputCosPhiL3	+0.00 – 1.00
135	11.6	WORD100	OutputPowerFactorL1	0.00 – 1.00
137	11.8	WORD100	OutputPowerFactorL2	0.00 – 1.00
139	11.10	WORD100	OutputPowerFactorL3	0.00 – 1.00
141	11.12	WORD10	OutputCrestFactorL1	0.0 – 9.9
143	11.14	WORD10	OutputCrestFactorL2	0.0 – 9.9
145	11.16	WORD10	OutputCrestFactorL3	0.0 – 9.9

**UPS system: LifeCheck:**

Index	Slot	Type	Name	Description
147	12.0	BYTE	LifeCheck	Bit 0-1 toggled 1x per minute

**UPS system: Auxiliary signals (display of user-defined signals) (1=active):**

Index	Slot	Type	Bit no.	Name	Description
148	13.0	BYTE	0	Userdef_AUX1 – Rect.	"0"
			1	Userdef_AUX2 – Rect.	"0"
			2	Userdef_AUX3 – Rect.	"0"
			3	Userdef_AUX4 – Rect.	"0"
			4	Userdef_AUX5 – Rect.	"0"
			5	Userdef_AUX6 – Rect.	"0"
			6	Userdef_AUX7 – Rect.	"0"
149	13.1	BYTE	0	Userdef_AUX1 – Inv.	"0"
			1	Userdef_AUX2 – Inv.	"0"
			2	Userdef_AUX3 – Inv.	"0"
			3	Userdef_AUX4 – Inv.	"0"
			4	Userdef_AUX5 – Inv.	"0"
			5	Userdef_AUX6 – Inv.	"0"
			6	Userdef_AUX7 – Inv.	"0"

**GSD file: UPS PT blue System + n PBs (n = 2 - 8 power blocks)****UPS system: Status**

Index	Slot	Type	Name	Description
1	1.0	BYTE	UPSStatus	UPS status: 1 = normal operation 2 = bypass operation 3 = battery operation 4 = Eco operation 7 = UPS off 8 = UPS off due to fault signal. contact "0"
2	1.1	BYTE	CurrentRedundanz	0 = no redundant PB 1 = one redundant PB 2 = two redundant PBs 3 = three redundant PBs 4 = four redundant PBs

**UPS system: Information, warnings, alarms (1=active)**

Index	Slot	Type	Bit no.	Name	Description
3	2.0	BYTE	0	SystemGeneralWarning	W: UPS system collective warning
4	2.1	BYTE	0	SystemGeneralFault	A: UPS system collective alarm
5	2.2	BYTE	0	Userdef_DigIn1Active	W: "0"
6	2.3	BYTE	0	Userdef_DigIn2Active	W: "0"
7	2.4	BYTE	0	Userdef_DigIn3Active	W: "0"
8	2.5	BYTE	0	RedundancyLost	W: Redundancy of the UPS system lost
9	2.6	BYTE	0	Overloadwarning	W: UPS system is overloaded
10	2.7	BYTE	7-0	FanFault	W: Fan fault in a power block Transfer of the PB no. (bit coded)
11	2.8	BYTE	7-0	RecChaBattWarning	W: Collective warning for rectifiers, chargers, batteries Transfer of the PB no. (bit coded)
12	2.9	BYTE	7-0	RecChaBattFault	A: Collective alarm for rectifiers, chargers, batteries Transfer of the PB no. (bit coded)
13	2.10	BYTE	7-0	InvBoostWarning	W: Collective warning for inverters, boosters Transfer of the PB no. (bit coded)
14	2.11	BYTE	7-0	InvBoostFault	A: Collective alarm for inverters, boosters Transfer of the PB no. (bit coded)
15	2.12	BYTE	7-0	SbsWarning	W: Collective warning for bypass Transfer of the PB no. (bit coded)
16	2.13	BYTE	7-0	SbsFault	A: Collective alarm for bypass Transfer of the PB no. (bit coded)

17	3.0	BYTE	7-0	RectMainsFault	W: Rectifier mains fault Transfer of the PB no. (bit coded)
18	3.1	BYTE	7-0	SbsMainsFault	W: Bypass mains fault Transfer of the PB no. (bit coded)
19	3.2	BYTE	3-0	BattCharMode	I: Status mode of the batt. charger (total) 0 = at least 1 battery not present 1 = at least 1 charger off 2 = trickle charging 3 = charging 4 = equalising charging 5 = start-up charging 6 = diesel operating mode 7 = battery charging circuit test 8 = battery check 9 = battery capacity check
20	3.3	BYTE	7-0	BatteryWarning	W: battery warning Transfer of the PB no. (bit coded)
21	3.4	BYTE	7-0	BatteryAlarm	A: battery alarm Transfer of the PB no. (bit coded)
22	3.5	BYTE	7-0	BatteryLow	W: battery undervoltage message Transfer of the PB no. (bit coded)
23	3.6	BYTE	7-0	RectifierON	I: rectifier operation Transfer of the PB no. (bit coded)
24	3.7	BYTE	7-0	InverterON	I: inverter operation Transfer of the PB no. (bit coded)
25	3.8	BYTE	7-0	BypassON	I: bypass operation Transfer of the PB no. (bit coded)
26	3.9	BYTE	7-0	BypassBlocked	I: bypass blocked Transfer of the PB no. (bit coded)

Transfer of the PB no. (bit coded): Bit0 = PB1, Bit1 = PB2, ...

**UPS system measured values: Rectifier mains:**

Index	Slot	Type	Name	Value range
27	4.0	WORD10	RectMainsFrequency	0.0 - 99.0 Hz
29	4.2	WORD	RectMainsVoltL1	0 - 999 V
31	4.4	WORD	RectMainsVoltL2	0 - 999 V
33	4.6	WORD	RectMainsVoltL3	0 - 999 V
35	4.8	INT	RectMainsCurrentL1	+0 - 9999 A
37	4.10	INT	RectMainsCurrentL2	+0 - 9999 A
39	4.12	INT	RectMainsCurrentL3	+0 - 9999 A
41	5.0	WORD	RectMainsApparentPowerL1	0 - 9999 kVA
43	5.2	WORD	RectMainsApparentPowerL2	0 - 9999 kVA
45	5.4	WORD	RectMainsApparentPowerL3	0 - 9999 kVA
47	5.6	INT	RectMainsRealPowerL1	+0 - 9999 kW
49	5.8	INT	RectMainsRealPowerL2	+0 - 9999 kW
51	5.10	INT	RectMainsRealPowerL3	+0 - 9999 kW
53	5.12	INT	RectMainsReactivePowerL1	+0 - 9999 kvar
55	5.14	INT	RectMainsReactivePowerL2	+0 - 9999 kvar
57	5.16	INT	RectMainsReactivePowerL3	+0 - 9999 kvar
59	6.0	INT100	RectMainsCosPhiL1	+1.00
61	6.2	INT100	RectMainsCosPhiL2	+1.00
63	6.4	INT100	RectMainsCosPhiL3	+1.00
65	6.6	WORD100	RectMainsPowerFactorL1	0.00 - 1.00
67	6.8	WORD100	RectMainsPowerFactorL2	0.00 - 1.00
69	6.10	WORD100	RectMainsPowerFactorL3	0.00 - 1.00

**UPS system measured values: Bypass mains:**

Index	Slot	Type	Name	Value range
71	7.0	WORD10	SBSMainsFrequency	0.0 – 99.9 Hz
73	7.2	WORD	SBSMainsVoltL1	0 – 999 V
75	7.4	WORD	SBSMainsVoltL2	0 – 999 V
77	7.6	WORD	SBSMainsVoltL3	0 – 999 V

**UPS system measured values: Battery values:**

Index	Slot	Type	Name	Value range
79	8.0	WORD	BatteryVoltage	0 - 999 V
81	8.2	INT	BatteryCurrent	+ - 0 - 3276 A
83	8.4	INT	BatteryPower	+ - 0 - 3276 kW
85	8.6	WORD	AutonomyTime	0 - 999 min
87	8.8	WORD	StateOfCharge	0 – 100 %
89	8.10	INT10	BatteryTemperature	+ - 0.0 - 99.9 °C "0"

**UPS system measured values: UPS output:**

Index	Slot	Type	Name	Value range
91	9.0	WORD10	OutputFrequency	0.0 – 99.0 Hz
93	9.2	WORD	OutputVoltageL1	0 – 999 V
95	9.4	WORD	OutputVoltageL2	0 – 999 V
97	9.6	WORD	OutputVoltageL3	0 – 999 V
99	9.8	WORD	OutputLoadL1	0 – 100 %
101	9.10	WORD	OutputLoadL2	0 – 100 %
103	9.12	WORD	OutputLoadL3	0 – 100 %
105	9.14	WORD	OutputCurrentL1	0 – 9999 A
107	9.16	WORD	OutputCurrentL2	0 – 9999 A
109	9.18	WORD	OutputCurrentL3	0 – 9999 A
111	10.0	WORD	OutputApparentPowerL1	0 – 9999 kVA
113	10.2	WORD	OutputApparentPowerL2	0 – 9999 kVA
115	10.4	WORD	OutputApparentPowerL3	0 – 9999 kVA
117	10.6	WORD	OutputRealPowerL1	0 – 9999 kW
119	10.8	WORD	OutputRealPowerL2	0 – 9999 kW
121	10.10	WORD	OutputRealPowerL3	0 – 9999 kW
123	10.12	WORD	OutputReactivePowerL1	0 – 9999 kvar
125	10.14	WORD	OutputReactivePowerL2	0 – 9999 kvar
127	10.16	WORD	OutputReactivePowerL3	0 – 9999 kvar
129	11.0	INT100	OutputCosPhiL1	+ - 1.00
131	11.2	INT100	OutputCosPhiL2	+ - 1.00
133	11.4	INT100	OutputCosPhiL3	+ - 1.00
135	11.6	WORD100	OutputPowerFactorL1	0.00 – 1.00
137	11.8	WORD100	OutputPowerFactorL2	0.00 – 1.00
139	11.10	WORD100	OutputPowerFactorL3	0.00 – 1.00
141	11.12	WORD10	OutputCrestFactorL1	0.0 – 9.9
143	11.14	WORD10	OutputCrestFactorL2	0.0 – 9.9
145	11.16	WORD10	OutputCrestFactorL3	0.0 – 9.9

**UPS system: LifeCheck:**

Index	Slot	Type	Name	Description
147	12.0	BYTE	LifeCheck	Bit 0-1 toggled 1x per minute

**UPS system: Auxiliary signals (display of user-defined signals) (1=active):**

Index	Slot	Type	Bit no.	Name	Description
148	13.0	BYTE	0	Userdef_AUX1 – Rect.	"0"
			1	Userdef_AUX2 – Rect.	"0"
			2	Userdef_AUX3 – Rect.	"0"
			3	Userdef_AUX4 – Rect.	"0"
			4	Userdef_AUX5 – Rect.	"0"
			5	Userdef_AUX6 – Rect.	"0"
			6	Userdef_AUX7 – Rect.	"0"
149	13.1	BYTE	0	Userdef_AUX1 – Inv.	"0"
			1	Userdef_AUX2 – Inv.	"0"
			2	Userdef_AUX3 – Inv.	"0"
			3	Userdef_AUX4 – Inv.	"0"
			4	Userdef_AUX5 – Inv.	"0"
			5	Userdef_AUX6 – Inv.	"0"
			6	Userdef_AUX7 – Inv.	"0"

**Powerblock 1 - Status:**

Index	Slot	Type	Name	Description
150	14.0	BYTE	UPSStatus	UPS status: 1 = normal operation 2 = bypass operation 3 = battery operation 4 = eco operation 5 = off due to fault 6 = off due to auto redundancy 7 = off by operator 8 = off due to fault signalling contact "0"
151	14.1	BYTE	BatteryChargeMode	I: Status mode of the battery charger 0 = no battery present 1 = OFF 2 = trickle charging 3 = charging 4 = equalising charging 5 = start-up charging 6 = diesel operating mode 7 = battery charging circuit test 8 = battery check 9 = battery capacity check

**Power block 1 – Battery measured values:**

Index	Slot	Type	Name	Value range
152	15.0	WORD	BatteryVoltage	0 - 999 V
154	15.2	WORD	AutonomyTime	0 - 999 min
156	15.4	WORD	StateOfCharge	0 – 100 %

**Power block 2 – Status (only for  $\geq 2$  power blocks):**

Index	Slot	Type	Name	Description
158	16.0	BYTE	UPSStatus	UPS status: 1 = normal operation 2 = bypass operation 3 = battery operation 4 = eco operation 5 = off due to fault 6 = off due to auto redundancy 7 = off by operator 8 = off due to fault signalling contact "0"
159	16.1	BYTE	BatteryChargeMode	I: Status mode of the battery charger 0 = no battery present 1 = OFF 2 = trickle charging 3 = charging 4 = equalising charging 5 = start-up charging 6 = diesel operating mode 7 = battery charging circuit test 8 = battery check 9 = battery capacity check

**Power block 2 – Battery measured values (only for  $\geq 2$  power blocks):**

Index	Slot	Type	Name	Value range
160	17.0	WORD	BatteryVoltage	0 - 999 V
162	17.2	WORD	AutonomyTime	0 - 999 min
164	17.4	WORD	StateOfCharge	0 – 100 %

**Power block 3 – Status (only for ≥ 3 power blocks):**

Index	Slot	Type	Name	Description
166	18.0	BYTE	UPSStatus	UPS status: 1 = normal operation 2 = bypass operation 3 = battery operation 4 = eco operation 5 = off due to fault 6 = off due to auto redundancy 7 = off by operator 8 = off due to fault signalling contact "0"
167	18.1	BYTE	BatteryChargeMode	I: Status mode of the battery charger 0 = no battery present 1 = OFF 2 = trickle charging 3 = charging 4 = equalising charging 5 = start-up charging 6 = diesel operating mode 7 = battery charging circuit test 8 = battery check 9 = battery capacity check

**Power block 3- Battery measured values (only for ≥ 3 power blocks):**

Index	Slot	Type	Name	Value range
168	19.0	WORD	BatteryVoltage	0 - 999 V
170	19.2	WORD	AutonomyTime	0 - 999 min
172	19.4	WORD	StateOfCharge	0 – 100 %

**Power block 4 – Status (only for ≥ 4 power blocks):**

Index	Slot	Type	Name	Description
174	20.0	BYTE	UPSStatus	UPS status: 1 = normal operation 2 = bypass operation 3 = battery operation 4 = eco operation 5 = off due to fault 6 = off due to auto redundancy 7 = off by operator 8 = off due to fault signalling contact "0"
175	20.1	BYTE	BatteryChargeMode	I: Status mode of the battery charger 0 = no battery present 1 = OFF 2 = trickle charging 3 = charging 4 = equalising charging 5 = start-up charging 6 = diesel operating mode 7 = battery charging circuit test 8 = battery check 9 = battery capacity check

**Power block 4 – Battery measured values (only for ≥ 4 power blocks):**

Index	Slot	Type	Name	Value range
176	21.0	WORD	BatteryVoltage	0 - 999 V
178	21.2	WORD	AutonomyTime	0 - 999 min
180	21.4	WORD	StateOfCharge	0 – 100 %

**Power block 5 – Status (only for ≥ 5 power blocks):**

Index	Slot	Type	Name	Description
182	22.0	BYTE	UPSStatus	UPS status: 1 = normal operation 2 = bypass operation 3 = battery operation 4 = eco operation 5 = off due to fault 6 = off due to auto redundancy 7 = off by operator 8 = off due to fault signalling contact "0"
183	22.1	BYTE	BatteryChargeMode	I: Status mode of the battery charger 0 = no battery present 1 = OFF 2 = trickle charging 3 = charging 4 = equalising charging 5 = start-up charging 6 = diesel operating mode 7 = battery charging circuit test 8 = battery check 9 = battery capacity check

**Power block 5- Battery measured values (only for ≥ 5 power blocks):**

Index	Slot	Type	Name	Value range
184	23.0	WORD	BatteryVoltage	0 - 999 V
186	23.2	WORD	AutonomyTime	0 - 999 min
188	23.4	WORD	StateOfCharge	0 – 100 %

**Power block 6 – Status (only for ≥ 6 power blocks):**

Index	Slot	Type	Name	Description
190	24.0	BYTE	UPSStatus	UPS status: 1 = normal operation 2 = bypass operation 3 = battery operation 4 = eco operation 5 = off due to fault 6 = off due to auto redundancy 7 = off by operator 8 = off due to fault signalling contact "0"
191	24.1	BYTE	BatteryChargeMode	I: Status mode of the battery charger 0 = no battery present 1 = OFF 2 = trickle charging 3 = charging 4 = equalising charging 5 = start-up charging 6 = diesel operating mode 7 = battery charging circuit test 8 = battery check 9 = battery capacity check

**Power block 6 – Battery measured values (only for ≥ 6 power blocks):**

Index	Slot	Type	Name	Value range
192	25.0	WORD	BatteryVoltage	0 - 999 V
194	25.2	WORD	AutonomyTime	0 - 999 min
196	25.4	WORD	StateOfCharge	0 – 100 %

**Power block 7 – Status (only for ≥ 7 power blocks):**

Index	Slot	Type	Name	Description
198	26.0	BYTE	UPSStatus	UPS status: 1 = normal operation 2 = bypass operation 3 = battery operation 4 = eco operation 5 = off due to fault 6 = off due to auto redundancy 7 = off by operator 8 = off due to fault signalling contact "0"
199	26.1	BYTE	BatteryChargeMode	I: Status mode of the battery charger 0 = no battery present 1 = OFF 2 = trickle charging 3 = charging 4 = equalising charging 5 = start-up charging 6 = diesel operating mode 7 = battery charging circuit test 8 = battery check 9 = battery capacity check

**Power block 7- Battery measured values (only for ≥ 7 power blocks):**

Index	Slot	Type	Name	Value range
200	27.0	WORD	BatteryVoltage	0 - 999 V
202	27.2	WORD	AutonomyTime	0 - 999 min
204	27.4	WORD	StateOfCharge	0 – 100 %

**Power block 8 – Status (only for 8 power blocks):**

Index	Slot	Type	Name	Description
206	28.0	BYTE	UPSStatus	UPS status: 1 = normal operation 2 = bypass operation 3 = battery operation 4 = eco operation 5 = off due to fault 6 = off due to auto redundancy 7 = off by operator 8 = off due to fault signalling contact "0"
207	28.1	BYTE	BatteryChargeMode	I: Status mode of the battery charger 0 = no battery present 1 = OFF 2 = trickle charging 3 = charging 4 = equalising charging 5 = start-up charging 6 = diesel operating mode 7 = battery charging circuit test 8 = battery check 9 = battery capacity check

**Power block 8 – Battery measured values (only for 8 power blocks):**

Index	Slot	Type	Name	Value range
208	29.0	WORD	BatteryVoltage	0 - 999 V
210	29.2	WORD	AutonomyTime	0 - 999 min
212	29.4	WORD	StateOfCharge	0 – 100 %