RECTIFIER
PSR06-W

USER MANUAL

Notes to this manual

ATTENTION! Read this manual very carefully before installing and commissioning the specified module.
This manual is a part of the delivered module. Familiarity with the contents of this manual is required for installing and operating the specified module.
The rules for prevention of accidents for the specific country and the general safety rules in accordance with IEC 364 must be observed.

The function description in this manual corresponds to the date of publishing.
Technical changes and changes in form and content can be made at any time by the manufacturer without notice.
There are no obligations to update the manual continually.

The module is manufactured in accordance with applicable DIN and VDE standards such as VDE 0106 (part 100) and VDE 0100 (part 410). The CE marking on the module confirms compliance with EU standards 2006-95-EG (low voltage) and 2004-108-EG (electromagnetic compatibility) if the installation and operation instructions are followed.

Supplier:

	ELTEK DEUTSCHLAND GmbH BU Industrial Schillerstraße 16 D-32052 Herford
☎	+ 49 (0) 5221 1708-210
FAX	+ 49 (0) 5221 1708-222
Email	Info.industrial@eltek.com
Internet	http://www.eltek.com

Changes and errors excepted.

Revision history:

Revision: 6.0

Date: 2014-09-111

Revision	Description of change	Writer	Date
00	Reworked edition on base of the further manual "BHB-PSR06-W.D25-1000.HB101": Layout changed, several minor text corrections inserted.	RTH	2008-02-14
1.0	New revision status numbering (X.X) introduced, values for input voltage range changed (>>wide input range).	RTH	2009-04-08
1.1	Minor text modifications	RTH	2009-04-16
2.0	Several minor corrections inserted.	RTH	2010-03-23
3.0	Section 6, and 7.3 as well modified.	RTH	2011-01-17
4.0	Section 5.2.6 "Parallel connection" inserted, section 7.3 corrected.	RTH	2011-02-15
5.0	"PSR06/36-13.3W" added.	RTH	2011-04-19
5.1	"Table of figures" added, section 7.3 reworked	RTH	2014-08-21
6.0	Section 6.2.1 "Use of temperature sensors for paralleled rectifier modules" added; section 7.3 adapted accordingly.	RTH	2014-09-11

Contents

Table of figures

A. Safety Instructions

Warning!

Because several components of operating electrical modules are charged by dangerous voltage, the improper handling of electrical modules may cause accidents involving electrocution, injury, or material damages.

- Operation and maintenance of electrical modules must be performed by qualified skilled personnel such as electricians in accordance with EN 50110-1 or IEC 60950.
- Install the module only in areas with limited access to unskilled personnel.
- Before starting work, the electrical module must be disconnected from mains. Make sure that the module is earthed.
- Do not touch connector pins as they can be charged with dangerous voltage up to 30 seconds after disconnection.
- Only spare parts approved by the manufacturer must be used.

B. Electronic Waste Disposal

The correct disposal of electronic waste is the responsibility to recycle discarded electronic equipment and is necessary to achieve the chosen level to protect human health and the environment.

In the case of waste disposal of your discarded equipment we recommend to contact a professional waste management company.

1. General Information

The primary switched mode rectifier type PSR06-W (in the following named as “SMPS”) delivers a max. output power of 600 W. Typical applications are DC power supplies as well as uninterruptable power supplies with back up battery. Rectifiers of type SMPS have good dynamic regulation properties concerning input voltage changes and load variations. It works with an IV characteristic in accordance with DIN 41772 and it is a ready-for-connection wall cabinet module. The operation elements and measurement instruments are located on the front panel; the input/output connectors are located at the bottom of the module. SMPS modules operate single side grounded and ungrounded at input and output as well.

2. Type Range

Type Designation PSR06/	Article code	Input voltage range (V_{AC})	Output-voltage (V_{DC})	Output-current (A)
24-20W	100-006-142.00	120 to 230 (-15/+10 %)	24	20
36-13.3W	100-006-192.00	120 to 230 (-15/+10 %)	36	13.3
48-10W	100-006-152.00	120 to 230 (-15/+10 %)	48	10
60-8.2W	100-006-162.00	120 to 230 (-15/+10 %)	60	8.2
110-4.5W	100-006-172.00	120 to 230 (-15/+10 %)	108	4.5

Available options and accessories:

1) Temperature sensor lead LM 335 (sensor lead in M5 cable shoes with 2 m wire); article code: **880-300-TMP.00**
2) Temperature sensor lead LM 335 (sensor lead in M5 cable shoes with 4 m wire); article code: **880-300-TMP.01**

3. Start-up procedure

Before connecting to the input voltage it should be checked whether the voltage information on the rating plate corresponds to the available voltage and also that the polarity corresponds to the connection plan of the plug. The mains connection is done via terminals below the cabinet. The protective conductor should be generally connected (protection class 1, leakage current ≤ 3.5 mA).

The DC output has to be connected on terminal block X1. The signalling contacts for monitoring, sense links and active current have to be connected on terminal blocks X2 and X3. For details see section 7.3.

Important:

The rectifier has big capacitors at the output. If you connect a switched off module to a battery or other modules which operate in parallel, there is a big capacitor charge current. This current may destroy the contacts on output connectors.

WARNING! After switching off, the capacitors hold its voltage for some time. Do not touch!

The rectifier operates with convection cooling. The ambient temperature has to be less than +55 °C. If there is a higher temperature, the life time of the modules will be decreased.
The losses per module are approx. 40 W to 80 W (depends on the type).

4. Operation

All operation elements are located on the front panel of the module. The function of each element is explained on the following pages. See also the front panel drawing in section 7.1 (figure 2).

5. Functions

5.1 Circuit diagram

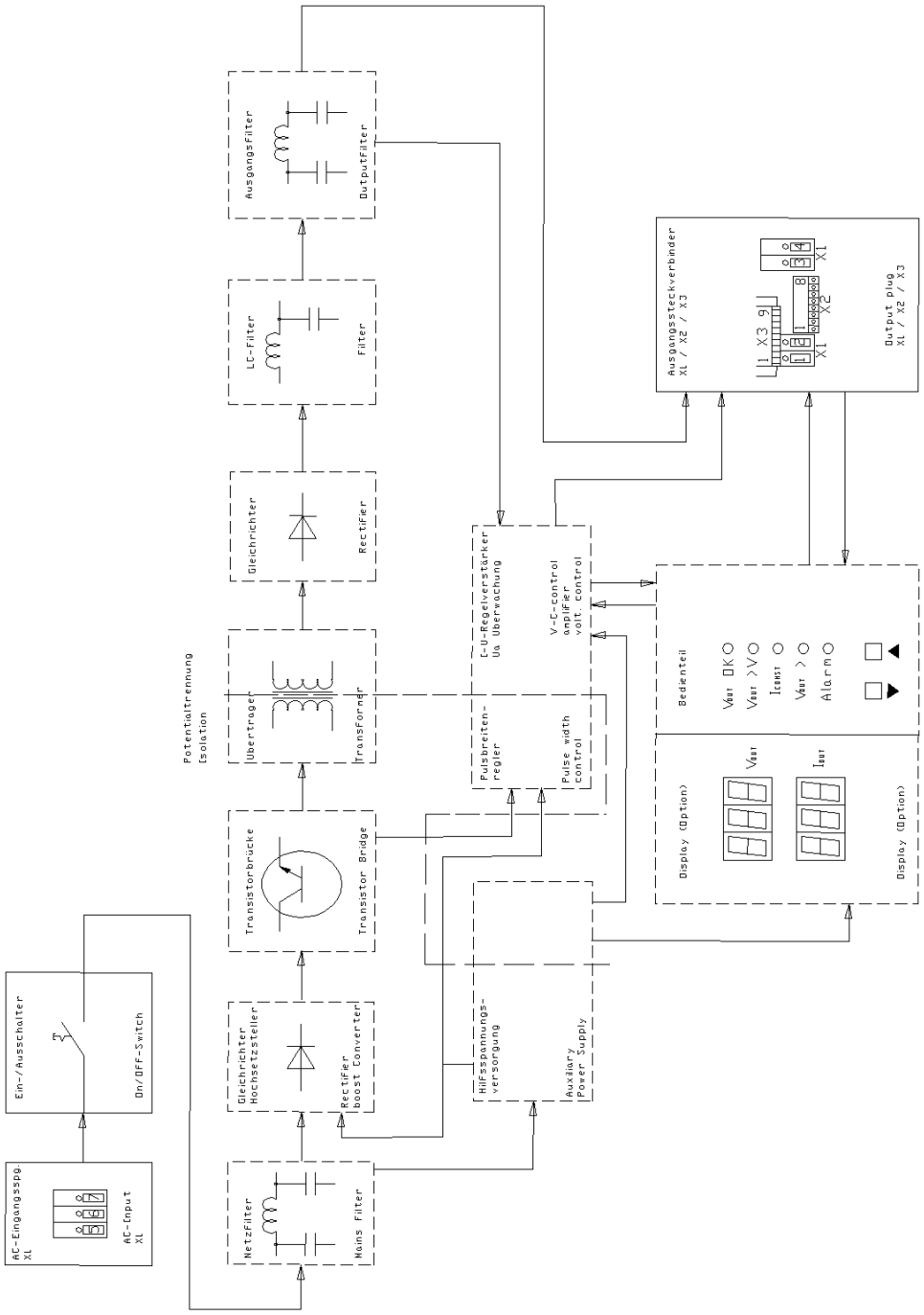

Figure. 1) PSR circuit diagram

5.2 Electrical function description

Rectifiers of type PSR consist of the following main parts:

1. Input filter suppressing the feedback of high frequency interference produced by the unit into the mains as well as for the attenuation of the interference voltages and voltage transients superimposed on the mains.
2. Mains rectifier with switched step-up-converter (operation frequency 100 kHz) to transform the input voltage in a pre-regulated DC voltage of approx. 380 V and to control the waveform of input current (sinusoidal!). An additional function is the limitation of inrush current.
3. Transistor bridge to transform the 380 V_{DC} in a pulse width modulated AC voltage with an frequency of 100 kHz.
4. HF transformer for decoupling of primary and secondary part and to transport the power to secondary side.
5. Rectifier diodes to make a DC voltage from high frequency AC voltage.
6. LC-Filter to reduce the voltage ripple on rectifier output.
7. Output filter for RFI suppression and to reduce the noise level on DC line.
8. Internal power supply for supplying of primary and secondary control units with potential decoupling.
9. Regulation line with decoupling through opto couplers.
10. Adjustment panel for adjustment of output parameters, signals and measurement instruments.

5.2.1 Electrical insulation

Due to the construction of the module (also module parts) and separate wiring of mains input and DC output the SMPS fulfils the following standards:

- devices with $U_O \leq 60$ V_{DC} protection against shock current because of low voltage with safe electrical decoupling acc. to EN 60950 and VDE 0100.
- devices with $U_O > 60$ V_{DC} safe electrical decoupling to $U_O = 220$ V_{DC} acc. EN 60950 and VDE 0160.

5.2.2 Input

A one-pole mains switch at the bottom of the unit (see section 7.1 “Front view/operation elements”) is used to switch on and off the unit.
The unit starts up over a run-up stage which limits the switch-on current to $<I_{nom}$.

5.2.3 Output

The output line is an IV characteristic acc. to DIN 41772 /DIN 41773 with factory set **decreased output line** (-1 % at 100 % Inom); alternatively the module can be ordered with **active current sharing mode** which has to be set at the factory. The output is continuous short circuit proof (constant current control).

5.2.4 Dynamic regulation of output voltage

At load jumps between 10 % and 90 % I_{nom} / 90 % and 10 % I_{nom} the dynamic voltage difference is max. ±3 % and will be regulated within max. 1.5 ms to static levels.

5.2.5 RFI suppression

Modules of type PSR fulfil the standard VDE 0878 T1 and EN 55011/55022 class 'B'. The output ripple is (measured psophometric acc. to CCITT) < 1.2 mV (24 V and 36 V); < 1.8 mV (48 V and 60 V).

5.2.6 Parallel connection

PSR modules can be paralleled to increase the system output power as well as to create redundant power supply systems (n+x principle). Due to the **decreased output line** (see section 5.2.3 "Output") the load sharing deviation between the paralleled units is approx. ±10 % of the output current. Using the **active current sharing mode** (only settable at the factory) the load sharing deviation between the paralleled units is approx. ±5 % of the output current. Using the decreased output line the load sharing deviation can be optimized as follows: increase the output voltage "Vo" of the unit which delivers the least load current and reduce the output voltage of the unit which delivers the highest load current (see section 5.4). Selective monitoring of paralleled units is only possible using external decoupling diodes in the **plus line** of the outputs.
NOTE: If units are paralleled, pin 8 at connector block X3 has got to be linked from all units and pin 9 at connector block X3 also has got to be linked from all units (see section 7.3).

5.3 Monitoring

5.3.1 Mains voltage monitoring

The SMPS is designed for operation in the specified range (see technical data sheet).
The unit is protected for input voltages up to 270 V_{AC} by varistor at the input-side.

5.3.2 Operation monitoring

Functional monitoring; signalling with LED "Vout OK", criterion: output voltage ≥ 97 % of adjusted output voltage without constant current regulation and ≥ 85 % of adjusted output voltage with constant current regulation. The signalling threshold of this monitoring automatically follows the adjusted nominal output voltage.

This signal is included in the collective failure signal of the rectifier. Additional there is an optocoupler signal (V_O O.K.) available.

5.3.3 Output voltage low

Output voltage low monitoring; signalled by green LED "Vout>Vmin",
Criterion: output voltage is higher than adjusted level V<.
This signal has its own relay contact on signalling connector. If the voltage value is O.K. Pin 6 and Pin 7 of X2 are closed.

5.3.4 Output voltage high

Output voltage high monitoring; signalled by red LED "Vout>",
Criterion: output voltage higher than adjusted level V>. This signal is included in collective failure signal of rectifier. If there is an error the LED is ON and the rectifier internally switches OFF. In this case the unit has to be manually reset by ON/OFF switch.

5.3.5 Protection against overheating

Protection against overheating; signalled by blinking red LED "Bell symbol" (this signal is included in collective failure signal), criterion: temperature of heat sink > 90 °C. In this case the module is automatically switched OFF. If the heat sink cooled down, the module is automatically switched ON.

5.3.6 Signals

The signals "V_O OK", "Mains OK" and "Constant Current Mode Iconst" are provided as opto coupler signals. The opto couplers have a load capacity of max. 30 V/5 mA. The opto couplers switch ON if an error occurs. The collective failure signal (provided by potential free relay contact) is delayed at approx. 1 sec. The relay contacts between Pin 3 and Pin 5 of X2 are open whereas the contacts between Pin 4 and Pin 5 are closed at error (see section 7.3).

5.4 Adjustment of output and threshold values

The adjustment of output values and monitoring thresholds is very easy. All values can be adjusted using the front keys. The values are shown on digital displays. Enabling the 2nd voltage line via an external circuit is necessary to adjust the boost charge voltage V_{O2} (see section 6.4).

At normal operation the top display shows the output voltage (V_{O1} and V_{O2}) and the bottom display shows the output current (I_O).

For any adjustment please follow the following instructions:

- press both keys UP/DOWN (↑↓) together for a short time; the rectifier changes to adjustment mode
- press the key UP (↑) or DOWN (↓) to change the adjustment parameter (see also table on bottom)
- press both keys UP/DOWN (↑↓) together for a short time; the rectifier changes to value change mode
- press the key UP (↑) or DOWN (↓) to change the adjustment value (if you hold the key the value changes quicker)
- press both keys UP/DOWN (↑↓) together for a short time; the rectifier changes back to the adjustment mode (at this moment the changed value will be stored)
- press both keys UP/DOWN (↑↓) for approx. 3 sec. to change back to the operation mode

Adjustable parameters in adjustment mode:

Display	Parameter
V_{O1} (=U_{A1})	triple charge voltage
V_{O2} (=U_{A2})	boost charge voltage (see section 6.4)
I_O (=I_A)	output current
V<	output voltage low threshold (see section 5.3.3)
V>	output voltage high threshold (see section 5.3.4)
V‹	Trigger threshold of V< (e.g. 20.4 V)
V‹	Switch on again threshold of V< (e.g. 21.0 V)
t	coefficient of temperature for temperature compensation of charge voltage (see section 6.2)

The monitoring thresholds automatically follow the adjusted nominal values of output voltage. The monitoring thresholds for mains/step-up-converter and overheating are not changeable.
Details about the adjustment range of each individual threshold value, see section “Technical Data”.

6. External Functions

6.1 Output voltage sensor leads

Using sense links for output voltage you are able to compensate voltage losses due to wires and diodes as well. A maximum voltage drop of approx. 4 % of the nominal output voltage is compensable. Interruption on sense links, confusing of poles or short circuit cannot damage the rectifier i.e. in case of a broken wire of the plus (**+**) sense link the output voltage can increase at max. 4 %.

6.2 Temperature compensation of the charge voltage

If closed batteries are used, we recommend the temperature-controlled compensation of charge voltage.
You have to connect an external active temperature sensor (option) on connector block X3 according to section 7.3. The standard temperature coefficient is -4 mV/K per cell (within a temperature range of 0 to 50 °C). The basic temperature is 20 °C. The coefficient can be adjusted in a range of -1 to -6 mV/K per cell. The sensor has to be connected using a 2-pole wire (0.25 mm^2). It can be mounted directly on top of battery or on battery poles. At big distances (> 2 m) we recommend a shielded wire with connection of the shield on rectifiers ground.

6.2.1 Use of temperature sensors for paralleled rectifier modules

If rectifier modules PSR06-W are to be used in parallel operation with temperature compensation of the battery charge voltage, it is mandatory to connect **one temperature sensor to each rectifier module**.

6.3 External switch ON/OFF

The rectifier can be externally switched off by switching **pin 2** of connector block **X3** to **GND** according to section 7.3 and figure 4) as well. In this case “switch-off” does not result in a collective failure signal!

6.4 Boost charge mode (second voltage line)

A second voltage line (e.g. boost charge voltage) can be enabled at the PSR06W. To enable the second voltage line you have to connect **Minus (GND)** to **pin 1** of connector blockl **X3** (see section 7.3 and figure 4) as well) using an external switch. The voltage value "V_{02}" can be adjusted by the user (see section 5.4).

7. Operation elements and connectors

7.1 Front view/operation elements

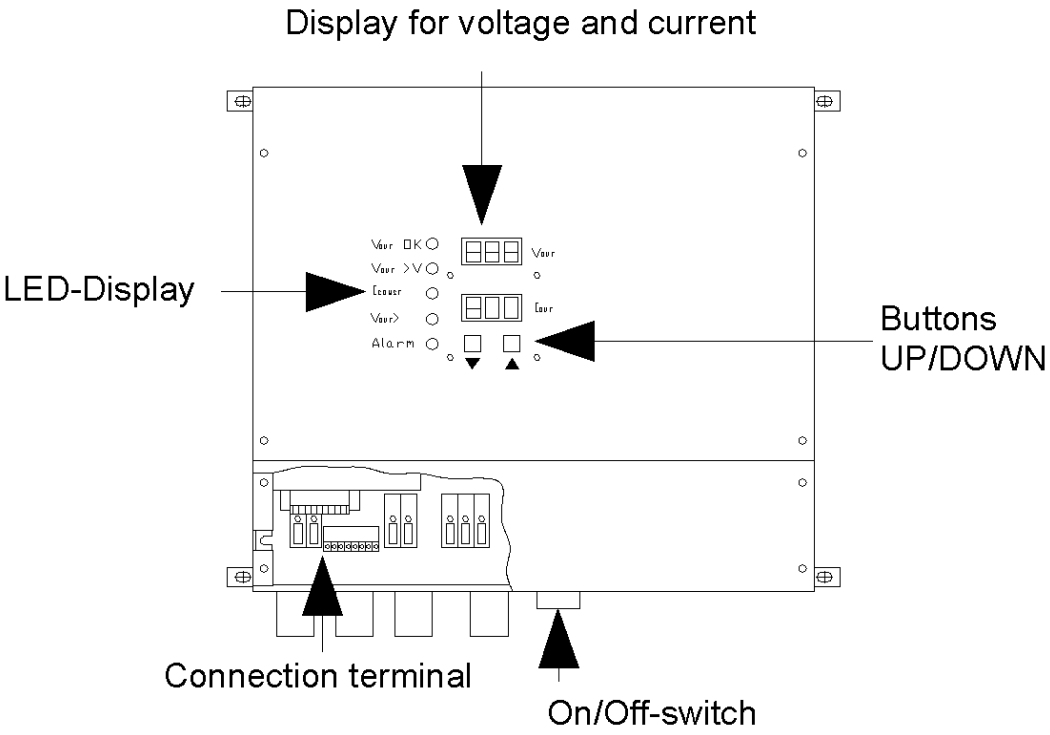

Figure 2) Front view/operation elements

7.2 Indication instruments

The unit is equipped with LED- instruments 0-999 for current and voltage indication. The accuracy corresponds to Class 1 with reference to the nominal output value of the unit. The indication instrument can be converted to the indication of the adjusted theoretical value for the regulation and monitoring via an external circuit of the signal plug.

7.3 Connection tables of input and output terminals

The following picture shows the terminal area (terminal blocks X1, X2, X3) of the rectifier:

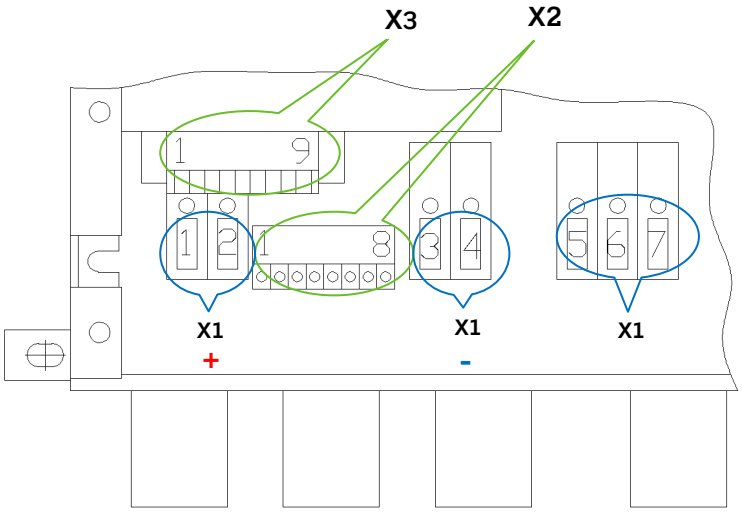

Figure 3) Connector blocks X1, X2, X3

Connector block X1:

X1/Pin	Function
1	DC – Output L+
2	DC – Output L+
3	DC – Output L-
4	DC – Output L-
5	PE
6	N - Input
7	L1 - Input

Connector block X2:

X2/Pin	Function
1	(+) Sensor lead connection[6)]
2	Not connected
3	Signal relay general fault alarm, NO
4	Signal relay general fault alarm, NC
5	Signal relay general fault alarm COM [5)]
6	Signal relay U<,COM [5)]
7	Signal relay U< (total discharge), NO
8	(-) Sensor lead connection[6)]

Connector block X3:

X3/Pin	Function
1	Control input for the second voltage line V_{O2} (boost charge) [1]
2	(+) External On/Off [4]
3	Optocoupler common emitter
4	Optocoupler C " U_O present"
5	+15V DC
6	Optocoupler C "I_O"
7	Temperature sensor lead (+) [2]
8	Compensating connection for current distribution [3]
9	GND

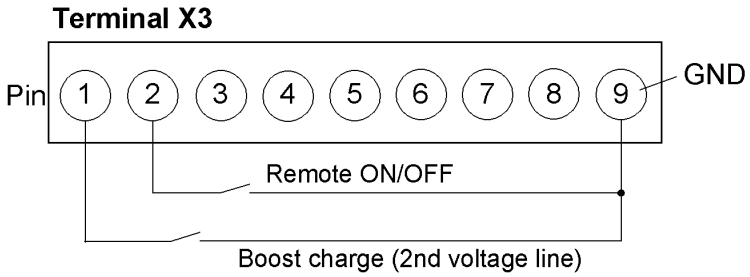

Figure 4) Connector block X3: Connectors for „External ON/OFF" and „Second voltage line"

Legend:

[1] The connection of Pin 1 to -V_O (GND) enables the second voltage line (e.g. boost charge).

[2] Connection of the TK sensor by two-core cable to pin 7 and pin 9.
Note:
If rectifier modules PSR06-W are to be used in parallel operation with temperature compensation of the battery charge voltage, it is mandatory to connect **one temperature sensor to each rectifier module**.

[3] If units are paralleled, pin 8 has got to be linked from all units and pin 9 has also got to be linked from all units.
Note: In this case external decoupling diodes and fuses are only allowed to be placed in the **plus line**.

[4] The connection of Pin 2 to -V_O (GND) switches the rectifier (externally) OFF (see the picture above).
Note:
The input is potential free with safe electrical decoupling to primary side and with 500 V_{DC} to secondary side.

[5] The relay outputs are potential free with safe electrical decoupling to primary side and with 500 V_{DC} to secondary side.

[6] **ATTENTION!** If a sensor lead is used, external decoupling diodes are only allowed to be placed in the **plus line**.

8. Maintenance

Due to the implemented components, the SMPS unit virtually is maintenance free. In case of operation in dusty atmosphere, it is regularly advisable to control the dust inside of the unit and, if necessary, blow it out with compressed air. Deposits of dust can result in reduced cooling and could also result in conductive impurities in combination with dew formation or high moisture.

9. Fault finding instructions

Only skilled and trained technical personnel should carry out all necessary operations at the unit.

9.1. Output voltage failure

- Input voltage present?
- Mains switch on?
- Is the input plug correctly inserted?
- Output terminal polarised or short-circuit at the output?
- Parallel operation condition: external decoupling diode polarised?
- Monitoring V_O > responded (LED V_O> lights up)?

>>Corrective action: Switch the unit ON/OFF and examine the adjustment V_O >!

If the unit still does not work even though all checks have been done, contact your sales agent or the service department of ELTEK DEUTSCHLAND GmbH.

9.2. Output voltage deviation

- Does the unit operate in the current limit due to overload?
  Corrective action: Reduce the load!
- Adjustment value of V_O correct?
  Corrective action: Readjust the output voltage.
- If external sensors lead connection is used: is the sensor lead connection open?
- Are the decoupling diodes connected in the output circuit?

>>Corrective action: Correct the potential drop by increasing the output voltage of the unit!

If the unit still does not work even though all checks have been done, contact your sales agent or the service department of ELTEK DEUTSCHLAND GmbH.

10. Technical Data

10.1. General technical data

Nominal input voltage range	120 to 230 VAC (-15/+10 %)
Frequency	47 Hz to63 Hz
Nominal input current	2.7 A @ 230 VAC; 5.2 A @ 120VAC
Power Factor λ	0.99 @ 100 %>P_{nom} >50 %; 0.97 @ 50 %> P_{nom} >25 %; 0.95 @ P_{nom} < 25 %
Characteristic curve	IV characteristic according to DIN 41 772/ DIN 41773
RFI	according to EN50081-1
Conduction related	according to EN55011 / EN55022 limit value class "B"
Radiation	according to EN 55011 / EN55022 limit value class "B"
EMC	according to EN50082-2
Cabinet	ESD-test according to EN61000-4 part 2; 6 kV contact; 8 kV air discharge HF-field according to EN61000-4 part 3; 10 V/m (30 MHz to 1 GHz)
Power cable	Burst-test according to EN61000-4 part 4; 2 kV Surge-test according to EN61000-4 part 5; 4 kV unsymmetrical; 2 kV symmetrical
Control cable	Burst-test according to EN61000-4 part 4; 2 kV Surge-test according to EN61000-4 part 5; 2 kV unsymmetrical
Function extra low voltage	with safe insulation for $V_O \leq$ 60 VDC according to VDE0100 part 410/11.83, section. 4.3.2
Dynamic behaviour	≤ 3 % for load steps between 10 % - 90 % - 10 % nominal output current (transient time t ≤ 1 ms)
Short circuit behaviour	continuous short circuit-proof, 1 x nominal output current
Function monitoring „V_{O1}“ threshold value floating	(green LED “Vout OK”) $V_O \geq$97 % of the adjusted output voltage without current limit or $V_O \geq$85 % of the adjusted output voltage
Monitoring output under-voltage „V<„	green LED „Vout>Vmin“, with potential-free contact
Monitoring output over-voltage „V>„	red LED “Vout>”
Constant current operation „I_O“	yellow LED “Iconst”
Over-temperature	red LED “bell symbol”, blinking

Digital instruments: Ammeter:	Indication of 00.1 to 99.9 A_{DC}
Voltmeter:	Indication of 00.1 to 999 V_{DC}
External functions: Signal "V<"	via potential-free contact (contact charge: 1 A @ 60 V_{DC})
General fault alarm signal	via potential-free relay contact (1 sec. time delay); contact charge: 1 A @ 60V_{DC}
Power measuring	for active current sharing
Discharge test/boost charge	voltage value adjustable
Voltage regulation	Temperature compensated
Temperature coefficient	4 mV/K per cell with external temperature sensor (optional); temperature adjustable
External sensor lead connection for output voltage "V_O"	Signal via opto coupler V_O present („V_{O1}" alternatively „V_{O2}")
constant current operation "I_O"	Signal via opto coupler
External ON/OFF	
Design	Wall cabinet
Protection class	IP 20
Cooling	Convection cooling
Ambient temperature	-20 °C to +45 °C
Storage temperature	-40 °C to + 85 °C
Environmental conditions	IEC 721 part 3-3 Class 3K3 / 3Z1 / 3B1 / 3C2 / 3S2 / 3M2
Max. operation altitude	1500 m
Mechanical strength and Shock-proof	according to VDE 0160 issue 5.88 Pt. 7.2.2
Finish	RAL 7035 (front plate)
Weight	approx. 5.3 kg
Dimensions	280 x 285 x 95 mm (H x W x D)
Connection terminals: AC-Input, DC-Output	Terminal X1
Signalling	Terminal X2/X3
Protective conductor connection	Bolt M4/Terminal X1

10.2. Type specific data

Type: **PSR06/** 24-20W	36-13.3W	48-10W	60-8.2W	110-4.5W
Article code: 100-006-142.00	100-006-192.00	100-006-152.00	100-006-162.00	100-006-172.00
Output Voltage V_{O1} **(Equalising charge)** **Adjusted value** 27.2 V_{DC} ± 1 % **Adjustment range** 23.4 to 28.8 V_{DC}	40.9 V_{DC} ± 1 % 18.9 to 50.4 V_{DC}	54.5 V_{DC} ± 1 % 46.6 to 57.6V_{DC}	68.1 V_{DC} ±1 % 58.5 to 72.0 V_{DC}	122.6 V_{DC} ±1 % 105 to 130 V_{DC}
Output voltage V_{O2} **(Boost charge)** **Adjusted value** 28.8 V_{DC} ± 1 % **Adjustment range** 24 to 30 V_{DC}	43.2 V_{DC} ± 1 % 36 to 45 V_{DC}	57.6 V_{DC} ± 1 % 48 to 60 V_{DC}	72.0 V_{DC} ± 1 % 60 to 73 V_{DC}	129.6 V_{DC} ±1 % 108 to 135 V_{DC}
Output current I_O **Adjusted value** 20 A_{DC} ± 2 % **Adjustment range** 50 to 100 % $I_{nominal}$	13.3 A_{DC} ± 2 % 50 to 100 % $I_{nominal}$	10 A_{DC} ± 2 % 50 to 100 % $I_{nominal}$	8.2 A_{DC} ± 2 % 50 to 100 % $I_{nominal}$	4.5 A_{DC} ± 2 % 50 to 100 % $I_{nominal}$
Type of battery Lead acid battery, 12 cells	18 cells	24 cells	30 cells	54 cells
Efficiency ≥88 %	≥88 %	≥89 %	≥89 %	≥89 %
Voltage ripple ≤20 mV_{pp}	≤20 mV_{pp}	≤20 mV_{pp}	≤20 mV_{pp}	≤100 mV_{pp}
Noise voltage according to CCITT ≤1.2 mV	≤1.2 mV	≤1.8 mV	≤1.8 mV	---
Monitoring:				
DC under voltage V< **Threshold value** 20.4 V_{DC} **Adjustment range** 19.2 to 24 V_{DC}	30.6 V_{DC} 28.8 to 36 V_{DC}	40.8 V_{DC} 38.4 to 48 V_{DC}	51.0V_{DC} 48 to 60 V_{DC}	91.8V_{DC} 86.4 to 108 V_{DC}
DC over voltage V> **Threshold value** 30 V_{DC} **Adjustment range** 26 to 30 V_{DC}	45 V_{DC} 39 to 45 V_{DC}	60 V_{DC} 52 to 60 V_{DC}	75 V_{DC} 66 to 75 V_{DC}	135 V_{DC} 119 to 135 V_{DC}

11. Dimensional Drawings/Front View

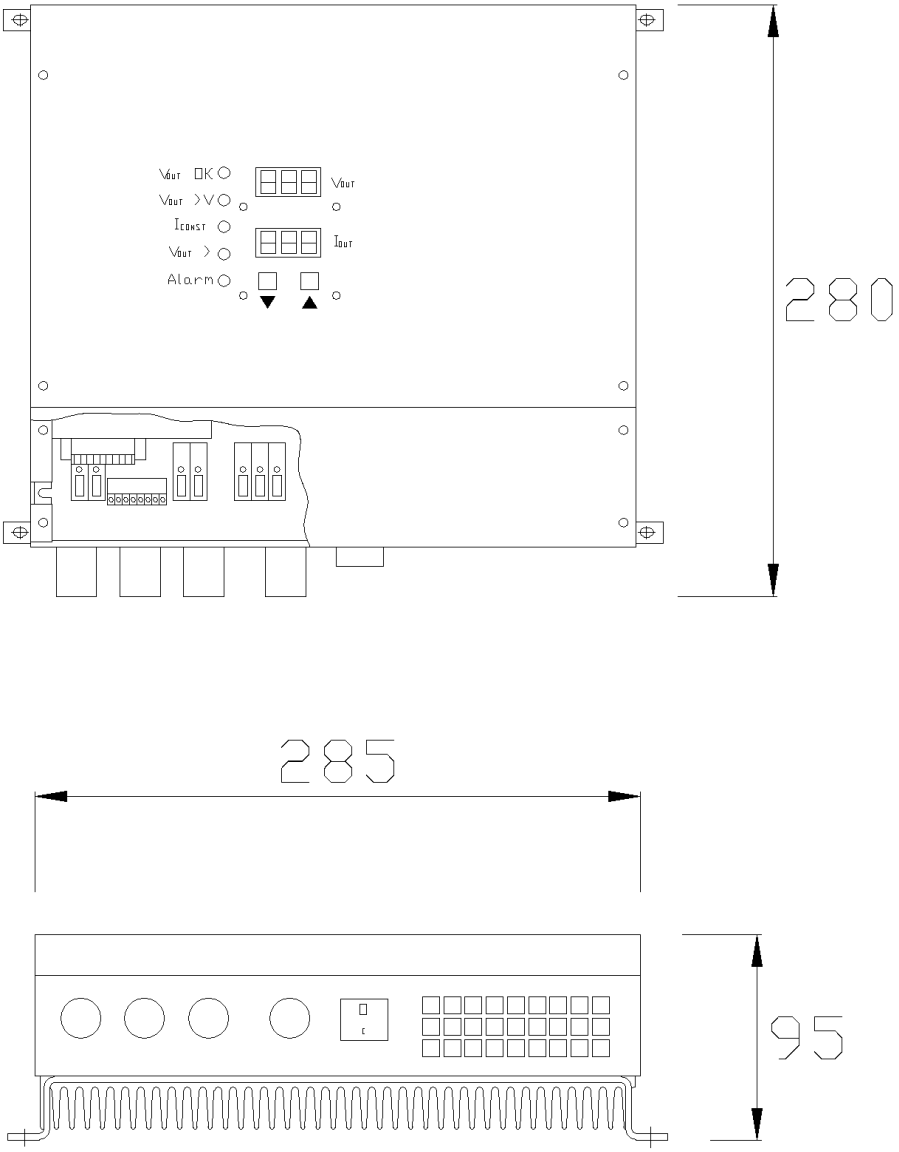

Figure. 5) Dimensional drawing

12. Your Notes

Supplier:

✉	ELTEK DEUTSCHLAND GmbH BU Industrial Schillerstraße 16 D-32052 Herford
☎	+ 49 (0) 5221 1708-210
FAX	+ 49 (0) 5221 1708-222
Email	Info.industrial@eltek.com
Internet	http://www.eltek.com