



AC Power Supply

Valid for:

PS4655

PS4665

P2420

Please Note:

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AC POWER SUPPLY

1 INTRODUCTION

1.1 GENERAL DESCRIPTION

The AC Power Supply is designed as a stand alone automatic AC Power Supply with automatic switch-over to 24V battery supply.

The AC Power Supply is designed with four separately fused output lines to ensure independent supply for connected equipment.

Furthermore AC Power Supply includes the following features:

- 115V/230V selectable input.
- Encapsulation class IP22.
- Galvanic isolated AC alarm output.
- Protected Battery monitoring output.
- Easy connection.
- Easy access to fuses.
- Vertical or horizontal mounting.
- IEC 945 approved.

1.2 TECHNICAL DATA

| | |
|------------------------|---|
| AC input voltages: | 115V, range 88V - 132V or 230V, range 176V - 264V. Manual setting. |
| AC input frequency: | 50/60 Hz \pm 6% |
| DC output voltage: | 29V \pm 0.5V. |
| DC output current: | 13A continuous. 17A for 15 minutes. 25A for 1 minute. Duty-cycle 10%. |
| Battery monitoring: | Protected output. |
| AC failure output: | Relay contacts 5-50mA, 10-32V. Closed in alarm condition. Alarm in case of AC supply failure. |
| Protection: | The AC Power Supply output is current limited and protected against short circuit, over voltage and over temperature. |
| Operating temperature: | - 20° to + 55° C. |
| Dimensions: | HxWxD: 110x370x260 mm. |
| Weight: | Approx. 5 kg. |
| Compass safe distance: | Standard: 1.4 m. Steering: 1.0 m |

2 TECHNICAL DESCRIPTION

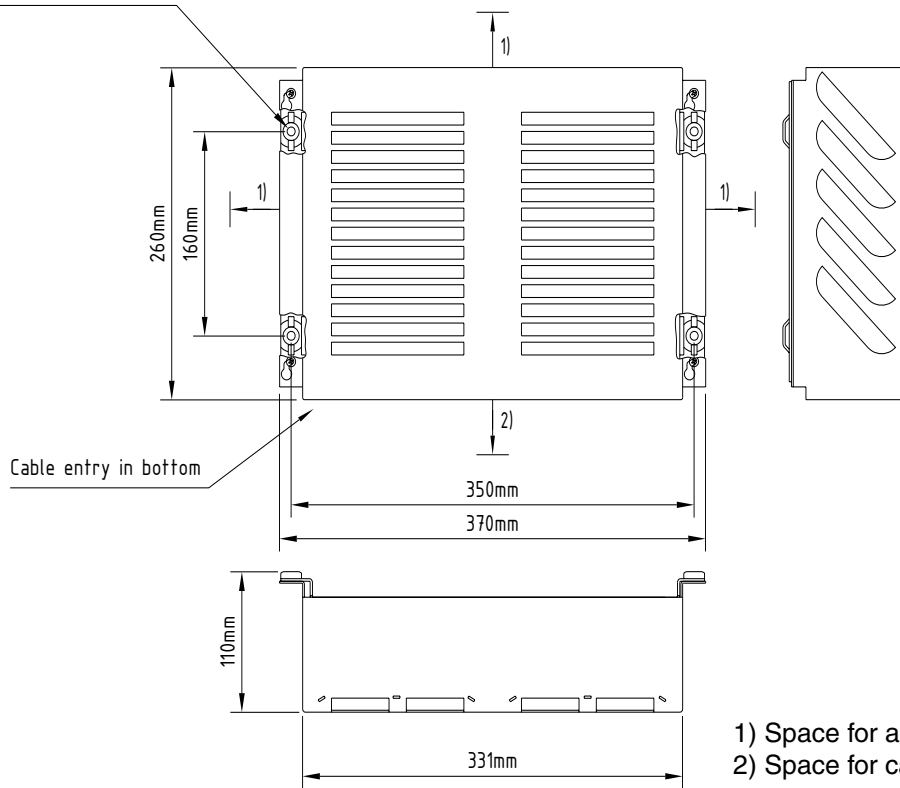
2.1 PRINCIPLE OF OPERATION

The AC Power Supply contains an input filter followed by a rectifier (230V)/voltage doubler (115V) circuit producing an unregulated DC voltage which is converted to 29V in a push-pull converter. A regulator optically isolated from the driver circuit then adjusts the output into a constant voltage. The output DC voltage is galvanically isolated from the input and the chassis (ground). The four DC outputs are connected to the battery using it as source if an AC line failure or failure in the unit occurs. As the AC line recovers the AC Power Supply is again source for the four DC outputs. This sequence is controlled by the switch over circuit.

3 INSTALLATION

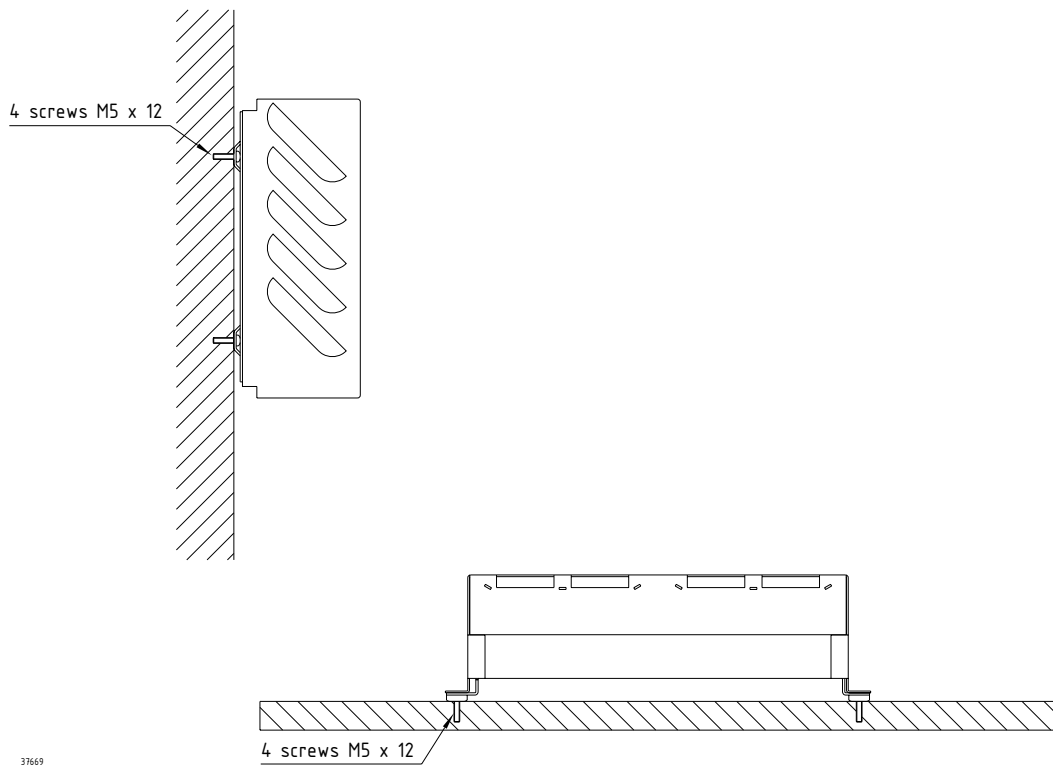
3.1 OUTLINE AND DIMENSIONS

Mounting, 4 holes $\varnothing 7\text{mm}$



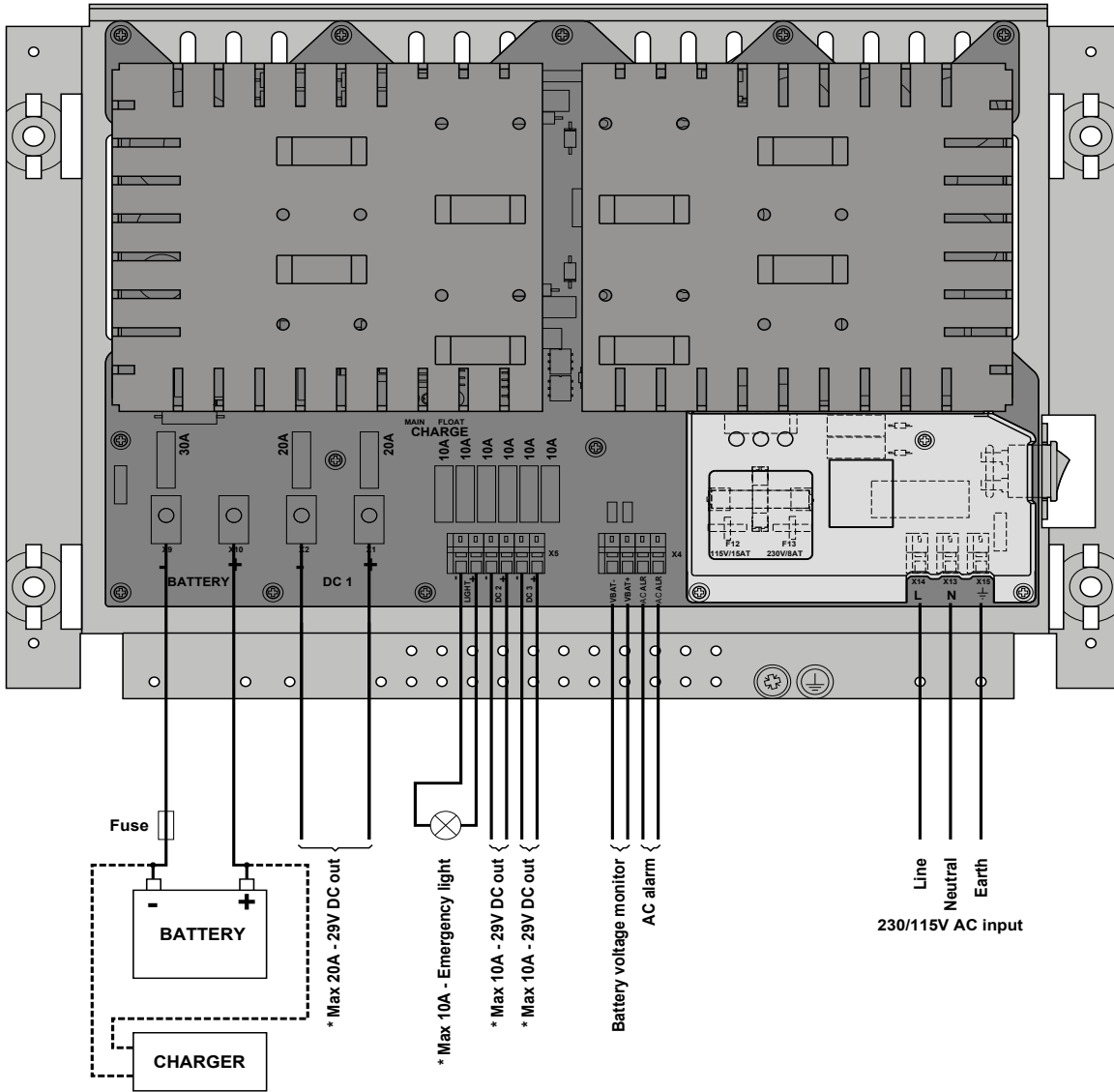
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3.2 MOUNTING POSSIBILITIES



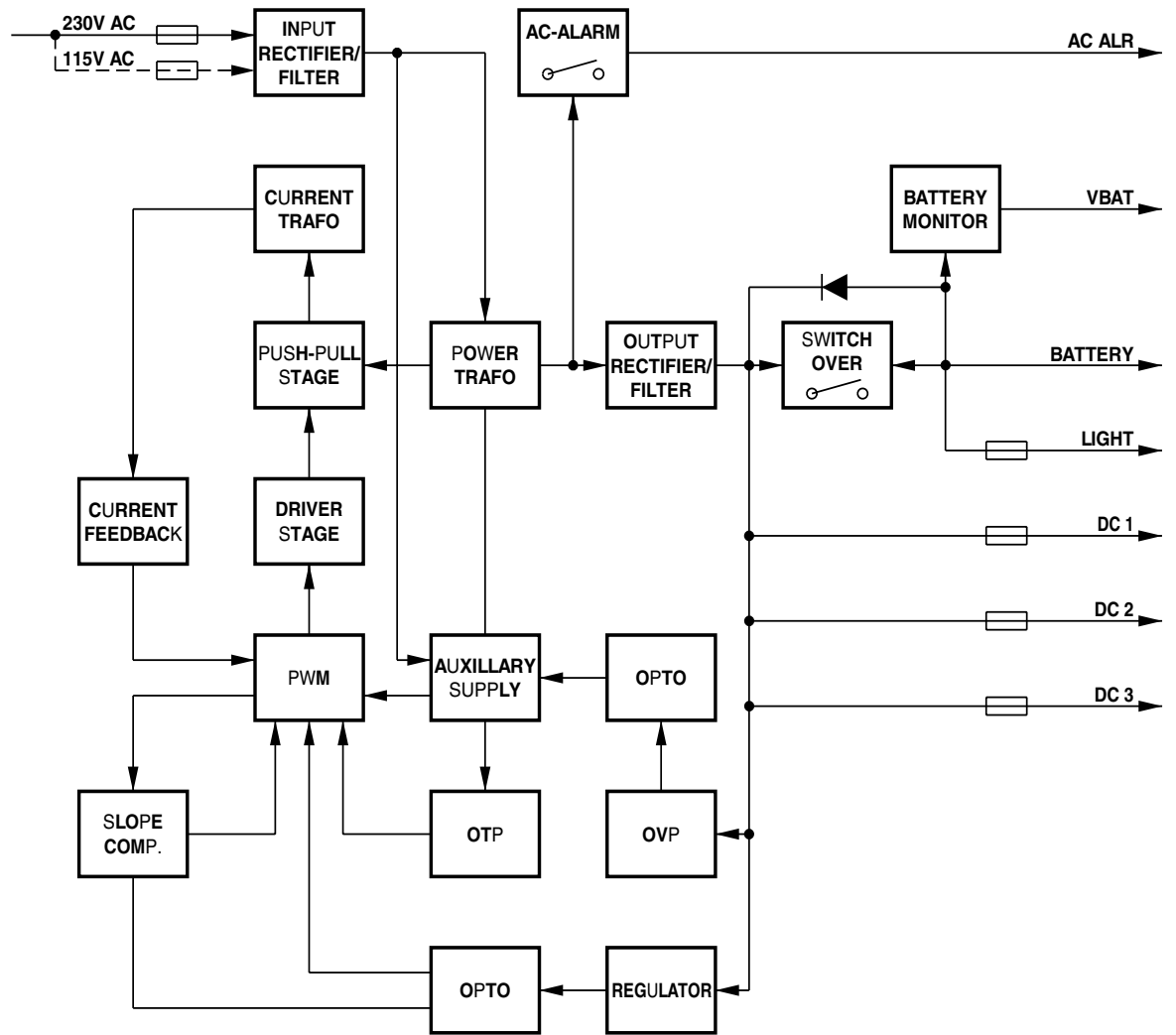
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3.3 INSTALLATION WIRING



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3.4 BLOCK DIAGRAM



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3.5 AC SUPPLY VOLTAGE SETTING

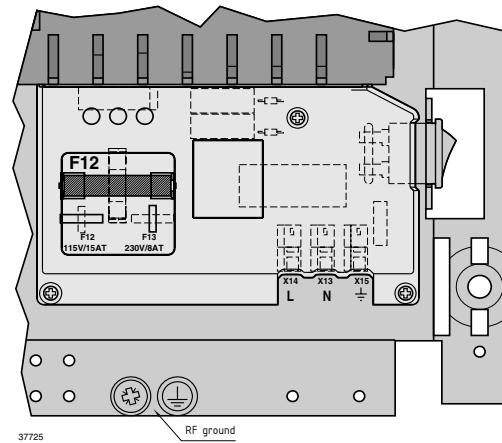
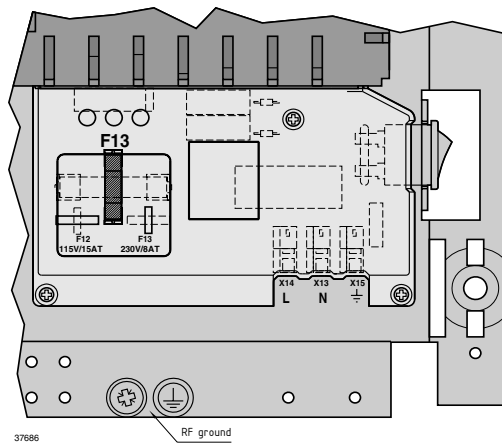
Before connecting the AC Power Supply to the AC mains, check that the AC Power Supply is set to the correct voltage and that the fuse rating corresponds to the setting used.

The voltage setting is selected by changing the fuse located under the front cover. The equipment is normally set to 230V. To select a different voltage insert the appropriate fuse.

Take care that the power is switched off before changing the fuse.

Fuse setting for 230V

Fuse setting for 115V



| Setting | Voltage range | Fuse rating |
|---------|---------------|-------------|
| 230V | 176 - 264V | F13 - 8AT |

| Setting | Voltage range | Fuse rating |
|---------|---------------|-------------|
| 115V | 88 - 132V | F12 - 15AT |

Caution:

Incorrect setting of the mains voltage may damage the AC Power Supply assembly.

3.6 CONNECTIONS

AC INPUT

The AC supply leads are connected to the terminal block as indicated. Screened power supply cable may be used as required by some administrations. The cable is fastened and the screen connected by a cable clamp on the main chassis below the terminal block.

| Terminal | Designation | Description |
|----------|-------------|------------------|
| X13 | N | Neutral |
| X14 | L | Line |
| X15 | ⏏ | Protective Earth |

Recommended cable type: 3 x 1.5 mm² screened.

BATTERY

The battery is connected to the battery terminals located to the left on the connection area. It is recommended to have fuses at the battery. The cable dimension depends on current consumption and permissible voltage drop in the cable.

The table below shows the necessary cable cross section for a voltage drop of 0.6V at 25A and external fuse ratings.

| Max. cable length to battery | Recommended Screened multiwire | External fuses |
|------------------------------|--------------------------------|----------------|
| 7 metres | 2 x 10 mm ² | 40A |
| 11 metres | 2 x 16 mm ² | 50A |
| 17 metres | 2 x 25 mm ² | 63A |

| Terminal | Designation | Description |
|----------|-------------|--------------------|
| X9 | BATTERY - | Input from Battery |
| X10 | BATTERY + | |

OUTPUTS

| Terminal | Designation | Description |
|----------|-------------|--|
| X1 | DC 1 + | 29V DC or Battery voltage in case of AC supply failure |
| X2 | DC 1 - | |

| Terminal | Designation | Description |
|----------|-------------|--|
| X5 - 1 | LIGHT - | Emergency Light connected to Battery Voltage |
| X5 - 2 | LIGHT + | |

| Terminal | Designation | Description |
|----------|-------------|---|
| X5 - 3 | DC 2 - | 29V DC or Battery voltage in case of AC supply failure. |
| X5 - 4 | DC 2 + | |


| Terminal | Designation | Description |
|----------|-------------|---|
| X5 - 5 | DC 3 - | 29V DC or Battery voltage in case of AC supply failure. |
| X5 - 6 | DC 3 + | |

| Terminal | Designation | Description |
|----------|-------------|-----------------------------------|
| X4 - 1 | VBAT - | Protected Battery monitor output. |
| X4 - 2 | VBAT + | |

| Terminal | Designation | Description |
|----------|-------------|--|
| X4 - 3 | AC ALR | Galvanically isolated AC alarm output. Relay contacts 5 - 50mA, 10 - 32V. Closed in alarm condition. Alarm in case of AC supply failure. |
| X4 - 4 | AC ALR | |

RF GROUND TERMINAL

The RF ground terminal is placed to the right on the cable-clamping bar.

| Terminal | Designation | Description |
|---|-------------|--------------------------------|
|  | RF ground | Grounding screw for cable lug. |

RF grounding requires special attention. Each equipment should have its own individual low-inductance earth connection.

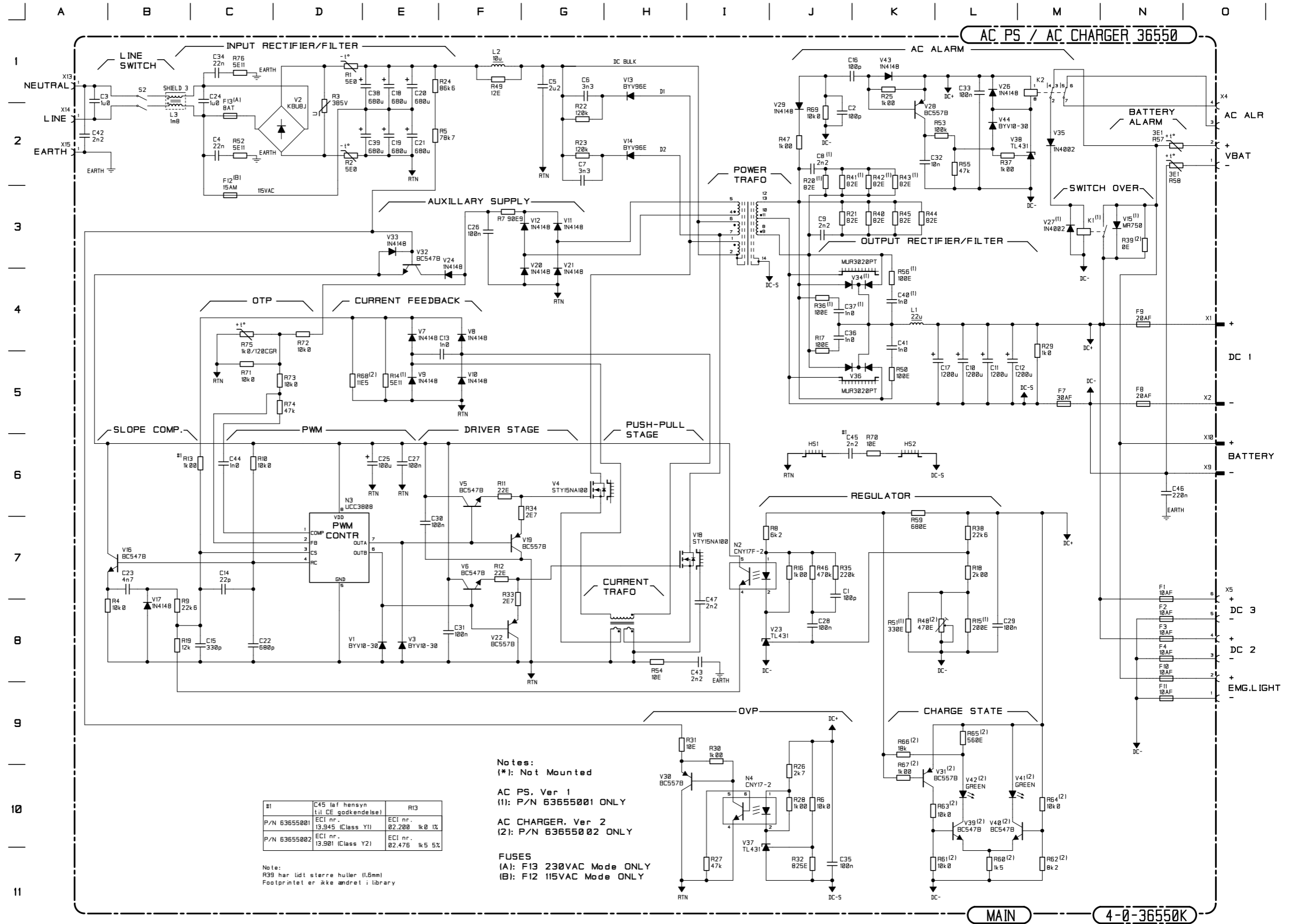
CABLE SCREEN

The cable screen of each cable should be connected to the cable-clamping bar.

4 SCHEMATIC DIAGRAM AND COMPONENT LOCATION

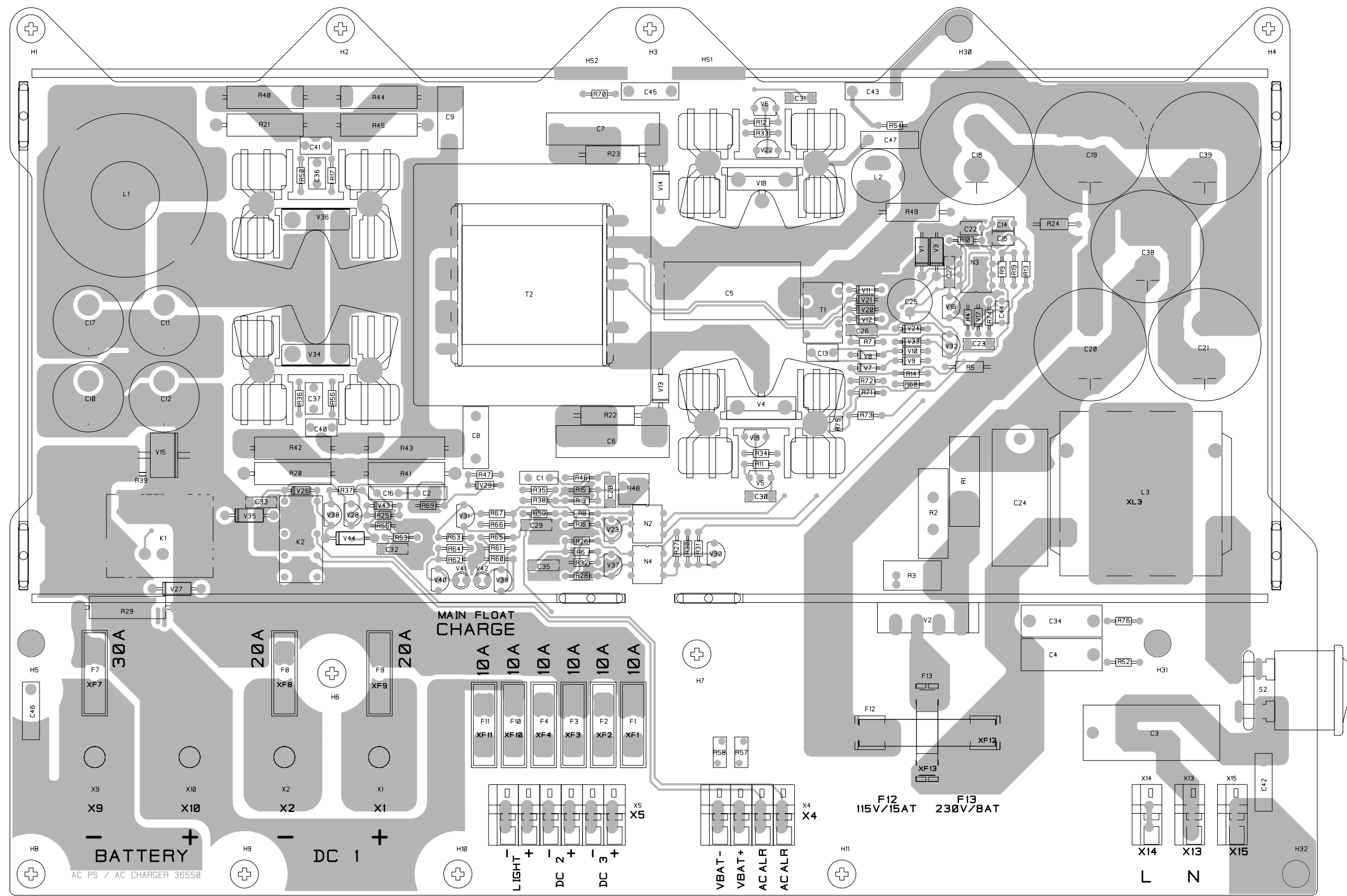
4.1 POWER SUPPLY UNIT

SCHEMATIC DIAGRAM



This diagram is valid for PCB 36550K

COMPONENT LOCATION



Not mounted components;
 R39, R48, R60, R61, R62, R63,
 R64, R65, R66, R67, R68,
 V31, V39, V40, V41, V42

Seen from component side with upper side tracks
 PCB rev. 36550D

5 PARTS LIST

| AC Power Supply | | T&T | 5-6-36550D/4-0-36550D | 63655001 |
|-----------------|---|---------------|------------------------|----------|
| POSITION | DESCRIPTION | MANUFACTURER | TYPE | PART NO. |
| C1 | CAPACITOR CERAMIC 100pF 5% NPO 50VDC | KCK | RT-HE80 SK CH 101 J | 15.136 |
| C2 | CAPACITOR CERAMIC 100pF 5% NPO 50VDC | KCK | RT-HE80 SK CH 101 J | 15.136 |
| C3 | CAPACITOR CLASS X2 1u0F 20% 275VAC | PHILIPS | 2222 336 23105(24105) | 13.931 |
| C4 | CAPACITOR CLASS Y2 22nF 20% 250VAC | PHILIPS | 2222 336 60223 (61223) | 13.908 |
| C5 | CAPACITOR MKT 2u2F 20% 400VDC | ARCOTRONICS | R60 M R 4220 CK M | 11.200 |
| C6 | CAPACITOR KP 3n3F 5% 1600VDC | PHILIPS | 2222 376 95332 | 13.326 |
| C7 | CAPACITOR KP 3n3F 5% 1600VDC | PHILIPS | 2222 376 95332 | 13.326 |
| C8 | CAPACITOR MKP 2n2F 10% 630VDC | PHILIPS | 2222 375 10222 (12222) | 13.403 |
| C9 | CAPACITOR MKP 2n2F 10% 630VDC | PHILIPS | 2222 375 10222 (12222) | 13.403 |
| C10 | CAPACITOR ELECTROLYTIC 1m2F 20% 50VDC | NICHICON | UPL1H122MHH | 14.721 |
| C11 | CAPACITOR ELECTROLYTIC 1m2F 20% 50VDC | NICHICON | UPL1H122MHH | 14.721 |
| C12 | CAPACITOR ELECTROLYTIC 1m2F 20% 50VDC | NICHICON | UPL1H122MHH | 14.721 |
| C13 | CAPACITOR CERAMIC 1n0F 10% CL2 500VDC | KCK | RT-HM60 SK YB 102 K | 15.160 |
| C14 | CAPACITOR CERAMIC 22pF 5% NP0 50VDC | PHILIPS | 2252 305 12 229 | 16.667 |
| C15 | CAPACITOR CERAMIC 330pF 5% NP0 50VDC | PHILIPS | 2252 305 12 331 | 16.681 |
| C16 | CAPACITOR CERAMIC 100pF 5% NPO 50VDC | KCK | RT-HE80 SK CH 101 J | 15.136 |
| C17 | CAPACITOR ELECTROLYTIC 1m2F 20% 50VDC | NICHICON | UPL1H122MHH | 14.721 |
| C18 | CAPACITOR ELECTROLYTIC 680uF 20% 200VDC | PANASONIC | ECEC 2D A 681 C B | 14.793 |
| C19 | CAPACITOR ELECTROLYTIC 680uF 20% 200VDC | PANASONIC | ECEC 2D A 681 C B | 14.793 |
| C20 | CAPACITOR ELECTROLYTIC 680uF 20% 200VDC | PANASONIC | ECEC 2D A 681 C B | 14.793 |
| C21 | CAPACITOR ELECTROLYTIC 680uF 20% 200VDC | PANASONIC | ECEC 2D A 681 C B | 14.793 |
| C22 | CAPACITOR CERAMIC 680pF 5% NP0 50VDC | PHILIPS | 2252 305 12 681 | 16.685 |
| C23 | CAPACITOR MKT 4n7F 10% 63VDC | BC Components | 2222 370 35472 | 11.374 |
| C24 | CAPACITOR CLASS X2 1u0F 20% 275VAC | PHILIPS | 2222 336 23105(24105) | 13.931 |
| C25 | ELECTROLYTIC CAPACITOR 100uF 20% 50VDC | ELNA | RJJ 50V 101 M H4 T2 | 14.653 |
| C26 | CAPACITOR MKT 100nF 10% 63VDC | BC Components | 2222 370 75104 (78104) | 11.136 |
| C27 | CAPACITOR MKT 100nF 10% 63VDC | BC Components | 2222 370 75104 (78104) | 11.136 |
| C28 | CAPACITOR MKT 100nF 10% 63VDC | BC Components | 2222 370 75104 (78104) | 11.136 |
| C29 | CAPACITOR MKT 100nF 10% 63VDC | BC Components | 2222 370 75104 (78104) | 11.136 |
| C30 | CAPACITOR MKT 100nF 10% 63VDC | BC Components | 2222 370 75104 (78104) | 11.136 |
| C31 | CAPACITOR MKT 100nF 10% 63VDC | BC Components | 2222 370 75104 (78104) | 11.136 |
| C32 | CAPACITOR MKT 10nF 5% 63VDC | BC Components | 2222 370 36103 | 11.134 |
| C33 | CAPACITOR MKT 100nF 10% 63VDC | BC Components | 2222 370 75104 (78104) | 11.136 |
| C34 | CAPACITOR CLASS Y2 22nF 20% 250VAC | PHILIPS | 2222 336 60223 (61223) | 13.908 |
| C35 | CAPACITOR MKT 100nF 10% 63VDC | BC Components | 2222 370 75104 (78104) | 11.136 |
| C36 | CAPACITOR CERAMIC 1n0F 10% CL2 500VDC | KCK | RT-HM60 SK YB 102 K | 15.160 |
| C37 | CAPACITOR CERAMIC 1n0F 10% CL2 500VDC | KCK | RT-HM60 SK YB 102 K | 15.160 |
| C38 | CAPACITOR ELECTROLYTIC 680uF 20% 200VDC | PANASONIC | ECEC 2D A 681 C B | 14.793 |
| C39 | CAPACITOR ELECTROLYTIC 680uF 20% 200VDC | PANASONIC | ECEC 2D A 681 C B | 14.793 |
| C40 | CAPACITOR CERAMIC 1n0F 10% CL2 500VDC | KCK | RT-HM60 SK YB 102 K | 15.160 |
| C41 | CAPACITOR CERAMIC 1n0F 10% CL2 500VDC | KCK | RT-HM60 SK YB 102 K | 15.160 |
| C42 | CAPACITOR CLASS Y2 2n2F 20% 250VAC | BC Components | 2222 336 63222 (64222) | 13.901 |
| C43 | CAPACITOR CLASS Y2 2n2F 20% 250VAC | BC Components | 2222 336 63222 (64222) | 13.901 |
| C44 | CAPACITOR CERAMIC 1n0F 5% NP0 50VDC | PHILIPS | 2252 305 12 102 | 16.687 |
| C45 | CAPACITOR CLASS Y2 2n2F 20% 250VAC | BC Components | 2222 336 63222 (64222) | 13.901 |
| C46 | CAPACITOR CLASS Y2 2n2F 20% 250VAC | BC Components | 2222 336 63222 (64222) | 13.901 |
| C47 | CAPACITOR CLASS Y2 2n2F 20% 250VAC | BC Components | 2222 336 63222 (64222) | 13.901 |
| F1 | ATO BLADE FUSE 10AF RED COLOURED RED | LITTELFUSE | 257010 | 45.663 |
| F2 | ATO BLADE FUSE 10AF RED COLOURED RED | LITTELFUSE | 257010 | 45.663 |
| F3 | ATO BLADE FUSE 10AF RED COLOURED RED | LITTELFUSE | 257010 | 45.663 |
| F4 | ATO BLADE FUSE 10AF RED COLOURED RED | LITTELFUSE | 257010 | 45.663 |
| F7 | ATO BLADE FUSE 30AF COLOURED GREEN | LITTELFUSE | 257030 | 45.667 |
| F8 | ATO BLADE FUSE 20AF COLOURED YELLOW | LITTELFUSE | 257020 | 45.665 |
| F9 | ATO BLADE FUSE 20AF COLOURED YELLOW | LITTELFUSE | 257020 | 45.665 |
| F10 | ATO BLADE FUSE 10AF RED COLOURED RED | LITTELFUSE | 257010 | 45.663 |
| F11 | ATO BLADE FUSE 10AF RED COLOURED RED | LITTELFUSE | 257010 | 45.663 |
| F12 | FUSE 15AM Ø6.3x32mm | LITTELFUSE | 311015 | 45.630 |
| F13 | FUSE 8AT 250V 5x20mm | ELU | 179 120 8AT | 45.519 |
| HS1 | Cooling chassis PS4655 / CH4656 / CH4657 | T&T | 1-2-36892E | 236892 |
| HS2 | Cooling chassis PS4655 / CH4656 / CH4657 | T&T | 1-2-36892E | 236892 |
| K1 | RELAY SPST 24VDC/50A PCB VERSION | SIEMENS | V23071-A1010-A132 | 21.028 |
| K2 | RELAY DPDT 24VDC/1ADC | MEISEI | M4-24H | 78000044 |
| L1 | Choke fixed toroidal 22uH/25ADC 8% | FLUX | FT 12300031-1 | 20.238 |
| L2 | CHOKE FIXED 10uH 20%/5ADC | SUMIDA | RCH-110 100M | 74011007 |
| L3 | Choke Dual 2x1.8mH/10DAC | THAI LIN | TL85-100-182 | 20.056 |
| N2 | OPTOCOUPLER IC/IF 63-125% CNY17F-2 | SIEMENS | CNY17F-2 | 32.534 |
| N3 | PWM Controller, L.Pow. Curr.Mode, UCC3808-1 | UNITRODE | UCC3808N-1 | 31.179 |
| N4 | OPTO COUPLER CNY17-2 | SIEMENS | CNY17-2 | 32.530 |
| R1 | RESISTOR NTC 5 OHM 20% 8.5A | SIEMENS | B57364-S509-M55 | 07.305 |
| R2 | RESISTOR NTC 5 OHM 20% 8.5A | SIEMENS | B57364-S509-M55 | 07.305 |
| R3 | RESISTOR VDR 385V 10% | PHILIPS | 2322 594 53816 (03817) | 06.507 |
| R4 | RESISTOR MF 10k0 OHM 1% 0.25W | PHILIPS | 2322 157 11003 | 02.235 |
| R5 | RESISTOR MF. 78k7 OHM 1% 0.6W | PHILIPS | 2322 156 17873 | 03.242 |
| R6 | RESISTOR MF 10k0 OHM 1% 0.25W | PHILIPS | 2322 157 11003 | 02.235 |
| R7 | RESISTOR MF. 90R9 1% 0.25W | PHILIPS | 2322 157 19099 (29099) | 02.246 |

| POSITION | DESCRIPTION | MANUFACTURER | TYPE | PART NO. |
|----------|---|----------------------|------------------------|----------|
| R8 | RESISTOR MF 6k2 OHM 5% 0.33W | PHILIPS | 2322 187 73622 | 02.491 |
| R9 | RESISTOR MF. 22k6 1% 0.25W | PHILIPS | 157 12263 (22263) | 02.253 |
| R10 | RESISTOR MF 10k0 OHM 1% 0.25W | PHILIPS | 2322 157 11003 | 02.235 |
| R11 | RESISTOR MF 22 OHM 5% 0.33W | PHILIPS | 2322 187 73229 | 02.432 |
| R12 | RESISTOR MF 22 OHM 5% 0.33W | PHILIPS | 2322 187 73229 | 02.432 |
| R13 | RESISTOR MF 1k00 OHM 1% 0.25W | PHILIPS | 2322 157 11002 | 02.200 |
| R14 | RESISTOR MF. 5R11 1% 0.25W | PHILIPS | 2322 157 15118 (25118) | 02.242 |
| R15 | RESISTOR MF 215 OHM 1% 0.25W | PHILIPS | 2322 157 12151 | 02.212 |
| R16 | RESISTOR MF 1k00 OHM 1% 0.25W | PHILIPS | 2322 157 11002 | 02.200 |
| R17 | RESISTOR MF 100 OHM 5% 0.33W | PHILIPS | 2322 187 73101 | 02.448 |
| R18 | RESISTOR MF. 2k00 1% 0.25W | PHILIPS | 2322 157 12002 (22002) | 02.250 |
| R19 | RESISTOR MF 12k OHM 5% 0.33W | PHILIPS | 2322 187 73123 | 02.498 |
| R20 | RESISTOR PMF 82 OHM 5% 3W | PHILIPS | 2322 195 13829 | 04.672 |
| R21 | RESISTOR PMF 82 OHM 5% 3W | PHILIPS | 2322 195 13829 | 04.672 |
| R22 | RESISTOR PMF 120k OHM 5% 2W | PHILIPS | 2322 194 13124 | 04.236 |
| R23 | RESISTOR PMF 120k OHM 5% 2W | PHILIPS | 2322 194 13124 | 04.236 |
| R24 | RESISTOR MF. 86k6 OHM 1% 0.6W | PHILIPS | 2322 156 18663 | 03.244 |
| R25 | RESISTOR MF 1k00 OHM 1% 0.25W | PHILIPS | 2322 157 11002 | 02.200 |
| R26 | RESISTOR MF 2k7 OHM 5% 0.33W | PHILIPS | 2322 187 73272 | 02.482 |
| R27 | RESISTOR MF 47k OHM 5% 0.33W | PHILIPS | 2322 187 73473 | 02.512 |
| R28 | RESISTOR MF 1k00 OHM 1% 0.25W | PHILIPS | 2322 157 11002 | 02.200 |
| R29 | RESISTOR PMF 1k0 OHM 5% 3W | PHILIPS | 2322 195 13102 | 04.699 |
| R30 | RESISTOR MF 1k00 OHM 1% 0.25W | PHILIPS | 2322 157 11002 | 02.200 |
| R31 | RESISTOR MF 10 OHM 5% 0.33W | PHILIPS | 2322 187 73109 | 02.424 |
| R32 | RESISTOR MF 825 OHM 1% 0.25W | PHILIPS | 2322 157 18251 | 02.224 |
| R33 | RESISTOR MF 2R7 OHM 5% 0.33W | PHILIPS | 2322 187 73278 | 02.410 |
| R34 | RESISTOR MF 2R7 OHM 5% 0.33W | PHILIPS | 2322 187 73278 | 02.410 |
| R35 | RESISTOR MF 220k OHM 5% 0.33W | PHILIPS | 2322 187 73224 | 02.528 |
| R36 | RESISTOR MF 100 OHM 5% 0.33W | PHILIPS | 2322 187 73101 | 02.448 |
| R37 | RESISTOR MF 1k00 OHM 1% 0.25W | PHILIPS | 2322 157 11002 | 02.200 |
| R38 | RESISTOR MF. 22k6 1% 0.25W | PHILIPS | 2322 157 12263 (22263) | 02.253 |
| R39 | Not used | | | |
| R40 | RESISTOR PMF 82 OHM 5% 3W | PHILIPS | 2322 195 13829 | 04.672 |
| R41 | RESISTOR PMF 82 OHM 5% 3W | PHILIPS | 2322 195 13829 | 04.672 |
| R42 | RESISTOR PMF 82 OHM 5% 3W | PHILIPS | 2322 195 13829 | 04.672 |
| R43 | RESISTOR PMF 82 OHM 5% 3W | PHILIPS | 2322 195 13829 | 04.672 |
| R44 | RESISTOR PMF 82 OHM 5% 3W | PHILIPS | 2322 195 13829 | 04.672 |
| R45 | RESISTOR PMF 82 OHM 5% 3W | PHILIPS | 2322 195 13829 | 04.672 |
| R46 | RESISTOR MF 470k OHM 5% 0.33W | PHILIPS | 2322 187 73474 | 02.536 |
| R47 | RESISTOR MF 1k00 OHM 1% 0.25W | PHILIPS | 2322 157 11002 | 02.200 |
| R48 | Not used | | | |
| R49 | RESISTOR PMF 12 OHM 5% 2W | PHILIPS | 2322 194 13129 | 04.136 |
| R50 | RESISTOR MF 100 OHM 5% 0.33W | PHILIPS | 2322 187 73101 | 02.448 |
| R52 | RESISTOR MF. 5R11 1% 0.25W | PHILIPS | 2322 157 15118 (25118) | 02.242 |
| R53 | RESISTOR MF 100k OHM 5% 0.33W | PHILIPS | 2322 187 73104 | 02.520 |
| R54 | RESISTOR MF 10 OHM 5% 0.33W | PHILIPS | 2322 187 73109 | 02.424 |
| R55 | RESISTOR MF 47k OHM 5% 0.33W | PHILIPS | 2322 187 73473 | 02.512 |
| R56 | RESISTOR MF 100 OHM 5% 0.33W | PHILIPS | 2322 187 73101 | 02.448 |
| R57 | RESISTOR PTC 3.1 OHM 250mA/50V | BOURNS | MF-R025 | 72090000 |
| R58 | RESISTOR PTC 3.1 OHM 250mA/50V | BOURNS | MF-R025 | 72090000 |
| R59 | RESISTOR MF 680 OHM 5% 0.33W | PHILIPS | 2322 187 73681 | 02.468 |
| R60 | Not used | | | |
| R61 | Not used | | | |
| R62 | Not used | | | |
| R63 | Not used | | | |
| R64 | Not used | | | |
| R65 | Not used | | | |
| R66 | Not used | | | |
| R67 | Not used | | | |
| R68 | Not used | | | |
| R69 | RESISTOR MF 10k0 OHM 1% 0.25W | PHILIPS | 2322 157 11003 | 02.235 |
| R70 | RESISTOR MF 10 OHM 5% 0.33W | PHILIPS | 2322 187 73109 | 02.424 |
| R71 | RESISTOR MF 10k0 OHM 1% 0.25W | PHILIPS | 2322 157 11003 | 02.235 |
| R72 | RESISTOR MF 10k0 OHM 1% 0.25W | PHILIPS | 2322 157 11003 | 02.235 |
| R73 | RESISTOR MF 10k0 OHM 1% 0.25W | PHILIPS | 2322 157 11003 | 02.235 |
| R74 | RESISTOR MF 47k OHM 5% 0.33W | PHILIPS | 2322 187 73473 | 02.512 |
| R75 | RESISTOR PTC 1kO/120centigrade | PHILIPS | 2322 671 91107 | 07.104 |
| R76 | RESISTOR MF. 5R11 1% 0.25W | PHILIPS | 2322 157 15118 (25118) | 02.242 |
| S2 | Rocker Switch w. lamp, 4pol, DPST, 6A/250VAC, PCB | Legion Electronic Co | LECR9Y2KDFR7FR1 | 43.056 |
| T1 | Transformer Current Sense 1:1:50, 12A | FLUX | FT 28001201 | 22.209 |
| T2 | Transformer SMPS 370W | FLUX | 14410040-1 | 22.215 |
| V1 | DIODE SCHOTTKY 30VDC/1A | PHILIPS | BYV10-30 133(113) | 27.611 |
| V2 | DIODE BRIDGE 600V/8A KBU8 | GENERAL INSTRUM | KBU8J(K,M) | 27.112 |
| V3 | DIODE SCHOTTKY 30VDC/1A | PHILIPS | BYV10-30 133(113) | 27.611 |
| V4 | Cooling assembly PR31/50 for STY15NA100, MAX247 | T&T | 0-0-36759 | 736759 |
| V5 | TRANSISTOR AF BC547B NPN TO-92 | PHILIPS | BC547B-126 | 28.067 |
| V6 | TRANSISTOR AF BC547B NPN TO-92 | PHILIPS | BC547B-126 | 28.067 |
| V7 | DIODE 1N4148 HIGH SPEED | PHILIPS | 1N4148-143 | 25.131 |
| V8 | DIODE 1N4148 HIGH SPEED | PHILIPS | 1N4148-143 | 25.131 |
| V9 | DIODE 1N4148 HIGH SPEED | PHILIPS | 1N4148-143 | 25.131 |
| V10 | DIODE 1N4148 HIGH SPEED | PHILIPS | 1N4148-143 | 25.131 |

| POSITION | DESCRIPTION | MANUFACTURER | TYPE | PART NO. |
|----------|---|--------------|---------------------------|----------|
| V11 | DIODE 1N4148 HIGH SPEED | PHILIPS | 1N4148-143 | 25.131 |
| V12 | DIODE 1N4148 HIGH SPEED | PHILIPS | 1N4148-143 | 25.131 |
| V13 | Diode Avalance F.Rec. 1000V/1A BYV96E, MUR1100 | PHILIPS | BYV96E -153(133) | 83100960 |
| V14 | Diode Avalance F.Rec. 1000V/1A BYV96E, MUR1100 | PHILIPS | BYV96E -153(133) | 83100960 |
| V15 | DIODE RECTIFIER 50V/6ADC MR750, RL750 | MOTOROLA | MR750 (51,52,54,56,60) | 25.219 |
| V16 | TRANSISTOR AF BC547B NPN TO-92 | PHILIPS | BC547B-126 | 28.067 |
| V17 | DIODE 1N4148 HIGH SPEED | PHILIPS | 1N4148-143 | 25.131 |
| V18 | Cooling assembly PR31/50 for STY15NA100, MAX247 | T&T | 0-0-36759 | 736759 |
| V19 | TRANSISTOR AF BC557B NPN TO-92 | MOT. | BC557BZL1 | 28.091 |
| V20 | DIODE 1N4148 HIGH SPEED | PHILIPS | 1N4148-143 | 25.131 |
| V21 | DIODE 1N4148 HIGH SPEED | PHILIPS | 1N4148-143 | 25.131 |
| V22 | TRANSISTOR AF BC557B NPN TO-92 | MOT. | BC557BZL1 | 28.091 |
| V23 | DIODE SHUNT REGULATOR PROGRAMMABLE | MOTOROLA | TL431CLP RA | 85004310 |
| V24 | DIODE 1N4148 HIGH SPEED | PHILIPS | 1N4148-143 | 25.131 |
| V26 | DIODE 1N4148 HIGH SPEED | PHILIPS | 1N4148-143 | 25.131 |
| V27 | DIODE RECTIFIER 1N4002 100V/1A | MOTOROLA | 1N4002(03/04/05/06/07)RL | 25.100 |
| V28 | TRANSISTOR AF BC557B NPN TO-92 | MOT. | BC557BZL1 | 28.091 |
| V29 | DIODE 1N4148 HIGH SPEED | PHILIPS | 1N4148-143 | 25.131 |
| V30 | TRANSISTOR AF BC557B NPN TO-92 | MOT. | BC557BZL1 | 28.091 |
| V31 | Not used | | | |
| V32 | TRANSISTOR AF BC547B NPN TO-92 | PHILIPS | BC547B-126 | 28.067 |
| V33 | DIODE 1N4148 HIGH SPEED | PHILIPS | 1N4148-143 | 25.131 |
| V34 | Cooling assembly PR31/50 for MUR 3020PT, TO218 | T&T | 0-0-36822 | 736822 |
| V35 | DIODE RECTIFIER 1N4002 100V/1A | MOTOROLA | 1N4002(03/04/05/06/07)RL | 25.100 |
| V36 | Cooling assembly PR31/50 for MUR 3020PT, TO218 | T&T | 0-0-36822 | 736822 |
| V37 | DIODE SHUNT REGULATOR PROGRAMMABLE | MOTOROLA | TL431CLP RA | 85004310 |
| V38 | DIODE SHUNT REGULATOR PROGRAMMABLE | MOTOROLA | TL431CLP RA | 85004310 |
| V39 | Not used | | | |
| V40 | Not used | | | |
| V41 | Not used | | | |
| V42 | Not used | | | |
| V43 | DIODE 1N4148 HIGH SPEED | PHILIPS | 1N4148-143 | 25.131 |
| V44 | DIODE SCHOTTKY 30VDC/1A | PHILIPS | BYV10-30 133(113) | 27.611 |
| X1 | Connection Element w. 5x10mm Screw and Accessories | T&T | 0-0-37559 | 737559 |
| X2 | Connection Element w. 5x10mm Screw and Accessories | T&T | 0-0-37559 | 737559 |
| X4 | TERMINAL BLOCK PCB VERS. 4 POLES 1.5mm ² | PTR | AK 3000/04-5.0-SLADE GREY | 81.134 |
| X5 | TERMINAL BLOCK PCB VERS. 6 POLES 1.5mm ² | PTR | AK 3000/06-5.0-SLADE GREY | 81.136 |
| X9 | Connection Element w. 5x10mm Screw and Accessories | T&T | 0-0-37559 | 737559 |
| X10 | Connection Element w. 5x10mm Screw and Accessories | T&T | 0-0-37559 | 737559 |
| X13 | TERMINAL BLOCK PCB VERS. 1 POLE 1.5mm ² | PTR | AK 3000/01-5.0-SLADE GREY | 81.131 |
| X14 | TERMINAL BLOCK PCB VERS. 1 POLE 1.5mm ² | PTR | AK 3000/01-5.0-SLADE GREY | 81.131 |
| X15 | TERMINAL BLOCK PCB VERS. 1 POLE 1.5mm ² | PTR | AK 3000/01-5.0-SLADE GREY | 81.131 |
| XF1 | FUSE HOLDER 1 POLE ATO BLADE FUSES | PUDENZ | 178.6165.0001 (.0002) | 78.499 |
| XF2 | FUSE HOLDER 1 POLE ATO BLADE FUSES | PUDENZ | 178.6165.0001 (.0002) | 78.499 |
| XF3 | FUSE HOLDER 1 POLE ATO BLADE FUSES | PUDENZ | 178.6165.0001 (.0002) | 78.499 |
| XF4 | FUSE HOLDER 1 POLE ATO BLADE FUSES | PUDENZ | 178.6165.0001 (.0002) | 78.499 |
| XF7 | FUSE HOLDER 1 POLE ATO BLADE FUSES | PUDENZ | 178.6165.0001 (.0002) | 78.499 |
| XF8 | FUSE HOLDER 1 POLE ATO BLADE FUSES | PUDENZ | 178.6165.0001 (.0002) | 78.499 |
| XF9 | FUSE HOLDER 1 POLE ATO BLADE FUSES | PUDENZ | 178.6165.0001 (.0002) | 78.499 |
| XF10 | FUSE HOLDER 1 POLE ATO BLADE FUSES | PUDENZ | 178.6165.0001 (.0002) | 78.499 |
| XF11 | FUSE HOLDER 1 POLE ATO BLADE FUSES | PUDENZ | 178.6165.0001 (.0002) | 78.499 |
| XF12 | FUSE CLIP 1/4" PCB TYPE | LITTELFUSE | 102 071 | 78.389 |
| XF13 | FUSECLIP FOR 20x5mm FUSELINK | LITTEL FUSE | 111501 | 78.396 |
| XL3 | Shield for Choke TL 85 | T&T | 1-2-36919A | 236919 |

6 ACCESSORIES INCLUDED

| DESIGNATION | QUANTITY | PART NUMBER |
|--------------------------|-----------------|--------------------|
| Fuse 8AT, for 230V | 1 | 45.519 |
| Fuse 15AT, for 115V | 2 | 45.630 |
| Fuse auto blade 10A | 2 | 45.663 |
| Fuse auto blade 20A | 2 | 45.665 |
| Fuse auto blade 30A | 1 | 45.667 |
| Screw M4x30 | 11 | 87.363 |
| Screw M4x20 | 17 | 87.359 |
| Screw M5x12 | 5 | 87.453 |
| Sheet metal screw 5.5x25 | 5 | 88.252 |
| Cable clamp, 4 holes | 4 | 204712 |
| Cable clamp, 3 holes | 8 | 204713 |
| Technical Manual | 1 | M4655COM |

Technical Manual

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