

Technical Data

Online UPS system proTECTO q 700 - 3000



**J. Schneider
Elektrotechnik**

The proTECTO is an on-line continuous converter UPS system according to IEC / EN 62040-3 (VFI-SS-111) with sinusoidal output voltage in all operating modes, LCD display, RS232 interface, USB connection, a slot for communication cards and shutdown software for all modern Windows systems including server versions, Mac and Linux systems, as well as VMware and Hyper-V virtualisation platforms. Operating modes (adjustable via the display): On-Line, Line-Interactive, Smart Active or "Emergency Supply" (Standby). The autonomy time of the systems can be extended by connecting additional battery modules.



Model	700	1000	1000 ER	1500	2200	2200 ER	3000	3000 ER
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Rating								
Rating in VA	700	1000	1000	1500	2200	2200	3000	3000
Rating in W	630	900	900	1350	1980	1980	2700	2700
Power factor cos ϕ	0,9							

Back-up time	Back-up time in minutes							
100% load and cos ϕ 0,7	6	7	-	5	6	-	5	-
50% load and cos ϕ 0,7	15	18	-	15	16	-	15	-

Input								
Nominal input voltage	220 / 230 / 240 V AC							
Input voltage range at 50% load	140 – 276 V							
Input voltage range at 100% load	184 – 276 V							
Input frequency range	50 Hz \pm 5% / 60 Hz \pm 5%							
Nominal frequency	standard 50 Hz, via software configurable on 50 Hz, 60 Hz or auto select							
Tolerance of frequency	\pm 5 %							
Maximum input current in A (nominal load, minimum input voltage and Battery charging)	4	5,8	5,8	8,2	12	12	16	16
Peak current	< nominal current							
Power factor (cos ϕ)	> 0,98							
Current distortion (THDI)	\leq 7 %							
„Hold-Up time“ (Time that can be bridged without switching to battery - there is no interruption of the output voltage.)	< 40 ms							

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Output	
Output voltage	230 V (switchable on 220 or 240 V)
Tolerance of output voltage - static	± 1,5 %
Tolerance of output voltage - dynamic (load shift 0 to 100%)	≤ 5 %
Reaching the tolerance range of the Voltage after load step.	< 20 ms
Waveform of the output voltage	sinussoidal
Output frequency in normal operation	50 or 60 Hz ± 5 %
Speed of frequency adjustment	1 Hz / s
Output frequency in battery operation	50 or 60 Hz ± 0,2 %
Voltage distortion / linear load	< 2 %
Voltage distortion / non-linear load	< 4 %
Power factor at the output	0,9
Crestfactor measured according to EN 50091-1 (peak current to RMS-current)	Up to 3:1
efficiency (ECO Mode and Smart Active)	98 %

Overload	
Bypass: Overload capacity in normal operation (after 2 sec. switchover to bypass)	100 - < 110% for 2 minutes 110 - < 150% for 4 seconds > 150% for 1 second
WR: Overload capacity in battery mode (afterwards switch off)	100 - < 110 % for 1 minute 110 - < 150 % for 4 seconds > 150 % for 0,5 seconds
Bypass: short-circuit current	3 x I Nom for 0,5 seconds
WR: short-circuit current	2 x I Nom for 0,3 seconds

Bypass	
Voltage tolerance for switch over	180 – 264 Volt
Tolerance of frequency	from ± 0,5 Hz to ± 5Hz configurable
Switch-over time	2 ms

Battery	
Nominal voltage	24 V 36 V 36 V 36 V 72 V 72 V 72 V 72 V
Number of blocks	2 3 * 3 6 * 6 *
Capacity per block	7 Ah 7 Ah * 9 Ah 7 Ah * 9 Ah *
Type	Closed and maintenance-free
Life duration	3 - 6 years (depending on environmental conditions)
Charging time	approx. 4 hours
Charging current	0,8 A 0,8 A 6 A 0,8 A 0,8 A 6 A 0,8 A 6 A
Battery test	Automatical each 40 hours

* external batteries

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Display	
Mains operation	Icon in LCD-Display is illuminated
Battery operation	Icon in LCD-Display is illuminated, UPS is peeping each 4 seconds
Battery discharged	Icon in LCD-Display is blinking, UPS is peeping 1 time per second
Bypass active	Icon in LCD-Display illuminates
Stand by	Icon in LCD-Display illuminates
Intervention required	Icon in Display illuminates
Load at UPS	LCD bar display
Battery state of charge	LCD bar display

Control elements	
Button	ON
Button	SELECT
Button	STANDBY
Switch	Main switch

Interfaces	
Sub-D 9 Pin socket	RS 232 interface
USB-Port	USB-interface
REPO and remote control	Screw terminals
Slot	Slot for communication card

Connections				
Input	IEC 10 A	IEC 16 A		
Output	4 x IEC 10 A	8 x IEC 10 A + 1 IEC 16 A		
REPO	Control terminals at the rear side			
Fusing input of the UPS (Thermal fuse) in A	7 (10 ER-Version)	10	12 (16 ER Version)	16 (20 ER Version)
DC-connection for battery extension	no	standard	no	standard

Protection	
Protective devices	overcurrent – short-circuit - overvoltage - undervoltage heat – deep discharge protection of batteries
Surge voltage strength	IEC 801-5 6 KV 1.2 / 50 µsec; 3 KA 8/20 µsec; 300 Joule

Norms	
Safety	EN 62040-1-1; regulation 2014 / 35 / EG
EMV / RFI	EN 62040-2 Kategorie C2 und Richtlinie 2014 / 30 / EG
Operation requirements	EN 62040 – 3 VFI-SS-111

Environmental conditions	
Environmental temperature	0 up to 40°C
Humidity relative	< 95% no condensation
Noise level in 1 m distance	< 40 dB(A)

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Housing								
Material	Sheet steel / Front plastics							
Colour	Black							
Protective class	IP 20							

Dimensions								
Dimensions (H x W x D) in mm	232 x 421 x 237				402 x 553 x 280			

Weight								
Weight in kg	11	13,5	7*	15	26	10,6*	28	14*

Scope of delivery								
Manual in German language (CD-ROM)	yes							
Schuko/IEC mains cable	1							
IEC/IEC connection cable	2							
Plug for battery extension	-	1	-	1	-	1	-	1
RS232 connection cable	1							
USB-cable	1							
Shutdown-Software for Windows 7 / 2008 / Vista / 2003 / XP, Novell and Linux Operation systems on CD-ROM.	ja							

Options

External Servicebypass								
Manual switch for release of the UPS system without switch off of the load								
Dimensions (H x W x D) in mm	180x300x115							
Weight in kg	3							

SNMP card								
NetMan 204 SNMP Interface-card	X							

Software								
Network version of PowerShield ³ Shutdown-Software for Windows, Novell, UNIX and Linux operation systems.	X							

*external batteries

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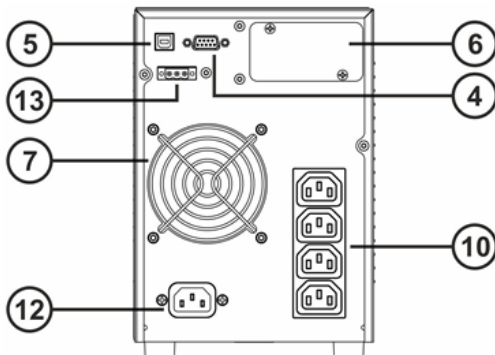
Views of the UPS

Front view

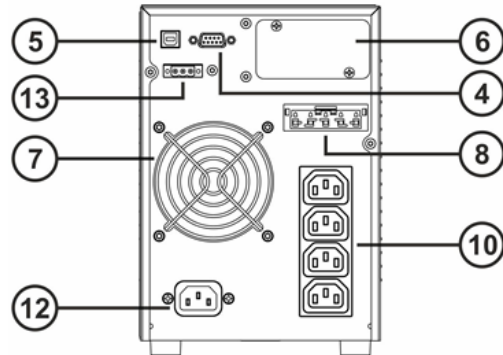


Side view right side

Models 700VA / 1500VA



Model 1000 VA



1 Display

2 Multifunktion button

3 Main switch

4 RS232-Port

5 USB-Port

6 slot for communication cards

7 cooling fans

8 Connection of battery extension

10 output sockets IEC 10A

12 input socket IEC 10A

13 control terminals (Emergency stop)

Technical Data

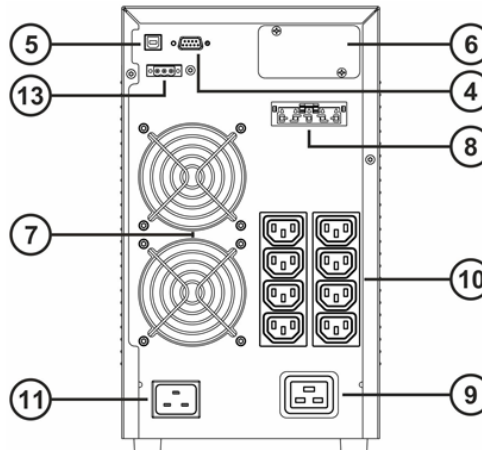
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Side view right side

Models 2200 (ER) and 3000 (ER) VA



4 communication port RS232 and contacts

5 USB-Port

6 Slot for communication cards

7 Cooling fan

8 Connection battery extension

9 output socket IEC 16A

10 output sockets IEC 10A

11 input plug IEC 16A

12 input plug IEC 10A

13 control terminals (Emergency stop)

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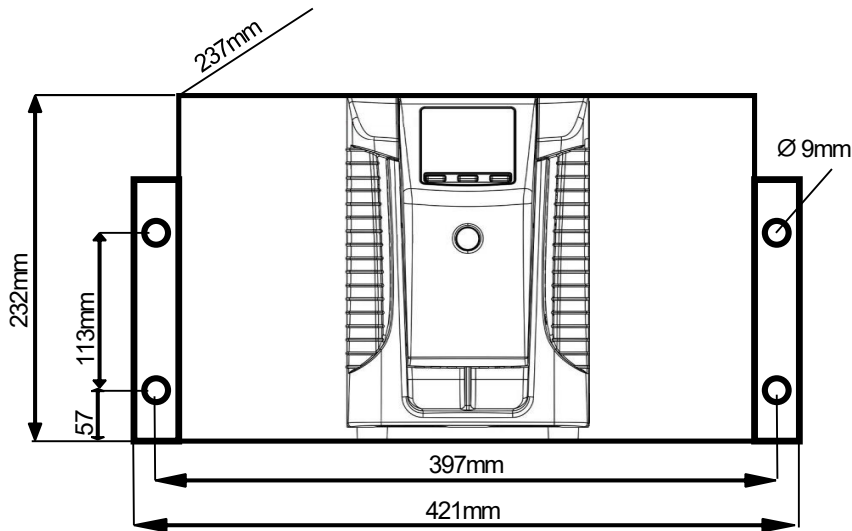
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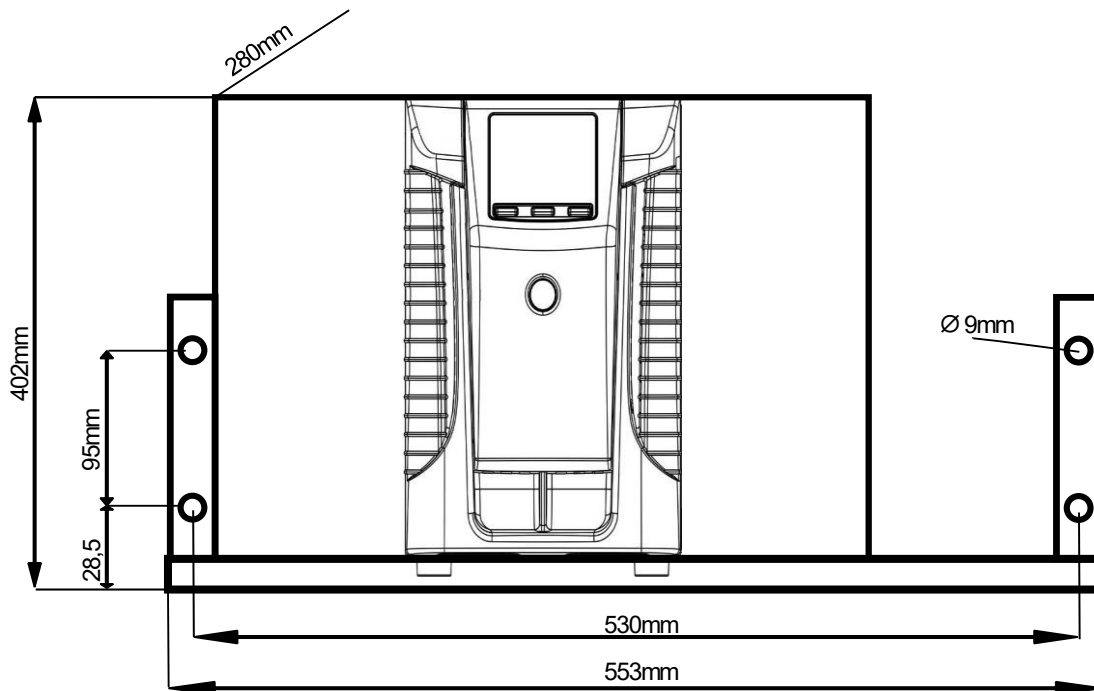
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Dimensions

Models 700VA / 1500VA



Models 2200 (ER) and 3000 (ER) VA



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Reg.-Nr. 2750

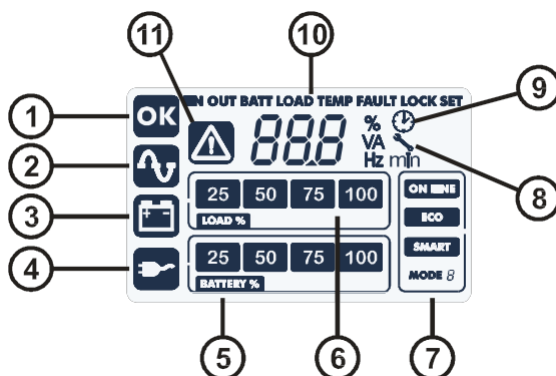
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View of the display



- | | |
|---------------------------|---|
| A Button „SEL“ | 5 display of state of charge of battery |
| B Button „ON“ | 6 display of load |
| C Button „STAND-BY“ | 7 configuration area |
| 1 Proper operation | 8 Service required |
| 2 Mains operation | 9 Timer |
| 3 Battery operation | 10 display of measured values |
| 4 Load supplied by bypass | 11 Stand-by / Alarm |

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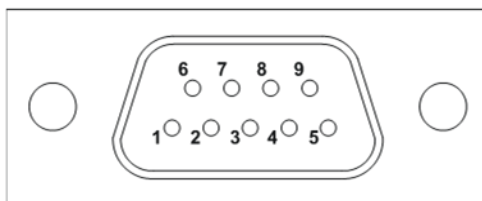
Communication-Ports

The following communication ports are on the rear side of the UPS (see views of the UPS):

- RS232-connection
- USB-connection
- extension slot for additional communication cards

RS232-Anschluss

RS232-Connection



PIN #	SIGNAL	Notes
1	Programmable output *: [standard: UPS-system failed]	(*) Opto isolated contact max. +30Vdc / 35mA. These contacts can be used for UPSTools Software or others
2	TXD	
3	RXD	
5	GND	
6	Power supply DC (Imax=20mA)	
8	Programmable output *: [standard: discharge prewarning]	Further information concerning interface assignment of the UPS systems are described in the manual of the UPSTools Software.
9	Programmable output*: [standard: battery operation]	

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Communication-slot

The UPS unit is provided with an expansion slot for optionally available communication plug-in cards (see adjacent figure) that allow the unit to dialogue using the main communication standards.

Some examples:

- second USB- and RS232-Port
- Multiplexer for doubling the serial interface
- Ethernet-Netzwerk-card with protocols TCP/IP, HTTP and SNMP
- Protocol converter plug-in card JBUS / MODBUS
- Plug-in card with insulated relay contacts

