



Technical Data

On-Line UPS-system *proTECTO* 700-3000

The **proTECTO** is a On-Line double conversion UPS-system according to IEC / EN 62040-3 (VFI-SS-111) with sinus wave output voltage in each operation mode, LCD-indication, RS232 interface, USB-connection, slot for communication cards and Shutdown-software for Windows 7 / 2008 / Vista / 2003 / XP, Novell and Linux system software.

Operation modes (selectable on display): On-Line, Line-Interactive, Smart Active or Standby.

The back-up time of the system can be increased by connecting additional external battery modules.



model	proTECTO	700	1000	1000 ER	1500	2200	2200 ER	3000	3000 ER
-------	----------	-----	------	---------	------	------	---------	------	---------

rating									
rating in VA	700	1000	1000	1500	2200	2200	3000	3000	
rating in W	560	800	800	1200	1760	1760	2400	2400	

back-up time	back-up time in minutes								
100% load	6	7	0	5	6	0	5	0	
50% load	15	18	0	15	16	0	15	0	

input									
nominal 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 ± 5% / 60 Hz ± 5%								
nominal frequency	standard 50 Hz, adjustable by software, 50 Hz, 60 Hz or auto select								
tolerance of frequency	± 5 %								
nominal current in A (nominal load and charged capacitors, input voltage 230 Volt)	3,3	4,5	6	6,5	9,5	13,5	12,5	16	
maximum input current in A (nominal load, minimum input voltage and capacitor charging)	3,7	5,2	10	7,8	11,2	16	15,5	20	
inrush current	< nominal current								
power factor (cos φ)	> 0,98								
harmonical distortion (THDI)	≤ 7 %								
„Hold-Up Zeit“ (back-up time which can be realized without switching on capacitor – no interruption of the output voltage occurs)	< 40 ms								



Technical Data

On-Line UPS-system *proTECTO 700-3000*

model	proTECTO	700	1000	1000 ER	1500	2200	2200 ER	3000	3000 ER
-------	----------	-----	------	------------	------	------	------------	------	------------

output	
output voltage	230 V (adjustable to 220 or 240 V)
tolerance of output voltage - static	± 1,5 %
tolerance of output voltage – dynamic (load impact 0 to 100%)	≤ 5 %
voltage reset after dynamic variation	< 20 ms
waveform of output voltage	sinus
output frequency in normal operation	50 or 60 Hz ± 5 %
rate of frequency adjustment	1 Hz / s
output frequency in capacitor operation	50 or 60 Hz ± 0,2 %
voltage distortion / linear load	< 2 %
voltage distortion / non-linear load	< 4 %
power factor output	0,8
crest factor according to EN 50091-1 (peak current to RMS-current)	til 3:1
efficiency (ECO Mode and Smart Active)	98 %

overload	
overload in normal operation (afterwards switch over bypass)	100 - < 110% about 2 minutes 110 - < 150% about 4 seconds > 150% about 1 second
overload in battery operation (afterwards switch off)	100 - < 110 % about 1 minute 110 - < 150 % about 4 seconds > 150 % about 0,5 seconds
short-circuit current	3 x I Nenn about 0,5 seconds

bypass	
voltage tolerance for switch over	180 – 264 Volt
tolerance of frequency	from ± 0,5 Hz til ± 5Hz adjustable
time to switch over	2 ms

battery	
nominal voltage	24 V 36 V 36 V 36 V 72 V 72 V 72 V 72 V
number of modules	2 3 * 3 6 * 6 *
nominal capacity per module	7 Ah 7 Ah * 9 Ah 7 Ah * 9 Ah *
type	closed and maintenance-free
life duration	3 - 6 years (depending on environmental conditions)
recharge time	appr..4 hours
charge current	0,8 A 0,8 A 7 A 0,8 A 0,8 A 8 A 0,8 A 8 A
battery test	automatical each 40 hours

* external batteries



Technical Data

On-Line UPS-system *proTECTO* 700-3000

model	proTECTO	700	1000	1000 ER	1500	2200	2200 ER	3000	3000 ER
-------	----------	-----	------	------------	------	------	------------	------	------------

displays	
normal operation	icon at LCD-display illuminate
battery operation	icon at LCD-display illuminate, UPS beeps all 4 seconds
battery discharged	icon at LCD-display blinking, UPS beeps 1 time per second
bypass active	icon at LCD-display illuminate
stand by	icon at LCD-display illuminate
maintenance necessary	icon at display illuminate
load	LCD-display
capacitor charge	LCD-display

control and command buttons	
button	ON
button	SELECT
button	STANDBY
switch	Main switch

interfaces	
Sub-D 9 Pin socket	RS 232 interface
USB-Port	USB-interface
slot	slot for communication plug-in card

connections	
input	IEC 10 A
output	4 x IEC 10 A 8 x IEC 10 A 8 x IEC 10 A + 1 IEC 16 A
Input fuse (thermal fuse) in A	7 (10 ER-version) 10 12 (16 ER version) 16 (20 ER version)
DC-connection for battery module	no standard no standard

protection	
protections	over current – short circuit – over voltage - low voltage heat – deep discharge protection of the batteries
Impuls withstand voltage	IEC 801-5 6 KV 1.2 / 50 µsec; 3 KA 8/20 µsec; 300 Joule

norms and regulations	
safety	EN 62040-1-1; regulation 2006 / 95 / EL
EMV / RFI	EN 62040-2 category 2 and regulation 2004 / 108 / EL
operational requirements	EN 62040 – 3 VFI-SS-111

environmental conditions	
environmental temperature	0 up to 40°C
relative air humidity	< 95% non-condensing
noise level in 1 m distance	< 40 dB(A)



Technical Data

On-Line UPS-system *proTECTO* 700-3000

model	proTECTO	700	1000	1000 ER	1500	2200	2200 ER	3000	3000 ER
-------	----------	-----	------	------------	------	------	------------	------	------------

cabinet	
material	sheet steel / front plastics
colour	black
protection class	IP 20

dimensions	
dimensions (H x W x D) in mm	235 x 158 x 422 333 x 190 x 446

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

delivery	
manual in german (on CD-ROM)	yes
schuko/IEC mains cable	1
IEC/IEC connection cable	2
plug for battery-increase	- 1 - 1 - 1
RS232 connection cable	1
USB-cable	1
shutdown-software for Windows 7 / 2008 / Vista / 2003 / XP, Novell and Linux system on CD-ROM.	yes

options

external service by-pass	
manual by-pass switches the load from the inverter to the mains power supply without interrupting the output power supply in case of maintenance	
dimensions (H x W x D) in mm	180x300x115
weight in kg	3

SNMP card	
NetMan 102 Plus SNMP interface-card	X

software	
network version of PowerShield ³ shutdown-software for Windows 7 / 2008 / Vista / 2003 / XP, Novell, UNIX and Linux system.	X

*external batteries

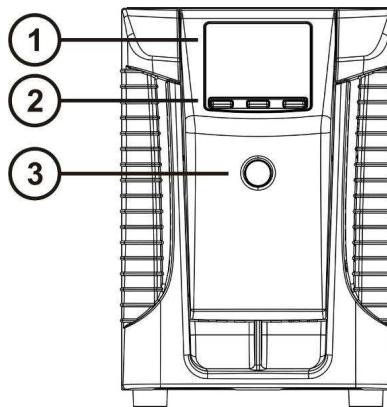


Technical Data

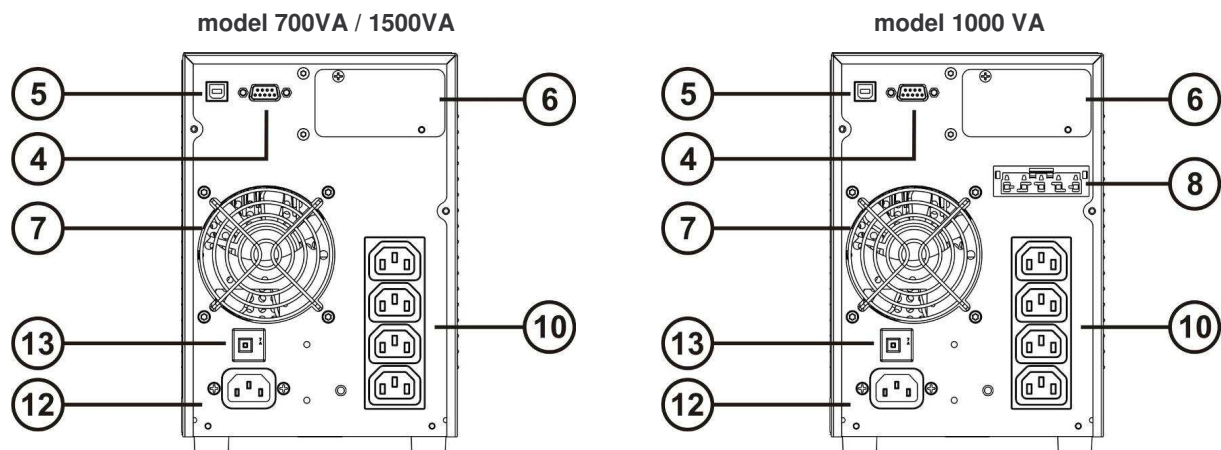
On-Line UPS-system *proTECTO 700-3000*

View of the UPS

FRONT VIEW



REAR SIDE



- ① display
- ② multifunction-buttons
- ③ main switch
- ④ RS232-Port
- ⑤ USB-Port
- ⑥ slot for plug-in card

- ⑦ fan
- ⑧ connection for battery increase
- ⑩ outlet IEC 10A
- ⑫ input plug IEC 10A
- ⑬ thermal input fuse

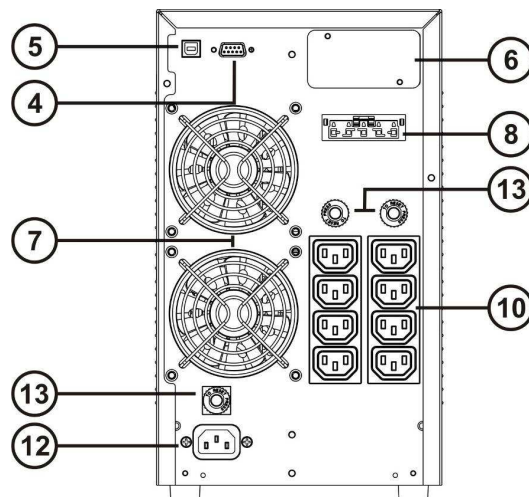


Technical Data

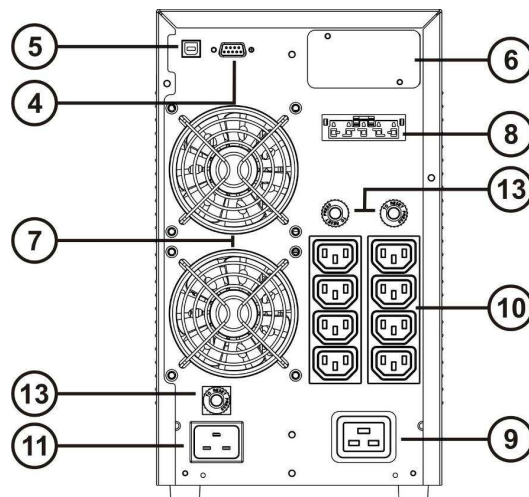
On-Line UPS-system *proTECTO 700-3000*

rear side

model 2200VA



model 3000VA



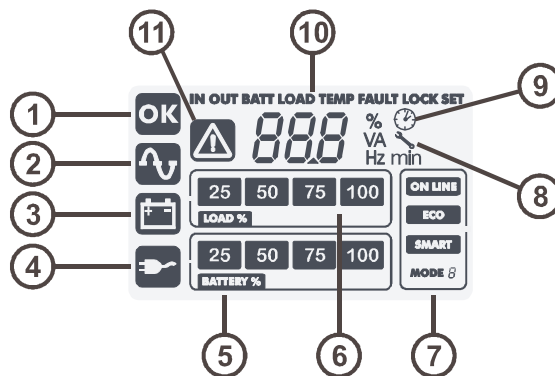
- | | |
|---|-----------------------------|
| ④ communication port RS232 and contacts | ⑨ outlet IEC 16A |
| ⑤ USB-Port | ⑩ outlet IEC 10A |
| ⑥ slot for plug-in card | ⑪ input plug IEC 16A |
| ⑦ fan | ⑫ input plug IEC 10A |
| ⑧ connection fo battery increase | ⑬ thermal input/output fuse |



Technical Data

On-Line UPS-system *proTECTO 700-3000*

View of the display



- | | |
|---------------------|------------------------|
| Ⓐ button „SEL“ | Ⓔ charge level |
| Ⓑ button „ON“ | Ⓛ load level |
| Ⓒ button „STAND-BY“ | Ⓜ configurations |
| ① normal operation | Ⓨ maintenance required |
| ② mains ok | Ⓩ timer |
| ③ battery operation | ⓐ indicated value |
| ④ load on bypass | ⓑ stand-by / alarm |



Technical Data

On-Line UPS-system *proTECTO 700-3000*

communication-ports

On the rear side of the ups you can find the following communication ports:

- RS232-plug
- USB-plug
- Plug-in slot for optional communication cards

RS232-interface

RS232-interface		
PIN #	SIGNAL	COMMENTS
1	Adjustable output *: [standard: UPS-system error]	(*) optical contact max. +30 Vdc / 35 mA. adjustable by use a special software (**) optical isolated input +5 bis 15 Vdc. (PIN 4/6 and 7/6) adjustable by use a special software
2	TXD	
3	RXD	
4	Adjustable input **: [standard: not active]	
5	GND	
6	+12 Vdc ($I_{max} = 80mA$)	
7	Adjustable input **: [standard: not active]	
8	Adjustable output *: [standard: capacitors depleted]	
9	Adjustable output *: [standard: mains failure]	



Technical Data

On-Line UPS-system *proTECTO 700-3000*

communication-slot

The UPS system is equipped with an expansion slot for optional communication cards (see accompanying figure) provided that the device using the dialog to enable the most important communications standards.

Some examples:

- second USB- and RS232-port
- multiplexer doubles the serial port
- ethernet-network-plug-in card with protocol TCP/IP, HTTP and SNMP
- protocol-converter-plug-in card JBUS / MODBUS
- protocol-converter-plug-in card PROFIBUS
- slot with isolated relay card

