



Soft power systems

AEG

Power supply systems

UPS series PROTECT C. / C.R

Double conversion UPS with true sine wave - output





PROTECT C. / C.R

2nd generation Double - Conversion UPS
with True Sine Wave - Output

10000 VA

6000 VA

3000 VA

2000 VA

1000 VA





PROTECT C. - Features



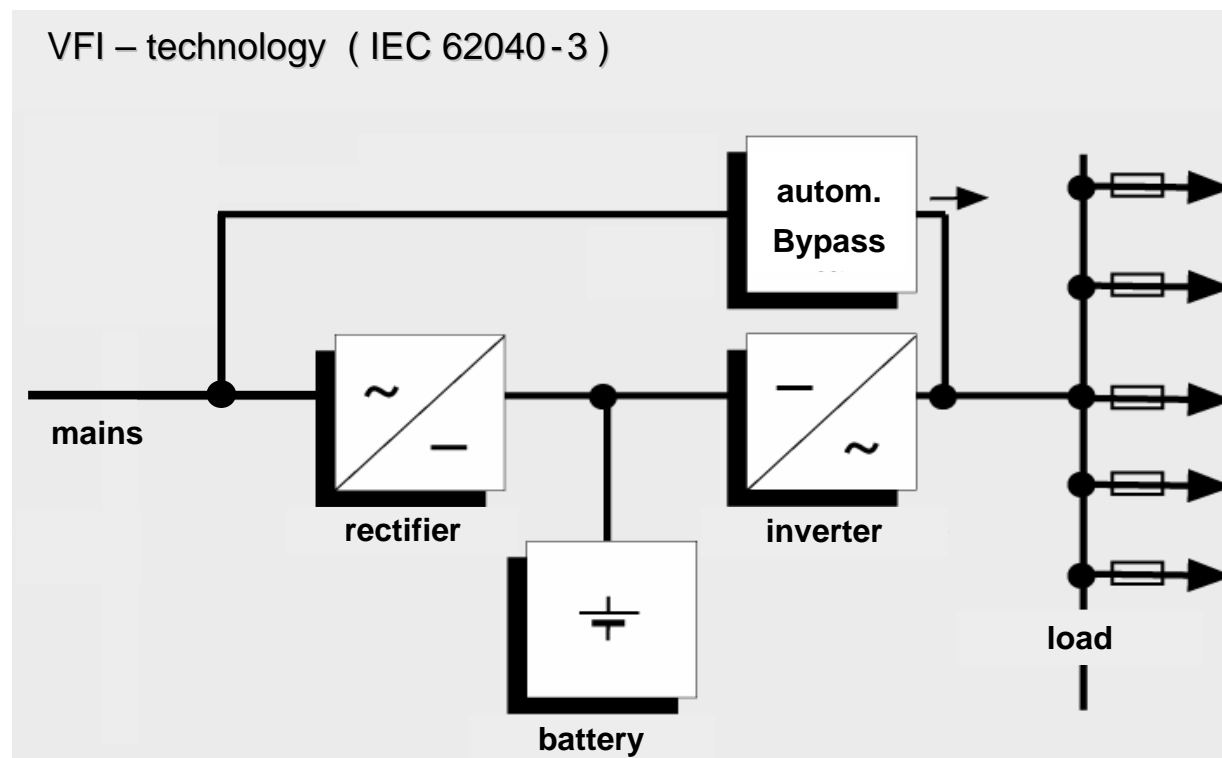
- true On-Line-UPS incl. bypass
(double- / duration conversion VFI - technology)
- none troubling system pertubation
input power factor over 0.96 (PFC circuit)
- extreme wide input voltage range
- low noise level,
modern design, blackline
- compatible with all known EDP systems
incl. management- and shutdown – software,
e.g. Windows, Linux, Mac OS
- communication slot in series for SNMP, AS400, ...
- surge protection for RJ11 / RJ45 connectors
- 24 months warranty period



PROTECT C. - Technology

Soft power systems

- double-conversion design (true online):
Classification VFI SS 211 (acc. to IEC 62040 – 3)
 - VFI SS 211 (IEC 62040 – 3): 1, 2 and 3 kVA
 - VFI SS 111 (IEC 62040 – 3): 6 and 10 kVA



Resolves various power problems:

- ✓ Interruption
- ✓ Weakening
- ✓ Noise
- ✓ Surge
- ✓ Instant voltage drop
- ✓ Thunderbolt
- ✓ Transients changes
- ✓ Frequency changes

AEG

Power supply systems



PROTECT C. - UPS classes

Voltage Phenomenon		Time	e. g.	IEC 62040-3	UPS solution
1.	Outage - blackouts	> 10 ms		VFD Voltage + Frequency Dependent	Classification 3
2.	Sags / brownouts				Offline
3.	Dynamic overvoltage				
4.	Undervoltage	continuous		VI Voltage Independent	Classification 2
5.	Overvoltage	continuous			LineInteractive
6.	Lightning	sporadic		VFI Voltage + Frequency Independent
7.	Transients (Surge)	< 4 ms			Classification 1
8.	Frequency variations	sporadic			(true) Online
9.	Voltage distortion (Burst)	periodic			real Double-Conversion
10.	Voltage harmonics	continuous			

Publication by ZVEI: UPS Guide

by additional lightning arrestors



PROTECT C. - Autonomy time table

coupled battery modules	autonomy time (full load / half load) [min.]				
	1000 VA	2000 VA	3000 VA	6000 VA	10000 VA
integrated battery	6 / 20	10 / 30	5 / 16	8 / 26	5 / 16
1	38 / 97	55 / 130	30 / 85	26 / 67	16 / 42
2	76 / 170	106 / 237	60 / 149	47 / 112	27 / 60
3	---	---	---	67 / 157	42 / 97
4	---	---	---	94 / 203	53 / 118

UPS PROTECT C.



coupled battery modules	autonomy time (full load / half load) [min.]			
	1000 VA	2000 VA	3000 VA	6000 VA
integrated battery	6 / 20	---	---	---
1	38 / 97	10 / 30	5 / 16	8 / 26
2	76 / 170	30 / 85	17 / 49	26 / 67
3	---	55 / 130	30 / 85	47 / 112
4	---	83 / 180	48 / 114	67 / 157
5	---	106 / 237	60 / 149	94 / 203

UPS PROTECT C.R





PROTECT C. - Autonomy time in detail

Saft power systems

PROTECT C. TOWER at part load	< < < < Autonomy time at > > > >					Recharge time to 90% capacity
	15% Last	25% Last	50% Last	75% Last	100% Last	
PROTECT C.1000 [1 kVA]	= 105 W	= 175 W	= 350 W	= 525 W	= 700 W	
with integrated battery system	92,0 min.	52,5 min.	21,0 min.	10,5 min.	6,5 min.	5 h
with 1 x PROTECT C.1000BP	321,5 min.	198,5 min.	97,5 min.	55,5 min.	38,0 min.	24 h
with 2 x PROTECT C.1000BP	558,0 min.	371,5 min.	169,5 min.	109,0 min.	76,5 min.	40 h
PROTECT C.2000 [2 kVA]	= 210 W	= 350 W	= 700 W	= 1050 W	= 1400 W	
with integrated battery system	119,5 min.	78,5 min.	30,0 min.	17,5 min.	10,0 min.	5 h
with 1 x PROTECT C.2030BP	447,0 min.	278,0 min.	130,5 min.	86,0 min.	54,5 min.	24 h
with 2 x PROTECT C.2030BP	830,5 min.	489,0 min.	237,0 min.	151,5 min.	106,5 min.	40 h
PROTECT C.3000 [3 kVA]	= 315 W	= 525 W	= 1050 W	= 1575 W	= 2100 W	
with integrated battery system	78,5 min.	46,0 min.	16,0 min.	9,0 min.	5,0 min.	5 h
with 1 x PROTECT C.2030BP	278,0 min.	172,0 min.	84,5 min.	49,5 min.	29,5 min.	24 h
with 2 x PROTECT C.2030BP	489,0 min.	315,0 min.	149,0 min.	97,5 min.	60,0 min.	40 h
PROTECT C.6000 [6 kVA]		= 1050 W	= 2100 W	= 3150 W	= 4200 W	
with integrated battery system		56,5 min.	26,0 min.	13,5 min.	8,5 min.	4 h
with 1 x PROTECT C.6000BP		135,0 min.	67,5 min.	41,0 min.	26,0 min.	8 h
with 2 x PROTECT C.6000BP		219,5 min.	112,0 min.	69,0 min.	47,5 min.	12 h
with 3 x PROTECT C.6000BP		302,0 min.	157,5 min.	102,0 min.	67,5 min.	16 h
with 4 x PROTECT C.6000BP		406,5 min.	203,5 min.	125,0 min.	94,0 min.	20 h
PROTECT C.10000 [10 kVA]		= 1750 W	= 3500 W	= 5250 W	= 7000 W	
with integrated battery system		35,5 min.	16,5 min.	9,5 min.	5,5 min.	7 h
with 1 x PROTECT C.10000BP		82,5 min.	42,0 min.	24,0 min.	16,5 min.	11 h
with 2 x PROTECT C.10000BP		124,0 min.	60,0 min.	43,0 min.	27,5 min.	16 h
with 3 x PROTECT C.10000BP		145,0 min.	96,5 min.	56,0 min.	42,0 min.	24 h
with 4 x PROTECT C.10000BP		158,0 min.	118,0 min.	76,0 min.	53,0 min.	30 h

AEG

Power supply systems



PROTECT C.R - Autonomy time in detail

Saft power systems

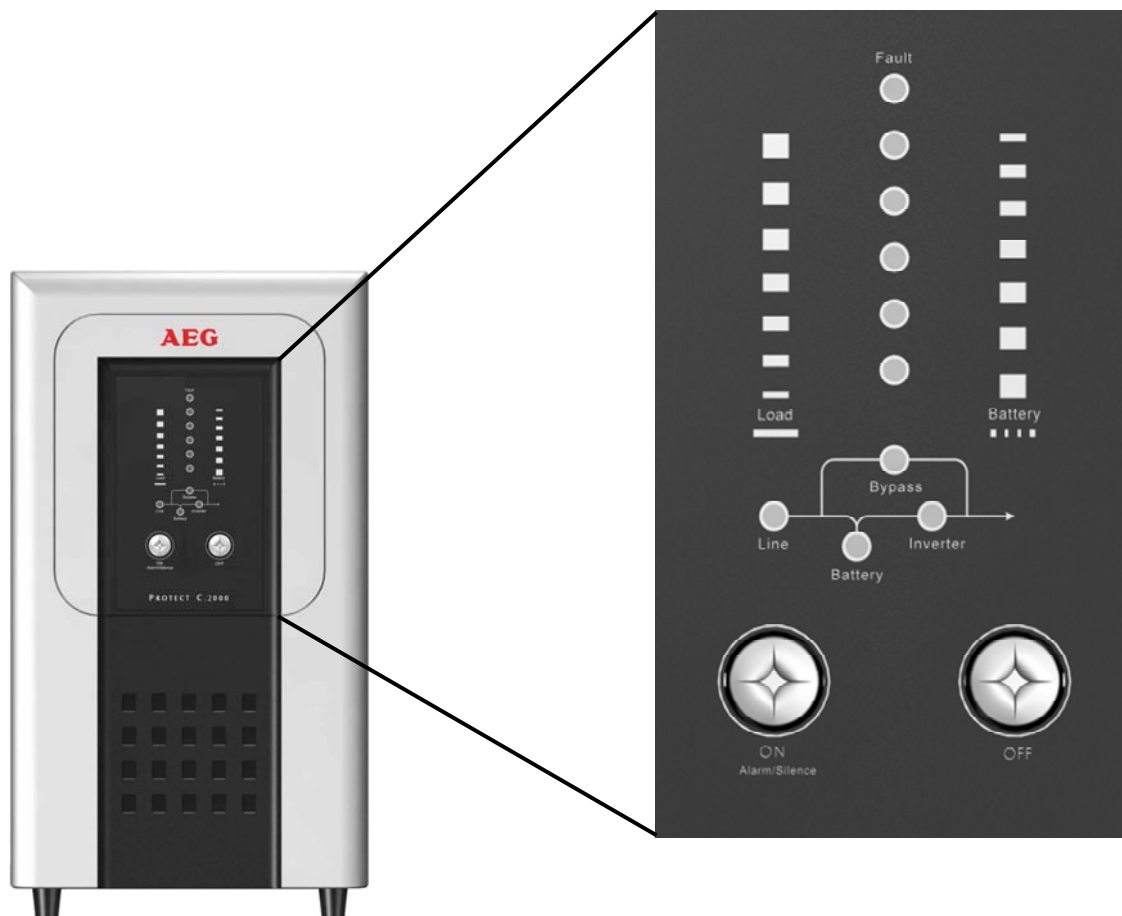
PROTECT C. RACK at part load	< < < < Autonomy time at > > > >					Recharge time to 90% capacity
	15% Last	25% Last	50% Last	75% Last	100% Last	
PROTECT C.1000R [1 kVA]	= 105 W	= 175 W	= 350 W	= 525 W	= 700 W	
with integrated battery system	92,0 min.	52,5 min.	21,0 min.	10,5 min.	6,5 min.	5 h
with 1 x PROTECT C.1000RBP	321,5 min.	198,5 min.	97,5 min.	55,5 min.	38,0 min.	24 h
with 2 x PROTECT C.1000RBP	558,0 min.	371,5 min.	169,5 min.	109,0 min.	76,5 min.	40 h
PROTECT C.2000R [2 kVA]	= 210 W	= 350 W	= 700 W	= 1050 W	= 1400 W	
	< < < < w/o integrated battery system > > > >					
with 1 x PROTECT C.2030RBP	119,5 min.	78,5 min.	30,0 min.	17,5 min.	10,0 min.	5 h
with 2 x PROTECT C.2030RBP	278,0 min.	165,0 min.	84,5 min.	49,5 min.	29,5 min.	14 h
with 3 x PROTECT C.2030RBP	447,0 min.	278,0 min.	130,5 min.	86,0 min.	54,5 min.	24 h
with 4 x PROTECT C.2030RBP	592,5 min.	400,0 min.	179,5 min.	114,5 min.	83,0 min.	32 h
with 5 x PROTECT C.2030RBP	830,5 min.	489,0 min.	237,0 min.	151,5 min.	106,5 min.	40 h
PROTECT C.3000R [3 kVA]	= 315 W	= 525 W	= 1050 W	= 1575 W	= 2100 W	
	< < < < w/o integrated battery system > > > >					
with 1 x PROTECT C.2030RBP	78,5 min.	46,0 min.	16,0 min.	9,0 min.	5,0 min.	5 h
with 2 x PROTECT C.2030RBP	172,0 min.	109,0 min.	49,0 min.	27,0 min.	16,5 min.	14 h
with 3 x PROTECT C.2030RBP	278,0 min.	172,0 min.	84,5 min.	49,5 min.	29,5 min.	24 h
with 4 x PROTECT C.2030RBP	400,0 min.	241,5 min.	113,5 min.	71,5 min.	48,0 min.	32 h
with 5 x PROTECT C.2030RBP	489,0 min.	315,0 min.	149,0 min.	97,5 min.	60,0 min.	40 h
PROTECT C.6000R [6 kVA]		= 1050 W	= 2100 W	= 3150 W	= 4200 W	
	< < < < w/o integrated battery system > > > >					
with 1 x PROTECT C.6000RBP		56,5 min.	26,0 min.	13,5 min.	8,5 min.	4 h
with 2 x PROTECT C.6000RBP		135,0 min.	67,5 min.	41,0 min.	26,0 min.	8 h
with 3 x PROTECT C.6000RBP		219,5 min.	112,0 min.	69,0 min.	47,5 min.	12 h
with 4 x PROTECT C.6000RBP		302,0 min.	157,5 min.	102,0 min.	67,5 min.	16 h
with 5 x PROTECT C.6000RBP		406,5 min.	203,5 min.	125,0 min.	94,0 min.	20 h

AEG

Power supply systems

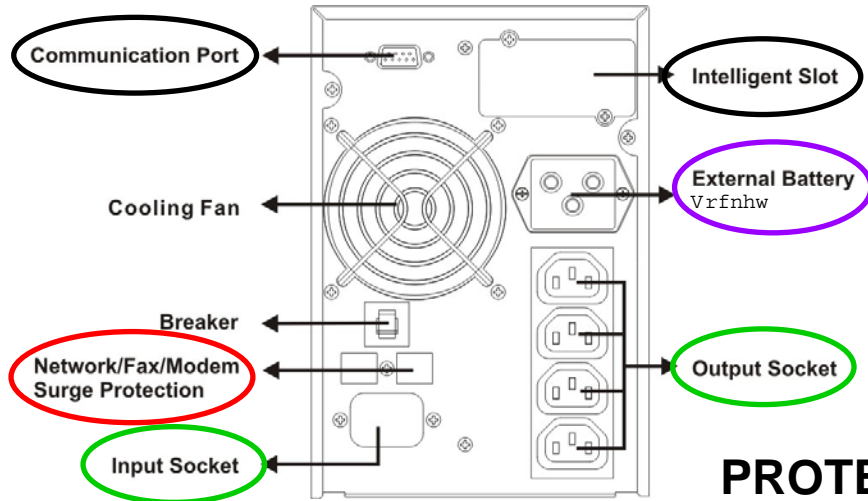


PROTECT C. - Display

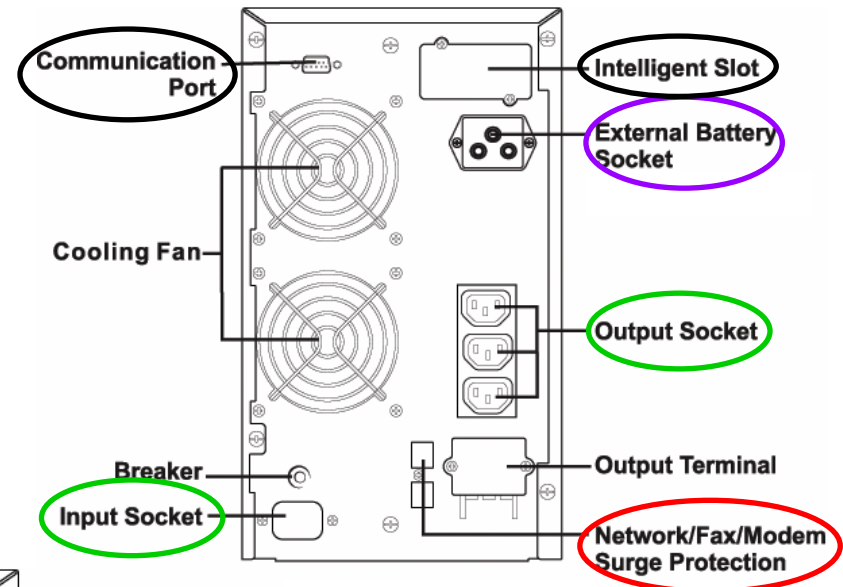




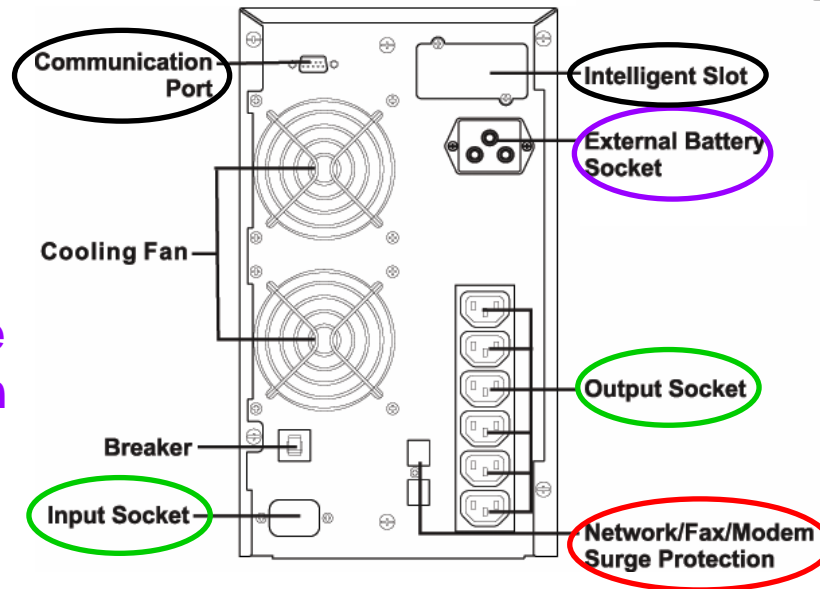
PROTECT C. - Rear panel



PROTECT C.1000



PROTECT C.3000



PROTECT C.2000

plug & play
IEC sockets

modular cascadable
battery construction

surge protection
RJ11 / RJ45

true RS232
incl. CompuWatch

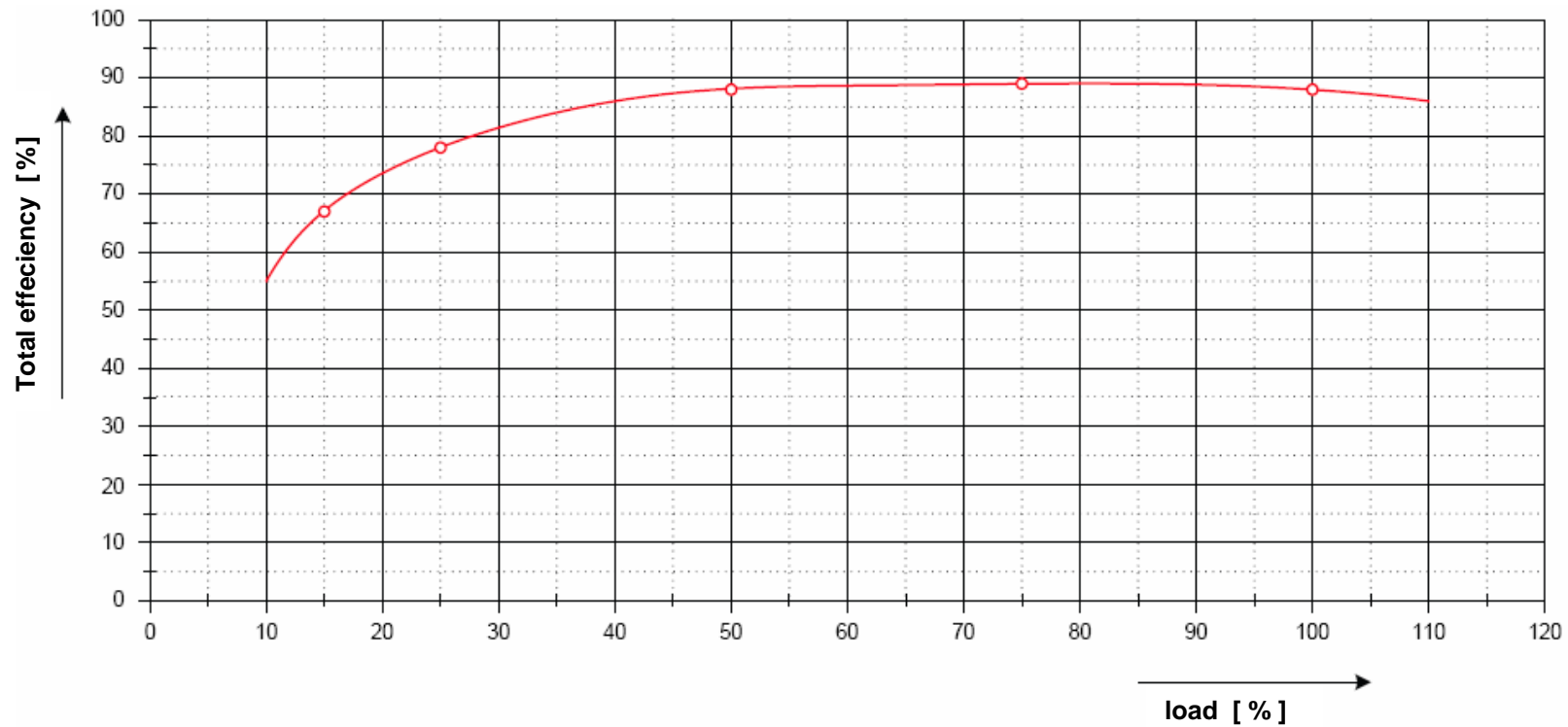
highly advanced
communication slot
e.g. AS/400, SNMP



PROTECT C. - Specification item efficiency

Total efficiency curve PROTET C. (e.g. 6 / 10kVA)

in pure AC-AC / normal operation plus 2%, that means nominal operating point > 90%

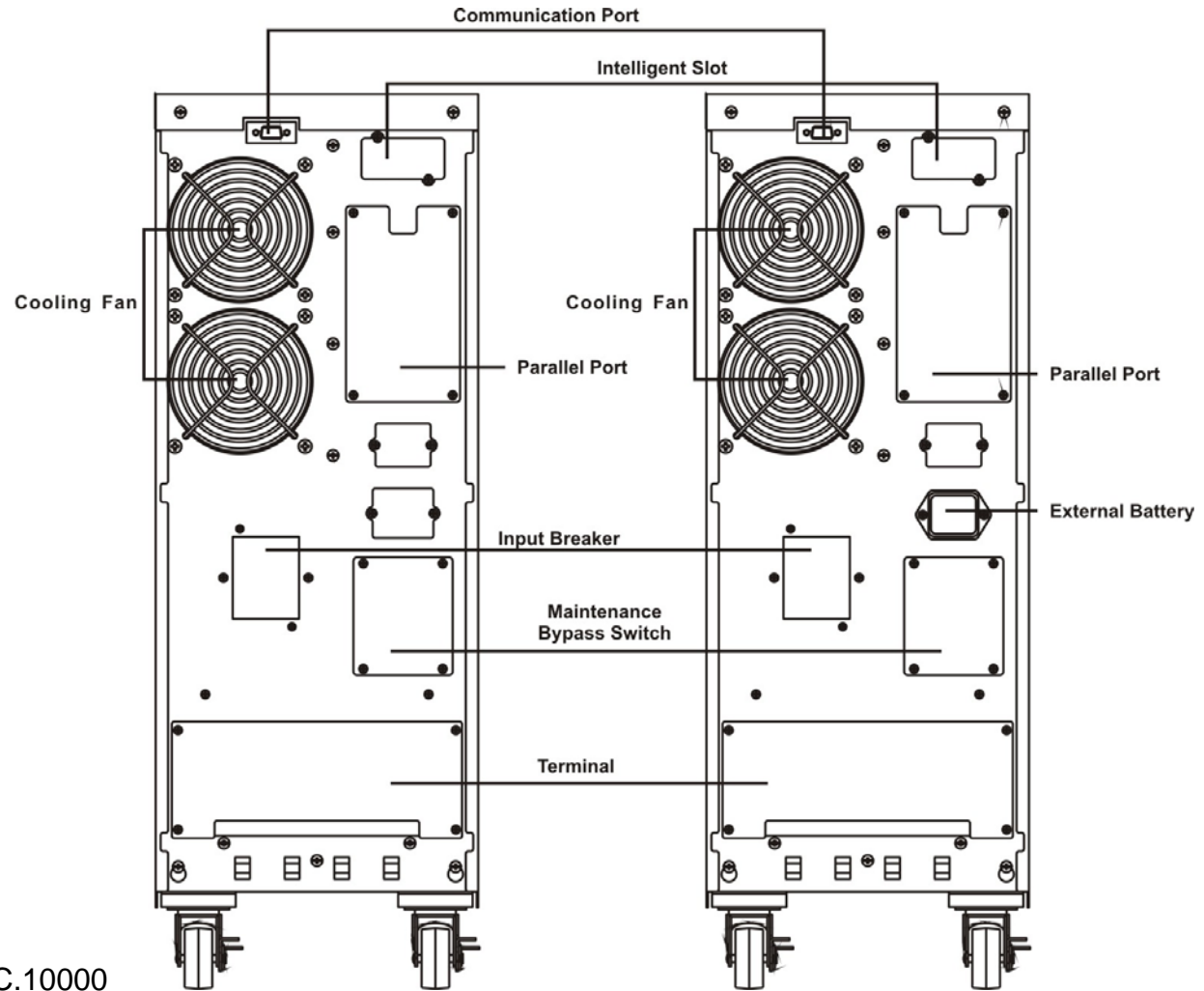




PROTECT C.6000/C.10000 ▪ Parallel operation

PROTECT C. 6000
PROTECT C.10000

- n + x technology
- increase of power and / or redundancy
- simple to install
- high flexibility
- cost effective

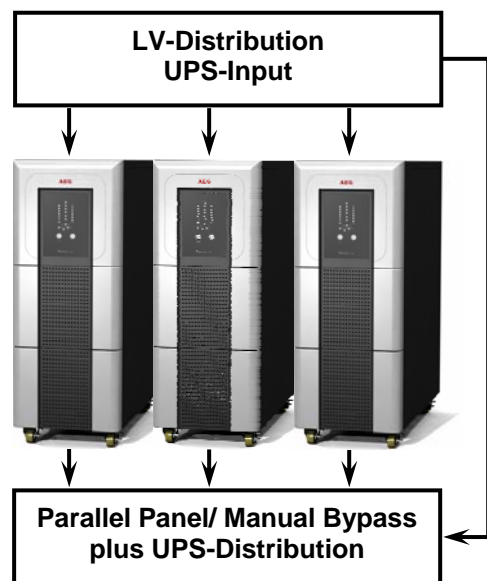


e.g. PROTECT C.10000

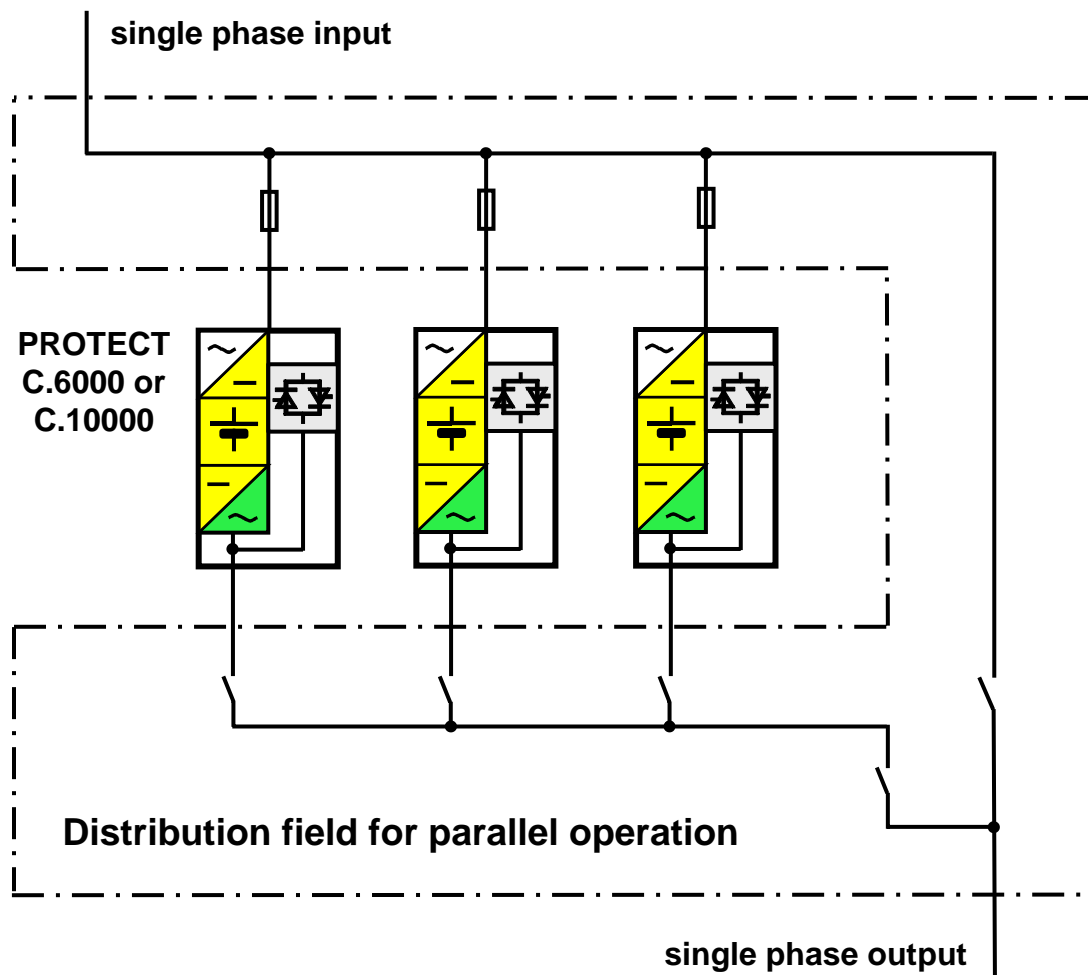


Saft power systems

Compact - UPS - Parallel processing



30000 VA
20000 VA
10000 VA
18000 VA
12000 VA
6000 VA

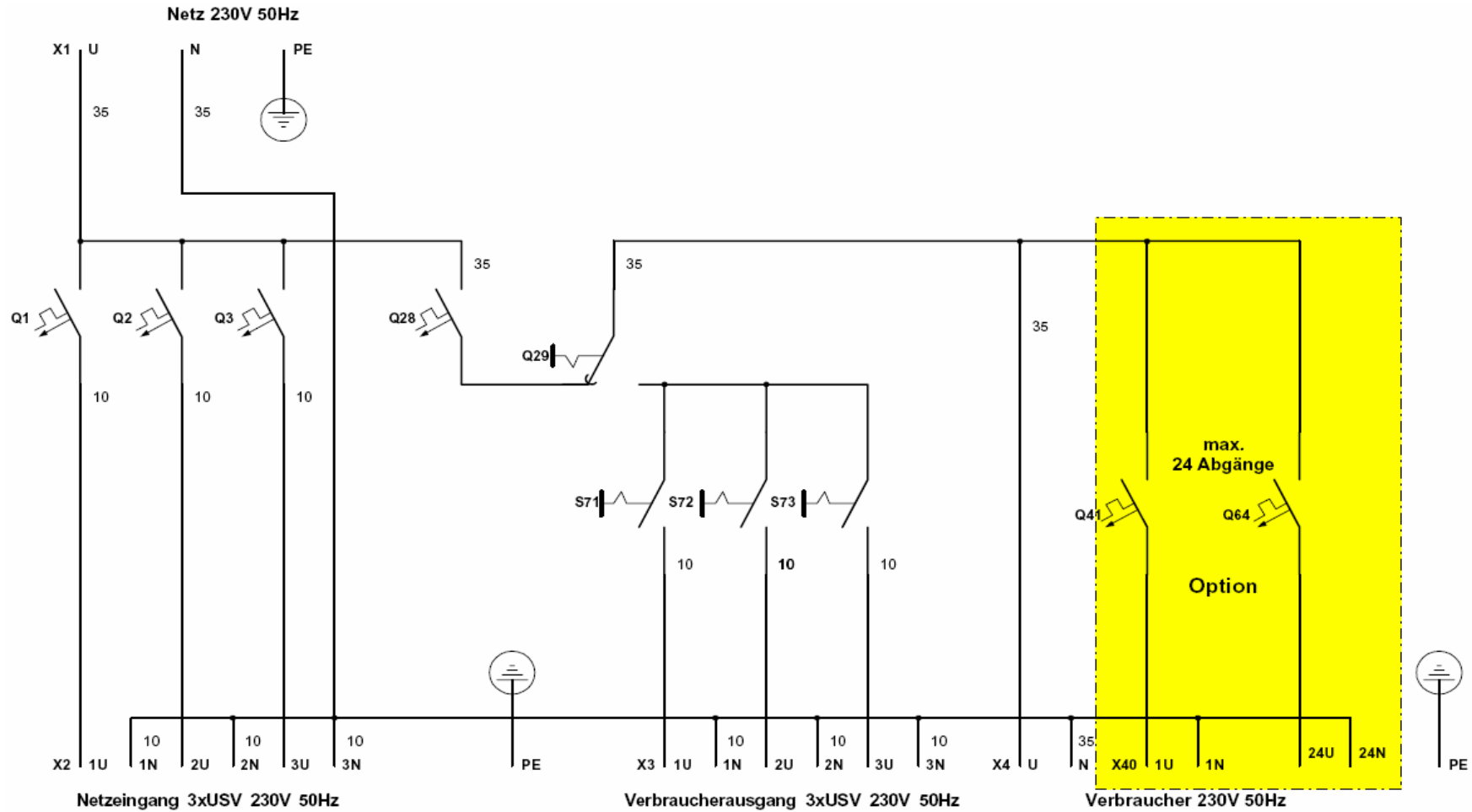


AEG

Power supply systems



Parallel Distribution Box - Circuit diagram

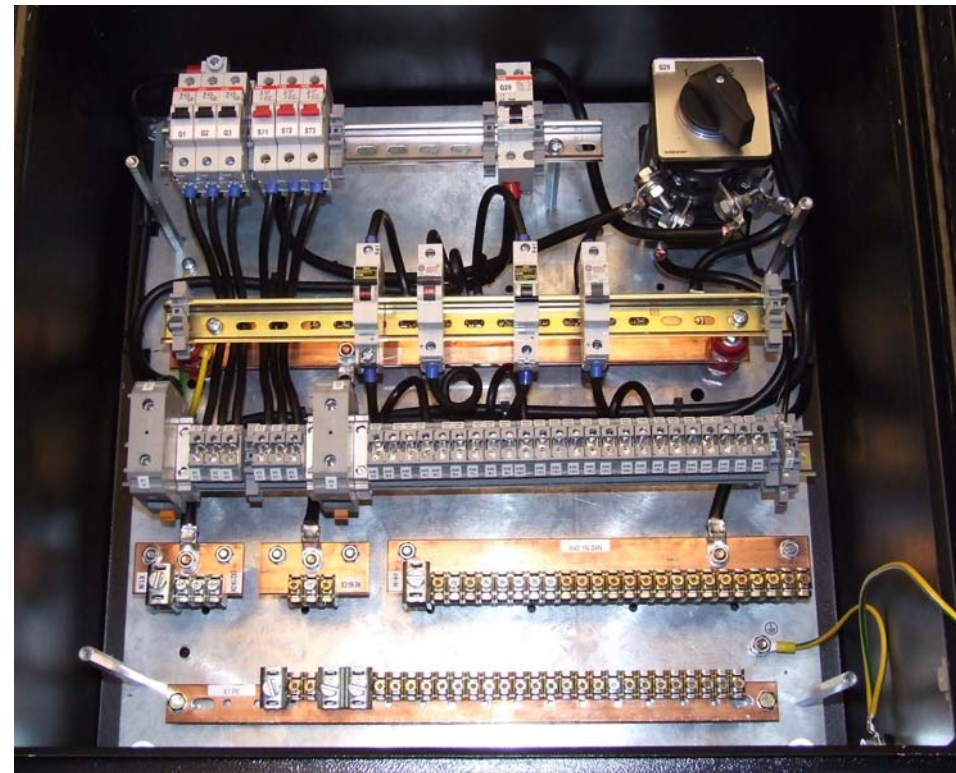
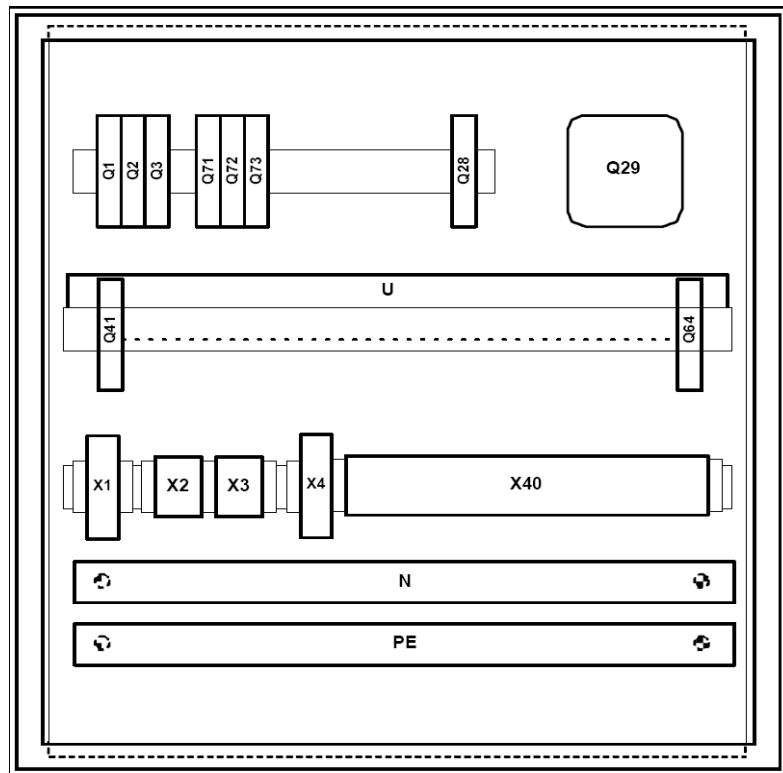




Parallel operation PROTECT C.

Logical design – chassis

Reality

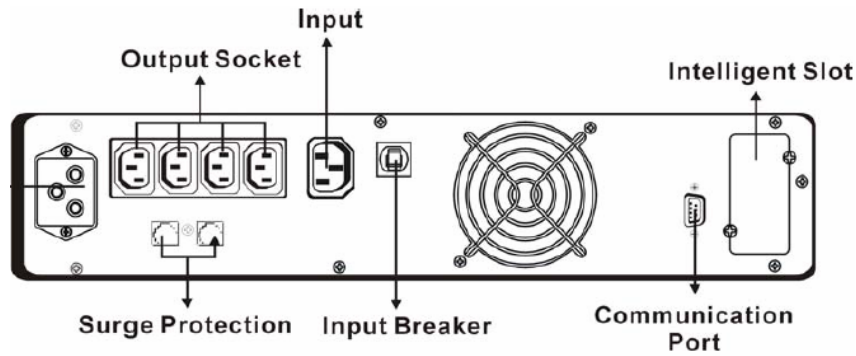




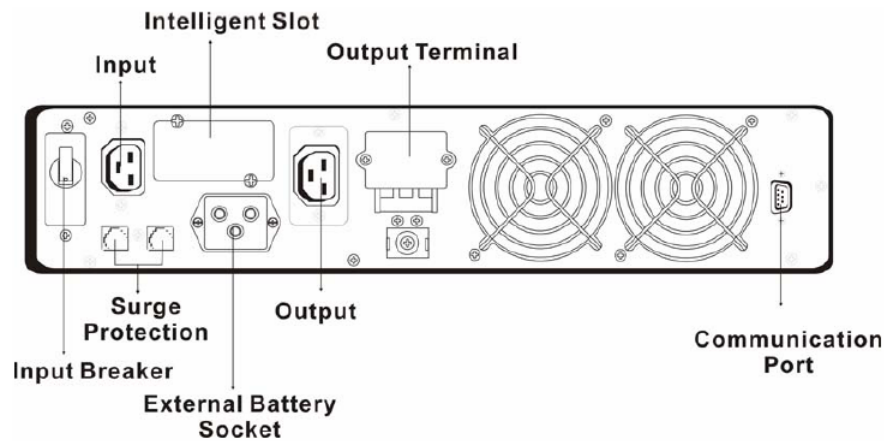
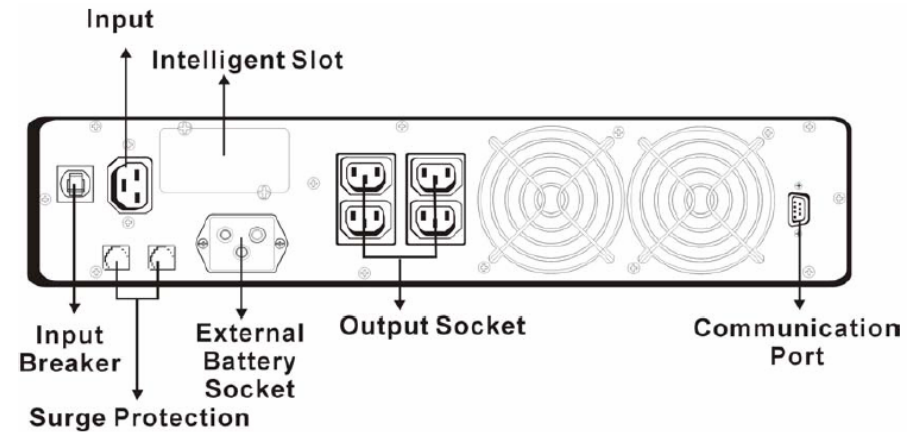
PROTECT C.R - Rear panel

Soft power systems

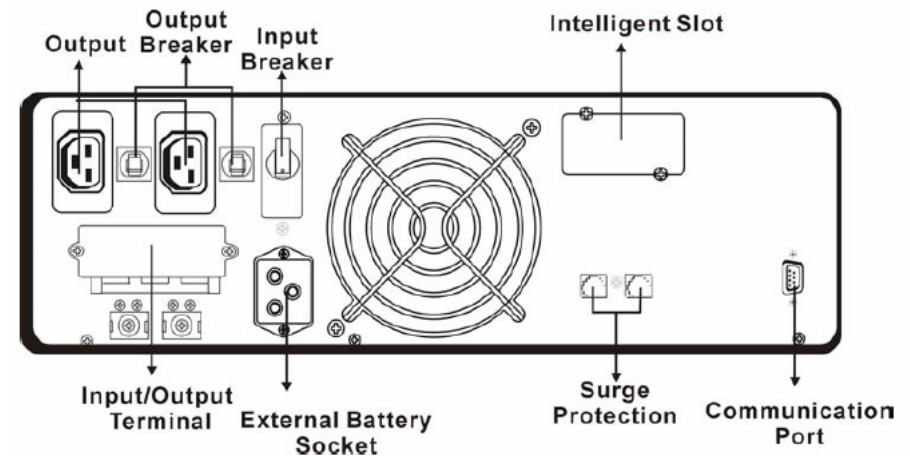
PROTECT C.1000R



PROTECT C.2000R



PROTECT C.3000R



PROTECT C.6000R

AEG

Power supply systems



PROTECT C.R. - "S"-models (application example)

