AEG

POWER
SOLUTIONS

PROTECT 1 LCD

High efficiency transformerless UPS 10 to 20 kVA

Configurable phases : 3/3, 3/1, 1/1

Highly flexible and compact. Protect 1 LCD is a transformer-less UPS that combines high efficiency values with compact footprint and flexible configurations. Thanks to its full IGBT technology, Protect 1 LCD features low input THDi with almost unity input power factor.

The UPS is settable as 3/3, 3/1 or 1/1 and offers an adjustable range of recharging current up to 13 A. The system is an ideal power supply solution for small and medium critical applications when the power consumption, the footprint and the maintainability are key factors of choice.

Reduced overall cost of ownership

Protect 1 LCD is a double conversion UPS (VFI SS 111), offering an AC/AC efficiency up to 96%. It can operate in ECO Mode, with efficiency up to 98%, thus reducing the utility costs associated with operating a device of this type. The multilingual graphical 4,3" LCD touch-screen display provides all the important operating status and measurement values.

Typical applications

- Transportation
- Commercial and industrial buildings
- Healthcare
- Sports and leisure facilities
- Manufacturing

FEATURES

- VFI topology (online / double conversion) protection against all mains network problems
- Extremely wide input voltage window without stress on the internal battery system and with a stable output voltage
- ECO mode (VFD) for high efficiency operation
- Frequency converter mode settable
- Up to 3 units in parallel connection (communicating through a closed-loop system)
- Settable number of input phases directly in field: 3/3 or 3/1 or 1/1
- Up to 6 external battery cabinets (matching) can be connected
- Adjustable recharging current up to 13 A
- Slot for optional SNMP card
- Graphic LCD touchscreen display with interactive multilingual user interface
- User interface with 2 levels of password protection Emergency power off on terminal block (potential-free)
- Cold start

BENEFITS

- **Compact Solution**: Protect 1 LCD maximizes savings in terms of footprint, power installed, electrical system, security and power management.
- **High Efficiency**: Protect 1 LCD provides highest levels of power availability, flexibility and energy efficiency for any mission critical application. Thanks to the output PF up to 1 (kVA=kW) it provides the maximum power to the load.
- **Easy installation, operation and maintenance**: The UPS can be configured as 3/3 or 3/1 or 1/1 phases system: the input phase configurations, both with single and dual input connection, can be easily set in field. The 4,3" LCD display provides access to operating information for the UPS.
- **Battery Solutions:** Protect 1 LCD can be equipped with internal VRLA batteries and with external matching battery cabinets. Thanks to its configurable recharging current (up to 13 A) it can recharge all available battery solutions.

* Conditions apply

Specifications

UPS POWER RATING		10 KVA	15 KVA	20 KVA
Part number	With internal batteries	30928111	30928112	30928113
	Without internal batteries	30928243	30928244	30928245
MAINS INPUT LINE (RECTIFIER)				
Phase (input)		1Ph+N+PE | 3Ph+N+PE		
Nominal Voltage [VAC]		1Ph: 220/230/240 | 3Ph: 380/400/415		
Voltage range [VAC] – Single-phase Input		160-300 @ 100% load | 100 – 160, derated down to 50% load linearly		
Voltage range [VAC] – Three-phase Input		277-520 @ 100% load | 173 – 277, derated down to 50% load linearly		
Frequency [Hz]		50/60		
Frequency range [Hz]		40-70		
Power Factor		> 0.99		
Input THDi (at rated voltage and THDv < 0,5%)		< 3% (with full linear load)		
BYPASS INPUT LINE				
Nominal Bypass Input Voltage [V]	Single- Phase	220/230/240		
Bypass Input Voltage Range [V]	Single- Phase	187-264 (L-N)		
Nominal Bypass Input Voltage [V]	Three-phase	380/400/415		
Bypass Input Voltage Range [V]	Three-phase	323-457 (L-L)		
Bypass Input Frequency [Hz]		50/60		
Bypass Frequency Range [Hz]		+/- 10%		
Bypass Frequency Range [Hz]	≤110%	Permanent		
	110% – 125%	10 min		
	125% – 150%	30 s		
	≥150%	500 ms		
OUTPUT LINE (INVERTER)				
Voltage [V]		1Ph: 220/230/240 | 3Ph: 380/400/415		
Output THDv (according to IEC EN 62040-3)		< 1% (with linear load); < 5% (with nonlinear load)		
Transfer time		Typical: no break		
Output PF (up to 40°C)		1		
Crest Factor		3:1		
Frequency [Hz]		50/60		
Overload capacity through inverter line	≤125%	10 min		
	125% - 150%	1 min		
	≥150%	500 ms		
Short circuit current (through inverter line) 1-ph		90A ± 10% for 200 ms	171A ± 10% for 200 ms	222A ± 10% for 200 ms
Short circuit current (through inverter line) 3-ph		30A ± 10% for 200 ms	57A ± 10% for 200 ms	74A ± 10% for 200 ms
AC/AC efficiency in VFI @ nominal linear load		95,6%	96%	95,7%
AC/AC efficiency in VFD (Eco Mode)		> 98% (at nominal load)		
BATTERY LINE				
Nominal DC Voltage [VDC]		±120	±240	
Quantity of lead acid batteries (12V each)		20 x 12V/9Ah (10+10)	40 x 12V/9Ah (20+20)	
Recharge current		1.8 A (adjustable (0-13 A)		
USER INTERFACE				
Display		LCD Touch Screen Display (4,3")		
Standard communication ports		Dry contacts, RPO, RS232, USB		
Optional communication ports		SNMP, Dry contacts (additional optional board)		
GENERAL				
IP protection degree		IP20		
Color		RAL 9005		
Operating temperature [°C]		0 to 40 (up to 50°C with power derating)		
Storage temperature without batteries [°C]		-25 to 60		
Relative humidity		0 to 95%		
Altitude (above sea level) [m]		< 1000 (with power derating of 1% every 100 m up to 3000 m, according to IEC EN 62040-3)		
Noise at 1 m distance at typical load [dB]		< 55		
UPS – Dimensions (WxDxH) [mm]		300 x 721 x 805		
UPS – Weight [kg]	Without Internal Batteries	56	63	
	With Internal Batteries	106	163	
EXTERNAL BATTERY CABINET				
Part Numbers	With Batteries	30928115	30928120	
	Without Batteries	30928114	30928116	
Configurations		2 x 20 x 12V/9Ah	1 x 40 x 12V/9Ah	
Dimensions (WxDxH) [mm]		225 x 518 x 589		
Weight [kg]	Without batteries	15,6		
	With batteries	115,6		
STANDARDS AND CERTIFICATIONS				
Marking and certifications		CE/UKCA		
Safety, EMC, Test and Performance		IEC EN 62040-1, IEC EN 62040-2 (C3 class for radiated and conducted emissions), IEC EN 62040-3		

AEG Power Solutions

Approach your local AEG Power Solutions representative for further support. Contact details can be found on: www.aegps.com