

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 touchscreen 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 .

Specifications

UPS POWER RATING	10 KVA	15 KVA	20 KVA
MAINS INPUT LINE (RECTIFIER)			
Phase (input)	1Ph+N+G / 3Ph+N+G		
Nominal Voltage [V]	1Ph: 220/230/240 3Ph: 380/400/415		
Voltage range [V]	1Ph: 160-300 or 3Ph: 277-520 @ 100% load undervoltage admitted with derating to 50% of load: 1Ph: 100 V or 3Ph: 173V		
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]	1Ph: 220/230/240 3Ph: 380/400/415		
Bypass Input Voltage Range [V]	1Ph: 187-264 (L-N) 3Ph: 323-457 (L-L)		
Bypass Input Frequency [Hz]	50/60		
Bypass Frequency Range [Hz]	+/- 10%		
Overload capacity through bypass line	= 110% (permanently) from 110% to 125% (for 10 min) from 125% to 150% (for 30 s)		
OUTPUT LINE (INVERTER)			
Output Voltage [V]	1Ph: 220/230/240 3Ph: 380/400/415		
Output THDv (according to IEC EN 62040-3)	< 1% (with linear load); < 5% (with non linear 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%*In for 10 min 150%*In for 1 min >150%*In for 500ms		
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]	240	240	240
Quantity of lead acid batteries (12V each)	20	40 (20+20)	40 (20+20)
Recharge current	1.8 A (adjustable (0-13 A))	1.8 A (adjustable (0-13 A))	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 (can tolerate up to 50°C with power derating)		
Storage temperature [°C]	-15 to 70		
Relative humidity	0 to 95%		
Altitude (above sea level) [m]	< 1000 (with power derating of 0,5% every 100 m up to 3000 m, according to IEC EN 62040-3)		
Noise at 1 m distance at typical load [dB]	< 55		
STANDARDS AND CERTIFICATIONS			
Marking and certifications	CE/UKCA		
Safety	IEC EN 62040-1		
EMC	IEC EN 62040-2 (C3 class for radiated and conducted emissions)		
Test and Performance	IEC EN 62040-3		

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