

START POWER

Power Electronics Technologies

SP1 DEFENDER



MADE IN ITALY

UPS SINGLE-PHASE SP1 4-12kVA

- LAN network
- Server
- Data center
- Industrial PCs
- Industrial systems
- Telecommunication devices
- Emergency devices
- Electromedical equipments

The UPS series **Defender** is available in **SP1** (single-phase), **SP2** (Three-phase single-phase), **SP3** (Three-phase three-phase) versions with **on-line double conversion technology**.

The **UPS Defender** is designed in compliance with EN50171 standard, and can be used in **responder function**, or as emergency power supply device in **SA** or **SE** mode.

Small-sized boxes, low weight and balanced noise **facilitate installation procedure** providing **maximum comfort**.

The **UPS Defender** are equipped with **advanced communication** system thanks to the use of management software and programmed shutdown.

The multi-level optimized inverters of the **UPS Defender** ensure **efficiency up to 96%** in on-line mode.

Both the **automatic bypass** and the **manual override** are available.

The **UPS Defender** also ensure wide tolerance on output with inrush **short-circuit currents up to 200%**.



TECHNICAL FEATURES

MODEL	DEFENDER SP1							
	MD 4	MD 5	MD 6	MD 7	MD 10	MD 12		
INPUT	Input Voltage (Vac)	180 - 276 (usable with engine-generator)						
	Frequency (Hz)	48 - 62						
	Distortion THDI	< 5%						
	Power Factor	≥ 0,98						
	Connections	Clips						
OUTPUT	Nominal Power (kVA)	4	5	6	7	10	12	
	Nominal Capacity (kW)	3,6	4,5	5,4	6,3	9	10,8	
	Voltage (Vac)	220/230/240 (selectable)						
	Voltage Precision	+/- 1% @ 230 Vac						
	Waveform	Pure sinewave						
	Frequency	50 / 60 Hz +/- 0,1 (selectable)						
	Nominal Current @230V (Arms)	17,4	21,7	26,1	30,4	43,5	52,2	
	Inrush Current @230V (Arms)	26,1	32,6	39,1	45,7	65,2	78,3	
	Crest Factor	3:1						
	Overload	150% per 30" - 200% (short-circuit)						
	Connections	Clips						
	PERFORMANCE	Reaction time	zero					
		Efficiency	94% (on-line) - 98% (eco mode)					
Battery Recharge Time		4 - 6 hours						
Battery Test		Automatic Continuous						
Bypass		Automatic Integrated 0 ms / Manual bypass						
Protections		Overload - Short-circuit – Excessive low battery – Overvoltage - Temperature						
Operating Temperature		0 - 40 °C						
Noise Level		< 45 dB a 1m at Full Load – PWM control						
PHYSICAL		Dimensions (HxWxD) mm / rack	450 x 215 x 700 / 5U rack					2 box 450 x 215 x 700 / 10 U rack
	Net Weight - Basic Autonomy (Kg)	51	58	60	70	75	140	
CONTROL & COMMUNICATION	Color LC Display	2 x 16 characters, blue backlit, keypad with 4 keys						
	Interface	RS 232 - USB						
	EPO (Emergency Power Off)	Yes						
	Control Software and Shutdown	Included						
ACCESSORIES	Battery box	Rack and tower version with wheels						
	AS400 contacts board	Clean contact-alarms and digital insulated input						
	Extended interface board	Ethernet Interface - SNMP Agent						
	Insulating Transformer	Integrated Optional or Movable and Separated						
STANDARD & CERTIFICATIONS	EMC	CEI EN 50091-2, EN61000-3-2 (PFC), 61000-3-3 (flicker)						
	Safety	CEI EN 60950, EN62040-1-1, norms 73/23/EC, 93/68/EC						