

	CATALOGO PRODOTTI	
	SINGLE PHASE ONLINE UPS	Rev. 4    NS LCD 1-3kVA PF1



The NS LCD PF1 series, featuring true Online Double Conversion (VFI) technology, ensures a continuous, stable, and regulated pure sine-wave AC supply for mission-critical applications. With a unitary Power Factor (PF 1), the active power (W) fully matches the apparent power (VA), delivering superior performance and energy efficiency for demanding industrial and IT infrastructures.

## PRINCIPLES OF WORKING

**Normal Mode:** Under standard utility conditions, the load is directly fed via the Inverter, while the Rectifier maintains battery charge and supplies the necessary power to the output stage.

**Battery Mode:** Should a blackout, phase loss, or voltage fluctuation occur, the battery powers the Inverter with **zero transfer time**, ensuring uninterrupted operation for critical equipment.

**Automatic Bypass:** In the event of an overload, internal fault, or overtemperature, the load is instantly transferred to the emergency line (Static Bypass) and automatically reverts to the Inverter once nominal conditions are restored .

## FEATURES

- ✓ True Online Double Conversion technology (VFI-SS-111).
- ✓ Unitary output Power Factor (PF 1.0).
- ✓ Lithium-ion battery compatible (Lithium-ready).
- ✓ Full-time Digital Signal Processor (DSP) control technology.
- ✓ Filtered, stabilized, and pure sine-wave output.
- ✓ Active Input Power Factor Correction (THDi < 5%).
- ✓ Wide input voltage window (110V-300V) to preserve battery health.
- ✓ Zero transfer time for total load protection.
- ✓ Cold start function and programmable auto-restart on mains return .
- ✓ Premium efficiency: up to 93% in Online mode and 98% in ECO mode.
- ✓ Scalable runtime via matching battery cabinets (8A supercharger available).
- ✓ Smart battery management with automatic and manual diagnostic testing.
- ✓ User-friendly LCD for status monitoring and estimated autonomy.
- ✓ CEI 0-16 compliant for medium-voltage substation requirements.
- ✓ USB & RS232 ports as standard; slot for SNMP, RS485, or Relay cards .
- ✓ Integrated EPO (Emergency Power Off) and ROO (Remote On/Off) features.

## CONTROL PANEL

- ✓ **LED Indicators:** Line Mode, Inverter, Bypass, Battery Mode, Low Battery, Overload, Fault Alarm.
- ✓ **Backlit LCD Display:** Graphical interface providing real-time data for Input/Output Voltage and Frequency, Load Level, Battery Status, Output Current, Estimated Runtime, and Internal Temperature.
- ✓ **Keypad:** Multi-function buttons for ON/OFF control, Alarm Mute, Manual Battery Test, and Menu Navigation (Select).



CATALOGO PRODOTTI

SINGLE PHASE ONLINE UPS

Rev. 4

NS LCD 1-3kVA PF1



## SPECIAL FUNCTIONS

- ✓ **ECO Mode:** High-efficiency operation (up to 98%) to minimize operational costs and environmental impact.
- ✓ **Frequency Converter Mode:** Configurable output frequency (50Hz or 60Hz) regardless of the input frequency.
- ✓ **Programmable Outlets (Energy Share):** Intelligent load shedding of non-critical devices to maximize backup time for mission-critical loads.
- ✓ **Auto Restart:** Programmable automatic restart upon mains return, even after a full battery discharge cycle.
- ✓ **Substation Ready:** Advanced firmware features for Medium-Voltage (MV) substations and PLC control cabinets (CEI 0-16 compliant).

## COMMUNICATION INTERFACES



- ✓ **Standard Equipment:** Each unit features integrated RS232 and USB ports for comprehensive local management. Professional supervision software is provided complimentary upon request, enabling real-time parameter tracking and automated system shutdown.
- ✓ **Expansion Slot:** In addition to standard ports, the system supports optional network interfaces:

- **SNMP Card:** For advanced web-based management and multi-client network integration.
- **RS485 Interface:** For Modbus protocol compatibility.
- **Relay Card:** Dry contact interface for remote alarm signaling.

## ACCESSORIES

- ✓ **External Battery Modules:** Standardized cabinets designed for scalable runtime requirements (up to several hours). These modules include independent internal chargers to ensure fast, safe, and efficient battery recovery.



- ✓ **Maintenance Bypass (MTBS):** A "Plug & Play" external manual bypass switch. It allows for UPS maintenance or replacement without interrupting power to critical loads, while providing integrated output distribution.

## BACK PANEL





CATALOGO PRODOTTI

SINGLE PHASE ONLINE UPS

Rev. 4

NS LCD 1-3kVA PF1

Feature	NS1000-10LCD PF1	NS2000-10LCD PF1	NS3000-10LCD PF1
Power	1000VA / 1000W	2000VA / 2000W	3000VA / 3000W
<b>INPUT</b>			
Nominal Voltage	230Vac (110~300Vac*) 1Ph+N		
Nominal Frequency	45-65Hz with auto-sensing		
Power Factor	≥ 0.99 at full linear load		
<b>OUTPUT</b>			
Voltage	208/220/230/240Vac ± 1% (selectable)		
Frequency	50/60Hz ± 0.1Hz (battery mode)		
Waveform	Pure Sine Wave		
Voltage Distortion	≤ 2% (linear load); ≤ 4% (non-linear load)		
Transfer Time	0 ms (Zero)		
DC Start	Yes (Cold Start function)		
Crest Factor	3:1		
Overload	105-120% for 30s; 121-150% for 10s; >150% immediate		
<b>BATTERY</b>			
Type	Maintenance-free VRLA (Lithium-ready)		
Recharge Time	4 hours to 90%		
Battery Voltage	24Vdc	48Vdc	72Vdc
Capacity & Number	2x 12V 9Ah	4x 12V 9Ah	6x 12V 9Ah
Accessory Charger	8A (optional for extended runtime)		
<b>MISCELLANEOUS</b>			
Protections	Overload, Over-temperature, Short circuit, Deep discharge		
Efficiency	93% (Online mode) / 98% (ECO mode)		
LCD Measurements	V, Hz, Load, Battery, Autonomy, Temperature		
Self-Diagnostics	Manual and Automatic		
Noise Level	≤ 50 dBA at 1 meter		
Interface	USB, RS232, ROO, EPO (SNMP, RS485 optional)		
Input Plug	1x IEC 10A	1x IEC 10A	1x IEC 16A
Output Sockets	4x IEC C13	4x IEC C13	4x C13 + 1x C19
Dimensions (WxDxH mm)	144 x 343 x 215	190 x 387 x 322	190 x 462 x 322
Weight (kg)	9.1	16.7	22.8
<b>STANDARDS</b>			
Safety	IEC/EN 62040-1		
EMC	IEC/EN 62040-2 (Category C2)		
Performance	VFI-SS-111 (IEC/EN 62040-3)		
Grid	CEI 0-16 (Dedicated Firmware)		
Quality / Environment	ISO 9001 / ISO 14001		
Marking	CE		

ELIT Srl reserves his right to do modifications to his products without notice.