



UNINTERRUPTIBLE POWER SUPPLY



The TPH KING PT PF1 series represents the latest generation of UPS PF1 in three-phase medium power systems without transformer (VFI-SS-111).

TPH KING PT provides the perfect solution for small and medium-sized data centers, communication rooms, IT networks, and any mission critical application that requires high power and energy efficiency.

TPH KING PT has a solution with integrated internal batteries from 10 to 60kW, minimizing the size of use. The flexibility in the number of configurable batteries from 30 to 50 monoblocs allows to optimize costs and back up time.

The high efficiency in ON-LINE mode of 96.6% (VFI) and 99.4% in OFF-LINE mode guarantees maximum energy savings.

**PRINCIPLES OF WORKING**

Under normal power supply conditions, the load is fed directly by the Inverter while the rectifier supplies the necessary power to the Inverter and to charge the batteries.

If one of the following conditions occurs on the power supply: mains failure, lack of a phase, voltage out of tolerance, the battery provides the necessary energy to the inverter to supply the load in zero transfer time. Once normal operating conditions are restored, the rectifier charges the battery and at the same time feeds the load through the inverter.

If one of the following conditions occurs: overload, Inverter input or output voltage out of tolerance, Inverter failure, overtemperature, the load is automatically transferred, zero transfer time, to the emergency line. When normal operating conditions are restored, the load is automatically transferred back to the Inverter.

**FEATURES**

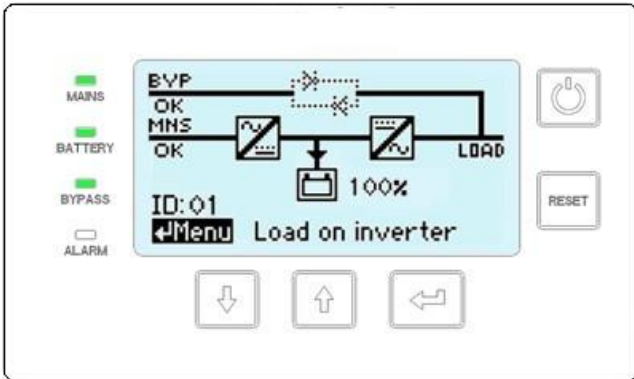
- Input power factor 0.99
- Output power factor PF1, kVA = kW
- Harmonic distortion THiD input ≤ 3%
- Efficiency 96.6% VFI
- Zero transfer time
- Sinusoidal voltage, filtered & stabilized
- Parallelable up to 30 units (7.5MW)
- Footprint <0.35m<sup>2</sup> up to 60kW
- High short circuit capacity (3 x In)
- Continuous overload up to 120%
- Flexible battery configuration
- Full discharge battery protection
- ONLINE / OFFLINE operating mode
- RS232, basic dry contact port and bluetooth

Optional

- **25kA Icu circuit-breaker**
- 7 inches graphical touchscreen display
- Interface SNMP, RS485, additional dry contact port
- Insulation transformer
- Triple independent mode parallel bus
- Synchro kit
- Parallel kit
- Back feed protection
- Dual input feed (opt on 10-60kW / std on 80-250 kW)

**CONTROL PANEL**

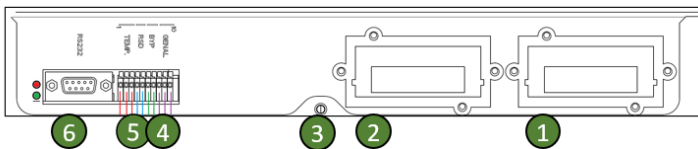
The UPS is equipped with a 3 "LCD graphic display, four LED indicators and a dial with five buttons.



The four LED indicators, mains, battery, bypass and alarm offer a quick and simple view of the UPS operating status. Each LED can have two states, ON or OFF. The display of the 3 "module shows the operating mode of the system. Furthermore, it allows the display of a series of parameters, commands and configurations of the specific module, electrical measurements, UPS status, event log, configurations and service.

**INTERFACES**

The TPH KING PT series UPS is equipped with a standard interface, PC0310, and 2 slots for SNMP and additional dry contacts port.



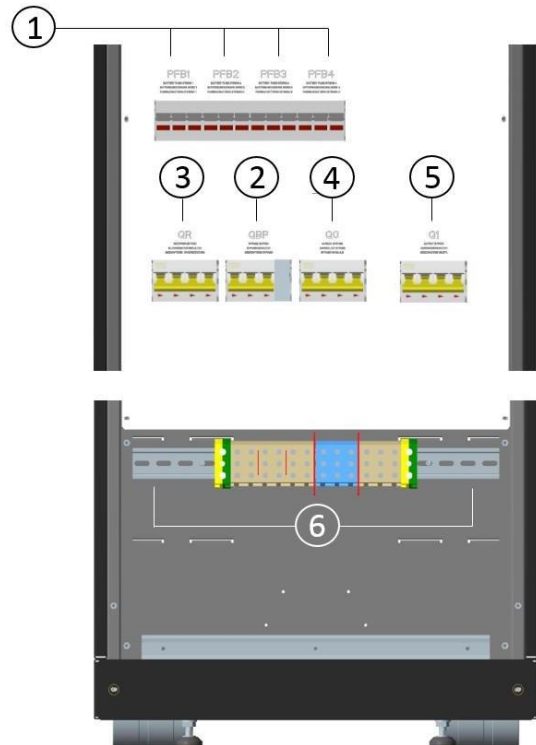
The UPS is standard equipped with following input ports:

1. Slot for SNMP adapter
2. Slot for optional I/O connectivity board
3. Bluetooth (mobile iOS/Android)
4. 1x dry output contact, general alarm
5. 3x input ports: monitoring of external manual bypass, remote shutdown and battery temperature sensor PT100
6. 1x RS232 serial communication

Optional:  
Multidrop connections  
SNMP/Modbus adaptor

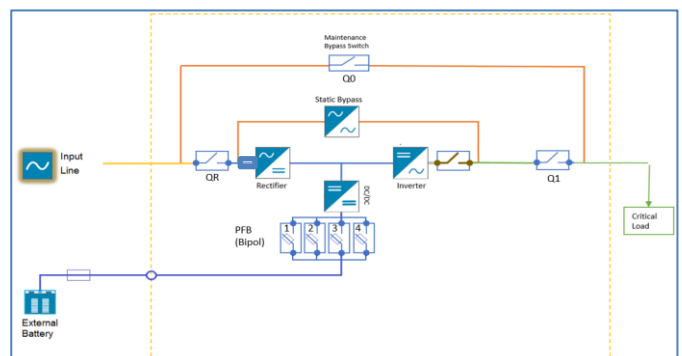
- I/O Dry port relay board (5 dry output contacts, 4 dry input contacts) – PC0311
- Battery temperature sensor
- Ambient temperature sensor
- Humidity sensor

**INPUT AND OUTPUT**



1. Battery fuses
2. Bypass switch (if provided with dual input feed option)
3. Input switch
4. Manual bypass switch
5. Output switch
6. Connections and wiring

**BLOCK DIAGRAM**





CATALOGO PRODODOTTI

UPS 3PH PF1 TRANSFORMER-LESS  
10 ÷ 250kVA

Rev. 1 TPH KING PT Series

MODEL	TPH KING PT 10	TPH KING PT 20	TPH KING PT 30	TPH KING PT 40	TPH KING PT 60
Rated power kVA/kW	10/10	20/20	30/30	40/40	60/60

INPUT					
Rated voltage	380-400-415Vac 3PH+N+PE				
Voltage range	-25%, +20% @100%; -32.5% +20% @80%; -35%, +20% @60%				
Input power factor	0.99				
Frequency	40 ÷ 70Hz				
Total Harmonic Distortion	<3% for linear load; <5% for non-linear load				
Peak current	Absent				

OUTPUT					
Rated voltage	380-400-415Vac 3PH+N+PE				
Stabilità tensione	±1% static stability; ±3% dynamic stability				
THDV	<3% for linear load, <5% for non-linear load				
Frequency	50Hz/60Hz				
Frequency tolerance	±0.1% (battery mode)				
Waveform	Sinusoidal				
Transfer time	0 ms.				
Output power factor	1				
Efficiency	96.6% on-line - 99.4% off-line				
Overload	Inverter < 120% continuous; ≥ 125% for 10 min; ≥ 150% for 1 min Bypass 135% for long term; <1000% for 100ms				
Crest factor	3:1				

BATTERY					
Type	Lead-Acid / NiCad / Lithium				
Charger	20 A	20 A	40 A	40 A	40 A
Rated voltage	360-480Vdc				

MISCELLANEOUS					
Relative humidity	0-95% no condensing				
Operating temperature	0-40°C (No power derating)				
Storage Temperature	-40°C +70°C				
Operating Altitude	1000 m. Above 1000 m, derating 1% for each additional 100 m				
Audible noise	< 65dBA				
Communication	Std 1 x RS232, 2 x Dry In, 1 x Dry Out, 2x Expansion slots, Bluetooth Option 5 x Dry Output contacts, 4 x Dry Input contacts, SNMP Slot				
Colour	RAL 9017				
Dimensions mm	350x850x1075	350x850x1075	350x850x1075 or 520x850x1725	350x850x1075 or 520x850x1725	350x850x1075 or 520x850x1725
Weight without batteries	80kgs	80kgs	105kgs	105kgs	105kgs
Cabinet protection degree	IP20				

STANDARDS	
Safety	EN 62040-1
EMC	EN 62040-2
Performance	EN 62040-3



MODEL	TPH KING PT 80	TPH KING PT 100	TPH KING PT 120	TPH KING PT 160	TPH KING PT 200
Rated power kVA/kW	80/80	100/100	120/120	160/160	200/200

INPUT					
Rated voltage	380-400-415Vac 3PH+N+PE				
Voltage range	-25%, +20% @100%; -32.5% +20% @80%; -35%, +20% @60%				
Input power factor	0.99				
Frequency	40 ÷ 70Hz				
Total Harmonic Distortion	<3% for linear load; <5% for non-linear load				
Peak current	Absent				

OUTPUT					
Rated voltage	380-400-415Vac 3PH+N+PE				
Stabilità tensione	±1% static stability; ±3% dynamic stability				
THDV	<3% for linear load, <5% for non-linear load				
Frequency	50Hz/60Hz				
Frequency tolerance	±0.1% (battery mode)				
Waveform	Sinusoidal				
Transfer time	0 ms.				
Output power factor	1				
Efficiency	96.6% on-line – 99.4% off-line				
Overload	Inverter < 120% continuous; ≥ 125% for 10 min; ≥ 150% for 1 min Bypass 135% for long term; <1000% for 100ms				
Crest factor	3:1				

BATTERY					
Type	Lead-Acid / NiCad / Lithium				
Charger	64 A	80 A	96 A	120 A	160 A
Rated voltage	240-600Vdc				

MISCELLANEOUS					
Relative humidity	0-95% no condensing				
Operating temperature	0-40°C (No power derating)				
Storage Temperature	-40°C +70°C				
Operating Altitude	1000 m. Above 1000 m, derating 1% for each additional 100 m				
Audible noise	< 69dBA				
Communication	Std 1x RS232, 1x RS485, 5x Dry output contacts, 4x Dry input contacts, Bluetooth, SNMP slot				
Colour	Grigio scuro RAL9017				
Dimensions mm	600x600x1985	600x600x1985	600x600x1985	600x730x1985	600x730x1985
Weight without batteries	80kgs	80kgs	105kgs	105kgs	105kgs
Cabinet protection degree	IP20				

STANDARDS	
Safety	EN 62040-1
EMC	EN 62040-2
Performance	EN 62040-3

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