X4 Series
ST 10-80kVA

THREE-PHASE IN / SINGLE-PHASE OUT
DOUBLE CONVERSION ON-LINE UPS

QUALITY POWER SUPPLY

ON-LINE double conversion VFI technology guarantees a filtered, stabilized and reliable voltage that is free from all mains interference (over voltages, frequency variations, voltage drops).

LOW CONSUMPTION

As well as the on-line operating mode, EPI ST can operate in:

- Economy Mode: the UPS uses Line Interactive technology. The load is powered from the mains and the energy consumption is reduced with a subsequent improvement in efficiency (98%).
- Smart Active Mode: the UPS automatically selects On Line or Line Interactive operating mode according to the quality of the mains supply, by monitoring the number, frequency and type of disturbances at the mains power input.
- Stand-by-Off (back-up unit): with the mains available, the UPS is normally not powered and consequently the power consumption is almost zero. Only when the mains fails or falls outside a preset range, does the inverter take over in 200 ms using power from the batteries. This operating mode is suitable for Emergency Escape Lighting (CPSS - Central Power Supply System) as per standard EN 50171.

These modes can be programmed to suit the requirements of the user and the load to be powered.

EXPANDABILITY

The units can be connected in parallel up to 8 units to increase power availability or redundancy. The single module or the system can be expanded at any time following the power demand without any influence on the initial investment. Thanks to the peculiarity of the 'Hot System Expansion' feature, the additional unit can be connected in parallel while the other units are on-line and supplying regular power to the load. The new UPS is on-line and will receive the updated information automatically.

HIGH RELIABILITY

The digital control of the appliance considerably improves its reliability, since a reduction in electronic components lowers the likelihood of breakdowns. The parallel connection of the UPS up

to 8 units exponentially increases the reliability of the system. The parallel connection system has 2 levels of redundancy. In the event both redundant cables are lost, only the relevant module will be disconnected from the output bus bar, while the other modules supply power to the load.

OPERATING FLEXIBILITY

EPI ST is a UPS with On- Line double conversion technology that can also operate in Line Interactive mode (Economy Mode). It can handle the two architectures autonomously through the Smart Active function. The Stand-By-Off function can be used to transform the UPS into a back-up unit to supply power for emergency lighting. EPI ST can also be used as a Frequency Converter, 50/60Hz or vice versa.

MAXIMUM BATTERY CARE

Temperature is the greatest threat to batteries; for this reason, EPI ST monitors the temperature of the battery and thereby controls the battery charging voltage. An automatic battery test periodically checks the efficiency of the batteries. The batteries are not used during micro-interruptions (40 ms), since the required energy is drawn from a group of capacitors (BATTERY SAVING). This system extends the life of the batteries. The EPI ST range also includes deep discharge protection feature.

MAXIMUM SAFETY FOR PERSONNEL

The back feed protection device prevents any voltage back feed in the upstream distribution board, thus ensuring the safety of the maintenance personnel.

ADVANCED COMMUNICATION

The unit comes with UPSMon software as a standard feature. The software displays the most important information such as the input and output voltage, the load applied, the remaining back-up time, etc., in the form of bar graphs. It is able to provide information even in the event of a failure, to support the fault diagnostics. UPSMon software can be used to program the automatic shutdown of all open systems in the event of a prolonged black out. The UPS also contains the following hardware interfaces:

- RS232 serial port
- Dry contacts
- EPO (Emergency Power Off) contact for UPS shutdown using the remote emergency button.

MIMIC PANEL

The mimic panel allows easy and intuitive operation of the UPS. It gives access to the most important parameters: status and alarms, control commands, input, output, battery measurements (power, current, voltage, frequency and temperature) and settings. The EPI ST diagnostics system includes up to 128 alarms or messages allowing precise and detailed identification of any event.

LOW INPUT HARMONIC DISTORTION

The Power Factor Correction (PFC), standard on all models, guarantees the input power factor level to 0.95 for any load percentages so that it is ideal in conjunction with Motor Generator or in installations with other sensitive loads. EPI ST is also available with built-in Active Filter designed to reduce the level of THDi to less than 4% and to increase the input power factor up to 0.99.

Technical Specifications:

INPUT	ST 10	ST 15	ST 20	ST 30	ST 40	ST 60	ST 80
Voltage	400 V+ N three-phase						
Voltage Tolerance	±20%						
Frequency	45+65 Hz						
Current Distortion	<4% with Active Filter						
Power Factor	0.99 with Active Filter						
Input Phases	3						
BY PASS							
Rated Voltage	400 V + N						
Phases Number	3 + N						
Voltage Tolerance	±15% (selectable from ±5% to ±25%)						
Rated Frequency	50/60 Hz						
Frequency Tolerance	±2% (selectable up to ±5%)						
By-pass	Static and manual for maintenance						
Transfer Time	0 ms						
BATTERIES							
Type	Maintenance-free sealed lead acid						
Battery Blocks	12V						
Batteries Number	32	48					
Recharge Time	6 h				4 - 8 h		
OUTPUT							
Rated Power	10000 VA	15000 VA	20000 VA	30000 VA	40000 VA	60000 VA	80000 VA
Active Power	8 kW	12 kW	16 kW	24 kW	32 kW	48 kW	64 kW
Phases Number	3 + N						
Waveform	Sinewave						
Rated Voltage	380-400-415 V (selectable)						
Frequency	50/60 Hz selectable						
Frequency Stability	±0.05% in battery operation, ±1% in synchronism with mains (±5% selectable)						
Dynamic Stability	±5%						
Static Stability					±1%		
Crest Factor (Ipeak/Irms)	3:1						
Short-Circuit Current	300% for 0.5						
Output Phases	3						
Overload	110% for 5h, 125% for 10, 150% for 1						
SYSTEM							
AC/AC Efficiency	>92% in On-Line Mode, >98% in Economy Mode/Smart Active Mode/Standby-Off Mode/AVS Mode						
Operating Altitude	1000 m a.s.l.						
Noise	50÷56 dBA at 1 m.						
Operating Temperature	0°C + 40°C						
Relative Humidity	95% non condensing						
Protection degree	IP20						
Communication	Double RS232/C				Double RS232/C + slot for SNMP adapter		

Technical Specifications:

INPUT	ST 10	ST 15	ST 20	ST 30	ST 40	ST 60	ST 80
SYSTEM							
Communication Slot	2 RS232/C, slot for Netman 102 or MultiCom 302, 352, Profibus						
Remote Signals	Volt free contacts						
Remote Controls	EPO and bypass						
Colour	Dark grey RAL 7016						
Standards	Safety: EN 62040-1-1 and directive 2006/95/EC; EMC: EN 62040-2 and directive 2004/108/EC; classification according to IEC 62040-3 (Voltage Frequency Independent) VFI-SS-111						
Technology	On-line double conversion						
Weight(kg)	From 110 to 258 Kg	From 115 to 335 Kg	From 130 to 350 Kg	From 144 to 370 Kg	160 Kg	180 Kg	192 Kg
Dimensions (WxDxH) mm	450x750x1200 mm				500x740x1400 mm		
DATA							
Back up Time at Full Load(min)					0 Min.		
Installation	Tower						
Configuration	Parallel Unit						
OPTIONS							
Battery Cabinets for Longer Runtimes	Yes						
Empty Battery Cabinets for Longer Runtimes	Yes						
Parallel Kit	Yes						
Isolation Transformer Module(WxDxH)	555x720x 1200mm/ 145kg	555x720x 1200mm/ 165kg	555x720x 1200mm/ 190kg	555x720x 1200mm/ 215kg	555x720x 1200mm/ 260kg	640x740x 1400mm/ 380kg	640x740x 1400mm/ 430kg
LCD-based Remote Control Panel	Yes						
LED-based Remote Control Panel	Yes						
Communication Software 'professional' Version	Yes						
OPTIONS							
MultiCom 351	X	X	X	X	X	X	X
MultiCom 352	X	X	X	X	X	X	X
MultiCom 301	X	X	X	X	X	X	X
MultiCom 302	X	X	X	X	X	X	X
NetMan 101 Plus	X	X	X	X	X	X	X
NetMan 102 Plus	X	X	X	X	X	X	X
Multi I/O	X	X	X	X	X	X	X
IRMS Multi-Switch	X	X	X	X	X	X	X
AS/400 Interface Kit	X	X	X	X	X	X	X
UPS Remote Contacts Expander	X	X	X	X	X	X	X
MultiCom 401	X	X	X	X	X	X	X