Technical Data Sheet

PXP AC UPS System

> PXP 1000 5-160 kVA single phase
> PXP 3000 5-160 kVA three phase

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Technical data PXP

UPS input

Rectifier input voltage	3x380/400/415 V
Rectifier input voltage tolerance	-10/+15 %
Rectifier input frequency	41–70 Hz (auto detection)
Rectifier current total harmonic distortion	<5 % @ 100 % load
Rectifier input power factor	typical 0.96–0.98
Inrush current	≤8–10I_N
Bypass input voltage PXP 1000	1x220/230/240 V +/-10 %
PXP 3000	3x380/400/415 V +/-10 %
Bypass input frequency	50/60 Hz +/-8 %

Battery circuit

Battery voltage	400 VDC
Battery operating range	335–540 VDC
Float voltage at -10 % line power	programmable within battery operating range
Boost voltage at nominal line power	programmable within battery operating range
Boost charge time	1–24h programmable
Charging current limitation	programmable

UPS output

Nominal UPS ratings at 0.8 lagging PF		5, 10, 15, 20, 30, 40, 50, 60, 80, 100, 120, 140, 160 kVA
Output voltage	PXP 1000	1x220/230/240 V (other voltages optional)
	PXP 3000	3x380/400/415 V (other voltages optional)
Voltage tolerance:		
static within 0–100 % load		+/-1 %
dynamic for 0–100 % or 100–0 %		+/-5 %
regulation time to +/-1 %		<60 ms
regulation time to +/-3 %		<20 ms
Overload:		
Inverter		230 %/60 ms, 150 %/1 min, 125 %/10 min
Bypass		1000 %/100 ms, 150 %/1 min, 125 %/10 min
Frequency		50/60 Hz
Frequency stability, free running		<0.01 %
Synchronization range		0.5/1/2/4/6/8 % programmable
Slew rate single phase systems		0.25/0.5/1 Hz/s programmable
Slew rate three phase systems		0.25/0.5/1/2/4/6 Hz/s programmable
Wave form		sinusoidal
Admissible output crest factor		3
Distortion factor:		
Linear load		<2 %
Non-linear load according to IEC 62040-3		<5 %
Allowable power factor		0.8 lag–0.8 lead

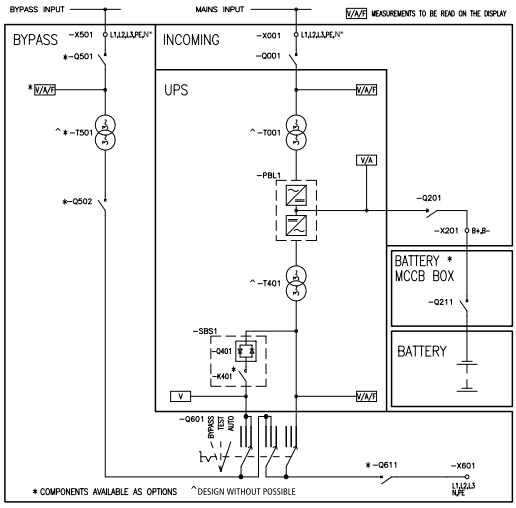
General data

Ambient temperature range for storage	from -30 to +80 °C
Ambient temperature range for operation	from -10 to +40 °C (100 % nominal load)
Altitude above sea level	<1000 m without load de-rating
Allowable air humidity	<95 % (non condensing)
Noise level standard n+1 fan system	55–65 dBA depending on type
Degree of protection	IP20 according to IEC 60529
Paint	pebble gray, RAL 7032 structured
Standards:	
Safety	IEC/EN 62040-1
EMC	IEC/EN 62040-2
Performance	IEC/EN 62040-3
UPS classification	VFI-SS-111 acc. to IEC 62040-3
Conformity	CE-Label
Efficiency	up to 94 % depending on type
Cooling	forced ventilation (two speed) with n+1 redundant monitored fans

Data subject to changes

Specification PXP

Typical single-line drawing



Standard configuration

Static bypass switch EN
Rectifier input switch
Fixed charging voltage I-U characteristic
PFC rectifier (supplies 100 % AC load @ 0.8 PF and charges battery with 20 % of nominal power)
Rectifier line power backfeed protection
Battery capacity test (full discharge with current load)
Human-machine interface with additional LEDs for direct alarm display
Ground terminal
Bottom cable entry
N+1 monitored two-speed fans

Digital input
Emergency Power Off (EPO)
2 configurable inputs

Digital (NO / NC relay)
Common alarm
Battery operation
Static bypass switch On

Optional features – UPS input

Other input voltages:
3x190, 208, 220, 230, 440, 460, 480, 500, 525, 600, 660, 690 V
Rectifier input MCCB
Without isolation transformer on rectifier line power ^T001
Without isolation transformer on bypass line power ^T501
Bypass stabilizer with isolation transformer
Bypass mains backfeed protection

Optional features – Battery circuit

Battery fuse in UPS
Battery fuse box
Battery MCCB in UPS
Battery MCCB box (for non-hazardous areas or hazardous areas zone 1/2 Ex de IIC)
Battery temperature alarm
Battery monitor (programmable battery data)
Battery asymmetry supervision
Diode for reverse polarity protection
Up to 3 sensors for temperature dependent battery charging voltage (recommended for Valve Regulated Lead Acid (VRLA) battery)

Optional features – UPS output

Other output voltages:
- 1x110, 115, 120, 127, 254, 265, 277 V
- 3x190, 200, 208, 220, 230, 440, 460, 480, 500, 525, 600, 660, 690V

Without isolation transformer on inverter output ^T002
Analog meters 72x72 mm or 96x96 mm (directly beside of HMI):
- Rectifier mains (voltage, current, frequency)
- Bypass mains (voltage, current, frequency)
- Battery (voltage, current)
- Inverter output (voltage, current, frequency, PF, kVA, kW)
- Others on request built in distribution

Digital outputs (NO / NC relay output):
- Operational indications
- Battery not connected
- Normal operation
- Static bypass operation
- Manual bypass operation
- Boost charge
- Float charge
- Inverter asynchronous

Fail-safe alarms:
- Rectifier line power fault
- Bypass line power fault
- Battery discharged
- Fan failure
- Rectifier fault
- Inverter fault
- Static bypass switch fault
- Over temperature
- Battery ground fault
- More individual operation status indications or fail-safe alarms on request (maximum 19 relays in total)

Optional features – Communication

Network management card (NMC) for WEB browser based monitoring
MODBUS RS-485, IEC 61850
Other interfaces are available on request

Optional features – Other alarms

DC ground fault alarm
AC ground fault alarm

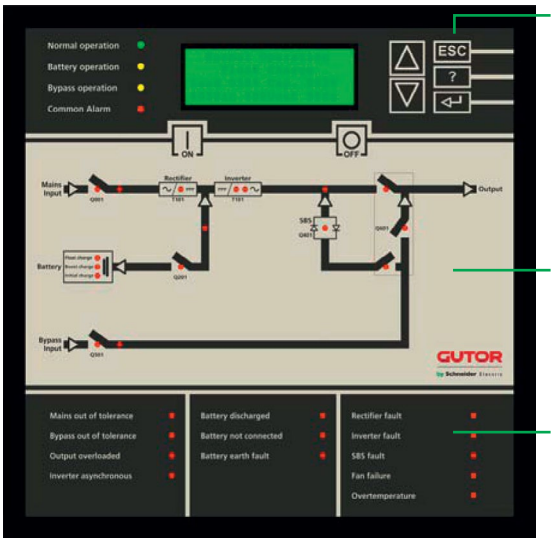
Optional features – General

Ambient temperature maximum +55°C
Allowable altitude up to 4000 m above sea level
Air filters at air inlet
Other colors
Space heaters
Panel lighting
Top cable entry
Protection up to IP52
Cabinet height 2300 mm (standard 1900 mm)

Additional options are available on request

Human-machine interface (front panel)

The front panel includes a comprehensive and flexible human-machine interface. It is divided into three sections:



Control and display consists of an LC display, indication LEDs for operating modes, and push buttons to navigate through the display menus and control the UPS. The user can access measurement data and system information via display menus, including the event and alarm logs.

Mimic indicates the current operational status of the system and its components. It clearly shows the power path currently supplying the load and the availability of the other supplies.

Alarm indication for the system alarms, as well as for external signals which can be flexibly assigned to LEDs for visualization.

Settings accessible via display menu

- Auto start
- Auto boost charge
- Set date/time
- Charge mode
- Bypass operation
- Battery capacity test
- Battery monitor test (optional)
- Display settings
- Menu language

Measurements accessible via display menu

- AC rectifier line power input voltage, current and frequency
- AC bypass line power input voltage, current and frequency (optional)
- AC output voltage, current and frequency
- Load in kVA, kW and % of nominal rating
- Battery voltage and current
- Battery capacity % and expected runtime
- Total system status in parallel/redundant operation
- 3 temperature measurements (with optional sensors)
- Runtime and switchover statistics
- Maximum and minimum voltages and currents
- Time-stamped event log (operation mode changes and alarms)

GUTOR by Schneider Electric

GUTOR Electronic LLC
Hardstrasse 72–74
5430 Wettingen
Switzerland
P +41 (0)56 437 34 34
F +41 (0)56 437 34 44
gutor.info@schneider-electric.com
www.gutor.com

Offices
Brazil > Canada > China > Germany > India
Japan > Malaysia > Mexico > Russia > Saudi Arabia
United Arab Emirates > USA