



# Technical Data Sheet

## PXP AC UPS System

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



## 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 <sub>N</sub>       |
| 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

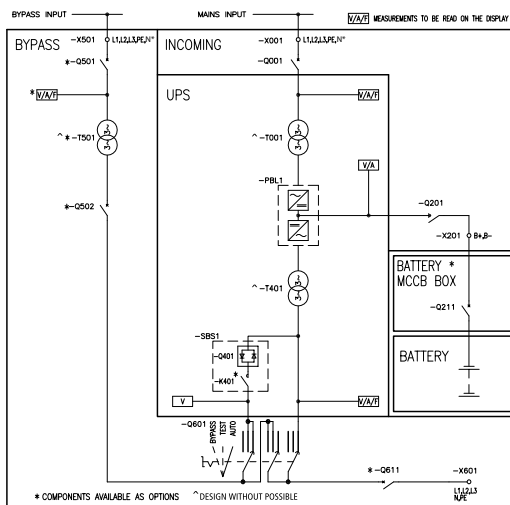
|  |  |
|--|--|
| Nominal UPS ratings at 0.8 lagging PF    | 5, 10, 15, 20, 30, 40, 50, 60, 80, 100, 120, 140, 160 kVA                              |
| Output voltage                           | PXP 1000<br>PXP 3000   |
|  | 1x220/230/240 V (other voltages optional)<br>3x380/400/415 V (other voltages 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**

## Typical single-line drawing



## Standard configuration

- Static bypass switch EN
- Rectifier input switch
- Fixed charging voltage I-V 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

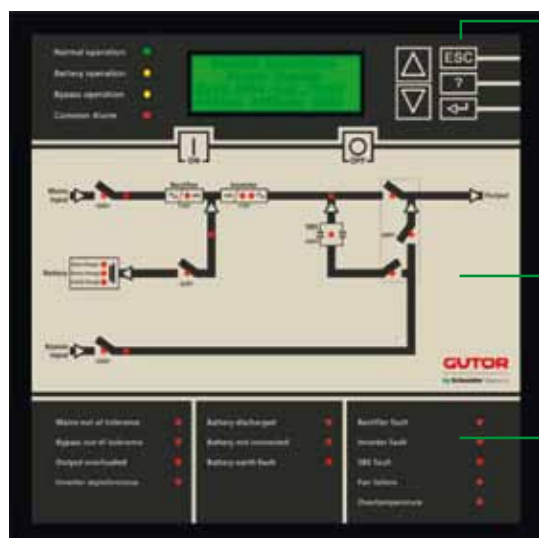
## Optional features – General

- 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)

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