

Technical Data Sheet

PxW AC UPS System

- > PEW 5–200 kVA single phase
- > PDW 10–220 kVA three phase
- > Higher ratings on request



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Technical data PEW single phase/PDW three phase

UPS input

Rectifier input voltage	3x380/400/415V
Voltage tolerance	
DC in tolerance	+/-10%
for function	+10/-15%
Bypass input voltage single phase	1x220/230/240V +/-10%
three phase	3x380/400/415V +/-10%
Frequency	50/60 Hz +/-6%
Inrush current	<10x I _N (input current)

Intermediate DC circuit

Voltage	110/125/220/400VDC
Rectifier voltage tolerance	+/-1% I-U characteristic
Float voltage range at -10% line power	100–115% programmable
Boost voltage range at nominal line power	100–125% programmable
Boost charge time	1-24h programmable
Charging current limitation	depending on battery, programmable
Inverter input range (Output tolerance +/-1%)	+20/-15%
Inverter maximum input range (Output tolerance +/-10%)	typical +/-25%

UPS output

Nominal UPS rating	kVA at 0.8 lagging PF
Voltage single phase	1x220/230/240V
three phase	3x380/400/415V
Voltage tolerance:	
static within 0-100% load	+/-1%
dynamic at 100% load surge	+/-4%
regulation time	<25 ms
Overload:	
Inverter 1 min	150%
Inverter 10 min	125%
Bypass 100 ms	1000%
Short-circuit inverter 50–100 ms	200%
Frequency	50 (60) Hz
Frequency stability, free running	<0.01%
Synchronization range	0.5/1/2/4/6/8%
Slew rate single unit	0.25/0.5/1/2/4 Hz/s programmable
Slew rate redundant system	4.0 Hz/s
Wave form	sinusoidal
Admissible output crest factor	unlimited
Distortion factor:	
Linear load	≤ 3%
Non-linear load according to IEC 62040-3	≤ 5%
Allowable power factor	0.4 lag–0.9 lead
Fault clearing capability	30% of UPS nom. current rated gG fuse (IEC 60269) within 10 ms and bypass available

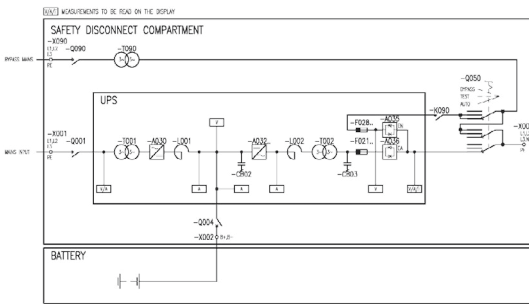
General data

Ambient temperature range for storage	from -20 to +70 °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	60–70 dBA depending on type
Noise level 100% redundant fans	65–75 dBA depending on type
Degree of protection	IP20 according to IEC 60529
Paint	pebble gray, RAL 7032 structured
Efficiency	up to 93% depending on type
Cooling	forced ventilation with redundant n+1 monitored fans
Standards:	
Safety	IEC/EN 62040-1
EMC	IEC 62040-2, EN 50091-2
Performance	IEC/EN 62040-3
UPS classification	VFI-SS-111 acc. to IEC 62040-3
Conformity	CE-Label

Data subject to changes

Specification PEW single phase/PDW three phase

Typical single-line drawing



Single phase drawing

Battery voltage & UPS ratings

Voltage (VDC)	110		125		220		400	
UPS ratings (kVA)	5	-	5	-	5	-	-	-
	10	10	10	10	10	10	-	-
	15	15	15	15	15	15	-	-
	20	20	20	20	20	20	-	-
	40	40	40	40	40	40	-	-
	-	-	-	-	50	-	-	-
	-	60	-	60	60	60	-	-
	-	80	-	80	80	80	-	-
	-	-	-	-	100	100	-	-
	-	-	-	-	-	120	120	120
	-	-	-	-	-	-	150	-
	-	-	-	-	-	160	-	160
	-	-	-	-	-	-	200	-
	-	-	-	-	-	-	-	220

Higher ratings and other voltages on request

■ single phase ■ three phase

Standard configuration

Single UPS		
UPS output voltage	single phase	1x230V
	three phase	3x400/230V
Rectifier input voltage	3x400V +10/-10%	
Bypass input voltage	single phase	1x230V +10/-10%
	three phase	3x400/230V +10/-10%
Frequency	50 Hz +/-6%	
Six-pulse Rectifier with isolation transformer		
Rectifier sized for output PF = 0.8		
Rectifier input switch		
Fixed charging voltage I-U characteristic		
Static switch EN Bypass (line power side) with additional backfeed protection		
LC display unit with additional alarm LEDs		
Alarm relays for battery operation and common alarm		
Bottom cable entry		
Ground terminal		
N+1 monitored two-speed fans		
Ambient temperature range from -10 to +40°C		
Protection IP20		
Painting pebble gray, RAL 7032 structured		
Battery MCCB in UPS		
Manual Bypass Switch 3 pos in UPS		

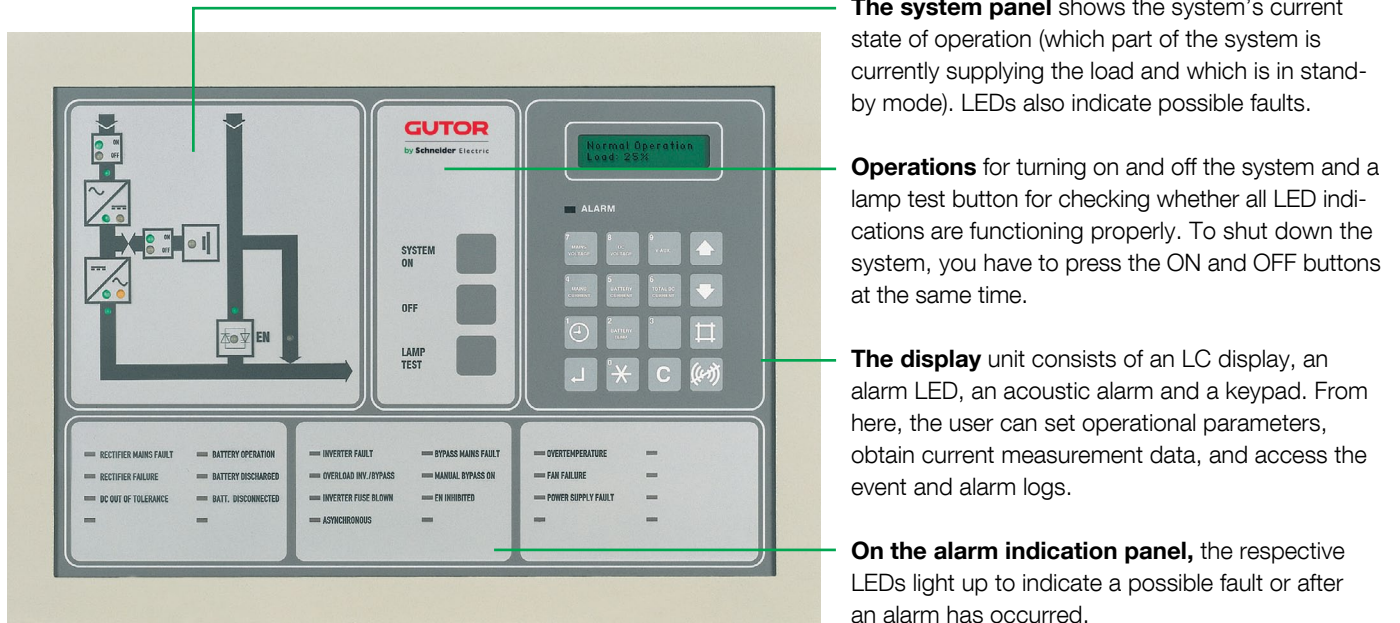
Options

Parallel redundant configuration		
Other input voltages	single phase	190-690V
	three phase	190-690V
Other output voltages	single phase	110-288V
	three phase	190-690V
Frequency 60 Hz +/- 6%		
12-pulse Rectifier with isolation transformer		
Oversized rectifier		
Rectifier fuse		
Bypass input switch or MCCB		
Rectifier input MCCB		
Sensor for temperature dependent battery charging voltage, recommended for sealed batteries and wide temperature range		
Battery temperature alarm		
Diode for reverse polarity protection		
Rectifier output isolator/circuit breaker		
Battery fuse in UPS		
Battery fuse box		
Battery MCCB box		
Inverter input isolator/circuit breaker		
Oversized inverter		
Static Switch EA (Inverter side)		
Battery Monitor (programmable battery data)		
Battery asymmetry supervision		
AC and DC ground fault alarm		
RS-232/485 interface (event log download)		
RJ-45 Ethernet port for WEB browser based monitoring		
RS-485 MODBUS Protocol (slave)		
External time synchronization		
Top and/or bottom cable entry		
Space heaters		
Ventilation 100% redundant		
Panel lighting		
Ambient temperature maximum +55°C		
Allowable altitude up to 4000 m above sea level		
Protection up to IP52		
Other colors		
Bypass isolation transformer		
Bypass stabilizer with isolation transformer		
Black start facility		
Key switch on front panel		
Additional analog meters 96x96, cl. 1.5		
Set with VM DC, AM Bat & output FM, VM & AM		
Set with Input VM & AM with select switch		
kW of output		
Power factor		
Relay board A077, 16 fail-safe NO/NC contacts:		
Rectifier line power fault	Ground fault	DC Inverter fuse blown
DC out of tolerance	5x options	Bypass line power fault
Rectifier fuse blown	Fan failure	Power supply unit fault
Battery discharged	Overtemperature	
Relay board A078, 16 fail-safe NO/NC contacts:		
EA inhibited	Battery disconnected	Inverter ON
EN inhibited	Battery	Boost charge operation
Manual Bypass ON	Rectifier failure	Rectifier ON
Asynchronous	EA ON	External horn
Inverter fault	EN ON	Overload Inverter/Bypass

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 four sections:



The system panel shows the system's current state of operation (which part of the system is currently supplying the load and which is in stand-by mode). LEDs also indicate possible faults.

Operations for turning on and off the system and a lamp test button for checking whether all LED indications are functioning properly. To shut down the system, you have to press the ON and OFF buttons at the same time.

The display unit consists of an LC display, an alarm LED, an acoustic alarm and a keypad. From here, the user can set operational parameters, obtain current measurement data, and access the event and alarm logs.

On the alarm indication panel, the respective LEDs light up to indicate a possible fault or after an alarm has occurred.

Operational parameters

- Selectable second display language
- Auto start
- Bypass operation
- Boost charge
- Auto boost (charge)
- Battery capacity test
- Battery monitor test (optional)
- Set date/time

Measurements

- Load in % of nominal kVA rating
- AC rectifier line power 1 voltage and current
- AC bypass line power 2 voltage
- DC total current, battery voltage and current
- Battery temperature (with optional sensor)
- AC Inverter current
- AC output voltage, current and frequency
- AC output peak current
- Time left in battery operation with current load (optional with programmed battery data)
- Event log with date and time (operating mode changes and alarms)



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