

# P600 EZ-SWAP

**PRIMAX**  
TECHNOLOGIES



## COMPACT - RELIABLE - VERSATILE - INTELLIGENT

**Compact** - Is achieved with high frequency 5kW modules:  
Optimize space and feed loads while keeping batteries healthy.

**Reliability** - Is built in with modularity to keep feeding loads even in the event of control board failure:  
No more major emergencies due to charger failure.

**Versatility** - Is gained by having up to 3x5 KW modules in a wall-mount enclosure that can fit in a standard relay-rack:  
In a 125 Vdc substation application, 5 to 105 A can be installed in the same enclosure.

**Intelligence** - Is implemented by a touch-screen display giving access to all parameters and settings.

The P600 EZ-Swap provides the most comprehensive list of standard alarms & features in the industry  
It is quick and easy to install, use and maintain.  
It will also take care of batteries like no other charger.

### OVERVIEW

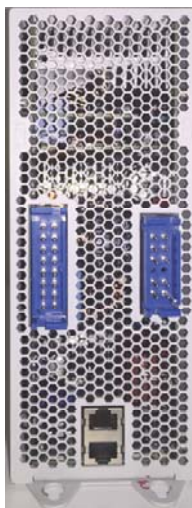
With one easy to install cabinet, you can order a charger that will fit most substation applications. All installation and servicing operations have been simplified using intelligent modular design. Minimum technical knowledge and experience is needed to install, operate, maintain and service the P600 EZ-SWAP. High frequency technology reduces the overall size and weight up to 80% compared to traditional chargers.

### LESS IS MORE

- Simplifies design and installation in a wide range of applications. One size wall mount cabinet smartly packaged to include up to 3 modules delivering up to:105 A at 125 Vdc., it will fit in standard 19" & 23" relay racks.
- Major emergencies caused by charger failures are reduced. Each module has its own controller capable of operating even if the main controller is out.
- Minimum technical knowledge required for charger diagnostic and repair, main controller or power modules can easily be replaced in less than 10 minutes.
- No more wasted time with the easy to operate interactive touchscreen display, The menu is simplified and easy to navigate.
- No risk of falling behind, the Primax P600 EZ-SWAP will evolve in time: Control boards can be easily re-flashed with new algorithms and functions, 4 digital inputs for future expansion. If more power or N+1 redundancy is required, the charger can be adapted by adding an extra module.

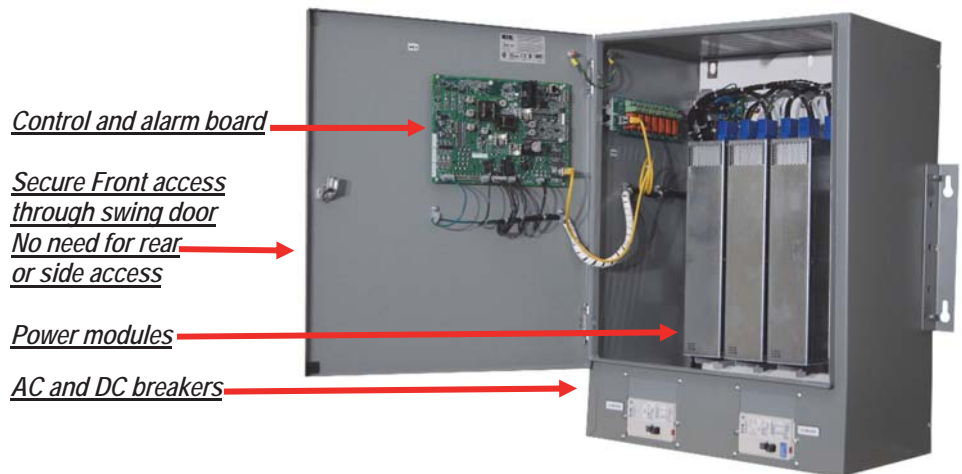


FRONT



BACK

*P60 basic power unit*



Control and alarm board

Secure Front access  
through swing door

No need for rear  
or side access

Power modules

AC and DC breakers

# QUICK & EASY TO INSTALL, OPERATE & MAINTAIN

# Basic design features

## Electrical:

- Input Voltage: 120\*-208-230-240, 1 & 3 phase, 50-60Hz
- Output Voltages: 24-48-125-250-380-480 Vdc
- Output power: Up to 5 kW/module at 50°C or 5.5kW at 40°C
- No of units: up to 3 units per enclosure
- THD < 5%, Power factor: 0.99, Efficiency: 92%
- Static load regulation: ±0.5% at +10/-12% input voltage, ±5% frequency and 0-100% load
- Dynamic load regulation: =<1% from 10-90% on resistive load
- Recovery time: 2 cycles
- System MTBF: 175,000 hours.
- MTTR: Less than 10 minutes
- Output ripple: Less than 100mV
- Protection:
  - Soft start
  - Current limit adjustable from 5% to 100% of nominal rating
  - AC and DC output breaker standard
  - Surge suppression on input and output
  - Reverse polarity protection

## Safety certification

- UL1012-CSA C22.2-107.1 listed, CSA C22.2 107.1 certified
- ISO9001 Quality control

## Mechanical:

- Enclosure: NEMA 1-IP20 Protection c/w hinged front access door
- Wall mount or 19" rack mount. Grey ANSI 61 grey powder paint
- Numbered PVC copper wire (standard)
- Weight:
  - Individual Module: 7.5Kg - 17lbs
  - Enclosure with one Module: 43Kg - 95lbs
- Dimensions
  - Individual module: ): HxWxD: 8.37"x3.28"x17" / 213x83x386(mm)
  - Standard enclosure (ARM 300T): HxWxD: 30"x17.5"x15.2" / 762x445x386(mm)
  - Optional Seismic enclosure (ARM 400):HxWxD: 30"x 21" x 15.2" / 762x533x381(mm)

## Environmental

- Audible noise: < 65dBa at 1m (3.3ft)
- Ventilation: variable forced cooling for longer fan life
- Base unit heat dissipation: 1500Btu/hr/module at full load
- Operating temperature: -20°C to +50°C
- Operating humidity: up to 95% non condensing
- Altitude de-rating:
  - 0% for the 1st 1000m (3300ft)
  - 7% per 1000m (3300ft) over 1000m (3300ft)
- Temperature de-rating: 2%/°C from 50°C to 60°C

## ALL ALARMS ARE DISPLAYED IN PLAIN ENGLISH

**Default factory activated alarms:** Rectifier failure / ac Fail / low volt dc ( 2 levels) / high volt dc / positive ground fault / negative ground fault

**Customer enabled alarms\*\*:** High voltage cyclical shutdown / high ripple alarm / rectifier high voltage / rectifier low voltage / internal high Temperature / charger low temperature / low output current / high output current / equalize on alarm / frequency out of range c/w programmable shutdown

**Each alarm:** Can be enabled or disabled, individual level adjustments, individual Time delay, the display can be latched or unlatched, relays can be latched or unlatched, the failsafe mode can be on or off, any alarm relay can be assigned to any alarm (when individual relays are ordered)

## OPTIONS:

### Communication Modules

- Modbus RTU via RS232/485 or TCP/IP, DNP3 or web page via Local or dynamic IP address, c/w Watchdog circuitry, IEC 61850

### Alarms

- Hardware high volt shutdown,
- Battery discharging alarm
- Battery high & low temperature alarm and shutdown

### Metering & Monitoring

- Input voltage, current and frequency metering
- Non intrusive battery current metering
- Integrated digital AH meter
- System Clock w/ date and time stamp on event log
- Temperature compensation c/w single battery temperature probe
- 2<sup>nd</sup> temperature probe for room temperature allowing Δ temp. alarm
- Battery continuity test,
- Remote equalize and shutdown

### Input and Output

High capacity interrupting breakers, connection free forced load sharing, remote battery voltage sensing, dc output circuit breaker, battery current limit

### Mechanical and hardware

Seismic cabinet (Wall-mount or will fit a 23" relay rack)  
Special paint, NEMA/IP protection, fungus and tropical proofing, halogen-free and special wiring, bottom or side cable entry

1ph Model No.	3ph Model No.	Output current	Input current at				
			at 208 and 240 ac		1ph input (V)		3ph input (V)
			120*	208	240	208	240
<b>24Vdc</b>							
P600-1-24-65	P600-3-24-65	65	17.5	10.1	8.7	5.8	5.0
P600-1-24-130	P600-3-24-130	130	34.9	20.1	17.5	11.6	10.1
P600-1-24-200	P600-3-24-200	200	53.7	31.0	26.9	17.9	15.5
<b>48Vdc</b>							
P600-1-48-65	P600-3-48-65	65	34.9	20.1	17.5	11.6	10.1
P600-1-48-130	P600-3-48-130	130	69.8	40.3	34.9	23.3	20.2
P600-1-48-200	P600-3-48-200	200	107.4	62.0	53.7	35.8	31.0
<b>125Vdc</b>							
P600-1-125-35	P600-3-125-35	35	30.0	26.9	23.3	15.5	13.5
P600-1-48-70	P600-3-48-70	70	60.0	53.8	46.7	31.1	26.9
P600-1-48-105	P600-3-48-105	105	90.0	80.8	70.0	46.6	40.4
<b>250Vdc</b>							
P600-1-250-17	P600-3-250-17	17	30.0	26.2	22.7	15.1	13.1
P600-1-250-35	P600-3-250-35	35	60.0	53.8	46.7	31.1	26.9
P600-1-250-51	P600-3-250-51	51	90.0	78.5	68.0	45.3	39.3
<b>500Vdc</b>							
P600-1-500-10	P600-3-500-10	10	30.0	26.7	23.1	15.4	13.4
P600-1-500-20	P600-3-500-20	20	60.0	53.4	46.3	30.8	26.7
P600-1-500-30	P600-3-500-30	30	90.0	80.1	69.4	46.3	40.1

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\* At 120 Vac input, output power is derated

\*\* alarms can be enabled on-site or at the time of the order

Specs may change without prior notice