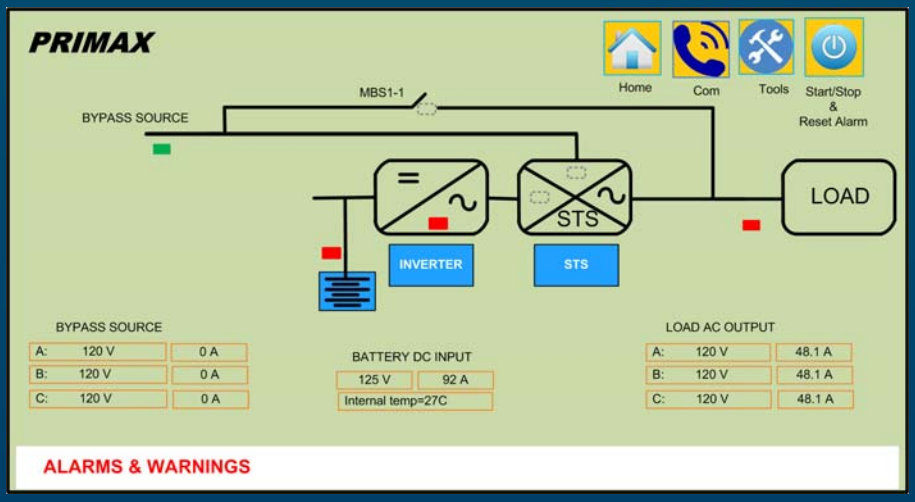
P850i Inverter Series

PRIMAX TECHNOLOGIES

Industrial Grade Inverters



General

- PWM IGBT inverter
- DC bus: 24V, 48V, 125V, 250V, 380V up to 600Vdc
- History log time stamped by real time clock (battery backup memory) including time and date
- Galvanic isolation Copper Wound transformers
- Fully rated SCR no break static transfer switch
- Monitoring and interface: Multilingual menu driven 7" color touch screen with power flow mimic diagram. All events are displayed in text format
- Dedicated bypass line input
- Circuit breaker on AC input*, battery, bypass input and AC output
- Ambient temperature indication on LCD
- Battery cycle counter: number of discharges with time stamps, duration and consumed AH
- Restore factory settings and save site parameters
- Upstream and downstream neutral integrity: input and output neutrals are connected
- Automatic or manual battery test based on voltage, time or AH. Test can be enabled or disabled.
- Audible alarm with silencing button
- 30-Year Design
- Highest Quality Components
- RS232-485-Modbus Communication Port with monitoring software
- Built to meet UL1778, CSA C22.2 141-10 & 107.3, NEMA PE1, NEC, ANSI, and FCC

IGBT POWER MODULES:
High frequency PWM operating at high frequency to provide fast dynamic response to changing load and battery conditions

HEAVY DUTY MAGNETICS:
Very conservatively rated magnetics

CIRCUIT BREAKERS:
DC input and bypass input

BLACK START CAPABILITY:
Inverter can be started with the grid is not connected to site

EASY ACCESS:
All components are laid out to give easy access to all components for safe and fast service.

ROTARY/DRUM MANUAL BYPASS SWITCH (MBS):
Make-Before-Break heavy duty switch. External MBS is preferred

HIGH LOAD HARMONICS TOLERANT:
Designed to provide non-linear loads with high 3rd, 5th, 7th harmonic contents and with 3:1 crest factor

OPTIONS

Input and Output
- High capacity interrupting breakers
- Bypass line isolation transformer or electronic regulator
- Integrated Distribution panel

Interface:
- Up to 24 individual alarm form "C" contacts
- IEC 61850 communication
- 4-20mA & 0-10V current and voltage R/W loops

Metering & Monitoring
- Integrated digital AH meter
- Individual cell monitoring

Maintenance
- Independent manual bypass switch and/or battery circuit breaker

Mechanical and hardware
- Special paint, NEMA & IP protection
- Seismic design
- Fungus and tropical proofing
- Halogen free and special wiring
- Bottom or side cable entry
- Custom battery racks and enclosures
- Custom enclosures: Stainless steel, aluminum, fibreglass, outdoor, harsh environments, insulated, air conditioned...

Primax P850i series industrial inverters are designed to provide high quality ac power back-up for your industrial applications. The inverter is based on a true IGBT PWM sine wave conversion design to feed critical loads with clean, reliable and uninterruptible AC power. Primax P850i series comes standard with: solid state Static Transfer Switch, front panel monitoring and controls.

Technical Data

General	
Power range : 1 up to 500 KVA	• All access from hinged front door with menu driven display and real time clock
Heavy duty construction	• MTBF of 300 000 hours, MTTR less than 1 hour
Numbered PVC copper stranded wire (optional SIS)	• ISO 9001 Quality control
Protection	
• Low volt shutdown (when enabled)	• Surge suppression on input and output.
Bypass Input	
Input voltage/ voltage range	120 up to 600 Vac, ± 10%, 60Hz, 1 or 3 ph / ±5% for manual transfer and 10% for automatic transfer
Alarms	
System	Internal high and low Temperature; ; No load, output voltage out of range, input and output not synchronized, auxiliary power supply fail, EPO, high temperature impeding, high temperature shutdown, fan fail, UPS on battery, load on MBS, reset UPS **Optional:** External high Temperature shutdown; External low Temperature;
Inverter	Inverter off, internal protection transfer, IGBT de-saturation, voltage out of tolerance, Inverter not synchronized, frequency out of tolerance, current > 125%, current > 150%, # phase over-current, forced on inverter
Bypass	Sync sense fail, Voltage out of tolerance, frequency error, load on bypass, excessive auto-retransfers, transfer failed, bypass breaker open, overload shutdown, forced on bypass
Battery	Battery HV; Battery LV; end of discharge; ; LV shutdown, battery test failed, battery test due (when automatic test is disabled) **Optional:** Battery low & high current; Battery low capacity; unbalanced battery; temperature probe alarm; battery discharging alarm
Metering and Readings	
System output	Input frequency, inside temperature, load percentage, kVA, kW, kVAR Line-line voltage, line-neutral voltages & currents
Inverter	Line-Line output Voltage, ac current, input dc voltage, input dc current, frequency
Battery	Voltage, charge-discharge current, battery consumed Ah and state of charge
Bypass	**Optional:** Line-line Voltages, line-neutral voltages, currents and frequency

Drum type make-before-break manual

125Vdc-1ph-20 kVA inverter

For other requirements consult factory
Specifications may change without prior notice
P850i-2017

Technical Data

Inverter	
Configuration	IGBT PWM controlled with true sine wave output and double wound copper isolation transformer
Nominal output voltage	120-208-240-380-400-415-440-480-575-600 Vac, 1ph or 3ph
Output Voltage regulation	
Static / 100% unbalanced load	± 0.5% /±2% adjusted to ± 5% manually - 50 ms regulation time
Load step 0% - 100% - 0%	±8% Recovering within tolerance into 2 cycles
Load step 0% - 50% - 0%	±3% Recovering within tolerance into 2 cycles
Output Voltage	
100% Linear load /80% non linear	2% / 5% THD Maximum
Crest factor compatibility	3:1 with 80% load
Output neutral wire rating	200%
3ph Phase Displacement	
100% Balanced load	120° ±1%
100% Unbalanced load (80%-0-80%)	120° ±2%
Output Frequency, Overload and Power Factor	
Free running	50/60Hz, ± 0.01%
Synchronized with utility	±5%
Slew rate	1Hz/s (adjustable 0.01 to 1 Hz/s)
Overload capability (on inverter)	125% at 0.8PF for 10 minutes / 150% at 0.8PF for 60 seconds followed by current limitation
Power factor rating	0.7 to 1 capable to deliver the rated kVA and rated KW at 0.8 lagging pf. For less than 0.8pf loads the rated kW becomes the limiting factor. Contact factory for leading pf or below 0.7 lagging pf.
Static Bypass	
Input configuration	Common with rectifier (default) or dual input (option)
Primary components	Full load rated static switch. Back-feed protection TBs (optional contactor)
Type	100% SCR seamless transfer type
Transfer limits	±10% of nominal output voltage (adjustable)
Overload capability (on bypass)	110% continuous, 150% for 5 minutes / 1000% for 1/2 cycles (non repetitive)
Alarm contacts (voltage free)	User defined
Serial communication	Modbus TCP/IP. Other protocols are optional
Emergency shutdown	Emergency power off terminal blocks. (optional integrated pushbutton)
Input signals	External auxiliary contact for the bypass switch
Display and Interface	
Display	7" color touch screen LCD to display mimic diagram/status, power flow, readings, graphs, waves, functions, history, load percentage, alarms, battery autonomy, time and date, etc.
Touch-screen control	Start-up, shutdowns, resets, transfers, configurations, settings, etc.
Mechanical	
Audible noise level	45 to 65 dBa at 3ft (1 meter) rating dependant
Ambient temperature	Operating: -5ºC to 40ºC /Storage: -40ºC to 85ºC
Storage temperature range	5ºF to 122ºF (-15ºC to +50ºC)
Temperature de-rating	1.5% / ºC from 40ºC to 60ºC
Operating humidity	0-95% non condensing
Maximum altitude	3300ft (1000m). De-rating: 6500ft (2000m)/-9%, 8000ft (2500m)/-14%, 9000ft (3000m) Ft/-18%
Cooling	Forced air with redundant fans
Enclosure	NEMA 1 (IP20) - steel c/w hinged front access door- RAL7032 or ANSI 61 light grey

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