# P850i Inverter Series



# 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 30-Year Design 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
- 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, $\pm$ 10%, 60Hz, 1 or 3 ph / $\pm$ 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 <u>Optional:</u> 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) <u>Optional:</u> 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	



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

125Vdc-1ph-20 kVA inverter

# **Technical Data**

Inverter           Configuration         IGB TWM controlled with the sine wave output and double wound copper isolation transformer           Nominal output voltage         202-208-240-380-400-515-600 Vac, 1ph or 3ph           Output Voltage regulation           Static / 100% unbalanced load         10.5% / 2% manually - 50 ms regulation trime           Configuration to colspan="2">Configuration to colspan="2">Configuration trime           Configuration to colspan="2">Configuration to colspan="2">Configuration trime           Configuration to colspan="2">Configuration to colspan="2">Configuration trime           Configuration to colspan="2">Configuration trime           Configuration to colspan="2">Configuration trime           Configuration to colspan="2">Configuration to colspan="2">Configuration trime           Configuration to colspan="2">Configuration to colspan="2" <th cos<="" th=""><th colspan="2"></th></th>	<th colspan="2"></th>		
Configuration         ICGT 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., Ip or 3ph           Static / 100% unbalanced load         ± 0.5% / 42% adjusted to 15 % manually - 50 ms regulation time           Load step 0% - 100% - 0%         13% Recovering within tolerance into 2 cycles           Load step 0% - 100% - 0%         25% / 5% THO Maximum           Ceref factor compatibility         31 with 30% load           Output Voltage         200%           Dotty to regulation incer         25% / 5% THO Maximum           Ceref factor compatibility         31 with 30% load           100% Unbalanced load         10° 11%           100% Unbalanced load         10° 12%           00% Unbalanced load         10° 10 intervity           100% Unbalanced load         10° 10 intervity           00% Unbalanced load         10° 10 intervity           100% Classtoble Odd Unto 11%/5         Oster add capability	Inverter		
Nominal output voltage         120-208-240-380-275-600 Vac, 1ph or 3ph           0         0.0000 Vac, 1ph or 3ph           Stetic / 100% unbalanced load         0.5% /12% adjusted to 15% manually- 50% maregulation time           Load step 0% - 100% - 0%         25% Recovering within tolerance into 2 cycles           0000 Vactor Voltage         000000000000000000000000000000000000	Configuration	IGBT PWM controlled with true sine wave output and double wound copper isolation transformer	
Output Voltage regulation           State / 100% unbalanced load         ± 0.5% / 12% adjuted to 2 5% manually - 50 ms regulation time           Load step 0% - 100% - 0%         ± 3% Recovering within tolerance into 2 cycles           Output Voltage           Output Voltage           Output Voltage           Output Voltage           Output Voltage           Output Voltage           Output Frequency, Overload and Power Factor           Free running         So/60Hz, ± 0.03%           So/60Hz, ±0.03%            ±0.05% for 60 second	Nominal output voltage	120-208-240-380-400-415-440-480-575-600 Vac, 1ph or 3ph	
Static / 100% unbalanced load       ± 0.5% / 2% adjusted to ± 5% manually - 50 ms regulation time         Load step 0% - 100% - 0%       ±3% Recovering within tolerance into 2 cycles         Output Voltage         100% Linear load /80% non linear       2% / 5% THD Maximum         Cash of the covering within tolerance into 2 cycles         Output Voltage         00% Linear load /80% non linear         Cash of the covering within tolerance into 2 cycles         Output Voltage         00% Static Covering within 80% load         Output Frequency, Overload and Power Factor         Feer running         Static Covering within 20% load         Static Adjustate I cols to 1 Hz/s         Output Frequency, Overload and Power Factor         Feer running         Static Bypass         Static Bypass         Static Bypass         Diver factor rating         Diversite deliver the rated KVA and rated KW at 81 lagging pf. For less than 0.8P loads the rated kW bross mander to the bypass within tolerance into 2 (sold state) 10.7 Li capable to deliver the rated KVA and rated KW at 81 lagging pf. For less than 0.8P loads the rated kW bross match RW at 0.8 lagging pf. For less than 0.8P loads the rated kW bross mated KW at 0.8 lagging pf. For less than 0.8P	Output Voltage regulation		
Laad step 0% - 100% - 0%       #3% Recovering within tolerance into 2 cycles         Output Voltage         100% Linear load /80% non linear       2% / 5% THD Maximum         Colspan="2">Colspan="2"       Colspan="2"       Colspan="2	Static / 100% unbalanced load	$\pm$ 0.5% / $\pm$ 2% adjusted to $\pm$ 5% manually - 50 ms regulation time	
Lead step 0% - 50% - 0%         #3% Recovering within tolerance into 2 cycles           Output Voltage           Output Voltage           Output Voltage           Output Voltage           Output Voltage           Output Voltage           Output State           State           Output State           State           Output State           State           Output State           State           Output State<	Load step 0% - 100% - 0%	±8% Recovering within tolerance into 2 cycles	
Output Voltage           100% Linear load /80% non linear         2% / 5% THD Maximum           Cersif factor compatibility         31; with 80% load           Output neutral wire rating         200%           Output neutral wire rating         200%           B0% Balanced load         120° ±1%           100% Unbalanced load (80%-0-80%)         120° ±2%           Output Frequency, Overload and Power Factor           Free running         50/60Hz ± 0.03/8           Synchonized with utility         15%           Siew rate         1H2/s (adjustable 0.01 to 1 H2/s)           Overload capability (on inverter)         125% at 0.89° for 10 minutes / 150% at 0.89° 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 kVA becomes the limiting factor. Contact factory for leading pf or below 0.7 lagging pf.           Primary components         Full load rated static switch. Back-feed protection TBs (optional contactor)           Type         100% SC Resembers transfer type           Tansfer limits         ±10% of nominal output voltage (adjustable)           Overload capability (on inverse)         100% or forminal output voltage (adjustable)           Output defined         Modubus TCP/IP. Other protocols are optional           Imaret fimits	Load step 0% - 50% - 0%	±3% Recovering within tolerance into 2 cycles	
100% Linear load /80% non linear       2% / 5% TH0 Maximum         Crest factor compatibility       3:1 with 80% load         00tput netral wire rating       200%         Sph Phase Displacement         100% Unbalanced load       120° ±1%         100% Unbalanced load (80%-0-80%)       120° ±1%         Output Frequency, Overload and Power Factor         Free running         50/60Hz, ± 0.01%       50/60Hz, ± 0.01%         Synchronized with utility       45%         Sole of the presence of t	Output Voltage		
Crest factor compatibility       31 with 30% load         Output neutral wire rating       200%         Sph Phase Displacement         100% Balanced load       120° ±1%         100% Unbalanced load (80%-0.80%)       120° ±2%         Compatibility of 120° ±2%         Overload and Power Factor         Free running       50/60Hz, ± 0.01%         Sold Colspan="2">Colspan="2"Colspan="2">Colspan="2"         Colspan="2"       Colspan="2"	100% Linear load /80% non linear	2% / 5% THD Maximum	
Output neutral wire rating         200%           Sph Phase Displacement           Sph Phase Displacement           120° ±1%           120° ±1%           Output Frequency, Overload and Power Factor           Free running         50/60Hz ± 20.01%           Synchronized with utility         #5%           Synchronized with utility         #5%           Synchronized with utility         #5%           Synchronized with utility         #5%           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         To 1 capable to deliver the rated KVA and rated KW at 0.8 lagging pf. For fess than 0.8pf loads the rated KW becomes the limiting factor. Contact factory for leading pf or below 0.7 lagging pf.           Primary components         Full load rated static switch. Back-feed protection TBs (optional contactor)           Transfer limits         ±10% SGR seamiess transfer type           Transfer limits         ±10% SGR seamiess transfer type           Transfer limits         ±10% SGR seamiess transfer type <th colspanting="" th="" to<=""><th>Crest factor compatibility</th><th>3:1 with 80% load</th></th>	<th>Crest factor compatibility</th> <th>3:1 with 80% load</th>	Crest factor compatibility	3:1 with 80% load
Shp Phase Displacement           100% Bialanced 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%           Sew rate         114/s (adjustable 0.01 to 1 Hz/s).           Overload capability (on inverter)         125% at 0.89F for 10 minutes / 150% at 0.89F for 60 seconds followed by current limitation           Power factor rating         0.7 to 1 capable to deliver the rated KVA and rated KVW at 0.8 lagging pf. For less than 0.8pf loads the rated kVW becomes the limiting factor. Contact factory for leading pf or below 0.7 lagging pf.           Power factor rating         0.7 to 1 capable to deliver the rated kVA and rated KW at 0.8 lagging pf.           Primary components         Full load rated static switch. Back-feed protection TBs (optional contactor)           Pype         100% SCS Scamesents stransfer type           Transfer limits         ±10% of nominal output voltage (adjustable)           Overload capability (on bypass)         110% continuous, 150% for 5 minutes / 100% for 1/2 cycles (non repetitive)           Alarn contact (voltage free)         User defined           Serial communication         Modbus TCP/IP. Other protocols are optional           Emergency shutdown         Emergency power off terminal blocks. (optional integrated	Output neutral wire rating	200%	
100% Balanced load (80%-0-80%)       120° ±3%         100% Unbalanced load (80%-0-80%)       120° ±2%         Output Frequency, Overload and Power Factor         Free running       50/60Hz, ± 0.01%         Synchronized with utility       ±5%         Siew rate       1Hz/s (adjustable 0.01 to 1 Hz/s)         Overload capability (on inverter)       125% at 0.28F 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 KW 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.         Public 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 seames stransfer type         Tansfer limits       ±10% of nominal output voltage (adjustable)         Overload capability (on bypass)       110% continuous, 150% for 5 minutes / 1000% for 1/2 cycles (non repetitive)         Alarn 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       Esternal auxillary contact for the bypass switch <th colspan="3">3ph Phase Displacement</th>	3ph Phase Displacement		
100% Unbalanced load (80%-0-80%)       120° ± 23%         Output Frequency, Overload and Power Factor         Free running       50% (60Hz, ± 0.01%         Synchronized with utility       ±5%         Siew rate       1Hz/s (adjustable 0.01 to 1 Hz/s)         Overload capability (on inverter)       125% at 0.8PF for 100 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 KVA and rated fKW at 0.8 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         Coverold capability (on bypass)       110% continuous, 150% for 5 minutes / 100% for 1/2 cycles (non repetitive)         Alarm contact ( voltage free)       User defined         Singlag and Interface         Oisplay and Interface         Nisolay and switch         Overation ups to touch screen LCD to display minic diagram/status, power flow, readings, graphs, waves, functions, history, load percentage, alarms, battery automy, time and date, etc.          45 to 65 dBa a	100% Balanced load	120° ±1%	
Output Frequency, Overload and Power Factor           Free running         50/c0trk ± 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 capabile to deliver the rated KVA and rated KW at 0.8 lagging pf. For less than 0.8pf loads the rated KV at 0.8 lagging pf. For less than 0.8pf loads the rated KV at 0.8 lagging pf. For less than 0.8pf loads the rated KV at 0.6 lagging pf. For less than 0.8pf loads the rated KV at 0.6 lagging pf. For less than 0.8pf loads the rated KV at 0.6 lagging pf. For less than 0.8pf loads the rated KV at 0.6 lagging pf. For less than 0.8pf loads the rated KV at 0.6 lagging pf. For less than 0.8pf loads the rated KV at 0.6 lagging pf. For less than 0.8pf loads the rated KV at 0.6 lagging pf. For less than 0.8pf loads the rated KV at 0.6 lagging pf. For less than 0.8pf loads the rated KV at 0.6 lagging pf.           Power factor rating         0.7 to 1 capability (on twict retaile VX at 0.8 lagging pf. For less than 0.8pf loads the rated KV at 0.6 lagging pf.           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 / 100% for 1/2 cycles (non repetitive)           A	100% Unbalanced load (80%-0-80%)	120° ±2%	
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 blow 0.7 lagging pf.         Primary components       Full load rated static switch. Back-feed protection TBs (optional contactor)         Pripe       100% SCR seamless transfer type         Transfer limits       110% continuous, 150% for 5 minutes / 1000% for 1/2 cycles (non repetitive)         Alar contact (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       7° color touch screen LCD to display minic diagram/status, power flow, readings, graphs, waves, functions, history, load percentage, alarms, battery autonomy, time and date, etc.         Touch-screen control       St to 65 dBa at 3ft (1 meter) rating dependant         Ambient temperature       Operating: -Sec to 409C / to 65%C         Storage temperature range	Output Frequency, Overload and Power Factor		
Synchronized with utility         ±5%           Slew rate         1Hz/s (adjustable 0.01 to 1Hz/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.           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           Aarn 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         7" color touch screen LCD to display minic 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.           Multible noise level         45 to 65 dBa at 3ft (1 meter) rating dependant           Ambient temperature         Operating: -SP	Free running	50/60Hz, ± 0.01%	
Slew rate       1H2/s (adjustable 0.01 to 1 H2/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 KVA 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.         Puter components       Full load rade static switch. Back-feed protection TBs (option)         Primary components       Full load rade 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 / 100% for 1/2 cycles (non repetitive)         Alarn contacts (voltage free)       User defined         Serial communication       Modbus TCP/IP. Other protocols are optional         Imput signals       External auxiliary contact for the bypass switch         Display and Interface       Display and Interface         Display       7" color touch screen LCD to display mimic diagram/status, power flow, readings, graphs, waves, functions, history, load percentage, alarns, battery autonomy, time and date, etc.         Touch-screen control       Start-up, shutdowns, resets, transfers, configurations, settings, etc.         Mueble noise level       45 to 65 dBa at 3ft (1 meter) rat	Synchronized with utility	±5%	
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.         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         Berrial communication       Modbus TCP/IP. Other protocols are optional         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       Statup, shudowns, resets, transfers, configurations, settings, etc.         Mechanical       Mechanical         Audible noise level       45 to 55 dBa at 3ft (1 meter) rating dependant         Ambient temperature       Operating: -59°C to 4	Slew rate	1Hz/s (adjustable 0.01 to 1 Hz/s)	
Power factor rating       0.7 to 1 capable to deliver the rated KVA and rated KW at 0.8 lagging pf. For less than 0.8pt loads the rated KW becomes the limiting factor. Contact factory for leading pf or below 0.7 lagging pf.         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 and Interface         N* 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 55 dBa at 3ft (1 meter) rating dependant         Ambient temperature       Operating: -5ºC to 40°C / Storage: -40°C to 85°	Overload capability (on inverter)	125% at 0.8PF for 10 minutes / 150% at 0.8PF for 60 seconds followed by current limitation	
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         0'' 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         Adible noise level         45 to 65 dBa at 3ft (1 meter) rating dependant           Ambient temperature         Operating: -59C to 40°C / Storage: -40°C to 85°C         Storage temperature range           SPF to 122ªF (15% C to +50%C)         Temperature de-rating         1.5% / % C from 40°C to 60°C      <	Power factor rating	W becomes the limiting factor. Contact factory for leading pf or below 0.7 lagging pf.	
Input configuration         Common with retifier (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 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         45 to 65 dBa at 3ft (1 meter) rating dependant           Ambient temperature         Operating: -5%C to 40%C /Storage: -40%C to 85%C           Storage temperature range         5% F to 122% (-15% C to 50%C)           Temperature de-rating         1.5% / %C from 40%C to 60%C      <			
Input comparise         Evention intercenting of control model (cproof)           Primary components         Full load rated static switch. Back-feed protection ISG (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)           Alarn contact (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 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.           Multible noise level         45 to 65 dBa at 3ft (1 meter) rating dependant           Ambient temperature range         SPF to 122ºF (c 15ºC to +50ºC)           Temperature de-rating         1.5% / ºC from 40ºC to 60ºC           Operating: -SPC to 40ºC (Storage: -40ºC to 85ºC           Storage temperature ra	Input configuration	Common with rectifier (default) or dual input (ontion)	
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.         Audible noise level       45 to 65 dBa at 3ft (1 meter) rating dependant         Ambient temperature       Operating: -5°C to 40°C / Storage: -40°C to 85°C         Storage temperature range       5°F to 122°F (-15°C to +50°C)         Temperature de-rating       1.5% / °C from 40°C to 60°C         Operating: -5%C to 40°C / Storage: -60°C (1000m)/-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 g	Primary components	Full load rated static switch. Back-feed protection TBs (optional contactor)	
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 minic 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         A 5to 65 dBa at 3ft (1 meter) rating dependant         Ambient temperature       Operating: -5% Cto 40% C / Storage: -40% Cto 85% C         Storage temperature range         5% for 122% f (-15% Ct to +5% C)       Temperature de-rating         1.5% / % C from 40% Cto 60% C       Operating: 5%00ft (2000m)/-9%, 8000ft (2500m)/-14%, 9000ft (3000m) Ft/-18%         Cooling         Forced air with redundant fans         Enclosu		100% SCR seamless transfer type	
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       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       Mobient temperature         Operating: -5ºC to 40ºC /Storage: -40ºC to 85ºC         Storage temperature range       5ºF to 122ºF (-15ºC to +50ºC)         Temperature de-rating       1.5% / °C from 40ºC to 60°C         Operating: -5ºC to 00°C       Operating: 6500t (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	Transfer limits	±10% of nominal output voltage (adjustable)	
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 and Interface         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: -5% to 40% C /Storage: -40% to 85% C         Storage temperature range       5% F to 122% F (-15% to +50% C)         Temperature de-rating       1.5% / % C from 40% to 60% C         Operating: -5% to 60% C       Operating: 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	Overload capability (on bypass)	110% continuous, 150% for 5 minutes / 1000% for 1/2 cycles (non repetitive)	
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Cooling       Forced air with redundant fans         Enclosure       NEMA 1 (IP20) - steel c/w hinged front access door- RAL7032 or ANSI 61 light grey	Maximum altitude	3300ft (1000m). De-rating: 6500ft (2000m)/-9%, 8000ft (2500m)/-14%, 9000ft (3000m) Ft/-18%	
Enclosure NEMA 1 (IP20) - steel c/w hinged front access door- RAL7032 or ANSI 61 light grey	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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# Represented by: