For Home UPS &
Inverter Battery Category

LUMINOUS

SOLAR PCU

Ideal solution for commercial buildings, domestic applications and decentralized power plants

Range Available
1 to 100 KW

Luminous 1 to 100 KW Inverters

True bi-directional inverters with MPPT charge controller designed especially for solar application. These single & three phase output inverters operate in parallel with the grid utility. Solar electricity is produced when Photons from the sun rays hit Photovoltaic panels, and electrons are generated in the Photovoltaic cells, leading to production of Direct Current (DC).

The electrical energy in form of DC power is used to charge the batteries through a charge controller and also used to cater load through inverter. These PCU's (Power Conditioning Units) are so designed that additional energy generated from Solar PV plants can be exported to the grid.*

Luminous PCU Features:

- Bi-directional Solar Inverter with MPPT Charge Controller
- Inverter with High Speed MOSFET/IGBT and state of the Art DSP Controller
- High Efficiency and Reliability
- In-built in output isolation transformer
- Remote monitoring available

Display parameter:

- Array : Voltage, Current, Power, Temperature
- Battery : Voltage, Current
- Grid : Voltage, Current, Power
- Output: Voltage, Current, Inv. H/S temp. , Power

Protections:

- Under/Over voltage protection for Input, Output, Battery & Array
- Reverse polarity protection for Array
- Protection for Output Overload, Short circuit and Over Temperature
- MCB & Surge protection at Array input Path

Indications:

MPPT Charger ON/OFF, Battery on Float, Battery on Boost, Battery Low, Battery Charging/ Discharging, Grid Switch ON, Inverter Switch ON, Grid ON, Load ON, Inverter ON

Specifications For Solar Inverters

System Rating (KW)	1KW	2KW	3KW	4KW	5KW	6KW	10KW
Photovoltaic Input							
MPPT Voltage	65V – 90V DC			130V – 160V DC			160V – 200V DC
Maximum Input Current (A)	15A*	30A*	46A	31A	38A	46A	63A
Maximum PV power recommended (KW)	1.1KW*	2.2KW*	3.3KW	4.4KW	5.5KW	6.6KW	11KW
No. of Charge Controller	1						
MPPT Base Charge Controller							
Switching Element	MOSFET/IGBT						
Type of Charger	PWM with MPPT						
Grid Input							
Input Supply Phase	1 Phase 2 Wire						
Nominal Voltage & Voltage Range	115VAC/230VAC (+15%, -20%)						
Battery							
Battery Voltage	48V			96V			120V
Battery recharge current setting range from Grid Side	9A*	19A*	28A	19A	23A	28A	36A
Battery recharge current setting range from Array Side	19A*	39A*	56A	37A	46A	56A	74A
Inverter							
Switching Element	MOSFET/IGBT						
Control	32 Bit DSP controlled*						
Nominal Output Voltage	115VAC/230VAC ; L-N						
Output Supply Phase	1 Phase 2 Wire						
Output waveform	Sine wave						
Nominal Frequency (Hz)	50/60 Hz						
Power Factor (Within KVA/KW)	0.6 lag to 1 (Within KVA and KW rating)						
Nominal Output Current (A)	4A/9A	9A/18A	13A/26A	17A/34A	22A/44A	26A/52A	44A/88A
Voltage regulation	+/-2%						
Voltage Stability in dynamic condition	Complies with IEC/EN 62040-3, Class 1						
Output voltage distortion with 100% linear load	< 2% *						
Overload at nominal output voltage for 10 minutes	125%						
Overload at nominal output voltage for 1 minute	150%						
Inverter peak efficiency (Ref. STD IEC 61683)	Up to 90% *						
Noise @ 1 meter (dBA +/-2dBA)	<58dBA		<62dBA				
Protection degree with open doors	IP20						
Colour	RAL 7016 Texture						
Dimension (WxDxH in mm)	250x620x500*				250x640x600		800x600x1100
Cooling	Forced Air						
Galvanic Isolation	Inbuilt isolation transformer at inverter output						
Environment							
Location	Indoor (Free from corrosive gases & conductive dust)						
Temperature Operating	0-40 °C						
Max. Relative humidity @25°C (non-condensing)	Up to 95%						
Max. Altitude above sea level without de-rating (m)	1000 m (For higher altitude complies with IEC/EN 62040 - 3)						
Standard Compliance							
Testing	IEC62040-1, 2, 3(for Safety, EMC Class, Testing) & IEC 60068-2(1,2,14,30)						

**Parameters are also available in different specifications.*

System Rating (KW)	10KW	15KW	20KW	25KW	30KW	35KW	40KW	45KW	50KW	100KW
Photovoltaic Input										
MPPT Voltage	280-340 V									
Maximum Output Current (A)	36A	55A	73A	92A	107A	128A	147A	165A	183A	367A
Maximum PV power recommended (KW)	11KW	16.5KW	22KW	27.5KW	33KW	38.5KW	44KW	49.5KW	55KW	110KW
No. of Charge Controller	1									
MPPT Base Charge Controller										
Switching Element	IGBT									
Type of Charger	PWM with MPPT									
Grid Input										
Input Supply Phase	3 Phase 4 Wire									
Nominal Voltage & Voltage Range	415V AC, +10%, -15%									
Battery										
Battery Voltage	240V									
Battery recharge current setting range from Grid Side	0-19A	0-28A	0-37A	0-46A	0-55A	0-65A	0-74A	0-83A	0-91A	0-182A
Battery recharge current setting range from Array Side	36A	55A	73A	92A	107A	128A	147A	165A	183A	367A
Inverter										
Switching Element	IGBT									
Control	32 Bit DSP controller									
Nominal Output Voltage	415V AC 3Ph+N									
Output Supply Phase	3 Phase 4 Wire									
Output waveform	Sine wave									
Nominal Frequency (Hz)	50 Hz									
Load Power Factor	0.6 lag to 1									
Nominal Output Current (A)	14A	21A	28A	35A	42A	49A	56A	63A	69A	140A
Voltage regulation	+/-1%									
Voltage Stability in dynamic condition	Complies with IEC/EN 62040-3, Class 1									
Output voltage distortion with 100% linear load	< 2									
Overload at nominal output voltage for 10 minutes	125%									
Overload at nominal output voltage for 1 minute	150%									
Inverter peak efficiency	90%	91%					92%			
Noise @ 1 meter (dBA +/-2dBA)	<62dBA						<72dBA			
Protection degree	IP20 (with open doors)									
Dimension (WxDxH in mm)	400x700x800	500x1000x800					1000x900x1500			1100x1000x1700
Cooling	Forced Air									
Galvanic Isolation	Inbuilt isolation transformer at inverter output									
Environment										
Location	Indoor (Free from corrosive gases & conductive dust)									
Temperature Operating	0-50°C									
Max. Relative humidity	Up to 95% @ 25°C (non-condensing)									
Max. Altitude above sea level without de-rating	1000 m (For higher altitude complies with IEC/EN 62040 - 3)									
Standard Compliance										
Testing	IEC 62040 - 1, 2, 3 (For Safety, EMC Class, Testing)									

Due to continuous product improvement, the specifications are subject to change without prior notice.