



HBD SERIES



5-15 KVA/48V
3 PHASE

10-15KVA/120V
3 PHASE

15-100KVA/240V
3 PHASE

30-200KVA/360V
3 PHASE

125-250KVA/480V
3 PHASE

250 KVA/576V
3 PHASE

THREE PHASE HYBRID MPPT PCU (5-250 KVA)*

Genuine 'Hybrid' - Not just 'Off-Grid'

Our HBD series offers hybrid solar inverters of 1-250KVA to residential/commercial/industrial customers. This series is built to resolve the two challenges posed by unreliable grids and power cuts – intermittent electricity and high electricity costs. Energiaa's HBD series inverters are essentially grid-tie inverters with storage. They also work as standalone systems in case of no grid. They not only store electricity in the attached batteries but also export unconsumed solar power to the grid, or store and mix with the grid as programmed in its 'behind-the-meter' use.

*Other customised ratings available on request

KEY FEATURES

Bi-directional	Seamless switching to and from grid (both import and export) and battery supply, high-efficiency MPPT technology
Grid-interactive	Blends solar and grid-power for optimisation
Energiaa's Benchmark Solar Tech	We use the latest DSP-based 'Active Front End' technology with IoT to achieve 'flexible' or 'smart' energy
IEC certified	IEC certifications available
Behind-the-Meter	Latest global tech enabled where in the absence of Net-Meter policy, we can store solar energy into battery and then blend it with Grid during high-tariff times or with DG-set for DG-set optimisation
Easy-to-monitor	Optional GPRS-based remote monitoring and controlling
3-Priority working modes	HBD with export/ HBD without export/ Off-Grid
Pure sine wave technology	Recommended for longer life of Industrial/ Commercial equipment
Intelligent battery charging	3-Stage charging (Float, Bulk & Absorption) for more battery life (for Lead Acid batteries). Communication-based charging for Lithium chemistries available
Compatible charger	Supports wide range of batteries – Flooded Lead Acid Tubular/GEL/VRLA. On request product for Li+ chemistries available

KEY BENEFITS

Customisable Energy Shift	Store power and use later
Runs AC at home	Can sustain jerk loads like Air Conditioner
Protection	Protects against grid fluctuations, overload, short circuit, array reverse, battery reverse and thermal fluctuations
Galvanic Isolation	Uses galvanic isolation at output – Ideal for Rural/Microgrid applications
Long life	Lifespan of 15+ years
Almost zero-servicing	Our robust HBD series inverters are IoT-based and require zero to negligible servicing and maintenance
Largest-in-class display	Beautiful display units showing all inverter+solar+battery data

TOLL-FREE SERVICING SUPPORT: 1800-891-3319

3-P LOW VOLTAGE (48V) 5-15KVA HYBRID MPPT PCU



Bungalow



Hospitals



Office Buildings



Poultry Farm



Micro Grids



Gyms



RATINGS	5KVA/48V	8KVA/48V	10KVA/48V	15KVA/48V
Model No.	HBD-048-05K-3P	HBD-048-008K-3P	HBD-048-010K-3P	HBD-048-015K-3P
A. MPPT CHARGER				
PV Nominal Capacity (Total KWp)	5	8	10	15
Max No. of Strings	5	8	10	15
Charge Controller Type (Buck)	MPPT			
No of MPPT Channel/ No. of Inputs	1/1			
Max. Open Circuit PV Volts (Voc)	190			
MPPT Voltage Range (Vmp)	75-160			
Max SCC O/P Amps	100	160	200	300
Peak Charging Efficiency	94%			
B. SOLAR INVERTER				
Nominal Capacity (Total)	5KVA	8KVA	10KVA	15KVA
Output Amps per Phase	6	9	12	17
Nominal Battery Voltage	48			
Output Voltage/ Frequency/Phase	400V(±2%) / 50Hz/ 3P+N			
Load Power Factor	0.8- unity			
Peak Efficiency	>86 %		>88 %	
Over Loads: 60 sec/ 30 sec/ 5 sec	101-110%/111- 125%/126-150%			
Auto Bypass Feature	Provided			
Anti Islanding/ Power Export to Grid	Provided(As per IEC 62116 & IEC 61727)			
C. GRID CHARGER				
Grid Voltage Operating Range	400V (+10% & -20%)			
Grid freq Operating Range	50Hz (+5% & -5%)			
Max Import Power	7.5KVA	12KVA	15KVA	22.5KVA
D. PROTECTIONS & DISPLAY PARAMETERS				
	PROTECTIONS		DISPLAY PARAMETERS	
PV Side	• Reverse Polarity, PV Power Limit, Surge Protection (MOV)		• Voltage, Charger O/P Amps, Power, Cumulative Energy	
Battery Side	• Reverse Polarity, O/U Voltage, Current Limit		• Voltage, Current, Battery State	
Grid Side	• O/U Voltage, O/U Frequency, Surge Protection (MOV)		• Phase Voltage, Frequency, Power, Power Factor	
Load Side	• Overloads, Short circuit, Surge Protection (MOV)		• Voltage & Current, Frequency, Power, Export kWh.	
System Protection	• Over Temperature		• Mode of Operation, Active Faults, Status Mimic	
E. MISCELLANEOUS				
Switchgear Protection	MCB/MCCB provided on PV, Battery, Load & Grid path			
LED Indications	Mains On, Alarm, Buzzer Mute.			
Data Port (RS485/ RS 232)	Optional (Available on Request)			
Remote monitoring	Optional through GPRS based Modem			
Ingress Protection	IP-20 (Indoor Type)			
Cooling Method	Force Cooling (Temp Controlled)			
Operating Temperature	0-50 degrees (without Derating)			
Humidity	Max. 95% Non-Condensing			
Altitude	1000m above sea level			
Color Shade	RAL7035/ DA GREY HE1S005			
Dimensions (H X W X D)	750X530X897.45MM			

3-P HIGH VOLTAGE (120/240/360V) 10-50KVA HYBRID MPPT PCU



Petrol Pumps



Commercial



Bank ATM



Schools



Mills



Government Buildings

RATINGS	10KVA/120V	15KVA/120V	15KVA/240V	20KVA/240V	25KVA/240V	30KVA/240V/360V	40KVA/240V/360V	50KVA/240V/360V	
Model No.	HBD-120-010K-3P	HBD-120-015K-3P	HBD-240-15K-3P	HBD-240-20K-3P	HBD-240-25K-3P	HBD-240-30K-3P HBD-360-30K-3P	HBD-240-40K-3P HBD-360-40K-3P	HBD-240-50K-3P HBD-360-50K-3P	
A. MPPT CHARGER									
PV Nominal Capacity (Total KWp)	10	15	15	20	25	30	40	50	
Max No. of Strings	6	9	5	6	8	9/6	12/8	15/10	
Charge Controller Type (Buck)	MPPT								
No of MPPT Channel/ No. of Inputs	1/1								
Max. Open Circuit PV Volts (Voc)	360		675			675 / 820			
MPPT Voltage Range(Vmp)	165-299		330-560			330-560 / 495-681			
Max SCC O/P Amps	80	120	60	80	100	120/80	160/108	200/135	
Peak Charging Efficiency	94%								
B. SOLAR INVERTER									
Nominal Capacity (Total)	10KVA	15KVA	15KVA	20KVA	25KVA	30KVA	40KVA	50KVA	
Output Amps per Phase	12	17	17	23	29	35	46	58	
Nominal Battery Voltage	120		240 / 360						
Output Voltage/ Frequency/Phase	400V(±2%) / 50Hz/ 3P+N								
Load Power Factor	0.8-Unity								
Peak Efficiency	>89 %		>90 %			>92 %			
Over Loads: 60 sec/ 30 sec/ 5 sec	101-110%/111-125%/126- 150%								
Auto Bypass Feature	Provided								
Anti Islanding/ Power Export to Grid	Provided (As per IEC 62116 & 61727)								
C. GRID CHARGER									
Grid Voltage Operating Range	400V (+10% & -20%)								
Grid freq Operating Range	50Hz (+5% & -5%)								
Max Import Power	15KVA	22.5KVA	22.5KVA	30KVA	37.5KVA	45KVA	60KVA	75KVA	
D. PROTECTIONS & DISPLAY PARAMETERS									
	PROTECTIONS				DISPLAY PARAMETERS				
PV Side	• Reverse Polarity, PV Power Limit, Surge Protection (MOV)				• Voltage, Charger O/P Amps, Power, Cumulative Energy				
Battery Side	• Reverse Polarity, O/U Voltage, Current Limit				• Voltage, Current, Battery State				
Grid Side	• O/U Voltage, O/U Frequency, Surge Protection (MOV)				• Phase Voltage, Frequency, Power, Power Factor				
Load Side	• Overloads, Short circuit, Surge Protection (MOV)				• Voltage & Current, Frequency, Power, Export KVAh.				
System Protection	• Over Temperature				• Mode of Operation, Active Faults, Status Mimitc				
F. MISCELLANEOUS									
Switchgear Protection	MCB/MCCB provided on PV, Battery, Load & Grid path.								
LED Indications	Mains On, Alarm, Buzzer Mute.								
Data Port (RS485/ RS 232)	Optional (Available on Request)								
Remote monitoring	Optional through GPRS based Modem								
Ingress Protection	IP-20 (Indoor Type)								
Cooling Method	Force Cooling(Temp Controlled)								
Operating Temperature	0-50 degrees (without Derating)								
Humidity	Max. 95% Non-Condensing								
Altitude	1000m above sea level								
Color Shade	RAL7035/ DA GREY HE1S005								
Dimensions(H X W X D)	825X845X550				925X845X550		1040X650X965		1040X650X965

3-P HIGH VOLTAGE (240/360/480/576V) 60-250KVA



Cold Storage



Process Industries



Malls



RATINGS	60KVA/240V/360V	80 KVA/240V/360V	100KVA/240V/360V	125KVA/360V/480V	150KVA/360V/480V	200KVA/360V/480V	250KVA/480V/576V
Model No.	HBD-240-60K-3P HBD-360-60K-3P	HBD-240-80K-3P HBD-360-80K-3P	HBD-240-100K-3P HBD-360-100K-3P	HBD-360-125K-3P HBD-480-125K-3P	HBD-360-150K-3P HBD-480-150K-3P	HBD-360-200K-3P HBD-480-200K-3P	HBD-480-250K-3P HBD-576-250K-3P
A. MPPT CHARGER							
PV Nominal Capacity (Total KWp)	60	80	100	125	150	200	250
Max No. of Strings (per channel)	6/4	8/5	10/6	8/7	10/10	14/13	12/9
Charge Controller Type (Buck)	MPPT						
No of MPPT Channel/ No. of Inputs	3/3						4/4
Max. Open Circuit PV Volts (Voc)	675/820			820/950			950/1050
MPPT Voltage Range(Vmp)	(330-560)/ (495-681)			(495-681)/ (560-850)			(560-850)/(750-900)
Max SCC O/P Amps	240/160	320/216	400/270	338/253	400/300	400/300	375/330
Peak Charging Efficiency	94%						
B. SOLAR INVERTER							
Nominal Capacity (Total)	60 KVA	80 KVA	100 KVA	125KVA	150KVA	200KVA	250KVA
Output Amps per Phase	69	92	115	144	173	231	289
Nominal Battery Voltage	240/360			360/480			480/576
Output Voltage/ Frequency/Phase	400V(±2%) / 50Hz/ 3P+N						
Load Power Factor	0.8-Unity						
Peak Efficiency	>92 %			>94 %			
Over Loads: 60 sec/ 30 sec/ 5 sec	101-110%/111- 125%/126- 150%					101-110%/111- 120%/121-130%	
Auto Bypass Feature	Provided						
Anti Islanding/ Power Export to Grid	Provided (As per IEC 62116 & 61727)						
C. GRID CHARGER							
Grid Voltage Operating Range	400V (+10% & -20%)						
Grid freq Operating Range	50Hz (+5% & -5%)						
Max Import Power	90KVA	120KVA	150KVA	188KVA	225KVA	250KVA	300KVA
D. PROTECTIONS & DISPLAY PARAMETERS							
	PROTECTIONS				DISPLAY PARAMETERS		
PV Side	• Reverse Polarity, PV Power Limit, Surge Protection (MOV)				• Voltage, Charge O/P Amps, Power, Cumulative Energy		
Battery Side	• Reverse Polarity, O/U Voltage, Current Limit				• Voltage, Current, Battery State		
Grid Side	• O/U Voltage, O/U Frequency, Surge Protection (MOV)				• Phase Voltage, Frequency, Power, Power Factor		
Load Side	• Overloads, Short circuit, Surge Protection (MOV)				• Voltage & Current, Frequency, Power, Export KVAh.		
System Protection	• Over Temperature				• Mode of Operation, Active Faults, Status Mimic		
E. MISCELLANEOUS							
Switchgear Protection	MCB/MCCB provided on PV, Battery, Load & Grid path.						
LED Indications	Mains On, Alarm, Buzzer Mute.						
Data Port (RS485/ RS 232)	Optional (Available on Request)						
Remote monitoring	Optional through GPRS based Modem						
Ingress Protection	IP-20 (Indoor Type)						
Cooling Method	Force Cooling(Temp Controlled)						
Operating Temperature	0-50 degrees (without Derating)						
Humidity	Max. 95% Non-Condensing						
Altitude	1000m above sea level						
Color Shade	RAL7035/ DA GREY HE15005						
Dimensions (H X W X D)	1040X650X965	1900X1050X800			2125 X 1200 X 1200		