

Hybrid MPPT PCU · three phase

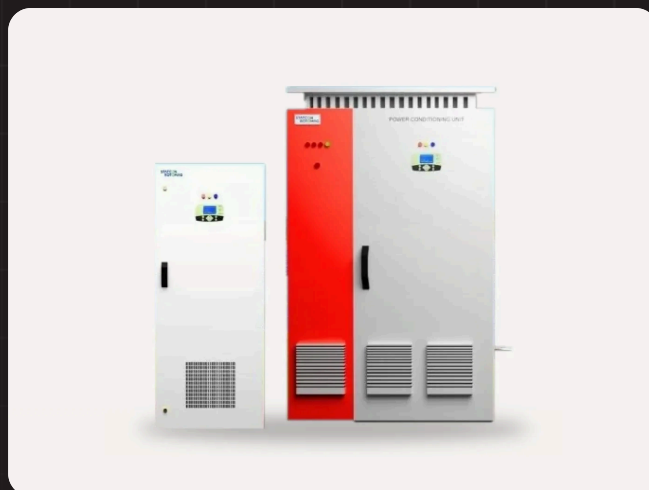
HBD series three-phase hybrid inverter

Genuine hybrid, not just off-grid. Grid-tie inverters with storage, from 5 to 250 kVA.

5-250 kVA · 48 to 576 V

Three phase

Designed and built in India



5-250 kVA

three-phase ratings

94 %

peak charging efficiency

>94 %

peak inverter efficiency (large models)

3

priority working modes

Overview

Hybrid inverters for unreliable grids

The HBD series solves the two problems that unreliable grids and power cuts bring: intermittent electricity and high electricity costs. These are grid-tie inverters with storage that also run standalone when there is no grid. They store energy in the batteries, export unused solar power to the grid, or store it and blend it with the grid as programmed, in a 'behind-the-meter' set-up.

Unique features

- ✓ **Bi-directional.** Seamless switching to and from the grid (import and export) and battery, with high-efficiency MPPT
- ✓ **Grid-interactive.** Blends solar and grid power for optimisation
- ✓ **DSP-based Active Front End** technology with IoT for flexible, smart energy
- ✓ **IEC certified.** IEC certifications available
- ✓ **Behind-the-meter.** Without a net-metering policy, store solar energy in the battery and blend it with the grid at high-tariff times, or with a DG set to optimise it
- ✓ **Easy to monitor.** Optional GPRS-based remote monitoring and control
- ✓ **Three priority modes:** HBD with export, HBD without export, off-grid

Key benefits

- ✓ **Pure sine wave,** recommended for a longer life of industrial and commercial equipment
- ✓ **Intelligent charging:** 3-stage (float, bulk, absorption) for lead-acid; communication-based charging for lithium available
- ✓ **Compatible charger** for flooded lead-acid tubular, gel and VRLA; lithium on request
- ✓ **Energy shift:** store power and use it later
- ✓ **Runs jerk loads** such as air conditioners
- ✓ **Protection** against grid fluctuations, overload, short circuit, array reverse, battery reverse and thermal fluctuations
- ✓ **Galvanic isolation at output,** ideal for rural and microgrid use
- ✓ **Long life** of 15+ years, with almost zero servicing
- ✓ **Large display** of inverter, solar and battery data

— Low voltage, 48 V

HBD 5–15 kVA, three phase

	5 kVA / 48 V	8 kVA / 48 V	10 kVA / 48 V	15 kVA / 48 V
Model number	HBD-048-05K-3P	HBD-048-008K-3P	HBD-048-010K-3P	HBD-048-015-3P
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 channels / inputs	1/1			
Max. open-circuit PV volts (Voc)*	190 V			
MPPT voltage range (Vmp)*	75–160 V			
Max. SCC output amps	100	160	200	300
Peak charging efficiency	94%			
B. Solar inverter				
Nominal capacity (total)	5 kVA	8 kVA	10 kVA	15 kVA
Output amps per phase	6	9	12	17
Nominal battery voltage	48 V			
Output voltage / frequency / phase	400 V (±2%) / 50 Hz / 3P+N			
Load power factor	0.8 to unity			
Peak efficiency	>86%		>88%	
Overloads: 60 s / 30 s / 5 s	101–110% / 111–125% / 126–150%			
Auto bypass	Provided			
Anti-islanding / power export to grid	Provided (as per IEC 62116 and IEC 61727)			
C. Grid charger				
Grid voltage operating range	400 V (+10% / –20%)			
Grid frequency operating range	50 Hz (+5% / –5%)			
Max. grid import power	7.5 kVA	12 kVA	15 kVA	22.5 kVA
Dimensions (H x W x D, mm)	750 x 530 x 897.45			

— High voltage, 120 V, 240 V and 360 V

ECO-HBD 10-50 kVA, three phase

	10 kVA / 120 V	15 kVA / 120 V	15 kVA / 240 V	20 kVA / 240 V	25 kVA / 240 V	30 kVA / 240 V, 360 V	40 kVA / 240 V, 360 V	50 kVA / 240 V, 360 V
Model number	ECO-HBD-120-010K-3P	ECO-HBD-120-015K-3P	ECO-HBD-240-15K-3P	ECO-HBD-240-25K-3P	ECO-HBD-240-25K-3P	ECO-HBD-240-30K-3P ECO-HBD-360-30K-3P	ECO-HBD-240-40K-3P ECO-HBD-360-40K-3P	ECO-HBD-240-50K-3P ECO-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 channels / inputs	1/1							
Max. open-circuit PV volts (Voc)*	320 V		650 V			650/820 V		
MPPT voltage range (Vmp)*	165–280 V		330–570 V			330–570 / 495–681 V		
Max. SCC output amps	80	120	60	80	100	120/80	160/108	200/135
Peak charging efficiency	94%							
B. Solar inverter								
Nominal capacity	10 kVA	15 kVA	15 kVA	20 kVA	25 kVA	30 kVA	40 kVA	50 kVA
Output amps per phase	12	17	17	23	29	35	46	58
Nominal battery voltage	120 V		240/360 V					
Output voltage / frequency / phase	400 V (±2%) / 50 Hz / 3P+N							
Load power factor	0.8 to unity							
Peak efficiency	>89%		>90%			>92%		
Overloads: 60 s / 30 s / 5 s	101–110% / 111–125% / 126–150%							
Auto bypass	Provided							
Anti-islanding / power export to grid	Provided (as per IEC 62116 and IEC 61727)							
C. Grid charger								
Grid voltage operating range	400 V (+10% / –20%)							
Grid frequency operating range	50 Hz (+5% / –5%)							
Max. grid import power	15 kVA	22.5 kVA	22.5 kVA	30 kVA	37.5 kVA	45 kVA	60 kVA	75 kVA
Dimensions (H x W x D, mm)	700 x 550 x 845		800 x 550 x 845			900 x 650 x 965		

— High voltage, 240 V to 480 V

ECO-HBD 60-250 kVA, three phase

	60 kVA / 240 V, 360 V	80 kVA / 240 V, 360 V	100 kVA / 240 V, 360 V	125 kVA / 360 V, 480 V	150 kVA / 360 V, 480 V	200 kVA / 360 V, 480 V	250 kVA / 480 V
Model number	ECO-HBD-240-60K-3P ECO-HBD-360-60K-3P	ECO-HBD-240-80K-3P ECO-HBD-360-80K-3P	ECO-HBD-240-100K-3P ECO-HBD-360-100K-3P	ECO-HBD-360-125K-3P ECO-HBD-480-125K-3P	ECO-HBD-360-150K-3P ECO-HBD-480-150K-3P	ECO-HBD-360-200K-3P ECO-HBD-480-200K-3P	ECO-HBD-480-250K-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 channels / inputs	3/3						4/4
Max. open-circuit PV volts (Voc)*	650/820 V		820/900 V				900 V
MPPT voltage range (Vmp)*	330–570 / 495–681 V			495–681 / 660–800 V			660–800 V
Max. SCC output amps	235/157	314/209	392/261	326/245	392/294	522/392	490
Peak charging efficiency	94%						
B. Solar inverter							
Nominal capacity	60 kVA	80 kVA	100 kVA	125 kVA	150 kVA	200 kVA	250 kVA
Output amps per phase	69	92	115	144	173	231	289
Nominal battery voltage	240/360 V		360/480 V				480 V
Output voltage / frequency / phase	400 V (±2%) / 50 Hz / 3P+N						
Load power factor	0.8 to unity						
Peak efficiency	>92%		>94%				
Overloads: 60 s / 30 s / 5 s	101–110% / 111–125% / 126–150%					101–110% / 111–120% / 121–130%	
Auto bypass	Provided						
Anti-islanding / power export to grid	Provided (as per IEC 62116 and IEC 61727)						
C. Grid charger							
Grid voltage operating range	400 V (+10% / –20%)						
Grid frequency operating range	50 Hz (+5% / –5%)						
Max. grid import power	90 kVA	120 kVA	150 kVA	188 kVA	225 kVA	250 kVA	300 kVA
Dimensions (H x W x D, mm)	1650 x 800 x 850		1900 x 800 x 1050		2125 x 1200 x 1200		

— All models

General specifications

E. Miscellaneous			
Switchgear protection	MCB/MCCB provided on PV, battery, load and grid path	LED indications	Mains on, alarm, buzzer mute
Data port (RS-485 / RS-232)	Optional (available on request)	Remote monitoring	Optional, through GPRS-based modem
Ingress protection	IP20 (indoor type)	Cooling method	Forced cooled (temperature controlled)
Operating temperature	0–50 °C (without derating)	Humidity	Max. 95%, non-condensing
Altitude	1000 m above sea level	Colour	RAL 7035 / DA grey HE 15005

— D. Protections and display parameters

Protections		Display parameters
PV side	Reverse polarity, PV power limit, surge protection (MOV)	Voltage, charger output amps, power, cumulative energy
Battery side	Reverse polarity, over/under voltage, current limit	Voltage, current, battery state
Grid side	Over/under voltage, over/under frequency, surge protection (MOV)	Phase voltage, frequency, power, power factor
Load side	Overloads, short circuit, surge protection (MOV)	Voltage and current, frequency, power, export kWh
System	Over-temperature	Mode of operation, active faults, status mimic

* Revised Voc and Vmp effective from 21 September 2023.

The above models are compatible with lead-acid batteries only. Lithium compatibility requires extra hardware and software (at extra cost), which is factory fitted only.

Statcon Energiaa Pvt. Ltd. reserves the right to modify or withdraw any of the ratings or technical specifications. Other customised ratings are available on request.