

— Off-grid solar MPPT PCU · single phase

Bullet solar MPPT PCU

So smart, so powerful, so reliable. Bullet 3024 and Bullet 3524 in an all-metal body.

24 V · 25.6 V lithium

Bullet 3024 and 3524

Designed and built in India



2200–3000 W

max. PV modules

70–100 A

max. charging current

200 %

overload capability

<15 ms

changeover in UPS mode

— Overview

An off-grid solar inverter built for heavy loads

Bullet is a single-phase solar MPPT power conditioning unit for homes and small businesses. An IGBT-based MPPT charger and a DSP-controlled pure sine wave inverter run heavy loads on solar, battery or grid, with multiple modes to make the most of solar generation.

- ✓ **Runs heavy loads.** Powers a 1 HP motor pump with the 3024 model and handles a 1.5-ton inverter AC with the 3524.
- ✓ **Lithium fast charge.** Selectable lithium charging profile and rapid charging from solar and grid: 70 A / 18 A on the 3024, 100 A / 30 A on the 3524.
- ✓ **More power.** Connect more panels with a higher MPPT rating: 2200 W on the 3024, 3000 W on the 3524.
- ✓ **Smart modes.** Multiple modes of operation maximise PV generation and help you become an independent energy user.
- ✓ **All-metal body.** A full heavy metal body acts as armour and gives a long product life.

Two models

Bullet 3024: up to 2200 W of PV, 70 A charging, 415 x 357 x 160 mm.

Bullet 3524: up to 3000 W of PV, 100 A charging, 475 x 400 x 185 mm.

Highlights

Pure sine wave output

UPS and wide-range modes

DSP-based controller

16 x 2 backlit display

Works with lead-acid and lithium

Bullet 3024		Bullet 3524
Nominal DC voltage	24 V / 25.6 V for lithium	
MPPT charger		
Type of charger / no. of MPPT channels	MPPT / one	
Switching element	IGBT	
Max. connected PV modules	2200 W	3000 W
Max. MPPT output current / max. battery charging current	70 A	100 A
Max. open-circuit PV voltage	110 V	
MPPT voltage range	35–88 V	
Max. input PV current	40 A	50 A
MPPT peak efficiency	94%	92%
Solar inverter		
Input power at peak load	2200 W	3000 W
Switching element	MOSFET	
Nominal output voltage / frequency	220 V / 50 Hz	
Output voltage range (at nominal battery volts)	180–220 V	
Max. output nominal current	8 A	9.5 A
Overloads	100–125% (120 s), 126–150% (60 s), 151–200% (5 s), >200% (immediate)	
Overload restart (not in UPS mode)	3 times auto restart, then manual reset	
Controller / output type	DSP based / pure sine wave	
Input source	PV / battery / grid	
Peak inverter efficiency	>85%	
Total harmonic distortion	Less than 5%	
Changeover time: UPS mode / wide-range mode	Less than 15 ms / less than 25 ms	
No-load losses	1.5 A	2.0 A
UPS mode (IT loads) / wide-grid mode (non-IT loads)	Provided / provided	
Battery		
Wake-up circuit	Included	
Battery under-cut alarm	22.2 V (auto adjustable) / lithium 24.2 V (settable)	
Battery under-cut	21.6 V (auto adjustable) / lithium 24.0 V (settable)	
Float charging voltage (factory settable)	26.4 V tubular / 27 V SMF / 26.8 V flat plate / 28.8 V lithium	
Boost charging voltage (factory settable)	29.4 V tubular / 27.6 V SMF / 27.4 V flat plate / 28.8 V lithium	
Grid charger		
Grid operating range, wide-UPS mode	120–280 V (±10 V)	
Grid under / over cut recovery, wide-UPS mode	135 V / 265 V (±5 V)	
Grid operating range, UPS mode	180–260 V (±10 V)	
Grid under / over cut recovery, UPS mode	195 V / 245 V (±5 V)	
Grid input frequency range	47–53 Hz	
Max. battery charging current from grid	18 A (settable)	30 A (settable)
Input source supported	Grid / generator	

Environment and mechanical

	Bullet 3024	Bullet 3524
Operating temperature	0–50 °C ambient	
Max. relative humidity at 25 °C	95% (non-condensing)	
Degree of protection	IP20	
Dimensions (L x W x H)	415 x 357 x 160 mm	475 x 400 x 185 mm

Display, protections and indications

	Details
Protections	PV: reverse polarity, battery reverse power, PV power limit. Battery: under-voltage cut, over-voltage cut, reverse polarity, overcharge limit (BCL), battery fuse. Grid: over-voltage, under-voltage, over-frequency, under-frequency, grid fuse fail. Load: overload, short circuit, over-heat, output low, grid back-feed, prevents phase-to-phase grid supply.
Display parameters	PV: voltage, amps, power, today's kWh, total kWh generation. Battery: voltage, amps, charge / discharge status. Grid: voltage, frequency. Load: voltage, load %, frequency. System: operating modes (UPS / wide range), priority selection, grid charging enable / disable, battery status (charging / discharging). Start-up: welcome, firmware versions.
Display faults	PV: PV over-voltage. Battery: battery under-voltage, battery over-voltage. Grid: back-feed, under / over voltage, fuse fail. Load: overload, output short circuit. System: over-temperature.
Audio buzzer	Overloads, short circuit, low battery alarm, battery under-cut, change in grid status (beep), grid fuse fail, PV over-voltage, grid over-voltage
Front panel LEDs	Power on, inverter on, SPV present / SPV charging, grid present / grid charging, battery under-cut / alarm, fault
Front panel switches	Reset for system on/off, up, down, back, enter
Display type	16 x 2 alphanumeric display with backlight

Specifications are subject to change without prior notice due to constant improvement in design and technology.