PRELIMINARY DATASHEET · REV 0.1

BDC125K

125-kW Bidirectional Power Conversion System for Battery Energy Storage



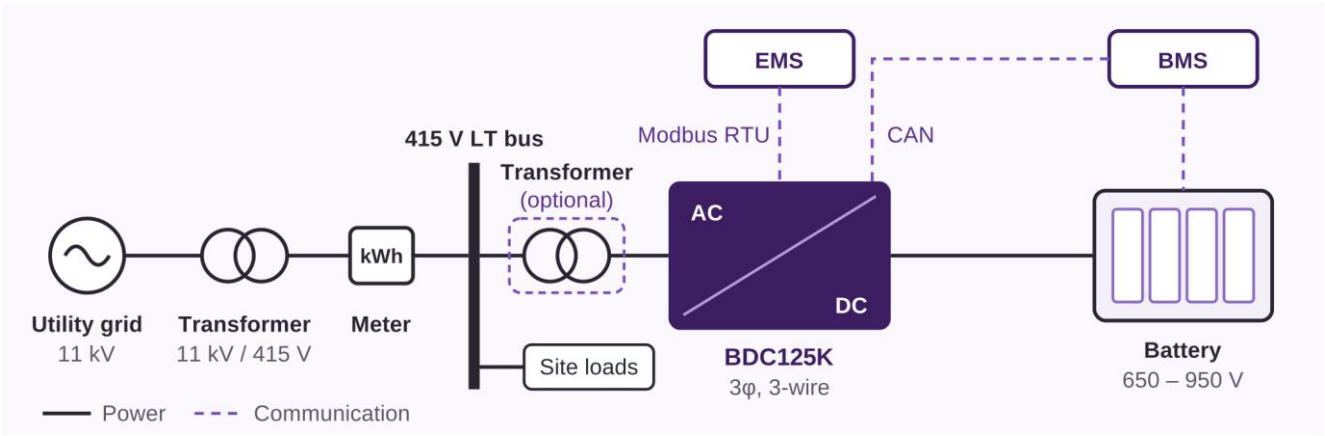
PRODUCT INFORMATION

BDC125K is a 125-kW bidirectional power conversion system (PCS) that links a battery string to the 415 V three-phase LT network. Its silicon-carbide power stage charges and discharges the battery on command from the site EMS while controlling active and reactive power at the point of connection.

Applications: BESS · Peak shaving & ToD arbitrage · Solar + storage (AC-coupled) · EV charging hub front-end

Key ratings: 125 kW / 125 kVA · 415 V, 3-phase 3-wire AC · 650 – 950 V DC · 2-level SiC power stage

APPLICATION



PRODUCT CHARACTERISTICS

- **Silicon-carbide power stage.** 2-level SiC MOSFET bridge for high efficiency in a compact footprint.
- **Grid-code ready.** Grid-support and protection functions designed to IS 16169, CEA connectivity standards and IEEE 1547.
- **Native BMS integration.** Isolated CAN link to the master BMS for limits, alarms and protective trips.
- **Made in India.** Designed, developed and assembled in India, with fully owned control firmware.

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BDC125K · Technical parameters

DC SIDE (BATTERY)	
Operating voltage	650 – 950 V
Max. DC voltage	1000 V
Max. DC current	200 A
AC SIDE (GRID)	
Rated power	125 kW / 125 kVA
Grid connection	3-phase, 3-wire + PE
Rated voltage	415 V line-to-line
Voltage range	360 – 460 V
Rated current	190 A
Frequency	50 Hz (47.5 – 52 Hz*)
Power factor	−1 to +1
Current THD	< 3 % at rated power*
POWER STAGE	
Topology	2-level, 3-leg SiC MOSFET active front end
Grid filter	LCL with active damping
Isolation	Transformerless; external isolation transformer for 4-wire loads
Peak efficiency	98.9 %
Cooling	Forced air, temperature-controlled
COMMUNICATION	
BMS interface	Isolated CAN
EMS interface	Modbus RTU
MECHANICAL & ENVIRONMENTAL	
Dimensions (W × H × D)	520 mm x 750 mm x 250 mm
Enclosure	Floor-standing, IP20
Operating temperature	−20 to +60 °C, derating above 55 °C
Relative humidity	0 – 95 %, non-condensing
Altitude	≤ 2000 m without derating
STANDARDS & COMPLIANCE	
Grid code	Designed to IS 16169, IEEE 1547 and CEA connectivity standards
Safety / EMC	IEC 62477-1; IEC 61000-6-2 / -6-4*
Certification	In progress

* Design target. Specifications are subject to change without notice.