

PrismaBox

500 - 1DC/1AC - 750/480

US reference edition | 277/480 Vac | 60 Hz



Presentation

PrismaBox 500 - 1DC/1AC - 750/480 is the US reference PrismaBox module for 277/480 Vac, 3-phase, 60 Hz storage and conversion systems.

Based on PCA (Port-Configurable Assembly) technology, it provides one AC interface and one high-voltage DC interface at system level.

PrismaBox integrates into Prisma Storage PCS cabinets or Power Conversion Kit (PCK) deployments and operates with Inview X+ supervision.

Key features

- 50 kW at 277/480 Vac, 3-phase, 60 Hz
- High efficiency for AC-DC and DC-AC conversion
- Hot-swappable 2RU module for low MTTR
- Compact design with high power density
- 750 Vdc nominal storage interface
- Redundant Bus A/B modular synchronization

Compatible with systems used in the following applications



Storage



Conversion

Technical characteristics

General	
Catalog name	PrismaBox 500 - 1DC/1AC - 750/480
Reference use	US 277/480 Vac, 3-phase, 60 Hz storage conversion
Dimensions (W x H x D)	493 x 692 x 88 mm (2RU module)
Weight	27 kg
Ingress protection	IP20 module; install in approved system enclosure
Cooling type	Fan-forced cooling
Casing material	Aluminium
Operating T / humidity	-40C to +70C, power derating above +50C / max RH 95% non-condensing
Storage / transport T	-40C to +70C / max RH 95% non-condensing
Altitude without derating	< 1500 m; derating above 1500 m: approx. 0.8% per 100 m, max 4000 m
AC 1 In/Out - US reference	
Nominal voltage / power	3 x 277/480 Vac, 3-phase, 60 Hz / 50 kW
Connection	3-wire at module power stage; neutral creation or bonding handled at system level
Voltage range (L-L)	260 to 537 Vac; low-voltage operation subject to current-limit derating
Nominal line current	Approx. 60 A per phase at 50 kW / 480 Vac
Aggregate AC current limit	Approx. 70.8 A per module, based on two internal AC port limits
Power factor / THDi	> 0.99 above 50% load / < 3% at nominal conditions
Frequency	60 Hz nominal; synchronization range for 60 Hz operation: 55 to 65 Hz
Peak efficiency AC to DC	> 98.5% at 50% load and nominal voltage
Short-time overload capacity	150% for 15 seconds
Short-circuit contribution	Current-limited; published reference approx. 130 A per phase for 500 ms in inverter mode
Voltage regulation	Static +/-1% from 10% to 100% load; dynamic <5% for 0-100-0 load step, approx. 100 ms recovery
DC 2 In/Out	
Nominal voltage / power	750 Vdc nominal / 50 kW module class
Voltage range	300 to 900 Vdc; full power above approx. 650-660 Vdc
DC current	Approx. 67 A at 750 Vdc nominal; aggregate port limit up to 80 A per module
Reverse polarity protection	Yes
Peak efficiency DC to AC	> 98.5% at 50% load and nominal voltage
Signaling and supervision	
Display	LEDs on module; 7-inch Inview X+ touchscreen at Prisma system level
System communication	CE+T redundant Bus A/B for modular synchronization; Ethernet to Inview
Remote ON/OFF	At rear terminal / shelf or system interface
US standards reference	
Safety / interconnection	UL 1741, UL 1741-SB and IEEE 1547 by released configuration; confirm certificate and firmware package
EMC / EMI	FCC Part 15 Class A; final test applicability by enclosure and installation configuration

Specifications can change without notice. Final ordering codes, certification status, enclosure details, and project settings are confirmed in the released configuration package.

PrismaBox 500

US reference module | 1DC/1AC | 750 Vdc / 480 Vac



<p>AC1 IN/OUT</p> <p>277/480 Vac</p> <p>3-phase, 60 Hz</p>	<p>DC2 IN/OUT</p> <p>750 Vdc</p> <p>300-900 Vdc range</p>	<p>POWER</p> <p>50 kW</p> <p>per module at 480 Vac</p>	<p>FORM FACTOR</p> <p>2RU / 27 kg</p> <p>493 x 692 x 88 mm</p>
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US operating envelope

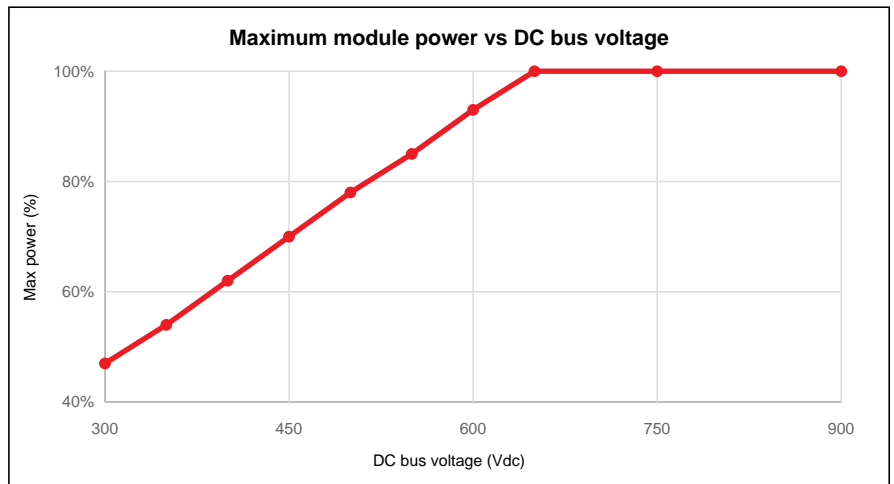
PrismaBox 500 is framed for North American 277/480 Vac, 3-phase, 60 Hz deployments. The module presents one system-level AC interface and one high-voltage DC interface for storage and conversion applications. Internally, the current STO implementation parallels two AC port circuits and four DC sub-port circuits to create a single 50 kW-class AC/DC building block.

<p>Modular service</p> <p>Capacity scales by module count. Hot-swappable modules support fail-small service behavior in Prisma PCS or PCK configurations.</p>	<p>Inview X+ supervision</p> <p>Module LEDs and Inview X+ at system level provide local monitoring, control, alarms, and remote enable/disable interface points.</p>	<p>Project-defined safety</p> <p>PrismaBox is non-isolated between AC and DC power ports. Grounding, IMD behavior, LOTO isolation, and any transformer are engineered at system level.</p>
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DC power availability at 480 Vac reference

The PrismaBox 500 DC interface is optimized for a nominal 750 Vdc storage bus. Full module power is available above approximately 650-660 Vdc; below that threshold, available power is reduced to remain inside current limits.

DC bus voltage	Max module power
300 Vdc	47%
350 Vdc	54%
400 Vdc	62%
450 Vdc	70%
500 Vdc	78%
550 Vdc	85%
600 Vdc	93%
650 Vdc	100%
750 Vdc	100%
900 Vdc	100%



US project notes

Native fit	480 Vac C&I; storage, peak shaving, renewable firming, resilience, and microgrid projects using a nominal 750 Vdc storage bus.
Voltage boundary	DC systems above 900 Vdc are outside the native PrismaBox 500 operating window and require an intermediate DC/DC stage or alternate architecture.
Non-isolated topology	There is no galvanic isolation between AC and DC ports. Grounding, insulation monitoring, transformer needs, and visible-break LOTO isolation are system-level design items.
Certification boundary	UL 1741-SB / IEEE 1547 applicability is configuration- and firmware-dependent. Confirm the exact certificate package before utility or AHJ submittal.

This sheet is intended as a customer-facing US reference for PrismaBox. Final published specifications and compliance statements should be aligned with the released CE+T configuration package.

