

# Enhanced performance for PV installations

## 1000V Array Box

A string combiner for 1000 Vdc that protects and enhances the performance of PV installations.



### Solution at a glance

The 1000V Array Box is a PV string combiner box installed between the PV modules and the inverter, providing protection and performance monitoring for PV power plants.

#### Higher return on investment

- Reduced CAPEX: highly cost competitive range, offers capability to connect weather sensors
- Reduced OPEX: precise power production tracking, failure and aging detection of PV modules

#### Designed for reliability

- Isolating polyester enclosure reinforced with fiberglass for corrosion and pollution resistance
- Optimal cooling of switch-disconnector and PV fuses to increase usage life
- Extensive safety, quality and reliability testing
- Robust design through rigorous Custom Reliability Testing

#### Product applications



Centralized PV power plants



Centralized commercial grid-tie

#### Flexible

- Fits every PV plant design and module technology with a range of 8/16/24 input channels and 160/300 A STC output currents
- Range available with or without monitoring of string currents
- On-field weather sensors easily connected inside the Array Box to avoid any additional equipment

#### Easy-to-service

- Conext™ Advisor 2 identifies the service needs of the Array Box
- Motorized switch controlled remotely by Conext Advisor 2 accelerates lockout-tagout procedure and allows an easy return to operation

#### Easy-to-install

- Flexible mounting options; mounting on a support bracket or on a plinth for independence from the racking system; or attached to the racking system for less civil work
- Capabilities to directly connect up to 2 PV string cables and 2 DC output cables per polarity

# Technical specifications

Device short name	AB08-160	AB16-160	AB16-300	AB24-300
<b>Electrical specifications</b>				
<b>DC input</b>				
Number of inputs	8	16	16	24
Max. voltage in open circuit	1000 Vdc	1000 Vdc	1000 Vdc	1000 Vdc
Max. input current in short circuit	25 A	25 A	25 A	25 A
Max. input current in short circuit at STC	20 A	20 A	20 A	20 A
<b>DC output</b>				
<b>Max. output current in short circuit</b>				
Ambient temperature < 40°C	200 A	200 A	375 A	375 A
Ambient temperature < 45°C	180 A	200 A	350 A	350 A
Ambient temperature < 50°C	160 A	200 A	315 A	315 A
<b>Max. output current in short circuit at STC</b>				
Ambient temperature < 40°C	160 A	160 A	300 A	300 A
Ambient temperature < 45°C	145 A	160 A	280 A	280 A
Ambient temperature < 50°C	125 A	160 A	250 A	250 A
<b>AC supply</b>				
Voltage at 50/60 Hz	230 V + 10 / -15%			
<b>Environmental specifications (in operation)</b>				
Ambient temperature	-25°C to +40°C at full power, +50°C with derating <sup>1</sup>			
Relative humidity	0 to 100% condensing			
Altitude	0 to 2000 m without derating			
<b>Mechanical specifications</b>				
<b>Enclosure</b>				
Type	Outdoor use, full insulating cabinet (polyester reinforced with fiberglass)			
Fire withstand	Self-extinguishing (does not propagate fire during the glow-wire test at 960 °C), halogen-free			
Color	RAL 7035, Light Grey			
<b>Product</b>				
Dimensions (H x W x D)	84.7 x 63.6 x 30.0 cm (33.3 x 25.0 x 11.8 in)	105.6 x 85.2 x 35.0 cm (41.6 x 33.5 x 13.8 in)	105.6 x 85.2 x 35.0 cm (41.6 x 33.5 x 13.8 in)	105.6 x 85.2 x 35.0 cm (41.6 x 33.5 x 13.8 in)
Weight (protect / monitored / controlled)	33.0 / 37.0 / 40.0 kg (72.8 / 81.6 / 88.1 lb)	58.0 / 62.0 / 65.0 kg (127.9 / 136.7 / 143.3 lb)	63.0 / 67.0 / 71.0 kg (138.9 / 147.7 / 156.5 lb)	67.0 / 71.0 / 75.0 kg (147.7 / 156.5 / 165.3 lb)
Mounting	Floor-standing on support, wall-fixing or attached with lugs (must be installed with protection from direct sunlight)			
Degrees of protection	IP54, IK10			
<b>Features</b>				
<b>Protection</b>				
DC inputs overcurrent protection	Protection on both polarities, gPV fuses, size 10 x 38 mm, max. rating 30 A (fuses not provided with product)			
DC overvoltage protection	Surge arrester, 1000 Vdc, type 2, I <sub>max</sub> 40 KA			
AC supply overvoltage protection	Surge arrester, 230 Vac, type 2, I <sub>max</sub> 40 KA			
Electric shock protection	Class II equipment			
<b>Monitoring and control<sup>1</sup></b>				
DC input currents	0 to 30 A, accuracy +/- 0.5% full scale (one measurement per input)			
DC voltage	0 to 1000 V, accuracy +/- 0.5%			
Internal temperature	-30 to +120°C, accuracy +/- 1°C			
Temperature sensor input <sup>3</sup>	-30 to +120°C, accuracy +/- 1°C, for external PT1000 2 wires temperature sensor			
2 x irradiance sensor inputs <sup>3</sup>	0 to 1600 W/m <sup>2</sup> , accuracy +/- 0.5% full scale, for external 4-20 mA irradiance sensor			
Communication	Profibus DP / RS485 and Modbus RTU / RS485 link			
Switch disconnecter remote control <sup>1</sup>	Motor pack and MX shunt release or MN undervoltage release			
<b>Compliance</b>				
LV switchgear	IEC / EN 61439-1 and 61439-2			
CE marking	According LV directive 2006 / 95 / CE and EMC directive 2004 / 108 / CE			
<b>Available models</b>				
Protect: protection only	PVSAB31101	PVSAB31201	PVSAB31301	PVSAB31401
Monitored: protection and monitoring	PVSAB31111	PVSAB31211	PVSAB31311	PVSAB31411
Controlled MX: Protection, monitoring and switch control (Shunt release)	PVSAB31121	PVSAB31221	PVSAB31321	PVSAB31421
Controlled MN : Protection, monitoring and switch control (Undervoltage release)	PVSAB31131	PVSAB31231	PVSAB31331	-
Optional weather expansion board <sup>2</sup>	PVSAB31021	PVSAB31021	PVSAB31021	PVSAB31021

Specifications are subject to change without notice.

<sup>1</sup> Array Box - Application Note AP02 - Current derating with temperature.

<sup>2</sup> For monitored and controlled models.

<sup>3</sup> With optional weather expansion board.

<sup>4</sup> For controlled models.