Array power

Direct PV array-connected DC/DC converters

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24 V DC power from PV arrays up to 1500 V

Phoenix Contact's portfolio of array-powered DC/DC converters offers alternatives to hard-wired AC power sources for PV data acquisition systems and other direct array-powered applications.

Your advantages:

- 24 V DC directly from the array
- LED and remote function monitoring
- Parallel operation for increased output
- DC UPS options for reserve power
- UL 1741/62109 listed

Phoenix Contact array-powered DC/DC converters have high isolation and surge voltage resistance to permit safe operation in direct array-connected applications. They are suitable for use with negatively grounded, positively grounded, or floating array conductor PV systems. The TRIO 1500 V DC/DC converter also features remote DC-OK function monitoring and tool-free installation with push-in connection terminal blocks.

TRIO-PS-2G/1500DC/24DC/8 combiner box installation.

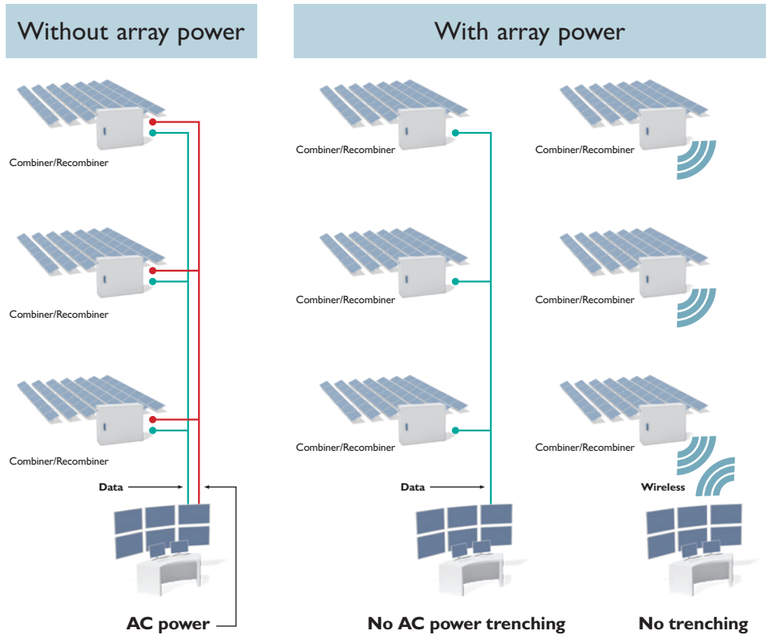
Power for PV data acquisition with minimized construction costs

AC power distributed via conduit and trenched cables is one of the most frequently used methods of providing power for PV data acquisition hardware. However, this method has high upfront construction costs and limited flexibility when making changes. Array-powered DC/DC converters connect directly to PV arrays and can supply power for data acquisition systems, eliminating the need for AC power distribution and reducing construction costs. When used with wireless communications, completely autonomous data systems are possible, eliminating all wiring requirements.

The wide voltage input ranges of array-powered DC/DC converters ensure stable operation over input ranges that exceed that of most inverters. Combined with low power requirements, in many applications they will turn on in morning low-light conditions prior to inverters and turn off in evening low-light conditions after inverters. This allows them to be used in applications where overnight operation is not required. Combined with a DC UPS, extended 24-hour or reserve operation is possible.

Array power DC/DC converters can also be installed in parallel to increase the output power or for a redundant operation. Please see the operating instructions for parallel or redundant operation installation requirements.

In powering distributed PV data acquisition systems, array-powered DC/DC converters can assist in supporting the efficient asset management of solar arrays. They offer the advantages of hard-wired power distribution systems as well as the flexibility of self-powered systems. By utilizing the distributed nature of DC interconnections within an array, cabling to power PV data acquisition hardware is minimized. In addition, 1000 V and 1500 V nominal input array voltage models allow both C&I and utility-scale installations. Low-voltage 24 V DC output is compatible with most data acquisition hardware such as weather data, solar irradiance, back-of-module temperatures, and combiner box monitoring. The 24 V DC output can also power inverter control systems, cameras, and lighting.



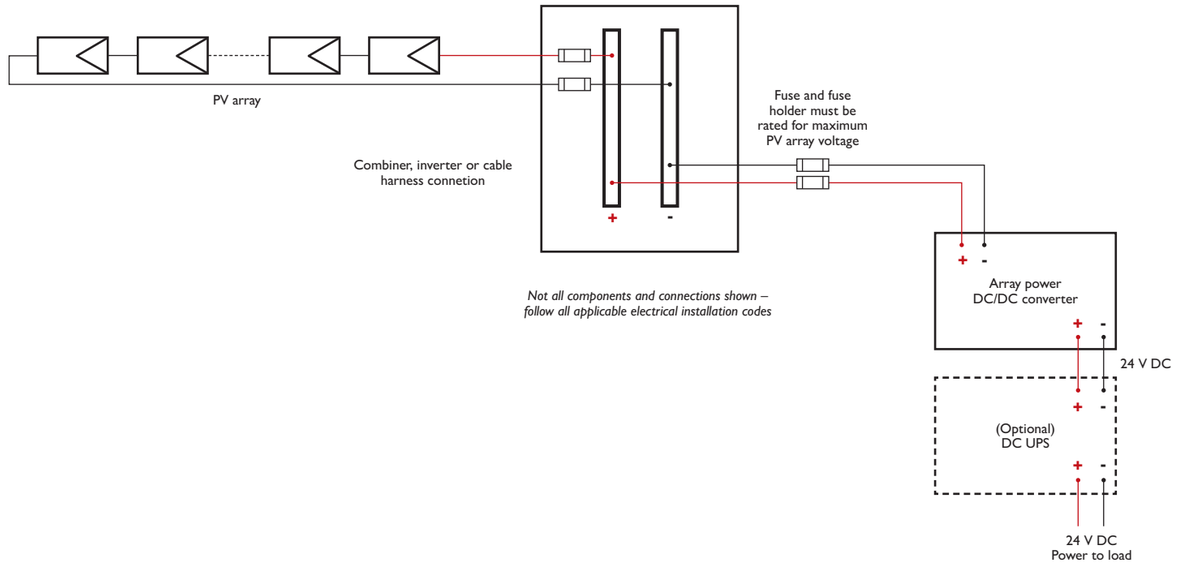
Product overview

		
	1000 V PV arrays	**1500 V PV arrays**
Input voltage	300 V DC ... 1000 V DC	500 V DC ... 1.650 V DC
Output voltage	24 V DC ±1 %	24 V DC ±1 %
Input fuse *	1 A	2 A
W x H x D	55 x 90 x 84 mm	88.5 x 130 x 160 mm
Type	UNO-PS/350-900DC/24DC/60W	TRIO-PS-2G/1500DC/24DC/8
Order Number	2906300	1075240
Output current	2.5 A	8 A
Temperature range (operating)	-25 °C ... 70 °C (> 55° C derating : 2.5%/K)	-25 °C ... 70 °C (> 60 °C derating: 2.5 %/K)
Ambient temperature (start-up type tested)	-40 °C	-40 °C
Approvals	UL 1741 / IEC 62109-1	UL 62109-1 / EN 62109-1

* Fuse and fuse holder must be rated for maximum PV array voltage

Application example

Array-powered DC/DC converters can be easily connected directly to PV arrays.



Ongoing communication with customers and partners worldwide

Phoenix Contact is a global market leader based in Germany. We are known for our future-oriented components, systems, and solutions in the fields of electrical engineering, electronics, and automation. With a global network reaching across more than 100 countries with over 17,400 employees, we stay in close contact with our customers, something we believe is essential for success.

Our wide variety of innovative products makes it easy for our customers to find future-oriented solutions for multiple applications and industries. We focus predominantly on the fields of energy, infrastructure, process, and factory automation.

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