

SolarSpec™

INTERCONNECT SOLUTIONS FOR THE SOLAR INDUSTRY



molex®

The background of the entire page is a photograph of a vast solar farm. The solar panels are arranged in neat rows and recede into the distance, creating a strong sense of perspective. The sky is a clear, bright blue, and a large, bright sun flare is visible in the upper left quadrant, partially obscuring the top edge of the panels. The overall lighting is bright and clean, emphasizing the technology and the natural environment.

SolarSpec™ Interconnect Solutions

Developed to address key applications within the global solar industry, our SolarSpec products are specifically designed to support efficient, reliable and flexible solar interconnections.



Molex offers standard and custom design solutions that utilize many of our industry-leading mating interfaces. By leveraging these proven and reliable interfaces, we can help you design a cost-effective interconnect system to meet the needs of your application.

SolarSpec™ solutions are designed for unique applications and environments that have to meet the many energy and solar design requirements, including:

- UL 1703
- IEC
- IP67/IP68/IP69
- Weatherproof, environmental and sealed connectors
- NEC and NEC2008 requirements
- Long-term UV and ozone resistance
- RoHS compliance

The SolarSpec designation ensures that the unique requirements of solar applications are being addressed through the use of proven technology, solar-compliant materials and unmatched reliability in rugged environments.

We now offer solutions for photovoltaic panels, tracking systems and inverters. For applications such as residential and commercial rooftops, utilities, public buildings and solar farms, we offer junction boxes, DC Connectors and cable assemblies. For tracking system applications such as Concentrated Solar Power (CSP) and central receiver towers, we provide IP67 and UV-rated connectors and cordsets. And, for inverter applications, we offer custom interconnect products as well as a wide range of standard, off-the-shelf Molex products, including DC panel-mount and field attachable connectors.



► Connectivity Solutions for Photovoltaic Panels

Because of the growing demand for renewable energy sources, the manufacture of solar modules and photovoltaic arrays has advanced dramatically in recent years.

To reach critical mass and realize economies of scale, the PV solar industry is now looking into new and innovative ways to increase manufacturing efficiency. Equipment must also match customer warranties and maintain high standards of performance throughout its lifetime.

Working closely with leaders in the photovoltaic industry, Molex has developed a comprehensive range of interconnection products that specifically addresses these issues.



SolarSpec™ DC-Connector and Cable Assemblies

Reliable, rugged and durable, IP67-sealed, SolarSpec™ DC connectors with simple snap-lock mating and internal locking mechanism for superior safety are designed for direct connection to solar junction boxes, field installations and photovoltaic grid wiring and deliver quality and value to module manufacturers, installers and distributors.

- Lowest contact resistance when compared to equivalent DC connectors
- Accommodate 2.50mm² and 4.00 to 6.00mm² (14 and 12 to 10 AWG) cable
- TÜV- and UL-certified

SolarSpec™ DC cable assemblies, with proven long life cycle and optimum weather resistance, meet the demands of harsh and outdoor solar





PV Panel Applications

Junction Boxes are very critical components of each and every solar panel and are of great importance to panel manufacturers.

SolarSpec™ Junction Box

Molex designed the SolarSpec™ Junction Box to address the specific needs of panel manufacturers by simplifying their production process and reducing manufacturing costs.

- Allows for semi-automated or fully automated assembly
- SolderCharge™ SMT technology facilitates high-speed assembly
- Excellent thermal stability
- High current rating
- TÜV, UL and CSA certified



SolarSpec™ Next Generation Smart Junction Box

The modular concept of the SolarSpec Junction Box allows for maximum flexibility and easy upgrade of the PV Panel functionality as the electronic PCB is always placed in the Junction Box cover. The base assembly mounted onto the PV Panel always remains the same.



- Multiple cover assembly options are available to fit the same base panel assembly
 - Passive: Bypass protection function
 - Safety: Bypass, shut-off and arc protection
 - Monitoring: Functionality of Passive and Safety plus performance tracking on output levels and panel efficiencies, including remote diagnostics
 - Bypass, Safety and anti-theft protection
 - Security: Functionality of Passive, Safety and Monitoring plus theft protection, alert warning and security tracing
 - Maximum Power Point Tracking (MPPT), monitoring and communication
 - Power Optimization: Functionality of Passive, Safety, Monitoring and Security plus Maximum Power Point Tracking (MPPT) balances system output levels to ensure highest efficiencies are achieved

► Connectivity Solutions for Solar Inverters

When converting direct current (DC) from the photovoltaic array into alternating current (AC), solar inverters are often subjected to extreme environmental conditions. These applications typically call for waterproof/sealed interconnects.

We offer a wide range of Molex standard products that are already used in Solar applications, like SolarSpec™ DC Panel Mount and Field-Attachable connectors.

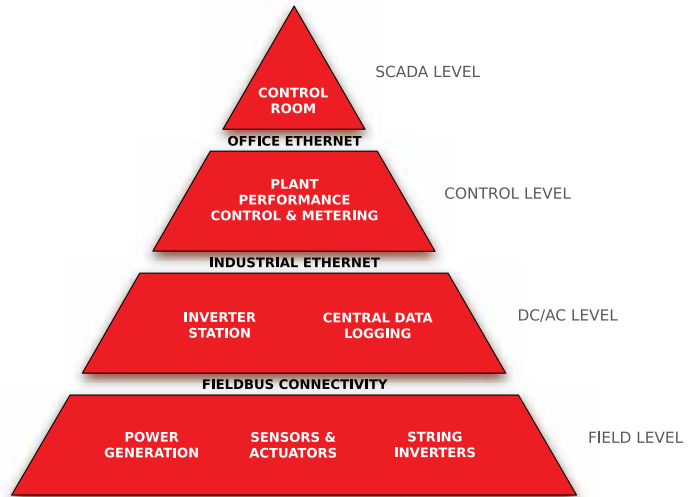
We offer solutions for specific applications and parameters, such as I/O Connectors, PCB Connectors and Cable Assemblies, Antenna solutions for Wireless Communication and User Interface-Membrane/Capacitive Switches.



➤ Connectivity Solutions for Solar Trackers and Concentrators

More energy falls on Earth's deserts in six hours than the world consumes in a year. Huge tracking systems and parabolic mirrors will be located in giant solar power plants. Different technologies, such as photovoltaic and concentrated solar power, will provide green energy to end users around the world.

These systems are precisely managed by inclination and positioning sensors, measurement and control units, motors and security cameras. Fieldbus network interface systems, such as CANopen are used for the measurement and data acquisition of the solar power plant.



Brad Industrial Networks and Connectivity Solutions

Molex provides all of the industrial I/O wiring systems and network communications for this equipment.

CONNECTIVITY

Connectors, cordsets and distribution boxes for sensors, actuators and bus network applications.

POWER

Modular, flexible wiring systems for power distribution and motor control.

CONTROL

Network I/O for on-field and in-cabinet applications.

COMMUNICATIONS

Network interface cards, switches, gateways, simulation software and diagnostic tools.



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one company > a world of innovation