

SOLAR SOLUTIONS

# GRID CONNECTIVITY + RELIABILITY

From panel to inverter, substation and energy storage





# EVERY CONNECTION COUNTS

When you can save time and money on each and every one

The demand for solar power continues to grow. And so does your need for more robust systems that deliver increased power and efficiency. When system size grows, complexity does too, as well as your costs for installation, operation and maintenance. You need cost-effective and reliable connections that are durable, no matter the environment. Connections that can be installed quickly, easily and accurately. Safe connections that won't overheat or be vulnerable to wildlife.



**That's why we make sure every connection counts - from early design to installation and commission, and especially during full operation.**

With over 60 years of experience dedicated to the energy industry, we understand your situation and are ready to help you overcome even the toughest challenge.

## YOUR CHALLENGES. OUR SUPPORT.

To meet your solar needs, we offer more design flexibility, compatibility with higher ampacity levels and proven solutions that help reduce installation time, labor and material costs.



## THE REAL COST OF CONNECTIONS.

A single bird tangled up on a power pole created a fire hazard that caused over \$9 million of damages, destroying acres of land and part of the solar farm substation. The customer hardened their overhead lines with TE Connectivity's Wildlife and Asset protection products reducing their risk of wildlife-induced outages by 90%.





# ONE CONNECTIVITY PARTNER

For cost-effective, reliable plug-and-play solutions

From panel to inverter, substation and energy storage – we are one source for your multiple connectivity needs. With innovative plug-and-play solutions and dedicated solar engineering consultancy, we'll show you why TE Connectivity equals more. We can support you no matter the architecture you select: trunk bus design, conventional, or floating.

## CONSULT

We provide upfront engineering advice - including cable management recommendations - that can maximize the efficiency of your whole system, drive down material and labor costs while ensuring electrical reliability.

## TEST

Our solutions are type-tested in our labs to help you streamline commissioning, reduce approval time and preventative maintenance requirements. Our harnesses are 100% routine-tested to ensure high reliability.

## DESIGN

We can collaborate with you to create customized solutions that are designed to be efficient. These include the configuration of fused and unfused harnesses, jumpers, connectors, trunk bus cables and disconnect boxes.

## TRAIN

Most solar farm outages are due to incorrect installation. We can help you increase installation accuracy by delivering tailored on-site installation training and competency assessment of your installers and supervisors.



Any connection can change the world

ENABLING MORE THAN

# 99 GW

SOLAR GENERATION WORLDWIDE OVER THE PAST TEN YEARS

## + EQUALS MORE

### + REDUCED TOTAL COST OF OWNERSHIP

Gain efficiency with one supplier for your solar farm connections. Our extensive portfolio offers design customization and configurability to save time and labor costs.

### + INSTALLER & ENGINEERING SUPPORT

Improve your bottom line with our dedicated solar engineering consultancy and installation training. We help you with voltage drop, cable management, wire sizing and installation efficiency.

### + EASY, FAST, SAFE INSTALLATION

Reduce installation time with our plug-and-play solutions. By keeping the number of components and steps to a minimum, we make installations intuitive.

### + GRID RELIABILITY

Rely on our high-quality brands and field-proven products that withstand harsh conditions. Our streamlined Customizable Trunk Solution reduces time required for future preventive and corrective maintenance.

### + GRID MONITORING

Build a more intelligent solar farm thanks to our string monitoring systems and our smart separable connectors with voltage sensors that provide real-life monitoring.

### + WILDLIFE & ASSET PROTECTION

Prevent wildlife-induced outages and reduce fire ignition sources with customizable solutions that insulate and protect overhead lines and substation equipment.



EXTREMES + DURABILITY

# EFFICIENCY AND PROFITABILITY

That endure tough conditions

A relentless dedication to materials science means our solar products are designed to last. They are built to withstand submersion leakage tests, temperature variations, UV exposure, moisture and mechanical conditions.

Our DC connectors are built for flame retardancy, are robust and resist animal intrusion. They are listed to UL, cUL and IEC standards, while our AC solutions comply with the IEEE, ANSI, IEC and GB applicable standards.

Our experience is built on the foundation of industry-leading quality brands. If you know Raychem, you know TE Connectivity. We are the inventors of heat shrink technology, and we have nearly three decades of proven performance in cold applied technology. Our products are trusted the world over for 'install and forget' reliability.

WHEN YOU HAVE MILLIONS OF CONNECTIONS, SAVINGS ADD UP.

UP TO **80%**

Reduced installation time

BY SWITCHING TO OUR SOLARLOK 2.0 DC PLUG CONNECTORS\*

UP TO **40%**

Material & labor savings

WITH OUR CUSTOMIZABLE TRUNK SOLUTION

\*Based on our comparison of installation time with our SOLARLOK crimping DC connectors

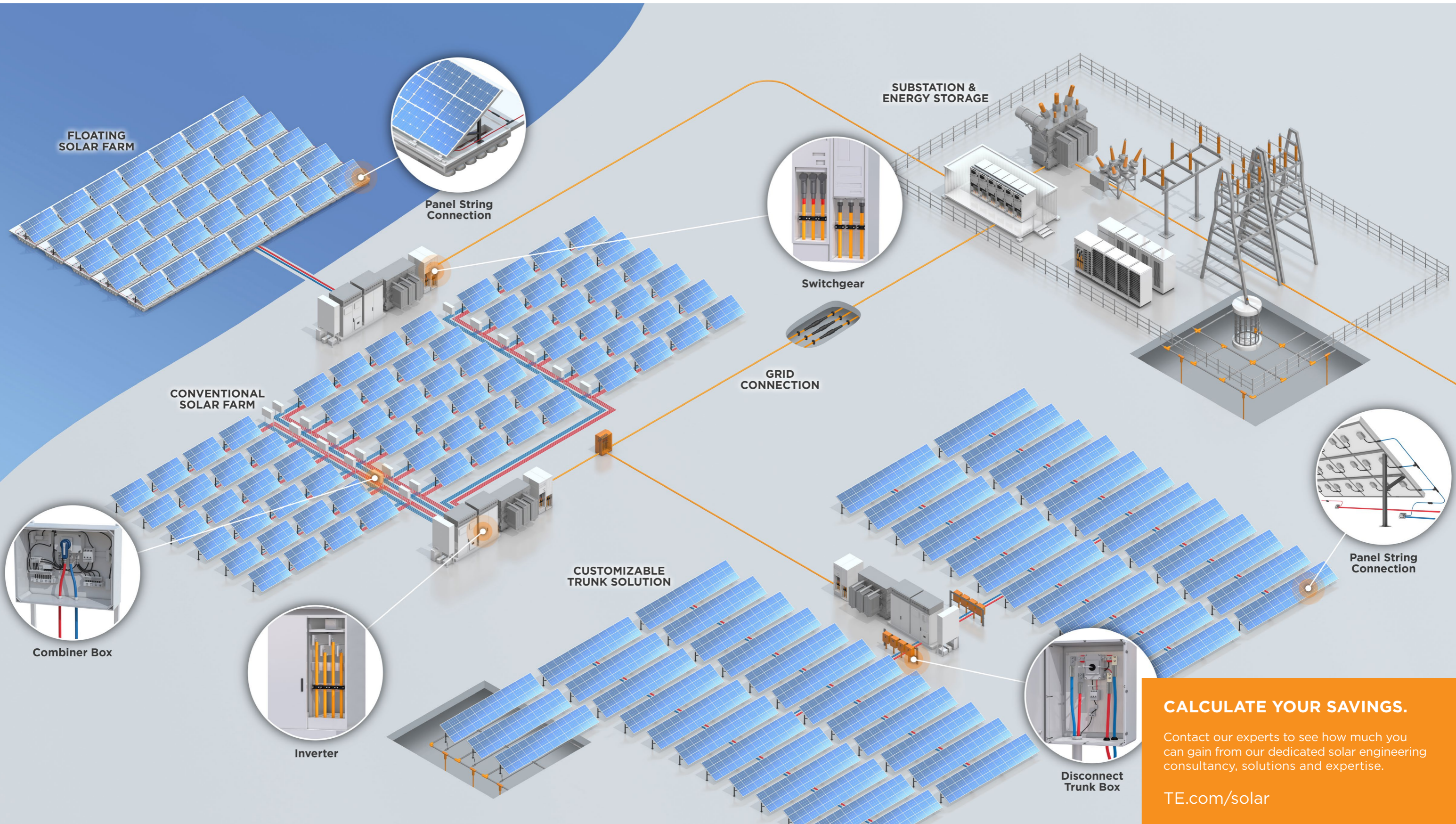


**POWERING EFFICIENCY THROUGH INNOVATION**

A large solar EPC successfully leveraged our new Customizable Trunk Solution, solar engineering consultancy, and on-site installation training. They were able to reduce installation time by 40%, while voltage losses were reduced to 1.5% for increased efficiency over the solar farm lifecycle.







**CALCULATE YOUR SAVINGS.**

Contact our experts to see how much you can gain from our dedicated solar engineering consultancy, solutions and expertise.

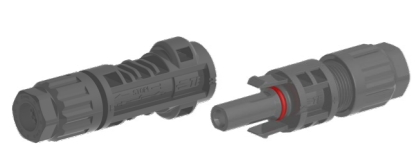
[TE.com/solar](https://www.te.com/solar)



## OUR SOLAR PORTFOLIO HIGHLIGHTS

### DC CONNECTIONS

Our SOLARLOK photovoltaic connectors are designed for easy, quick and reliable DC connections. With a precision-engineered design, they help achieve the lowest contact resistance to reduce power losses.



#### DC CRIMP CONNECTORS

Minimize power losses with precision contact structure and high waterproof protection.



#### DC PLUG & SPLICE CONNECTORS

Reduce up to 80% installation time with Insulation Displacement Contact (IDC) technology, provide reliability.

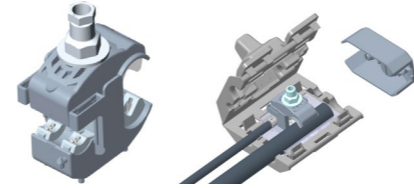


#### GROUNDING CONNECTORS

Enable installers to ground the photovoltaic system and create flexibility at the installation.

### CUSTOMIZABLE TRUNK SOLUTIONS

Reduce overall labor, operational and maintenance costs with our Customizable Trunk Solution. Designed to eliminate combiner boxes and provide plug-and-play flexibility, whether installed underground or above.



#### INSULATION PIERCING CONNECTORS WITH GEL COVER

Provide Insulation Piercing technology for fast connections and high-quality sealing.



#### INLINE FUSE HARNESSES

Provide protection closer to the panel with a pre-assembled and customizable design.



#### DISCONNECT TRUNK BOXES

Protect low voltage systems from surge prior to the inverter connection and minimize cabling.

### CONNECTION & MOUNTING SOLUTIONS

Our range of lugs and sleeves, dual-rated or bimetallic, accommodate aluminum and copper conductors with no torque maintenance required.



#### SHEAR BOLT LUGS

Offer fast, reliable connection thanks to torque-controlled shear bolt heads for excellent electrical contact.



#### COMPRESSION LUGS

Fit in limited spaces thanks to compact design, compatible with aluminum and copper cables.



#### TRANSITION ASSEMBLIES

Enable cross-section transition to help reduce voltage drop, heat shrink tube insulates reliably.

### SWITCHGEAR & TRANSFORMER SOLUTIONS

Our Raychem separable connectors, and heat shrink and cold shrink terminations are easy to install, compact and adaptable to most cable types to reduce your installation time and costs.



#### SEPARABLE CONNECTORS UP TO 72.5 kV

Increase grid reliability when combined with voltage sensors, testing points or surge arresters.



#### INNER CONE CONNECTORS UP TO 52 kV

Withstand high short-circuit current with spring-loaded protection cover and metal-enclosed design.



#### COLD SHRINK TERMINATIONS UP TO 42 kV

Save time on-site with pre-expanded components on a spiral holdout for easier installation.

### ONSHORE GRID CONNECTIONS

To connect your grid, choose from our complete range of Raychem heat and cold shrink joints for 1-core to 3-core cables, and junction boxes to separately branch-off joints or cable junctions.



#### JOINTS WITH SEPARATE REJACKETING UP TO 35 kV

Enable cable neutral wires to pass over cold-applied splice body, and sealed with rejacketing.



#### HEAT & COLD SHRINK JOINTS UP TO 42 kV

Fit in limited spaces with compact design and easy installation thanks to shear bolt technology.



#### JUNCTION BOXES UP TO 36 kV

Offer full metal encapsulation for long service life, easy access for phasing and voltage indication.

### GROUNDING SOLUTIONS

Our ground rods and AMP or SIMEL connectors - exothermic welded, compression and bolted - are resistant to corrosion and help eliminate grounding failures to ensure your solar farm safety and operation.



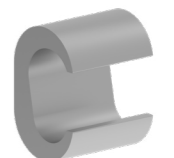
#### EARTHING RODS

Ensure electrical performance and high corrosion protection, even when driven deep into the earth.



#### EXOTHERMIC CONNECTORS

Provide high-quality permanent grounding connections for copper and steel conductors.



#### COMPRESSION CONNECTORS

Deliver high performance and easy installation with crimping tool. Made of pure electrolytic copper.

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TE Connectivity is a global industrial technology leader creating a safer, sustainable, productive and connected future. Our broad range of connectivity and sensor solutions, proven in the harshest environments, enable advancements in transportation, industrial applications, medical technology, energy, data communications and the home. With approximately 80,000 employees, including more than 7,500 engineers, working alongside customers in approximately 140 countries, TE ensures that EVERY CONNECTION COUNTS.

**Learn more:** [TE.com/solar](https://www.te.com/solar)

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