



# SOLUTIONS FOR THE ENERGY MARKET



# YOUR TRUSTED PARTNER FOR GLOBAL ENERGY SOLUTIONS

At TE Connectivity (TE), we deliver solutions to energy and utility customers across the world, which allows them to build reliable infrastructures in the most challenging environments. From developing new networks in emerging countries to strengthening grids in mature ones, we focus on creating specialized solutions that meet your needs.

Our customers know us for our trusted product lines, including TE's Raychem Cable Accessories, Simel Insulation Piercing Connectors and Mechanical Connectors, Bowthorpe EMP Surge Arresters, Crompton Instruments, Axicom High Voltage Products, ALR Photocontrol and Lighting Accessories and Utilux Lugs. But we deliver far more than high quality products: we're also a leader in end-to-end customer service. We are where our customers are, working with them early in the planning stages of a new project, and offering installation and local support to ensure the best performance every step of the way.

## THE RIGHT SOLUTION FOR EVERY APPLICATION

Our customers demand the utmost reliability and performance in their networks; failure is not an option! At TE, we engineer the best products – and deliver the best service – for your application.

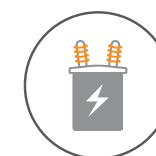
Our products are engineered to perform in the most extreme environments – and optimized to meet your needs. We continually improve our technology, and rely on decades of advanced materials science expertise to develop solutions that perform reliably in challenging industries, including:



Underground



Overhead



Substation



Power OEM



Wind/Solar



Nuclear



Mining



Rail/Metro



Marine







# OUR COMPREHENSIVE PRODUCT SOLUTIONS

40,000 dedicated energy products. One supplier. Our easy-to-install solutions offer advanced reliability when you need it most.

## CABLE ACCESSORIES

- Low Voltage
- Medium Voltage
- High Voltage
- Nuclear

## CONNECTORS & FITTINGS

- High Voltage Connectors Systems
- Low/Medium Voltage Overhead
- Underground Connectors

## INSULATION & PROTECTION

- Insulators & Surge Arresters
- Wildlife & Asset Protection
- High Voltage Components
- Hollow Core Insulators

## MONITORING & CONTROL

- Transducers
- Protector Trip Relays
- Digital Instruments
- Analogue Instruments
- Current Transformers
- Shunts





# THE TE ADVANTAGE

## EXCEPTIONAL PROFESSIONAL SERVICE

- Seminars, workshops and installation trainings
- Worldwide electrical testing
- On-site installation management and supervision
- Dedicated customer service
- Local literature and installation instructions
- Multilingual contract negotiations
- Customs clearance and certification assistance

## GLOBAL REACH

We serve you wherever you are with our global network of engineering and manufacturing sites.

Berkeley Vale, Australia	Halol & Vaisai (JV), India	Shanghai, China
Berlin, Germany	Juarez, Mexico	Swindon, UK
Braganza, Brazil	Kunshan, China	Uglich, Russia
Brighton, UK	Limerick, Ireland	Witham, UK
Fuquay-Varina, US	Markham, Canada	Wohlen, Switzerland
Gevrey-Chambertin, France	Ottobrunn, Germany	

## EXTRAORDINARY CUSTOMER EXPERIENCES

Right product. Right environment. Right now. We specialize in solving your everyday electrical challenges through a combination of quality products and outstanding service.

### OUR ADVANTAGE

- Global reach, local support
- Solutions to meet your needs
- Reliable products designed to meet environmental extremes
- Committed to quality
- Support of all electrical standards







# SHARING SPECIALIZED EXPERTISE

## ENGINEERING CAPABILITIES

- 60+ years of global power experience
- 12+ engineering and research facilities across the globe for power products
- World-class team of experts
- 14,000 patents from TE

## ADVANCED TECHNOLOGY

- Proven and qualified technologies for high, medium and low voltage applications
- Extra high voltage, high current loading solutions
- Easy-to-install products
- Sustainable, reliable performance
- Long-lasting products reduce total cost of maintenance and operation
- Proven longevity in harsh environments (offshore, desert, tropics, arctic climates)





# OUR ENGINEERING LABS

Rigorous testing and rugged products are the standard at TE.

- 20+ engineers sit on international standards boards
- 40+ employees in our engineering labs
- 10+ labs around the world

## Brighton Lab, UK

- Hybrid high power and high voltage lab
- Principal electrical and mechanical lab
- Full range of arrester testing (high voltage, high current, high energy)
- 500 kV transformer
- Modern impulse tester

## Fuquay-Varina Lab, US

- Electrical, mechanical and environmental testing
- Testing of connectors & fittings, insulators, wildlife and asset protection, and cable accessories up to 245 kV
- Working towards ISO-17025 accreditation in 2017

## Gevrey-Chambertin Lab, France

- ISO-17025 accredited in 21 test competencies
- More than 200 tests per year
- Connector testing for all voltage classes

## Kunshan Lab, China

- Daily production testing and new product development testing
- Cable accessories and connectors and fittings testing up to 245 kV

## Markham Lab, Canada

- Electrical, mechanical and environmental testing for connectors and fittings
- Product testing standards include: ANSI, CSA, and NEMA standards
- 511 m<sup>2</sup> of lab space with electrical test capabilities up to 8,000 amps

## Ottobrunn Lab, Germany

- Testing of joints, terminations, and switchgear from 400V-245 kV
- 2400 m<sup>2</sup> indoor testing space; 600 m<sup>2</sup> outdoor testing space
- Full range of specifications: impulse level, particle discharge; environmental conditions; exposure to salt and humidity; pressure variations
- Working towards ISO-17025 accreditation in 2018

## Witham Lab, UK

- Tests connectors and fittings, cable joints and other LV accessories
- Standards include: BSEN61238-1, C93, and ENA TS 09-23.1.2014

## OUR MATERIALS SCIENCE CAPABILITIES

- 4 labs across the globe –Ottobrunn (Germany), Swindon (UK), Fuquay-Varina (US), Shanghai (China)
- Over 40 Materials Engineers & Technicians
- Detailed analytical chemistry expertise
- Extensive materials testing knowledge and capabilities, including physical, environmental, thermal, chemical, electrical and analytical testing
- Close customer support, providing detailed product technical assistance, analysis and after-sales service as required
- Customer specific product validation and testing facility

## SETTING THE STANDARDS

With over 20 engineers serving on international standards boards, we create the protocols and practices that shape tomorrow's connectivity.

- IEC
- IEEE
- ANSI
- CENELEC

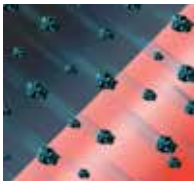


# OUR CULTURE OF INNOVATION

We know your industry never stands still; and neither does TE. Our world-class materials science expertise helps us focus on what you need right now – and continue to create the next generation of technology to better serve you.

## MATERIAL INNOVATIONS

Better, longer lasting products start with better materials. Our core materials science focus keeps us ahead of the changing needs of the electrical power industry.



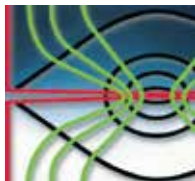
*Non-tracking and UV stable materials*



*UHV composite materials*



*Moisture blocking*



*Reduced contact resistance*



*Surge suppression systems*



*Resin technology*



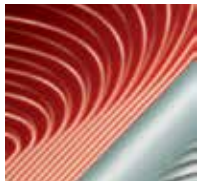
*PowerGel insulating material*



*Shear bolt technologies*

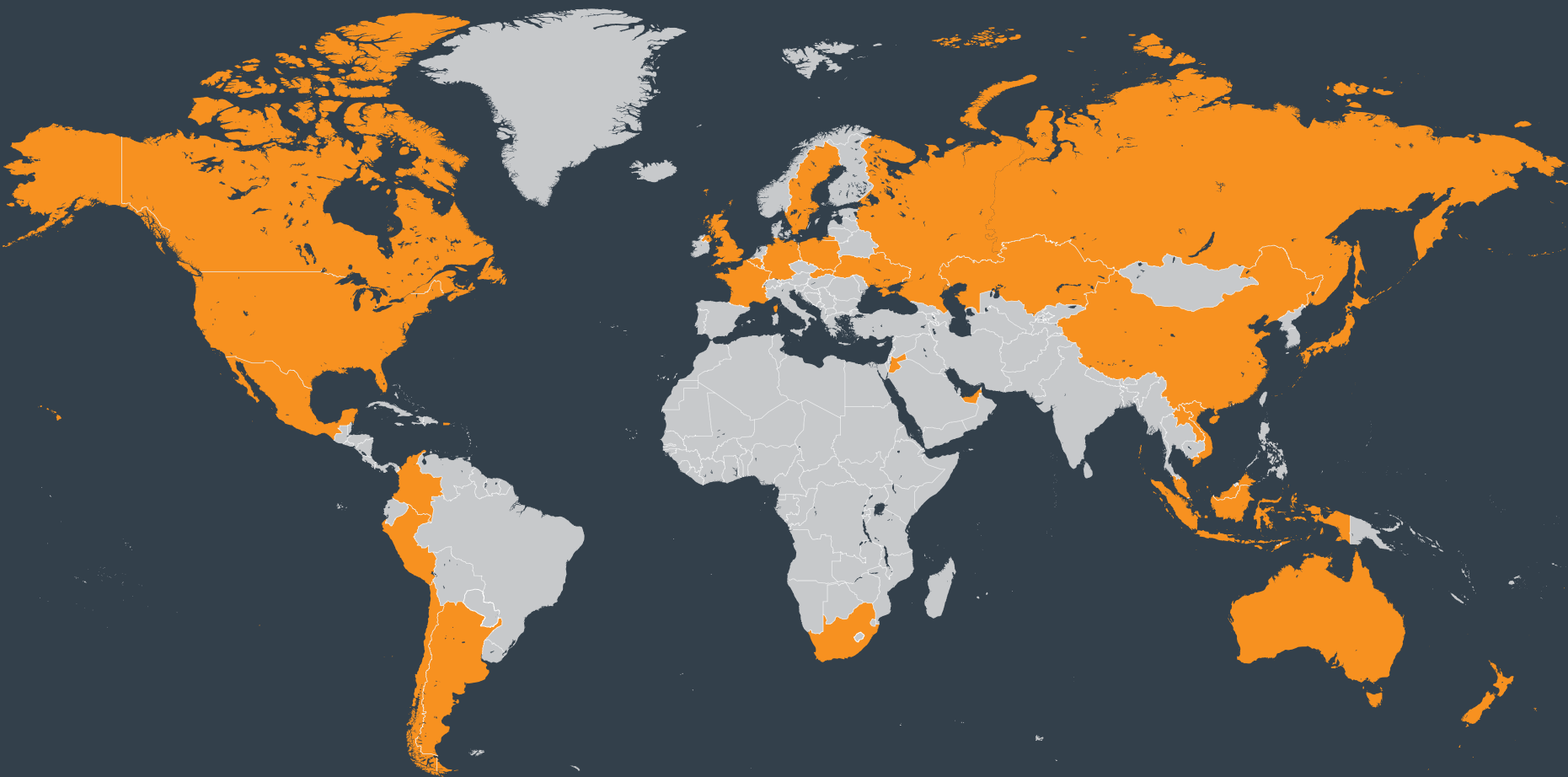


*High performance heat-shrinkable multi-layer materials*



*Electrical stress control*





# TRAINING EXCELLENCE

Correct installation increases product performance, and keeps your maintenance costs low. At TE, we reduce failures in the field – and lower your total cost of ownership – by providing easy-to-install products and expert installation training.

## OUR WORLDWIDE TRAINING LOCATIONS SUPPORT GLOBAL CUSTOMER NEEDS

With over 50 experts in 30 different countries, TE provides training service for these countries and surrounding territories. Our training sites are located in:

APAC	EMEA	AMERICA
Australia	Belgium	Argentina
China	France	Canada
Hong Kong	Germany	Chile
Indonesia	Hungary	Colombia
Japan	Jordan	Mexico
Malaysia	Kazakhstan	Peru
New Zealand	Poland	United States
Thailand	Russia	
Vietnam	South Africa	

## TAILOR-MADE INSTALLATION TRAINING PROGRAMS AND CERTIFICATES

Our training services around the globe teach you how to install our products correctly and efficiently.

- LV/MV/HV Cable Accessories
- Connectors & Fittings
- Insulation & Protection
- Customized program for different industrial applications:
  - Underground, Overhead, Substation, OEM, Renewable Energy, Wildlife and Asset Protection, Nuclear Power, Mining, Rail, Shipbuilding & Offshore
- Contractor installation training

## FLEXIBLE TRAINING ENVIRONMENTS MEET YOUR TIME AND SAFETY STANDARDS

- At TE, at your location or at our distributor's facility
- On site in the field
- Online webinar training

Whether online or in person, on our or on your premises, our experts can help you create a customized seminar or installation training.

[Learn more on te.com/trainingcenter](https://te.com/trainingcenter)



TE Connectivity Ltd. is a \$13 billion global technology and manufacturing leader creating a safer, sustainable, productive, and connected future. For more than 75 years, our connectivity and sensor solutions, proven in the harshest environments, have enabled advancements in transportation, industrial applications, medical technology, energy, data communications, and the home. With 78,000 employees, including more than 7,000 engineers, working alongside customers in nearly 150 countries, TE ensures that EVERY CONNECTION COUNTS. Learn more at [www.te.com](http://www.te.com)

#### Generation

- Conventional Power
- Nuclear Power
- Wind/Solar
- Hydro-electric

#### Transmission & Distribution

- Substation
- Underground
- Overhead
- Street Lighting

#### Industry

- Mining
- Petrochemical
- Railway
- Shipbuilding

WHEREVER ELECTRICITY FLOWS, YOU WILL FIND TE CONNECTIVITY



[te.com/energy](http://te.com/energy)

#### FOR MORE INFORMATION:

##### TE Technical Support Centers

##### AMERICAS

USA/Canada: +1 (800) 327-6996  
 Mexico: +52 0-55-1106-0800  
 Brazil: +55 11-2103-6023  
 South America: +57 1-319-8962

##### ASIA-PACIFIC

Australia: +61 29-554-2695  
 New Zealand: +64 9-634-4580  
 China: +86 (0) 400-820-6015

##### EUROPE-MIDDLE EAST-AFRICA

France: +33 (0) 38-058-3200  
 Germany/Switzerland: +49 (0) 89-608-9903  
 UK: +44 08708-707-500  
 Spain/Portugal: +34 912-681-885  
 Italy: +39 335-834-3453  
 Benelux: +32 16-508-695  
 Russia: +7 495-790 790 2-200  
 Poland/Baltics: +48 224-576-753  
 Czech Republic: +42 (0) 272-011-105  
 Sweden/Norway: +46 850 725 000  
 Middle East: +971 4-211-7020

[te.com/energy](http://te.com/energy)

© 2018 TE Connectivity. All Rights Reserved. EPP-2934-EN-2/18

ALR, Axicom, Bowthorpe EMP, Raychem, SIMABUS, Simel, Utilux, TE Connectivity and the TE connectivity (logo) are trademarks of the TE Connectivity Ltd. family of companies. Other logos, product and Company names mentioned herein may be trademarks of their respective owners. While TE has made every reasonable effort to ensure the accuracy of the information in this brochure, TE does not guarantee that it is error-free, nor does TE make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. TE reserves the right to make any adjustments to the information contained herein at any time without notice. TE expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. The dimensions in this brochure are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice. Consult TE for the latest dimensions and design specifications.