

MONITORING SOLUTIONS FOR SMART GRIDS

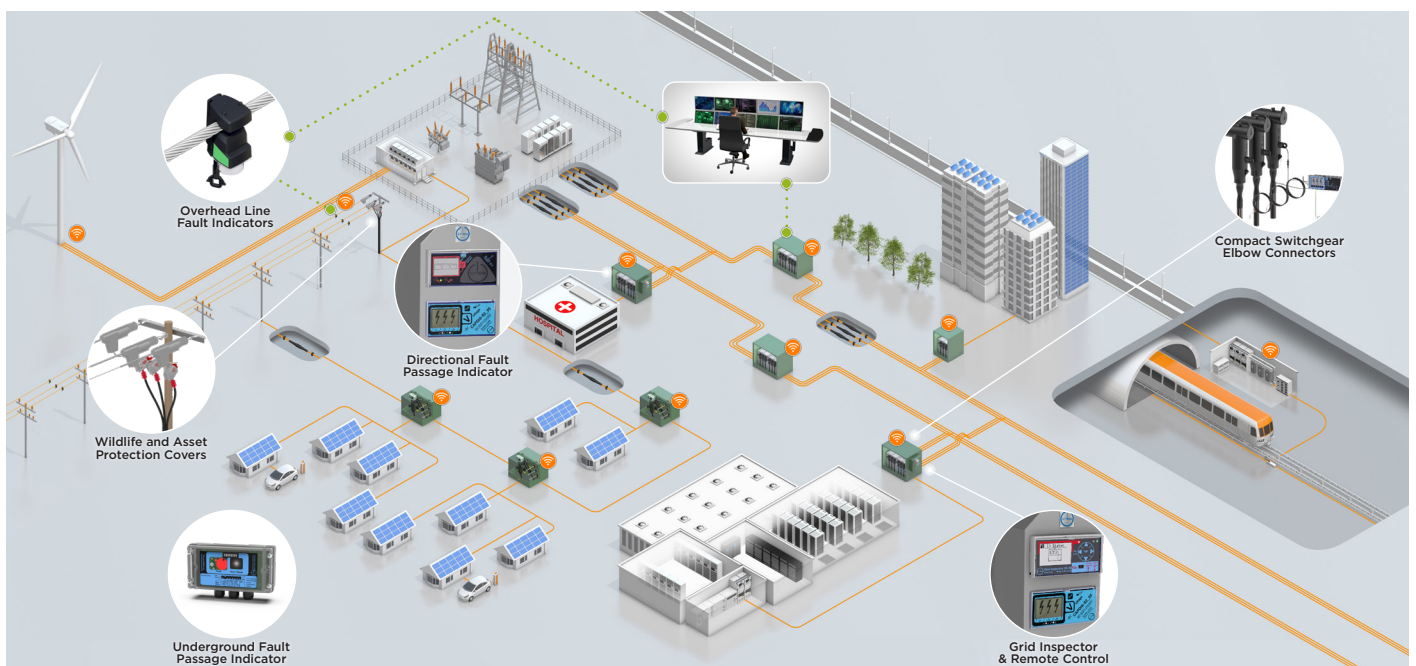
The acquisition of Kries expands our portfolio in power grid monitoring, protection and automation systems. By adding intelligence, grid operators can make their distribution grid smarter and more flexible.

SMARTER SOLUTIONS FOR RELIABLE CONNECTIONS

Locating a fault on hundreds of miles of power lines is a challenge for any distribution network owner. Aging infrastructure, extreme weather events, wildlife interaction, fallen conductors, or even the increased demand for electricity, can cause power interruptions in high fault currents. These unplanned outages must be resolved promptly to minimize the impact on consumers.

Our grid monitoring devices pinpoint faults and weak connections, providing an effective tool for power monitoring and asset management. Gain crucial data thanks to TE Raychem cable accessories and TE Kries fault indicators, to prevent failures and reduce both the System Average Interruption Duration Index (SAIDI) and the System Average Interruption Frequency Index (SAIFI).

INCREASE YOUR GRID VISIBILITY WITH OUR SMART SOLUTIONS

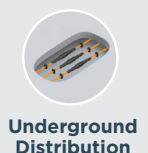
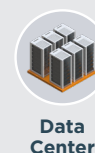
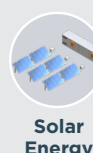


+ Grid Monitoring
+ Reduced Cost of Ownership

+ Easy, Fast, Safe Operation
+ Power Flow Monitoring

+ Grid Transparency
+ Grid Reliability

Our solutions adapt to new or retrofit installations for a wide array of applications including:



CAP-LINE - VOLTAGE DETECTION AND PARTIAL DISCHARGE INDICATION FOR SWITCHGEARS

Our Kries CAP-Line is a permanently installed voltage monitoring system. It comes with an integrated screen which indicates the presence of partial discharge, helping to prevent potential failures. CAP-line of products offer improved personal safety as it is not necessary to open the switchgear to take voltage measurements. Grid operators are thereby protected against incidental contact with energized equipment.



Deadbreak Elbow



Connecting Cable



*CAPDIS R4.5
(Voltage detection)*



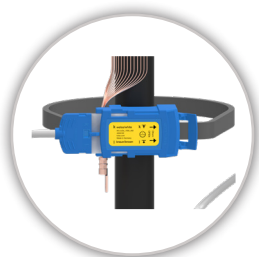
*CAPDIS R5
(Voltage detection
+ Partial Discharge)*

Features & Benefits

- Permanent voltage monitoring.
- Replaces hot sticks and clamping voltage detectors, increasing reliability and safety by eliminating the risk of electric arc when opening the switchgear.

IKI-LINE - FAULT CURRENT INDICATION FOR UNDERGROUND DISTRIBUTION GRIDS

Our Kries IKI-Line monitors over-current and fault conditions enabling faster fault location and reducing the total outage duration. IKI-23, combined with CAPDIS, improves SAIDI indicators through directional fault indication, reducing the Mean Time to Repair (MTTR) for operators.



*Split Core Current
Transformer*



*IKI-10-Light
(Visual Indication via
Integrated LED)*



*IKI-23
(Earth Fault Detection)*



*IKI-23
(Directional Fault Detection
when combined with CAPDIS)*

Features & Benefits

- Reduces the time to locate a fault on the grid.
- Fault prediction with intermittent earth fault and partial discharge detection.
- Possibility to combine IKI-23 with CAPDIS for directional fault detection and voltage monitoring.

IKI-50 - GRID INSPECTOR AND REMOTE CONTROL FOR SWITCHGEARS

Our Kries IKI-50 is a compact and easy-to-install field monitoring and control device, enabling grid visibility and transparency. It can be integrated into switchgears to provide load and fault information, preventing overloads. Combined with our Smart RSTI, IKI-50 is able to monitor both voltage and current with one device, turning the switchgear into a digital substation.



Smart RSTI
(Voltage Measurement)



Split Core Current
Transformer



Grid Inspector IKI-50
(Fault Detection
& Remote Control)



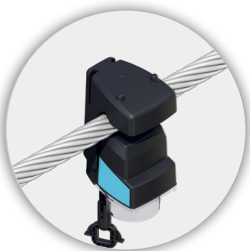
IKI-50 + CAPDIS
(Directional Fault
Detection)

Features & Benefits

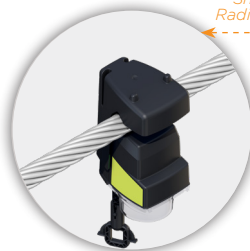
- Power load monitoring increasing grid visibility.
- Enables fault detection reducing downtime (SAIDI).
- Remote control and network automation, improving grid flexibility and increasing reliability.

IKI-OVERHEAD (OH) - FAULT CURRENT INDICATOR FOR OVERHEAD DISTRIBUTION LINES

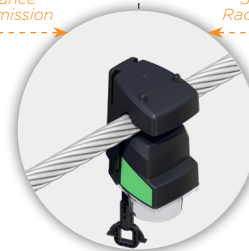
Our Kries IKI-OH devices are fault current indicators for distribution overhead lines from 1 to 36 kV. They are engineered to monitor for fault conditions such as short circuits, temporary and ground faults on overhead lines. The IKI-OH indicates a fault condition locally with integrated LEDs, whereas the combination of IKI-OH-Radio and Butler allow remote reporting to a SCADA software.



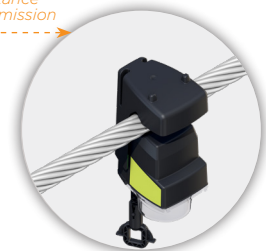
IKI-Overhead
Visual Indication



IKI-Overhead Radio
Radio Link Up To 10m



IKI-Overhead Butler
Fault Indicator - 4G



IKI-Overhead Radio
Radio Link Up To 10m



Features & Benefits

- Long battery life (10 to 15 years)
- Easy installation on energized power lines.
- Reduced downtime - Faster to locate the source of the fault.

ONE CONNECTIVITY PARTNER

We carry more than 65 years of experience in cable accessories, and we offer a complete portfolio of Raychem switchgear connectors and terminations. They can fit virtually any cable size or installed product and offer reliable performance in the harshest environmental conditions.

Our acquisition of the German pioneering company Kries expands TE's portfolio in power grid monitoring, protection and automation systems.

For 30 years, Kries has been helping distribution network owners to effectively improve grid uptime and network efficiency.

By adding intelligence to their distribution grid, grid operators can detect fault conditions, perform predictive maintenance and stabilize the interplay between power generation and consumption, which is critical for the transition to renewable energy.



1 MILLION +

**units of Kries voltage
detecting systems
installed worldwide**



Learn more: [TE.com/smartgrid](https://te.com/smartgrid)

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Kries is now part of
TE Connectivity.

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