Fault Indicator Solutions for Wind Farms

Quickly determine fault location and restore operations in wind farm collector systems

- Reduce maintenance with line-powered, battery-free fault indicators.
- Enhance safety with remote displays that remove the need to open potentially energized enclosures.
- Install SEL fault indicators on a wide variety of medium-voltage cable sizes in overhead and underground systems.
- Implement remote monitoring using the optional auxiliary output contact.

Applications

Install LINAM® fault indicators in pad-mounted transformers, switches, and junction boxes throughout wind farm systems to help operations personnel quickly and safely determine the location of a fault, isolate the faulted section, and restore service.

Capacitive Test Points

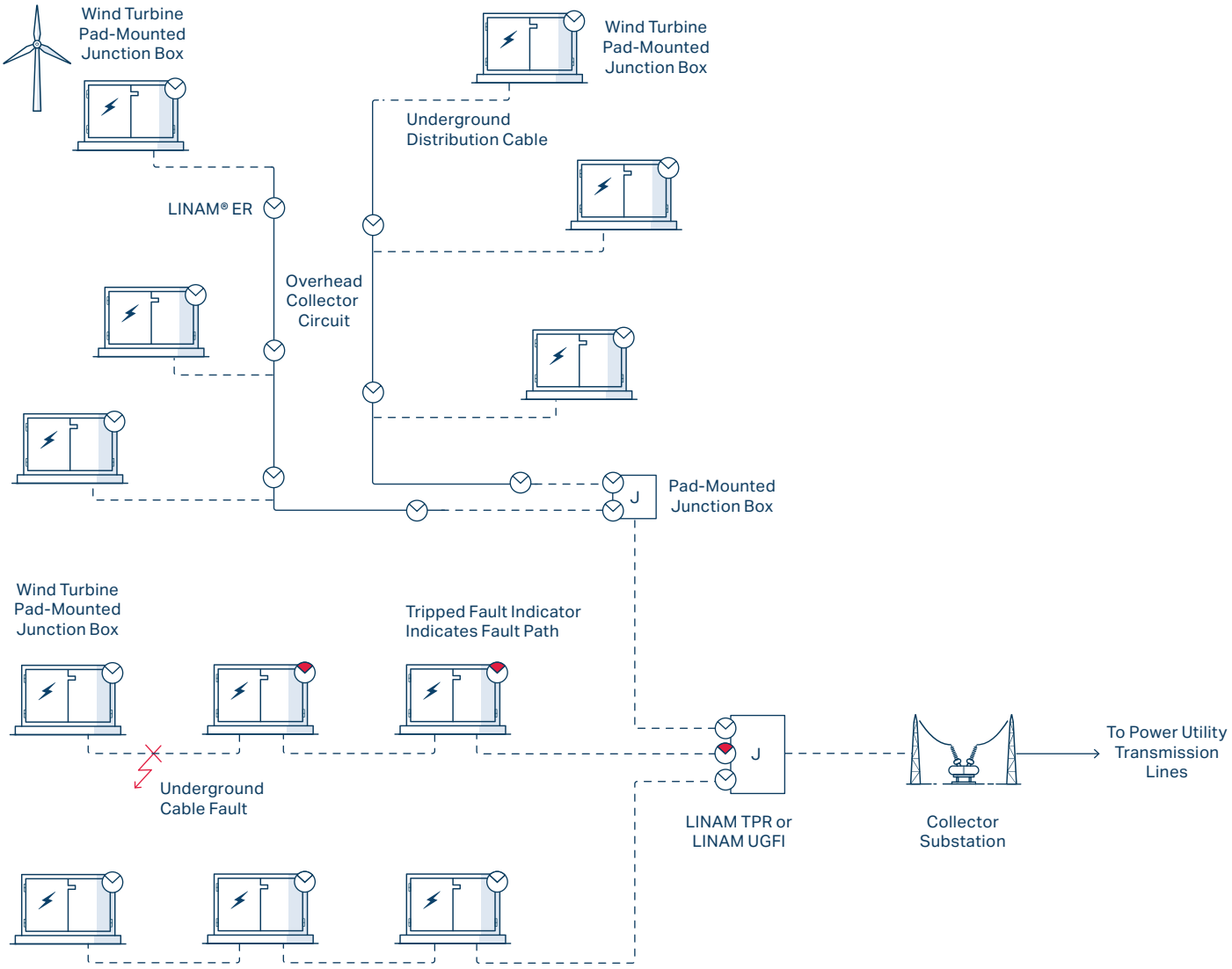
Install the LINAM TPR Underground Test Point Reset Fault Indicator in wind farm applications that use separable connectors equipped with capacitive test points located on the T-body of 200 A and 600 A cable terminations. By selecting a high nominal trip rating and a longer trip response time, you can apply this cost-effective, nondirectional fault indicator to find faults on circuits with distributed generation.

Overhead and Underground Conductors

The LINAM UGFI Underground Fault Indicator and LINAM ER Overhead Electrostatic Reset Fault Indicator are line-powered and battery-free and require no maintenance.

Apply the LINAM UGFI in junction boxes, equipment enclosures, and vaults to indicate faults in underground cables. Its current reset feature doesn't require load current to maintain readiness to trip and requires only 1 A of current to reset.

Apply the LINAM ER at strategic intervals along overhead conductors and at midfeeder disconnects to minimize fault-finding times and optimize reliability statistics. The inrush restraint feature prevents false tripping during recloser operations, and the unit automatically resets upon restoration of system voltage.



LINAM ER Overhead Electrostatic Reset Fault Indicator

Apply the line-powered, battery-free LINAM ER on overhead conductors from 10.35 kV_{L-L} to 69 kV_{L-L} system voltage. The ER automatically resets upon restoration of line voltage.

- Inrush restraint feature prevents false tripping during recloser operations.
- Install safely and quickly on energized lines using a single hot stick.
- Reflective target display is easy to spot, day and night.
- An optional LED display increases visibility in low light. The battery-powered LED activates only in low light and is powered independently from the sensor and mechanical target.

LINAM TPR Underground Test Point Reset Fault Indicator

Apply the LINAM TPR to capacitive test points to provide fault indication. Powered by system voltage, the TPR works independently of load current and automatically resets upon restoration of system voltage.

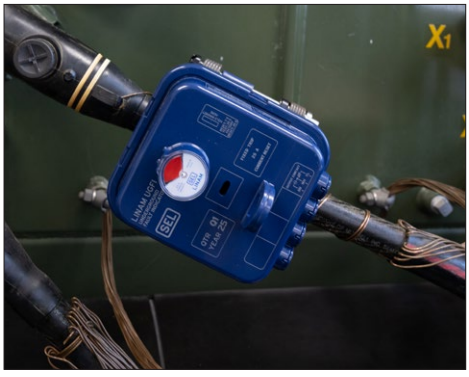
- Remote display options remove the need to open an enclosure.
- Use the optional auxiliary contact to send a status indication to SCADA.
- An optional junction shield helps prevent false tripping due to adjacent phase effects.
- The TPR is easy to install on most brands of separable connectors and can easily be removed for test point access.

LINAM UGFI Underground Fault Indicator

Apply the LINAM UGFI in pad-mounted and underground equipment. The UGFI maintains trip readiness in the absence of load current and requires only 1 A of current to reset. Innovative fault detection technology prevents false tripping, so your crews will spend less time investigating false alarms.

- Remote display options remove the need to open an enclosure to see the fault status.
- An optional auxiliary contact allows status indication to be sent to SCADA.
- Multiple reset and trip threshold options are available.

A TPR with junction shield provides fault indication inside switchgear.



A UGFI provides fault indication inside pad-mounted switchgear or underground vaults.

General Specifications

LINAM ER Overhead Electrostatic Reset Fault Indicator

Power Source	Electric field potential gradient
Nominal Trip Rating	1,200 A
Trip Tolerance	±10%
System Voltage Range (L-L)	10.35 to 69 kV
Reset Time	Approximately 20 minutes at 6 kV (L-N) (Higher voltages result in quicker reset.)
Display	Reflective red target
Maximum Fault Current	25 kA
Trip Response Time	24 ms
Inrush Restraint Response Time	300 ms
Outer Diameter Clamping Range	0.162" to 1.54" (Please specify clamping diameter or range when ordering.)
Housing Material	UV-stabilized polycarbonate resin
Clamp Material	Stainless-steel clamp with a semiconductive rubber sleeve
Temperature Range	−40° to +85°C (−40° to +185°F)

LINAM UGFI Underground Fault Indicator

Trip Thresholds	25 to 1,600 A
Immunity From Adjacent-Phase Fault Current	25 kA at 10.2 cm (4 in) on center between phases
Maximum Fault Current Withstand	40 kA for 10 cycles
Clamping Range	15.2 to 55.9 mm (0.6 to 2.2 in)
Current Reset Option	≥1 A for as long as 10 minutes
Timed-Reset Option	2, 4, 8, or 12 hours
Timed Reset With Current Reset Override	Timed-reset duration (2, 4, 8, or 12 hours) or ≥1 A (whichever occurs first)
Fault Detection Time	As fast as 1.5 cycles; 2 cycles typical
Approximate Weight	453.59 g (3 lb)
Temperature Range	−40° to +85°C (−40° to +185°F)
Product Certification	IEEE 495—Guide for Testing Faulted Circuit Indicators

LINAM TPR Underground Test Point Reset Fault Indicator

Power Source	Capacitive test point voltage on T-body separable cable connectors
Nominal Trip Rating	1,200 A
Trip Tolerance	±10%
Reset Voltage (L-N)	≥5 kV
Reset	Automatic on restoration of voltage
Reset Time	3 minutes typical, dependent on system voltage
Maximum Fault Current	25 kA
Trip Response Time	24 ms
Inrush Restraint Response Time	300 ms
Elbow Style	600 A class with capacitive test point
Housing Material	Conductive EPDM rubber
Temperature Range	−40° to +85°C (−40° to +185°F)

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