

# SEL-CR

## Underground Current Reset Fault Indicator



Improve system reliability by quickly identifying underground cable faults

- Line-powered fault indicator doesn't need batteries.
- Leads line crews straight to the fault and reduces the outage duration.
- Factory-set and ready for installation.
- Flexible display configurations fit many applications.
- Economical long-term solution backed with a ten-year, no-questions-asked warranty.

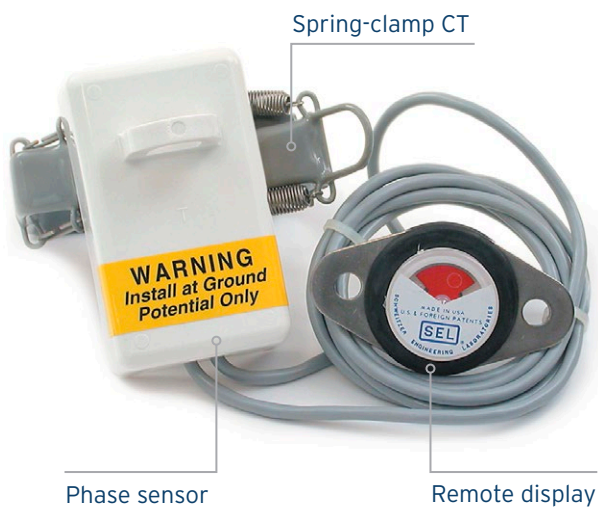


# Overview

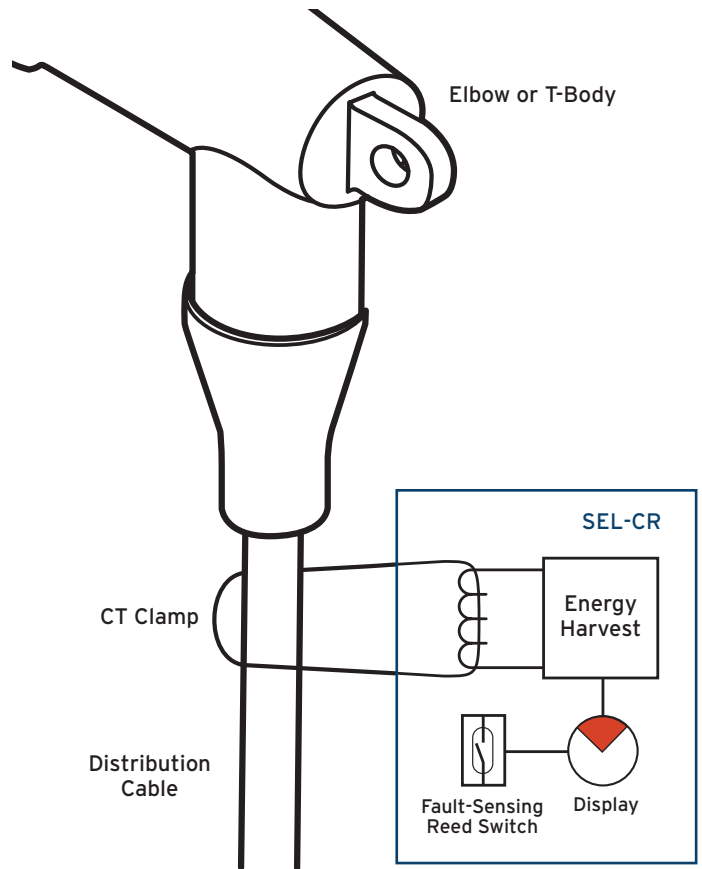
SEL-CR Underground Current Reset Fault Indicators use continuous load current to automatically reset and maintain readiness to respond to a fault.

The SEL-CR features a closed-core CT. This dual-purpose CT harvests energy from the magnetic field generated by the load current while also functioning as a clamp to secure the product on an underground cable.

By using a fault-sensing reed switch that is factory-set and calibrated to a user-selected trip rating, the SEL-CR can detect and sense faults lasting as little as 1 millisecond. Faults are indicated on an integral or remote display.



## SEL-CR With Remote Display 1CRV



# Key Benefits

## Reduce Outage Duration

Quickly and efficiently find faults on underground distribution system cables to improve reliability.

## Easy Installation

Spring-loaded clamps enable quick installation with standard hot-line tools.

## Flexible Fault Status Indication

Choose an integral display for the most compact configuration. Remote displays provide external fault indication to a pad-mounted enclosure and at a vault entrance. An optional auxiliary contact provides status indication to SCADA via your nearby remote terminal unit (RTU).

## Improved Productivity

Remote displays eliminate the need to open the enclosure to check the fault indicator's status, which reduces the fault-finding time.

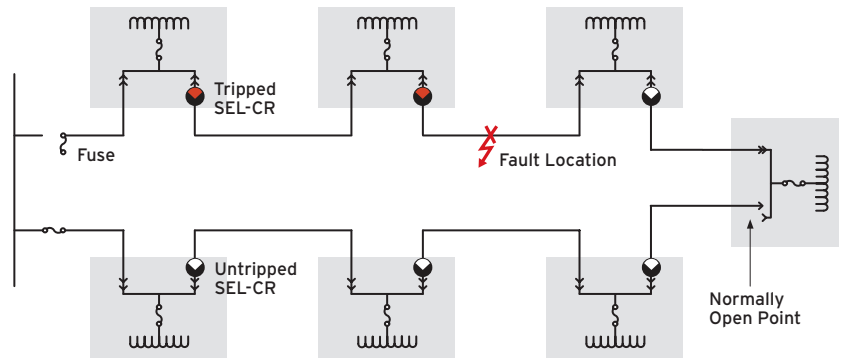
## Enhanced Visibility

SEL fault indicator displays are highly visible. Choose an integral or remote reflective red target for clear fault status indication. In addition, the fully line-powered design does not require batteries. The BEACON® LED display is offered as a standalone BEACON Bolt® LED or in combination with a mechanical target display. All BEACON LED options feature a hardwired LED that provides the brightest lighted display compared to other solutions in the industry.

# Applications

## Pad Mount

Install SEL-CRs in pad-mounted enclosures to identify faults in the underground cable between enclosures. SEL-CRs help determine where to isolate the fault so you can restore as many customers as possible while the permanent fault is repaired. These FCIs are ideal for three-phase pad-mounted transformers and three-phase live-front or dead-front switchgear where there is sufficient load current to power the SEL-CR.

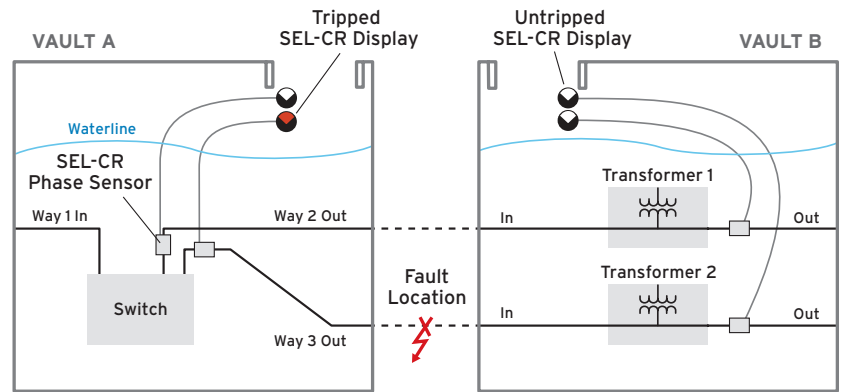


SEL-CRs identify the faulted cable section within a loop of pad-mounted transformers that contain a normally open point.

## Subsurface

Apply the SEL-CR to underground cables within subsurface vaults and manholes to identify faulted cable sections. SEL-CR remote displays help eliminate the need to enter vaults to view the FCI fault status. SEL-CRs with mechanical target displays are fully submersible and designed to withstand flooded environments. If flooding is common, use SEL-CRs with remote mechanical target displays to view the fault status above the water line.

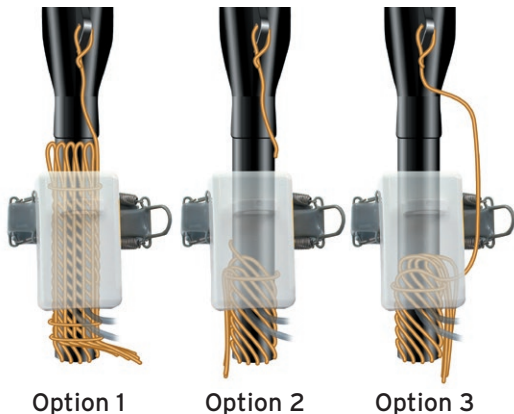
Avoid opening vaults by using the RadioRANGER® Wireless Fault Indication System to view the fault status of the SEL-CR from outside the vault.



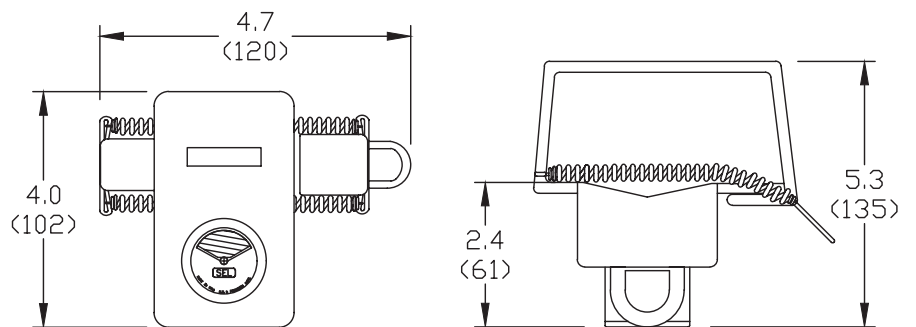
Apply SEL-CRs to outgoing ways of switches and transformers to determine if the fault is beyond the installed (or monitored) location.

## Cable Preparation and Installation

SEL recommends double-back concentric neutral training, as shown in Option 1. Other acceptable methods include Options 2 and 3, which depict the installation of the FCI directly over the semiconductive layer around the cable.



## Dimensions



# Specifications

General Specifications	
<b>Power Source</b>	Mechanical target: Load current LED display: Replaceable battery (standard)—1,200 flashing hours (2.4 Ah, 3.6 V lithium AA cell)
<b>Display Options</b>	Reflective red target Combination target and BEACON LED Tamperproof Bolt or BEACON Bolt LED
<b>Inrush Restraint Response Time</b>	300 ms
<b>Nominal Trip Rating</b>	50 to 1,200 A
<b>Trip Rating Tolerance</b>	±10% (specified at +25°C [+77°F]) at the calibrated outside diameter
<b>Trip Response Time</b>	1 ms at trip rating, 24 ms optional
<b>Minimum Reset (Operating) Current</b>	3 A continuous, 1.5 A optional
<b>Typical Reset Time</b>	25 seconds at 10 A and above
<b>Reset Type</b>	Standard: Reset is triggered by current restoration for main phase sensor only. Optional: Three-phase reset automatically resets when current is restored in each phase of a three-phase set.
<b>Maximum Fault Current</b>	25 kA for 10 cycles at 60 Hz
<b>Mounting Diameter Ranges</b>	Standard: 0.75" to 2.10" (19 mm to 53 mm) Optional large core: 1.8" to 2.5" (46 mm to 64 mm)
<b>Submersibility</b>	15 ft (4.6 m)
<b>Housing</b>	UV-stabilized polycarbonate
<b>Transformer Core</b>	Vinyl-coated silicon steel
<b>Temperature Range</b>	−40° to +85°C (−40° to +185°F)



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