

In **electrical maintenance works**, in order to cope with **safety standards**, it becomes necessary to **identify de-energized cables unambiguously prior to its manipulation**.

Cutting the wrong cable may result in the following consequences:

- personnel live threat
- power supply failure

The **Ariadna CI – Cable Identifier** is an advanced, yet simple to operate, digital tool. It helps users to **easily identify any de-energized electric cables, energized MV cables and energized LV cables**, among multiple conductors, in trenches, manholes, panels, aerial/underground conversions, etc.

With a single device, any types of cables can be identified in both Medium and Low Voltage and it does not require calibration prior to identification.

The Ariadna CI is standardized for **electrical safety procedures** by world's leading Electric Utilities.



Main features

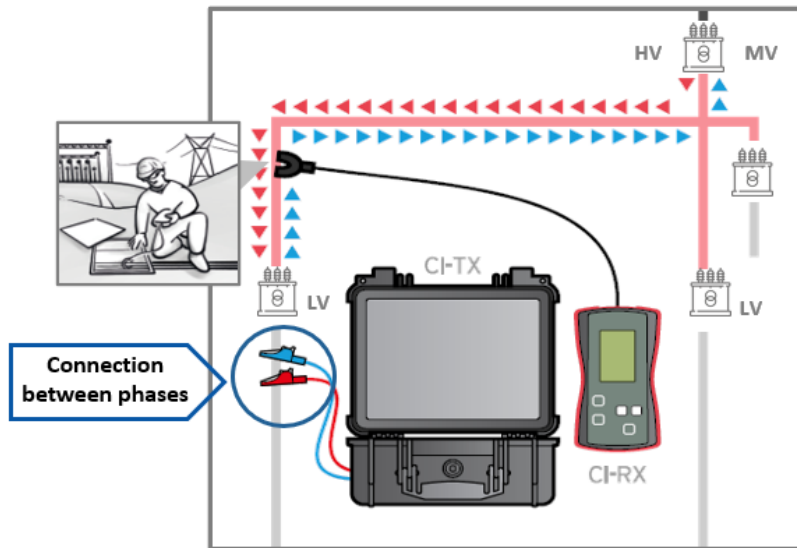


- **Safely cable identification**
- **De-energized cable** identification
- **Live MV cable** identification
- **Live LV cable** identification
- Single-phase and three-phase cables
- Signal injection:
 - **Direct connection**
 - **Induction** through toroidal clamp (optional)
- Max. cable length 50 Km (direct connection)
- Rechargeable battery in TX, operation time >24h
- Detects amplitude and polarity of the active signal
- **Identification sound alert (CI-RX)**

Energized MV cable identification | Connection diagram

It works by injecting current pulses from a live network, by **connecting a load at the LV side of an MV/LV transformer**, and **detecting the current that is produced at the MV side of the transformer**. The CI-TX transmitter acts as a power load that absorbs energy from the grid. Thus, the current demanded flows through one phase from the HV/MV substation to the MV/LV transformer, and returns through the other two phases in the opposite direction.

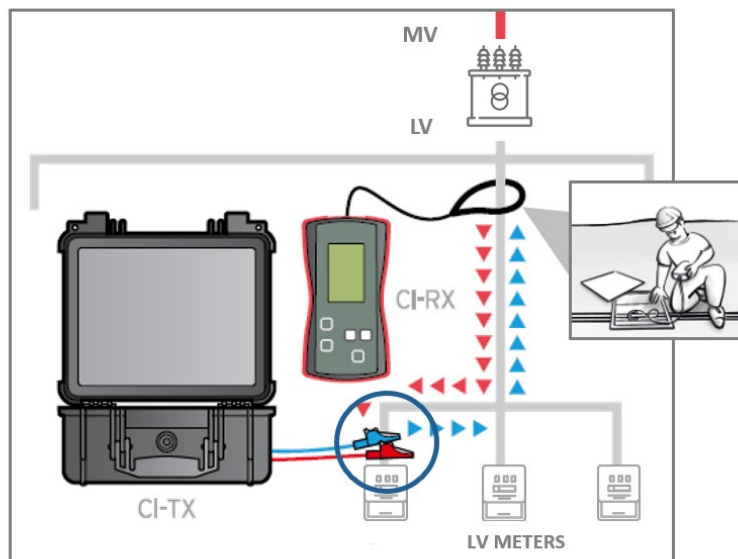
With the CI-RX these signals can be detected in manholes, trenches, Secondary Substation inlets and outlets, overhead-underground conversions, etc



Energized LV cable identification | Connection diagram

In a similar way to MV live cable identification, it is possible to identify LV energized cables by current pulses from the network. CI-TX transmitter is connected at the end side of the LV cable to be identified. When turned on, it starts to sink current pulses from the network, and these pulses flow from the point of injection to the LV transformer that feeds it.

With the CI-RX unit it is possible to identify LV cable path in any accessible places, like manholes, busbars, etc.

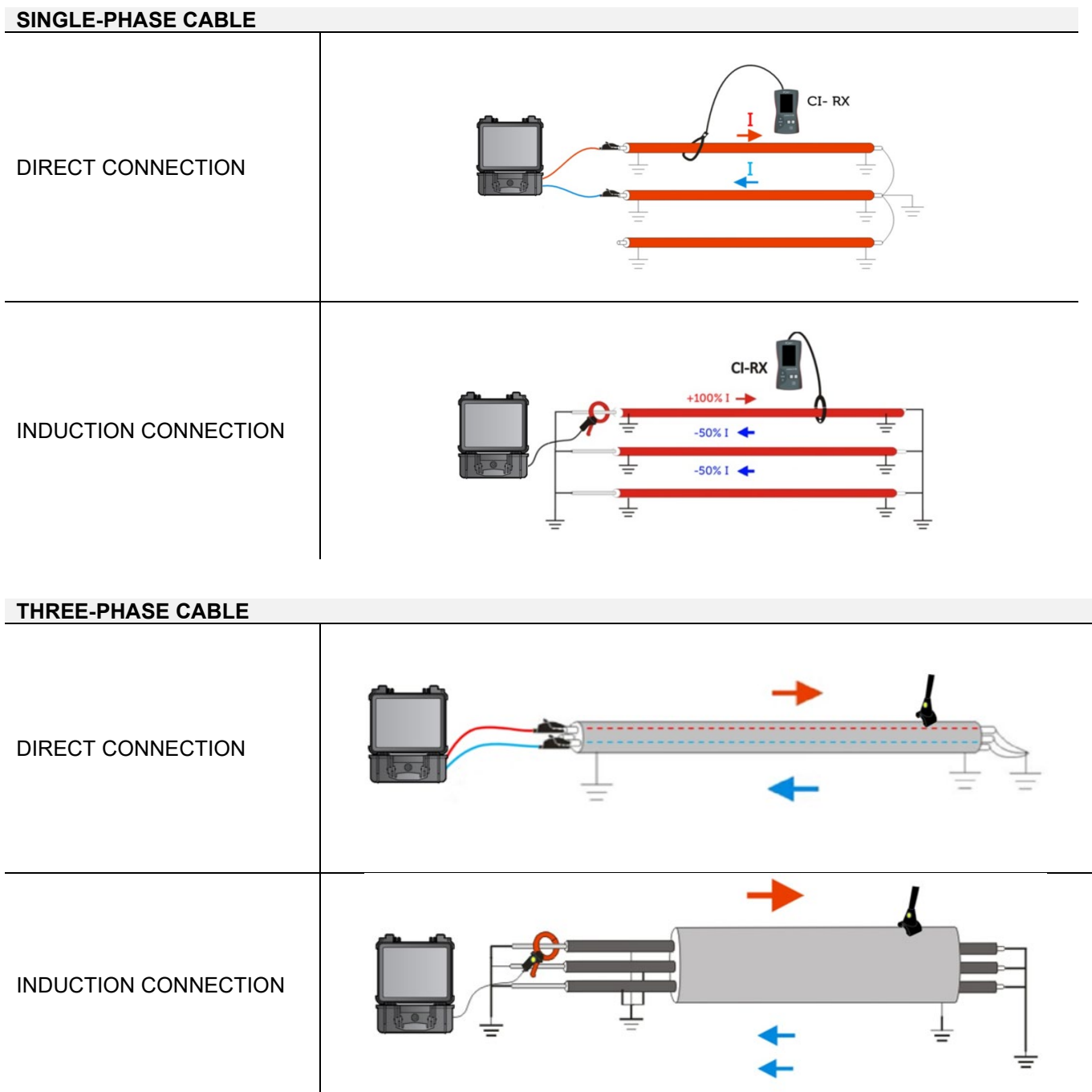




De-energized cable identification (MV and LV) | Connection diagram

Through polarized frequency signal injection and detection, it is possible to positively **identify de-energized cables**.

Unlike live cable identification, the needed energy for generating identification signals come from CI-TX's rechargeable Li-ion battery, instead of coming from the grid. Two ways are available for injecting signals on cables, through direct connection or by using a toroidal inductive clamp. Afterwards cables are identified by measuring produced signal's amplitude and polarity.



Technical features*

*Specifications subject to change without notice



Ariadna CI-TX
Transmitter

Ariadna CI-RX
Receiver

Size (mm)	315 x 255 x 150	Size (mm)	120 x 220 x 65
Weight	3 kg	Weight	0.75 kg
Protection degree	IP65	Protection degree	IP54
Battery charger input	100-250 Vac (50/60Hz)	Batteries	4 x 1.5 V AA
Battery charger output	12V DC === 2A	Operation temperature	-10 / 55 °C
Rechargeable battery	8.4 V 6.6 Ah Li-ion	Display	Colour TFT 240x400
Car lighter charger	Yes	Internal speaker	Yes (for sound alert)
Fuse at the end of the mains leads	6.3x32 mm 10 A 500 V 50kA type F		
Operation temperature	-10 / 55 °C		
Display	Monochrome 160x100		
ENERGIZED CABLES			
Signal type	Current pulses	Active signal analysis	Amplitude and polarity
Inject signal amplitude	160/80A peak	Passive current measurement	50/60 Hz. RMS
V. max. Network	480 Vac(P-P) 300 Vac(P-N)	I max. network	1800 A RMS (50/60Hz)
Operation time	>24 h. (level 2)	Max. cable length	> 50 km
DE-ENERGIZED CABLES			
Signal type	Current frequency	Active signal analysis	Amplitude and polarity
Active signal power	10 W	Max. cable length	> 50 km
Operation time	>24 h. (level 2)	Max. Loop resistance	1000 Ω

Compliance standards

- Electromagnetic compatibility:
EN 61000-6-3, EN 61000-6-2
- Electric safety:
EN 61010-1 CAT IV 300V, Protection against electric shock, Class II



Power cable identification and location solutions