# Cable Identifier CI/LCI

## Reliable cable selection for de-energised and energised (live) cables

- **Inexpensive solution**
- **Identification and selection of cables**
- **Well-proven system in the market**
- **Suitable for MV and LV cables**
- **Easy to use**
- **Safe to operate**
- **Very small and lightweight**

### DESCRIPTION

The absolutely clear and unambiguous identification of a power cable before cutting or jointing is of great importance for safety. Any mistakes can result in significant property damage, personal injury or even death of the cable technician. Additionally, an incident will often cause unplanned in-service outages for connected customers. The CI/LCI system has been developed to make the task of cable identification and selection considerably safer and easier.

The system consists of a generator unit that sends defined impulses, and a receiver unit. This receiver CI RX is connected via a flex clamp (AZF 150-CI or AZF 250-CI) in order to decouple the transmitter signal sent by the generator into the cable that is supposed to be identified. This generator CI TX transmits single pulses with a peak current of up to 100 A. The current flow of the impulses causes an electromagnetic field with a well-defined polarity around the connected power cable, which gets picked up by the flex coupler of the receiver CI RX, and which is automatically synchronised and displayed on the LED indicator scale. The only adjustment is the displayed signal sensitivity.

The following parameters are evaluated to distinguish the useful signal from interference:

- Impulse shape
- Polarity
- Amplitude
- Frequency (interval of 2 s)

The combination of using a directional clamp and the impulse parameter monitoring provides a safe and consistent cable identification and selection, regardless of any interferences.

The user only has to check the displayed signals for plausibility, i.e. typically only one of the conductors or cores has got the correct polarity while all other cables have the opposite polarity (search for the "odd one out" or for "no signal").

Any deviations from this situation must be addressed immediately by checking the whole setup.

## TECHNICAL DATA

### Transmitter for identification on de-energised cables CI TX

| | |
|---|---|
| Pulse voltage | 55 VDC |
| Pulse current | max. 100 A |
| Pulse sequence | 30 $min^{-1}$ |
| Pulse width | 72 ms |
| Power supply | 100 … 240 VAC; 50 / 60 Hz;<br>12 VDC rechargeable battery |
| Operating time | 4 h (Li-ion rech. battery) |
| Charging time | 6 h |
| Weight | 1,6 kg |
| Dimensions (W x H x D) | 201 x 120 x 80 mm |
| Protection class | IP 54 |
| Operating temperature range | - 10 °C … + 60 °C |
| Storage temperature range | - 10 °C … + 60 °C |
| Relative humidity | 93 % at 30 °C (non-condensing) |

### Universal-receiver CI RX

| | |
|---|---|
| Sensor | Flex coupler<br>dia. approx. 150 or 250 mm |
| Amplifier setting | 3 … 24 dB in 10 steps |
| Power supply | 2 x 1,5 V AA batteries |
| Operating time | > 50 h |
| Weight | 0,4 kg |
| Dimensions (W x H x D) | 150 x 65 x 35 mm |
| Protection class | IP 54 |
| Operating temperature range | - 10 °C … + 60 °C |
| Storage temperature range | - 10 °C … + 60 °C |
| Relative humidity | 93 % at 30 °C (non-condensing) |

### Transmitter for identification on energised cables LCI TX (100-240 V)

| | |
|---|---|
| Operating voltage | 100 … 240 VAC; 50 / 60 Hz |
| Pulse current | 80 A |
| Pulse sequence | 30 $min^{-1}$ |
| Pulse width | 1,5 ms |
| Weight | 0,5 kg |
| Dimensions (W x H x D) | 151 x 101 x 60 mm |
| Protection class | IP 54 |
| Operating temperature range | - 10 °C … + 60 °C |
| Storage temperature range | - 10 °C … + 60 °C |
| Relative humidity | 93 % at 30 °C (non-condensing) |

### Transmitter for phase to phase identification on energised cables LCI TX (240-440 V)

| | |
|---|---|
| Operating voltage | 240 … 440 VAC; 50 / 60 Hz |
| Pulse current | 80 A |
| Pulse sequence | 30 $min^{-1}$ |
| Pulse width | 1,5 ms |
| Weight | 0,5 kg |
| Dimensions (W x H x D) | 151 x 101 x 60 mm |
| Protection class | IP 54 |
| Operating temperature range | - 10 °C … + 60 °C |
| Storage temperature range | - 10 °C … + 60 °C |
| Relative humidity | 93 % at 30 °C (non-condensing) |

## CABLE IDENTIFIER CI/LCI

**Reliable cable selection for de-energised and energised (live) cables**

CI TX – transmitter
for de-energised cables

Complete set CI/LCI

LCI TX – transmitter for energised cables (100-240 V) and phase-to-phase identification (240-440 V)

CI RX – universal receiver

TFS CI – twisted field sensor

Lead kit for CI TX

Lead kit for LCI TX

Flexible clamps AZF 150-CI,
AZF 250-CI


Transport case

There are different sets available offering various combinations of CI TX and LCI TX. There is also a free choice of flexible clamps and for the type of mains plug. The scope of delivery includes CI RX receiver, TFS CI twisted field sensor, and lead kit in a transport case.

## Optional accessories

SZ-80 set
Transmitter clamp for CI TX generator

PAS CI
Phase identification sensor

MK 37 (EU, UK, US, AUS/CN)
Test lead for connection of LCI TX to power outlet

MK 55
Test lead with NH-tap (00-03) for LCI TX

## ORDERING INFORMATION

| | Product<br>(please select one set) | Order no. |
|---|---|---|
| | **Basic set CI; Cable identifier**<br>Consisting of: CI TX transmitter, CI RX receiver, twisted field sensor TFS CI,<br>fused lead kit for CI TX, mains cable and transport case | 1005670-1 |
| | **Basic set LCI; Cable identification under energized conditions 100-240 V**<br>Consisting of: LCI TX transmitter 100-240 V, CI RX receiver, twisted field sensor TFS CI,<br>fused lead kit for LCI TX and transport case | 1005671-1 |
| | **Basic set LCI; Cable identification under energized conditions 240-440 V**<br>Consisting of: LCI TX transmitter 240-440V, CI RX receiver, twisted field sensor TFS CI,<br>fused lead kit for LCI TX and transport case | 1005669-1 |
| | **Complete set CI & LCI; with identification under energized conditions 100-240 V**<br>Consisting of: CI TX transmitter and LCI TX transmitter 100-240 V, CI RX receiver,<br>twisted field sensor TFS CI, fused lead kit for CI TX and LCI TX, transport case | 1005672-1 |
| | **Complete set CI & LCI; with identification under energized conditions 240-440 V**<br>Consisting of: CI TX transmitter and LCI TX transmitter 240-440 V, CI RX receiver,<br>twisted field sensor TFS CI, fused lead kit for CI TX and LCI TX, transport case | 1005673-1 |

| | Flexible clamp<br>(please select at least one flex converter per set) | Order no. |
|---|---|---|
| | Flexible clamp AZF 150-CI, 120 mm | 820013106 |
| | Flexible clamp AZF 250-CI, 230 mm | 820013107 |

| | Mains cable (only needed for sets containing CI)<br>(please select only one) | Order no. |
|---|---|---|
| | Mains cable EU (plug) | 90020175 |
| | Mains cable UK (plug) | 2008761 |
| | Mains cable US (plug) | 2008762 |

## ORDERING INFORMATION

| | Optional accessories | Order no. |
|---|---|---|
| | Transmitter clamp for CI TX transmitter, SZ-80 set | 2007615 |
| | Phase identification sensor PAS CI | 820014535 |
| | Test lead for connection of LCI TX to power outlet, EU version, MK 37-EU | 118304682 |
| | Test lead for connection of LCI TX to power outlet, UK version, MK 37-UK | 90020744 |
| | Test lead for connection of LCI TX to power outlet, US version, MK 37-US | 90020743 |
| | Test lead for connection of LCI TX to power outlet, AUS/CN version, MK 37-AUS/CN | 2011453 |
| | Test lead with NH-tap (00-03) for LCI TX, MK 55 | 820025178 |

| | Complete CI/LCI sets for use in North America | Order no. |
|---|---|---|
| | **For de-energised cables only: Basic set CI-USA**<br>Consisting of: CI TX transmitter, CI RX receiver, flexible clamp 250 mm,<br>twisted field sensor TFS CI, fused lead kit for CI TX, mains cable (US) and transport case | 1008270 |
| | **For energised (live) LV cables only: Basic set LCI-USA**<br>Consisting of: LCI TX transmitter 100-240 V, CI RX receiver, flexible clamp 250 mm,<br>twisted field sensor TFS CI, fused lead kit for CI TX, mains cable (US) and transport case | 1008272 |
| | **Complete set CI/LCI-USA containing everything**<br>Consisting of: CI TX transmitter, LCI TX transmitter 100-240 V, CI RX receiver, flexible clamp 250 mm,<br>twisted field sensor TFS CI, fused lead kit for CI TX, mains cable (US) and transport case | 1008271 |



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