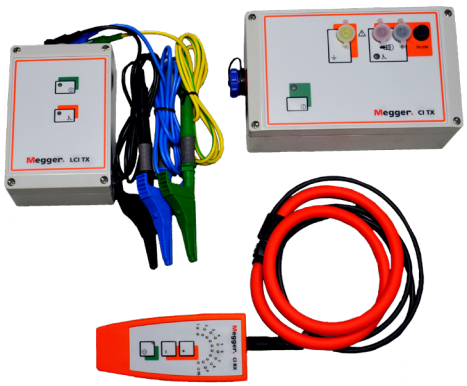
Cable Identifier

Reliable cable selection for energised and de-energised cables



- Inexpensive cable selection system
- Easy to operate
- Safe to operate
- Very small

DESCRIPTION

Clear identification of a cable before it is cut or fitted has huge safety implications. Any mistakes here can result in fatal consequences for the cable fitter and may cause outages for the connected customers. The CI cable identification system has been developed to make this work much easier and safer.

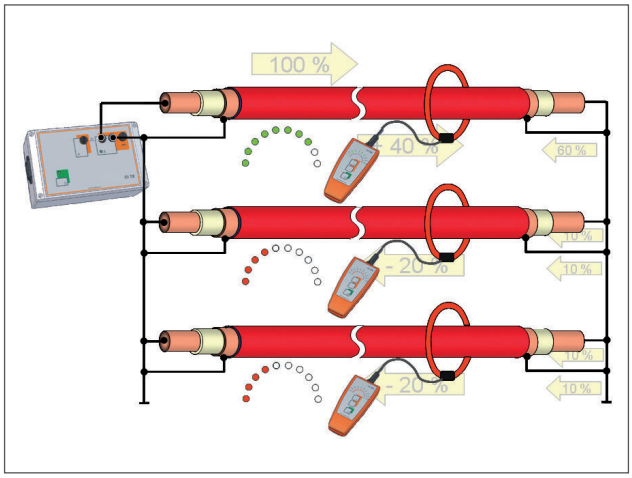
The system consists of the current impulse generator and the receiver CI RX. This receiver is connected by (AZF 250-CI or AZF 150-CI) flex clamp for decoupling the identification signal. The pulse generator CI TX generates single sawtooth pulses with a peak current up to 100 A and transmits them into the cable being identified. The current flow of these impulses causes an electromagnetic field with a defined polarity around the cable which is received with the flex coupler of the receiver CI RX, automatically synchronised and displayed by the LED scale. The only possible adjustment is the display sensitivity.

A special software function controls and verifies all parameters of the received pulse.

The following parameters are evaluated:

- Impulse shape
- Polarity
- Amplitude
- Frequency (2 s intervall)

The directional clamp in combination with the parameter monitoring by the receiver provides a safe selection regardless of any interference.



The user must only verify the display. This means that generally only one conductor or cable has the correct polarity while all other cables have the opposite polarity.

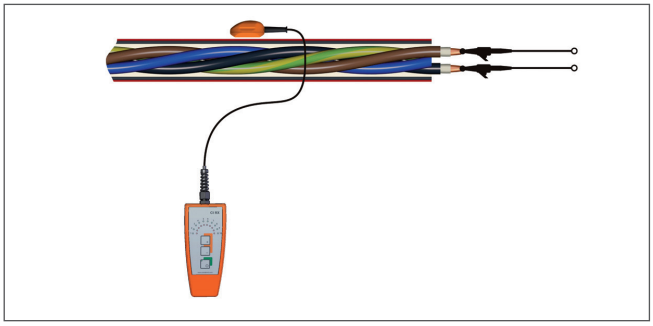
Deviations from these requirements must lead to a control of the complete setup.

Selection in de-energised cables with the CI Set
The CI TX an active, internally powered generator, is designed for the selection of de-energised cables. This mains or rechargeable battery powered unit generates active impulses up to 100 A. The pulse can fed via direct connection or with the optional transmitter clamp (SZ 80). The operating time of up to 4 hours permits a very flexible use.

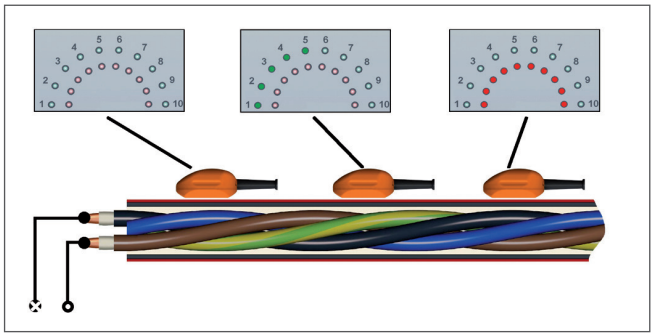
Low-voltage applications
Work on low-voltage cable networks is increasingly being carried out live. This demands a reliable system to identify the correct cable, which naturally has to be possible without switching off the mains voltage.

Identification of energised cables with the LCI Set
The impulse generator LCI TX is connected by a protective conductor lead with the 115 V/230 V AC supply. The feeding transformer is loaded with current pulses of approx. 80 A. in 2 second intervals. This results in a pulsed current on the section of cable which is received by the flexible clamp and is thus used to reliably identify this section of cable (not suitable for IT networks!). Two LEDs indicate the correct connection polarity. This guarantees correct connection to safety sockets.

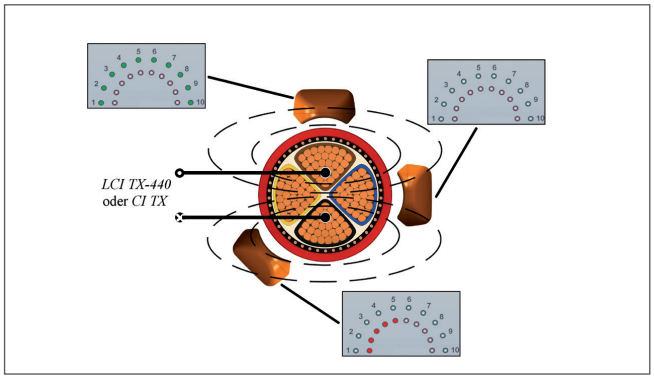
Selection between two phases, and in TT and IT systems
For the selection between phases and with the twisted field method there is the LCI TX 440, which can be connected directly between two phases of a low voltage distribution.



The selection generator LCI TX 440 is connected between two phases up to 440 V. The requirement is a current flow through the feeding transformer.With the twisted field sensor TFS CI, the required phase is then directly detected through the outer sheath.
For an even safer selection, this system provides the possibility of using the Flex Coupler to select the correct cable first and then to confirm this additionally by using the twist field sensor to verify the specific phase in the cable. In this case the cable can be opened at the outer sheath, and the phase can be exposed before cutting or working on it. Especially for unmarked phases as they exist in PILC or similar, this procedure is very helpful.



Advantage of the twist field method with current impulse
In opposition to a conventional twist field method with audio frequency, the use of the TFS CI in combination with the polarised selection impulse has a significant higher selectivity. This technology has a very clear, narrow limited



maximum on top of the phase to be selected, as well as the same clear negative maximum on the return line. Unused conductors will not produce any signal. This twist field selection works as well with the LCI TX (Connection L-N).
For the connection on open LV distributions the system has standard safety clips with integrated fuse acc. to CAT IV / 600 V. For a direct connection to NH fuses there is an optional NH test adapter for the insertion on top of NH fuses. This enables a mechanically solid and high current capable connection. This adapter is fused with 6 A, and can be directly used at the LCI TX 440 connector or by a screw-in adapter for the fused clip base, to be used with the LCI TX.
The small dimension of the selection generators permits easy storage inside road pillars.

TECHNICAL DATA*

Transmitter for identification on de-energised cables CI TX

Pulse voltage	55 VDC
Pulse current	max. 100 A
Pulse sequence	30 / min
Pulse width	72 ms
Power supply	100 … 240 VAC; 50 / 60 Hz; 12 VDC rechargeable battery
Operating time	4 h ion rechargeable 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/storage temperature	- 10 °C … + 60 °C
Relative humidity	93 % at 30 °C (non-condensing)

Universal-receiver CI RX

Sensor	Flex-Coupler Ø ca. 150 mm (oder ca. 250 mm)
Amplifier setting	10 steps; 3 … 24 dB
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/storage temperature	- 10 °C … + 60 °C
Relative humidity	93 % at 30 °C (non-condensing)

Transmitter for identification on energised cables LCI TX

Operating voltage	100 … 240 VAC; 50 / 60 Hz
Pulse current	80 A
Pulse sequence	15 / min
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/storage temperature	- 10 °C … + 60 °C CAT IV/300V
Relative humidity	93 % at 30 °C (non-condensing)

Transmitter for phase to phase identification on energised cables LCI TX 440X

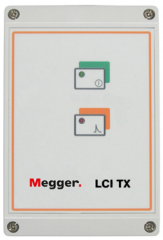
Operating voltage	100 … 440 VAC; 50 / 60 Hz
Pulse current	80 A
Pulse sequence	15 / min
Pulse width	1,5 ms
Weight	0,5 kg
Dimensions (W x H x D)	151 x 101 x 60 mm
Protection class	IP 54
Operating/storage temperature	- 10 °C … + 60 °C CAT IV / 600V
Relative humidity	93 % at 30 °C (non-condensing)

*We reserve the right to make technical changes

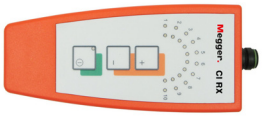
Phase identification sensor

Twisted field sensor TFS CI

CI & LCI set with transport case



LCI TX / TX-440



CI-RX

CI-TX

SZ 80

Flexible clamp 150 / 250

Lead kit for LCI

Lead kit for CI

Test lead MK 37-EU

Test lead MK 55

ORDERING INFORMATION

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

	Flexible clamp (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 LCI) (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 generator, 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

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