

SPLIT CURRENT SENSOR INTENDED FOR MV DISTRIBUTION LINES



DESCRIPTION OF SCXI

Rev. 2 - January 2018

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SAFETY SYMBOLS



WARNING OR CAUTION:

This symbol denotes a hazard. Not following the indicated procedure, operation or alike could mean total or partial breakdown of the equipment or even injury to the personnel handling it.



NOTE:

Information or important aspects to take into account in a procedure, operation or alike.

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1 INTRODUCTION

1.1 GENERAL

The SCXI is a current measurement sensor suitable for underground insulated medium-voltage cables, specially in masonry, air and gas insulated switchgear.

By installing an SCXI sensor in each of the three phases of the distribution MV cables, the vector sum of the three measured current values can be calculated.

1.2 CONSTITUTION

The SCXI sensor is made up of a toroidal transformer of two semi-cores of 500:1 transformation ratio.

In order to make installation easier, the sensor is split-core type and should be installed by clamping the conductor, including the shield connected to ground.

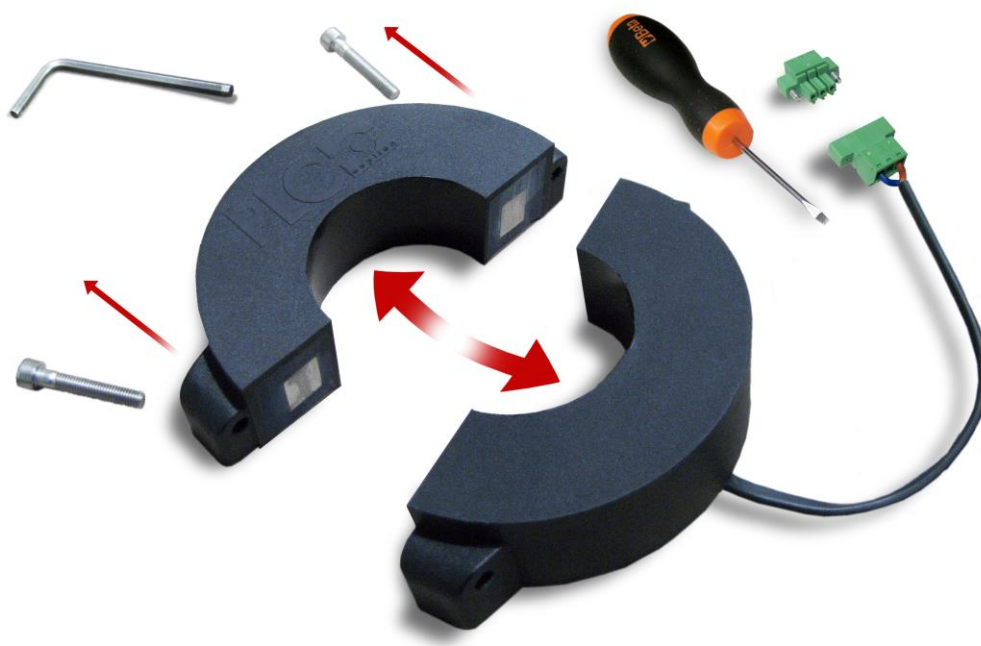


Figure 1 Locking system of the SCXI sensor

1.3 TECHNICAL CHARACTERISTICS

1.3.1 Electrical characteristics

Type	Inductive
Use	Indoor
Connection type	Over insulated cable
Nominal transformation ratio	500:1
Dielectric Strength	5 kVrms/1 min
Minimum saturation current	1500 A (the secondary being short-circuited)
Dynamic current	20 kA
Accuracy	±2%
SCXI electrical circuit	See Figure 3

1.3.2 Operating conditions

Temperature and humidity	From -25 °C to +55 °C and relative humidity <95%
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1.3.3 Mechanical characteristics

Dimensions	External diameter: 111 mm
	Internal diameter: 55 mm
	Width 134 mm
	Thickness: 31 mm
	See Figure 2
Connection	Screw terminal for 1.5 mm ² cables. It is necessary a 2.5 mm flat-headed screwdriver
Maximum MV cable diameter	50 mm
Locking system	By means of two Allen screws (see Figure 1)
Weight	600 g

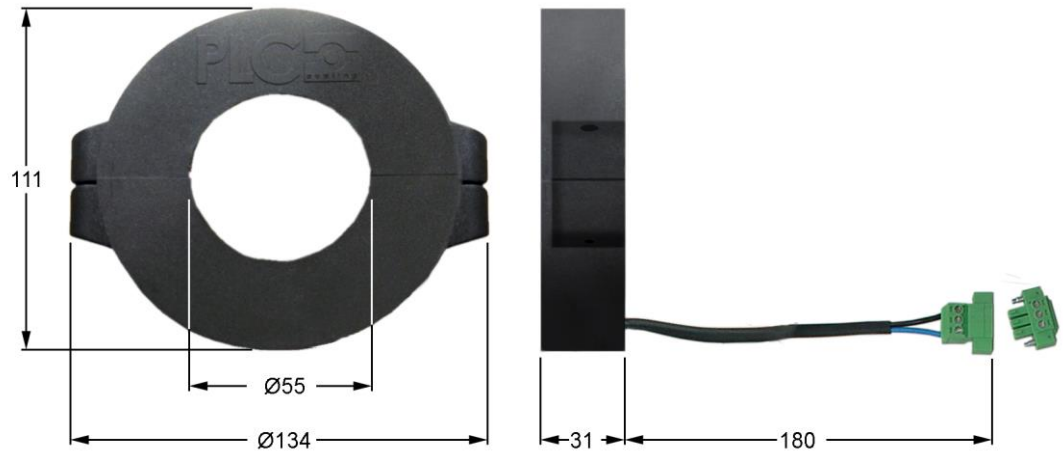


Figure 2 General dimensions of the SCXI sensor

Blue and black cables and the logo give information about the relative phase in order to use three SCXI sensors to obtain the zero-sequence current.

The SCXI electric circuit according to flow direction is shown in Figure 3.

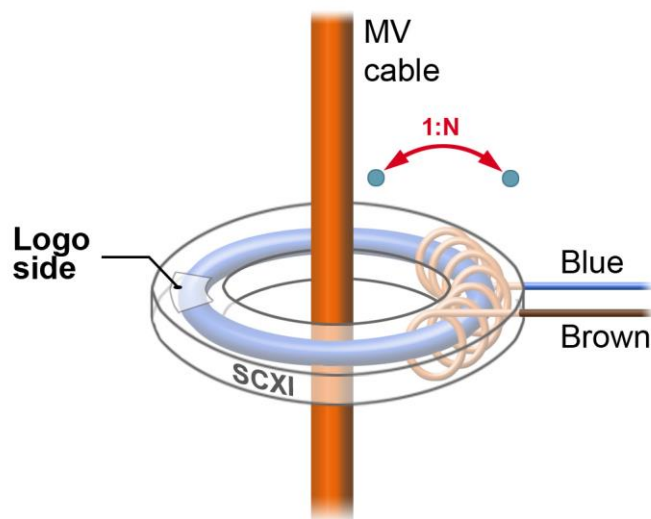


Figure 3 SCXI electric circuit according to current flow direction

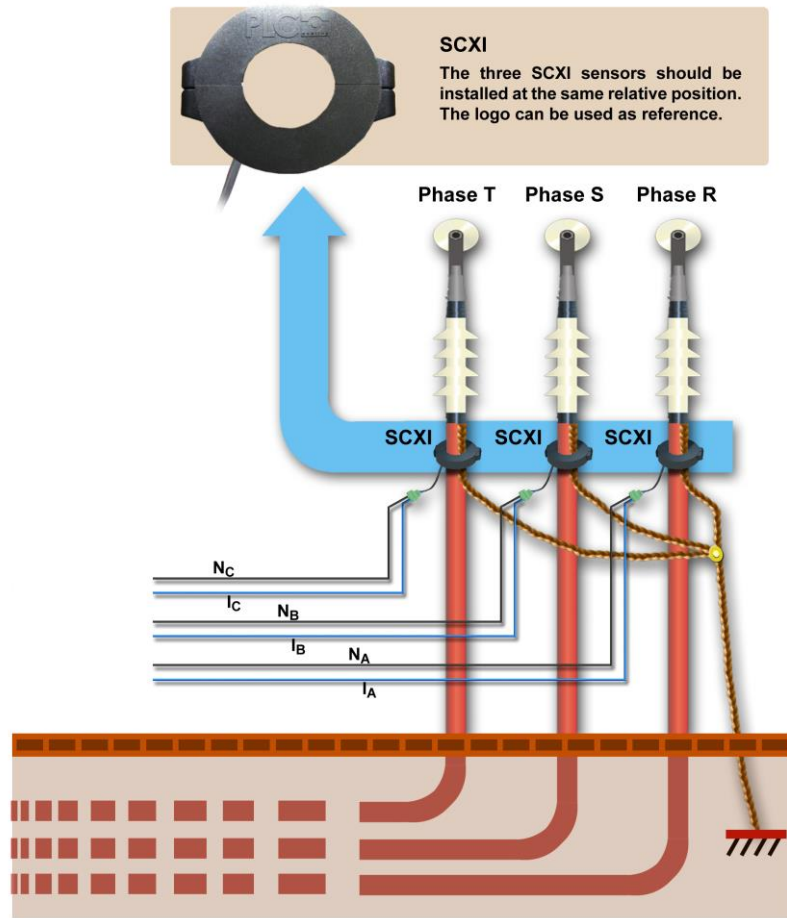


Figure 4 Three phase current sensors

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WARNINGS BEFORE INSTALLING THE SCXI



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1. The installation of the SCXI unit in a medium-voltage power line is generically subject to the fulfilment of all the safety measures and prevention of risks established for this type of work by the electricity company that will use these devices and the Safety standards (EN 50110).
 2. In order to install and handle the SCXI current sensor the following points must be complied with:
 - Only qualified personnel appointed by the electricity company that owns the installation should carry out the installation and handling of the SCXI sensor.
 - The SCXI should only be installed WITHOUT VOLTAGE in the medium-voltage power line, and the conductors have to be connected to ground.
 - The environment in which it is to operate should be suitable for the sensor, fulfilling all the conditions indicated in section 1.3, *TECHNICAL CHARACTERISTICS*.
 3. ZIV will not accept responsibility for any injury to persons, installations or third parties, caused by the non-fulfilment of points 1 and 2.