

Vigilohm mobile fault locating kit XGR + XRM + probes

053130



presentation

The mobile fault locating kit comes in the form of a case containing:

- a locating signal generator, XGR, supplied with 220 - 240 V AC;
- a locating signal receiver XRM;
- three tong-type current probes: XP15, XP50 and XP100.

The devices making up the kit and the XGR for other voltages are all available individually.

See catalogue number tables.

use

The kit is used on LV IT systems (i.e. installations with an unearthed or impedance-earthed neutral). It enables fault locating on:

- AC installations 50 to 400 Hz;
- DC installations.

It is used mainly with insulation monitoring devices that inject DC currents (TR22A, EM9B or EM9BV, etc.).

operation

- the XGR generator injects a 2.5 Hz AC voltage between the installation and the earth, thereby creating a leakage current which passes through the installation insulation impedance;
- the XRM mobile receiver is associated with one of the three tong-type probes, XP15, XP50 or XP100, and detects this leakage current at 2.5 Hz. It displays a value between 1 and 19 according to the current passing through the probe, thus detecting the leakage current;
- three current probes are available, the XP15, XP50 and the XP100, for cables with diameters up to 12, 50 and 100 mm respectively. Older probe models are not compatible with the XRM.

type of installation to be monitored

LV AC or mixed AC/DC IT systems	phase-to-phase voltage with XGR connected to neutral	760 V
	with XGR connected to phase	440 V
	frequency	45 to 400 Hz
DC or rectified IT systems	voltage between polarities	500 V

electrical characteristics

auxiliary supply	XGR	voltage	115 to 525 V AC
		maximum consumption	15 VA
	XRM	IEC alkaline 9 V cell	PP3 or 6 LR61 type not supplied
display	XRM	type	digital
		scale	0 to 19
calibration	XRM		by potentiometer
impedance	XGR		40 kΩ
maximum current injected	XGR		2.5 mA

mechanical characteristics

weight	XGR		0.85 kg
	XRM		0.2 kg
case	XGR	plastic	portable
	XRM	plastic	portable

associated equipment

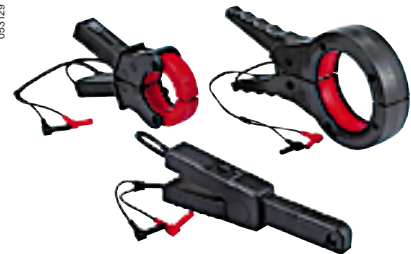
probes	XP15	for cables up to	∅ 12 mm
	XP50	for cables up to	∅ 50 mm
	XP100	for cables up to	∅ 100 mm

047166



Locating signal generator XGR

053129



XP15, XP50 and XP100 probes.

051350



Locating signal receiver XRM

Vigilohm: functions and characteristics

toroids

051352



Closed toroids (type A)

042589



Split toroids (type OA)

use

The toroids are used to detect the earth leakage currents. They are used with the Vigilohm System for the detection, locating and measurement of earth fault currents on IT systems. Closed toroids (type A) are suitable for new installations and extensions. Split toroids (type OA) are suitable for renovated installations and extensions.

functions

These toroids detect leakage current and transmit a proportional signal to the associated receiver.

compatibility

All type A and OA toroids are compatible with the various devices of the Vigilohm System range: XD301, XD312, XD308C, XL308, XL316, XML308 and XML316.

installation and connection

Closed toroids (type A)

- enclosed in an insulated casing;
- 2 possibilities for mounting:
 - diam. 30-50-80 mm on symmetrical rail,
 - all diameters on plate and cables;
- connection:
 - diam. 30 to 200 mm by tunnel terminals for 0.22 mm² wires (minimum),
 - diam. 300 mm by 6.35 mm tab connectors.

Split toroids (type OA)

- enclosed in an insulated casing;
- mounting on plate and cable;
- connection by 5 mm diam. screws for 0.22 mm² wires.

characteristics

toroids

electrical characteristics

transformation ratio	1/1000	1/1000
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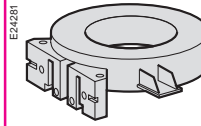
maximum permissible current: 1 kA continuous - 5 kA/1.5 s - 100 kA/0.05 s	■	■
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mechanical characteristics

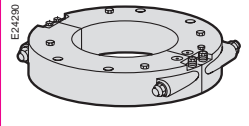
weight (kg)	ø 30	ø 50	ø 80	ø 120	ø 200	ø 300	ø 46	ø 110
	0.120	0.200	0.420	0.590	1.320	2.230		
							1.300	3.200

other characteristics

temperature range	for storage	- 55 °C to + 85 °C	- 55 °C to + 85 °C
	for operation	- 5 °C to + 70 °C	- 5 °C to + 70 °C
degree of protection		IP 20	IP 20



type A



type OA

installation precautions

Immunity to line overcurrents

Line overcurrents, due to motor starting or transformer energising, may result in unnecessary fault detection by the detector. A number of simple precautions can help prevent this from happening: when used together they are even more effective:

- place the toroid on a straight part of the cable;
- carefully centre the cable in the toroid;
- use a toroid with a diameter far larger than the diameter of the cable (2 x diameter), (figure 1).

For severe operating conditions, use of a mild steel sleeve placed around the cable, in the toroid, considerably increases immunity.

Recommended characteristics

- mild steel foil, 1/10 mm thick, to be wound several times around the cable in the toroid (at least 1 mm thick);
- internal diameter of toroid > 1.4 x external diameter of the cable bundle (figure 2);

- toroid-detector link:
 - resistance ≤ 3 Ω,
 - cross-sectional area of wires: 0.75 mm² to 1.5 mm²,
 - maximum length: 50 m.

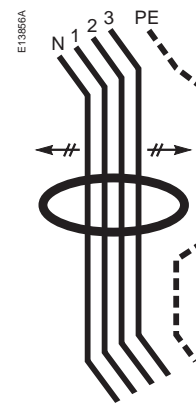


Figure 1.

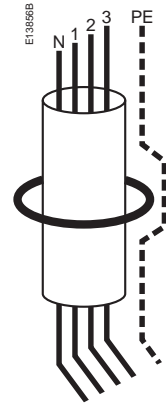


Figure 2.