

SPG5-1000-1

Portable stand-alone cable fault location unit for LV cable installations

Megger[®]



- **Toolbox philosophy: Identification, prelocation, pinpointing and conversion of faults all in one unit**
- **Safety interlocks for monitoring of station earth and touch potentials (F-U), as well as earth connections (F-Ohm)**
- **Fully automatic operation of all modes via motorised switching**
- **Software-based user interface with single “turn & click” rotary knob control**
- **ICEplus transient prelocation method for normal unbranched LV cables as well as for branched LV networks**
- **DC test (DC hi-pot) and burning up to 5 kV, surging (thumping) up to 4 kV, delivers 1000 J**

DESCRIPTION

The SPG5-1000-1 is a comprehensive all-in-one-box fault locating solution, tailored for testing, identifying, converting, prelocating, and pinpointing faults in low-voltage cable installations. It effectively handles a wide variety of cable faults: from flashing and non-flashing to high and low resistance, intermittent, main insulation, and sheath faults.

Prioritising user convenience, the SPG5-1000-1 is fully automated and features an intuitive software interface, eliminating most user interventions known from manual analogue instruments. The controller actuates motorised switches so that the unit auto-adjusts to the correct settings based on user input. Simplifying the operation further, a single “turn and click” rotary knob ensures easy accessibility for users of all experience levels.

Utilising the integrated ICEplus method for HV prelocation, the SPG5-1000-1 accurately and precisely locates faults in both unbranched point-to-point low-voltage cables and branched low-voltage networks with T- or Y-joints. ICEplus is a transient prelocation method that evaluates the oscillating current component of a propagating travelling wave which was previously created by capacitor discharge into the cable. Notably, unlike TDR and ARM, this method is unaffected by common issues of attenuation and reflections at T- or Y-junctions, ensuring consistent prelocation regardless of the network’s configuration.

FEATURES

- Most comprehensive safety features in its class and comparatively lightweight
- Automation via motorised switches for operating mode selection, execution, and voltage range selection
- Identification of different fault types: Insulation test up to 5 kV and 250 MΩ
- DC test (DC hi-pot) up to 5 kV, incl. ramped DC function and automatic voltage breakdown detection
- Built-in transient prelocation method ICEplus
- Surging (thumping) at 2/4 kV with 1000 J output
- Sheath testing and sheath fault pinpointing up to 5 kV DC

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TECHNICAL DATA

Protection class	IP 20
Weight	Device 50 kg (110 lbs) + accessories
Operating temperature	-10 °C ... +50 °C (14 °F ... +122 °F)
Controls	Via one single integrated controller for all operating modes and system functions
Safety	Safety interlocks for monitoring of station earth and hazardous touch potentials via reference earth (F-U) including voltage-time-integral in case of fast transients, and for monitoring of earth connections via loop resistance (F-Ohm); robust discharge and earthing unit good for 1 kJ or 80 µF at 5 kV DC and with a time constant < 1 sec
Controller display	Industrial grade colour TFT panel
LCD size	14.5 cm (5.7 inch)
Aspect ratio	4:3
Resolution	640 x 480 (VGA)
Backlight	LED
Luminance	400 cd/m ²
HV DC source	0 ... 5 kV DC, leakage current measurement in ranges of 1 / 10 / 100 mA
Breakdown detection	0 ... 5 kV DC
Insulation test	Up to 5 kV DC Measuring range 1 kΩ ... 250 MΩ
Fault conversion	High frequency burning in voltage ranges of 5 / 2 / 0.5 kV Max. burn currents of 100 / 250 / 1000 mA
Surge levels	Dual stage, 0 ... 2 / 0 ... 4 kV with 1000 / 1000 J
Surge rate	Adjustable 3 ... 10 sec, single shot
Built-in prelocation	ICEplus with up to 4 kV capacitor discharge
Sheath testing	0 ... 5 kV DC
Sheath fault pinpointing	Pulsed DC from HV DC source for voltage gradient method (step voltage method) Pulse sequences of 1:3, 1:4, 1:6, DC
Storage temperature	-40 °C ... +70 °C (-40 °F ... +158 °F)
Mains input supply	750 VA 230 V ± 10%, 50/60 Hz
Dimensions (L x W x H)	500 x 545 x 650 mm (19.7 x 21.5 x 25.6 inch)

ORDERING INFORMATION

Product	Order no.
LV fault location solution SPG5 with 5 m connection set incl. fault locating unit SPG5-1000-1 itself, plus 1x accessories bag and set of cables: 1x pluggable HV lead 5 m, T9 terminations, 1x MC crocodile clamp and 1x adapter for operational earth (HV return), 1x earthing cable 6 mm ² 5 m, 1x mains input lead 2.5 m Schuko plug, 1x F-U lead 5 m, 1x metal stake for reference earth, 1x nylon hammer	1015076 + 1015234
LV fault location solution SPG5 with 10 m connection set incl. fault locating unit SPG5-1000-1 itself, plus 1x accessories bag and set of cables: 1x pluggable HV lead 10 m, T9 terminations, 1x MC crocodile clamp and 1x adapter for operational earth (HV return), 1x earthing cable 6 mm ² 10 m, 1x mains input lead 2.5 m Schuko plug, 1x F-U lead 5 m, 1x metal stake for reference earth, 1x nylon hammer	1015283 + 1015235
LV fault location solution SPG5 with 20 m connection set incl. fault locating unit SPG5-1000-1 itself, plus 1x accessories bag and set of cables: 1x pluggable HV lead 20 m on cable reel, T9 terminations, 1x MC crocodile clamp and 1x adapter for operational earth (HV return), 1x earthing cable 16 mm ² 20 m, 1x mains input lead 2.5 m Schuko plug, 1x F-U lead 5 m, 1x metal stake for reference earth, 1x nylon hammer	1015284 + 1015236
External safety device suitable for SPG5, relevant for CENELEC countries in accordance with EN 50191:2010, VDE 0104:2011 and DGUV 203-034	2012574

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SALES OFFICE

Megger Germany GmbH
Dr.-Herbert-lann-Str. 6
D-96148 Baunach
T +49 9544 68-0
E team.international@megger.com

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www.megger.com
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