

# SWG-12

## MOBILE CABLE TEST AND FAULT LOCATION SYSTEM



- **Cable insulation testing with DC voltage up to 12 kV**
- **Fault conditioning (burning) with current up to 100 mA @ 12 kV**
- **Detachable reflectometer with touch screen control**
- **TDR, ARC / ARC multi-shot, ICE and DECAY pre-location**
- **Surge generator up to 1100 J with 0 ... 3 / 6 / 12 kV surge levels switch**
- **Advanced safety systems**

Mobile cable test and fault location system SWG-12 is designed for:

- **Testing cable insulation** with DC voltage up to 12 kV;
- **Fault conditioning** by burning faulty cable insulation with current up to 100 mA @ 12 kV;
- **Pre-locating cable faults** with the reflectometer RIF-9 based on the low-voltage impulse reflection method (TDR), and high-voltage decay method (DECAY), single impulse (ARC) and multiple impulse (ARC multi-shot) arc reflection method, and impulse current method (ICE);
- **Pinpointing cable faults** with an acoustic method with 1100 J surge generator and a suitable signal receiver.

SWG-12 is supplied with the detachable reflectometer RIF-9 which is equipped with extra-bright 10.4" display with touch control, making the process of fault pre-location quick, easy and efficient.

Powerful 1100 J surge generator is accompanied by a surge levels switch which allows to achieve the maximum surge impulse energy at 3, 6 and 12 kV. High surge energy enhances the possibilities of fault pinpointing by delivering a stronger signal in the conditions of high interference, deep cable burial or long distance to the place of a fault.

SWG-12 features various operator safety assurance systems and provides a reliable and comprehensive solution for complete servicing of low- and medium-voltage cables.



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<b>DC testing</b>	Output voltage adjustment and indication range	0 ... 12 kV
	Output current indication ranges	0 ... 10 mA
	Indication	Analogue indication of output voltage and current in real time
	Relative voltage and current indication error	$\pm 3$ % of full range
<b>Fault conditioning (burning)</b>	Output DC voltage adjustment and indication range	0 ... 12 kV
	Output current (open-circuit run)	up to 100 mA
	Voltage adjustment type	Continuous
	Indication	Analogue indication of output voltage and current in real time
	Relative voltage and current indication error	$\pm 3$ % of full range
<b>Fault pre-location</b>	Pre-location methods	<ul style="list-style-type: none"> <li>▪ TDR (impulse reflection method)</li> <li>▪ ARC / ARC multi-shot (single impulse / multiple impulse arc reflection method)</li> <li>▪ ICE (impulse current method)</li> <li>▪ DECAY (voltage decay method)</li> </ul>
	Fault detection ranges (for velocity factor 1.50 or $v/2 = 100$ m/ $\mu$ s)	0 ... 60 / 120 / 250 / 500 / 1000 / 2000 / 5000 / 10 000 / 20 000 / 50 000 / 120 000 m
	Fault detection resolution: <ul style="list-style-type: none"> <li>▪ for velocity factor 1.50 (<math>v/2 = 100</math> m/<math>\mu</math>s)</li> <li>▪ for velocity factor 1.87 (<math>v/2 = 80.2</math> m/<math>\mu</math>s)</li> </ul>	0.5 m 0.4 m
	Distance to fault detection accuracy	0.2 % of selected range
	Sampling rate	200 MHz
	Time mark accuracy	0.01 %
	Output impedance adjustment range	2 ... 100 $\Omega$ , resolution 2 $\Omega$
	Probe pulse parameters: <ul style="list-style-type: none"> <li>▪ voltage</li> <li>▪ width adjustment range</li> </ul>	45 V 10 ns ... 100 $\mu$ s
	Gain adjustment range	minus 21 ... + 69 dB
	Velocity factor adjustment range	0.750 ... 3.000, resolution 0.001
	Propagation velocity ( $v/2$ ) adjustment range	50.0 ... 200.0 m/ $\mu$ s, resolution 0.1 m/ $\mu$ s
	Internal memory of the reflectometer: <ul style="list-style-type: none"> <li>▪ historical measurements with associated settings</li> <li>▪ reference cable propagation velocity (<math>v/2</math>) records</li> </ul>	up to 1000 up to 500

<b>Fault pinpointing with acoustic method</b>	Surge voltage levels and adjustment ranges	<ul style="list-style-type: none"> <li>▪ Level 1: 0 ... 3 kV</li> <li>▪ Level 2: 0 ... 6 kV</li> <li>▪ Level 3: 0 ... 12 kV</li> </ul>
	Surge energy at each level	up to 1100 J
	Surge rate	<ul style="list-style-type: none"> <li>▪ Single pulse, manually triggered</li> <li>▪ 4 ... 12 surges/min, automatic mode</li> </ul>
	Indication	Analogue indication of output voltage in real time
<b>Controls and interfaces</b>	Connection interfaces	<ul style="list-style-type: none"> <li>▪ USB-A (user memory stick, FAT32)</li> <li>▪ USB-B (PC connection)</li> <li>▪ RS-485 (service only)</li> </ul>
	Display (reflectometer RIF-9)	10.4" colour TFT, 800 × 600 px, resistive touch
	Operating modes switch	Manual
	Surge voltage levels switch	Manual
	Secondary control interface	Rotary encoder with "ENTER" button
<b>Connections</b>	HV test cable (KEP-12)	6 m
	Power supply cable	10 m
	Protective earthing cable (KEP-10Gct)	10 m
	Earthing control cable	6 m
<b>Safety</b>	Grounding	<ul style="list-style-type: none"> <li>▪ Protective earthing</li> <li>▪ Operating grounding</li> <li>▪ Continuous grounding monitoring system</li> <li>▪ Automatic discharge device</li> </ul>
	Protection	<ul style="list-style-type: none"> <li>▪ Overvoltage</li> <li>▪ Overcurrent</li> <li>▪ Overheating</li> </ul>
	High voltage switch off	<ul style="list-style-type: none"> <li>▪ EMERGENCY STOP button</li> <li>▪ Power keylock switch</li> </ul>
	Ingress protection rating (according to EN 60529)	IP 30
	<b>Power supply and consumption</b>	Mains supply voltage
Mains supply frequency		50 Hz (60 Hz option)
Power consumption		up to 1.0 kV·A
<b>Physical</b>	Dimensions, H × W × D (with RIF-9 installed)	1172 × 775 × 603 mm
	Total weight (with RIF-9 and connection cables)	120 kg

Specifications are subject to change without notice. Pictures are for illustration purposes only.



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