

Press release

Testing cable sheaths and locating cable faults with a mobile device

Finding earth-sensitive faults within minutes

Sulz, 24. August 2012 – Operators of electrical distribution networks, as well as network managers at photovoltaic power plants, wind farms, street lighting or in industrial parks want to find cable faults quickly. Easy to handle and operate and reliable determination of the fault location take priority. BAUR Prüf- und Messtechnik GmbH (Sulz, Austria) took all this into consideration while designing "shirla", a lightweight device weighing not even 20 kg, for cable/cable sheath testing and cable fault location and pinpointing. Powered via the mains supply or via a built-in accumulator, shirla enables cable and cable sheath testing up to 10 kV DC. Hence, it is suitable for use in low and medium voltage networks testing control cables and telecommunication cables.

Preliminary location of low ohmic faults, e.g. sheath faults, works with direct current and is based on the Wheatstone measuring bridge. Hereby, a measuring bridge is balanced with a variable resistance. In shirla, the measuring bridge is used according to Murray (bridge circuit with one auxiliary return) and Glaser (bridge with two auxiliary returns). When measurement is completed, shirla displays the distance to the fault location, either in percentage of the measured cable line or in meters. For distance calculating, the device considers inputs for length, conductor cross-section and conductor material of the cable and its segments to increase the accuracy of the result.

As length and position of the cable are usually known for in-house infrastructures, the fault can be detected within a few meters using a line measuring device (running wheel). Then exact pinpointing only takes a short time. The search receiver KMF 1 or the universal receiver UL 30 can be used for pinpointing. The step voltage method can be applied with both receivers and the sheath fault is often located within a few minutes. shirla delivers the required voltage (e.g. rectangular shape). Depending on cable type, the operator can adjust this pulsed voltage continuously between 100 V and 10 kV.

shirla - the cable sheath testing and fault location system - has proven to be a universal tool for finding cable sheath faults in low voltage structures, such as the lighting network, and also within medium voltage networking, e.g. of wind power plants. Operators and makers of solar parks use shirla regularly for testing and fault location, even on 1 kV DC cables. Apart from faults in the sheath (earth-sensitive faults), low and high ohmic faults can be located with the BAUR device.





Easy handling, light weight and rechargeable battery operation make shirla the favourite tool even for small network-operators.



Earth-sensitive, low ohmic and high ohmic faults can be detected with shirla - the portable sheath testing and fault location device.



Preliminary location with shirla narrows sheath faults down to a few meters. With the step voltage method and the corresponding manual devices, pinpointing the exact position is easily performed.



shirla - Technical Data

Input voltage Max. input power Max. 200 VA Display Bisplay Billuminated digital LCD display, automatic brightness adjustment, 320 x 240 dots Testing Output voltage Output current Display Besistance measurement Voltage and current limitation Measurement method Besurement method Besuring voltage / Bridge voltage Besuring current Max. 50 mA Accuracy Besuring sequence Befinable cable sections Fully automatic balancing and measuring procedure Definable cable sheath fault pin-pointing Pulse voltage Battery mode Battery mode Besurement Battery mode Besurement Besurement limitation Besurement Battery mode Besurement Battery mode Cable and cable sheath fault pin-pointing Battery mode Besurement Battery mode Buttery mode Buttery mode Buttery mode Buttery mode Buttery mode Buttery mode Coperating temperature Coperating temperature Coperating temperature Coperating temperature Coperating time Buttery humidity Buttery Mon-condensing Dimensions (in mm) Approx. 440 x 490 x 220 (L x H x W) Weight including accessories Automatic measurement report output viau Buttery humidity Buttery won-condensing Dimensions (in mm) Approx. 440 x 490 x 220 (L x H x W)		
Display Illuminated digital LCD display, automatic brightness adjustment, 320 x 240 dots	Input voltage	110 VAC 240 VAC, 50 Hz / 60 Hz
brightness adjustment, 320 x 240 dots Testing Output voltage 0 –10 kV Output current 10 mA at 5 kV, 5 mA at 10 kV Resolution 1 μA Resistance measurement yes Voltage and current limitation yes Cable and cable sheath fault prelocation Measurement method 4-conductor measuring bridge according to Murray and Glaser Measuring voltage / Bridge voltage Up to 10 kV Measuring current Max. 50 mA Accuracy ± 0.1% Measuring sequence Fully automatic balancing and measuring procedure Definable cable sections 50 sections Voltage and current limitation yes Cable and cable sheath fault pin-pointing Pulse voltage 100 V – 10 kV Pulse current Max. 700 mA Pulse pattern Three selectable pulse patterns General Integrated rechargeable battery, battery mode for all uses Report preparation Automatic measurement report for testing and fault prelocation, report output via USB 2.0 interface Operating temperature -20 °C+50 °C Storage temperature -40 °C+60 °C <	Max. input power	Max. 200 VA
Output voltage 0 −10 kV Output current 10 mA at 5 kV, 5 mA at 10 kV Resolution 1 μA Resistance measurement yes Voltage and current limitation yes Cable and cable sheath fault prelocation Measurement method 4-conductor measuring bridge according to Murray and Glaser Measuring voltage / Bridge voltage Up to 10 kV Measuring current Max. 50 mA Accuracy ± 0.1% Measuring sequence Fully automatic balancing and measuring procedure Definable cable sections 50 sections Voltage and current limitation yes Cable and cable sheath fault pin-pointing Pulse voltage 100 V − 10 kV Pulse current Max. 700 mA Pulse pattern Three selectable pulse patterns General Integrated rechargeable battery, battery mode for all uses Report preparation Automatic measurement report for testing and fault prelocation, report output via USB 2.0 interface Operating temperature -20 °C+50 °C Storage temperature -40 °C+60 °C Relative humidity Non-condensing Dimensions (in mm	Display	
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Relative humidity Non-condensing Dimensions (in mm) Approx. 440 x 490 x 220 (L x H x W)	Operating temperature	-20 ℃+50 ℃
Dimensions (in mm) Approx. 440 x 490 x 220 (L x H x W)	Storage temperature	-40 °C+60 °C
	Relative humidity	Non-condensing
Weight including accessories < 20 kg	Dimensions (in mm)	Approx. 440 x 490 x 220 (L x H x W)
	Weight including accessories	< 20 kg



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