EXAMPLE

Faulted cable is 25000 meters long.
The value read in position ”E”, LE,

is 24.7%, the value LB is 24.7 %.

the cable has only one contact

at distance:

$$\frac{24.7 \times 25000}{100} = 6175$$

meters from the Outside end of the cable.

SPECIFICATIONS

Can test cables with a loop resistance between 0.1 and 40.000 Ω
Range: > 100 km @ 400 Ω/km
Basic accuracy: ± 0.1 % ± 1 digit
Test current: 0.2 ÷ 500 mA
Power: 9 V PP3 style alkaline cell
Battery life: 1000 measurem. @ 50 Ω
Weight: 400 g
Dimensions: 191 x 102 x 57 mm

ENVIRONMENTAL CONDITIONS

Pollution degree 2

Operating Environment 0 °C to 40 °C

TROUBLESHOOTING

No display dim display	Dead battery. Instrument failure.
Unstable measurement	Dead battery. Cable to test not faulted. Measurement carried out immediately after a voltage test. Cable to test too short. Cable to test not connected. Broken test leads. Instrument failure.

CALIBRATION

Our instruments are calibrated using the following standards

Datron 4705 Autocal Multifunction Calibrator
Yokogawa 7563 Precision Digital Thermometer
GenRad 1686 Digital Capacitance Meter
Agilent 66309D Mobile Communic. Source
HP 34401 Multimeter
HP 34970A Data Acquisition Unit
Burster 1424 IEEE488 High Precision Decade
Tettex 3200/BU Standard Resistor
AOIP 0,01 Ω Standard Resistor
Tettex Decade Capacitors
ARCO Standard Capacitors
JBC 5001 Standard Capacitor
Lecroy LT264ML Oscilloscope
Haefely PU12 Impulse tester
Schaffner NSG431 Electr. Discharge Simulator
Lecroy 9109 Arbitrary Function Generator
Norbar 40051 Torque meter
HP 3577A Network Analyzer
Agilent E4406 VSA Tester
Agilent 33120A arbitrary waveform generator

SERVICING INFORMATION

If you have questions or need further assistance, please email us at support@agminstruments.com

Our complete catalog can be viewed, printed or book marked from our website: www.agmel.com

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USER MANUAL

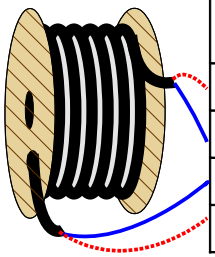
Short circuit locator for metallic cables

Mod. *A694*

AGMel

EA694 Rev 6 12/18

1 battery holder
2 display
3 measure switch
4 probes connector
5 measure mode select



Connect wire	with test lead
A	E
B	COM
B	COM
A	I

Lead connections

DESCRIPTION

The A694 is a short circuit locator for metallic cable wind on the reel; it gives the position of the fault from the inside or outside end of the cable, in percentage to the total cable length.

HOW TO USE IT

Ground the cable to be tested from any electrical charges.

If conductor “A” is short with “B”, connect the crocodile clips to the cable:

1) **the crocodile clip “I” to “A” from the inside end.**

2) **the crocodile clip “E” to “A” from the outside end.**

3) **the crocodile clip “COM” to “B” from the outside end.**

Perform a calibration test:
turn the measure mode knob to “Ref” and push the measure switch, the display will show 100.0 ± 0.1 %, otherwise:

a) the cable has a total resistance below 0.1 Ω

b) the cable has some electrostatic charges within

c) the test leads are broken.

Turn the measure mode knob to “E” and push the measure switch, read on the display the value LE, length of the cable (in percentage to the total cable length) from clip “E” to the short.

Switch the crocodile clip “COM” to conductor “B” from the inside end

push the measure switch, read on the display the value LB.

If LE = LB ± 0.1 %, then the cable has just one short at distance:

$$\frac{\text{(Value LE) x (total length of cable)}}{100}$$

from the outside end of the cable.
If LE ≠ LB ± 0.1 %, the cable has more than one short and the distance to fault is calculated making use of the program a694503e.exe downloaded from the website: www.agmel.com .

WARNINGS AND SAFETY RULES

The locator is protected against electrical charges, but in some conditions these charges on the wire can accumulate and can be dangerous for the technician, therefore

always ground the cable before any measurement

Do not short the clips “I” with “E” for a long time, otherwise the battery life will be reduced.

If it is used with very short cables or with thick conductors, it is advisable to use high capacity NiMh rechargeable batteries.

The calibration test is possible only after a cable is connected.

The crocodile clips “I” and “E” are special Kelvin clips, **do not force the opening.**

COMPLIANCE STATEMENTS

This product is subject to Directive 2002/96/EC and should not be disposed of as unsorted municipal waste.
Please utilize your local WEEE collection facilities in the disposition of this product and otherwise observe all applicable requirements.