



**FEATURES**

- DC and AC fault location measurement
- Isolation resistance measurement
- Loop resistance measurement
- Resistance difference measurement
- Mutual capacitance measurement
- Conductor-shield capacitance measurement
- Break and split measurement
- DMM functions
- Cable temperature measurement by external test probe
- Simple, menu controlled operation
- Storage of setups and results
- Results can be logged on external printer or PC via RS232C
- Software upgrade via RS232C
- Program for supporting the calibration procedure according to ISO 9000
- 128 x 128 graphic LCD display with backlight
- Small size, suitable for using in the field
- Internal rechargeable battery pack

**APPLICATIONS**

The **Fault Locator Bridge EFL 10** is a microprocessor controlled, DC and AC cable measuring instrument intended for fast and accurate fault location and quality testing of telecommunication cables.

**SPECIFICATIONS**

**Loop resistance**

Measuring range..... 1 Ohm to 10 kOhm  
 Accuracy ..... ±0.2% rdg ±0.1 Ohm  
 (100 Ohm to 10 kOhm)

**Resistance difference (ΔR)**

Measuring range of RL..... 1 Ohm to 5 kOhm  
 Measuring range of ΔR..... 1 Ohm to 1000 Ohm  
 Accuracy ΔR  
 1 to 10 Ohm ..... ±1% rdg ±0.1 Ohm  
 10 to 100 Ohm ..... ±1% to 0.2% rdg ±0.1 Ohm  
 100 to 1000 Ohm ..... ±0.2% rdg ±0.05 Ohm

**Insulation resistance**

Measuring range..... 10 kOhm to 100(20000)MOhm  
 Accuracy\*\*  
 100 kOhm to 10 MOhm ..... ±1% rdg ±1 digit  
 10 MOhm to 100 MOhm ..... ±2% rdg  
 100 MOhm to 3000 MOhm ..... ±10% rdg  
 3000 MOhm to 10000 MOhm ..... ±20% rdg  
 10000 MOhm to 20000 MOhm ..... ±30% rdg

**Capacitance**

Measuring range..... 1 nF to 10(25) μF  
 tan δ..... 0.0001 to 0.1  
 Accuracy (10 nF to 10 μF)\*\* ... ±0.5% rdg ±1 digit  
 Measuring frequency ..... 11 Hz

**DC Fault Location**

Measuring methods  
 Murray Loop  
 Three Point  
 Improved Hector (Küpfmüller)  
 Loop resistance range ..... 1 Ohm to 10 kOhm  
 Accuracy of Lx/L (RL = 2 kOhm, Lx/L=0.1 to 1):  
 Fault <1 MOhm..... ±0.1% rdg ±1 digit  
 Fault 1 to 5 MOhm..... ±0.2% rdg ±1 digit  
 Fault 5 to 25 MOhm..... ±1% rdg ±1 digit  
 Fault 25 to 100 MOhm..... ±5% rdg ±1 digit  
 Measuring voltage ..... max. 100 V  
 Measuring current..... max. 400 μA  
 Internal filter ..... > 70 dB at 50 Hz  
 Stored cable parameters  
 Standard Cu and Al cables  
 User Defined cables  
 User defined Multi-Section cable  
 User defined Loaded cable

**AC Fault Location**

Wire break, with and without leakage  
 Measuring range (depending on cable) .up to 20 km  
 Accuracy of Lx/L  
 (20 nF to 10 μF)..... ±(0.2 to 1)% rdg ±1 digit  
 Measuring frequency ..... 11 Hz  
 Split location  
 Measuring range (depending on cable) .up to 20 km  
 Accuracy of Lx/L and L2/L  
 (20 nF to 10 μF)..... ±(0.2 to 1)% rdg ±1 digit  
 Measuring frequency ..... 11 Hz

„rdg“ is an abbreviation for „of reading“



**Voltage**

DC voltage.....	0 to 100 V
AC voltage.....	0 to 100 V <sub>RMS</sub>
Accuracy .....	±1% rdg ±0.1 V
Frequency range .....	15 to 300 Hz

**Temperature (with Pt 1000 temperature probe)**

Temperature range .....	-20 to +60°C
Resolution .....	0.1°C
Accuracy.....	±0.4°C

**Storage and print out of measurement results**

Memory .....	for 128 result display
Print out from result display or from memory via RS232C interface	

**Connectors**

Connectors for measuring cables .....	4 mm safety banana sockets
Interface for printer or PC....	9 pin D Sub for RS232C
Charger .....	2.1 / 5.5 mm

**General specifications**

Power supply.....	internal rechargeable battery pack
Operation time.....	approx. 8 hours
External charger .....	mains adapter
Charging time in fast charging mode	less than 3 hours
Power down automatic after 10 minutes with no key stroke	
Display.....	192 x 192 graphic LCD with backlight
Input protection.....	100 V <sub>RMS</sub> 50 Hz, 140 V <sub>DC</sub> , 100 mA <sub>PEAK</sub> , for 30 s

**Environmental conditions**

Reference range .....	+23°C ± 5°C, RH 45% to 75% *
Specified operating range .....	0°C to +40°C, RH 30% to 75% *(< 25 g/m <sup>3</sup> )
Operating range limits .....	-10°C to +50°C, RH 30% to 75% *(< 25 g/m <sup>3</sup> )
Transport/storage range limits .....	-20°C to +70°C, RH 10% to 75% *(< 35 g/m <sup>3</sup> )

**Dimensions**..... 200 x 100 x 40 mm

**Weight**..... 0.8 kg

\* without condensation

\*\* in 2/WIRE mode

**Ordering information****FAULT LOCATOR BRIDGE**

**EFL 10** ..... 325-000-000

**Including:**

- Operating manual.....	OM 325-000-000E
- Calibration Certificate .....	CC 325-000-000E
- CD containing .....	CD 325-000-000E
- Measuring cable set .....	Y107-355
- PC connecting serial cable.....	Y107-302
- Software for PC .....	SW-325-902-000
- Mains adapter.....	Y146-001
- Battery (built in) .....	326-210-000
- Carrying case .....	Y147-007
- Shoulder bag .....	Y147-005
- EFF 50 Filter Unit .....	402-000-000

**Options:**

- Temperature probe .....	Y-146-014
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21.09.2009