



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_{RMS}
 Accuracy $\pm 1\%$ rdg ± 0.1 V
 Frequency range 15 to 300 Hz

Temperature (with Pt 1000 temperature probe)

Temperature range -20 to $+60^{\circ}\text{C}$
 Resolution 0.1°C
 Accuracy..... $\pm 0.4^{\circ}\text{C}$

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..... $100\text{ V}_{\text{RMS}}$ 50 Hz, 140 V_{DC} ,
 $100\text{ mA}_{\text{PEAK}}$, for 30 s

Environmental conditions

Reference range $+23^{\circ}\text{C} \pm 5^{\circ}\text{C}$,
 RH 45% to 75% *
 Specified operating range 0°C to $+40^{\circ}\text{C}$,
 RH 30% to 75% * ($< 25\text{ g/m}^3$)
 Operating range limits -10°C to $+50^{\circ}\text{C}$,
 RH 30% to 75% * ($< 25\text{ g/m}^3$)
 Transport/storage range limits -20°C to $+70^{\circ}\text{C}$,
 RH 10% to 75% * ($< 35\text{ g/m}^3$)

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 Y107-390
 – 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