



**FEATURES**

- TDR for balanced cables
- Easy to operate
- Automatic detection of the fault
- Small size, suitable for using in the field at different weather conditions
- Widest range in a hand-held cable fault locator up to 16 km
- Language selectable: English, Russian, German, Italian, French
- Dual balanced input enables
  - Examination of live lines
  - Comparison of two live lines
  - Difference between two live lines
  - Location of crosstalk points
  - Location of intermittent faults
  - Comparison of live line to memory
  - Difference between live line and memory
- Memory for storage waveforms and settings
- Clear waveform display of full trace for accurate diagnosis, 320 x 240 LCD color display with backlight
- Zoom for detailed examination
- Cable library for standard and user defined cable types
- Results can be transferred to PC via USB cable, via WLAN or can be stored on memory stick.
- Internal rechargeable lithium-ion battery pack
- Unit adjustment between V/2 and VOP

**APPLICATIONS**

The ETDR 10A-2 has been designed for quick and accurate fault location and qualification of loaded and non loaded telecommunication cables using impulse reflection technique.

The various measuring modes provide accurate location of discontinuities and errors like open circuit, wet section, loose contact etc.

Loop Pulsing Device (ES 2002) is available to make the TDR measurements easier when the test object is a branched network.

ETDR 10A-2 employs optimized pulsing and sampling methods, supported with advanced filtering and signal processing techniques, to reach the maximum measurement range and clean waveform for easier fault interpretation.

ETDR 10A-2 is designed for ease-of-use. If you select the cable type from the on board cable library and set the measurement range covering the length of the cable to be tested, V/2, gain, pulse width, and the distance dependent compensation of cable attenuation are automatically set as default.

3 to 10 ns pulse widths for close-in resolution. Faults as near as 0.5 m from the pedestal can be easily located.

Help facility with sample traces and useful topic related information.

**SPECIFICATIONS**

**Measuring ranges**

1. For non loaded cable ..... 16 m
  2. For non loaded cable..... 32 m
  3. For non loaded cable ..... 64 m
  4. For non loaded cable..... 160 m
  5. For non loaded cable..... 320 m
  6. For non loaded cable..... 640 m
  7. For non loaded cable..... 1600 m
  8. For non loaded cable..... 3200 m
  9. For all cables ..... 6400 m
  10. For all cables ..... 16000 m
  11. For loaded cables..... 32000 m
- (Maximum range depends on cable features)

**Evaluation of results**

with cursor and marker in meters

**Zoom**

Selectable .....OFF, 2.5, 5

**Resolution**

with zoom ..... 0.06% of range  
without zoom ..... 0.3% of range

**Accuracy**

Sampling .....0.01 m  
Fault location ..... 0.2% of range

**Propagation velocity**

For non loaded cables	
V/2.....	45 to 150 m/ $\mu$ s
VOP.....	30 to 99 %
For loaded cables	
V/2.....	1.2 to 30 m/ $\mu$ s
VOP.....	0.8 to 20 %

**Measuring modes**

L1 AUTOMATIC	With auto configuration
L1 CONTINUOUS	Repeated measurements with averaging
L1 LONG TIME	Location of loose contacts and intermittent faults
L1 SINGLE	One single measurement
L2 CONTINUOUS	Repeated measurements with averaging
L1 & L2 L1 - L2	Comparison of two pairs
XTALK AUTOMATIC	Transmit on L1
XTALK CONTINUOUS	Receive on L2
L1 & MEMORY L1 - MEMORY	Comparison with memory

**Pulse characteristics**

Amplitude: ..... max 10V peak to peak to open circuit  
 Widths for non loaded cables:  
 3, 6, 10, 30, 60, 100, 300, 600 ns 1, 3, 6  $\mu$ s  
 Width for loaded cables: 330  $\mu$ s  
 The provided pulse width changed with range.  
 The pulse amplitude changed with gain and width.

**Gain control**

Range.....0 to 90 dB  
 Steps.....6 dB/step

**Line connection**

Impedances:  
 For non loaded cables .100, 135, 150 Ohm balanced  
 For loaded cables .....600 Ohm balanced  
 Input protection .....200 V DC  
 Balance control ..... up to 900 Ohm

**Memory locations**

For waveforms.....	50
For setups.....	10
For user stored PVF values.....	10
For standard cable parameters.....	30

**GENERAL SPECIFICATIONS**

Power supply  
 Internal rechargeable lithium-ion battery pack  
 Operation time ..... min. 10 hours  
 Charging (without taking the battery pack out)  
 From 230 V mains .....with mains adapter  
 From 12 V car battery ..... with car adapter (option)  
 Charging time..... approx. 3 hours  
 Display ..... 320x240 color TFT LCD  
 Connectors  
 For mains or 12V car adapter .. 2.1/5.5 mm socket  
 L1 and L2 line connectors... 4 mm banana sockets  
 USB-MIC/B .....to connect PC or memory stick  
 Ambient temperature ranges  
 Normal operation .....-10 to +50°C  
 Rel. humidity ..... 30% to 75% (<25g/m<sup>3</sup>)  
 Limits of operation .....-10 to +50°C  
 Rel. humidity ..... 5% to 95% (<29g/m<sup>3</sup>)  
 Storage and transport .....-20 to +70°C  
 Rel. humidity .....55% at +45°C (<35g/m<sup>3</sup>)  
 Protection.....IP 54  
 Shockproof..... EN 60068-2-27 Shock  
 Dimensions ..... 200 x 100 x 40 mm  
 Weight..... 0.8 kg

**ORDERING INFORMATION****TIME DOMAIN REFLECTOMETER**

**ETDR 10A-2** .....464-000-002

Including:

Operating Manual  
 Short form operation instructions  
 Calibration Certificate  
 Measuring Cable (red)  
 Measuring Cable (black)  
 USB stick & adapter  
 USB cable for PC connection  
 Mains adapter  
 Battery pack (built-in)  
 Carrying case

Options:

ECA 10 Coaxial Adapter .....378-000-000  
 Car Lighter power adapter EAA 20 .....462-000-000  
 Loop Pulsing Device ES 2002 .....366-000-000  
 Spare battery .....464-210-000