

Product Datasheet - Technical Specifications



More information in our Web-Shop at ► www.meilhaus.com

Your contact

Technical and commercial sales, price information,
quotations, demo/test equipment, consulting:

Tel.: **+49 - (0)81 41 - 52 71-0**

FAX: **+49 - (0)81 41 - 52 71-129**

E-Mail: sales@meilhaus.com

Meilhaus Electronic GmbH
Am Sonnenlicht 2
82239 Alling/Germany

Tel. **+49 - (0)81 41 - 52 71-0**
Fax **+49 - (0)81 41 - 52 71-129**
E-Mail sales@meilhaus.com

Mentioned company and product names may be registered trademarks of the respective companies. Errors and omissions excepted. © Meilhaus Electronic.

METRACABLE TDR PRO

Time Domain Reflectometer – Cable Fault and Length Measuring Instrument

3-447-090-03
1/12.20

- Rugged, handy time domain reflectometer
- Measures cable length
- Pinpoints cable faults
- Identifies components (e.g. splitters)
- Provides information about the cabling itself (e.g. branches)
- Suitable for all types of electrical cables
- Long range of up to 14 km
- Memory function
- Internal cable database
- AUTO test function ensures readiness for operation at the touch of a button
- Freeze function for detailed viewing of the TDR trace
- Reference function for comparing two TDR traces at a glance
- METRACABLE MANAGER PC software included
- Data transfer to the PC via Bluetooth®



Applications

The METRACABLE TDR PRO is a compact, handy time domain reflectometer with a range of up to 14 km.

The METRACABLE TDR PRO is connected to the cable under test, to which it transmits a pulse. The pulse's reflection, i.e. its TDR trace, appears at the instrument's display panel.

Cable length is determined on the basis of the signal's reflection, whose shape also provides information concerning any included components (e.g. splitters), the cabling itself (e.g. splices, branches etc.) and any cable faults (short-circuits, broken cable, pinching etc.). The locations of components and faults are ascertained accurate to roughly 0.3 m.

Additional functions provide further support during cable inspection. The AUTO test function configures the most important parameters automatically and ensures that the instrument is quickly ready for operation. The freeze function permits detailed viewing of the TDR trace and the reference function saves the first of two measurements in the background, so that both can be compared at a glance.

The TDR trace display can be set up with either one or two cursors – one for absolute distance to the event and the other for measuring the distance between two events.

In combination with white background illumination, the extra high resolution of the high-contrast display ensures ideal viewing of the TDR trace in any environment.

Stored measurements can be conveniently transferred to the included METRACABLE MANAGER PC software via Bluetooth®. The software can be used to evaluate measurements and generate reports.

Features

- Rugged design
 - Impact-resistant ABS housing with fall protector
 - Protected display
 - Membrane keypad
- Compact, handy instrument
- Easy operation
- High-contrast display with background illumination
- High measuring resolution (localization accurate down to 0.3 m)
- BNC adapter for coaxial cable
- Surge protection
- METRACABLE MANAGER PC software
 - Data transfer via Bluetooth®
 - Measurement display
 - Report generation and printing
 - Cable database management
 - Instrument updates

METRACABLE TDR PRO

Time Domain Reflectometer – Cable Fault and Length Measuring Instrument

Technical Data

Mechanical Design

Housing	Approx. 19.5 × 10.0 × 4.5 cm
Weight	Approx. 390 g (without batteries)
Protection	IP 52 per DIN VDE 0470, part 1/EN 60 529 (protection against ingress of solid foreign objects: ≥ 1.0 mm dia. Protection against water ingress: protection against falling dripping water, when the housing is inclined up to 15°)
Mechanical protection	Impact-resistant ABS housing with fall protector and display protection (2 mm Plexiglas with hardened safety glass)
Display	LCD, monochrome, luminous, 240 × 128 pixels, adjustable on-time and contrast for background illumina- tion
Connections	2 ea. 4mm banana plug safety sockets

Ambient Conditions

Operating temperature	-10 ... +50 °C
Storage temperature	-25 ... +75 °C
Relative humidity	No condensation allowed
Elevation	Max. 2000 m
Place of use	Indoors, in laboratories, in industrial environments, at construc- tion sites

Power Supply

Power Supply	4 ea. LR6 battery, 1.5 V, type AA or 4 ea. rechargeable NiMH, 1.2 V, type AA
Operating time	Up to 30 hours (depending on battery type and quality), adjustable automatic shutdown

Electrical Safety

Pollution degree	1
Protection class	II per DIN EN 61140/VDE 0140-1
Surge protection	DC: 100 V AC: 230 V / 50 Hz

Electromagnetic Compatibility

Interference emission	EN 55011: 2015
Interference immunity	EN 61000-4-2: 2009 EN 61000-4-3: 2006

Data

Interface	Bluetooth®
Internal Memory	Up to 32 entries in the cable database Up to 510 measurements in the instru- ment

Languages

Menu language	German, English, French
---------------	-------------------------

Measurements

Signal type	Symmetrical search signal
Range:	≤ 14 km
Accuracy	+1% ± pixels at 0.66 VF
Resolution	3.125 ns or 0.3 m depending on cable
Output pulse	Max. 20 V pp
Pulse lengths	12, 25, 50, 100, 200, 500, 1000 and 2500 ns
Velocity factor	Variable from 0.2 to 0.99 in steps of 0.01
Impedance	50, 75, 100, 125 Ω
Signal type	Symmetrical
Magnification factor	In steps of 6 dB

Cable Types

Suitable for	Symmetrical cables with maximum at- tenuation of 80 dB, for example: <ul style="list-style-type: none">– Coaxial cables– Shielded cables– Twisted pair cables– Multi-wire cables– Power cables
--------------	---

METRACABLE TDR PRO

Time Domain Reflectometer – Cable Fault and Length Measuring Instrument

Scope of Delivery

- 1 METRACABLE TDR PRO (with carrying strap)
- 4 LR6 batteries, 1.5 V, type AA
- 1 Set of test probes (1.3 m, banana plugs, 300 V Cat II)
- 2 Alligator clips (plug-on)
- 1 BNC adapter (banana plug to coaxial cable)
- 1 Pouch (with carrying strap)
- 1 Condensed operating instructions

Order Information

Description	Type	Article No.
TDR measuring instrument including batteries, carrying strap, test probes, alligator clips, BNC adapter and pouch	METRACABLE TDR PRO	M281A



FIND CABLE FAULTS – DON'T LOOK FOR THEM

PINPOINTING FAULTS IN CABLES WITH
LENGTHS OF UP TO 14 KM



METRACABLE | **TDRPRO**
TIME DOMAIN REFLECTOMETER



Time Domain Reflectometer for Testing
Cables with Lengths of up to 14 km



FIND CABLE FAULTS – DON'T LOOK FOR THEM

The METRACABLE is a handy, compact time domain reflectometer for pinpointing faults in all types of cables without service, for example two-core, coaxial and power cables. It has a very short minimum resolution and a range of up to 14 km. Adjustable impedance and the editable velocity factor fulfill all requirements for a successful test setup.

With just a single click, the AUTO-test ensures that impedance, pulse length and measuring range correspond to the cable section under test. This assures quick diagnosis.

High display resolution with background illumination permits accurate fault evaluation of the trace. The included management software maintains the cable database.

Supported Cable Types

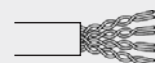
A broad range of various cable types can be tested and possible fault locations can be determined with the help of the TDR method. The METRACABLE is capable of examining cables with lengths of up to 14 kilometers such as the following:



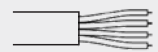
Coaxial cable



Shielded
cable

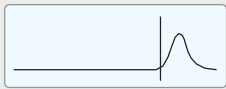


Two-core cable



Stranded
cable

TIME DOMAIN REFLECTOMETER



Open End



Tap



Short Circuit



Splice



Split/Resplit



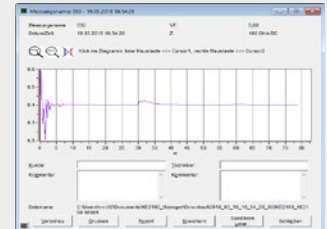
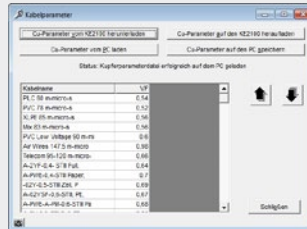
Water in Cable

Time domain reflectometry, abbreviated TDR, is a method for determining and analyzing propagation lengths and reflection characteristics of electromagnetic waves and signals. Measuring instruments which make use of this method are also known as cable radars.

During the TDR process, the instrument transmits a pulse to the cable which is reflected by cable faults and returned to the instrument. The type of fault can be determined on the basis of characteristic reflection curves. The instrument also indicates the location of the fault – accurate down to approximately 0.3 m.

METRACABLE Manager

Measurement results stored at the METRACABLE can be viewed and evaluated, the internal cable database can be managed and firmware updates can be installed with the help of Metracable Manager PC software. Measurements which have been downloaded and saved to the PC can also be evaluated at a later point in time without the need of establishing a connection with the instrument.



FOR YOUR WORKSHOP EQUIPMENT

we recommend the following new test technology:

METRAFUSE | FDPRO

The **METRAFUSE FD PRO** has been developed for quick identification of fuses and circuit breakers used to protect electrical circuits.

The **METRAFUSE FD PRO** consists of a receiver and an emitter. The emitter is integrated into the electrical circuit under test and generates a modified high-frequency signal for injection into the live conductor. The emitter's signal is captured by the receiver. An emitter signal is generated as soon as a fuse or a circuit breaker is detected. The change of state is indicated optically by means of an LED, as well as acoustically.

- Automatic sensitivity adjustment
- For cable lengths of up to several hundred meters
- Separate emitter and receiver units
- Optical and acoustic signaling
- Identification of fuses
- Allocation to electrical circuits
- Optical and acoustic indication
- Compact handheld instrument



METRAVOLT | VT1500

The **METRAVOLT VT 1500** is a 2-pole voltage tester with digital display combined with an integrated continuity, phase, polarity and phase sequence tester. Voltage and resistance values appear in digital format at the LCD. Three LEDs also indicate dangerous touch voltage and phase sequence, a further LED indicates resistance, and continuity is indicated by means of an acoustic signal.

The **METRAVOLT VT 1500** can even be used in the rain thanks to IP 65 protection. It can be safely used with up to 1000 V in CAT IV environments. A switchable load permits the detection of interference voltage and makes it possible to perform an RCD quick test, as well as a startup test for digital electric meters within a range of 0 to 1000 V AC / 1200 V DC.

- Voltage tester
- Continuity tester
- Phase tester
- Phase sequence tester
- LCD for measured value display
- IP 65 protection
- CAT IV 1000 V
- RCD quick test

