IP67
TDR-420

IP54
TDR-410

Diagnose faults
with instruments from the TDR series

Product features

- fault location in power and telecommunication cables
- two independent cursors to indicate two fault locations and the distance between them (**TDR-420**)
- fault location in coaxial cables
- fault location in infrastructure cables
- detection of breaks, short-circuits, damage caused by moisture and other changes in cable impedance
- graphic presentation of cable faults with an indication of the distance to the fault on the display

Application

TDR-420 and TDR-410 time-domain reflectometers are designed to detect where faults in metal wires are. These products are designed for electrical wholesalers and cable dealers, electrical installation companies, maintenance personnel at manufacturing plants and building personnel. These devices meet the expectations of all those who have to accurately locate a fault and wire end in either power or telecommunications cables.

Device capabilities

SONEL reflectometers are distinguished for their long operating range of **up to 6,000 m (TDR-420)**, very low margin of error in measurement (in the order of 1%) and the ability to adjust both the velocity of propagation and the impedance of the cable which is under investigation. By using **two cursors** there should be no problem with determining both the distance to two faults and the distance between them.

Easy readout

The **TDR-420** reflectometer is equipped with a readable **colour display** that, due to its 320 x 240 pixel resolution, allows the fault location to be indicated even more accurately.

Integrated Help

In the **TDR-420** device a **handy help** function has been added to facilitate the interpretation of the result obtained during measurement. Thanks to this function, a user can quickly determine the type of anomaly that is present in the cable segment which is being examined, by comparing the displayed reflectogram with typical fault shapes.

Durable and practical casing

In response to the customers needs the **new TDR-420 model** has been designed to operate in difficult environmental conditions. A unique **casing with the IP67 ingress protection** rating ensures that the device is both waterproof and dustproof. An additional advantage is the elastomer coating of the casing that prevents the device from slipping out of the hands and provides protection if it should be accidently dropped.

Technical specification

	TDR-410	TDR-420
measuring ranges	7 m, 15 m, 30 m, 60 m, 120 m, 250 m, 500 m, 1 km, 2 km, 3 km, 4 km 20, 45, 90, 180, 360, 750, 1500, 3000, 6000, 10000, 14000 [ft]	7 m, 15 m, 30 m, 60 m, 120 m, 250 m, 500 m, 1 km, 2 km, 3 km, **6 km** 20, 45, 90, 180, 360, 750, 1500, 3000, 6000, 10000, 20000 [ft]
accuracy	1% of selected range	
resolution	approx. 1% of range	
minimum cable length	4 m	
velocity of propagation	within 1…99% or 1…148 m/µs	within 10…99% or 15…148.5 m/µs
output impulse	5 V$_{p-p}$ for an open circuit	
output impedance	25, 50, 75, 100 Ω	25, 50, 75, 100, **125, 200** Ω
impulse width	3 ns…3 µs (depending on the range)	
scanning type	2 scans/s or a single scan	**up to 3 scans/s** or a single scan (ONCE mode)
generated acoustic signal	810 – 1100 Hz	
operating time on a full battery	**up to 30 hours of continuous scanning**	up to 8 hours of continuous scanning
power supply	4 x alkaline batteries 1.5 V AA type	4 x alkaline batteries 1.5 V AA type or **4 x NiMH AA rechargeable batteries**
auto-off function	1, 2, 3, 5 minutes or deactivated	1, 5, 10, 15 minutes or deactivated
display	graphical, backlit, 128 x 64 pixels	**colour 3.5" LCD TFT, 320 x 240 pixels**
overvoltage protection	400 V DC / 250 V AC	
operating temperature	-10…+50°C	-20…+70°C
storage temperature	-20…+70°C	-30°…+80°C
dimensions	**165 x 90 x 37 mm**	220 x 98 x 58 mm
weight	350 g	487 g
electromagnetic compatibility standards (EMC)	EN 61326-1	
degree of protection / tightness	IP54	**IP67**

Standard accessories

double-wire test lead 0.6 m

WAPRZ0X6DZBB

crocodile clip 1 kV 20 A red / black

WAKRORE20K02
WAKROBL20K01

M1 hanging straps
(TDR-420)

WAPOZSZE4

4x batteries alkaline 1.5 V AA

M-6 carrying case
(TDR-420)

WAFUTM6

M-13 carrying case
(TDR-410)

WAFUTM13

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