



## 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

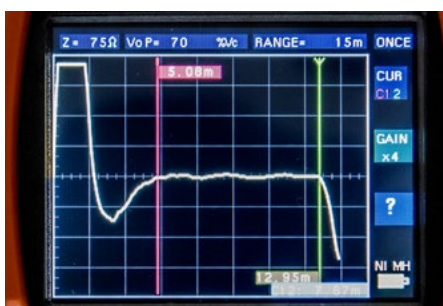
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TDR-410 and TDR-420 time-domain reflectometers are designed to detect where faults in metal wires are. These products are designed for electrical wholesalers and cable dealers, electrical installation companies, maintenance personnel at manufacturing 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

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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

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The TDR-420 reflectometer is equipped with a readable colour display that, due to its 320x240 pixel resolution, allows the fault location to be indicated even more accurately.

## Integrated Help

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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

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In response to the customers needs the new model of TDR-420 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 accidentally dropped.

## Technical specification

	 <b>TDR-410</b>	 <b>TDR-420</b>
<b>measuring ranges</b>	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]
<b>accuracy</b>	1% of selected range	
<b>resolution</b>	approx. 1% of range	
<b>minimum cable length</b>	4 m	
<b>velocity of propagation</b>	within 1...99% or 1...148 m/μs	within 10...99% or 15...148.5 m/μs
<b>output impulse</b>	5 Vp-p for an open circuit	
<b>output impedance</b>	25, 50, 75, 100 Ω	25, 50, 75, 100, 125 and 200 Ω
<b>impulse width</b>	3 ns...3 μs (depending on the range)	
<b>scanning type</b>	2 scans/s or a single scan	up to 3 scans/s or a single scan (ONCE mode)
<b>generated acoustic signal</b>	810 – 1100 Hz	
<b>operating time on a full battery</b>	up to 30 hours of continuous scanning	up to 8 hours of continuous scanning
<b>power supply</b>	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
<b>auto-off function</b>	1, 2, 3, 5 minutes or deactivated	1, 5, 10, 15 minutes or deactivated
<b>display</b>	graphical, backlit, 128x64 pixels	colour 3.5" LCD TFT, 320x240 pixels
<b>overvoltage protection</b>	400 V DC / 250 V AC	
<b>operating temperature</b>	-10°C / 50°C	-20°C / 70°C
<b>storage temperature</b>	-20°C / 70°C	-30°C / 80°C
<b>dimensions</b>	165 x 90 x 37 mm	220 x 98 x 58 mm
<b>weight</b>	350 g	487 g
<b>electromagnetic compatibility standards (EMC)</b>	EN 61326-1	
<b>degree of protection / tightness</b>	IP54	IP67

## Standard accessories



**double-wire test lead 0.6 m**

WAPRZ0X6DZBB



**crocodile clip red 1 kV 20 A**

WAKRORE20K02



**crocodile clip black 1 kV 20 A**

WAKROBL20K01



**4x batteries alkaline 1.5 V AA**



**M-6 carrying case (TDR-420)**

WAFUTM6



**M-2 carrying case (TDR-410)**

WAFUTM2