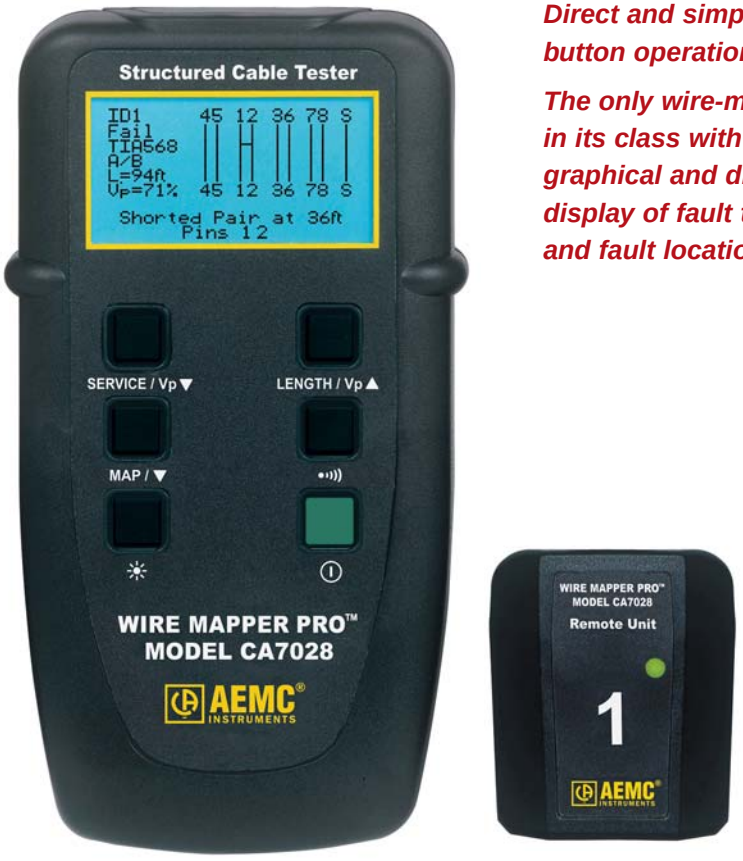
CABLE TESTER
Models CA7024, CA7026 & CA7028

CE

- Hand-held LAN Cable Mapping and Troubleshooting Tester (Model CA7028)
- Hand-held Alphanumeric TDR (Time Domain Reflectometer) Cable Length Meter and Fault Locator (Model CA7024)
- Hand-held Graphical TDR Telecom Cable Tester (Model CA7026)
- Designed for use on UTP, STP, FTP and SSTP cabling equipped with RJ-45 connectors and wired to either TIA 568A/B (ISO 11801 and EN 50137), USOC or ISDN specifications (Model CA7028)
- Measures cable length and indicates distance to open or short circuit faults to a range of 6000 ft (2000m) (Model CA7024)
- Measures cable length and indicates distance to faults and terminations to a range of 11,700 ft (3500m) (Model CA7026)

AEMC® INSTRUMENTS
CHAUVIN ARNOUX GROUP

WIRE MAPPER PRO™ LAN Cable Tester Model CA7028



Model CA7028 and Remote Unit

Direct and simple push button operation!

The only wire-mapper in its class with graphical and digital display of fault type and fault location.

The Wire Mapper Pro™ Model CA7028 is a hand-held structured cable mapping and troubleshooting tester designed for use on UTP, STP, FTP and SSTP cabling equipped with RJ-45 connectors and wired to either TIA 568A/B (ISO 11801 and EN 50137), USOC or ISDN specifications. It detects open circuit pairs, shorts, crossed wires, crossed pairs, reversed pairs, split pairs and shield faults.

In the event of opens and shorts, the Model CA7028 uses TDR technology to indicate if the fault is at the near end or the remote end of the cable, or if it is somewhere in between. It will then indicate the distance to the fault. This feature is a real time saver.

The Model CA7028 has the ability to measure and indicate the length of the cable under test, using a Vp (Velocity of Propagation) set by the user, from a built-in library or manually. It will measure and report the length of all four pairs of wires in the cable under test. It also generates an audible tone that is transmitted into all four pairs on the cable under test. This can be used for cable tracing and identification in conjunction with a tone receiver (see page 11).

The Model CA7028 also has the ability to identify telephone and data lines. If the main unit is plugged into an operational RJ-45 socket, it will give a continuous warning tone and display if a telephone voltage is present on any of the pins. If the Service Detect key is pressed, it will check and display telephone, 10BaseT, 100Mbit+ and token ring active service if present.

FEATURES

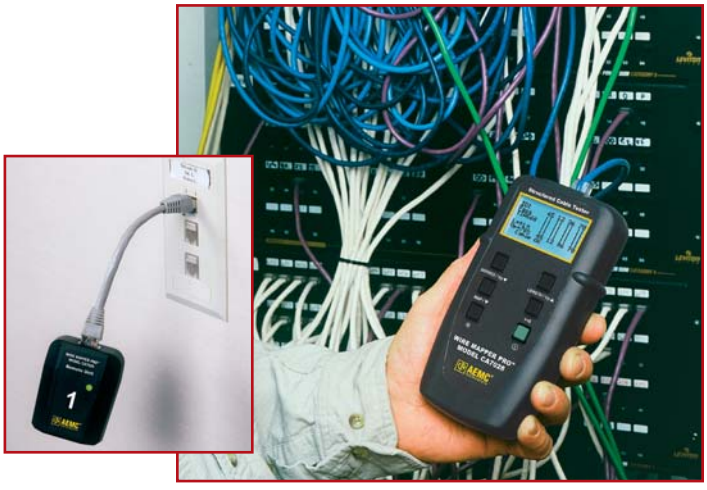
- Hand-held LAN Cable Mapping and Troubleshooting Tester
- Indicates all common wiring faults including split pairs, shorts, opens, reversed pairs and crossed wires
- Unique graphical and digital display of fault information and length
- Active remote unit indicates Pass/Fail by Green/Red LED during the test
- Indicates distances to opens and shorts and identifies location
- Display fault location up to 500 ft or 150m (user selectable)
- Built-in tone generator for tracing and locating cables
- Built-in service check function to detect telephone, 10BaseT, 100Mbit+ and token ring
- Visual and audible warning of live telephone network voltages
- Works with all category cables
- Rugged design weighs less than 12 oz (350g)
- Large high-visibility blue electroluminescent backlit display
- Complete with remote unit and mini patch leads
- Active remote identifiers indicate Pass/Fail at remote end using Green/Red LED
- Up to 16 unique remote identifiers available
- Works with TIA 568A/B, USOC and ISDN wiring schemes

SPECIFICATIONS

MODEL	CA7028
MEASUREMENTS	
Range	500 ft or 150m (user selectable)
Accuracy	±5%
Cable Types	UTP, STP, FTP & SSTP
Faults Indicated	Short Circuit Pair, Open Circuit Wire, Short Between Pairs, Split/Cross Pairs, Pair Reversals, Shield Continuity
Fault Location	Near end, remote end or distance to fault
Wiring Schemes	TIA 568A/B, USOC & ISDN
Service Indication	Telephone, 10BaseT, 100Mbit+, Token Ring
Voltage Warning	Audible and visual warning of TNV (Telecom Network Voltage) presence
Test Inhibit	Inhibits testing in the presence of live voltages
Tone Generator	Oscillating 810 to 1110Hz
GENERAL	
Display Resolution	128 x 64 pixel graphical LCD
Display Backlight	Blue electroluminescent
Fault Display	All fault and setting info displayed textually and graphically
Remote Display	Green (Pass)/Red (Fail) LED
Auto-Off	After three minutes
Languages	English, French, German, Spanish, Italian
Power Source	Four 1.5V AA Alkaline batteries
Battery Life	Standby mode >4000 hrs Continuous testing >7.5 hrs
Battery Life Indication	Bargraph
Storage Temperature	-4° to 158°F (0° to 70°C); 5 to 95% RH non-condensing
Operating Temperature	32° to 112°F (0° to 40°C); 5 to 95% RH non-condensing
Dimensions	Main unit: 6.5 x 3.5 x 1.5" (165 x 90 x 37mm) Remote unit: 2.5 x 2.0 x 1.0" (65 x 52 x 25mm)
Weight	Main unit: 12 oz (350g); Remote unit: 1.5 oz (40g)
Index of Protection	IP54
SAFETY	
Safety Ratings	EN 61010-1, EN 61326-1, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-6
CE Mark	Yes

APPLICATIONS

- Identify LAN wiring faults
- Find distances (feet or meters) to opens and shorts
- Test patch cords
- Test for active service
- Trace cable locations
- Measure cable length
- Map network layout
- Verify proper installation of RJ-45 connectors on cables



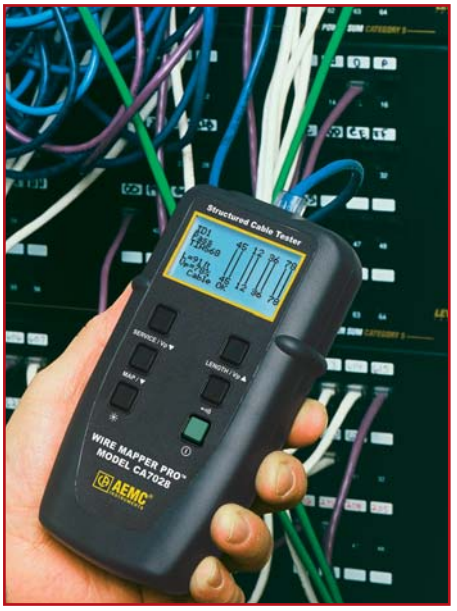
Model CA7028 used to locate and test a cable from the patch panel to an office a few hundred feet away.

FUNCTIONAL DISPLAYS

Wire Mapper Pro™ Model CA7028

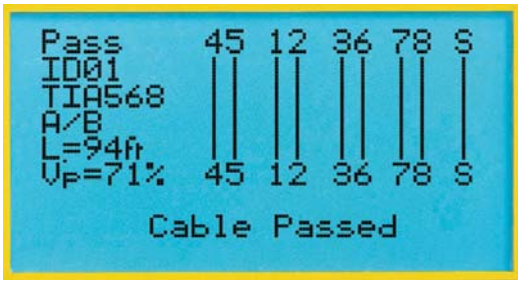
In addition to displaying the cable wire map, the Model CA7028 also displays a pass/fail indication, the ID number of the remote unit, the cable type (if from the built-in library), cable length and the Velocity of Propagation all on one screen.

The mapping of each pair is graphically displayed providing a quick indication of the termination at both ends of the cable. Opens or shorts along the cable are identified by wire and distance to the fault. The Model CA7028 also detects and displays opens or shorts at each end of the cable, thus notifying the operator which end needs to be corrected.



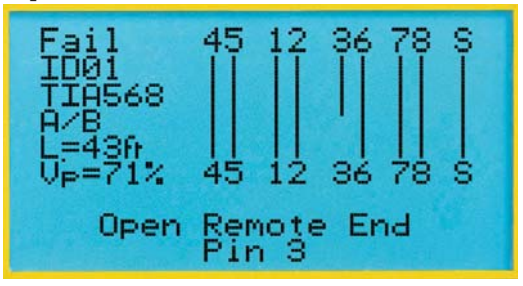
Model CA7028 at patch panel verifying cable runs.

Cable Passed



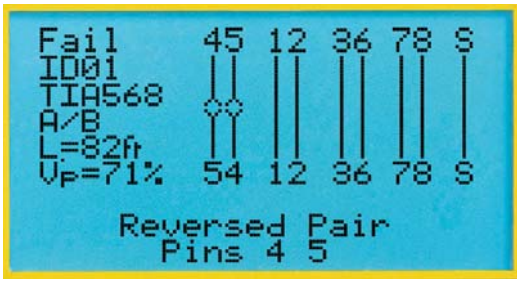
Good cable, all connections are correct.

Open Remote End



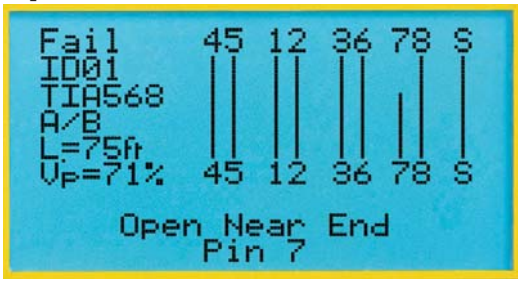
Open connection at remote end of cable on pin 3.

Reversed Pair



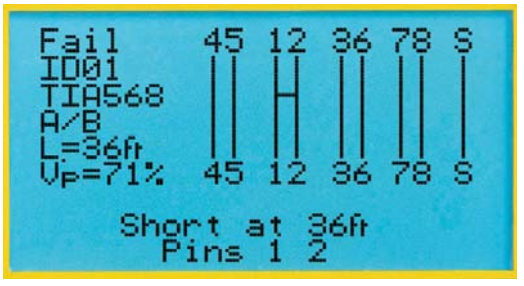
Wires at pins 4 and 5 reversed.

Open Near End



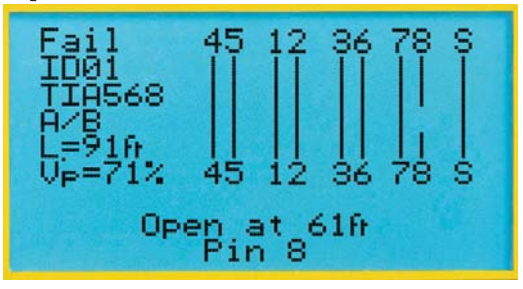
Open connection at near end of the cable on cable to pin 7.

Short



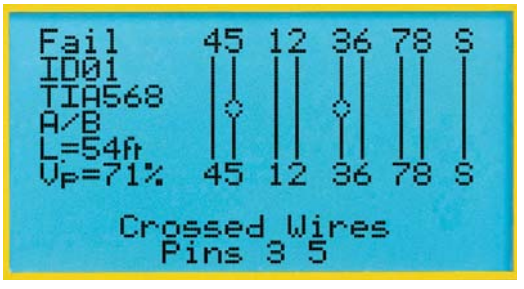
Short at 36 ft with pins 1 and 2 identified.

Open



Open wire at 61 ft with pin 8 identified.

Crossed Wires



Crossed wires with pins identified.

AEMC® INSTRUMENTS

The Model CA7028 can also detect the service capability of the cable under test. It can indicate 10BaseT, 100BaseT, token ring or telephone connections.

The built-in tone generator function is activated at the push of a button. When active, a signal between 810 and 1110Hz is injected into the cable. When used in conjunction with the Tone Receiver/ Cable Tracer Model TR02, cable tracing and locating is easily accomplished.

Tone Generator Enabled

Built-in tone generator for cable tracing.

Setup Screen

Quick and easy setup of cable type, Vp, feet/meter display, language and display contrast.

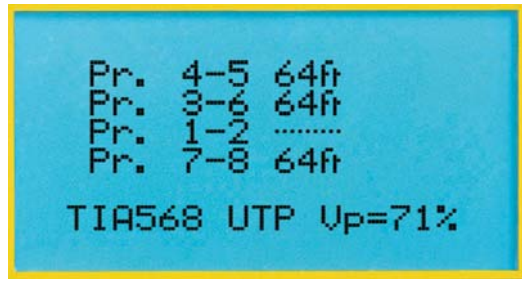
Service Test Screen

Service test function determines speed and type of transmission.

Voltage Detected

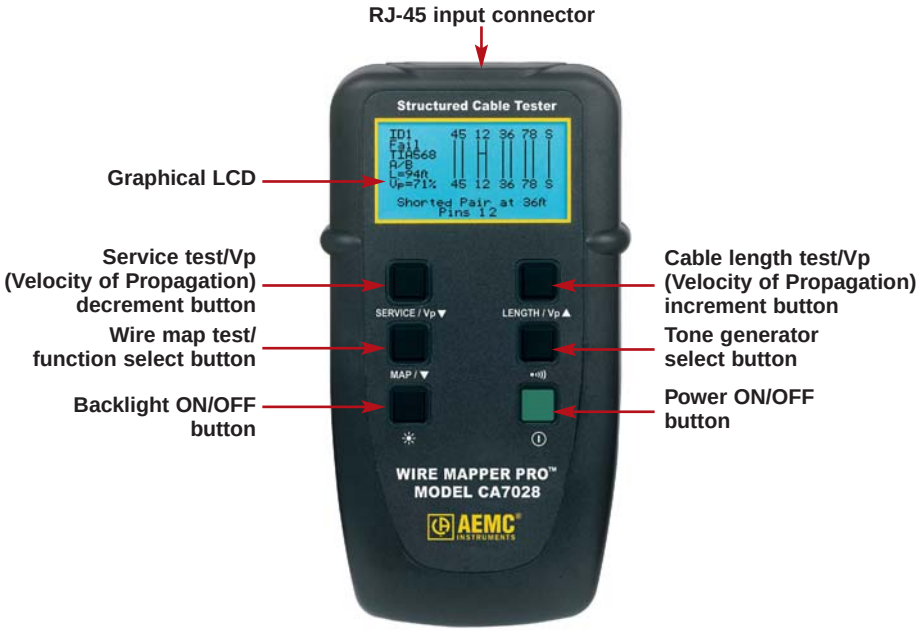
Automatic detection of live telephone voltage.

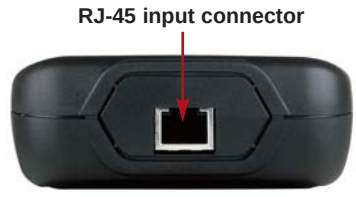
Cable Length Test Screen

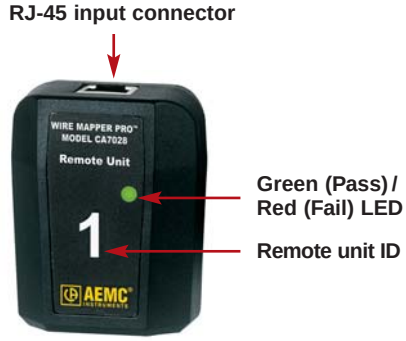


Built-in cable length meter verifies the length of the cable.

CONSTRUCTION







FAULT MAPPER™ Cable Length Meter & Fault Locator Alphanumeric TDR Model CA7024

Model CA7024

The Fault Mapper™ Model CA7024 is a hand-held, alphanumeric, TDR (Time Domain Reflectometer) Cable Length Meter and Fault Locator, designed to measure the length of electrical and communication cables. It can also indicate the distance to a fault in the cable (open or short), given access to only one end of a two or more conductor cable.

By incorporating fast-edge step TDR technology, the Model CA7024 measures cable length and indicates the distance to open or short circuit faults, to a range of 6000 ft or 2000m (user selectable), on virtually any type of cable. The Model CA7024 indicates the cable length or fault distance and description, alphanumerically on a 128 x 64 graphical LCD.

An internal library of standard cable types enables accurate measurement without the necessity of entering Velocity of Propagation (Vp) information, and the Model CA7024 automatically compensates for different cable impedances.

The Model CA7024 incorporates an oscillating tone generator that is detectable with a standard tone receiver (see page 11) for use in tracing cables and identification of cable location. The Model CA7024 also displays a “Voltage Detected” warning and sounds an alarm when connected to a cable energized by more than 10V, which prohibits testing.

FEATURES

- Hand-held Cable Length Meter and Fault Locator
- Detect opens and shorts and the distance to them from one end of the cable
- Measure cable length up to 6000 ft or 2000m (user selectable)
- Automatic cable impedance compensation
- Built-in library of most common cables and their Vp (Velocity of Propagation)
- Manual selection of Vp for all cables not found in library
- User programmable cable library with 15 positions
- Vp setting displayed along with length and cable type (if in library)
- Built-in tone generator for tracing and locating cables
- Large high-visibility blue electroluminescent backlit display

APPLICATIONS

- Determine length of cables on reels, coils or in boxes
- Determine cable runs in wall, conduit and other surfaces
- Detect opens and shorts in cables and the length to them
- Trace cables to identify runs and location

Model CA7024 is used to check length of a power cable on a reel.

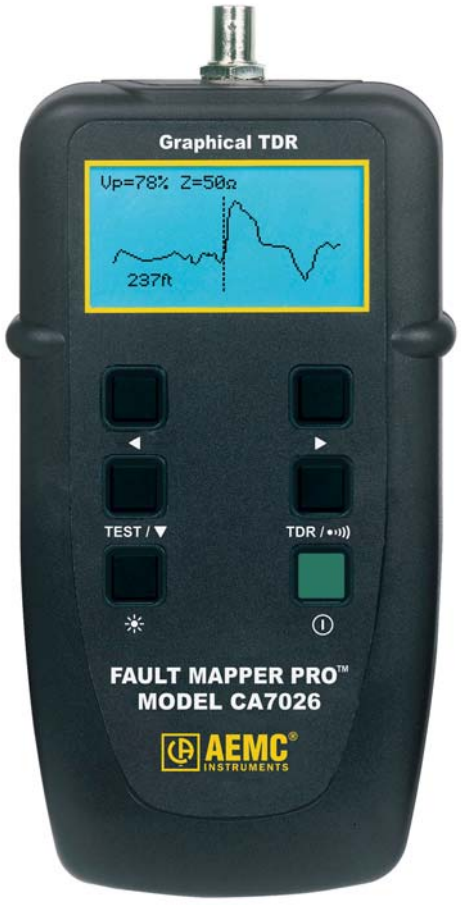
SPECIFICATIONS

MODEL	CA7024
MEASUREMENTS	
Range @ Vp = 70%	6000 ft or 2000m (user selectable)
Resolution	0.1 to 100 ft, then 1 ft (0.1 up to 100m, then 1m)
Accuracy*	±2% of Reading
Minimum Cable Length	12 ft (4m)
Cable Library	Built-in, user selectable & user programmable
Vp (Velocity of Propagation)	Adjustable from 0 to 99%
Output Pulse	5V (peak to peak) into open circuit; nanosecond rise Step Function
Output Impedance	Automatic compensation
Tone Generator	Oscillating tone 810 to 1110Hz
Voltage Warning	Triggers @ >10VAC/DC
GENERAL	
Display Resolution	128 x 64 pixel graphical LCD
Display Backlight	Blue electroluminescent
Auto-Off	After three minutes
Languages	English, French, German, Spanish, Portuguese, Italian
Power Source	Four 1.5V AA Alkaline batteries
Battery Life	Standby mode >4000 hrs Continuous testing >7.5 hrs
Battery Life Indication	Bargraph
Storage Temperature	-4° to 158°F (0° to 70°C); 5 to 95% RH non-condensing
Operating Temperature	32° to 112°F (0° to 40°C); 5 to 95% RH non-condensing
Dimensions	6.5 x 3.5 x 1.5" (165 x 90 x 37mm)
Weight	12 oz (350g)
Index of Protection	IP54
SAFETY	
Safety Ratings	EN 61010-1, EN 60950, EN 61326-1
CE Mark	Yes

**Measurement accuracy of ±2% assumes the instrument setting for Velocity of Propagation (Vp) of the cable under test to be accurately set, and homogeneity of the Velocity of Propagation (Vp) along the cable length.*

CONSTRUCTION

FAULT MAPPER PRO™ Telephone/Coaxial/Parallel Cable Tester Graphical TDR Model CA7026



Model CA7026

The Fault Mapper Pro™ Model CA7026 is a hand-held graphical TDR (Time Domain Reflectometer) designed for identifying and locating faults on power and communication cables, given access to one end only. The Model CA7026 measures cable length, and indicates the distance to cable faults and terminations to a range of 11,700 ft or 3500m (user selectable), on virtually any type of cable of two or more conductors. The Model CA7026 shows a reflection profile of the cable under test as an oscilloscope-like trace on a 128 x 64 pixel graphical LCD. A movable cursor can be aligned with points on the trace; the distances displayed will automatically update to the cursor position.

The Model CA7026 has a selectable impedance facility allowing it to be matched to the cable under test. This automatically eliminates the transmission pulse from the display, enabling easier identification of short range faults and terminations.

The Velocity of Propagation (Vp) is adjustable between 1% and 99% enabling accurate calibration to the cable under test.

The Model CA7026 incorporates an oscillating tone generator that is detectable with a standard tone receiver (see page 11), for use in the tracing and identification of cables.

FEATURES

- Hand-held Graphical TDR (Time Domain Reflectometer)
- Detects opens, shorts, taps, faulty taps, bridge taps, splitters, high resistance, wet cables, splices and more
- Identifies impedance mismatches
- Indicates cable faults and terminations up to 11,700 ft or 3500m (user selectable)
- Works with twisted pair, parallel and coaxial cable
- Selectable cable impedance (50Ω, 75Ω, 100Ω)
- Over-voltage protection up to 250V
- Adjustable cursor assists in locating faults and termination
- Built-in tone generator for tracing and locating cables
- Auto-Ranging scale
- Large high-visibility blue electroluminescent backlit display

APPLICATIONS

- Determine length of cable runs
- Find cable faults and the distance to them
- Determine degradation of cables due to moisture and other contaminants
- Trace and identify cables
- Determine telephone cable connections and the length to them

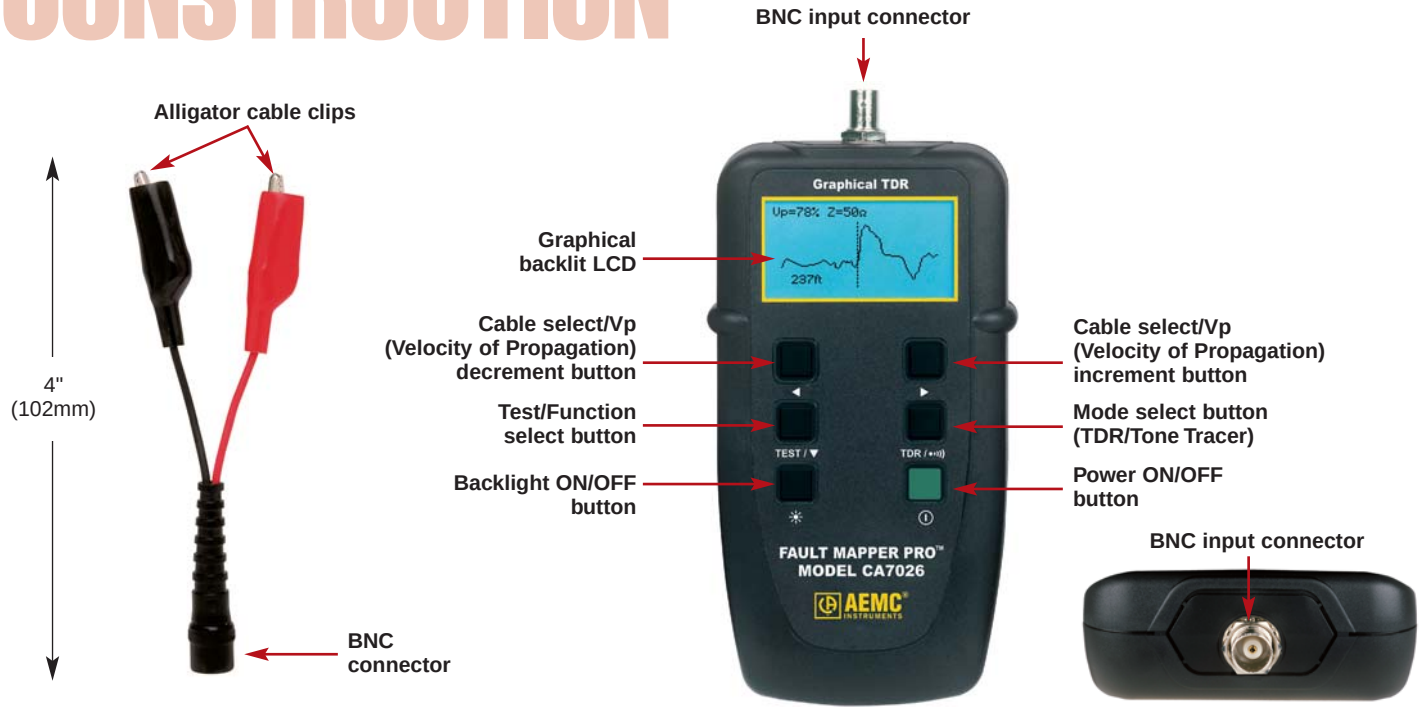
Model CA7026 testing cables in a telephone patch panel.

SPECIFICATIONS

MODEL	CA7026
MEASUREMENTS	
Range @ Vp = 70%	11,700 ft or 3500m (user selectable)
Ranges @ Vp = 70%	670, 1470, 2900, 5830 & 11,700 ft (220, 440, 870, 1750 & 3500m)
Resolution	Approximately 1% of selected range
Accuracy*	±1% of range
Range Selection	Automatic range selection against cursor position
Minimum Cable Length	12 ft (4m)
Sensitivity	Minimum 3 pixel return on a fault at 6000 ft (2000m)
Vp (Velocity of Propagation)	Adjustable from 0 to 99% in 1% steps
Output Pulse	+5V into an open circuit or +1.5V into 50Ω load; 25ns min to 2.15µs dependent on range
Cable Impedance	Selectable between 50, 75 & 100Ω
Tone Generator	Oscillating tone 810 to 1110Hz
Scan Rate	Single shot or 6.7 pulses per second (operator selectable)
GENERAL	
Display Resolution	128 x 64 pixel graphical LCD
Display Backlight	Blue electroluminescent
Auto-Off	After three minutes
Power Source	Four 1.5V AA Alkaline batteries
Battery Life	Standby mode >4000 hrs; Continuous testing >7.5 hrs
Battery Life Indication	Bargraph
Storage Temperature	-4° to 158°F (0° to 70°C); 5 to 95% RH non-condensing
Operating Temperature	32° to 112°F (0° to 40°C); 5 to 95% RH non-condensing
Dimensions	6.5 x 3.5 x 1.5" (165 x 90 x 37mm)
Weight	12 oz (350g)
Index of Protection	IP54
SAFETY	
Safety Ratings	EN 61010-1, EN 60950, EN 61326-1
CE Mark	Yes

**Measurement accuracy of ±1% assumes the instrument setting for Velocity of Propagation (Vp) of the cable under test to be accurately set, and homogeneity of the Velocity of Propagation (Vp) along the cable length. Accurate positioning of the cursor is also required.*

CONSTRUCTION



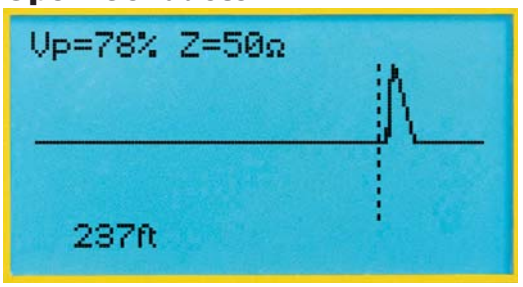
FUNCTIONAL DISPLAYS

Fault Mapper Pro™ Model CA7026

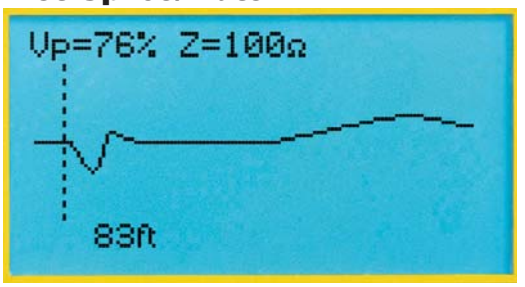
Typical Traces

The graphic display on the Model CA7026 will display the waveforms associated with the conditions found in communication and other cables. The cursor may be moved to the left or right to indicate the distance to condition. Additionally, the Velocity of Propagation and the impedance is also displayed.

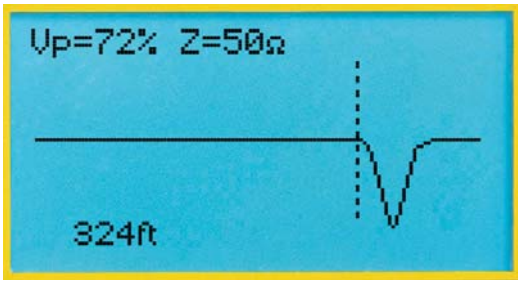
Open Conductor



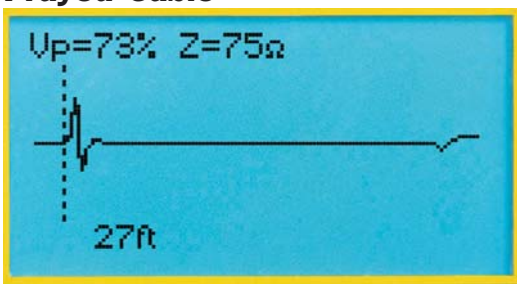
Wet Splice/Water



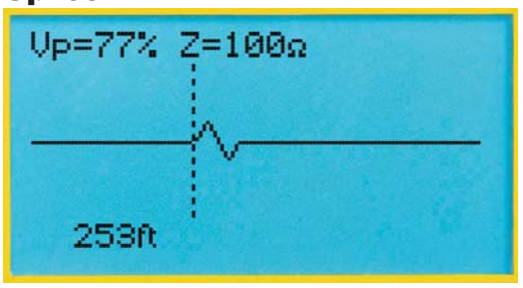
Shorted Conductor



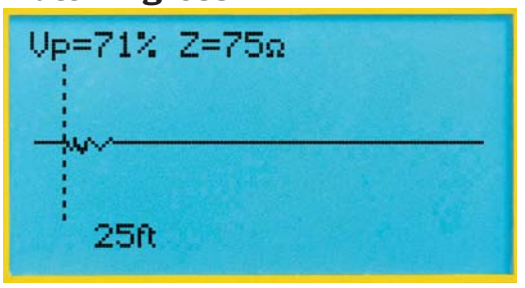
Frayed Cable



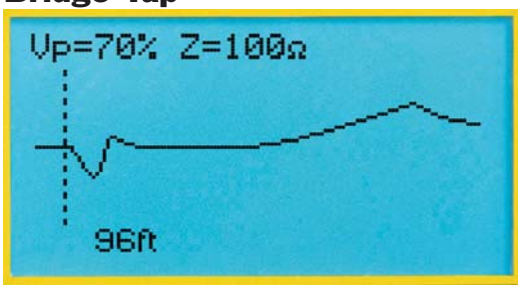
Splice



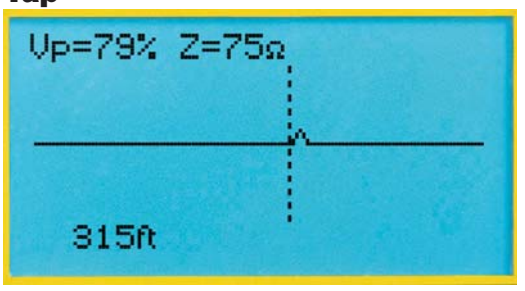
Water Ingress



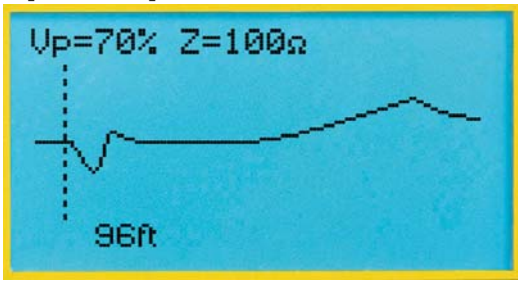
Bridge Tap



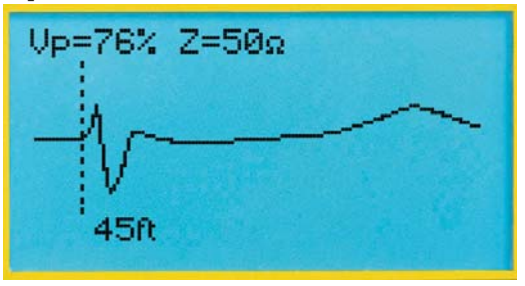
Tap



Split/Resplit



Splitter



AEMC® INSTRUMENTS

TONE RECEIVER/ CABLE TRACER Model TR02

Model TR02

The Tone Receiver/Cable Tracer Model TR02 is a small, hand-held tracer that will aid in the identification of tone carrying wires without piercing their insulation. It has a self-contained amplifier and a rugged, moisture resistant mylar cone speaker. When used in conjunction with the tone transmitter function of the Models CA7024, CA7026 or CA7028, wire tracing and locating is quick and efficient.

One button turns the unit on and, while it is depressed, activates the receiver. A volume control allows you to set the speaker loudness to a desirable level. An audio output jack facilitates the use of an optional, commercially available ear piece which inhibits the Model TR02's internal speaker. This provides quiet operation in office environments while allowing the operator to hear the signal clearly.

SPECIFICATIONS

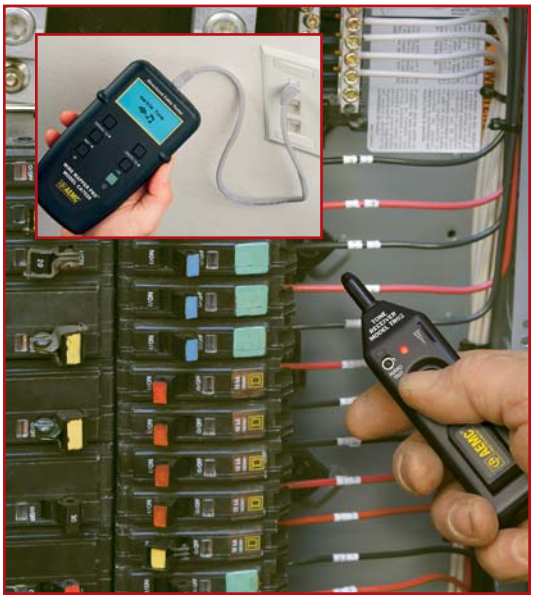
MODEL	TR02
GENERAL	
Power Source	9V Alkaline battery
Dimensions	5.12 x 1.26 x 1.26" (130 x 32 x 32mm)
Weight	3.18 oz (90g)

FEATURES

- Compatible with AEMC Models CA7024, CA7026 and CA7028
- Contains a frequency selective hi-gain, hi-impedance amplifier for clear pick-up
- Rugged, moisture resistant mylar cone speaker
- Convenient operation from a standard 9V Alkaline battery
- Volume control adjustment
- Audio output jack for ear piece
- Pen size, fits into your pocket

APPLICATIONS

- Locate cable runs
- Detect breaks in cables
- Find cables in panels



Model TR02 used to find cables in a panel.

CONSTRUCTION

ACCESSORIES

Model CA7024 includes meter, soft carrying case, BNC pigtail cable with alligator clips, four 1.5V AA batteries and user manual.

Wire Mapper Pro™ IDs (#2 – 5)
Catalog #2127.90

Wire Mapper Pro™ IDs (#6 – 9)
Catalog #2127.91

Model TR02 includes tracer, 9V Alkaline battery and user manual.

Model CA7026 includes meter, soft carrying case, BNC pigtail cable with alligator clips, four 1.5V AA batteries and user manual.

Model CA7028 includes meter, soft carrying case, remote ID (#1), two patch cords, four 1.5V AA batteries and user manual.

ORDERING INFORMATION — CATALOG NO.

Fault Mapper™ Model CA7024 (Cable Fault/Length Tester, Alphanumeric TDR). . . . . **Cat. #2127.80**
Includes meter, carrying case, BNC pigtail cable with alligator clips, four 1.5V AA batteries and user manual

Fault Mapper Pro™ Model CA7026 (Telephone Cable Tester/Graphical TDR) . . . . . **Cat. #2127.81**
Includes meter, carrying case, BNC pigtail cable with alligator clips, four 1.5V AA batteries and user manual

Wire Mapper Pro™ Model CA7028 (LAN Cable Tester) . . . . . **Cat. #2127.82**
Includes meter, carrying case, remote ID (#1), two patch cords, four 1.5V AA batteries and user manual

Accessories (Optional)

Tone Receiver/Cable Tracer Model TR02 . . . . . Cat. #2127.75
Wire Mapper Pro™ Remote IDs (#2 – 5) . . . . . Cat. #2127.90
Wire Mapper Pro™ Remote IDs (#6 – 9) . . . . . Cat. #2127.91

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