

# TENMARS

## Multi Media Cable Tester TM-901N/TM-902/TM-903

### User Manual



CE  
HB2TM9020011

TENMARS ELECTRONICS CO., LTD



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## 1 Introduction


The TM-902/TM-903 Multimedia Cable Tester (TM-901N LAN Cable Tester) is a hand-held test instrument that lets you verify and troubleshoot the Lan cable of twisted pair.

## 2 Safety Precaution



### CAUTION


Be extremely careful for the following conditions while measuring

- Do not operate the meter under the environment with explosive gas (material), combustible gas (material) steam or filled with dust.
- In order to avoid reading incorrect data, please replace the battery immediately when the symbol “” appears on the LCD.
- In order to avoid the damage caused by contamination or static electricity, do not touch the circuit board before you take any adequate action.
- Operating Environment: Indoors use. This instrument has been designed for being

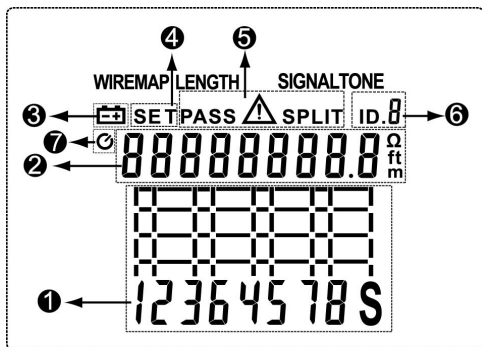
used in an environment of pollution degree 2.


- Operation Altitude: Up to 2000M.
- EMC: EN61326-1(2006),  
IEC 61000-4-2(2008),  
IEC 61000-4-3(2006) + (2007).

### **3 The verifier does the following:**

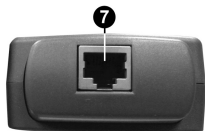
- Detects opens, shorts, miswires and split pairs on twisted pair cabling.
- Displays graph wiremap , opens, shorts, miswires, split pairs, and the remote ID number all on one screen.
- Identify remote ID number only one pair.
- Measures length.
- Using multiple remote ID up to 8 locators.
- Low battery detector “”.
- Auto backlight.
- Auto power off.

## 4 Display Features

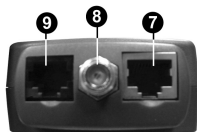


1. Displays graph wiremap , opens, shorts, miswires, split pairs.
2. Displays Length and Unit.
3. Lower battery indication.
4. Enter the SETUP mode symbol.
5. Result displays, Pass,  , split.
6. Displays remote ID number.
7. Auto power off

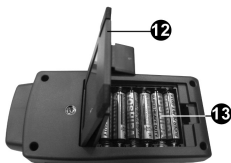
## 5 Multi Media Cable Tester Features



TM-902



TM-903





1. Power Key.
2. Setup function right Key.
3. Setting Key and Unit select Key
4. Test Key and Enter Key.
5. Setup function left Key.
6. Length and wiremap and signal-tone function key

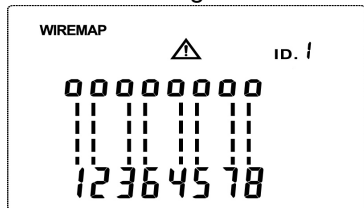
7. RJ-45 connector socket.
8. F-Connector .(TM-903)
9. RJ-11 connector socket.(TM-903)
10. Remote ID locator.
11. RJ-45 connector socket of remote ID locator.
12. Tilt-stand.
13. Battery cover.

## 6 Testing Twisted Pair Cabling

1. Connect the meter and remote ID locator to the cabling as shown in Figures.




2. Press the  key to power on.  
(TM-902/903)
3. Press  key to measures wiremap and Remote ID Locators detect.
4. Display show some testing option as shown in Figures.



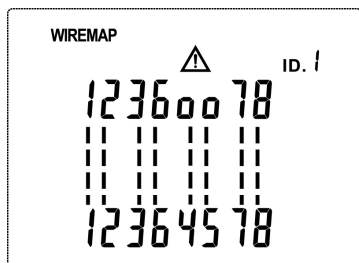


## 7 Twisted Pair Test Results

The following figures show typical test results for twisted pair cabling. Any error occurs will show  symbol on LCD.

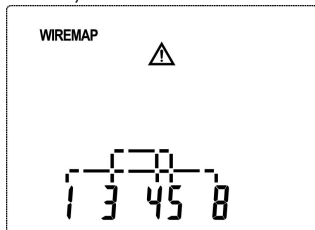
### Opens

Figure shows an open pair wire 4 and 5.



## Shorts

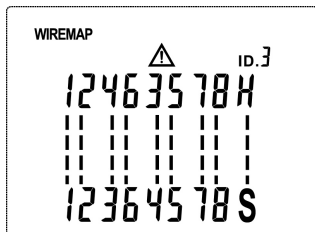
Figure shows tow short between wires 3, 4 and 5, another 1 and 8.



※ When shorted occur, the verifier maybe not show open and miswires.

## Miswires

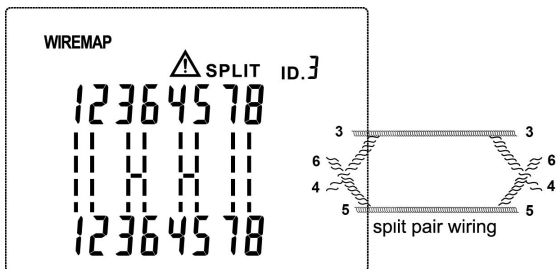
Figure shows that wires 3 and 4 are crossed. The pin numbers order to indicate the fault.



## Split Pair






The following figure shows a split pair on 3, 6 and 4, 5. The split pair flashes to indicate the fault. LCD will show “SPLIT” indicate.

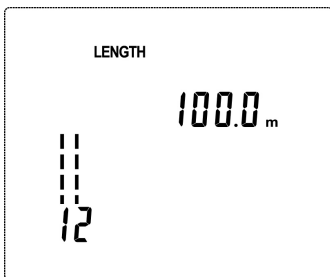
In a split pair, continuity from end to end is correct, but is made with wires from different pairs. Split pairs cause excessive crosstalk that interferes with network operation.








- ※ The split pair detects of cable must be at least 5 meters (15ft) in length.
- ※ If one of open, short or miswires occurs, the split pair detects won't work.

## 8 Length measures

1. Press the  key to power on.
2. Press the L/W key(TM-901N/TM-902) or  key(TM-903) to switch to Length (TM-903).
3. Press  and  Key to select show length pairs 1~4.
4. In the display length. Press the  key to changing the length units, shown in Figure.



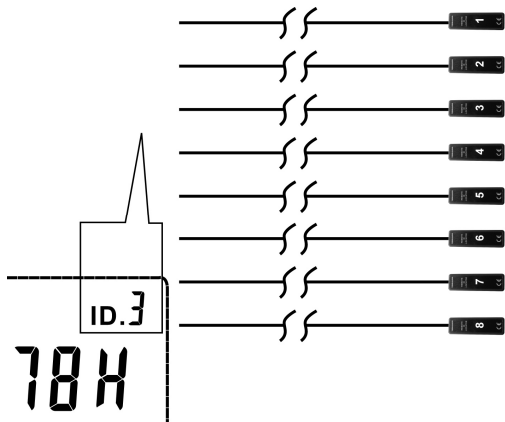
## 9 SIGNALTONE measures(TM-903)

1. Press the  key to power on.
2. Press the  key to switch to SIGNALTONE.
3. Press the  Key to select a different tone sequence displayed as the numbers 1~4 on LCD.
4. The function default continuity(LCD display "C")
5. If you want to changing, press the  Key to select continuity (LCD display "C") to changing one-shot(LCD display "F") ,you can selection numbers 1~8.
6. Press the  key to enable or disable out signal tone is cable tracing function. Toner is cable tracing function that assists in tracking cables hidden in walls. Ceilings, floors or patch panels by generating four distinct multi-tone signals that can be received by a cable tracer. To trace a cable

## 10 Using Multiple Remote ID Locators







### Locators

Using multiple remote ID locators helps you identify multiple network cable connections, as shown in Figure.




The display in Figure shows that the verifier is connected to the cable terminated with remote ID locator number 3.



## 11 Auto power on and off setting mode


1. Press the  key to power on.
2. Press the  key for more than 2 Second to enter Setting mode into setting mode.
3. Press the  key again to auto power on or off setting.
4. Press the  or  key to change ON or OFF.
5. Press the  key to enter and exit setting mode, shown in Figure.


## 12 Backlight on or off setting mode


Press the  key to power on.

Press the  key for more than 2 Second to enter Setting mode into setting mode.

Press the  key setting to auto power on or off setting Press the  key to backlight set

Press the  key again to backlight setting mod

Press the  key to change ON or OFF.











Press the  key to enter and exit setting mode, shown in Figure.










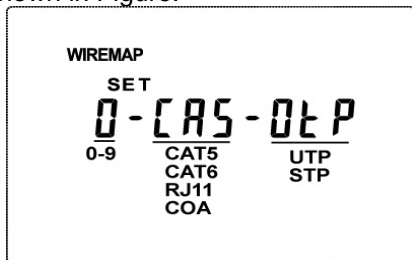




### 13 Changing Memory Number / Default Category /Types(UTP/STP) /Calibrating Length Measurements Value Parameter Options




The meter to provide user self calibrate memory use number 1 ~ 9. User can order different cable type, category and length to acquire measurements value parameter.

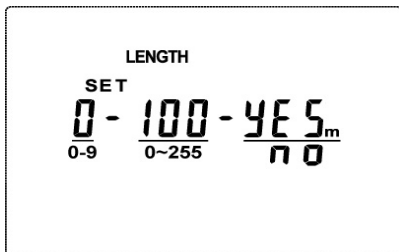
1. Press the  key to power on.
2. Press the  key more than 2 second to and setting mode.
3. Press the  key setting to auto power on or off setting Press the  key to backlight set Press  and  key to select number zero from No.0~9 . Press  key again to setting flashes number. Press  and  key to select number zero from No.0~9 . Press  key to enter exit setting mode,

4. Press  key into setting flashes cable category, Press  and  key to setting cat 5 or cat 6 ,( RJ11,COAX.TM-903).
5. Press  key  again to setting flashes cable type.
6. Press  key to select UTP or STP, Press  key to enter exit setting mode shown in Figure.





7. Press the  key more than 2 second to and setting mode. Press the  key again to select setting flashes calibrating length measurements value parameter.

- Press  and  key to select known length measurements value parameter.
- Press  key to enter and exit setting mode shown in Figure.



## 14 Checking the LCD and Software Version

In the shutoff mode, Press and hold  key again press the  key to turn on meter and LCD will keep all dark continued.

## 15 Battery Replacement


Turn off the meter and disconnect all test leads before replacing the battery.

Use only the correct type of batteries, properly

installed in the case, to power the meter.



### WARNING

If the symbol “  ” appears on the LCD, please replace the battery immediately

## 16 Options and Accessories

Consumers can order options and accessories as follows :

Remote ID Locator Kit, numbers 2-8.

## 17 End of life



**Caution:** this symbol indicates that equipment and its accessories shall be subject to a separate collection and correct disposal

## 18 Specifications

- **Cable types tested** : UTP, STP
- **Cable Category tested** : CAT5, CAT6 (RJ-11.COAX.TM-903 only).
- **Test connectors** :  
Shielded 8-pin modular jack (RJ45),test voice cable(RJ11)TM-903,and video coax cable(F-connenector) TM-903.
- **Wiremap test** : Detects opens, shorts, miswires, split pairs
- **Length test** :  
**Range** : up to 255 m (836 ft)  
**Resolution** : 0.1 m (ft)  
**Unit** : meter and foot  
**Typical accuracy** :  $\pm 10\%+1.0\text{m}$  (3 ft)
- **Display** : 58mm(L) x45mm(W)  
Monochrome LCD with backlight
- **Battery** : 1.5Vx6 batteries  
(LR03 SIZE AAA 1.5V)
- **Battery Lift** : Approx continuous testing  
200 times

- **Shutoff Rate Power** :1uA
- **Operate Maximum Power** :20mA
- **Operating temperature and humidity** :  
5°Cto 40°C,below 80% RH.
- **Storage temperature and humidity** :  
-10°C to 60°C, below 70%.
- **Dimensions** : 156(L)\*73(W)\*35(H) mm.
- **Weight** : About 170g.
- **Accessories** : User's manual x1, 1.5V  
AAA battery x6, CAT5 STP Cable x1,  
remote ID(1) x1



# TENMARS



## **Professional Electrical and Environment Test & Measurement Instruments:**

Battery Capacity / Impedance Tester  
LED light meter, Temperature & Humidity meter,  
Infrared Thermometer, Sound level meter  
Light meter, EMF meter, UV Light meter,  
RF meter, Hot wire Anemometer, CO meter  
Anemometer, Lan cable tester, CO<sub>2</sub> meter,  
Solar power meter, Radiation meter,  
Clamp meter, Multimeter, Phase Rotation test,  
Digital Insulation tester

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well all over the world**

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