

# Structured Cabling Tester

## MEGGER SCT500

**User Guide**





### **Safety Warnings**

This instrument meets the safety requirements of IEC61010-1 :1993. It is for use on de-energised circuits only and connection to a telecom network voltage (TNV1, 2 or 3) could result in damage to the instrument and/or a hazard to the operator, Hence the user must assume responsibility for ensuring his or her, own safety.

### **Symbols used on instrument:**



Caution: Refer to accompanying notes.



Equipment complies with current EU directives.

### **Standards**

Safety: IEC 610101-1 :1993

EMC BS/EN 61326-1 :1997

EMC Standard	Category of Pass
ESD IEC 1000-4-2	C
EM IEC 1000-4-3	A
Burst IEC 1000-4-4	C
Surge IEC 1000-4-5	A
Conducted RF IEC 1000-4-6	A

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### **WARNING**

The Structured Cabling Tester must NOT be connected either directly or indirectly to the mains electricity supply or the public telephone network,

**For use only on isolated circuits**

## 1 First Operation

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The Structured Cabling Tester comes complete with:

- No. 1 Remote Unit
- Male-Male Patch Lead x 2
- Alkaline 9 volt PP3 battery

**IT IS IMPORTANT THAT YOU READ THIS HANDBOOK BEFORE OPERATING THE INSTRUMENT**



Male – Male Patch  
lead

Remove all packaging, remove battery compartment cover and connect the battery (see section 13)

## 2 The Structured Cabling Tester

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The meter is a hand held battery powered unit that tests and fault-finds structured cabling installations based on 4-twisted pair cable and RJ45 connectors.

The meter can be used in two ways:

- Main Unit and Remote – Full fault details and an audible warning available at the Main Unit. A green/red LED flashes at the remote to signify Pass/Fail.
- Two Main Units – If a main unit is used at both ends of the cable, then fault details and the audible warning is available at both ends.

Specification:

Cable Types:	4 Pair UTP, 4 pair STP, USOC or 568A/B
Fault Indications	Shorts, Opens, Crossed Pairs, Split Pairs and Screen faults
Max. Length	120m
Min Length	2m
Accuracy	±0.5m (2-10m) or ±5% (10-120m)
Temperature	0-40 degC
Dimensions	Main Unit 200 x 80 x 35mm Remote Unit 65 x 52x 25mm
Weight	Main Unit 250g Remote Unit 60g

Note: The meter has an automatic power down facility after 3 minutes of non use whilst switch on. To re-activate, switch off then switch on.

### 3 Setting the Cable Type

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Enter Calibration Mode: Turn the main unit off, then while holding down the ◀▶ key turn back on. The display should read something like:

UTP TIA 568A/B  
Vp=71% L=57.2m

If a different type of cable is being tested, scroll through the alternatives using the ▲ key.

Switch off to exit Calibration Mode.

### 4 Setting for Vp

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Length measurement depends upon the velocity of propagation (Vp) of the cable. Foil screened Cat 5 trunk cable usually has a Vp of ~72%. The meter has provision to adjust the Vp setting. Enter Calibration Mode by switching on while holding down the ◀▶ key. In this mode the ● key scrolls the Vp value up and the ◀▶ key scrolls the Vp value down. Either use the manufacturers figure for the Vp of the cable, or adjust the Vp to give the correct length for a pre-measured cable at least 20m long. Note that each time the Vp is scrolled up or down, the length is automatically re-measured.

Switch off to exit calibration mode.

## 5 Testing a Cable

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Attach a main unit to one end of the cable and either a remote or second main unit to the other end. If the cable run terminates in a socket, use a male – male adaptor lead.

Press the ● key. If the cable run is OK the display will read:

Pass I/D xx

where xx is the identity code of the remote unit being used. The main unit sounds a double beep for a pass and the remote LED will flash green.

If the cable is less than 2m long the meter is unable to pick out a split pair fault. This is indicated by the display:

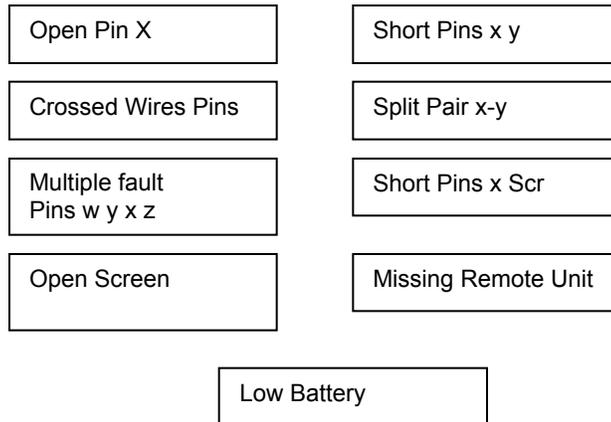
Pass I/D xx  
Short Cable

which indicates that the cable has been tested for correct pin mapping only.

If the cable is faulty the main unit will sound a pulsating tone and display an error message. The remote LED will flash red.

## 6 Typical Error Messages

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When testing with two main units, if there is a failure the far end unit will simply say "Fail". If the operator at that end wants the full failure message he can simply initiate a second test from his own unit using the ● key.

## 7 Testing Multiple Cables

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The meter is supplied as standard with one remote unit with I/D code 01. To test multiple cables attach the remote unit to each in turn.

Alternatively extra remote units (I/D codes 02 thru 16) can be purchased allowing up to 16 cables to be tested.

## 8 Measuring Cable Length

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Connect the main unit to one end of the cable under test. The far end of the cable need not be fitted with a remote unit provided it is left unterminated (i.e. not connected to a computer, hub, etc)

Press the ◀▶ key. The display should read:

**Length xxx.xm**

where xxx.xm is the length in metres. Remember the length indicated will include the length of any adaptor leads used. Cables less than 2m long will just be indicated as <2m. max cable length is 120m.

## 9 Warbler Mode

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The meter can also function as a tone generator for the purpose of tracing cables in conjunction with a suitable probe.

The tone warbles between 810Hz and 1110Hz six times a second.

To enable the warbler switch the main unit off and on again while holding down ▲ key.  
The display will read:

**Warbler Mode**

To exit warbler mode, turn the meter off.

## 10 Batteries

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The meter uses a PP3 size 9 volt alkaline battery. When the battery has become low and requires replacing, the display shows:

### **Low Battery**

switch off the meter, remove battery cover, replace battery and refit cover.

## **Repair and warranty**

The instrument contains static sensitive devices, and care must be taken in handling the printed circuit board. If an instrument's protection has been impaired it should not be used, but sent for repair by suitably trained and qualified personnel.

The protection is likely to be impaired if for example; it shows visible damage; fails to perform the intended measurements; has been subjected to prolonged storage under unfavourable conditions, or has been subjected to severe transport stresses.

**NEW INSTRUMENTS ARE GUARANTEED FOR 1 YEAR FROM THE DATE OF PURCHASE BY THE USER.**

NOTE: Any unauthorised prior repair or adjustment will automatically invalidate the Warranty.

## **INSTRUMENT REPAIR AND SPARE PARTS**

For service requirements for MEGGER Instruments contact:

AVO INTERNATIONAL	or	AVO INTERNATIONAL
Archeliffe Road		Valley Forge Corporate Centre
Dover		2621 Van Buren Avenue
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or an approved repair company.

### **Approved Repair Companies**

A number of independent instrument repair companies have been authorised for repair work on most MEGGER instruments, using genuine MEGGER spare parts. Consult the Appointed Distributor/Agent regarding spare parts, repair facilities, and advice on the best course of action to take.

### **Returning an Instrument for Repair**

If returning an instrument to the manufacturer for repair, it should be sent freight pre-paid to the appropriate address. A copy of the invoice and of the packing note should be sent simultaneously by airmail to expedite clearance through Customs. A repair estimate showing freight return and other charges will be submitted to the sender, if required, before work on the instrument commences.

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