USER GUIDE

Cable Core Identifier

ELECTRICAL+INDUSTRIAL | TOOLS+TECHNOLOGIES

TMAC™

THEW & McCANN GROUP

ACTIVE INNOVATION

TQCSI ISO 9001:2015

Quality Certified

AU1313-QC-EC-SC

BEFORE YOU START

GENERAL PRECAUTIONS

Read and understand this guide before operating this equipment.

The T-Mac® TM10840 (CCI-AUS) Cable Core Identifier (CCI) only to be used only by qualified personnel and must be used in conjunction with the user's own working and safety procedures, without compromising the integrity of the TMAC Group product supplied.

Follow all safety instructions contained within this guide.

QUALIFIED PERSON

A qualified person is one who is familiar with the installation, construction, operation or maintenance of the equipment and the hazards involved. In addition this person is competent, trained and authorized to undertake the work involved in accordance with established safety and working procedures.

SAFETY SYMBOLS USED IN THE GUIDE

Mandatory Action - This symbol indicates the action must be taken to avoid a hazard. Any information that follows this symbol must be obeyed to avoid possible harm.

Hazard Identification - This is a general warning sign. It is used to alert the user to potential hazards. Any information that follows this symbol must be obeyed to avoid possible harm.

GENERAL INFORMATION

The TMAC Cable Core Identifier (CCI) is an instrument for use on three-core power cables to identify the phases at each end of a cable run. The CCI identifies the marked phase cores, checks they are in the correct order and sequence, and provides clear visual indication of the specific changes to be made for correct core identifications end-to-end.

BATTERY INSTALLATION

Use only 9v **ALKALINE** batteries. It is important that this precaution be followed as standard dry cell batteries have a far more unstable operating voltage, which may result in microprocessor malfunction or permanent damage.

CARE AND HANDLING

Always keep the unit clean and dry. In the event of water/moisture damage, remove the battery immediately and allow the unit to dry. The unit may require disassembly to allow proper drying. It is recommended that only suitably qualified persons disassemble the unit. It is also important to note that disassembly (and similarly water damage) will void warranty.

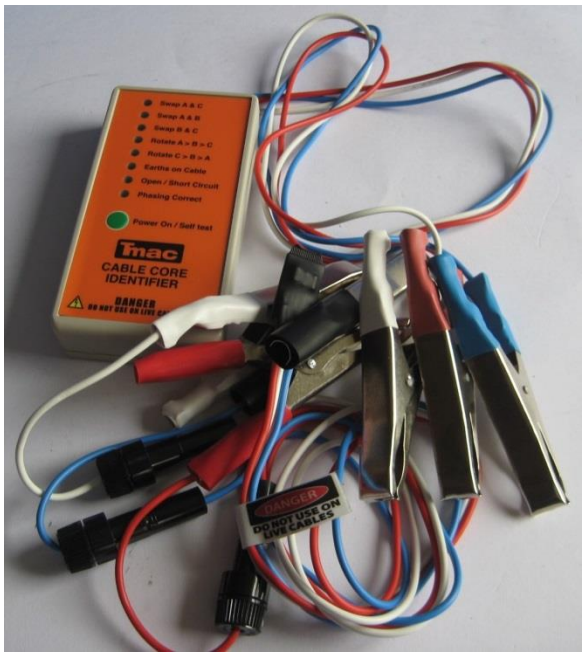

Figure 1 - Complete Components of the Cable Core Identifier

SAFETY

Hazard Identification - ONLY USE THIS INSTRUMENT ON EQUIPMENT THAT IS SUITABLY ISOLATED AND PROVED DE-ENERGISED. THIS INSTRUMENT DOES NOT INCORPORATE FAULT CURRENT PROTECTION.

BEFORE USE

Check that the Leads, Clamps on the Cable Core Identifier and the Diode Set are clean, free of dirt and grease and not damaged.

PROOF OF OPERATION

1. As with every test instrument, ***always test the CCI before and after*** each test sequence.
2. At all times during testing and proving, check that the LEDs illuminate brightly. If they are not bright, ***replace the battery immediately***. Then reprove the CCI.

Note: If the lights continue to flash in the test sequence this indicates that the battery is low, replace the battery before continuing.

3. To prove its operation, turn on the CCI by pressing the ***Power On/Self Test*** button.
4. Observe the LED's as you release the button. They will scroll up and down through a test sequence. Ensure that every light operates in sequence and that after the sequence is complete, the ***Open/Short Circuit*** LED is illuminated.
5. Connect the diode set to the CCI, matching all the end connection leads colour for colour, and ensuring that none of the leads or clamps touches a lead of a different colour. The ***Phasing Correct*** LED should light brightly. This will prove that the CCI and the diode set are operating correctly.

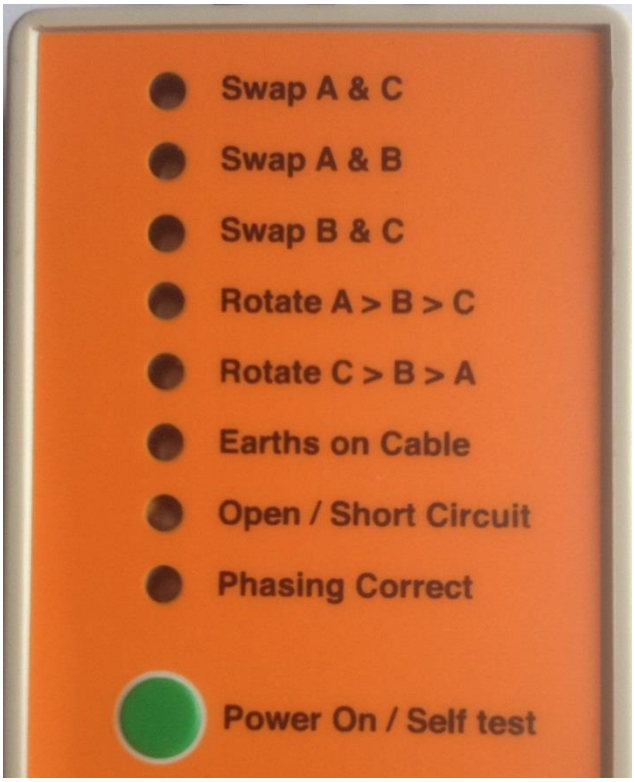

Figure 2 - Cable Core Identifier LED Unit

CABLE TEST PROCEDURE

1. If not provided, mark the cable ends to identify the cores. It is important to have all cores clearly marked for identification.
2. Connect the diode set to the remote end cores of the de-energized cable to be tested, matching the colours the on the clips with core phase markings.

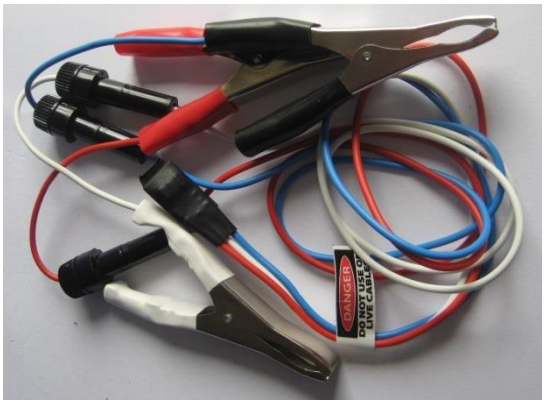

Figure 3 - Diode Leads with Fuses

3. If required, two remote ends may be fitted with diode sets proven in the normal manner.
4. Connect the CCI to the end(s) to be tested and turn it on with the ***Power On/Self Test*** button. If phasing, order and sequence is correct, the ***Phasing Correct*** LED should light brightly.
5. If any other LED indicates incorrect core connections, ***always change the connections using the clamps at the CCI Test end of the cable***. Then retest.
6. Follow the procedure below until ***Phasing Correct*** is indicated:

CCI Indication	Actions
Swap A & C	Swap A and C Phase (Red & Blue) clips on the Identifier (NOT the diodes) and re-test.
Swap A & B	Swap A and B Phase (Red & White) clips on the Identifier (NOT the diodes) and re-test.
Swap B & C	Swap B and C Phase (White & Blue) clips on the Identifier (NOT the diodes) and re-test.
Swap A – B -C	Move the A Phase (Red) clip to the B Phase (White) position. Move the B Phase (White) clip to the C Phase (Blue) position. Move the C Phase (Blue) clip to the A Phase (Red) position. Then re-test. (Alternatively, swap any 2 clips and re-test.)
Swap C – B – A	Move the C Phase (Blue) clip to the B Phase (White) position. Move the B Phase (White) clip to the A Phase (Red) position. Move the A Phase (Red) clip to the C Phase (Blue) position. Then re-test. (Alternatively, swap any 2 clips and re-test.)
Earths on Cable	There are still earths or shorts on the cable you are trying to test. Also a transformer or some other 3-phase load may be connected to the cable under test. Disconnect the offending piece of equipment and re-test.
Open / Short Circuit	There is a short between 2 of the cores under test, or 1 or more cores are not continuous between the identifier and the diode set. It is also possible that the clips on the diode set or the identifier are not making good contact with the cores.
Phasing Correct	The cores at the unmarked end match up to the cores at the marked end. Mark the cores at the end attached to the identifier with the colors of their respective clips. The test is complete.

Note: The instrument will automatically turn itself off approx. 3 minutes after the last time the power button was pressed.

TECHNICAL INFORMATION

Charging Circuit Voltage Range	3.8 – 4.4V DC
Internal Charging Resistance	100 Ohms
Maximum Cable Core Loop Resistance	28 Ohms
Maximum Core Voltage Drop	1.4V DC
Nominal Charging Current	50mA
Charging Time (to 2V DC)	100mS
Testing Lengths	Up to 10kMs
Battery Voltage	9V DC Alkaline
Enclosure Protection Rating	IP32
Operating Temperature Range	-10°C to + 50°C

ROUTINE MAINTENANCE & INSPECTIONS

The unit should be kept in a clean dry area. All care is to be taken to ensure no damage to the CCI unit, cables, clamps and Diode Set. Periodically all leads and fuses should be checked to ensure they in good working order.

REPAIR

The end user must not repair or modify any component associated with this device without written permission from TMAC

If repair is required contact TMAC.

TMAC

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DEFECTS / WARRANTY

DEFECTS

Goods are warranted to be free from defects. Provided they have been used strictly as recommended and subjected only to fair wear and tear, Goods (including parts within) which are found to be defective within 90 days after delivery to the Buyer will be repaired or replaced at the option of the Seller and at its expense. Repair or replacement by the Seller is the exclusive remedies of the Buyer

WARRANTY

To the maximum extent permitted by law, the Seller makes no warranties, either express or implied, as to merchantability, fitness for purpose or otherwise with respect to the Goods other than in paragraph above and as required by statute. The Seller is not liable for any prospective profits or special, indirect or consequential damages or any general loss or damage, or for any expense resulting from use by the Buyer or others of defective Goods. The Seller's liability is limited to no more than the sale price of the Goods plus replacement delivery charges. Prior authority for the return of goods is required by the seller.

Please contact the seller by email sales@tmacgroup.com.au, phone 07 3826 6000 or fax 07 3826 6066 for claims related to defective / warranty of goods provided.

FOR THE FULL TERMS AND CONDITIONS PLEASE REFER TO TMAC "STANDARD TERMS OF TRADE"