DT-9130 Voltage Tester
User Guide

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 TMAC TM00226 - DT-9130 Voltage Tester is only to be used 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 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

Hazard Identification - This is an electrical 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.

SAFETY

DO NOT TRY TO OPEN THE HOUSING

If the tester becomes unusable, dispose of it in accordance with the recommended statutory regulations.

If the device is not used in accordance with the manufactures specifications the protection provided by the equipment may be impaired.

DO NOT TOUCH THE PROBE TIPS

This measuring instrument may only be used within the ranges specified and within low voltage systems up to 600V.

Prior to usage ensure perfect instrument function by testing on a known voltage source or using TMAC Proving Unit Type TM00224.

Stop using the voltage tester if one or several functions fail or cease to indicate.

DO NOT USE THIS INSTRUMENT UNDER DAMP CONDITIONS

Perfect display is guaranteed within a temperature range of -10ºC up to +55ºC, at relative humidity of 85% or less.

The safety can no longer be insured if the instrument:

- Shows obvious damage
- Does not carry out the desired measurements
- Has been stored for too long under unfavorable conditions
- Has been subjected to mechanical stress during transport and/or handling.
- Has been damaged by leaking batteries.

ALL RELEVANT AUSTRALIAN STATUTORY REGULATIONS MUST BE ADHERED TO WHEN USING THIS INSTRUMENT.

Please read carefully.

Do not exceed the maximum allowable input range of any function for this device.

Safety equipment is required when carrying out work on live circuits

WARNINGS

WARNING OF A POTENTIAL DANGER

PLEASE COMPLY WITH THE INSTRUCTIONS

In order to avoid electrical shock, the valid safety regulations and guidelines regarding excessive contact voltages must be carefully observed when working with voltages exceeding 120V DC or 50V rms AC.

Prior to measurement make sure that the test leads and the test instrument are in perfect working order.

PROCEED WITH EXTREME CAUTION !!

DANGEROUS VOLTAGE

DANGER OF ELECTRICAL SHOCK

When using this instrument only the insulated probes may be touched.

GENERAL INFORMATION

RECOMMENDED USE

The device must only be used within its environmental and electrical ratings.

The operational safety of this device may be compromised if modifications are carried out by the user.

CARRYING OUT MEASUREMENTS

The DT-9130 voltage tester has two probes, a connecting cable and a main body with LCD display. It is recommended to hold the tester in such a way that you get a clear view of the display. For DC measurements, the fixed probe is the positive pole, and the floating probe is the negative pole.

Before carrying out measurement, make sure that the device is working properly by testing it with the TMAC Proving Unit or by measuring a known voltage source. If the tester's LCD does not activate and the display remains blank take the tester out of operation. A defective voltage tester must never be used. Do not operate the device with flat batteries or without batteries. Observe the state regulations and the guidelines for working with electrical systems.

VOLTAGE MEASUREMENT WITH HIGH INTERNAL IMPEDANCE

Always keep your hands behind the finger guards, never touch the probe tips when performing measurements.

Hold the two probes against the measuring points to be tested. The voltage tester will switch on automatically with voltages higher than 4.5V AC/DC. The measured voltage will show on the LCD display. If the measured voltage falls below 4.5 V AC/DC, the voltage tester will switch off automatically.

The LCD display shows the voltage values numerically and in the bar graph. The type of voltage under measurement (alternating current = AC or direct current = DC) and the polarity are also shown on the LCD display. In the event of negative DC voltage, the numeric voltage value is preceded by the minus sign " - "

Positive DC voltage is shown without a positive sign preceding the value.

The DT-9130 tester is designed with an input impedance of approximately 1MΩ, therefore it is possible to perform high input impedances voltage measurements without time restrictions.

The voltage tester also indicates a rotating direction (L or R) with measurements on single-phase mains. This is not a device malfunction.

CONTINUITY CHECK

The voltage tester can also be used as a continuity tester. Always hold the voltage tester by the handles designed for this purpose. Never touch the device beyond the finger guards. The continuity tester will switch itself on automatically when the test starts, and will switch itself back off when the test has been completed. Check for correct function before beginning the test. If you connect the two test tips with each other, you should hear a beep, and the continuity LED [7 – Orange] should light up. If this is not the case, replace the batteries as described under "Inserting/Changing the Batteries". The continuity tester indicates resistances of up to 300 kΩ.

USING THE VOLTAGE TESTER AS A "SINGLE-POLE" PHASE TESTER

The Voltage tester can also be used as a "single-pole" phase tester. Always hold the voltage tester by the handles designed for this purpose. Never touch the device beyond the handle ends.

The "single pole test" serves as a quick test only. Please check again for zero potential with the twin-pole measuring method before you do any work on the circuit. Observe the regulations regarding work with electrical systems.

Before beginning the test, check the condition of the batteries by connecting the test tips with each other.

Check for correct function at a known AC voltage source. Contact probe with the measuring point to be tested. In the event of the phase AC voltage between 100 and 600V, the LEDs [5 and 6 – Red] light up.

The "single-pole" phase display can be adversely affected by unfavourable ambient conditions (electrostatic fields, good insulation, etc). In all cases, conduct an additional, twin-pole voltage test.

INSERTING / CHANGING THE BATTERIES

The voltage tester is powered by two standard AAA size batteries. Use only alkaline batteries. The batteries need to be changed if the Low Battery symbol shows up on the LCD display or when the device fails self test.

Proceed as follows to insert or change the batteries:

- Loosen the screw on the battery compartment lid with a suitable Philips type screwdriver and remove carefully without pulling the connecting lead.
- Insert two AAA size batteries into the battery compartment. Observe the polarity information printed in the battery compartment.
- Carefully close and screw down the battery compartment lid again.
- The voltage tester will show no reading if the batteries are flat. The device must not be operated with flat batteries or without batteries.

To prevent damage from leaking batteries, remove the batteries from the device.

TEST USING THE PROVING UNIT

Test the voltage tester using the Proving Unit supplied by TMAC.

Before testing, lock the Connector TM00227 into the floating Test Probe. Insert the floating Test Probe into the black terminal. The Red LED should be a solid red light, if flashing slowly the battery needs replacement. Insert or touch the fixed Test Probe into the red terminal of the Proving Unit. When the Fixed Test Probe is connected, the LCD will read between 220 and 260 VAC, the LEDs [5 and 6 – Red] will light up and the Red LED on the Proving Unit will flash rapidly and the buzzer will sound.

INTERNAL SELF-TEST FUNCTION

To avoid electric shock, disconnect the test leads from any source of voltage.

The LED [5 – Red] will light up when there is a voltage over 50V, even if the battery is low or if the battery has been removed.

When the "Auto Test" button is pressed, all segments of the bar graph will display, the numeric LCD display will read "000", the continuity test LED [6 - Orange] will light up, and the buzzer will sound. This indicates the self-test was successful.

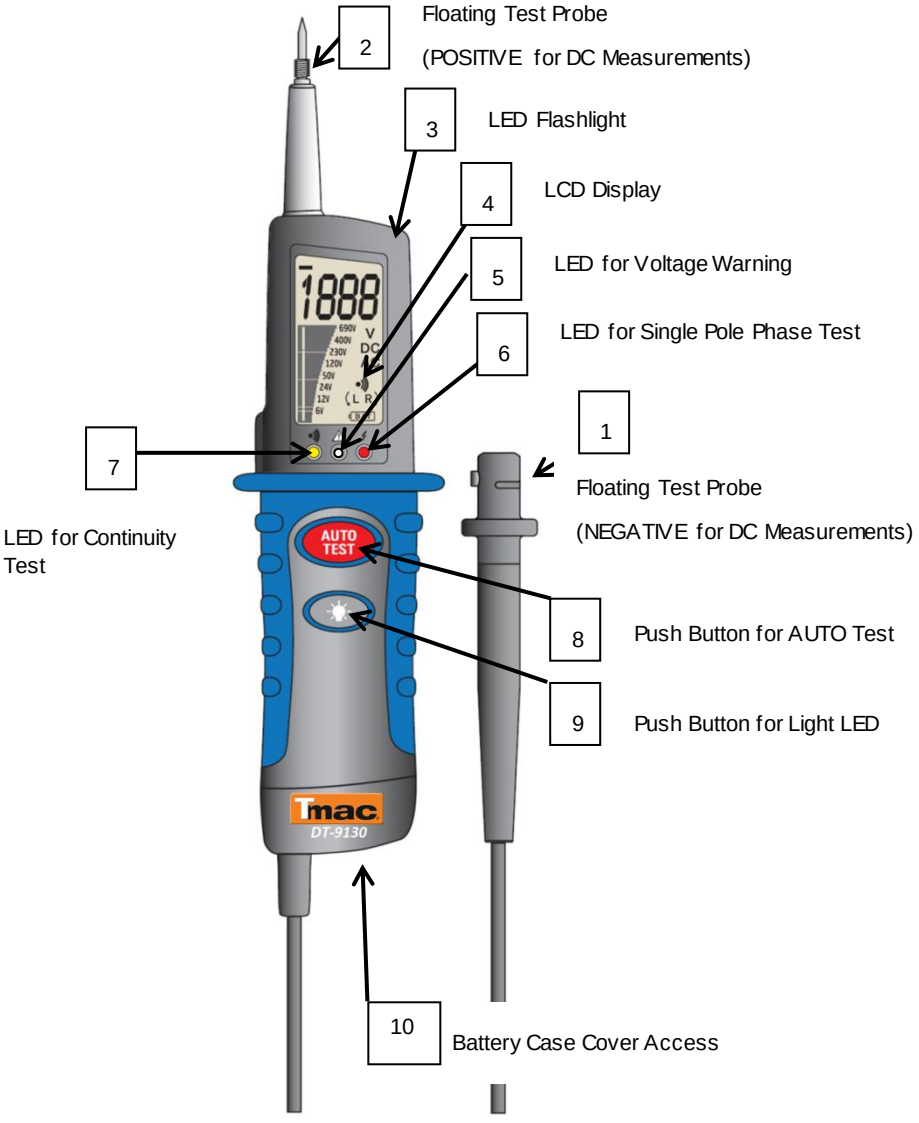
LED FLASHLIGHT

The voltage tester has a battery-operated LED flashlight. Press button [9] to switch on. The light stays on as long as this button is kept pressed. When the button is released, the light goes off.

ROTATING FIELD DIRECTION DISPLAY

The voltage tester can show the direction of the rotating field with three-phase systems. Hold the two test tips onto the measuring points to be tested. The applied voltage and the rotating field direction is shown on the LCD display. The rotating field symbols on the display will show the corresponding rotating field direction (L = Anticlockwise / R = Clockwise).

VOLTAGE TESTER DESCRIPTION



SPECIFICATION DT-9130 – SAA- 141192

LCD display 1999 counts (3½ digit) with bar graph & backlight

Voltage range 6,12, 24, 50, 120, 230, 400, 600V AC/DC

Tolerances DCV ±1.0% of reading ±3 digit

Tolerances ACV ±1.5% of reading ±5 digit

MAX. MEASURING CURRENT

600VAC approx. ≤3.0mA - 600VDC approx. ≤2.5mA

Polarity detection Full range

Range detection Automatic - Response time Updates 2~3 / sec.

ACV Frequency range 50/60Hz

Internal impedance approx. ≤1MΩ

Auto power on >4. 5V AC/DC

FUSE RATING

2A 500V BC 50kA @ 500V AC
BC 20kA @ 500V DC

SINGLE-POLE PHASE TEST

Voltage range 100…600V AC/DC

ACV Frequency range 50/60Hz

CONTINUITY TEST

Resistance range <300kΩ

Test current <5µA

Overvoltage protection 690V AC/DC

ROTARY FIELD INDICATION

Voltage range (LEDs) 100…400V

Frequency range 50/60Hz

Measurement principle double-pole and capacitive earth

SELF-CHECK / TEST - Auto

Operation time 5s < 250VAC/DC, 1s < = 0.2A (600V)/ 30s max.

Overvoltage protection 3s < 400V AC / 690V DC

Power supply 2x1.5V "AAA" Batteries

Temperature range -10ºC up to +55ºC

Humidity Max. 85% relative humidity

Overvoltage Class CAT III - 1000V AC/DC / CAT IV - 600V AC/DC

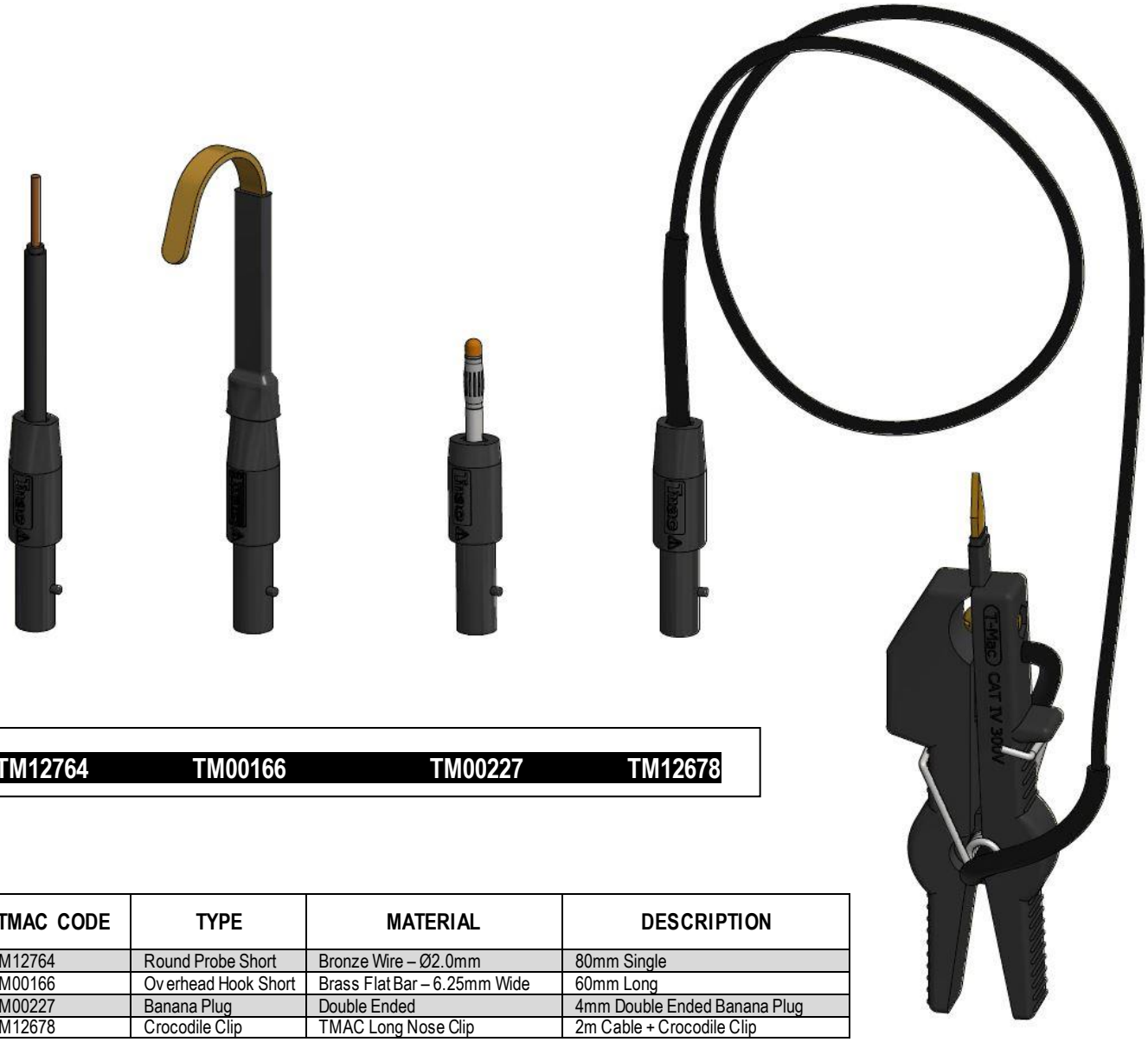
ROUTINE MAINTENANCE & INSPECTIONS

Inspect the device regularly, and calibrate every 6-12 months. Remove the device from service immediately if:

- There is visible evidence that the device has been damaged
- The device has been stored under unfavorable conditions for a long period of time
- The device has been subjected to physical abuse during transport
- The outside of the device should be cleaned with a soft, damp cloth or brush only. Do not use abrasive or chemical cleaning agents which could damage the housing or impair operation.

TMAC DT-9130 VOLTAGE TESTER OPTIONAL ACCESSORIES

Interchangeable Probe System



TM12764 TM00166 TM00227 TM12678

TMAC CODE	TYPE	MATERIAL	DESCRIPTION
TM12764	Round Probe Short	Bronze Wire – Ø2.0mm	80mm Single
TM00166	Overhead Hook Short	Brass Flat Bar – 6.25mm Wide	60mm Long
TM00227	Banana Plug	Double Ended	4mm Double Ended Banana Plug
TM12678	Crocodile Clip	TMAC Long Nose Clip	2m Cable + Crocodile Clip

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

45 Enterprise St Cleveland

QLD 4163 Australia

Tel: (+61) 07 3826 6000 http://www.tmacgroup.com.au/

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"