# **DET4TC2 and DET4TCR2 Digital Ground Testers**



- IP54 rated
- 2, 3 and 4 point testing
- Attached Rod Technique (ART)
- Stakeless measurements
- User selectable test frequency
- Dry cell or rechargeable versions
- User selectable output voltage
- Simple one button operation
- Robust carry case
- Backlit display
- Delivered with calibration certificate

## **DESCRIPTION**

Megger's DET4 family of ground testing instruments offers a comprehensive solution to your ground stake and soil resistivity testing needs. The standard instrument comes with test leads, stakes, terminal adaptors for bare wire, batteries and calibration certificate are delivered in a tough carry case which has space to accommodate all the instrument accessories - everything you need to start testing in one kit.

The DET4TC2 and DET4TCR2 are designed for extended temperature range use with an IP54 rated enclosure making them genuinely outdoor instruments. The instrument provides all the functions required for ground system testing: variable frequency 2 pole, 3 pole, 4 pole, Attached Rod Technique (ART), stakeless, leakage current and ground noise voltage measurement.

The instrument is easy to use with a large rotary selector switch and one-press test button, both of which permit operation with gloved hands. Unlike some instruments, the design negates the need for a shorting link when making two pole measurements. There are no hidden functions with the instrument: clearly labelled auxiliary controls are used to select the test frequency (94 Hz, 105 Hz, 111 Hz and 128 Hz), output voltage (50 V or 25 V where local standards apply) and to switch the backlight on or off.

The optional MCC CLAMP augments the traditional fall-of-potential measurement method with ART (Attached Rod Technique) which allows electrode testing without disconnection and also leakage current measurements down to 1 mA. A second optional clamp, the MVC CLAMP, enables true stakeless measurements to be made in situations where driving stakes is not practical.

The clear, easy-to-read display provides excellent contrast and viewing angle making the instrument ideally suited to outdoor use. The display is backlit, extending the operational environment of the instrument to cable cellars and other dark locations.

The instrument offers a wide measurement range of 0.01  $\Omega$  a to 200 k $\Omega$ , ground noise voltage measurement from 1 V to 100 V and ground current from 1 mA to 20 A. Accurate results can be obtained in electrically noisy environments since the instrument is capable of rejecting noise voltages of 40 V peak to peak and the user can select different test frequencies to minimise the effect of interference.

The DET4TC2 digital ground tester is powered from 8 AA batteries which are widely available and deliver excellent testing time. The DET4TCR2 is powered from rechargeable AA cells. The battery charger is built in and the instrument is supplied with an AC/DC adaptor. For both instruments, the battery status is display using a bar-graph.

The Megger ground testers comply with stringent safety standards and are rated to 100 V CAT IV. They also have selectable 25 V or 50 V output for compliance with IEC 61557-5.



## **SPECIFICATIONS**

## **Ingress protection**

IP54

# C stake, P stake and Noise check

Automatic

## **Noise rejection**

40 V pk to pk

#### 2-wire, 3-wire, 4-wire test

Yes, no shorting links required

### No disconnect testing (ART)

Yes, with MCC CLAMP

#### **Stakeless measurement**

Yes, with MCC CLAMP and MVC CLAMP

### **Instrument output**

Voltage:  $\pm 25$  V or  $\pm 50$  V at 94 Hz, 105 Hz, 111 Hz and 128 Hz Current: 4.5 mA or 0.45 mA or 0.045 mA

# Ground current range with clamp

0.5 mA to 19.9 A

### **Ground current accuracy**

5% ±3 digits

## **Ground voltage range**

0 to 100 V ac

### **Ground voltage accuracy**

2% ±2 V

# **Resistance ranges**

2, 3, 4 pole: 0.01  $\Omega$  to 200  $k\Omega$  ART: 0.01  $\Omega$  to 200  $k\Omega$  Stakeless: 0.01  $\Omega$  to 200  $\Omega$ 

# **Resistance accuracy**

2P measurements: 2% ±3 digits
3P measurements: 2% ±3 digits
4P measurements: 2% ±3 digits
ART measurements: 5% ±3 digits
Stakeless measurements: 7% ±3 digits

## **Maximum probe resistance**

Rp limit: 200 k $\Omega$  (50 V output voltage) Rc limit: 200 k $\Omega$  (50 V output voltage) Limits reduced to 100 k $\Omega$  for 25 V output voltage Limits reduced to 5 k $\Omega$  for 0.01  $\Omega$  resolution

# Display

 $3\frac{1}{2}$  digit high contrast liquid crystal, backlit

## **Battery type**

DET4TC2: 8 off AA (LR6) cells

DET4TCR2: 8 off AA (LR6) NiMH rechargeable cells

## Operating temperature range

-15 °C to +55 °C / 5 °F to 131 °F

## Storage temperature range

-40 °C to +70 °C / -40 °F to 158 °F

#### Safety

Complies with the requirements of IEC61010-1 100V CAT IV between terminal pairs.\*

#### **EMC**

In accordance with IEC61326-1

# **Standards Compliance**

Complies with the requirements of KEMA K85B

Complies with the following parts of EN61557, "Electrical safety in low voltage distribution systems up to 1000 V a.c. and 1500 V d.c. - Equipment for testing, measuring or monitoring of protective measures".

Part 1 - General requirements

Part 5 - Resistance to earth

#### **Dimensions**

203 mm x 148 mm x 78 mm (8 in x 5.8 in x 3 in)

#### Weight

1kg (2.2lb)

\*The CAT IV 100 V rating is dependant on the use of a leadset of at least this rating, for example the optional two wire leadset part number 1001-858.



	ORDERING	INFORMATION
Item	Order Code.	
DET4TC2	1000-345	Item
DET4TCR2 (rechargeable)	1000-346	Accessories
Included Accessories		Replacement hard c
Hard carry case		Replacement calibra
Stake and wire kit (15 m, 10 m, 10 m, 3 m)		(two-clamp measure
Right angle terminal adaptors (to connect bare wires	to	Replacement ground
terminals)		for included kit (200
External AC/DC charger (DET4TCR2 only)		Replacement ground
Kitted options for ART and Stakeless testing		for included kit (15
DET4TC2 + clamps	1000-365	Replacement cable i
DET4TCR2 + clamps (rechargeable)	1000-366	Replacement cable i
"+ clamps" included Accessories		Replacement cable i
Hard carry case		Replacement cable i
Stake and wire kit (15 m, 10 m, 10 m, 3 m)		Replacement extern
MCC CLAMP (for ART testing)		(DET4TCR2 only)
MVC CLAMP (adds stakeless testing)		MCC CLAMP
Field calibration check for instrument and		MVC CLAMP
CLAMPS		Calibration check be
Right angle terminal adaptors (to connect bare wires		Right angle termina
to terminals)		Black crocodile clip
External AC/DC charger (DET4TCR2 only)		"Getting down to e
Professional kitted options for ART and Stakel	ess testing	Megger guide to ea
DET4TC2 + ETK50C	1012-521	Leadset
DET4TCR2 + ETK50C	1012-523	
"+ kit" included Accessories		
Hard carry case		
Stake and wire kit (15 m, 10 m, 10 m, 3 m)		
MCC CLAMP (for ART testing)		
MVC CLAMP (adds stakeless testing)		
Field calibration check for instrument and		
CLAMPS		
External AC/DC charger (DET4TCR2 only)		
Separate ETK50C 2x 50m, 2x 30m complete with spi	kes and tape	

Item	Order Code.
Accessories	
Replacement hard carry case	5410-429
Replacement calibration check PCB	
(two-clamp measurements)	1000-434
Replacement ground test stakes (x2)	
for included kit (200 mm, 8 mm dia)	6220-804
Replacement ground test leads (x4)	
for included kit (15 m, 10 m, 10 m, 3 m)	6220-806
Replacement cable reel (50 m, red + spike)	1010-844
Replacement cable reel (30 m, black + spike)	1010-848
Replacement cable reel (50 m, yellow + spike)	1010-842
Replacement cable reel (30 m, green + spike)	1010-849
Replacement external AC/DC adaptor	
(DET4TCR2 only)	6280-370
MCC CLAMP	1010-516
MVC CLAMP	1010-518
Calibration check box (25 Ohm)	1000-435
Right angle terminal adaptor set	1012-511
Black crocodile clip (1)	6220-850
"Getting down to earth"	
Megger guide to earth ground testing	21500-072
Leadset	1001-858

#### UK

Archcliffe Road Dover CT17 9EN England T +44 (0) 1304 502101 F +44 (0) 1304 207342 E UKsales@megger.com

measure in weather proof holdall

# UNITED STATES

4271 Bronze Way
Dallas TX 75237-1088 USA
T 800 723 2861 (USA only)
T +1 214 333 3201
F +1 214 331 7399
E USsales@megger.com

## OTHER TECHNICAL SALES OFFICES

Norristown USA, Sydney AUSTRALIA, Ontario CANADA, Trappes FRANCE, Dubai UAE, Mumbai INDIA, Johannesburg SOUTH AFRICA, Chonburi THAILAND, Täby SWEDEN, Malaga SPAIN Registered to ISO 9001:2008 Cert. no. Q 09250 Registered to ISO 14001-2004 Cert. no. EMS 61597