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 Ω a to 200 kΩ, 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: ±25 V or ±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 Ω to 200 kΩ
ART: 0.01 Ω to 200 kΩ
Stakeless: 0.01 Ω to 200 Ω

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 kΩ (50 V output voltage)
Rc limit: 200 kΩ (50 V output voltage)
Limits reduced to 100 kΩ for 25 V output voltage
Limits reduced to 5 kΩ for 0.01 Ω resolution

Display
3½ 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
DET4TCR2 (rechargeable)	1000-346
Included Accessories	
Hard carry case	
Stake and wire kit (15 m, 10 m, 10 m, 3 m)	
Right angle terminal adaptors (to connect bare wires to terminals)	
External AC/DC charger (DET4TCR2 only)	
Kitted options for ART and Stakeless testing	
DET4TC2 + clamps	1000-365
DET4TCR2 + clamps (rechargeable)	1000-366
"+ clamps" 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	
Right angle terminal adaptors (to connect bare wires to terminals)	
External AC/DC charger (DET4TCR2 only)	
Professional kitted options for ART and Stakeless testing	
DET4TC2 + ETK50C	1012-521
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 spikes and tape measure in weather proof holdall	

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

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Registered to ISO 9001:2008 Cert. no. Q 09250 Registered to ISO 14001-2004 Cert. no. EMS 61597

DET4TC2_4TCR2_DS_en_V12

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