

DET4TC2 & 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 ICLAMP 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 VCLAMP, 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 k Ω , 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 ICLAMP

Stakeless measurement

Yes, with ICLAMP and VCLAMP

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 k Ω

ART: 0.01 Ω to 200 k Ω

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 k Ω (50 V output voltage)

Rc limit: 200 k Ω (50 V output voltage)

Limits reduced to 100 k Ω for 25 V output voltage

Limits reduced to 5 k Ω 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.	Item	Order Code.
DET4TC2	1000-345	Accessories	
DET4TCR2 (rechargeable)	1000-346	Replacement hard carry case	5410-429
Included Accessories		Replacement calibration check PCB	
Hard carry case		(two-clamp measurements)	1000-434
Stake and wire kit (15 m, 10 m, 10 m, 3 m)		Replacement ground test stakes (x2)	
Right angle terminal adaptors (to connect bare wires to terminals)		for included kit (200 mm, 8 mm dia)	6220-804
External AC/DC charger (DET4TCR2 only)		Replacement ground test leads (x4)	
Kitted options for ART and Stakeless testing		for included kit (15 m, 10 m, 10 m, 3 m)	6220-806
DET4TC2 + clamps	1000-365	Replacement auger stake	
DET4TCR2 + clamps (rechargeable)	1000-366	for professional kit	6220-839
" + clamps " included Accessories		Replacement cable reel (50 m, red cable)	
Hard carry case		for professional kit	1000-349
Stake and wire kit (15 m, 10 m, 10 m, 3 m)		Replacement cable reel (50 m, black cable)	
ICLAMP (for ART testing)		for professional kit	1000-350
VCLAMP (adds stakeless testing)		Replacement cable reel (30 m, yellow cable)	
Field calibration check for instrument and CLAMPS		for professional kit	1000-361
Right angle terminal adaptors (to connect bare wires to terminals)		Replacement cable reel (30 m, green cable)	
External AC/DC charger (DET4TCR2 only)		for professional kit	1000-843
Professional kitted options for ART and Stakeless testing		Replacement external AC/DC adaptor	
DET4TC2 + kit	1000-404	(DET4TCR2 only)	6280-370
DET4TCR2 + kit (rechargeable)	1000-405	ICLAMP Current clamp and connecting lead	1001-012
" + kit " included Accessories		VCLAMP Voltage inducing clamp, calibration check pcb	
Hard carry case		(for stakeless test) and lead	1001-013
Stake and wire kit (15 m, 10 m, 10 m, 3 m)		Calibration check box (25 Ohm)	1000-435
ICLAMP (for ART testing)		Right angle terminal adaptor set	6220-803
VCLAMP (adds stakeless testing)		Black crocodile clip (1)	6220-850
Field calibration check for instrument and CLAMPS		Professional ground testing kit 2 x 50 m, 2 x 30 m,	
Right angle terminal adaptors (to connect bare wires to terminals)		4 auger stakes, tape measure, in hard carry case	6320-245
External AC/DC charger (DET4TCR2 only)		Vehicle 12 V socket charger (DET4TCR2 only)	6220-375
Separate professional ground testing kit (2 x 50 m, 2 x 30 m, 4 auger stakes, tape measure, in hard carry case)		"Getting down to earth"	
		Megger guide to earth ground testing	21500-072
		Leadset	1001-858

DET4TD2 and DET4TR2

Digital Ground Testers



- IP54 rated
- 2, 3 and 4 point testing
- Selectable 25 V or 50 V output
- Dry cell or rechargeable versions
- Simple one button operation
- Robust carry case
- Delivered with calibration certificate

DESCRIPTION

Megger's DET4 family of ground testing instruments offers a unique solution to your ground rod and soil resistivity testing needs. The standard instrument comes with, test leads, stakes, terminal adaptors for bare wire, batteries and calibration certificate delivered in a tough polypropylene carry case - everything you need to start testing in one kit.

The ground testers are rated to IP54 making it truly an outdoor instrument. The ground tester has been designed to be easy to use, a large selector switch makes selection of 2 pole, 3 pole or 4 pole test easy with gloved hands - and the design makes the fitting of shorting links to perform 2 pole tests a thing of the past. A large, clear, easy to read LCD display and thumb sized test button again makes the instrument particularly suited to the outdoor conditions of ground testing.

In addition to this ease of use the ground tester also automatically checks the connection and condition of the P spike and the C spike, indicating the status on the display. The instrument also includes a voltmeter to allow you to measure the ground voltage. The ground tester can measure resistance from 0.01 Ω through to 20 k Ω and earth voltages up to 100 V. To allow testing in noisy environments the instrument is capable of rejecting noise of up to 40 V peak to peak.

The DET4TD2 digital ground tester is powered from 8 AA batteries which are widely available and deliver excellent testing time. The DET4TR2 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 displayed 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.

ELECTRICAL SPECIFICATIONS
Ingress protection:

IP54

C spike, P stake and noise check:

Automatic

Noise rejection:

40 V peak to peak

2-wire, 3-wire test, 4-wire test:

Yes, no shorting links required

Instrument output:

 Voltage: ± 25 V or ± 50 V at 128 Hz

Current: 4.5 mA or 0.45 mA

Resistance range:

 0.01 Ω to 20 k Ω
Earth voltage range:

0 - 100 V

Resistance accuracy

 2P measurements: 2% ± 3 digits

 3P measurements: 2% ± 3 digits

 4P measurements: 2% ± 3 digits

Maximum probe resistance:

 Rp limit: 100 k Ω (50 V output voltage)

 Rc limit: 100 k Ω (50 V output voltage)

 Limits reduced to 50 k Ω for 25 V output voltage

 Limits reduced to 5 k Ω for 0.01 Ω resolution

Ground voltage range:

0 to 100 V a.c.

Ground voltage accuracy:

 2% ± 2 V

Display:

3 ½ high contrast liquid crystal

Battery type:

DET4TD2 8 off AA (LR6) cells

DET4TR2 8 off AA (LR6) NiMH rechargeable cells

Operating temperature range:

-15 to +55 °C / 5 °F to 131 °F

Storage temperature range:

-40 to +70 °C / -40 °F to 158 °F

Safety:

Complies with the requirements of IEC61010-1

100 V CAT IV between terminal pairs.*

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

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 x 148 x 78 mm (8 x 5.8 x 3 inches)

Weight: 1 kg (2.2lb)

ORDERING INFORMATION

Item (Qty)	Order Code	Item (Qty)	Order Code
DET4TD2	1000-347	Right angle terminal adaptor set	6220-803
DET4TR2 (rechargeable)	1000-324	Black crocodile clip (1)	6220-850
Included Accessories		Professional ground testing kit (2 x 50m, 2 x 30m, 4 auger stakes, tape measure, in hard carry case)	6320-245
Hard carry case		Vehicle 12 V socket charger (rechargeable versions only)	6280-375
Stake and wire kit (15m, 10m, 3m)		'Getting down to earth' A Megger guide to earth testing	21500-072
Right angle terminal adaptors (to connect bare wires to terminals)		Leadset	1001-858
External AC/DC charger (rechargeable version only)			
Accessories			
Replacement hard carry case	5410-429		
Replacement ground test stakes (x2) for included kit 200mm, 8mm dia.)	6220-804		
Replacement ground test leads (x4) for included kit (15m, 10m, 10m, 3m)	6220-806		
Replacement external AC/DC charger (DET4TR2 only)	6280-370		
Calibration check box (25 ohm)	1000-435		

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