DET2/3

Advanced Earth (Ground) Tester

- **High resolution of 1 mΩ, ideal for large earth (ground) systems**
- **Versatile test modes**
- **High accuracy for earth (ground) electrode grid and soil resistivity tests**
- **Rechargeable battery power that can last all day with a fast re-charge (up to 10 hours)**
- **Robust instrument with IP65 protection**
- **Automatic test frequency selection, with filters and high current features**
- **Diagnostic trace display**
- **Data storage**
- **Large colour display that shows numeric and graphical results**

DESCRIPTION

The Megger® DET2/3 automatic earth (ground) test instrument is robust, compact and designed to measure earth Electrode Resistance and Soil Resistivity. It provides a full range of test methods and excels at the four terminal method of measurement, which eliminates the resistance of the current circuit from the measurement.

The DET2/3 is a reliable instrument for use on large or more complex earth systems, which include communications earth systems and difficult test environments. It can be used to test in accordance with BS 7430 (earthing / grounding), BS-EN-62305 (Lightning Protection), IEEE Standard 81 and Railway Applications.

Soil Resistivity measurements are used to establish the optimum electrode design and site, as well as archaeological and geological investigations.

FEATURES

High accuracy earth (ground) measurements

The DET2/3 provides accurate 1 mΩ resolution measurements of earth (ground) electrode resistance.

With its microprocessor controlled system it provides a flexible and 'user-friendly' approach to earth tests by the provision of excellent error detection capabilities and full test information shown on a large colour display.

Test frequency, test voltage and filtering can be quickly and easily adjusted so that adverse conditions, which can influence the test, can be overcome.

A wide band of test frequencies, with a resolution of 0.5 Hz, can be used to eliminate errors caused by noise in the earth.

The DET2/3 also includes an automatic frequency selection feature that scans for frequencies with the lowest noise level and then runs a test at that frequency.

Continuity measurements and bonding

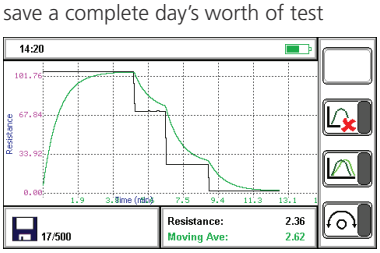
- **Single resistance range:** One fully automatic range from 0.01 Ω to 1.0 kΩ
- **Display:** Three digit display
- **Accuracy:** ±3% (±2 digits)
- **Short circuit current:** 200 mA continuity test currents
- **Lead null:** Lead resistance compensation (NULL) operates with a lead resistance up to 10 Ω

Trace display and data storage

Utilising the latest processors, the DET2/3 can provide a live trace of its measurements, which graphically shows the amount of noise from the system under test - a powerful diagnostic tool for the expert earth (ground) test engineer.

Use of the latest processors and a large internal memory allows for immediate calculations of resistivity (Wenner or Schlumberger method) and the ability to save a complete day's worth of test results.

Test result data can be downloaded directly through a USB flash drive or straight to a Windows PC running PowerDB™ software.



Weatherproof and rugged

The DET2/3 is sealed to IP54 standard, which provides weatherproofing during operation (case lid open). When the case lid is closed its protection standard is to IP65 (water and dust damage).

The case is made of a tough and light copolymer polypropylene, which can withstand the rough and tumble of outdoor use.

Portable power

An internal Li-ion battery provides for a full day of tests.
The Li-ion battery has a fast recharge facility that allows a flat battery to provide an afternoon of tests, if charged during a lunch break.
The DET2/3 can also operate from a standard 12 V DC battery supply.

SPECIFICATION

2, 3 and 4 pole resistance measurements

Range	0.001 Ω to 20.00 kΩ auto range
Display	Four digit display
Accuracy	at 23 °C ±2 °C ±0.5% of reading ±2 digits
3P	±10 mΩ
2P	±20 mΩ
Operational uncertainty	±2% of reading, ±2 digits (meets IEC61557 operational uncertainty requirement with readings over 10 mΩ) when spike resistances are below 100 Ω ±5% of reading ±2 digits ±10 mΩ (meets IEC61557 operational uncertainty requirement with readings over 10 mΩ)
Test standards	BS 7430 (Earthing) BS 62305 (Lightning) BS EN50122 (Railway) IEEE Standard 81
Test frequency	10 Hz to 200 Hz in steps of 0.5 Hz
Test current	50 mA max.
Maximum output voltage	Less than 50 V rms
Maximum interference	Up to 50 V pk to pk
Temperature coefficient	< ±0.1% per °C over operating temp

3 and 4 pole ART (selective) resistance measurements

Range	0.01 Ω to 10.00 kΩ Auto range
Accuracy	±5% of reading ±3 digits at 23 °C ±2 °C

Stakeless resistance measurement

Range	0.01 Ω to 200 Ω
Accuracy	±7% accuracy, ±3 digits

Leakage current

Range	0.00 A to 2.00 A
Accuracy	±5% (±3 digits)

Instrument specifications

Display	4.3 inch QWVGA, daylight viewable backlit colour
Operating temperature and humidity	-10 to 40 °C 90% RH max at 40 °C
Storage temperature	-20 to 60 °C
IP rating	IP54 operational (lid open), IP65 storage (lid closed)
Measurement rating	CAT IV 300 V
Power supply	Internal Li-ion battery or external 12-18 V, 65 W, DC supply
Battery life	Up to 10 hrs use
Battery charging time	Fast recharge to 50%, 3 hrs for 100%
Safety	Meets IEC 61010
EMC	Meets IEC 61326
Dimensions	L 315 x W 285 x H 181 mm (12.4 x 11.2 x 7.1 in)
Weight	4.5 kg (9.9 lb)
Data download	To PC through USB 2.0
Data storage	On board 500 record storage downloadable as *.txt
USB type A	Data download to USB drive
USB type B	Data download to PC
Secondary measurement display	Noise, voltage and current
Resistivity calculation	Wenner: PE = 2 π a R_w Schlumberger: PE = π $\frac{b\,(b+a)}{a}$ R
Test modes	Internally set 2P, 3P, ART (Selective), 4P, Stakeless (clamp) modes
Aux inputs	MCC1010, MVC1010
RoHS compliant	Yes

ACCESSORIES

MCC1010 and MVC1010

- For Stakeless tests
- For ART tests

Cable reels with spike

- Sturdy handle and a smooth unwind and wind action
- Cable 'feed through'
- 20 m, 30 m, 50 m, 60 m or 100 m cables
- Attachable 25 cm (10") earth spike
- Spike can be hammered into the ground
- Unique daisy-chain feature to create longer lengths

Continuity test cables and clips

- 1.4 m cables
- 2 wire connection cable
- Crocodile clips
- Probes

Accessories bag

- Holds a full suite of accessories
- Water resistant
- Toughened bottom for outdoor use

	DET2/3	DET2/3 with ETK50 C	DET2/3 with ETK100 C
DET2/3	■	■	■
Charger	■	■	■
MCC1010, current clamp		■	■
MVC1010, voltage clamp		■	■
User guide	■	■	■
Calibration checker, instrument	■	■	■
Calibration checker, clamps		■	■
Reel with 50 m test cable (x2)		■	
Reel with 30 m test cable (x2)		■	
Reel with 100 m test cable (x2)			■
Reel with 60 m test cable (x2)			■
Test spikes (x4)		■	■
100 m tape measure			■
1.4 m leads with connectors and clips (x2)		■	■
Pouch	■	■	■
Carry strap	■	■	■

		ETK30 1010-176	ETK50 1010-177	ETK100 1010-178	ETK50C 1010-179	ETK100C 1010-180
Test lead on reel	Red	30 m	50 m	100 m	50 m	100 m
	Yellow	20 m	50 m	100 m	50 m	100 m
	Black		30 m	60 m	30 m	60 m
	Green		30 m	60 m	30 m	60 m
Test lead 2 m with croc clip black		■				
Earth test spikes *		2	4	4	4	4
Interconnection lead (Reel to spike) *	Red	■	■	■	■	■
	Yellow	■	■	■	■	■
	Black		■	■	■	■
	Green		■	■	■	■
MCC1010					■	■
MCC1010 test lead					■	■
MVC1010					■	■
MVC1010 test lead					■	■
1.4 m leads with connectors and clips (x2)					■	■
Measuring tape			100 m	100 m	100 m	100 m
Holdall to contain kit		■	■	■	■	■

* Supplied with reels

ORDERING INFORMATION

Model name								Cable Reel							Language			Plug/Mains lead		
D	E	T	2	3			-	E	T	K					-	L	G		-	P	

SELECT A MODEL

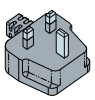
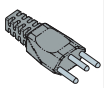
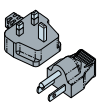
DET2/3XX

EARTH TESTING KIT

NONE XX
ETK 50CX
ETK 100C

SELECT A LANGUAGE AND PLUG

Please note only some plug types are available for certain languages - the language you need will determine the mains leads available

LANGUAGE		PLUG TYPES AVAILABLE							
3 DIGIT CODE	LANGUAGE INCLUDED	 UK	 EU	 US	 CH	 AUS	 IT	 IN	 UK + US
LG1	EN, DE, FR, NL	**P1**	**P2**	**-**	**P4**	**P5**	**-**	**-**	**-**
LG2	EN, ES, PT, IT	**P1**	**P2**	**P3**	**-**	**-**	**P6**	**-**	**-**
LG3	EN, AR, TR, FR	**P1**	**P2**	**P3**	**-**	**-**	**-**	**P7**	**-**
LG4	EN, CZ, SK, PL	**P1**	**P2**	**-**	**-**	**-**	**-**	**-**	**-**
LG5	EN, CN, JA, KO	**P1**	**P2**	**P3**	**-**	**-**	**-**	**-**	**P8**
LG6	EN, RU, HU, RO	**-**	**P2**	**-**	**-**	**-**	**-**	**-**	**-**
LG7	EN, NO, SV, FI	**-**	**P2**	**-**	**-**	**-**	**-**	**-**	**-**

ACCESSORIES

Optional accessories	Order code
Cable reel kit ETK30	1010-176
Cable reel kit ETK50	1010-177
Cable reel ETK100	1010-178
Cable reel ETK50C	1010-179
Cable reel ETK100C	1010-180
Clamp MCC 1010	1010-516

Optional accessories	Order code
Clamp MVC1010	1010-518
12 VDC power lead	1010-183
Terminal adapter, detachable retro-fit for C1, P1, P2, C2 connectors	6220-803
Power supply 18V73-5A	1010-793