

# DET14C and DET24C

## Clamp-on Ground Resistance Testers



- Large elliptical clamp design
- Smooth mating surfaces on the clamp head
- CATIV 600 V operation
- Noise filter function
- Intelligent data hold function
- Data storage with time- and date-stamped results

### DESCRIPTION

The DET14C and DET24C are advanced clamp-on ground resistance testers that set new standards in terms of access, performance, features, simplicity of operation and safety. The DET14C and 24C are used to measure earth/ground resistance in multiple loop installations without disconnecting the ground.

Designed with flat core ends, these units prevent dirt build-up, ensuring measurement integrity and improved reliability over products with interlocking teeth. Other enhancements include safety to CATIV 600V, a built-in filter function for electrically noisy environments, time and date stamped stored test results and ultra long battery life. Megger has taken what is now a standard test method and significantly improved its field applicability.

The DET14C and DET24C are designed to quickly measure ground electrode resistance in applications where this type of test method can be used and/or verify the integrity of ground connections. The goal of ground resistance testing is to ensure that the resistance ground electrode system is low enough to prevent or limit voltage rises caused by fault current, electrical surges, lightning strikes, etc.

Clamp-on ground testers work in applications where there is a loop resistance to measure with ground paths in the system (the more ground paths, the closer to the actual resistance). A utility pole ground system is a classic example of this type of application.

Typical end users include:

- Power utilities
- Electrical contractors/electricians
- Specialist grounding contractors
- Electrical testing companies
- Telecommunications companies
- Railroads
- Mining companies



The DET14C is being used to test a pole ground.



The DET14C is shown measuring a ground spike in a ground well.

### APPLICATIONS

Typical testing applications include:

- Pole grounds
- Service entrance/meter ground electrodes
- Service panels
- Pad mount transformer grounds
- Transmission tower grounds - utility ground cables
- Telephone pedestals
- Telephone cabinets
- Lightning protection ground electrodes

### FEATURES AND BENEFITS

#### Large elliptical clamp (head) design

- Allows testing of round cables/rods up to 37 mm diameter and ground tapes/straps up to 50 mm width
- Improved testing access

#### Smooth mating surfaces on the clamp head

- Easy to clean
- No interlocking teeth to damage

#### CATIV 600 V operation

- Highest level of user safety available
- Unit can be used safely before the distribution board

#### Noise filter function

- User can select the filter function to increase noise immunity
- Allows the unit to be used in higher electrical noise environments

#### Resistance and current limit alarm functions (visual and audible)

- Minimum and maximum limits can be set to reduce test time/improve accuracy

#### Intelligent data hold function (preset before testing)

- Increases instrument ease of use in difficult testing locations

#### Backlit display

- Allows for operation in low light environments such as cable basements

#### Data storage (both models)/results downloading (DET24C)

- Reduces potential for error in recording results

#### Time and date stamped results

- Improved data/results management
- Improved accuracy of result reporting

#### New ergonomic trigger design

- Easier and more comfortable to operate
- Less chance of slippage causing the head to snap shut

#### Ultra long battery life (24 hours continuous) with readily available batteries

- Longer operating time
- Reduced cost of ownership

### ELECTRICAL SPECIFICATIONS

#### Resistance Measurements

Ground Resistance Range	Resolution	Accuracy
0.05 $\Omega$ to 0.99 $\Omega$	0.01 $\Omega$	$\pm 1.5\% \pm 0.05 \Omega$
1.00 $\Omega$ to 9.99 $\Omega$	0.01 $\Omega$	$\pm 1.5\% \pm 0.1 \Omega$
10.0 $\Omega$ to 99.9 $\Omega$	0.1 $\Omega$	$\pm 2\% \pm 0.5 \Omega$
100.0 $\Omega$ to 199.9 $\Omega$	0.1 $\Omega$	$\pm 5\% \pm 1 \Omega$
200 $\Omega$ to 400 $\Omega$	1 $\Omega$	$\pm 6\% \pm 5 \Omega$
400 $\Omega$ to 600 $\Omega$	1 $\Omega$	$\pm 10\% \pm 10 \Omega$
600 $\Omega$ to 1200 $\Omega$	10 $\Omega$	$\pm 20\%$
1200 $\Omega$ to 1500 $\Omega$	10 $\Omega$	$\pm 35\%$

- Frequency of measurement 1390 Hz.

#### Alarm Settings

Alarm Type	Range	Resolution
Threshold 1	1 - 1500 $\Omega$	1 $\Omega$
Threshold 2	0 - 1500 $\Omega$	1 $\Omega$

#### Current Measurement (RMS)

Current Range	Resolution	Accuracy
0.5 mA to 0.99 mA	0.01 mA	$\pm 2\% \pm 0.05 \text{ mA}$
1.00 mA to 9.99 mA	0.01 mA	$\pm 2\% \pm 0.05 \text{ mA}$
10.0 mA to 99.9 mA	0.1 mA	$\pm 2\% \pm 0.1 \text{ mA}$
100 mA to 999 mA	1 mA	$\pm 2\% \pm 1 \text{ mA}$
1.00 A to 9.99 A	0.01 A	$\pm 2\% \pm 0.01 \text{ A}$
10.0 A to 35.0 A	0.1 A	$\pm 2\% \pm 0.1 \text{ A}$

- True RMS readings up to a crest factor of 5.0 (peak current 40 A)
- Accuracy guaranteed for 50 Hz and 60 Hz
- Measurement over the range 16 Hz to 400 Hz
- Maximum current is 100 A RMS continuous and 200 A RMS for 60 s max at 50 Hz and 60 Hz

### GENERAL SPECIFICATIONS

Maximum jaw opening	39 mm
Maximum jaw inner dimensions	39 mm x 55 mm
Display type	4 + 6 digit with backlight
Battery type	4 x 1.5 V IEC LR6/AA alkaline
Battery life	24 hours continuous testing – while measuring a 25 $\Omega$ resistance without backlight
Auto power down button	300 s (reset by jaw action or button press)
Data logging	DET14C 256 records DET24C 2,000 records
Data download	Opto-coupled IrDA-USB interface (DET24C only)
Range selection	Automatic within each mode
Sample time	< 1 s
Hold function	Yes with visual indicator
Alarm function	Yes with visual indicator
Noise filter function	Yes, automatic
Warning buzzer	Yes
Operating temperature, humidity	-4 °F to +122 °F, <85% RH (-20 °C to +50 °C)
Storage temperature, humidity	-40°F to +140 °F, <75% RH (-40 °C to +60 °C)
Weight	2.17 lb (985 g)
Instrument dimensions LxWxH	9.7 in. x 4.4 in. x 2 in. (248 mm x 114 mm x 49 mm)
IP rating	IP30 with jaws closed
Performance	IEC 61557-5 IEC 61557-13 Class 1
Safety	EN 61010-2-032 CATIV 600V Pollution degree 2
EMC	Class B Compliant, IEC 61326, BSEN 61326



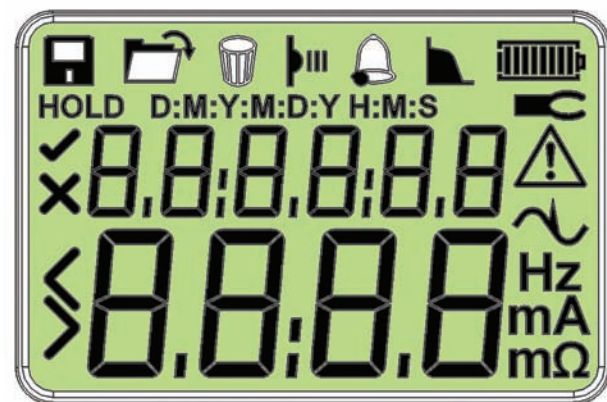
The clamp head of the DET14C/24C has a smooth mating surface and no interlocking teeth. Its large elliptical design improves access to the test specimen.



Close up of instrument's front panel.

### DET14C/24C DISPLAY VIEW

	Save		Tick = set
	Open		Cross = not set
	Delete		Warning refer to user guide
	IrDA download		Signal noise detected
	Alarm		Less than
	Filter		More than
	Battery		
	HOLD		
	D:M:Y M:D:Y		Date formats
	H:M:S		Hours, minutes, seconds
	Clamp open		



**DET24C INSTRUMENT FRONT VIEW**


Both units come with a carrying case, carrying strap, batteries, calibration check, and user guide CD.

DET24C also includes USB IrDA dongle and PowerDB Lite software.

**ORDERING INFORMATION**

Item (Qty)	Cat. No.
DET14C Digital earth test clamp-on meter	1000-761
DET24C Digital earth test clamp-on meter	1000-762
<b>Included accessories</b>	
Carrying case	1001-715
Carrying strap (wrist loop)	1001-716
User guide CD-ROM	1001-198
Calibration check	1001-498
Battery AA (Alkaline) (4 required)	25511-841
<b>Included accessories for DET24C only</b>	
USB IrDA dongle	90001-434
PowerDB Lite software	1000-576

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**ISO STATEMENT**  
 Registered to ISO 9001:1994 Reg no. Q 09250  
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