USER GUIDE

DLRO100EB, DLRO100XB & DLRO100HB

100 A High Performance Digital Low Resistance Ohmmeter

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For Patent information about this instrument refer to the following web site:
megger.com/patents

This manual supersedes all previous issues of this manual. Please ensure that you are using the most recent issue of this document. Destroy any copies that are of an older issue.

Declaration of Conformity

Hereby, Megger Instruments Limited declares that radio equipment manufactured by Megger Instruments Limited described in this user guide is in compliance with Directive 2014/53/EU. Other equipment manufactured by Megger Instruments Limited described in this user guide is in compliance with Directives 2014/30/EU and 2014/35/EU where they apply.

The full text of Megger Instruments EU declarations of conformity are available at the following website:

megger.com/eu-dofc

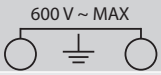
Contents

1. Safety warnings

These must be read and understood before use. Retain these safety warnings for future reference.

- **CAUTION:** THE INSTRUMENT MUST BE OPERATED ONLY BY SUITABLY TRAINED AND COMPETENT PERSONS
- Users of this equipment and their employers are required by National Health and Safety Legislation to carry out valid risk assessments of all electrical work so as to identify potential sources of electrical danger and risk of electrical injury.
- The instrument must NOT be used if any part of it is damaged.
- Damaged test leads must NOT be used. Test leads, connectors and mechanical guards must be in good order, clean and with no broken or cracked insulation.
- Fan filters and covers giving access to internal conductive parts must be correctly fitted before use.
- Testing inductive circuits can be hazardous: The DLRO100 is a high power instrument, designed for testing resistive loads. It must NOT be used to test inductive loads.
- **DANGER!** The instrument is not fully protected when switched off.
  - Switch the instrument ON before connecting to the test subject.
  - The test subject must be switched off, de-energised and checked before test connections are made. Ensure that the test subject cannot be re-energised whilst the instrument is connected.
  - Do not leave the equipment unattended when connected to the test subject.
  - Do not leave the equipment connected to the test subject after the test is completed.
- The user must exercise caution when connecting to and disconnecting from the test subject.
  - Always connect test leads to the instrument before attaching to test subject.
  - Keep hands behind tactile barriers on probe clips and clamps when making or breaking connections.
  - High current connections between the instrument and test subject must be secured against accidental detachment and must not be disengaged whilst test current is flowing.
  - High current test leads must be a minimum of 3 milliohm resistance.
  - Circuit terminals must not be touched during test.
  - Do not disconnect the instrument from the test subject until the test current has stopped and the TEST warning indicator is extinguished.
  - Test leads and connections may become hot during use. Exercise caution when handling.
  - Disconnect from the test subject before switching the instrument OFF.
- **DANGER!** Some models can be operated by remote control. A test can be started at any time by remote control. These additional precautions must be taken for instruments with a remote control function.
  - Measurement connections must be handled only when precautions have been taken to prevent a remote control test start.
  - If the remote control link should fail, the test must be stopped manually by pressing the TEST button.
- If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- Fan filters are user-serviceable. Disconnect all measurement leads and switch the instrument OFF before servicing the fan filters.
- There are no user-serviceable parts inside the instrument; all servicing, including fuse replacement, must be referred to Megger approved service centres.
- Use only Megger approved battery pack, and follow the instructions provided with the battery
- **Warning!** This instrument contains a Lithium Ion High Energy Battery Pack and a lithium coin cell.
  - Do not pierce, damage, disassemble or modify the battery. The battery contains safety and protection devices which, if tampered with may cause the battery to generate heat, rupture or ignite.-
  - Never heat (or dispose of) the battery in a fire.
  - Do not subject the battery to strong impact, mechanical shock or excessive heat.
  - Do not expose the battery to water, salt water or other liquids, or allow the battery to get wet.
  - Never short-circuit or reverse the polarity of the battery pack.
  - In the event of a battery cell leaking, do not allow the released fluid to come into contact with the skin or eyes. If contact has been made, wash the affected area with plenty of water and seek medical advice immediately

1.1 Safety and hazard symbols used on the instrument

Icon	Description
	Warning: High Voltage, risk of electric shock
	Caution: Refer to user guide.
UK CA	UK conformity. This equipment complies with current UK legislation
CE	EU conformity. Equipment complies with current EU directives.
	Equipment complies with current ‘C tick’ requirements.
	Do not dispose of to landfill, sewage systems or by fire.
	Equipment protected throughout by double insulation.
	Reference earth connection. Not a protective earth terminal
IP54	Enclosure is dust proof and protected against water splashes
	Line Power / mains
	600 V AC rms maximum between terminals, and between terminals and earth
	Universal Serial Bus (USB)
	Bluetooth®

Measurement Connection

- Only Megger supplied test leads designed for this instrument provide the full safety rating.

Voltage – The rated measurement connection voltage is the maximum line to earth voltage at which it is safe to connect.
CAT IV – Measurement category IV: Equipment connected between the origin of the low-voltage mains supply and the distribution panel.
CAT III – Measurement category III: Equipment connected between the distribution panel and the electrical outlets.
CAT II – Measurement category II: Equipment connected between the electrical outlets and the user’s equipment.

- Measurement equipment may be safely connected to circuits at the marked rating or lower. The connection rating is that of the lowest rated component in the measurement circuit.

For WEE and product disposal details please refer to **"17.2 WEE Directive" on page 32**

2. General description

The new Megger DLRO100 range of Low Resistance Ohmmeters provide high accuracy with noise immunity, are robust yet light and portable.

The range consists of three models:

- DLRO100EB has advanced features of configurable tests, manual, auto and continuous tests,
- DLRO100XB in addition has internal memory storage for test records and USB connectivity,
- DLRO100HB in addition to the above has Bluetooth®, remote operation and smart device capability.

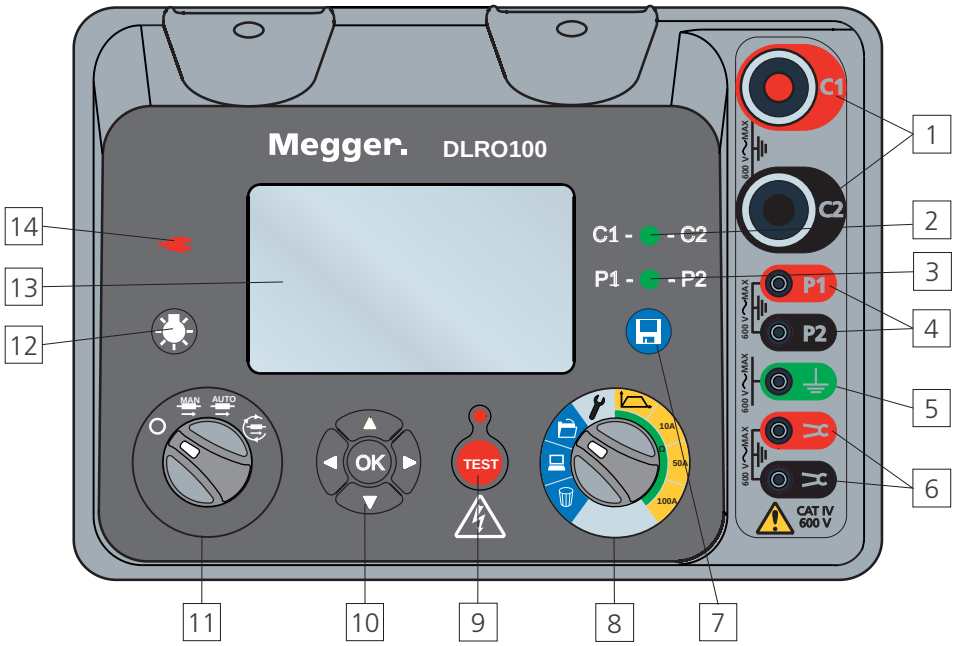
Key features

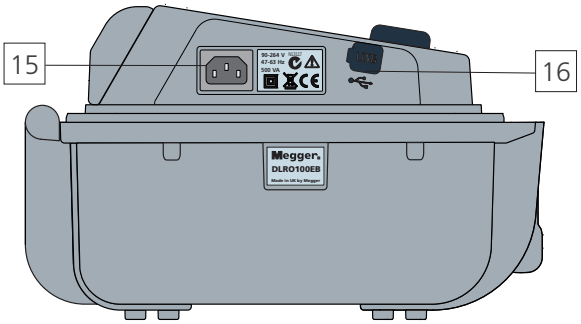
- CAT IV 600 V AC / 500 V DC up to 2000 m on all test terminals for safe operation
- CAT IV 300 V up to 4000 m
- Lightweight 100 A battery powered unit for portability – 7.9 Kg (17 lbs)
- Li-ion battery for high power and fast charge - works from an AC supply if the battery is fully discharged
- High noise immunity for stable readings
- Smooth DC Output for circuit breaker testing
- IP54 (lid open) for protection against ingress during operation (IP65 lid closed)
- Adjustable 10 - 100 A output, 4 terminal measurement for flexibility
- Adjustable current ramp rates and test duration for flexibility
- Battery capacity - 200 single tests or up to 2x 10 minutes continuous 100 A output for extended use
- Ultra tough outer case construction designed for use in demanding environments with a flame retardant UL94 V0 inner case for safety
- DualGround™ - Using the optional DC clamp enables circuit breaker testing with ground protection in place (100XB & 100HB variants) for safety
- Large, clear LCD for all light conditions
- Time and Date stamped memory for recording of results (220 readings)
- Range and test mode rotary switches for simplicity of operation
- Memory Storage and USB download capability (100XB & 100HB variants) for effective results management
- Remote Operation - Control the instrument remotely via a PC or laptop (100HB variants) for added safety
- Smart device support - Running a Power DB app on Windows 8 tablet or smart phone to populate unique asset ID's (100HB variants) for efficient asset management
- Two year warranty - second year conditional on free product registration

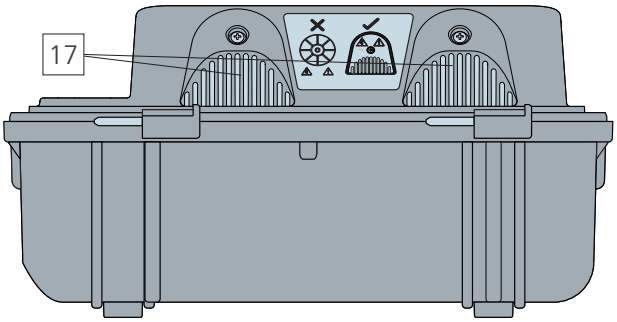
This product and its accessories are covered by EU design registrations 002349134-0001 and 002349134-0002.

This product and its accessories are the subject of patents pending.

3. Instrument controls and indicators

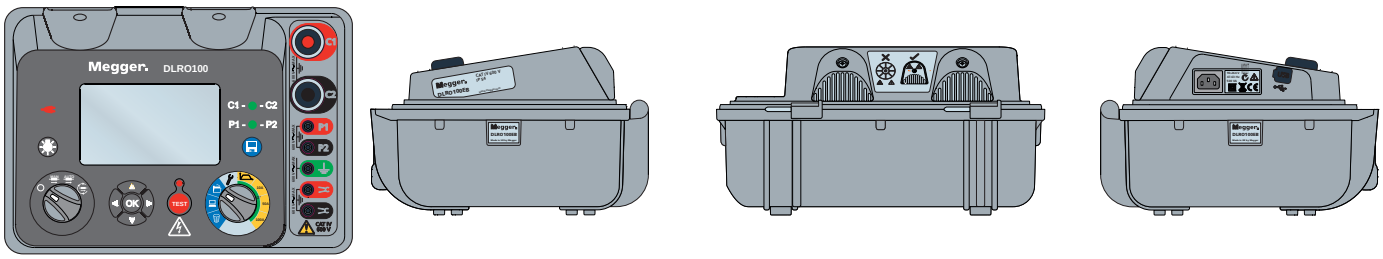






1. Current terminals – C1 - C2
2. C1 - C2 LED indicates continuity on the C terminals
3. P1 - P2 LED indicates continuity on the P terminals
4. Potential terminal - P1 - P2
5. Measurement earth terminal
6. DualGround™ terminal 100XB and 100HB only
7. Save button 100XB and 100HB only
8. Range rotary switch
9. TEST button with associated warning lamp
10. Navigation / OK buttons
11. Test mode rotary switch
12. Backlight button
13. Display
14. LED indicating line power / mains
15. Power socket
16. USB Device port 100X and 100H only
17. Cooling fans with IP54 cover

4. Preparations for Use



Initial instructions

- Remove instrument, power lead and pouch from the packing box.
- Open the lid noting position of the IEC 60320 power inlet and USB device port on the left panel. Test terminals are located to the right of the front panel.
- Read the safety warnings.
- A quick reference is provided in the instrument lid.
- Keep the original packaging for re-use.

Power lead and battery charging

- If the power lead supplied is not suitable for your AC connection, do not use an adaptor. Always use a Megger approved power lead.
- Use the supplied AC lead **ONLY.**
- Supply voltage: 90 to 265 V rms ac at 50 / 60 Hz.
- A red LED illuminates when line power/mains is present.
- The battery will charge when an AC source is connected, except when a test is in progress.
- For optimum battery life, charge the battery after each use. Full charge duration is 2.5 hours.
- The battery must be charged between 0 °C and 40 °C ambient temperature. If the battery detects a temperature outside this range the battery symbol will flash and charging will be prevented.
- The battery should be recharged every 3 months if the instrument is left unused for long periods. This may take up to 30 minutes to indicate normal charging.
- If the battery has been replaced or fails to recharge, follow instructions in 'Battery reset enable' paragraph to reset the battery charge indicator.
- If the battery fails to recharge after numerous attempts, contact a Megger approved service centre for advice.

Functional verification

Simply turning on the instrument at the test mode switch will initiate a start-up process and the display will respond. The initialisation screen (right) shows the firmware version.

Calibration

The DLRO100 is supplied with a calibration certificate.

An ISO17025 (UKAS) Calibration Certificate is available if ordered with the instrument.

Storage

Instruments should be stored within its temperature and humidity specifications.

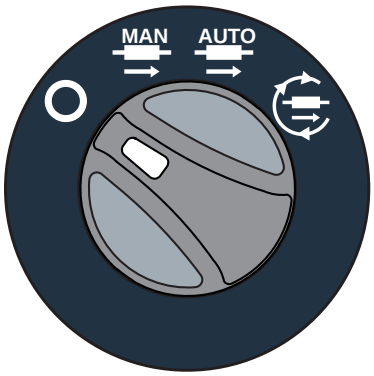
Intermittent operation limits

The DLRO100 is a high-power instrument and, as such, can generate significant heat. To prevent damage, the instrument contains internal thermal protection which can disable the test current if excessive temperature rise is detected. In this event, the thermometer symbol will be displayed on the screen. If this should occur, switch the instrument off and allow it to cool before repeating the test. If possible, do not position the instrument in direct sunlight.

5. Operating instructions

General operation

The DLRO100EB, 100XB and 100HB are primarily controlled by two rotary switches and a TEST button used to start and stop a test (see section entitled, “Instrument control and indicators”).



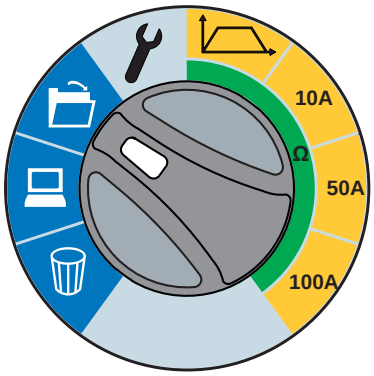
Test Mode rotary switch

The Test Mode rotary switch includes an ‘OFF’ position; the instrument switches on by rotating the switch clockwise from this position. Test modes provided are:

MAN Manual

AUTO Auto

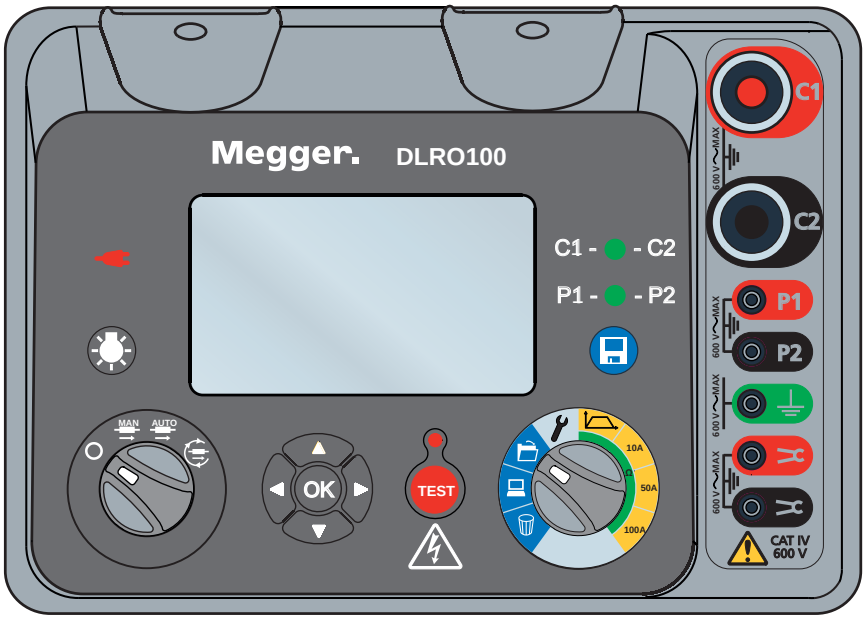
Continuous



Range rotary switch

A light blue coloured section which denotes memory functions; delete records; download records via USB or Bluetooth® and retrieve records. (100XB and 100HB Only)

A spanner enabling instrument and test settings.
A custom test selection, 10 A, 50 A and 100 A pre-set test currents.



Save button
(100XB and 100HB only)

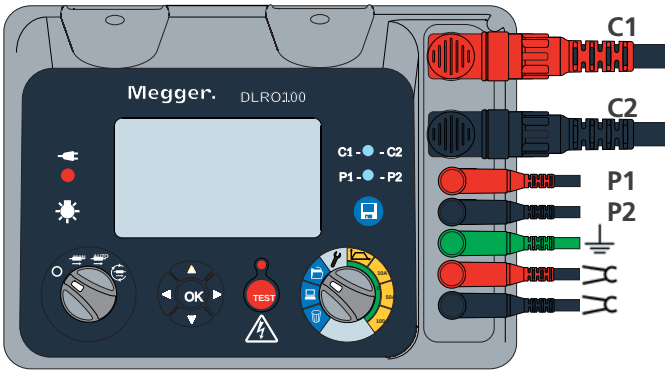
Backlight button

Navigate via Directional and an OK buttons

TEST button to start and stop a test.

6. Lead connections

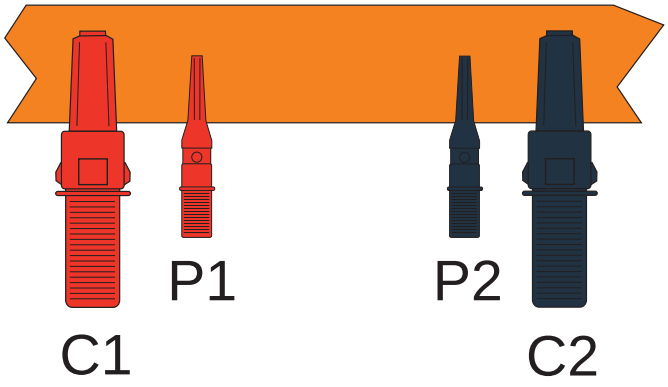
6.1 Test Leads



Leads connected to the instrument with the Kelvin arrangement below showing correct positioning of Current (C1,C2) and Potential probes (P1,P2).

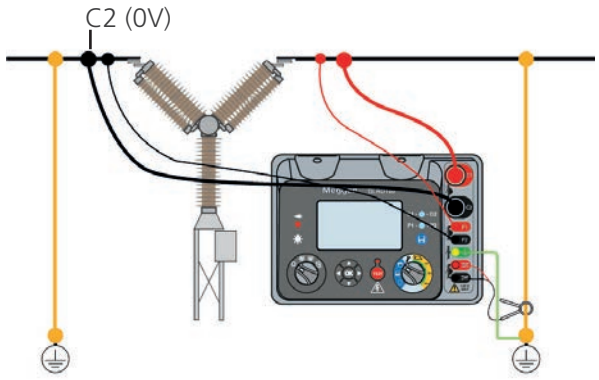
The earth terminal ⏚ is used to detect floating voltage on the test subject relative to the C2 (0 V) terminal. High floating voltage on the test subject could present a hazard to the user and the DLRO. If the test subject is ±200 mV from the C2 (0 V) terminal, test will be inhibited. The noise symbol ∿ will show when the test is inhibited. Disconnect from the earth terminal when this feature is not in use.

Section of test piece under test.



The current terminals (C1 and C2) must be connected outside of the potential terminals (P1 and P2), to ensure accurate readings.

6.2 DualGround™ and DC Clamp connection



As an additional safety precaution, perform the test with both ends of the test object grounded.

Connect the DC clamp to one of the ground connections. The DC clamp measures current flowing through the ground loop and the DLRO100 compensates for this current loss automatically resulting in a more reliable reading.

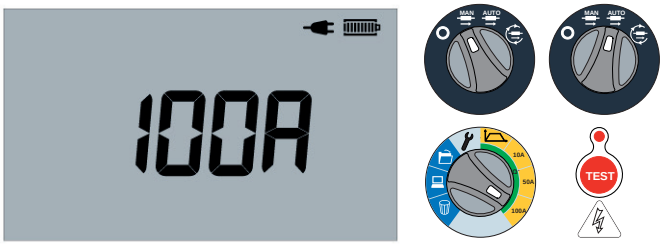
Refer to the MCPD100L manual for how to use the DC current clamp.

Connect the earth connector to a suitable earth. Do not leave the earth connection un-terminated or floating.

6.3 Testing modes

Manual and auto test

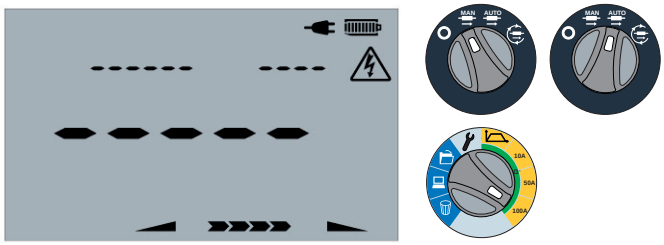
1.1 Preset test
100/50/10A - Initial



Select current on rotary switch.
Press test button to start the test.

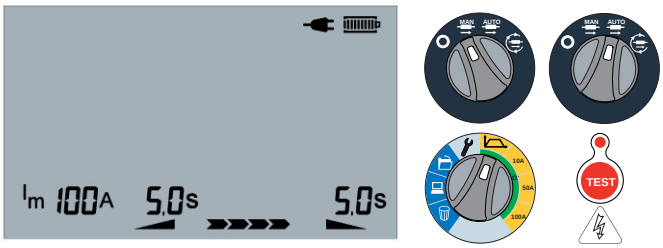
To configure date and time for saved results - refer to Instrument set-up section 2.6

1.2 Preset test
100/50/10A - Progress



Active test screen.

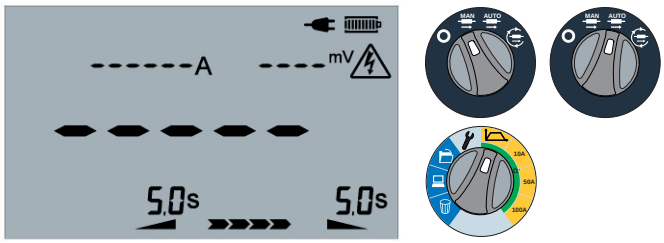
1.3 User configured Manual and Auto test - Initial



Press test button to start a custom test.

To configure test setting for user configured test, date and time for saved results - refer to Instrument set-up section 2.6

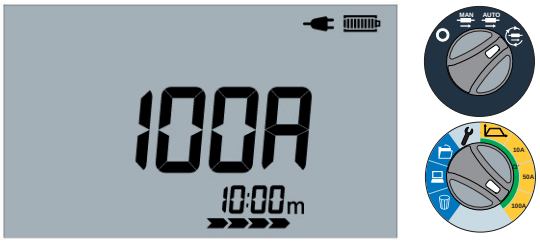
1.4 User configured Manual and Auto test - Progress



Active custom test screen.

Continuous test

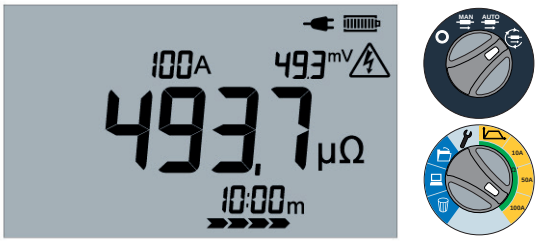
1.5 Preset test 100/50/10A - Initial



Press test button to start a continuous test.

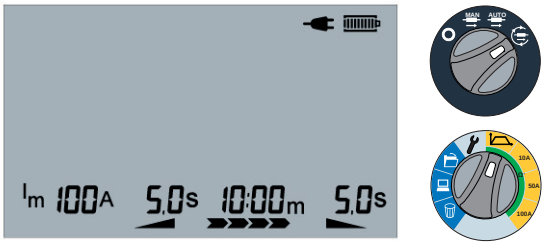
To configure date and time for saved results - refer to Instrument set-up section 2.6

1.6 Preset test 100/50/10A - Progress



Active continuous test screen.

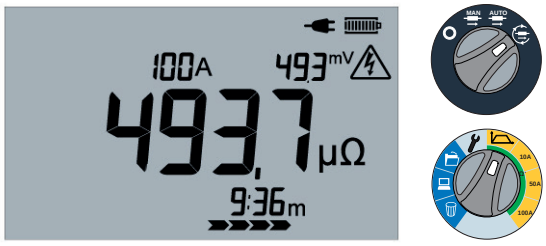
1.7 User configured continuous test - Initial



Press test button to start a custom continuous test.

To configure test setting for user configured test, date and time for saved results - refer to Instrument set-up section 2.6

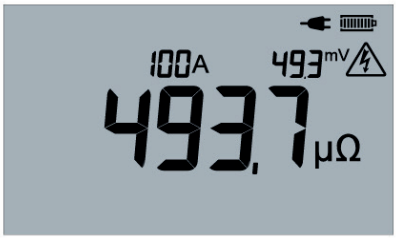
1.8 User configured continuous test - Progress



Active continuous test screen.

End of Test

1.9 End of test screen



Display shows the current through the test piece, measured voltage and calculated resistance. If the required current is not achieved the current value will flash.

Test aborted

1.10 Test aborted by instrument

Aborted test - A number of conditions can cause an abort. This example shows a bad connection.

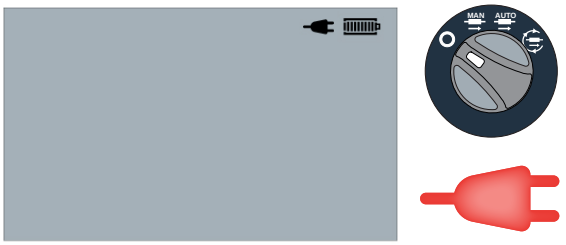
1.11 Test stopped by user

User stopped test by pressing the test button.

6.4 Instrument set-up

Charging and turning the instrument on

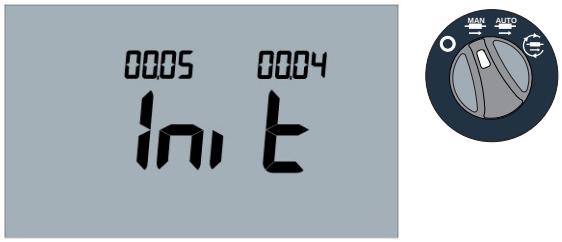
2.1 Charging screen – Instrument 0ff



Instrument switched off, mains connected and battery charging.

Fans will be running.

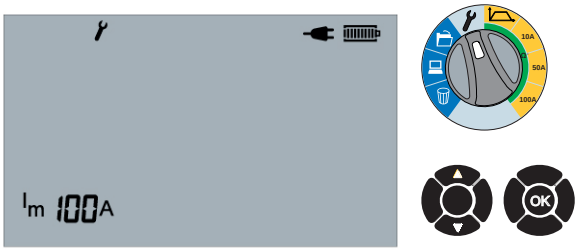
2.2 Screen



Successful initialisation.

User settings

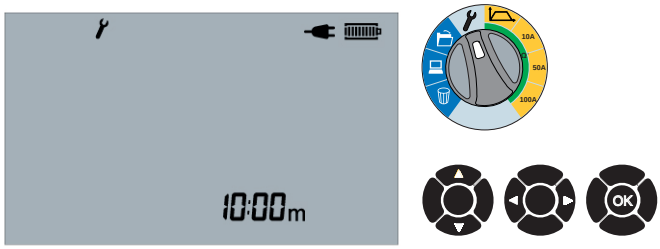
2.3 Set max current



Maximum current adjusted between 10 A and 100 A with UP and DOWN arrows. Select OK to accept and progress to set test duration.

For test durations of greater than 10 minutes the current setting is limited to a maximum of 59A

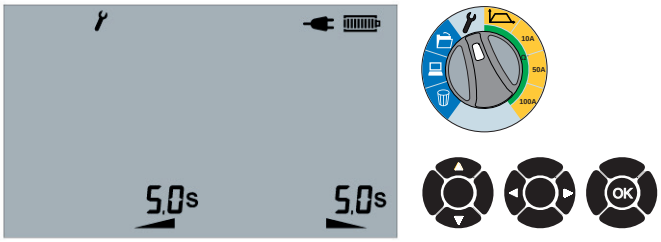
2.4 Set test duration



Test duration for the continuous test is adjusted with UP and DOWN arrows. Minutes and seconds are selected with LEFT and RIGHT arrows. Select OK to accept.

For currents of above 59A the test duration is limited to a maximum of 10 minutes.

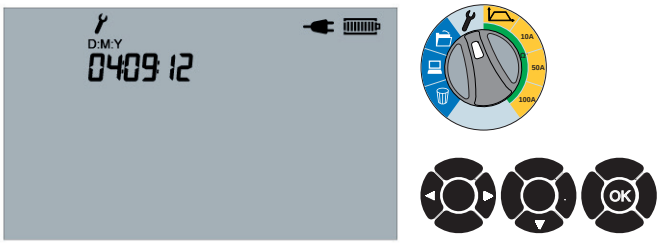
2.5 Set Ramp Up/Down



Ramp Up/Down duration adjusted with UP and DOWN arrows. Seconds and half seconds selected with LEFT and RIGHT arrows. Select OK to accept.

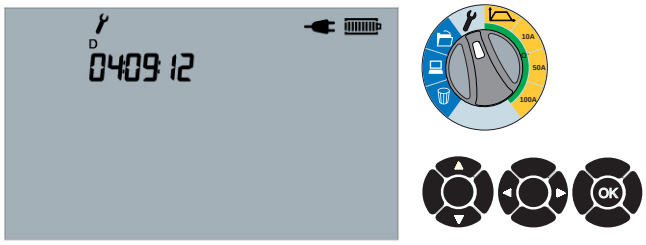
Time and date (XB and HB models only)

2.6 Set date format



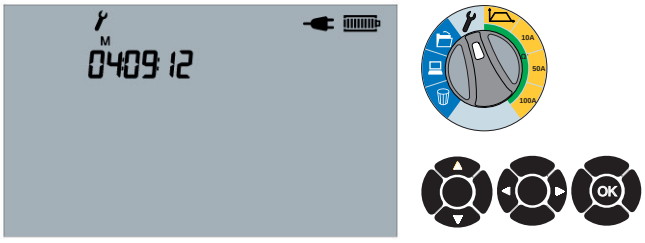
Change format with LEFT and RIGHT arrows. Adjust date by selecting DOWN arrow or select OK to accept.

2.7 Set date



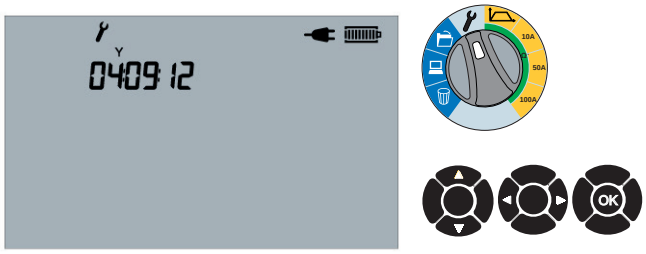
Adjust day with UP and DOWN arrows. Navigate using LEFT and RIGHT arrows or select OK to accept.

2.8 Set month



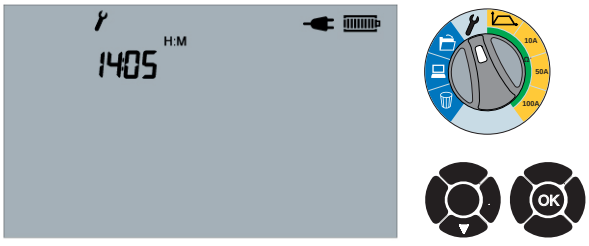
Adjust month with UP and DOWN arrows. Navigate using LEFT and RIGHT arrows or select OK to accept.

2.9 Set year



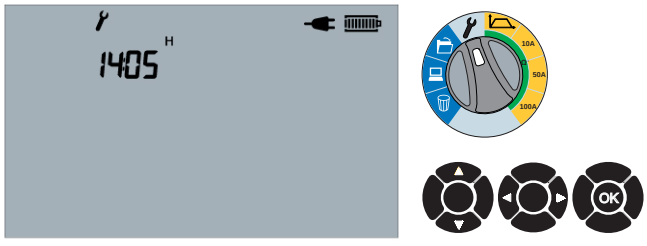
Adjust year with UP and DOWN arrows. Navigate using LEFT and RIGHT arrows or select OK to accept.

2.10 Set Time



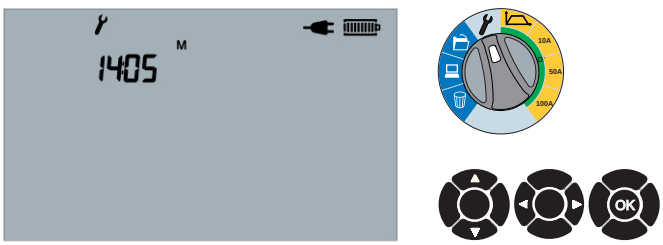
Adjust time by selecting DOWN arrow or select OK to accept.

2.11 Set Hours



Adjust hours with UP and DOWN arrows. Navigate using LEFT and RIGHT arrows or select OK to accept.

2.12 Set minutes



Adjust minutes with UP and DOWN arrows. Navigate using LEFT and RIGHT arrows or select OK to accept.

Bluetooth® (HB model only)

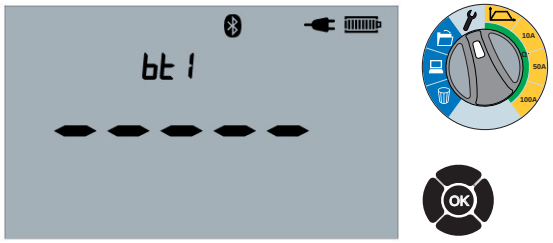
To activate Bluetooth® on the DLRO100 series, turn the **main rotary switch** to the Settings icon .

The Bluetooth® icon will appear at the top of the screen and **bt 1** will appear.

The DLRO100 will now appear in **available devices** on your Bluetooth® enabled mobile device (iOS and Android).

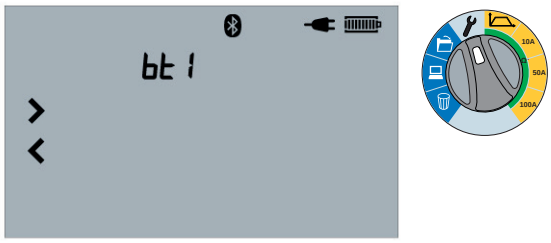
If the DLRO100 does not automatically pair with your Bluetooth device please follow these instructions:

2.13 Bluetooth®—Begin pair



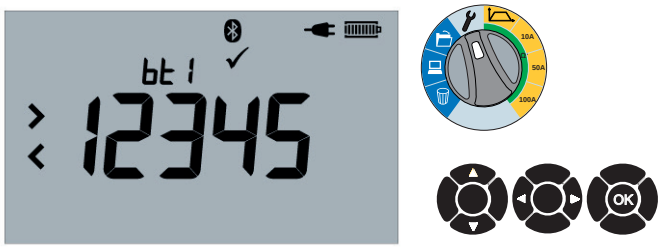
Press and hold OK for 3 seconds to begin pairing, or press OK to skip.

2.14 Bluetooth®—Pairing



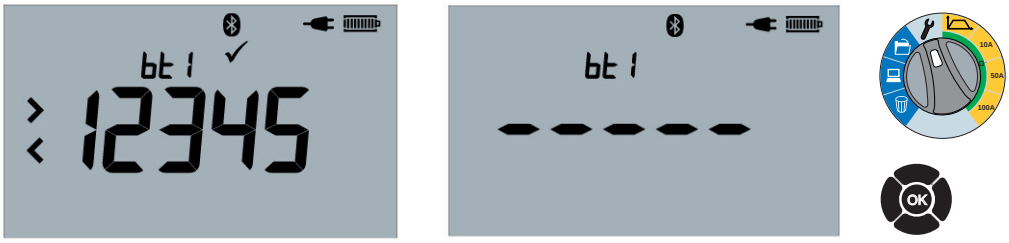
Pair instrument from PC/Smart Device. Enter PIN 1234 on PC.

2.15 Bluetooth®—Paired



Pairing complete for bt1. Scroll using UP and DOWN arrows to access other Bluetooth® pairs. Select current pair with LEFT or RIGHT arrows.

2.16 Bluetooth®—overwriting



Select existing pair.
Press OK for 3 seconds to begin pairing process.

Clamp gain (XB and HB models only)

2.17 Set clamp gain

Adjust Gain with UP and DOWN arrows between 0.1 mV/A and 20.00 mV/A.
Navigate using LEFT and RIGHT arrows or select OK to accept.

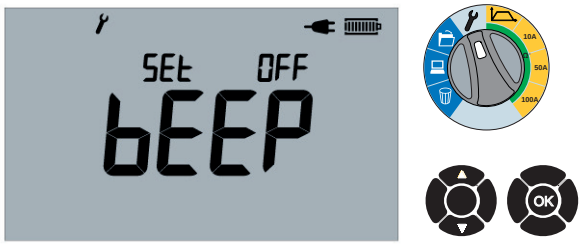
NOTE: The clamp must be zeroed before measurements start for accurate readings. The clamp current measurement is not displayed on the instrument.

Buzzer settings

2.18 Buzzer settings - ON

Press Up and Down arrows to adjust setting ON to OFF.
Select OK to set and proceed.

2.19 Buzzer settings - OFF



Press Up and Down arrows to adjust setting OFF to ON.
Select OK to set and proceed.

NOTE: When in settings, user can exit by moving the Range rotary switch away from the setting position (Spanner icon)

6.5 DLRO100A Resetting Battery Charge

Battery reset enable

2.20 Setup

Progress to Battery Reset screen.

'AC' is shown if charger lead plugged in.

Remove lead to proceed.

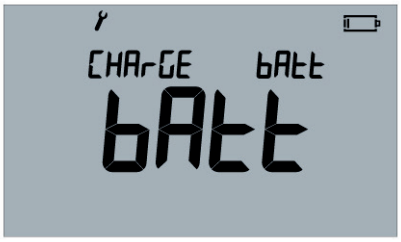
2.21 Lead removed:

Press 'Up' key to proceed.

2.22 Setup proceed

Press 'Ok' to proceed.

2.23 Battery reset complete

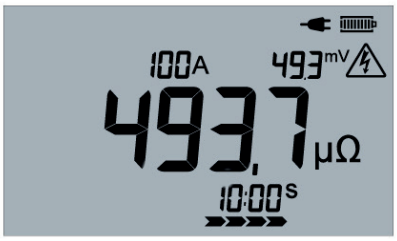


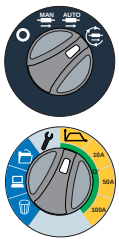
Reapply the AC. Menu automatically proceeds to the next item with battery symbol animated showing charge cycle.

6.6 Saving a test record (XB and HB models only)

Manual save

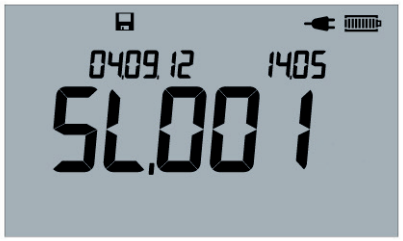
3.1 End of test





Press the SAVE button to save results.

3.2 Completion of save



Save completed.

Showing date, time and slot number for 2 seconds, then reverts to the End of Test screen.

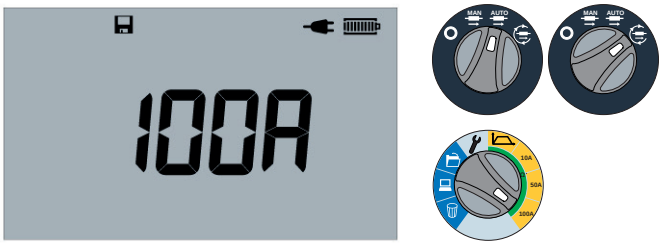
3.3 Results memory full

Internal memory is full.

Delete some results to create space.

Auto save and logging results

3.4 Auto Save — Auto and continuous



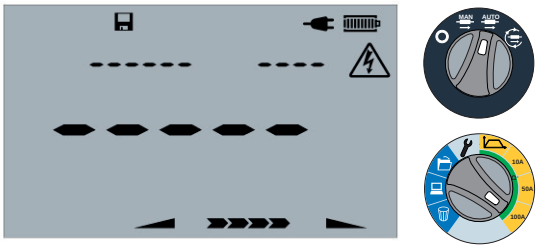
Press save before running

i) Auto test - save all auto test results.

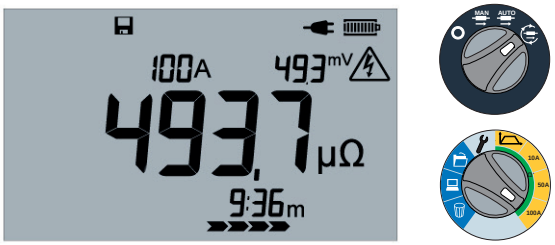
ii) Continuous test - log results every 5 seconds.

iii) If internal memory is full, delete some records to create space - refer to Saving a test record section 3.3

3.5 Auto test progress screen with auto save



3.6 Continuous test progress screen - Logging results



6.7 Delete results

Delete single results

4.1 Delete results — Single

Delete last saved slot. Press OK to accept.

4.2 Delete results — Progress screen

Press OK to accept.

Delete all results

4.3 Results screen—Delete ALL

Select LEFT or RIGHT arrows to toggle dEL and dEL ALL.

Press OK to accept.

Press OK to delete all results.

6.8 Download a test record

Download single result

5.1 Download results — All

Select LEFT or RIGHT arrows to toggle dnL and dnL ALL. Press OK to download all results.

5.2 Download results — Progress screen

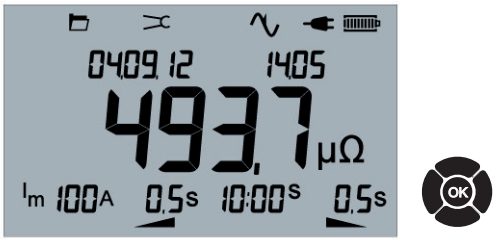
The countdown counter will show number of records being downloaded.

Recall a test record

5.3 Listing slot numbers

Scroll up and down through results with Slot Number. Press OK to display results.

5.4 Test record



Press OK to drill into result. Press OK to go back to previous screen showing Slot Numbers.

Flash between Date & Time, Voltage & Current

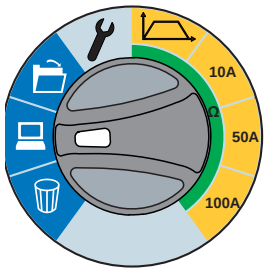
NOTE: Display DMY/MDY

7. Remote operation

Remote operation (DLRO100HB models only)

6.1 PC position

Moving the rotary switch to the PC position will show the download screen. Test switch can be MAN, AUTO or CONTINUOUS.



Remote control of DLRO100 is possible on 100HB models only and is over USB but not with a Tablet or Smart phone. (PC/Laptop only.)

Remote control mode is activated with the Range switch.

6.2 Remote control mode

Instrument under PC control showing PC then Ctrl

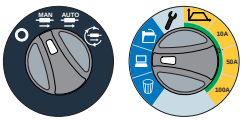
6.3 Test under remote control

NOTE: Results cannot be remotely saved on the instrument. The user can save results into a Power DB form on the PC. Remote control can be terminated from the PC or by moving either rotary switch. If a test is in progress the test can be terminated from the PC or again on the instrument by moving either rotary switch or pressing the test button.

8. Asset tagging

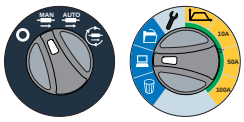
Asset tagging (DLRO100HB models only)

7.1 PC position



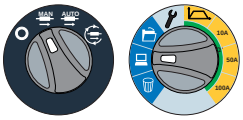
Moving the rotary switch to the PC position will show the download screen. Test switch can be MAN, AUTO or CONTINUOUS. For Bluetooth® pair as defined before here.

7.2 Asset tag



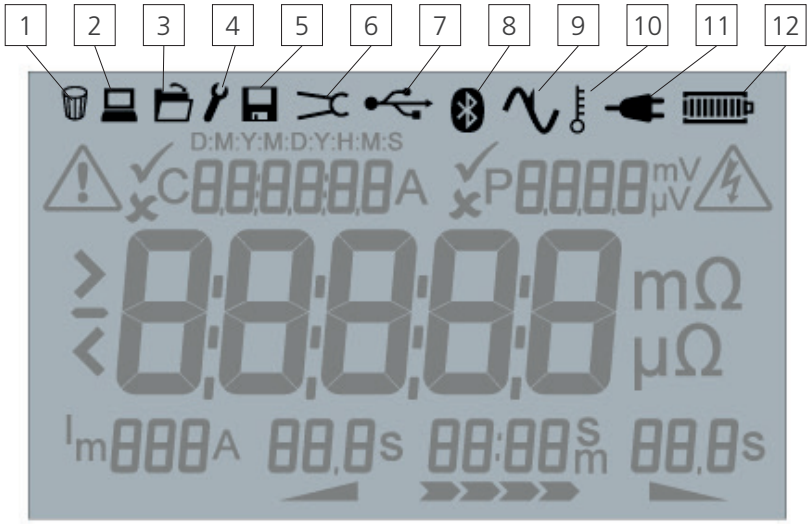
Instrument ready to receive tag data

7.3 End download

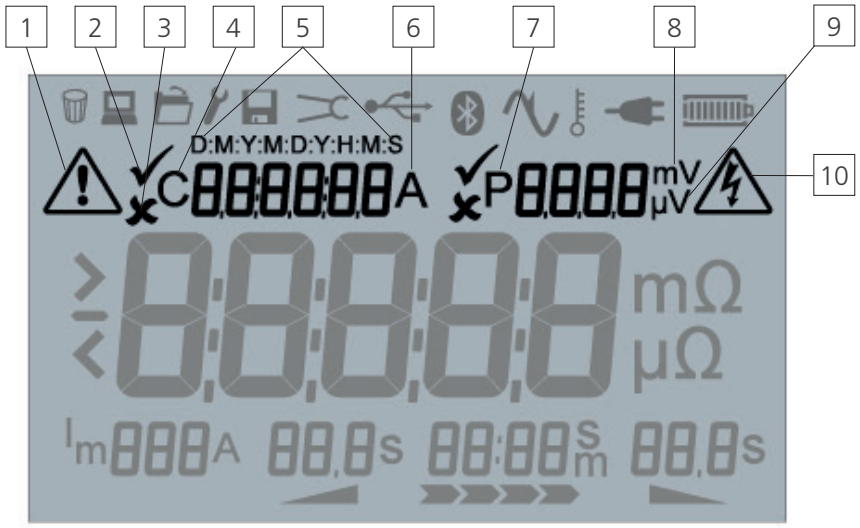


Tagged data received successfully

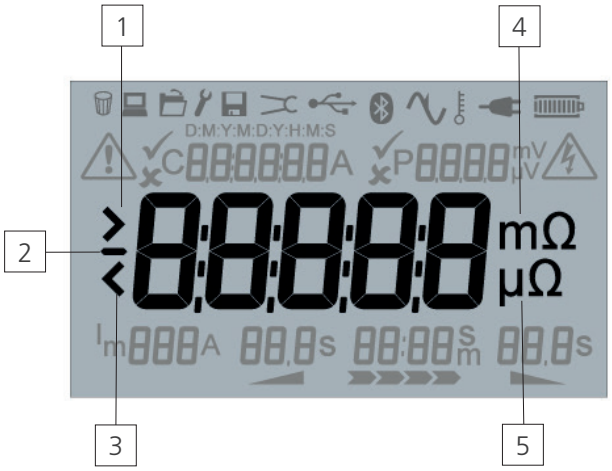
9. Screen symbol reference



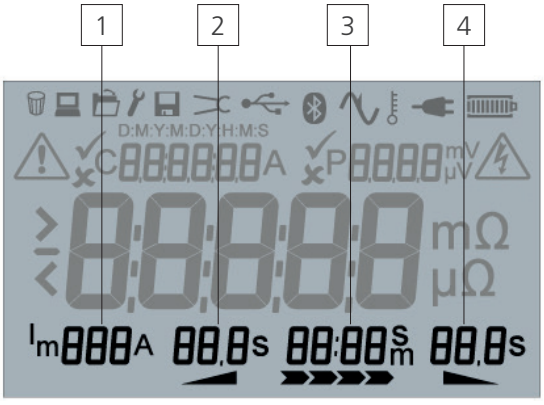
1. Delete
2. Download / Remote operation
3. Retrieve results
4. Settings
5. Save
6. DualGround™ Clamp
7. USB
8. Bluetooth®
9. Noise
10. Temperature
11. Mains
12. Battery



1. Exception
2. Tick
3. Cross
4. C – current
5. D:M:Y:M:D:H:M:S – Date and Time
6. A – Amps
7. P – Potential – voltage measurement
8. mV – milliVolts
9. µV – microVolts
10. Hazard warning



1. Greater than
2. Minus/dash
3. Less than
4. mΩ MilliOhms
5. µΩ MicroOhms



1. Im – maximum current
2. Ramp Up duration
3. Constant current duration
4. Ramp Down duration

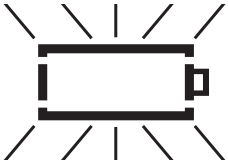
10. Battery indicator

The battery symbol on the LCD display contains 8 segments. The battery is monitored continuously when the instrument is turned on. The charge remaining in the battery is indicated by segments as follows:

Fully charged battery

50% charged battery

Tests cannot be started, insufficient charge



Symbol flashes when there is not enough charge for a test and the instrument will turn itself off.

When mains power is present the indicator shows the battery is being charged by animating the segments of the bar graph.

A flashing battery icon, showing the current charge level, indicates that the battery is prevented from charging due to the temperature being out of the allowable charge temperature range, 0 °C to 40 °C, or that the battery has failed.

11. Error indicators

A lit red LED above the test button, when the instrument is not conducting a test, indicates a fault. **Do NOT** use the instrument if this happens. Do not attempt to repair the instrument. See Repair and Warranty section for details.

If the internal temperature of the instrument exceeds a safe level, the test will be aborted and indicated on the screen. The temperature must drop before testing can be continued.

12. Preventive maintenance

Routine inspection

Look for any cracks or other damage to the enclosure; missing ports, etc.

Cleaning

Disconnect the instrument and wipe it with a clean cloth slightly damped with water or Isopropyl alcohol (IPA). Care should be taken near the terminals, IEC power and USB sockets.

Care of the instrument

The instrument should always be handled with care and not dropped. Always ensure that the instrument is secured when being transported to prevent mechanical shock.

Fan cover replacement

The cover is a single piece and can be removed by unscrewing and cleaned with clean cloth. Do not use the instrument without the fan covers in place. Do not allow the fan covers to become blocked.

Leads

Leads are silicone insulated and perform well in all weather conditions. Always keep the leads in a suitable lead bag during storage and transportation.

Regular inspection of leads is recommended to ensure they are not damaged in any way. Damaged leads could affect resistance readings and are a safety hazard.

Battery care

The battery should be charged at a minimum of 3 month intervals. This is to prevent deep discharge.

Never attempt to charge the battery below 0 °C or above +40 °C ambient. The battery is charged by connecting line power at the instrument IEC power socket.

Store the instrument in a cool, dry location to improve battery life. Storage temperatures below freezing should be avoided.

They can be safely removed by an Authorised Service Centre. Do not attempt to remove the batteries from this unit.

Battery disposal

The crossed out wheeled bin symbol placed on the batteries is a reminder not to dispose of them with general waste at the end of their life. For WEEE Directive see **"17.2 WEE Directive" on page 32**

This product contains lithium ion batteries and a coin cell, which are located inside the instrument.

The Lithium ion coin cell can be safely removed by an Authorised Service Centre. Do not attempt to remove the coin cell from this unit. Spent Lithium ion and a coin cell batteries are classified as Industrial Batteries. For disposal in the UK contact Megger Instruments Ltd

For disposal of batteries in other parts of the EU contact your local Megger company or distributor.

Megger is registered in the UK as a producer of batteries.

The Registration number is BPRN00142

For further information see **www.megger.com**

13. Technical Specification

Measurement range	0.1 µΩ – 1.999 Ω
Resolution	0.1 µΩ
Noise rejection	Differential 100 mV @ 50-60 Hz on Test Leads
DC output	Smooth DC
IP rating	IP54 Lid open / IP65 Lid closed
Operating temperature range	-20°C up to 50°C
Storage temperature range	-30°C up to 70°C
Humidity	<85% R.H. non-condensing
Battery life	200 single 100 A tests or up to 2x 10 minutes continuous 100 A output
Battery type	User replaceable Li-ion battery pack
Battery charge time	Full charge in 2.5 Hrs from flat
Maximum output voltage	2 V (battery), 3 V (AC)
EMC	IEC61326-1
Safety	IEC61010
	CAT IV 600 V AC / 500 V DC up to 2000 m
	CAT IV 300 V up to 4000 m
Dimensions	400 x 300 x 200 mm
Weight	7.0 kg (AC Only) 7.9 kg (with Battery)

Accuracy Current setting#	**Resistance range**	**Accuracy**
50 - 110 A	0 - 100.00 mΩ	Typical ± (0.2% + 0.2 µΩ) Max. ± (0.2% + 0.8 µΩ)*
11 - 49 A	10 µΩ - 100.00 mΩ	Typical ± (0.2% + 0.5 µΩ) Max. ± (0.2% + 2.0 µΩ)*
10 A	10 µΩ - 1000.0 mΩ	Typical ± (0.2% + 1.0 µΩ) Max. ± (0.2% + 2.5 µΩ)*

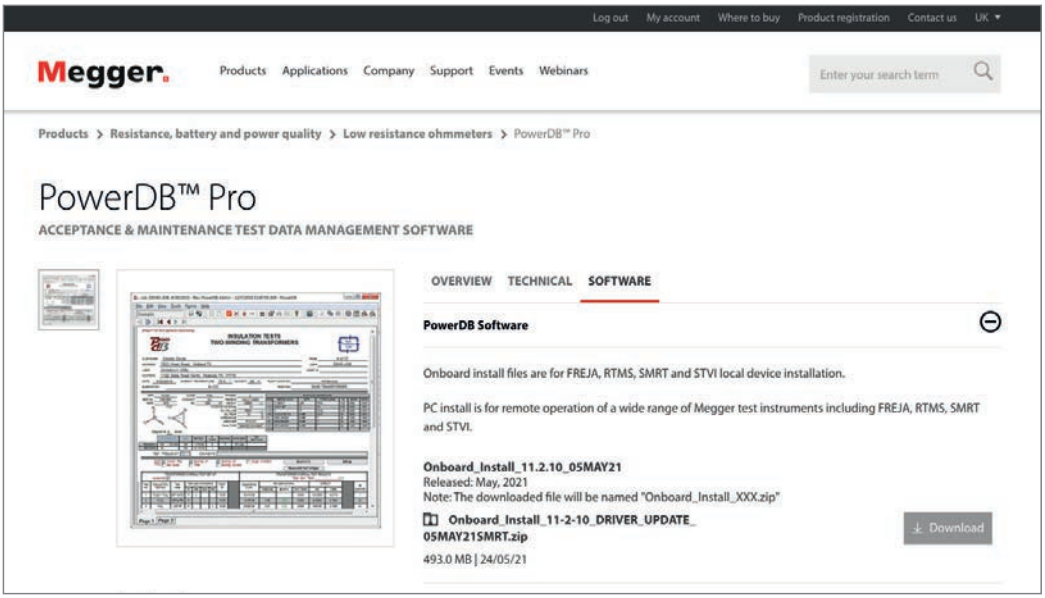
Added operational uncertainty for harsh environmental conditions (85% RH, -20°C to +50°C).		
Current setting#	**Resistance range**	**+ Accuracy**
50 - 110 A	0 - 100.00 mΩ	± (0.0% + 0.0 µΩ)
11 - 49 A	10 µΩ - 100.00 mΩ	± (0.0% + 1.0 µΩ)
10 A	10 µΩ - 1000.0 mΩ	± (0.1% + 2.0 µΩ)
# Actual test current may be limited by maximum output voltage		

* k = ±4σ

14. Download PowerDB

You can now download direct from the Megger website to ensure that you have the most recent version available.

Visit **megger.com/powerdb**



The latest edition will be at the top. Click the "download" button beside the file.

This will ask if you want to open or save the file. By clicking "Save" you will begin to download the install shield driver.

Then just follow the onscreen instructions to complete installation.

15. Accessories

Feature	DLRO100EB	DLRO100XB	DLRO100HB
100A Manual, Auto & Continuous Test. Custom test	■	■	■
CAT IV 600 V AC / 500 V DC and IP54	■	■	■
Battery	■	■	■
Internal memory		■	■
USB data download		■	■
DualGround™		■*	■*
Smart device			■
Bluetooth®			■
Remote control			■

* with optional DC Clamp

Optional Accessories	Order Code
DLRO100 CAT IV 600 V Lead Set (5m)	1004-448
DLRO100 CAT IV 600 V Lead Set (10m)	1004-449
DLRO100 CAT IV 600 V Lead Set (15m)	1004-450
DLRO100 Terminal adaptors (x2)	1005-555
DLRO100 CAT IV 600 V Kelvin Lead Set (5m)	1005-634
DLRO100 CAT IV 600 V Kelvin Lead Set (10m)	1005-635
DLRO100 CAT IV 600 V Kelvin Lead Set (15m)	1005-636
DLRO100 DC Clamp (MCPD 100L)	1005-622
DLRO100 UKAS Calibration Certificate	1005-888
DLRO100 Lithium Ion Battery Pack	1005-973

16. Acknowledgments

The DLRO100:

(i) uses the FreeRTOS operating system from **http://www.freertos.org**.

(ii) contains RADSOK® technology from Amphenol RADSOK is a registered trademark of Amphenol-Tuchel Electronics.

(iii) uses the HCC-Embedded FLASH file system as provided by HCC Embedded

(iv) uses the SCPI Parser library of commands from **http://jaybee.cz/software/**

17. Repair and warranty

If the protection of an instrument has been impaired it should not be used, but sent for repair by suitably trained and qualified personnel. The protection is likely to be impaired if, for example, the instrument shows visible damage, fails to perform the intended measurements, has been subjected to prolonged storage under unfavourable conditions, or has been exposed to severe transport stresses.

New instruments are covered by a two year warranty from the date of purchase by the user, the second year being conditional on the free registration of the product on www.megger.com. You will need to log in, or first register and then login to register your product. The second year warranty covers faults, but not recalibration of the instrument which is only warranted for one year. Any unauthorised prior repair or adjustment will automatically invalidate the warranty.

These products contain no user repairable parts and if defective should be returned to your supplier in original packaging or packed so that it is protected from damage during transit. Damage in transit is not covered by this warranty and replacement/repair is chargeable.

Megger warrants this instrument to be free from defects in materials and workmanship, where the equipment is used for its proper purpose. The warranty is limited to making good this instrument (which shall be returned intact, carriage paid, and on examination shall disclose to their satisfaction to have been defective as claimed). Any unauthorised prior repair or adjustment will invalidate the warranty. Misuse of the instrument, from connection to excessive voltages, fitting incorrect fuses, or by other misuse is excluded from the warranty. The instrument calibration is warranted for one year.

This Warranty does not affect your statutory rights under any applicable law in force, or your contractual rights arising from a sale and purchase contract for the product. You may assert your rights at your sole discretion

17.1 Calibration, Service and Spare Parts

For service requirements for Megger Instruments contact Megger or your local distributor or authorised repair centre.

Megger operates fully traceable calibration and repair facilities, ensuring your instrument continues to provide the high standard of performance and workmanship you expect. These facilities are complemented by a worldwide network of approved repair and calibration companies to offer excellent in-service care for your Megger products.

See the back of this user guide for Megger contact details.

Details of your Authorised Service Centre is available by contacting **ukrepairs@megger.com** and giving details of your location.

17.2 WEE Directive

The crossed out wheeled bin symbol placed on Megger products is a reminder not to dispose of the product at the end of its life with general waste. Megger is registered in the UK as a Producer of Electrical and Electronic Equipment. The Registration No is WEE/HE0146QT.

For further information about disposal of the product consult your local Megger company or distributor or visit **www.megger.com**.

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E. radeburg@megger.com

This instrument is manufactured in the United Kingdom.

The company reserves the right to change the specification or design without prior notice.

Megger is a registered trademark

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and are used under licence.

www.megger.com

DLRO100_UG_en_V13