

Di-LOG

...measurably better

DL6780/DL6790 CombiVolt™ Voltage & Continuity Indicator



Instruction Manual

EN
61010-1

CAT IV
600V

Voltage Indication 12 - 690V
AC/DC with Continuity

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Certificate of conformity

As the manufacturer of the instrument listed below, we declare under our sole responsibility that the product:

Di-LOG DL6780/DL6790

to which this declaration relates is in conformity with the relevant clauses of the following standards:

EN 61010-1:2010
EN 61010-2-030:2010
EN 61010-031:2015
EN 61243-3:2014
EN 61326-1:2013
EN 61326-2-2:2013
IEC 60529 (IP65)

LVD & EMC

The safety and performance of this instrument is assured when operated within the specifications in this instruction manual.

The product identified above conforms to the requirements of council directive 2014/35/EU

I. Overview

Thank you for purchasing a Di-LOG voltage continuity tester. This tester has been designed in accordance with the latest international safety standards.


The CombiVolt™ series of instruments are fully automatic voltage indicators capable of measuring AC/DC voltage up to 690V. Both units have visual and acoustic continuity indication, single pole detection and a phase rotation sequencing indication.


Constructed in accordance with IEC 61010-1 and IEC 61243-3.


- Single pole phase indication
- 2 pole phase rotation indication
- LED & LCD display (DL6790).


II. Safety Notices

This instruction manual contains information that must be followed for operating the meter safely and maintaining the meter in a safe operating condition. If this meter is not used in the manner that is specified, the protection provided may be impaired.

 **Warning!** Warns of potential danger, refer to the instruction manual to avoid personal injury or damage to the meter.

 **Caution!** Dangerous voltage. Danger of electrical shock.

 Perfect display is only guaranteed within a temperature range of -10 - 50°C, relative humidity <85%.

 A statement about protection impairment if used in a manner not specified by the manufacturer.

The voltage indicators are designed to be used by skilled persons and in accordance with safe methods of work.

The voltages marked on the voltage indicator are nominal voltages and the voltage indicator is only to be used on installations with the specified nominal voltages.

The different indicating signals of the voltage indicator are not to be used for measuring purposes.

Before using a voltage indicator at locations with a high background noise level, it has to be determined whether the audible signal is perceptible.

II. Safety Notices (continued)

It is important to check the state of the battery before use and to replace it if necessary.

The meter has been designed in accordance with the safety regulations for electronic measuring instruments, EN 61010-1:2010, EN 61010-2-030:2010, EN 61010-031:2015, EN 61243-3:2014, EN 61326-1:2013 & EN 61326-2-2:2013

Voltages above 75V DC or 50V AC may constitute a serious shock hazard.

Before using the meter, check for physical damage to the casing, in particular around the cable strain relief. If the case is damaged, do not use the meter.

Check the test probes for damaged insulation or exposed metal.

Check the leads for continuity.

Do not apply more than the rated voltage, as marked on the meter between the terminals or between any terminal and ground.

Do not use or store the meter in an environment of high temperature, humidity, fumes, vapour, gaseous, inflammable, and strong magnetic field.

The performance and safety of the instrument and the user may be compromised in such circumstances.

Disconnect circuit power and discharge all high voltage capacitors before testing resistance, continuity and diodes.

Remove the batteries if the meter is not in use for a long period.

Constantly check the battery as it may have leaked. A leaking battery will damage the meter.

The meter may only be opened by a qualified service technician for calibration and repair.

III. Instrument & Manual Symbols

Symbols displayed on the instrument and in the instruction manual:



Warning! Warns of potential danger, and to comply with the instruction manual.



Caution! Dangerous voltage, potential risk of electrical shock.



Equipment protected throughout by double or reinforced insulation. Complies with IEC 536, class II



Suitable for live working



CE Symbol of conformity confirms conformity with relevant EU directives. The meter complies with EMC directives (2004/ 1 08/ EC), the Low Voltage Directive (described in the standard EN 61010-1, 61243-3.



The DL6780/90 meets the standard (2012/19/EU) WEEE. This marking indicates that this product should not be disposed with other household wastes throughout the EC. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.



The instruction manual contains information and references, necessary for safe operation and maintenance of the instrument. Prior to using the instrument the user is kindly requested to thoroughly read the instruction manual and comply with it in all sections.

III. Instrument Symbols (continued)



Failure to read the instruction manual or to follow the warnings and references contained herein can result in serious bodily injury or instrument damage. The respective accident prevention regulations established by the professional associations are to be strictly enforced at all times.

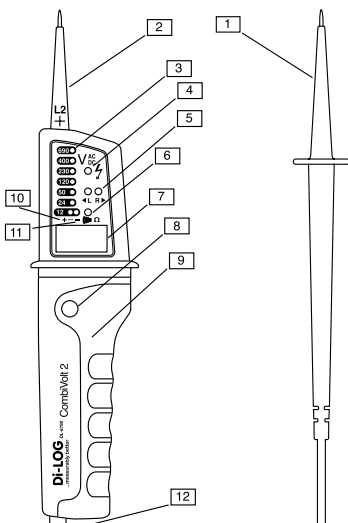
IV. DL6780/DL6790 Specification

DL67xx Voltage Indicator Specification		
	DL6780	DL6790
2 Pole Voltage Indication		
Voltage range	12 - 690V AC/DC	
LED resolution	12, 24,50, 120, 230, 400 & 690V	
LCD resolution	n/a	1 V +/- 3 % + 8 digits
Voltage detection	Automatic	
Frequency range	0 - 400Hz	
Peak current	3.5mA	
Operation time	30 Seconds	
Acoustic AC/DC signal	✓	
Auto power on	>12V AC/DC	
IP rating	IP65	
Single Pole Indication		
Voltage range	100 - 690V AC	
Frequency range	50 - 400Hz	
Continuity		
Acoustic & visual	✓	
Measurement range	0 - 400kΩ	
Phase Rotation Test		
Voltage range	100 - 690V AC	
Frequency	45 - 65Hz	
Over voltage protection	690V AC/DC	
Other Information		
Dimensions	225mm x 70mm x 28mm	
Weight (net)	200g	210g
Power supply	2 x 1.5V (RO3) AAA (supplied)	
EAN	5060082542329	5060082542336



CAT IV Applicable to test and measuring circuits connected at the source of the building's low-voltage MAINS installation.

V. Display and Controls



1. Test Probe (-) L1
2. Test Probe (+) L2
3. LED's for voltage indication
4. LED for single - pole test
5. Right & Left LED, phase rotation indication
6. LED for continuity
7. LCD for voltage display (only DL6790)
8. Contact electrode for double-pole test of phase rotation and single-pole test
9. Torch button on the back
10. Positive LED
11. Negative LED
12. Battery Compartment

1. Operating Instructions

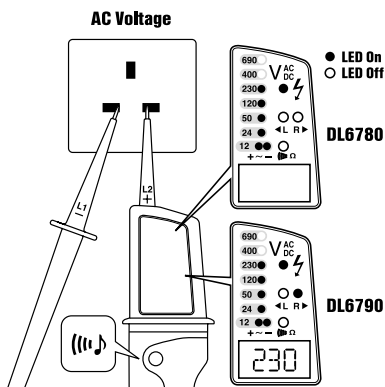
Carrying out measurements

Perform a self-test of the unit. Connect the two test probes L1 and L2 together. The continuity LED (6) will be lit, and an audible tone should be heard.

Before any test, check the unit on a known voltage source or approved voltage proving unit.

If the unit is defective it should be put out of service and returned to Di-LOG for repair.

2. AC Voltage Indication



Always hold the test probes by the handles behind the finger guards. Observe all the safety notices at all times.

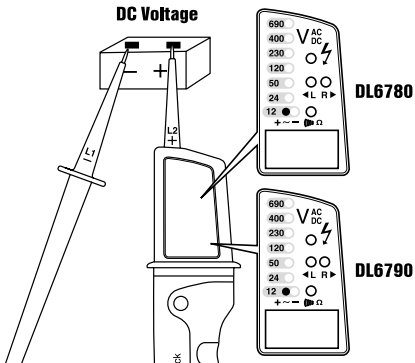
An audible tone is present when an AC voltage and a negative DC voltage are indicated.

The maximum switch on time is 30 s. When this time has elapsed, you must wait 10 minutes before retesting.

Connect probes to the voltage source observing the polarity of the test probes, L2 is the positive probe, L1 is the negative probe.

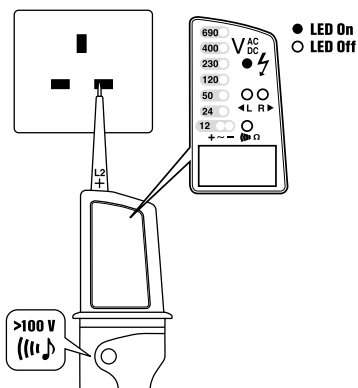
For AC voltage the value is indicated on the LEDs (3) and on the LCD display (DL6790 only). The + and - LEDs are illuminated and buzzer is audible.

3. DC Voltage Indication



For DC voltage measurement, connect probe L2 to the positive terminal and L1 to the negative terminal. The voltage is displayed on the LEDs and the LCD display (DL6790 only). The positive LED (10) is illuminated. If the polarity is reversed the buzzer will sound. The negative LED (11) will be illuminated.

4. Single Pole Voltage Indication



Perform a function test prior to this test.

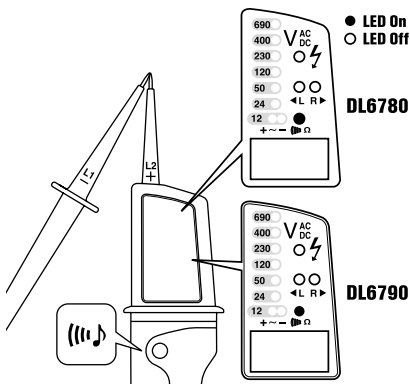
This unit can be used as a single pole voltage indicator when the batteries are inserted.

The single pole test is intended only as a quick check. The circuit must be checked again for the presence of voltage using the two-pole method.

Connect test probe L2 to the voltage source and keep finger on the contact electrode (8). If an AC voltage above 100 V is present the LED (4) is illuminated and the buzzer sounds.

The single pole test can be negatively affected by unfavourable conditions such as electrostatic field, good insulation etc.

5. Continuity Test



Note: The continuity test is only possible when batteries are installed and in good condition

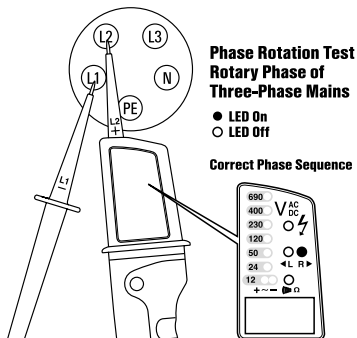
The continuity test is only possible when batteries are inserted and in good condition.

Ensure the circuit under test is not live.

Connect test probes L1 and L2 to the circuit. The continuity LED (6) will illuminate and the buzzer will sound.

The unit will indicate continuity below 400K ohm.

6. Phase Rotation Indication

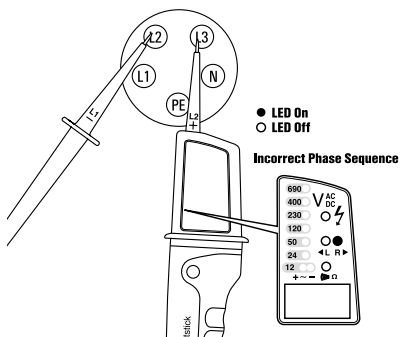


6. Phase Rotation Indication (continued)

Perform a function test prior to this test.

This unit can determine the phase rotation within a three phase supply.

Connect test probe L2 to the supposed phase 2 and the test probe L1 to the supposed phase 1. If the R LED illuminates the phases are in the correct sequence 1 to 2.



Connect test probe L2 to the supposed phase 3 and test probe L1 to the supposed phase 2. If the R LED illuminates the phases are in the correct sequence 2 to 3.

Connect test probe L2 to the supposed phase 1 and the test probe L1 to the supposed phase 3. If the R LED illuminates the phases are in the correct sequence 3 to 1.

During phase rotation test touch the contact electrode.

If the L LED illuminates, then the phase sequence is anti-clockwise.

7. Maintenance

Do not attempt to repair this unit . There are no user

serviceable items in this unit. Never attempt to open the casing apart from the battery cover.

Do not use the instrument if there is any physical damage to the case or test leads.

The outside of the unit can be cleaned with a soft damp cloth only.

Do not use abrasive or chemical cleaning agents.

8. Battery Replacement

Turn the battery cover by 90 degrees anti clockwise.

Remove the cover and take out spent batteries. Replace with 2 off 1.5 V AAA (LR03) batteries, checking the correct polarity.

Replace the battery cover and turn by 90° clockwise.

Discharged batteries should be disposed of responsibly and with compliance with current recycling and disposal regulations.

9. Calibration

The recommended calibration interval for the DL6780/DL6790 is 12 months.

10. Accessories

Spares & Optional Accessories

- TIP780** Replacement GS38 shrouds for probe tip.
- CP1190** CombiVolt Carry Pouch.
- PU690** 690V Proving Unit for proving voltage.
- CCDLPK** Combined carry pouch for PU690. Proving Unit and CombiVolt Voltage Indicator.

11. 24 Month Warranty

Di-LOG instruments are subject to stringent quality controls. If in the course of normal daily use a fault occurs we provide a 24 month warranty (only valid with proof of purchase). Faults in manufacture and material defects will be rectified by us free of charge, provided the instrument has not been tampered with and returned to us unopened. Damage due to dropping, abuse or misuse are not covered by the warranty.

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