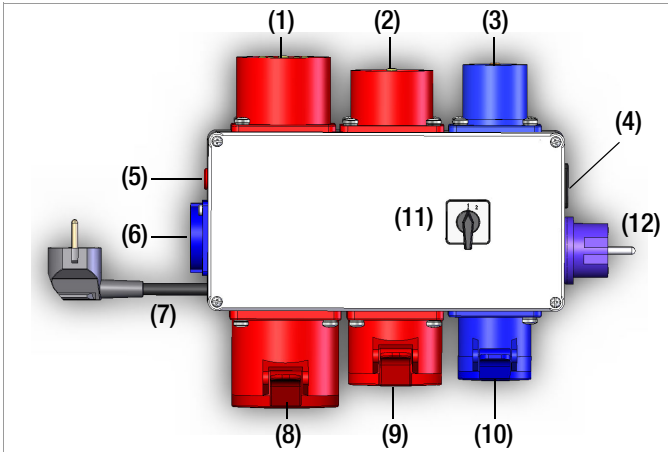


Test Adapter VL2 E (Z745W) / VL2 E CH (Z744B)

For Testing Devices and Cables

in Combination with Test Instruments

 3-349-242-15
 11/12.23


- (1) Surface mounted test plug: CEE 3P+N+PE 32 A 400 V
- (2) Surface mounted test plug: CEE 3P+N+PE 16 A 400 V
- (3) Surface mounted test plug: CEE 1P+N+PE 16 A 230 V
- (4) Surface mounted inlet test plug: 1P+N+PE 16 A 230 V
- (5) Connector socket for probe cable from the DIN VDE test instrument, for testing cables only
- (6) Surface mounted earth contact test outlet: 1P+N+PE 16 A 230 V
- (7) Earth contact connector cable for connection to test sockets at DIN VDE test instruments
- (8) Surface mounted test outlet: CEE 3P+N+PE 32 A 400 V
- (9) Surface mounted test outlet: CEE 3P+N+PE 16 A 400 V
- (10) Surface mounted test outlet: CEE 1P+N+PE 16 A 230 V
- (11) Rotary selector switch for cable function tests
- (12) Surface mounted earth contact test plug: 1P+N+PE 16A 230 V

Symbols on the Instrument



Warning concerning a point of danger (attention, observe documentation!)

300 V CAT II

Measuring category II device



European conformity marking



The device may not be disposed of with household trash. You are required to comply with all applicable local regulations.

1 Safety Instructions

The test adapter has been manufactured and tested in accordance with for following regulation: DIN VDE 0411/IEC 348

“Regulations for electronic testers and controllers,

Part 1: safety measures for electronic measuring instruments”

Safety is only assured for the user and the test adapter when used for its intended purpose in combination with test instruments. In order to maintain flawless technical safety conditions, and to assure safe use, it is imperative that you read these operating instructions thoroughly and carefully before placing the test adapter into service, and that you follow all instructions contained herein.

- Measurements within electrical systems are prohibited!



Attention!

You may only connect the VL2 E test adapter with its cable (7) with the test socket of the external test instrument for tests without line voltage. When connecting the adapter to a test panel with “VDE MAINS” switching, for example, the switch must be set to position “VDE”. Otherwise the RCCB of the equipment from which power is supplied might be tripped.

- Be prepared for the occurrence of unexpected voltages at devices under test (e.g. due to charged capacitors).
- Before connecting the device under test to the test adapter, subject it to a thorough visual inspection first. Damaged devices under test must be repaired prior to testing.
- Only extension cables which have been plugged into the test outlets at the test adapter may be connected to the surface mount plugs on the test adapter for testing.
- In order to assure compliance with technical safety requirements, the test adapter may only be repaired by a qualified electrician, who is preferably employed by the manufacturer.
- If the test adapter and/or its connector cables demonstrate visible damage, no longer function or have been stored for a lengthy period of time under unfavorable conditions, it must be assumed that hazard-free operation is no longer possible. Remove the test adapter from service and secure it against inadvertent use.

2 Application

2.1 Intended Use / Use for Intended Purpose

The test adapter is intended for the performance of measurements and testing at electrical devices and extension cables with CEE plug connectors in combination with test instruments in accordance with the regulations for periodic testing and repair of electrical devices.

Safety of the user, as well as that of the instrument, is only assured when it's used for its intended purpose.

2.2 Use for Other than Intended Purpose

Using the instrument for any purposes other than those described in these instrument operating instructions constitutes improper use. Use for Other than Intended Purpose may lead to unpredictable damage!

2.3 Liability and Guarantee

Liability and guarantee granted by Gossen Metrawatt GmbH complies with the applicable contractual and mandatory legal regulations.

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3 Connecting the Test Adapter to a Test Instrument

- ⇨ The test adapter's earth contact plug may only be plugged into the earth contact outlet of a test instrument which is identified as the test socket.

Testing Extension Cables

- ⇨ Additionally plug the test instrument's probe into the SL socket (5).

4 Connecting a Device Under Test to the Test Adapter

After the visual inspection has been passed and before plugging the device under test in to the appropriate connectors, all functions must be activated, making sure, for example, that thermostat contacts are closed etc. Always measure protective conductor resistance first for protection category I devices under test, because the measurement of insulation resistance and equivalent leakage current is not possible without a properly functioning protective conductor.

This measurement is of special importance for function testing as well, because a defective or reversed protective conductor may represent a hazard for the user!

5 Testing Devices

The following tests in accordance with DIN VDE must be performed in consideration of the operating instructions for the utilized test instrument.

5.1 Measuring Protective Conductor Resistance

- ⇨ **When testing devices:** Connect the probe cable to the housing of the DUT, making sure that good contact is established.
- ⇨ **When testing extension cables:** Plug the test instrument's probe into the SL socket (5). Connect the plug and the socket of the extension cable under test to the corresponding surface mount plug and surface mount outlet on the test adapter.
- ⇨ Perform testing in accordance with the operating instructions included with the test instrument.
- ⇨ Read the measured value and compare it with permissible values per standard.

Attention!

The connector cable must be shaken back and forth, section by section over its entire length, during measurement (for permanently installed devices only in so far as the connector cable is accessible during maintenance, modification or testing).

Compensation of Test Adapter Connector Cable Resistance

Cable resistance amounts to 0.07 Ω . This value must be subtracted from the displayed measured value for measurements in extreme ranges.

5.2 Measurement of Insulation Resistance

During this test, L1, L2, L3 and N are measured against PE (rotary selector switch set to position 1).

- ⇨ Perform testing in accordance with the operating instructions included with the test instrument.
- ⇨ Read the measured value and compare it with permissible values per standard. When testing extension cables, a value of 2 M Ω should not be significantly fallen short of.

Note

If there is any uncertainty about applying insulation voltage, for example with electronic devices, or, in the case of protection category I devices, if there is no assurance that all components subjected to line voltage will be taken into account by the measurement, the DUT must be tested using a leakage current measuring method with a suitable test instrument.

5.3 Measuring Equivalent Leakage Current

- ⇨ Perform testing in accordance with the operating instructions included with the test instrument.
- ⇨ Read the measured value and compare it with permissible values per standard.

6 Function Test for Extension Cables

- ⇨ Select insulation measurement at the test instrument.
- ⇨ Set the test adapter's rotary selector switch to position 2.
- ⇨ Read the measured value.

The display can settle in within a range of 0 Ω if all cores are short-circuited up to, for example, infinity (in the event of display overflow) if one core is interrupted. Due to the good insulation assured by undamaged cables, a test value of 7 M Ω with a tolerance of 10% has been established for this rational test procedure. All values within a range of 6.3 to 7.7 M Ω thus indicate that the test has been passed. In the event of an error, the actual defect, such as, for example, core short-circuiting, core interruption, core reversal and/or insufficient insulation must be evaluated.

The following characteristics can be tested with this procedure:

- ⇨ Testing of AC cables for short-circuiting and continuity and
- ⇨ Additional testing of 3-phase cables and caravan cables for reversed wiring of L1, L2, L3 and N (clockwise rotation).

Note

In the case of cables with indicator lamp (usually a glow lamp in the switch), the results of the continuity test for L and N may be distorted due to additional resistance caused by the glow lamp. In case of doubt, perform a continuity test for L and N by means of resistance measurement (R-PE or R-INS):

Attention!

Do not touch the connector plug contacts of long connector cables. They may be electrically charged.

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7 Characteristic Values

Nominal range of use

| | |
|-----------------|--|
| Maximum voltage | for measurement of insulation resistance 600 V DC for measurement of equivalent leak- 230 V AC age current |
| Maximum current | for the measurement of protective con- 10 A DC/AC ductor resistance |

Electrical Safety

| | |
|--------------------|---|
| Protection class | I |
| Measuring category | I for insulation resistance measurement 300 V, CAT II for all other measurements |

Ambient Conditions

| | |
|-----------------------|--|
| Storage temperature | - 20 °C ... + 60 °C |
| Operating temperature | - 10 °C ... + 50 °C |
| Accuracy range | 0 °C ... + 50 °C |
| Relative humidity | Max. 75%, no condensation allowed |
| Elevation | Max. 2000 m |
| Place of use | Indoors, except within specified ambient condi- tions |

Mechanical Design

| | |
|------------|---|
| Protection | Housing: IP 40 per DIN VDE 0470, part 1 Terminals: IP 20 |
| Dimensions | W × H × D: approx. 330 × 230 × 145 mm |
| Weight | Approx. 1.7 kg |

8 Maintenance

Self-Test

Self-testing for protective conductor continuity at the connector cable is performed automatically for all VDE tests.

Housing

No special maintenance is required for the housing. Keep outside surfaces clean. Use a slightly dampened cloth for cleaning. Avoid the use of cleansers, abrasives and solvents.

9 Contact, Support and Service

Gossen Metrawatt GmbH can be reached directly and simply – we have a single number for everything! Whether you require support or training, or have an individual inquiry, we can answer all of your questions here:

+49-911-8602-0 Monday to Thursday: 8 a.m. to 4 p.m.
Friday: 8 a.m. to 2 p.m.

Or contact us by e-mail at: info@gossenmetrawatt.com

Do you prefer support by e-mail?

Measuring and Test Technology: support@gossenmetrawatt.com

Industrial Measuring Technology: support.industrie@gossenmetrawatt.com

Enquiries concerning training and seminars can also be submitted by e-mail and online:

training@gossenmetrawatt.com

<https://www.gossenmetrawatt.com/training>



Please contact GMC-I Service GmbH for repairs, replacement parts and calibration¹⁾:

+49-911-817718-0
service@gossenmetrawatt.com
www.gmci-service.com

Beuthener Str. 41
90471 Nürnberg
Germany



¹⁾ DAKkS calibration laboratory per DIN EN ISO/IEC 17025 accredited by the Deutsche Akkreditierungsstelle GmbH under reference number D-K-15080-01-01.

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