GOSSEN METRAWATT

METRALINE PAT
Test Instrument for DIN VDE 0701-0702

3-447-021-03
2/4.19

- Testing in accordance with DGUV regulation 3, DIN VDE 0701-0702
- Quick selection of individual measurements via direct selection keys
- Automatic limit value adjustment (protective conductor, insulation, equivalent leakage current)
- **2-pole measurement** (low-resistance, insulation, equivalent leakage current, voltage)
- Testing of permanently connected devices is possible
- **Clear-text operation** with schematic diagrams and green/red LED display for go/no-go
- Large high-contrast display
- Testing of the mains connection for PE connection and automatic shutdown in case of dangerous residual current at the device under test
- Finger contact for testing protective conductor potential
- Short-circuit test for the device under test
- Quick mains polarity reversal with load current monitoring
- Quick processing of all active tests including function test with TRMS power display in just a single step. Standby measurement
- Bluetooth interface for measurement data transmission
- USB port for service and remote operation
- Compact design, minimal weight

Features

DUT Connection

– via the test socket with or without adapter (accessory) for various types of mains connections
– via adapter (accessory) for extension cables with and without multiple outlets
– permanently connected DUTs

Automatic Detection

– of mains connection errors

Bluetooth Interface

Data interface for direct read-out of measurement data after each individual test.
After pressing the key, the respective measured value is initially transmitted via the Bluetooth interface to an Android device to which **ELEXONIQ** has been installed (Android app for **METRALINE PAT**). The data can be subsequently transferred from the Android app to a PC, where they can be imported into **IZYTRONIQ** report generating software. Data can then be saved and managed at the PC, supplemented with comments and inserted into reports.

USB Port

Interface for service purposes and for controlling the test instrument via a virtual COM port at the PC.

Applications

Testing the Electrical Safety of Electrical Equipment in Accordance with DGUV Regulation 3

The test instrument is intended for fast, safe testing and measurement of repaired or modified electrical devices, and for periodic testing per **DIN VDE 0701-0702**. The following are measured in accordance with the regulations:

- Protective conductor resistance (test current: ±200 mA DC)
- Insulation resistance
- Protective conductor current for protection category I devices
- Contact current (for protection category II devices)
- Voltage in SELV circuits

Measuring methods:
❒ Equivalent leakage current, ❒ Differential current

Report Generating Functions

All of the values required for approval reports or device logbooks for electrical equipment (e.g. per ZVEH) can be measured with this test instrument.

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Features

Display

The LCD panel consists of a dot matrix at which selection menus, setting options, limit values, measurement results, instructions, error messages and schematic diagrams are displayed.

Function Keys

The measuring functions are selected with the function keys.

Mains Plug Polarity Reversal

It's not necessary to reverse polarity at the mains plug manually. Polarity is reversed internally during function testing by pressing a key, or during a test sequence upon request.

Test Instrument Safety Features

- Mains connection monitoring:
  Any faulty or dangerous connection is indicated, and measurement is disabled in the event of danger.
- Personal safety via integrated residual current monitoring.

Technical Data

Mains Connection

Alternating current	230 V ±10%
DUT connection	16 A Schuko

Measurements

Operating error: 5% of the measured value + 1% of the range

Protective Conductor Resistance Measurement (probe – PE, probe – PE-mains, probe – probe)

Measuring range	0.000 ... 4.000 Ω Open circuit voltage: 10 V, current: 200 mA DC

The cable length and cable cross-section parameters can be adjusted for measurement of the DUT at the test socket in order to display the limit value in accordance with the standard.

Insulation Resistance Measurement (LN – PE, LN – probe, probe – PE, probe – probe, L – N)

Measuring range	0.00 ... 20.00 MΩ
Test voltages	250 V, 500 V
Short-circuit current	1 mA

LN – PE: The heating element parameter can be set to Yes (0.3 MΩ) or No (1.00 MΩ) in order to display the limit value in accordance with the standard. Test voltage can be selected (see above).

Probe – probe: limit value (0.3/1/2 MΩ) and test voltage (250 V/ 500 V) can be selected.

Equivalent Leakage Current (LN – PE, LN – probe, probe – PE, probe – probe)

Measuring range	0.00 ... 20.00 mA Open circuit voltage: approx. 120 V
Current limiting	3.5 mA

LN – PE: Balanced wiring (Yes/No) can be selected. If "Yes" is selected, the measured value is cut in half.

Differential Current Measurement

Measuring range	0.00 ... 20.00 mA

Touch Current Measurement

Measuring range	0.000 ... 4.000 mA

Voltage Measurement, Probe – Probe

Measuring range	0.0 ... 440 V AC/DC
Current	0.00 ... 20 A

ELV parts: Yes (limit value max. 60.0 V) or No (min. 0.0 V) can be selected.

Function Test

The device under test can be supplied with mains voltage via the integrated test socket. The following are measured or calculated automatically:

Touch current IB	0.000 ... 4.000 mA
Differential current ID	0.00 ... 20.00 mA
Current consumption I	0.00 ... 20.00 A
Line voltage U	0.0 ... 250.0 V
Active power P	0 ... 4000 W

Polarity Reversal During the Function Test

Polarity can be reversed during the function test by pressing a key for the measurement of differential and touch current.

Power Measurement in Standby Mode During the Function Test

Current values of up to 40 mA can be measured for the display of small measured power values (mW range) in standby mode (DUT switched off).

Protective Conductor Monitoring

Voltage, N-PE	> 30 V

Integrated Fault Current Shutdown

Residual current	> approx. 20 mA

Electrical Safety

Protection category	I per IEC 61010-1/EN 61010-1/VDE 0411-1
Nominal voltage	230 V
Test voltage	2.3 kV, 50 Hz
Measuring category	250 V CAT II
Pollution degree	2
Protection	IP 40
Fuse link	Permanently installed for test socket protection

Mechanical Design

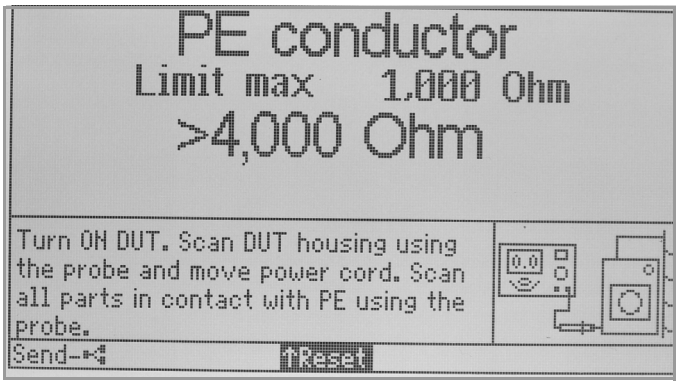
Display	Multiple display with dot matrix, 320 x 240 pixels, backlit display
Dimensions	W x H x D: 23 x 17.5 x 9.5 cm with retracted carrying handle
Weight	Approx. 1.3 kg

Scope of Delivery

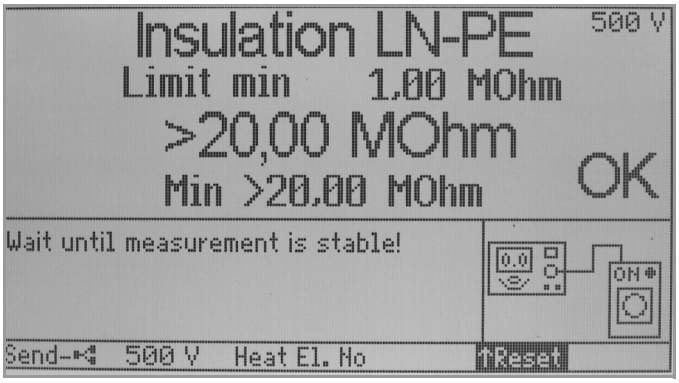
1 Test instrument
1 Red measurement cable with safety plug and test probe, 2 m
1 Mains power cable, Schuko – IEC 60230, 16 A, 1.5 m
1 Factory calibration certificate
1 Set of operating instructions

Test Instrument Measuring Menu – Sample Displays

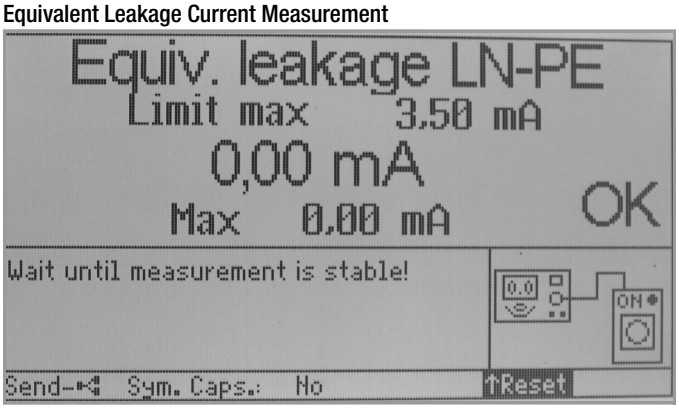
Protective Conductor Measurement



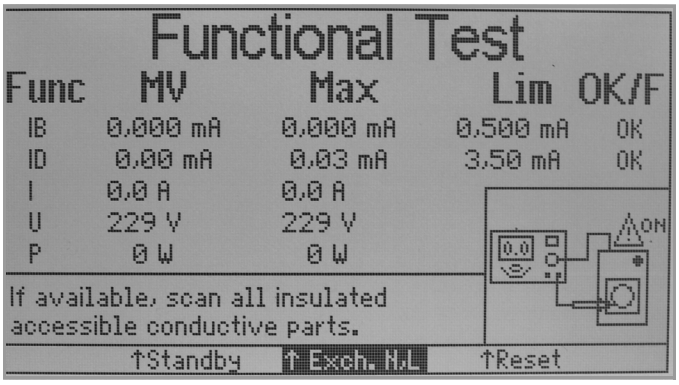
Insulation Resistance Measurement



Equivalent Leakage Current Measurement

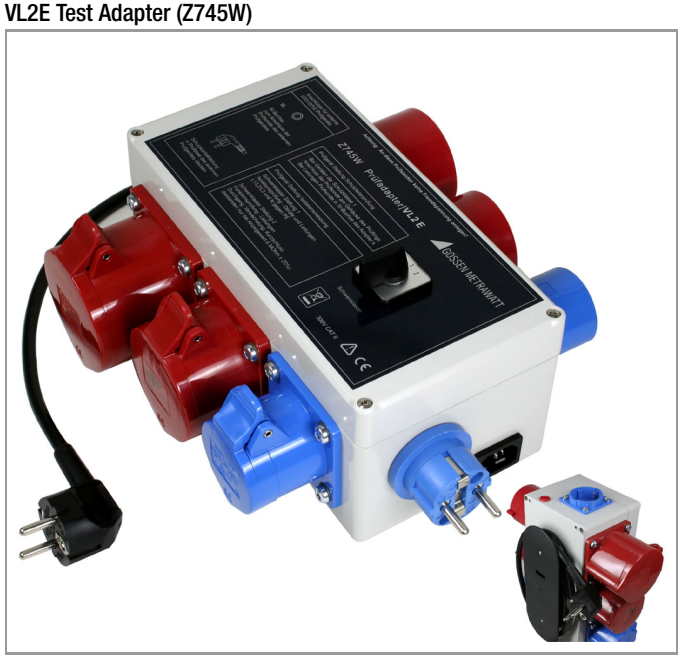


Function Test



Accessories

VL2E Test Adapter (Z745W)



The test adapter is laid out for measuring and testing electrical devices and extension cables with CEE plug connectors in combination with test instruments, and is equipped to this end with single and 3-phase plug connectors up to CEE 32A.

SECU-cal 10 Calibration Adapter (Z715A)

The calibration adapter is used for testing the measuring uncertainty of test instruments in accordance with DIN VDE 0701-0702/IEC 62353 (VDE 0751). As a rule, these instruments must be tested once each year as set forth by accident prevention regulation DGUV Regulation 3 (previously BGV A3), and in the event of certification in accordance with the ISO 9000 quality standard.

All limit values for the required tests per DIN VDE such as protective conductor resistance, insulation resistance, equivalent leakage current, differential and/or touch as well as housing leakage current, must be tested.

IZYTRONIQ Database Software (in preparation)

IZYTRONIQ is newly developed test software with which the entire testing scenario can be visualized, managed and documented in an audit-proof, instrument-independent fashion. And thus for the first time ever, measurement and test data from various test instruments and multimeters can be combined into a single test and documented. Intuitive operation and a modern look assure quick access to all functions.

The software is available on different scales and in different versions for the commercial trades, for industry and for training applications.

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Order Information

Designation	Type	Article No.
Standard models available from stock		
Test instrument with automatic test sequence, USB port, German user interface, earthing contact plug and outlet, measurement cables with test probe, factory calibration certificate and operating instructions	**METRALINE PAT**	M711A
PC Evaluation Software		
Further information regarding **IZYTRONIQ** database software is available on the Internet at: www.gossenmetrawatt.com (→ SOFTWARE → Measuring and Test Technology)		
Accessory Probes, Sensors, Adapters and Cables		
Special cable, 2 m	KS17-2	Z110H
Brush probe	Z745G	Z745G
Test adapter with single and 3-phase plug connectors up to CEE 32A – For all tests per DIN VDE without line voltage at single and 3-phase electrical devices – For tests per DIN VDE at single and 3-phase extension cords	VL2E	Z745W
Additional Accessories		
Calibration adapter for test instruments per DIN VDE 0701-0702/IEC 62353 (VDE 0751) (max. 200 mA) **not for use with 10 A protective conductor test current**	SECU-cal 10	Z715A
Carrying pouch	F2000 [D]	Z700D

[D] Data sheet available

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Les services d'EURO-INDEX

EURO-INDEX fournit des services pour tous les instruments de sa gamme de fournitures et offre des services, de la connaissance et du personnel hautement qualifié pour l'entretien (préventif), la réparation et le calibrage de vos instruments de mesure.

Centre de Service Agréé

EURO-INDEX est un Centre de Service Agréé pour toutes les marques représentées.

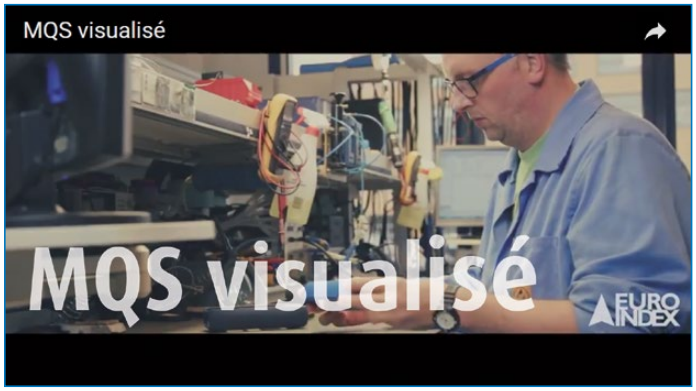
Autrement dit, vos instruments sont traités par du personnel formé et compétent, qui dispose des outils et logiciels adéquats. Seules des pièces d'origine sont utilisées et la garantie de votre instrument ainsi que la certification (ATEX, EN50379, etc.) restent valables.

PLUS D'INFOS

Laboratoire de maintenance et de calibrage

EURO-INDEX dispose d'un laboratoire de maintenance et de calibrage particulièrement moderne, titulaire d'une accréditation conforme à la norme NEN-EN-ISO/IEC 17025. Cette accréditation est valable pour différentes grandeurs, telles que spécifiées dans le champ d'application associé au numéro d'accréditation K105.

PLUS D'INFOS



Visionnez la vidéo sur notre chaîne YouTube et découvrez tout ce qu'il vous faut savoir sur MQS

MQS®

MQS est une formule d'entretien exclusive comportant un entretien et un calibrage périodiques de vos instruments de mesure. La prise en charge de multiples aspects vise à vous libérer de tout souci lors de l'utilisation de vos instruments de mesure. Les coûts sont modiques et prévisibles.

PLUS D'INFOS

Accès numérique à vos certificats de calibrage avec Mon MQS

Mon MQS est un portail Web qui vous donne accès partout et à tout moment à vos certificats de calibrage et aux documents apparentés.

PLUS D'INFOS

Location d'instruments de mesure

- Vaste assortiment
- Conseils avisés
- Les instruments sont livrés avec leurs accessoires et leurs certificats de calibrage traçables

PLUS D'INFOS

EURO-INDEX Academy

- Formations sur les produits (individuelles et collectives)
- Séminaires
- Vidéos de démonstration et d'instruction

PLUS D'INFOS

Guichet des services

Calibrage de l'analyse de gaz de combustion

Séminaires et ateliers

Calibrage de la thermographie

Sous réserve de modifications EURO-INDEX® FR 18001

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MANAGEMENTSYSTEEM CERTIFICATIE DNV·GL ISO 9001

KALIBRATIE RvA K 105
Portée accréditée voir www.rva.nl

WIJ LEIDEN VAKMENSEN OP
Erkend leerbedrijf