

METRALINE DM 61/62

Analog-Digital Multimeter

3-447-012-03
6/1.19

- Voltage: DC / AC 100 μ V ... 1000 V
- Current: DC / AC: 10 μ A ... 660.0 mA (DM 61) / 10.00A (DM 62)
- Clip function 1000:1 for current transformers (DM 61 only)
- Resistance: 100 m Ω ... 60.00 M Ω
- Capacitance: 1 pF ... 40.00 mF (DM 62 only)
- Frequency: 10.00 Hz ... 10.00 MHz (DM 62 only)
- Diode / Continuity
- Duty cycle (%) measurement (DM 62 only)
- Temperature TC with K-type: -50 ... 1300 $^{\circ}$ C
- TRMS bandwidth: 2 kHz (DM 62 only)
- Hold / Peak / Min-Max / Relative (Zero)
- Auto / Manual ranging
- Dual digital display with analog scale and backlight
- ABS Automatic Blocking Sockets
- UL Certification
- 3 year warranty



Features

Automatic Blocking Sockets (ABS) *

Automatic blocking sockets prevent incorrect connection of measurement cables and inadvertent selection of the wrong measured quantity. This significantly reduces danger to the user, the instrument and the system under test, and eliminates it entirely in many cases.

Automatic / Manual Measuring Range Selection

Measured quantities are selected with the rotary switch. The measuring range is automatically matched to measured values. The measuring range can be selected manually as well with the help of the AUTO/MAN key.

Display of Negative Values at the Analog Scale

Negative values are also displayed at the analog scale for zero-frequency quantities, allowing for observation of measured quantity fluctuation around the zero-point.

Storage of Measured Values

By pressing the **HOLD/MIN/MAX** key, the currently displayed measurement value can be „frozen“ in the display. The minimum and maximum values which were present at the input of the measuring instrument after activation of the MIN/MAX mode can be selectively "retained" with the MIN/ MAX function. The most important application is the determination of the minimum or maximum value during long-term observation of measurement quantities. MIN/MAX has no effect on the analog display; it continues to display the current measurement value.

Continuity Test

Allows for the detection of short-circuits and interrupted conductors. In addition to displaying test results, an acoustic signal can also be generated if desired.

Power Saving Circuit

The device is switched off automatically if the measured value remains unchanged for a period of approximately 15 minutes, and if none of the controls are activated during this time. Automatic shutdown can be deactivated.

Protective Cover for Harsh Conditions

The instrument is protected against damage in the event of impacts or dropping by means of a soft rubber cover with tilt stand. The rubber material also assures that the instrument does not wander if it is set up on a vibrating surface.

Duty Cycle Measurement – Square-Wave Signals

This function makes it possible to test circuits and transmission cables by measuring the frequency and the duty cycle of pulses.

Voluntary Manufacturer's Warranty

36 months for material and workmanship

* Patented (patent no. EP 1801 598, US 7,439,725)

METRALINE DM 61/62


Analog-Digital Multimeter


Characteristic Values

| Meas. Function | Measuring Range | DM61 | DM62 (TRMS) | Resolution | Input Impedance | Digital display Inherent deviation at reference condition + (...%rdg + ...digits) | Overload capacity ¹⁾ | | | | | |
|----------------------|-----------------------|----------|-------------|------------|------------------|---|---------------------------------|--------------------------------|--------------------------------|-----------|-------|-----------------------|
| | | | | | | | Overload values | Overload duration | | | | |
| V(DC) | 660.0 mV | • | • | 100 µV | >100 MΩ // <40pF | 0.7 + 5 | 1000 V DC AC eff/rms Sine wave | Cont. | | | | |
| | 6.600 V | • | • | 1 mV | 11 MΩ // <40pF | 0.4 + 5 | | | | | | |
| | 66.00 V | • | • | 10 mV | 10 MΩ // <40pF | 0.4 + 5 | | | | | | |
| | 660.0 V | • | • | 100 mV | 10 MΩ // <40pF | 0.4 + 5 | | | | | | |
| V(AC) | 660.0 mV | • | • | 100 µV | >100 MΩ // <40pF | 1.2 + 5 | 1000 V DC AC eff/rms Sine wave | Cont. | | | | |
| | 6.600 V | • | • | 1 mV | 11 MΩ // <40pF | 0.4 + 5 | | | | | | |
| | 66.00 V | • | • | 10 mV | 10 MΩ // <40pF | 0.4 + 5 | | | | | | |
| | 660.0 V | • | • | 100 mV | 10 MΩ // <40pF | 0.4 + 5 | | | | | | |
| A(DC) | 66.00 mA | • | • | 10 µA | 66.00 mV | 0.8 + 5 | 0.7 A | Cont. | | | | |
| | 660.0 mA | • | • | 100 µA | 66.00 mV | 0.8 + 5 | | | | | | |
| | 10.00 A ⁶⁾ | — | • | 10 mA | 10.00 mV | 1.5 + 5 | | | | | | |
| | Voltage Drop | | | | | | | | | | | |
| A(AC) | 66.00 mA | • | • | 10 µA | 66.00 mV | 0.8 + 5 | 0.7 A | Cont. | | | | |
| | 660.0 mA | • | • | 100 µA | 66.00 mV | 0.8 + 5 | | | | | | |
| | 10.00 A ⁶⁾ | — | • | 10 mA | 10.00 mV | 1.5 + 5 | | | | | | |
| Σ (AC) ⁵⁾ | 66.00 A | • | — | 10 mA | 66.00 mV | 0.8 + 5 | 0.7 A | Cont. | | | | |
| | 660.0 A | • | — | 100 mA | 66.00 mV | 0.8 + 5 | | | | | | |
| Ω | No load Voltage | | | | | | | 1000 V DC AC eff/rms Sine wave | max. 10 s | | | |
| | 660.0 Ω | • | • | 100 mΩ | -3.3 V | 0.8 + 5 | | | | | | |
| | 6.600 kΩ | • | • | 1 Ω | -1.08 V | 0.8 + 5 | | | | | | |
| | 66.00 kΩ | • | • | 10 Ω | -1.08 V | 0.8 + 5 | | | | | | |
| | 660.0 kΩ | • | • | 100 Ω | -1.08 V | 0.8 + 5 | | | | | | |
| | 6.600 MΩ | • | • | 1 kΩ | -1.08 V | 1.0 + 5 | | | | | | |
| □ | 660.0 Ω | • | • | 100 mΩ | -3.3 V | 0.8 + 5 | 1000 V DC AC eff/rms Sine wave | max. 10 s | | | | |
| | DIODE | | | | | | | | | | | |
| F | 6.600 nF | — | • | 1 pF | — | 3.0 + 40 | 1000 V DC AC eff/rms Sine wave | max. 10 s | | | | |
| | 66.00 nF | — | • | 10 pF | | 2.0 + 10 | | | | | | |
| | 660.0 nF | — | • | 100 pF | | 2.0 + 10 | | | | | | |
| | 6.600 µF | — | • | 1 nF | | 2.0 + 10 | | | | | | |
| | 66.00 µF | — | • | 10 nF | | 2.0 + 10 | | | | | | |
| | 660.0 µF | — | • | 100 nF | | 5.0 + 10 | | | | | | |
| | 6.600 mF | — | • | 1 µF | | 5.0 + 10 | | | | | | |
| | 40.00 mF | — | • | 10 µF | | 5.0 + 10 | | | | | | |
| | Hz | f min | | | | | | | 1000 V DC AC eff/rms Sine wave | max. 10 s | | |
| | | 66.00 Hz | — | • | | 0.01 Hz | | | | | 10 Hz | 0.2 + 2 ²⁾ |
| 660.0 Hz | | — | • | 0.1 Hz | | | | | | | | |
| 6.600 kHz | | — | • | 1 Hz | | | | | | | | |
| 66.00 kHz | | — | • | 10 Hz | | | | | | | | |
| 660.0 kHz | | — | • | 100 Hz | | | | | | | | |
| 6.600 MHz | — | • | 1 kHz | | | | | | | | | |
| % | 1.0 ... 98.90% | — | • | 0.01 % | 0.9% (% min) | 10 Hz ... 1 kHz ±5 Digit ³⁾ | 1000 V DC AC eff/rms Sine wave | max. 10 s | | | | |
| | °C/°F | | | | | | | | | | | |
| 0 ... 1300 °C | | • | • | 1 °C | — | 2.0 + 3 ⁴⁾ | | | | | | |
| -50 ... 0 °C | | • | • | 1 °C | — | 2.0 ± 10 ⁴⁾ | | | | | | |

- 1) At 0 °C ... + 40 °C
- 2) At input > 3.5 Vrms, typical 5 Vp-p, square wave, bipolar inputs
- 3) For < 10 kHz at 5 Vp-p, square wave, bipolar inputs
- 4) Without sensor
- 5) Display with current transformers 1000 : 1
- 6) Limited by 10 A fuse

Influencing Quantities and Influence Error

| Influencing Quantity | Range of Influence | Measured Quantity/ Measuring Range | Influence Error ¹⁾ ±(... % of rdg. + ... digits) |
|-----------------------------|--|---|---|
| Temperature | 0 °C ... +21 °C and +25 °C ... +40 °C | V DC, V AC | 1 x intrinsic uncertainty/K |
| | | A DC, A AC | |
| | | Ω | |
| | | Diode | |
| Measured Quantity Frequency | 20 Hz ... < 50 Hz | 660 mV~ | 1.0 + 3 |
| | > 50 Hz ... 200 Hz | | 5.0 + 3 |
| | 20 Hz ... < 50 Hz | 6.6 ... 1000 V~ | 1.0 + 3 |
| | > 50 Hz ... 2 kHz | | 5.0 + 7 |
| | > 50 Hz ... 200 Hz | A~ | 1.0 + 3 |
| | 20 Hz ... < 2 kHz | | 5.0 + 3 |
| Crest Factor CF | 1 ... 1.4 | V~ ³⁾ , A~ ³⁾ | ±1% of rdg |
| | 1.4 ... 5 ²⁾ | | ±5% of rdg |
| Battery Voltage |  ⁴⁾ ... < 2.49 V > 2.49 V ... 3 V | V DC | 5 Digit |
| | | V~, A DC | 10 Digit |
| | | A AC | 6 Digit |
| | | 660 Ω | 4 Digit |
| | | 6.600 kΩ ... 66.00 MΩ | 3 Digit |
| Relative Humidity | 75% | V~, V DC A~, A DC Ω F Hz °C % | 1 x intrinsic uncertainty |
| | 3 days | | |
| | Meter off | | |
| | | | |

- 1) With temperature: Error data apply per 10 K change in temperature. With frequency: Error data apply to a display from 300 digits onwards.
- 2) With unknown waveform (crest factor CF > 2), measure with manual range selection
- 3) With the exception of sinusoidal waveform.
- 4) After the „“ symbol is displayed.

| Influencing Quantity | Range of Influence | Measuring Range | Attenuation |
|----------------------------------|--|---------------------------------------|-------------|
| Common Mode Interference Voltage | Noise quantity max. 1000 V --- | V --- | > 100 dB |
| | | V ~ | > 100 dB |
| | Noise quantity max. 1000 V ~ 50 Hz, 60 Hz sinusoidal | V --- | > 100 dB |
| | | V ~ | > 50 dB |
| Normal Mode Interference Voltage | Noise quantity: V ~, value of the measuring range at a time max. 1000 V ~, 50 Hz, 60 Hz sinusoidal | 660 mV, 6.6 V, 660 V, 1000 V DC | > 43 dB |
| | | 66 V DC | > 35 dB |
| | Noise quantity max. 1000 V — | V ~ | > 45 dB |

Display

Liquid crystal display (58 mm x 31.4 mm) with analog indication and digital display and with display of the unit of measured quantity, function and various special functions.

Analog

Indication LCD scale with bar graph
 Scale length 55 mm
 Scaling 65 scale divisions during all the measurement
 Polarity indication With automatic reversal
 Overrange indication By triangle
 Sampling rate 28 times/s


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Digital

| | |
|---------------------------------|--|
| Height of Main Display numerals | 7 segment numerals: 12 mm |
| Height of Sub Display numerals | 7 segment numerals: 7 mm |
| Number of counts | 4 digit: 6600 steps |
| Overrange display | „OL“ is shown |
| Polarity display | „-“ sign is shown, When positive pole connected to „┴“ |
| Sampling rate | 2.8 times/s |

Power supply

| | |
|--------------|--|
| Battery | 2 AA size batteries alkaline manganese cells as per IEC LR6. |
| Service life | for METRALINE DM 61: 600 hrs. for V DC, A DC 300 hrs. for V AC, A AC for METRALINE DM 62: 400 hrs. for V DC, A DC 200 hrs. for V AC, A AC |
| Battery test | Automatic display of „  “ symbol when battery voltage falls below following value: approx. 2.4 V. |

Electromagnetic compatibility (EMC)

| | |
|--|---|
| Emission | EN 61326: 2013 Class B |
| Immunity | IEC 61000-4-2: 8 kV atmosphere discharge 4 kV contact discharge IEC 61000-4-3: 3 V/m |
| Short-term measured value deviation may occur during electromagnetic interference thus reducing the specified operating quality. | |

Safety: IEC 61010-1-2010

| | |
|--------------------|--|
| Measuring category | 600 V CAT III, 300 V CAT IV The maximum voltage of 1000 V may only be used with CAT II. |
| High Voltage Test | 6.7 kV (IEC 61010-1-2010) |

Fuses

Fuse for up to 660 mA ranges

FF (UR) 1.6 A/1000 V AC/DC; 6.3 mm X 32 mm; rating 10 kA with 1000 VAC/DC and ohmic load; in conjunction with power diodes, protects all current measuring ranges up to 660 mA.

Fuse for up to 10 A ranges (METRALINE DM 62)

FF (UR) 10 A/1000 V AC/DC; 10 mm x 38 mm; rating 30 kA with 1000 VAC/DC and ohmic load; protects the 10 A ranges up to 1000 V AC/DC.

Defective fuses are not displayed.

Response Time (after manual range selection)

| Measured Quantity/ Measuring Range | Response Time | | Transient response for step function of the measured quantity |
|---------------------------------------|-------------------|-----------------|---|
| | Analog Display | Digital Display | |
| V $\overline{\sim}$, V \sim , °C | 0.1 s | 1 s | from 0 to 80% of the upper range limit |
| A $\overline{\sim}$, A \sim | 0.1 s | 1 s | from 0 to 50% of the upper range limit |
| 660 Ω ... 6.6 M Ω | 0.1 s | 1 s | |
| 66 M Ω | 0.2 s | 2 s | from 0 to 80% of the upper range limit |
| \rightarrow | 0.1 s | 1 s | |
| 6.6 nF ... 66 μ F | 0.7 s | max. 1 s | |
| 660 μ F ... 6.6 mF | 1.4 s | max. 3 s | |
| 66 mF | 7.0 s | max. 15 s | |
| 660 Hz, 6.6 kHz | 2.0 s | max. 2 s | |
| 66 kHz, 660 kHz, 1 MHz | 0.5 s | max. 1 s | |
| % (\geq 10 Hz) | 0.7 s | max. 2.5 s | |

Reference conditions

| | |
|-----------------------------------|----------------------|
| Ambient temperature | 23 °C+ 2 K |
| Relative humidity | 45% ... 55 % RH |
| Frequency of measured quantity | 50 or 60 Hz \pm 2% |
| Waveform of the measured quantity | sinusoidal |
| Battery voltage | 3 V \pm 0.1 V |

Environmental conditions

| | |
|------------------------------|---------------------------------------|
| Functional temperature range | 0 °C ... +50 °C |
| Storage temperature range | -25 °C ... +70 °C (without batteries) |
| Relative humidity | 45 ... 75 % |
| Altitude | up to 2000 m |

Mechanical configuration

| | |
|--------------------------|---|
| Protection for the meter | IP50 |
| Pollution degree | 2 |
| Connection sockets | IP20 according to EN 60529 / DIN VDE 0470-1 |
| Dimensions | with holster: 86 mm x 188 mm x 53 mm without holster: 79 mm x 174 mm x 38 mm |
| Weight | 480 g approx., including battery and holster |

Applicable Regulations and Standards

| | |
|---------------------------------------|---|
| IEC 61010-1/EN 61010-1/ VDE 0411-1 | Safety requirements for electrical equipment for measurement, control and laboratory use |
| EN 60529 VDE 0470, Part 1 | Test instruments and test procedures Protection provided by enclosures (IP code) |
| DIN EN 61326-2-1 VDE 0843-02-2-1 | Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 2-1: Particular requirements for sensitive test and measurement equipment |
| DIN EN 60529 DIN VDE 0470 Part 1 | Test Instruments and test procedures – Degree of protection provided by enclosures (IP code) |

METRALINE DM 61/62

Analog-Digital Multimeter

Standard Equipment

- 1 Multimeter
- 1 Rubber holster with carrying strap
- 1 Cable set
- 1 Battery set
- 1 Operating instructions
- 1 Test report

Order Information

| Description | Type | Article Number |
|---|-----------------|----------------|
| Clipping multimeter, clip factor 1:1000 for current measurement with optional clamp WZ1001 as accessory | METRALINE DM 61 | M194A |
| TRMS Multimeter | METRALINE DM 62 | M197A |
| Accessories | | |
| AC clamp 1000:1 | WZ1001 | Z194A |

For additional information on accessories, please refer to

- our „Measuring Instruments and Testers“ catalogue
- our website www.gossenmetrawatt.com

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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.

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

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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.



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

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Guichet des services



Calibrage de l'analyse de gaz de combustion



Séminaires et ateliers



Calibrage de la thermographie

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