METRALINE EXM25
Multimeter for Use in Potentially Explosive Atmospheres

Measurement of
- Voltage
- Resistance
- Current
- Frequency

- Approved in accordance with ATEX directive 2014/34/EU for intrinsically safe and not intrinsically safe electric circuits up to 1000 V
- Highest degree of safety due to encapsulated protective resistors in DATA HOLD test probes CAT IV, 1000 V
- Intrinsically save energy units, rechargeable NiMH battery or lithium battery
- Illuminated display

Application
Thanks to their intrinsically safe design and rugged antistatic housing with protection class IP54, the instruments are particularly suited for use in mining and chemical/petrochemical industries.

Features

Storage of measured values
The indicated measured value can be „frozen“ on the LC display by pressing the HOLD key.

Self-test and battery level indicator
The self-test provides for the checking of all display elements and instrument functions. An automatic signal is generated when battery replacement is necessary.

Rugged housing
The impact-resistant and dust-proof plastic housing makes the instrument almost indestructible. The display panel is protected by a break-proof cover. Due to its high degree of protection (IP 54), the instrument can also be used in moist atmospheres.

High level of safety
Series resistors inserted in the two DATA-HOLD test probes provide for a high level of electrical safety.

Applicable Regulations and Standards

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEC 61010-1/-31</td>
<td>Safety requirements for electrical equipment for measurement, control and laboratory use – Part 1: General requirements</td>
</tr>
<tr>
<td>DIN EN 61010-1/-31</td>
<td>– Part 31: Safety requirements for hand-held accessories for testing and measuring</td>
</tr>
<tr>
<td>VDE 0411-1/-31</td>
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<tr>
<td>DIN EN 60529</td>
<td>Test instruments and test procedures – degrees of protection provided by enclosures (IP code)</td>
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<td>VDE 0470-1</td>
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<tr>
<td>DIN EN 61 326-1</td>
<td>Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements</td>
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<td>VDE 0843-20-1</td>
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</tr>
<tr>
<td>IEC / DIN EN 60079-0/-11</td>
<td>Explosive atmospheres – Part 0: Equipment – General requirements</td>
</tr>
<tr>
<td>VDE 0170-1/-7</td>
<td>– Part 11: Intrinsic safety circuit „i“</td>
</tr>
</tbody>
</table>

GMC-I Messtechnik GmbH


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**Characteristic Values**

<table>
<thead>
<tr>
<th>Measuring functions with automatic measuring range selection</th>
<th>Resolution</th>
<th>Limit deviation at +10 ... 30 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC and DC Voltage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC 10, 100, 1000 V (1160 V), TRMS</td>
<td>0.01 ... 1 V</td>
<td>±(1.5% + 3 digits)</td>
</tr>
<tr>
<td>0 ... 100 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>101 ... 500 Hz</td>
<td></td>
<td>±(5% + 5 digits)</td>
</tr>
<tr>
<td>DC 1, 10, 100, 1000 V (1610 V)</td>
<td>0.001 ... 1 V</td>
<td>±(1.5% + 3 digits)</td>
</tr>
<tr>
<td>Continuity/Resistance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>200 Ω, 2000 Ω</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 kΩ, 200 kΩ, 2000 kΩ, 2 MΩ, 20 MΩ</td>
<td>0.1 ... 10 kΩ</td>
<td>±(1% + 5 digits)</td>
</tr>
<tr>
<td>Current</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC/DC 1000 mA, 2 A</td>
<td>1 ... 10 mA</td>
<td>±(1% + 2 digits)</td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>200, 2000 Hz</td>
<td>0.1 ... 1 Hz</td>
<td>±(1% + 2 digits)</td>
</tr>
<tr>
<td>10 kHz</td>
<td>0.01 kHz</td>
<td>3% + 2 digits</td>
</tr>
</tbody>
</table>

**Nominal voltage ranges**

can be used in electrical systems for categories Ex I up to 1000 V, Ex IIB and Ex IIC up to 690 V

**Input resistance**

2 MΩ spread over 4 resistors, firmly encapsulated in the DATA-HOLD test probes

**Digit display**

Type LCD, 7 segment digits, 2 lines with background illumination
Display range 0 ... 1999 counts, 3½ digits
Overflow display „OL“ is indicated

**LEDs**

one each for voltage and resistance

**EG Prototype Test Certificate**

BVS 13 ATEX E 089

II 2G Ex ib IIC T4/T6 Gb (Petrochemical industry)

I M2 Ex ib I Mb (Coal mines)

**Electrical Safety**

CAT IV 1000 V with Data-Hold test probes

**Intrinsically safe electric circuits**

Current 2 A
internal inductance Li < 5 μH
Testing for absence of voltage with Data-Hold test probes 1 kV:
Category IIC AC/DC ≤ 690 V
Category IIB AC/DC ≤ 690 V
Category I AC/DC ≤ 1000 V

**Resistance ranges – maximum values in the event of defect**

- Voltage 6 V
- Current 2 mA

**Maximum permissible external capacitance/inductivity**

- Category IIC 40 μF/1000 mH
- Category IIB 1000 μF/1000 mH
- Category I 3000 μF/1000 mH

**Frequency**

2 up to 10 kHz

**Power supply**

The (rechargeable) batteries specified below may also be replaced in potentially explosive atmospheres as they are of encapsulated, intrinsically safe design.

**Rechargeable NiMH battery**

Type EXM-AK9
Nominal voltage DC 8.4 V
Maximum voltage U0 11.2 V
Capacity 8.8 Wh
Temperature class T4

**Lithium battery**

Type EXM-LB3
Nominal voltage DC 3.6 V
Maximum voltage U0 3.9 V
Temperature class T6

**Electromagnetic Compatibility (EMC)**

Interference emission EN 61236-1:2006 class B
Interference immunity EN 61236-1:2006

**Ambient Conditions**

Operating temperatures –10 ... + 40 °C
Relative humidity max. 85%
Elevation max. 2000 m

**Mechanical Design**

Protection type IP54
Housing impact-resistant, antistatic plastic housing (R < 10⁸ Ω) with unbreakable display cover
Dimensions 85 mm x 180 mm x 38 mm
Weight approx. 350 g (including (rechargeable) battery)
Connections – standard jacks for measuring cables with standard test probes for Ω/A – universal jack with bayonet lock for 1 kV Data-Hold test probes
METRALINE EXM25
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Standard Equipment of METRALINE EXM25A

1 METRALINE EXM25A multimeter
1 set of Data-Hold test probes for V, 1000 V CAT IV
1 set of standard test probes for Ω/A, 1000 V CAT II 16 A
1 Rechargeable NiMH battery
1 plug-in power supply unit NG4
1 set of operating instructions

Standard Equipment of METRALINE EXM25B

1 METRALINE EXM25B multimeter
1 set of Data-Hold test probes for V, 1000 V CAT IV
1 set of standard test probes for Ω/A, 1000 V CAT II 16 A
1 Lithium battery
1 set of operating instructions

Order Information

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Article Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multimeter with rechargeable NiMH battery METRALINE</td>
<td>METRALINE EXM25A</td>
<td>M210A</td>
</tr>
<tr>
<td>EXM25A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multimeter with lithium battery</td>
<td>METRALINE EXM25B</td>
<td>M210B</td>
</tr>
<tr>
<td>Ever-ready leather case with carrying strap EXM-LED</td>
<td>Leather case</td>
<td>Z209L</td>
</tr>
<tr>
<td>Intrinsically safe rechargeable NiMH battery, 9 V</td>
<td>EXM-AK9 NiMH rechargeable battery</td>
<td>Z209A</td>
</tr>
<tr>
<td>(T4) 40 h, for screwing into the multimeter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsically safe lithium battery, 3.6 V (T6),</td>
<td>EXM-LB3 lithium battery</td>
<td>Z209B</td>
</tr>
<tr>
<td>300 h, encapsulated, for screwing into the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>multimeter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plug-in power supply unit for charging</td>
<td>NG4</td>
<td>Z209P</td>
</tr>
<tr>
<td>rechargeable NiMH battery EXM-AK9</td>
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</tr>
</tbody>
</table>

Accessories

Ever-ready leather case EXM-LED (Z209L)

Intrinsically safe rechargeable NiMH battery EXM-AK9 (Z209A)

Intrinsically safe lithium battery EXM-LB3 (Z209B)

Plug-in power supply unit NG4 (Z209P)