

# METRALINE EXM25

## Multimeter for Use in Potentially Explosive Atmospheres

3-349-728-03  
3/8.19

### Measurement of

- Voltage
- Continuity
- 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

|   |  |
|---|--|
| IEC 61010-1/-31<br>DIN EN 61010-1/-31<br>VDE 0411-1/-31 | Safety requirements for electrical equipment for measurement, control and laboratory use<br>– Part 1: General requirements<br>– Part 31: Safety requirements for hand-held accessories for testing and measuring |
| DIN EN 60529<br>VDE 0470-1                              | Test instruments and test procedures – degrees of protection provided by enclosures (IP code)  |
| DIN EN 61326-1<br>VDE 0843-20-1                         | Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements   |
| IEC / DIN EN 60079-0/-11<br>VDE 0170-1/-7<br>ATEX       | Explosive atmospheres<br>–Part 0: Equipment – General requirements<br>–Part 11: Intrinsic safety circuit „i“   |

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## Multimeter for Use in Potentially Explosive Atmospheres

### Characteristic Values

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

### 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 (up to 50 V peak) 2 A  
internal inductivity 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 61236-1:2013 class B  
Interference immunity EN 61236-1:2013

### 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 < 10<sup>9</sup> Ω) with unbreakable display cover  
Dimensions 85 mm × 180 mm × 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

## Multimeter for Use in Potentially Explosive Atmospheres

### 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  $\Omega/A$ , 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  $\Omega/A$ , 1000 V CAT II 16 A
- 1 Lithium battery
- 1 set of operating instructions

### Order Information

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

### Accessories

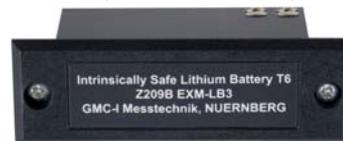
Ever-ready leather case EXM-LED (Z209L)



Intrinsically safe rechargeable NiMH battery EXM-AK9 (Z209A)



Intrinsically safe lithium battery EXM-LB3 (Z209B)



Plug-in power supply unit NG4 (Z209P)



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Edited in Germany • Subject to change without notice • A pdf version is available on the Internet



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