

METRALINE EXM25

Multimeter for Use in Potentially Explosive Atmospheres

3-349-728-03
2/10.16

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

CAT IV



CE



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

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Characteristic Values

Measuring functions with automatic measuring range selection	Resolution	Limit deviation at +10 ... 30 °C
AC and DC Voltage		
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)
Continuity/Resistance		
200 Ω, 2000 Ω		
20 kΩ, 200 kΩ, 2000 kΩ, 2 MΩ, 20 MΩ	0.1 ... 10 kΩ	±(1% + 5 digits)
Current		
AC/DC 1000 mA, 2 A	1 ... 10 mA	±(1% + 2 digits)
Frequency		
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 $L_i < 5 \mu\text{H}$
Testing for absence of voltage with Data-Hold test probes 1 kV:
Category IIC AC/DC $\leq 690 \text{ V}$
Category IIB AC/DC $\leq 690 \text{ V}$
Category I AC/DC $\leq 1000 \text{ V}$

Resistance ranges – maximum values in the event of defect

Voltage 6 V
Current 2 mA

Maximum permissible external capacitance/inductivity

Category IIC 40 $\mu\text{F}/1000 \text{ mH}$
Category IIB 1000 $\mu\text{F}/1000 \text{ mH}$
Category I 3000 $\mu\text{F}/1000 \text{ mH}$
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 $-10 \dots +40 \text{ °C}$
Relative humidity max. 85%
Elevation max. 2000 m

Mechanical Design

Protection type IP54
Housing impact-resistant, antistatic plastic housing
($R < 10^9 \Omega$) 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 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

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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