



# Intrinsically-Safe Multimeter 87V Ex



**For reliable safety inside the Ex-hazardous area: the new multimeter 87V Ex. With the robust holster the unit is well protected – even in the toughest conditions.**

- CAT III 1000V / CAT IV 600V
- Min/Max/Avg function
- 4 1/2- digit display with bar indicator
- Temperature measurement using thermocouple, type K
- Measurements up to 1000V / 10A (outside the Ex-hazardous area)
- Background lighting

#### Ex-data:

Ex-designation  
 Ex II 2 G EEx ia IIC T4

EC-Certificate of Conformity  
 ZELM 05 ATEX 0274

#### Standard delivery

- Device
- Ex-holster
- Battery
- Measuring leads
- Alligator clips
- Thermocouple, type K
- Operating instructions

#### Optional Accessories

- Carry case
- Factory calibration certificate
- DKD calibration certificate
- Ex-holster
- Measuring leads
- Alligator clips
- Thermocouple, type K
- Fuses (400mA and 10A)

The 87V Ex is a True RMS Multimeter with electrical safety specifications CAT III 1000V / CAT IV 600V according to EN 61010-1.

#### Technical Data:

Working temperature:	-20°C ... +50°C
Reference humidity range:	0% ... 80% (0°C ... 35°C)
Battery:	1 x 6LR61 (9V block battery); type-tested
Operating time:	Approx. 400 hours (without background lighting)
Dimensions:	201 x 95 x 52 mm (with holster)
Weight:	Approx. 650 g (with holster)



# Intrinsically-Safe Multimeter 87V Ex

## Measuring technology inside the Specification

**Ex-hazardous area** is always a critical subject. This new digital multimeter from ecom instruments GmbH offers a safe, compact solution, as the 87V Ex allows safe measurements both inside and outside (maximum of 10 A/1000V) of the Ex-hazardous area. The multimeter is certified to ATEX (Directive 94/9/EC) for use in Ex-zones 1 and 2. An additional safety feature is the test according to EN 61010 -1 for CAT III 1000V and CAT IV 600V.

## Designed specifically for industrial applications

This multimeter has been designed using state-of-the-art technology and offers all the functions required in industry. The flexible Ex-holster is designed so that you can be sure of a safe grip of the measuring device when you are working. The 87V Ex contains helpful functions such as Min/Max/Avg display and automatic switching between measuring ranges. Rapid changes in the signal can be measured using a bar indicator.

Thanks to its switchable filter (low-pass filter), the multimeter is ideally suited for carrying out precise voltage and frequency measurements on motor drives. Temperature measurements can be made using the accompanying type k thermocouple. The display can be set to either °C or °F. Special features include an automatic switch-off function to save battery power; Input Alert™ function (giving a warning in the case of incorrect test socket allocation). The display background lighting makes it easier to work in poorly lit conditions.

## Flexibility

The option of working on non-intrinsically safe circuits of up to 1000V and 10A can help reduce the number of devices needed. Note: existing safety regulations must be observed in any process. Both fuses (400mA and 10A) can be changed by the user outside of the Ex-hazardous area.

<b>DC voltage</b>	Range	600mV.....1000V
	Resolution	0.1 mV.....1V
	Accuracy	±0.05.....±0.1% + 1 digit
	Input impedance	10 MΩ; <100pF
	Overload protection	1000V rms
<b>AC voltage</b>	Range	600mV.....1000V
	Resolution	0.1 mV....1V
	Accuracy	±0,7 .....+2% + 2....20 digits
	Input impedance	10 MΩ; <100pF
	Overload protection	1000V rms
<b>Direct current</b>	Range	600µA.....10A
	Resolution	0.1 µA.....10mA
	Accuracy	±0.2 + 2....4 digits
<b>Alternating current</b>	Range	600µA....10A
	Resolution	0.1 µA.....10mA
	Accuracy	±1% + 2 digits
<b>Resistance</b>	Range	600Ω.....50MΩ
	Resolution	0.1 Ω.....0.01 MΩ
	Accuracy	±0.2.....±1% + 1.....3 digits
	Overload protection	1000V rms
<b>Conductivity</b>	Range	60.00nS
	Resolution	0.01nS
<b>Continuity</b>	Threshold value	n/a
	Overload stop	1000V rms
<b>Diode test</b>	Test voltage	3V
	Resolution	0.001V
	Accuracy	±2% +1 digit
<b>Frequency</b>	Range	199.99Hz.....199.99kHz
	Resolution	0.01 Hz.....0.01kHz
	Accuracy	±0.005% +1 digit
<b>Duty cycle</b>	Range	0,0.....99,9%
<b>Capacity</b>	Range	10nF.....9999µF
	Resolution	0.01nF.....1 µF
	Accuracy	±1% + 2 digits
<b>Temperature</b>	Range	-200°C....1090°C
	Resolution	0.1°C
	Accuracy *	1% + 10 digits
* without errors by the thermocouple		
<b>80BK temperature sensor</b>	Range	-40°C.....260°C
	Accuracy	2.2°C or 2% (the larger value applies)

## Remarks:

Measurements inside the Ex-hazardous area:  
 $U_i \leq 65V$ ,  $I_i \leq 5A$

Measurements outside the Ex-hazardous area:  
 $U_i \leq 1000V$ ,  $I_i \leq 10A$

Error: % of measured value + digits

