

Fluke 87V-Ex Intrinsically Safe True-RMS Multimeter

Designed to deliver maximum productivity and safety in and around potentially explosive work zones

Technical Data

The Fluke 87V-Ex is the ATEX-certified intrinsically safe version of the most popular meter in the world, the Fluke 87V. Intrinsically safe (I.S.) are protective methods employed in potentially explosive atmospheres. ATEX is the most stringent I.S. standard in Europe for products used in hazardous locations. Certified I.S. tools are designed to prevent the release of sufficient energy to cause ignition of flammable material.

I.S. standards apply to all equipment that can create one or more of a range of defined potential explosion sources such as electrical sparks, static electricity and mechanical friction. I.S. tools are designed for industries such as petro-chemical, grain processing, oil platforms and refineries, pharmaceutical and pipelines as well as other hazardous environments. For more information on intrinsic safety, visit www.fluke.com/ex.



Features:

- Unique function for accurate voltage and frequency measurements on variable speed motor drives (VSD's)
- Atex 137 safety rating for use in zone 1 and zone 2
- CAT IV 600 V safety approval for non-Ex industrial environments
- Large display with bright, two-level backlight makes the 87V-Ex very easy to read
- Built-in thermometer (probe included)
- True-rms ac voltage and current for accurate measurements on non-linear signals
- 4-1/2 digit mode for precise measurements (20,000 counts)
- Measure up to 1000 V and 10 A (ac/dc)
- Frequency to 200 kHz and % duty cycle
- Resistance, continuity and diode test
- 10,000 μ F capacitance range for components and motor caps
- Min/Max-Average and Peak capture to record transients and variations automatically
- Relative mode to remove test lead interference on resistance measurements
- Auto and manual ranging for maximum flexibility
- Analog bargraph for fast changing or unstable signals
- Input Alert provides audible warning against wrong use of input jacks

Safety ratings

- ATEX safety rating:  II 2 G EEx ia IIC T4
- Electrical safety rating: EN61010-1 CAT IV 600 V and CAT III, 1000 V

Summary specifications

Specifications		
Voltage dc	Maximum voltage: Accuracy: Maximum resolution:	1000 V $\pm (0.05 \% + 1)$ 10 μ V
Voltage ac	Maximum voltage: Accuracy: AC bandwidth: Maximum resolution:	1000 V $\pm (0.7 \% + 2)$ True-rms 20 kHz* 0.1 mV
Current dc	Maximum amps: Amps accuracy: Maximum resolution:	10 A (20 A for 30 seconds maximum) $\pm (0.2 \% + 2)$ 0.01 μ A
Current ac	Maximum amps: Amps accuracy: Maximum resolution:	10 A (20 A for 30 seconds maximum) $\pm (1.0 \% + 2)$ True-rms 0.1 μ A
Resistance	Maximum resistance: Accuracy: Maximum resolution:	50 M Ω $\pm (0.2 \% + 1)$ 0.1 Ω
Capacitance	Maximum capacitance: Accuracy: Maximum resolution:	9,999 μ F $\pm (1 \% + 2)$ 0.01 nF
Frequency	Maximum frequency: Accuracy: Maximum resolution:	200 kHz $\pm (0.005 \% + 1)$ 0.01 Hz
Duty cycle	Maximum duty cycle: Accuracy: Maximum resolution:	99.90 % $\pm (0.2 \% \text{ per kHz} + 0.1 \%)$ 0.10 %
Temperature measurement	Range:	-200.0 °C to 1090 °C (-328 °F to 1994 °F) excluding probe
80BK Temperature Probe	Range: Accuracy:	-40.0 °C to 260 °C (-40 °F to 500 °F) 2.2 °C or 2 % whichever is greater
Conductance	Maximum conductance: Accuracy: Maximum resolution:	60.00 nS $\pm (1.0 \% + 10)$ 0.01 nS
Diode	Range: Resolution: Accuracy:	3 V 1 mV $\pm (2 \% + 1)$
Duty cycle range	Accuracy:	Within $\pm (0.2 \% \text{ per kHz} + 0.1 \%)$
Measurements restriction in Ex-hazardous area	Voltage: Current:	≤ 65 V ≤ 5 A
Environmental specifications	Operating temperature: Storage temperature: Humidity (w/o condensation): Operating altitude:	-20 °C to +55 °C -40 °C to +60 °C 0 % to 90 % (0 °C to 35 °C) 0 % to 70 % (35 °C to 55 °C) 2000 m
Safety specifications	Overvoltage category: Agency approvals: ATEX specification: Agency approvals:	EN 61010-1 to 1000 V CAT III, 600 V CAT IV CSA, TÜV EX II 2 G EEx ia IIC T4 ZELM 05 ATEX 027
Mechanical and General Specifications	Size: Weight: Weight with holster: Display (digital): Display analog: Warranty: Battery life (Alkaline): Shock: Vibration:	201 x 98 x 52 mm (with holster) 1.09 lbs 1.46 lbs 6000 counts updates 4/sec. 19,999 counts in high-resolution mod 32 segments, updates 40/sec. 1 year ~400 hours typical, without backlight 1 Meter drop per IEC 61010-1:2001 Per MIL-PRF-28800 for a Class 2 instrument

*with low pass filter; 3 db @ 1 kHz

Ordering Information

Fluke-87-5-Ex Intrinsically Safe
True-rms Multimeter

Included

DMM with holster, TL75 Test Lead Set, AC72 Alligator Clip Set, instruction manual in English, French, German and CD Rom with additional manuals in multiple languages.

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up and running.™*

Fluke Corporation
PO Box 9090, Everett, WA USA 98206
Fluke Europe B.V.
PO Box 1186, 5602 BD
Eindhoven, The Netherlands

For more information call:
In the U.S.A. (800) 443-5853 or
Fax (425) 446-5116
In Europe/M-East/Africa +31 (0) 40 2675 200 or
Fax +31 (0) 40 2675 222
In Canada (800)-36-FLUKE or
Fax (905) 890-6866
From other countries +1 (425) 446-5500 or
Fax +1 (425) 446-5116
Web access: <http://www.fluke.com>

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