

# FLUKE®

## Fluke 87V Ex Intrinsically Safe True RMS Multimeter

**Performance and accuracy for productive measurements in and around hazardous zones**

The Fluke 87V Ex is an intrinsically safe version of the most popular meter in the world: the Fluke 87V. It has measurement functions, troubleshooting features, plus the resolution and accuracy to solve problems on motor drives, in plant automation, power distribution and electromechanical equipment. Additionally, it has an intrinsically safe rating and ATEX certification for use in hazardous areas. This makes it the ideal general-purpose measurement tool for use in environments such as (petro-) chemical plants, the pharmaceuticals industry and other locations subject to risk of explosion.

The 87V Ex has been developed for use both inside and outside hazardous zones without compromising performance or safety:

- Inside the zone it is a fully ATEX-certified DMM
- Outside the zone it can be used just like a standard Fluke 87V with full performance
- Unique function for accurate voltage and frequency measurements on adjustable speed motor drives and other electrically noisy equipment.



- ATEX safety rating for use in Zone 1 and Zone 2
- Large digital display with bright, two-level backlight makes the 87V Ex very easy to read
- Built-in thermometer for convenient temperature readings without carrying a separate instrument (TC probe included)
- True rms ac voltage and current for accurate measurements on non-linear signals
- Measure up to 1000V (ac/dc) and 10A (ac/dc) with a very wide 20 kHz bandwidth
- Selectable filter for accurate voltage and frequency measurements on motor drives
- 4½-digit mode for precise measurements (20,000 counts)
- Frequency to > 200 kHz and % duty cycle
- Resistance, conductance, continuity and diode test
- 10,000 µF capacitance range for components and motor caps
- Min/Max-Average recording with Min/Max Alert to capture variations automatically
- Touch Hold to capture stable readings avoiding noisy signals
- Peak capture to record transients as fast as 250 µs
- Relative mode to remove test lead interference from low ohm 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
- Selectable sleep mode for long battery life
- Access door for fast battery changes without breaking the calibration seal
- Holster with built in test lead and probe storage

**ATEX Compliant**

## General specifications

Functions	Maximum range	Accuracy	Max. resolution
Voltage DC	1000V	±(0.05% + 1)	10 µV
Voltage AC*	1000V	±(0.7% + 2) True rms	10 µV
Current DC	10A**	±(0.2% + 2)	0.01 µA
Current AC*	10A**	±(1.0% + 2) True rms	0.01 µA
Resistance	50 MΩ	±(0.2% + 1)	0.01 Ω
Capacitance	10,000 µF	±(1% + 2)	0.01 nF
Frequency	>200 kHz	±(0.005% + 1)	0.01 Hz
Duty cycle	99.90%	±(0.2% per kHz + 0.1%)	0.10%
Temperature	-200.0°C to 1090°C***	1.0%	0.1°C
80 BK Temperature probe	-40.0°C to 260°C	2.2°C or 2%, whichever is greater	-
Conductance	60.00 nS	±(1.0% + 10)	0.1 mV
Diode	3V	±(2% + 1)	0.1 mV
Duty cycle range	0.0 - 99.9%	±(0.2% per kHz + 0.1%)	0.1%

\* Bandwidth 20 kHz

\*\* 20A for 30 s max.

\*\*\* Excluding probe



True RMS



**Fluke.** Keeping your world up and running.

## Safety specifications

ATEX safety rating	II 2 G EEx ia IIC T4
Agency Approvals	ZELM 05 ATEX 0274; CSA, TÜV
Measurements in Ex area	Voltage ≤ 65V, Current ≤ 5A
Electrical safety rating	EN61010-1 CAT IV 600V and CAT III, 1000V

## Environmental specifications

Operating temperature	-20°C to +50°C
Storage temperature	-40°C to +60°C
Humidity (non-condensing)	0% - 90% (0°C to 35°C)
	0% - 70% (35°C to 50°C)
Operating altitude	2000 m

## Mechanical & general specifications

Size (HxWxD) and weight	201 x 98 x 52 mm (with holster); 624 g (including holster)
Display	
Digital:	6,000 counts/20,000 counts in high-resolution mode
Analog bargraph:	32 segments, 40 updates/s
Warranty	1 year
Battery life	Approx. 400 h typical, without backlight
Shock	1 meter drop acc. to IEC 61010-1:2001
Vibration	Acc. to MIL-PRF-28800 for a Class 2 instrument

## Ordering Information

Fluke 87V Ex                      Intrinsically Safe True RMS Multimeter

### Included with instrument

DMM with red holster, TL75 test leads, AC72 alligator clips, 80BK temperature probe, 9 V battery (installed), user manual (printed) in English, French and German, CD-ROM (with other languages).

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