

# TEST & MEASURING EQUIPMENT



**Questions? Answers at...**

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## Digital Multimeters

### Fluke 87V and 83V Industrial Multimeters

Fluke 87V and 83V multimeters have measurement functions, troubleshooting features, resolution and accuracy to solve more problems on motor drives, in-plant automation, power distribution and electro-mechanical equipment.

#### Features

- Unique function for accurate voltage and frequency measurements on adjustable speed motor drives and electrically noisy equipment (87V).
- Large digit display with bright two-level backlight makes the 87V significantly easier to read.
- Measure 20A for up to 30 sec, 10A continuously.
- Optional magnetic hanger for easy setup and viewing while freeing your hands for other tasks (TPAK).
- Expanded capacitance range to 10,000 $\mu$ F.
- Built-in thermometer (87V).

#### Electrical Safety

All inputs are protected to CAT III 1000 V and CAT IV 600 V. They can withstand impulses in excess of 8,000V to help protect you from arc blast resulting from surges and spikes.

Features	Part Number:	87V	83V
True-rms AC voltage and current for accurate measurements on non-linear signals		•	
Selectable filter for accurate voltage and frequency measurements on motor drives		•	
0.05% DC accuracy		•	
4½ digit mode for precise measurements		•	
Built-in thermometer lets you carry one less tool		•	
Large display digits and two-level bright white backlight for increase visibility		•	•
10,000 $\mu$ F capacitance range for components and motor caps		•	•
Peak capture to record transients as fast as 250 $\mu$ s		•	•
Measure up to 1000V AC and DC; up to 10A, 20A for up to 30 seconds		•	•
Auto and manual ranging for maximum flexibility		•	•
Analog bargraph		•	•
Frequency to 200kHz and % duty cycle		•	•
Min/Max and average recording to capture variations automatically		•	•
Relative mode to remove test lead resistance from low ohms measurements		•	•
Access door for fast battery changes without breaking the calibration seal		•	•
Limited lifetime warranty		•	•

Functions	Range and Resolution	Basic Accuracy	
DC volts	600.0mV, 6.000V, 60.00V, 600.0V, 1000V	0.05%	0.1%
AC volts	600.0mV, 6.000V, 60.00V, 600.0V, 1000V	0.7% (true-rms)	0.5%
DC current	600.0 $\mu$ A, 6000 $\mu$ A, 600.0mA, 6.000A, 10.00A	0.2%	0.4%
AC current	600.0 $\mu$ A, 6000 $\mu$ A, 600.0mA, 6.000A, 10.00A	1.0% (true-rms)	1.2%
Temperature (excl. probe)	-200°C to 1090°C (-328°F to 1994°F)	1.0%	
80BK Temperature Probe	-40°C to 260°C (-40°F to 500°F)	2.2° or 2%	
Resistance	600.0 $\Omega$ , 6.000k $\Omega$ , 60.00k $\Omega$ , 600.0k $\Omega$ , 6.000M $\Omega$ , 50.00M $\Omega$	0.2%	0.4%
Capacitance	10.00nF, 100.0nF, 1,000 $\mu$ F, 10.00 $\mu$ F, 100.0 $\mu$ F, 9,999 $\mu$ F	1.0%	1.0%
Frequency	199.99Hz, 1.9999kHz, 19.999kHz, 199.99kHz	0.005%	0.005%

**Battery life:** 400 hours typical with backlight off.

**Size (LxWxD):** 201mm x 98mm x 52mm (7.9in x 3.8in x 2in).

**Weight:** 355g (22oz.).

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# Digital Multimeters & Clamp Meter

## Fluke 77 IV Digital Multimeter

The 77 IV Digital Multimeter has the features needed to repair most electrical and electronic problems. This meter is simple to use and has significant improvements over Fluke's original 70 Series with more measurement functions, conformance to the latest safety standards, and a much larger display that's easier to view.

### Features

- Large display
- Backlight for work in dim areas.
- Min/Max to record signal fluctuations.
- Free your hands with the optional TPAK magnetic hanger.
- Auto and manual ranging.

### Measures

- Wide 1000V measurement range.
- Average responding AC measurements.
- 0.3% accuracy.
- Frequency and capacitance.
- Resistance and continuity.



Functions	Range	Best Accuracy	Best Resolution
DC volts	600.0mV to 1000V	± (0.3% + 1)	0.1mV
AC volts	6.000V to 1000V	± (2.0% + 2)	1.0mV
DC current	60.00mA to 10A	± (1.5% + 2)	0.01mA
AC current	60.00mA to 10A	± (2.5% + 2)	0.01mA
Resistance	600.0Ω to 50MΩ	± (0.5% + 1)	0.4%
Capacitance	1nF to 9,999μF	± (1.2% + 2)	1nF
Frequency	99.99Hz to 99.99kHz	± (0.1% + 1)	0.01Hz

## Fluke 336 Clamp Meter

- Inrush current feature
- Small body and jaws fit perfectly in your hand and into tight places.
- Controls positioned for one hand operation.
- Accurate low current measurements.
- Backlight; auto shut-off; display hold.
- Safety rating: IEC 1010-2-031, CAT III 600V
- Three-year warranty

(@23°C ± 5°C RH 0 to 90%)			
	Range	Accuracy	AC Response
DC volts	to 600.0V	1% + 5 counts	
AC volts	to 600.0V	1% + 5 counts (20 to 100Hz)	True-rms
DC current	0 to 600.0A	2% + 3 counts	
AC current	to 600.0V	2% + 3 counts (10 to 100Hz)	True-rms
Ohms	600.0Ω/6000Ω	1.5% + 5 counts	

**Inrush:** 100mS

**Continuity:** ≤30Ω

**Weight:** 0.31kg (11oz).

**Max wire dia:** 3cm (1.2in).

**Size:** (LxWxD): 201mm x 7.9cm x 4cm (9.9in x 3.1in x 1.6in).



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## Voltage, Continuity & Current Tester

### Fluke T5 Electrical Tester

The Fluke T5 Electrical Tester lets you check voltage, continuity and current with one compact tool. With the T5, all you have to do is select volts, ohms, or current and the tester does the rest. Tough test leads stow neatly in the back of the tester, making it easy to tote the T5 in your tool pouch. The optional H5 Holster keeps the test probes and leads ready to test, and lets you clip the T5 onto your belt. OpenJaw™ current lets you check current up to 100A—without breaking the circuit.

- Automatically measures volts AC and volts DC with precise digital resolution
- Displays resistance to 600V
- Easy and accurate OpenJaw™ current measurement
- Continuity beeper
- Compact design with neat probe storage
- Rugged enough to withstand a 10-foot (3m) drop
- Detachable Slim-Reach™ probe tips are customized for national electrical standards
- Test leads accept Fluke accessory test clips
- Available in 600V
- Can stay connected much longer than solenoid-type tester
- Auto off mode to conserve battery life

Part Number	Description
T5-600	600V
H5	Custom Holster
AC285V	Large Jaw Alligator Clips

### Specifications

#### Battery

**Type:** Two AA zinc chloride

**Life:** 200-hour zinc chloride, 400-hour alkaline; low battery indicator

#### Test leads

**Type:** Heavy duty, flexible leads rated for 600V use. Field replaceable leads terminate in male shrouded banana plugs

**Probes:** One red, one black. Detachable Slim-Reach™ probe tips in one of two tip styles: TP1 flat blade (US style) or TP4 4mm round (European style)

#### Continuity beeper

**Threshold:** On at <25Ω, off at >400Ω

#### Volts indicator LED

**Threshold:** Guaranteed on by 30V AC

#### Environmental

**Operating temperature:** -10°C to 50°C

**Storage temperature:** -30°C to 60°C

#### Temperature coefficient:

0.1 x (specified accuracy)/degree C (<18°C or >28°C)

#### Relative humidity:

0% to 95% (5°C to 30°C)

0% to 75% (30°C to 40°C)

0% to 45% (40°C to 50°C)

#### Operating altitude:

2000 meters max  
Dust and water resistant

#### Mechanical

**Size:** (H x W x L) 30.5 x 51 x 203 (1.2" x 2.0" x 8.0") approximate

**Weight:** 0.3 kg (10oz) approximate

**Current sensor opening:** 12.9mm (.508")

#### Safety

##### Maximum operating voltage:

T5-600: 600V AC/DC, Overvoltage Category III

##### Agency approvals (pending):

UL, CSA, and VDE

##### Manufacturer's certification:

CE Mark

##### Warranty:

General: 2 years;  
Calibration cycle: 1 year

### Questions? Answers at...

# Tachometers & Pressure Gauges

## LED Digital Contact Tachometer

A very versatile, very accurate LED digital contact tachometer, capable of reading from 0.1 to 25,000 revolutions, feet, meters and inches, all per minute, second, or hour (including miles per hour). It has a seven reading memory and overspeed protection.

Part Number	Description
<b>DT 107A</b>	Included accessories: 2 cones, 1 inverted cone, 2" wheel, 3½" extension wheel
<b>12-251</b>	Replacement wheel 6" circumference



## Hand Tachometers

- Part Number **DHT**
- Shock resistant case
  - Tolerance  $\pm 5\%$  of extreme scale value
  - RPM 16–20,000, FPM 5–6,000



## Tachometer Replacement Wheel

Part Number **DHTW**

## Door Pressure Gauges

Used to set proper door closing pressure, and to check belt tensions, as on hydraulic elevator pumps or door operator drives. It is also useful in checking car balance.

Part Number	Capacity
<b>10-700</b>	0-35 lbs.



## Pressure Gauge

This 2½-inch liquid-filled pressure gauge works great for checking oil pressure on hydraulic elevators. It has a stainless steel case with a polycarbonate window and is filled with glycerine. This gauge dampens pulse and vibration to give readings accurately to 3%. Quick connect couplings are available upon request. Optional 2-foot pressure line.

Part Number	Description
<b>10-490</b>	2½", 0–600
<b>10-491</b>	2½", 0–1,000
<b>10-495</b>	2-foot pressure line



LPGH (SHOWN WITH LPG)



## Liquid Pressure Gauges

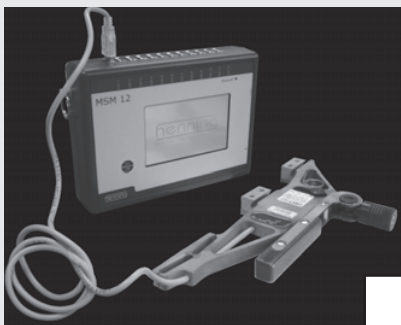
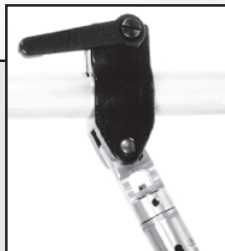
For setting up relief valve settings on hydraulic valves.

Part Number	Description
<b>LPG</b>	Maximum 600 P.S.I.
<b>LPG-1</b>	Maximum 1000 P.S.I.
<b>LPGH</b>	36" flexible hose with fittings, 2500 P.S.I.

- Replacement measuring wheel

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### Blue Blade Selector Tapes

Part Number	Size of Tape	Perforation Style
OTIS-1000	.015 x 1.000	Otis

Gauges, widths, and perforations can be tailored to your specifications. Tapes are available in blue tempered and stainless steel.



## Rope Tension Gauge, Test Weight Cart, Lead Wire & Selector Tapes

### Rope Tension Gauge

Easy to assemble, easy to use and accurate. Unequal rope tension adds wear and tear and shortens rope life. The rope tension gauge measures relative tension in ropes allowing you to adjust for equal tension. Kit includes: 1 chrome hook, 1 spreader with clamp, 1 chrome tube and 1 spring balance with hook and clamp.

Part Number **10-650**

### Mobile Rope-Tension Measuring System

Patented measuring principle allows you to measure and set the optimum tension of each rope, quickly and easily (integrated software-wizard). Works with different rope types and diameters.

Part Number	Description
EPW-455100	Includes control and 4 rope load sensors
EPW-455600	Additional LSM1 load sensor

### Test Weight Carts

Total weight of each unit is 500 lbs., consisting of a cart weighing 100 lbs., and 8 weights weighing 50 lbs. each. The wheels on the unit are 8" diameter rubber tires with roller bearings. Unit comes with a locking bar, padlock and 2 keys to prevent theft of the weights. Approximate dimensions: 8" deep x 26" wide x 42" high. Inside box dimensions: 7.25" deep x 20" wide x 18" high. Standard red primer, custom colors available.

Part Number	Description
10-900	500lbs., 8" wheels with weights
10-901	100lbs., weight cart only, 8" wheels
10-907	8" replacement wheel, weight 6lbs.

### Lead Wire Seal Press & Lead Sealing Wire

Recalibrating governors? We have the lead and wire seals, along with the sealing press to lock-in and hold adjustments. The wire seals are 2 strand, 23 gauge, galvanized wire, 8" long with 3/8" diameter, 2 hole, lead seal. Other combinations of lead seals and wires are available.

The sealing pliers are made with special leverage jaws for added sealing force. This is applied through hardened cams for longer life. The 1/2" diameter, removable sealing dies can be provided with initials or numerals at a minimal cost.

Part Number	Description
13-900	lead wire seal press
13-901	100 count 8" lead sealing wire

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