

TECHNICAL DATA

Fluke 787B and 789 ProcessMeter™



KEY DMM MEASUREMENTS

Measure ac and dc volts, ac and dc current, resistance, continuity, and frequency

KEY mA LOOP FUNCTIONS

20 mA current source/simulate, simultaneous mA and % scale readout, and 24 V loop power supply (789 only)

SAFETY RATED FOR INDUSTRIAL APPLICATIONS

CAT IV 600 V/CAT III 1000 V

Double the troubleshooting power so you can do more, while carrying a lot less

The Fluke 787B and 789 ProcessMeter™ double troubleshooting capabilities by combining the power of a safety rated digital multimeter and mA loop calibrator into a single, compact test tool. Whether you only need to source and simulate mA, or need a 24 V loop power supply, Fluke has a ProcessMeter™ test tool designed specifically to meet your needs. Based on the trusted measurement capabilities of the Fluke 87 DMM, the 787B and 789 add the ability to measure, source and simulate mA with the accuracy and resolution you would expect from a Fluke mA loop calibrator, giving you the ideal tool for troubleshooting and calibrating current loop applications.

With Fluke Connect™ mobile app and desktop software compatibility technicians can wirelessly monitor, log, and share data from the field with their team anytime, from anywhere*.

787B and 789 key features

- 20 mA dc current source/measure/simulate
- Simultaneous mA and % of scale readout
- DMM designed to meet 1000 volt IEC 61010 CAT III and 600 V CAT IV standards
- Fluke Connect® compatibility for wireless data logging (with IR3000FC module)*
- Precision 1000 V, 440 mA true-rms digital multimeter
- Frequency measurement to 20 kHz
- Min/Max/Average/Hold/Relative modes
- Diode test and continuity beeper
- Manual step (100 %, 25 %, Coarse, Fine) plus Auto Step and Auto Ramp
- Externally accessible battery for easy battery changes

789 additional features

- 24 V Loop power supply
- HART mode setting with loop power (adds 250 ohm resistor)

*Requires Fluke IR3000FC module (not included)

Not all models are available in all countries. Check with your local Fluke representative.

Measurement function	Range and resolution	Best accuracy (% of reading + LSD)
V dc	400.0 mV, 4.000 V, 40.00 V, 400.0 V, 1000 V	0.1 % + 1
V ac (true-rms)	400.0 mV, 4.000 V, 40.00 V, 400.0 V, 1000 V	0.7 % + 2
mA dc	30.000 mA	.05 % + 2
A dc	1.000 A (0.440 A continuous)	0.2 % + 2
A ac	1.000 A (0.440 A continuous)	1 % + 2
Resistance	400.0 Ohms, 4.000 k, 40.00 k, 400.0 k, 4.0 M, 40 M	0.2 % + 1
Frequency (0.5 Hz to 20 kHz)	199.99 Hz, 1999.9 Hz, 19.999 kHz	.005 % + 1
Diode test	2.000 V (shows diode voltage drop)	2 % + 1
Continuity	Beeps for resistance < approx. 100 ohms	



Output function	Range and resolution	Drive capability	Accuracy (% of span)
DC current output (Internal battery operation)	0.000 to 20.000 mA or 4.000 to 20.000 mA, (selectable at power-up) Over-range to 24.000 mA	24 V compliance or, 1,200 ohms, at 20 mA	.05 %
DC current simulate (Ext. 15 V to 48 V loop supply)	0.000 to 20.000 mA or 4.000 to 20.000 mA, (selectable at power-up) Over-range to 24.000 mA	1000 ohms, at 20 mA	.05 %
24 V loop supply*	Minimum 24 V	250 ohms at 20 mA	> 24 V
Current adjustment modes	Manual: Coarse, Fine, 25 % and 100 % step Automatic: Slow Ramp, Fast Ramp, 25 % step		

Temperature range of 18 °C to 28 °C, for one year after calibration
 *24 V Loop Supply available on 789 ProcessMeter™ only

General specifications	
Maximum voltage applied between any jack and earth ground	1000 V RMS
Storage temperature	-40 °C to 60 °C
Operating temperature	-20 °C to 55 °C
Temperature coefficient	0.05 x (specified accuracy) per °C (for temperatures < 18 °C or > 28 °C)
Relative humidity	95 % up to 30 °C; 75 % up to 40 °C; 45 % up to 50 °C; 35 % up to 55 °C
Vibration	Random, 2 g, 5-500 Hz
Shock	1 meter drop test
Safety	IEC61010-1, Pollution Degree 2/IEC61010-2-033, CAT IV 600 V/CAT III 1000 V
Size (HxWxL)	50 mm x 100 mm x 203 mm (1.97 in x 3.94 in x 8.00 in)
Weight	600 g (1.3 lbs)
Battery:	Four AA alkaline batteries
Battery life	140 hours typical (measurement), 10 hours typical (sourcing 12 mA)
Warranty	Three years



Preventive maintenance simplified. Rework eliminated.

Save time and improve the reliability of your maintenance data by wirelessly syncing measurements using the Fluke Connect® system.

- Eliminate data-entry errors by saving measurements directly from the tool and associating them with the work order, report or asset record.
- Maximize uptime and make confident maintenance decisions with data you can trust and trace.
- Access baseline, historical and current measurements by asset.
- Move away from clipboards, notebooks and multiple spreadsheets with a wireless one-step measurement transfer.
- Share your measurement data using ShareLive™ video calls and emails.
- 787B and 789 ProcessMeter is part of a growing system of connected test tools and equipment maintenance software. Visit the website to learn more about the Fluke Connect® system.



Ordering information

789 ProcessMeter
787B ProcessMeter

Included

TL71 Premium Test Lead Set plus AC175 Alligator Clips, Four AA alkaline batteries (installed), and Quick Reference Guide

Optional accessories

- IR3000FC Fluke Connect® Adapter
- 80TK Thermocouple Module
- TL20/TL220/TL224/TL26A/TL28A/TL40 Test Lead Sets
- AC120/AC220 Clips
- TP220 Industrial Test Probes
- i400 AC Current Clamp*
- i410 AC/DC Current Clamp**
- i1010 AC/DC Current Clamp**
- C25/C100 Cases
- PV350 Pressure Vacuum Module
- TPAK ToolPak Meter Hanging Kit

*Above 50 A ac

**Above 1 A dc or 20 A ac



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Smart phone wireless service and data plan not included with purchase. Fluke Connect is not available in all countries.

Fluke. Keeping your world up and running.®

Fluke 772 and 773 Milliamp Process Clamp Meters

Technical Data

**mA measurements
without breaking
the loop.
Save time.
Save money.**



Use the Fluke 772 and 773 to:

- Measure 4 to 20 mA signals without “breaking the loop” just like the innovative and popular Fluke 771 Process Milliamp Clampmeter
- Source 4 to 20 mA signals for testing control system I/O or I/Ps
- Simulate 4 to 20 mA signals for testing control system I/O
- Measure 4 to 20 mA signals with in-circuit measurement
- Simultaneously measure mA in-circuit with 24 V loop power for powering and testing transmitters
- Source mA output signals in a linear ramp or 25 % step output
 - Automatically change the 4 to 20 mA output for remote testing
- Power saving features, auto-off, backlight timeout extend battery life

Fluke 773 features:

- DC voltage measurement to verify 24 V power supplies or voltage I/O signals
- Source dc voltage to test input devices that accept a 1 to 5 volt or 0 to 10 volt signal
- Scaled mA output provides a continuous mA signal that corresponds to the 4 to 20 mA signal measured by the mA clamp
 - Output mA signal enables a logging DMM (289) or other device to record the 4 to 20 mA signal without breaking the loop
- mA in/out: simultaneously measure the mA signal with the clamp and source a mA signal
 - Apply a mA input signal to a device and measure its 4 to 20 mA output on devices such as valves or mA isolators
- Voltage output linear ramp or 25 % step output
 - Automatically change the voltage output for remote testing

Functions

	mA measure w/jaw	mA measure In circuit	mA source	mA sim	Loop power 24 V	DCV source 0-10 V	DCV measure 0-30 V	Scaled mA output to mA input	mA in/out
771	•								
772	•	•	•	•	•				
773	•	•	•	•	•	•	•	•	•

Functional specifications

	Function	Resolution and range	Accuracy	Notes
771, 772, 773	mA measurement	0 to 20.99 mA	0.2 % + 5 counts	Measured by clamp
		21.0 mA to 100.0 mA	1 % + 5 counts	
772 and 773	mA measurement	0 to 24.00 mA	0.2 % + 2 counts	Measured in series with test jacks
772 and 773	mA source	0 to 24.00 mA	0.2 % + 2 counts	Maximum mA drive: 24 mA into 1,000 ohms
772 and 773	mA simulate	0 to 24.00 mA	0.2 % + 2 counts	Maximum voltage 50 V dc
773	Voltage source	0 to 10.00 V dc	0.2 % + 2 counts	2 mA maximum drive current
773	Voltage measure	0 to 30.00 V dc	0.2 % + 2 counts	

General specifications 772 and 773

Influence of earth's field	< 0.12 mA
Battery	(4) 1.5 V, Alkaline, IEC LR6
Working hours	12 hours @ 12 mA source into 500 ohms
Size (HxWxL)	772, 773: 41.3 mm x 76 mm x 248 mm (1.625 in x 3 in x 9.75 in) 771: 59 mm x 38 mm x 212 mm, (2.32 in x 1.5 in x 8.35 in)
Weight	772, 773: 415 g (14 oz) 771: 260 g, (9.1 oz)
Operating temperature	-10 °C to 50 °C
Storage temperature	-25 °C to 60 °C
Operating humidity	< 90 % @ < 30 °C; < 75 % @ 30 ~55 °C
Operating altitude	0 ~ 2,000 m
Storage altitude	None
IP rating	IP 40
Vibration requirements	Random 2 g, 5 Hz to 500 Hz
Drop test	Passes 1 meter drop test (except the jaw)
EMI, RFI, EMC	Meets applicable requirements in EN61326-1 Note: For current measurement w/jaw, add 1 mA to specification for EMC field strengths of 1 V/m up to 3 V/m
Temperature coefficients	0.1/°C x specified accuracy for temperature < 18 °C or > 28 °C)
Warranty	Three-years, one-year on mA clamp assembly and cable



Fluke. Keeping your world up and running.®

Ordering information

- Fluke-772** Milliamp Process Clamp Meter
- Fluke-773** Milliamp Process Clamp Meter

Included accessories

Soft carrying case, test leads, alligator clips, hanging strap and user's manual.

