Technical Data

Fluke 787B and 789 ProcessMeter™



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.



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

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
- 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)

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		

General specifications

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

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
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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