

## 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**

<b>Influence of earth's field</b>	< 0.12 mA
<b>Battery</b>	(4) 1.5 V, Alkaline, IEC LR6
<b>Working hours</b>	12 hours @ 12 mA source into 500 ohms
<b>Size (HxWxL)</b>	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)
<b>Weight</b>	772, 773: 415 g (14 oz) 771: 260 g, (9.1 oz)
<b>Operating temperature</b>	-10 °C to 50 °C
<b>Storage temperature</b>	-25 °C to 60 °C
<b>Operating humidity</b>	< 90 % @ < 30 °C; < 75 % @ 30 ~ 55 °C
<b>Operating altitude</b>	0 ~ 2,000 m
<b>Storage altitude</b>	None
<b>IP rating</b>	IP 40
<b>Vibration requirements</b>	Random 2 g, 5 Hz to 500 Hz
<b>Drop test</b>	Passes 1 meter drop test (except the jaw)
<b>EMI, RFI, EMC</b>	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
<b>Temperature coefficients</b>	0.1/°C x specified accuracy for temperature < 18 °C or > 28 °C)
<b>Warranty</b>	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.



# Fluke Connect™ ir3000 FC Connector

## Technical Data

Connect your Fluke test tool with the ir3000 FC Connector and get all the benefits of the Fluke Connect mobile app



If you already have one of the tools below in your tool box or tool belt or are considering purchasing one, add the ir3000 FC Connector so you can communicate with Fluke Connect™ app.

- Fluke Connect ir3000 FC Connector allows you to wirelessly transfer data from your existing Fluke tools to your smart phone
- Fits over the IR port of your existing Fluke tools
- Immediately enables you to graph, save, and share the tool's readings with your team from your smart phone
- Identify and diagnose problems quickly and confidently
- Efficiently and safely capture real-time readings of the primary display from the field
- Share results instantly with your team
- Upgradeable by USB

**Supported Fluke tools:**

- Digital Multimeter: 287, 289
- Process Tool: 789

**Supported smart phones:**

- Android™ 4.4 & up
- iPhone® 4s & later

Review the information on both models below to ensure you are selecting the one that supports your existing Fluke tool. Next, download the Fluke Connect mobile app from the Apple or Google app store and get started.



Built with  
**FLUKE  
CONNECT™**

**See it. Save it. Share it.**  
**All the facts, right in the field.**

Fluke Connect with ShareLive™ video call is the only wireless measurement system that lets you stay in contact with your entire team without leaving the field. The Fluke Connect mobile app is available for Android™ (4.4 and up) and iOS (4s and later) and works with over 20 different Fluke products—the largest system of connected test tools in the world. And more are on the way. Go to the Fluke website to find out more.

Make the best decisions faster than ever before by viewing all temperature, mechanical, electrical and vibration measurements for each equipment asset in one place. Get started saving time and increasing your productivity.

Download the app at:



Smart phone, wireless service and data plan not included with purchase.

## General specifications

<b>Model</b>	FLUKE-IR3000FC
<b>Battery type</b>	Two AAA Alkaline batteries, ANSI-24A IEC-LR03
<b>Battery life</b>	6 hours of continuous transmission
<b>RF communications</b>	2.4 GHz ISM Band
<b>RF communication range</b>	Open air, unobstructed: Up to 20 m Obstructed, sheetrock wall: Up to 6.5 m Obstructed, concrete wall or steel electrical enclosure: Up to 3.5 m
<b>Temperature</b>	Operating: -10 °C to 50 °C Storage: -20 °C to 60 °C
<b>Certifications</b>	CSA, FCC, CE, IC
<b>Warranty</b>	Three years
<b>Weight</b>	80 g
<b>Size (HxWxL)</b>	3.2 cm x 7.6 cm x 6.4 cm (1.25 in x 3.0 in x 2.5 in)
<b>Compatibility</b>	Fluke 187, 189, 287, 289, 789

## Ordering information

**FLUKE-IR3000FC** Fluke Connect ir3000 FC Connector

RF connection time (binding time) may take up to 1 minute.

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