

TECHNICAL DATA

Fluke 287 True-rms Electronics Logging Multimeter with TrendCapture

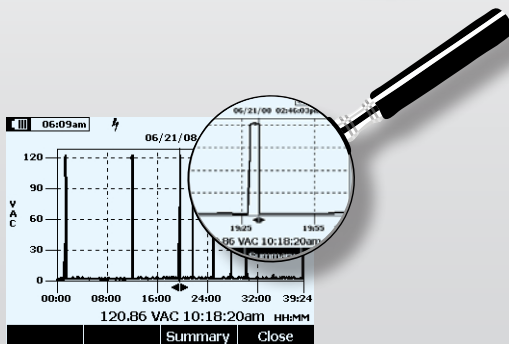


The best just got better

The Fluke 287 True-rms Electronics Logging Multimeter with TrendCapture quickly documents design performance and graphically displays what happened. Its unique logging and graphing capabilities mean you no longer need to download logged readings to a PC to detect a trend. The Fluke 287 packs more accuracy and convenience into a handheld multimeter than ever before.

Features

- TrendCapture quickly graphically displays logged data session to quickly determine whether anomalies may have occurred
- Zoom on trend provides unprecedented ability to view and analyze TrendCapture data; zoom in up to 14 times
- Selectable ac filter (Smoothing mode) helps display a steadier reading when the input signal is changing rapidly or noisy
- Adjustable recording and auto hold thresholds, specify a percentage change in the readings that begins a new event
- Large 50,000 count, 1/4 VGA display with white backlight. Multiple sets of measurement information can be simultaneously displayed at the same time.
- Logging function with expanded memory for unattended monitoring of signals over time. Using on-board TrendCapture users can graphically review logged readings without needing a PC. Store up to 15,000 recorded events.
- **i** button. On board help screens for measurement functions
- Saved measurements allow you to name and recall measurements made in the field
- Multi-lingual interface
- Multiple logging sessions possible without download
- 0.025 % basic dc accuracy
- 100 kHz ac bandwidth
- Real time clock for automatic time stamping of saved readings
- True-rms ac voltage and current for accurate measurements on complex signals or non linear loads. AC bandwidth specified to 100 kHz.
- Measure up to 10 A (20 A for 30 seconds)
- 100 mF capacitance range
- Temperature function
- Relative mode to remove test lead resistance from low ohms or capacitance measurements
- Peak capture to record transients as fast as 250 μs
- Premium test leads and alligator clips included
- Optional FlukeView forms enables you to document, store and analyze individual readings or a series of measurements, then convert them into professional-looking documents
- Optional magnetic hanger allows you to hang the meter for easy viewing while freeing your hands to focus on the job
- Limited lifetime warranty



TrendCapture displays vDC logged date.

EQUIPPED WITH NEW FUNCTIONALITY

Compatible with Fluke Connect mobile app and all Fluke FC enabled test tools with optional ir3000 FC infrared connector (sold separately).

TALK WITH YOUR TEAM

Let your team see what you see in an instant with ShareLive™ video call (requires Fluke Connect mobile app and ir3000 FC wireless connector).

Specifications

Function	Range and Resolution	Basic Accuracy
DC volts AC volts	50.000 mV, 500.00 mV, 5.0000 V, 50.000 V, 500.00 V, 1000.0 V	0.025 % 0.4 % (true-rms)
DC current AC current	500.00 μ A, 5000.0 μ A, 50.000 mA, 400.00 mA, 5.0000 A, 10.000 A	0.15 % 0.7 % (true-rms)
Temperature (excluding probe)	-200.0 °C to 1350.0 °C (-328.0 °F to 2462.0 °F)	1.0 %
Resistance	500.00 Ω , 5.0000 k Ω , 50.000 k Ω , 500.00 k Ω , 5.0000 M Ω , 50.00 M Ω , 500.0 M Ω	0.05 %
Capacitance	1.000 nF, 10.00 nF, 100.0 nF, 1.000 μ F, 10.00 μ F, 100.0 μ F, 1000 μ F, 10.00 mF, 100 mF	1.0 %
Frequency	99.999 Hz, 999.99 Hz, 9.9999 kHz, 99.999 kHz, 999.99 kHz	0.005 %
Additional functions/features		
Multiple on screen displays	Yes	
True-rms ac bandwidth	100 kHz	
dBV/dBm	Yes	
DC mV resolution	1 μ V	
Megohm range	up to 500 M	
Conductance	50.00 nS	
Continuity beeper	Yes	
Battery/fuse access	Battery/fuse	
Elapse time clock	Yes	
Time of day clock	Yes	
Min-max-avg	Yes	
Peak	250 μ S	
Duty cycle	0.01 % to 99.99 %	
Pulse width	0.025 ms, 0.25 ms, 2.5 ms, 1250.0 ms	
Hold	Yes	
Isolated optical interface	Yes	
Auto/touch hold	Yes	
Reading memory	Yes	
Log to PC	Yes	
Interval/event logging	Yes	
Logging memory	up to 10,000 readings	
General specifications		
Maximum voltage (between any terminal and earth ground)	1000 V	
Battery type	6 AA alkaline batteries, IEC LR6	
Battery life	100 hours minimum, 200 hours in logging mode	
Temperature		
Operating	-20 °C to 55 °C	
Storage	-40 °C to 60 °C	
Relative humidity	0 to 90 % (0 to 37 °C), 0 to 65 % (37 °C to 45 °C), 0 to 45 % (45 °C to 55 °C)	
Electromagnetic compatibility	IEC 61326-1: Portable	
Safety	IEC 61010-1 Pollution degree 2 IEC 61010-2-033: CAT IV 600 V, CAT III 1000 V	
Size (HxWxL)	22.2 cm x 10.2 cm x 6 cm (8.75 in x 4.03 in x 2.38 in)	
Weight	870.9 g (28 oz)	

Ordering information

287 True-rms Electronics Logging Multimeter with TrendCapture

Optional accessories

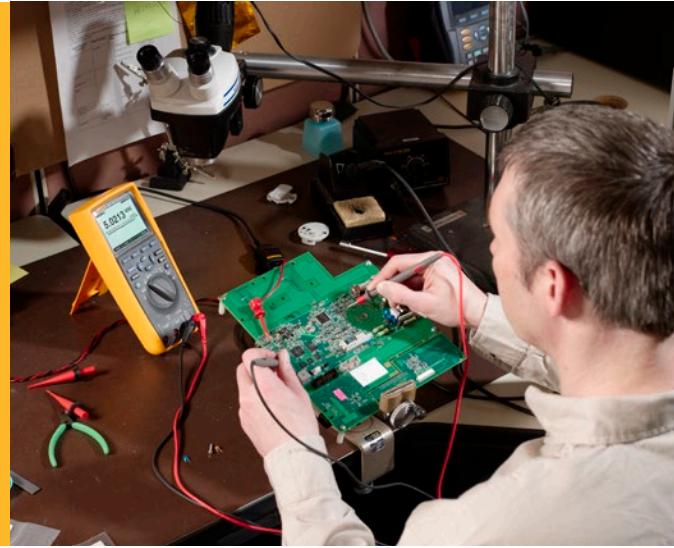
FVF-SC2 FlukeView™ Forms Software with Cable

80BK Integrated DMM Temperature Probe

TLK287 Electronic Test Lead Set

TPAK Magnetic Hanging Kit

C280 Soft Case



TECHNICAL DATA

Fluke 287 FlukeView® Forms Combo Kit



Fluke Connect® compatible

FLUKE-287/FVF KIT INCLUDES:

- Fluke-287 True-rms Electronic Logging Multimeter with TrendCapture
- FlukeView Forms Software and cable
- 80BK-A Thermocouple Probe
- CAT III 1000 V 10 A Modular test leads (red, black)
- CAT II 1000 V 10 A Modular test probes (red, black) and caps
- CAT III 1000 V 10 A Alligator Clips (red, black)
- C280 Soft Case for meter protection and accessory storage
- Amp Jack Plug Set
- TPAK Magnetic Meter Hanger for Hands-free Operation
- Requires Fluke ir3000 FC Infrared Connector for Fluke Connect communication (not included with this kit)

Maximize productivity with the combined Fluke 287 and FlukeView® forms combo kit. Designed for today's professionals involved in the R&D, maintenance, manufacture and design of electronic circuits or systems. With built-in data logger and TrendCapture™ (the meters on screen graphical display) capability, the 287 helps you track down elusive, intermittent problems or monitor equipment with any of its functions. FlukeView Forms enables you to document, store, and analyze individual readings or series of measurements, overlay logged data to find cause and effect relationships, or turn your data into meaningful graphs and tables for a professional report. The 287 is compatible with the new Fluke ir3000 FC Infrared Connector, allowing you to share live measurements on your iOS or Android smart device with the Fluke Connect mobile app. The 287/FVF combo kit gives you a practical and affordable approach to documenting circuit design performance.

287 functions/features

Multiple on screen displays	Yes
True-rms ac bandwidth	100 kHz
dBV/dBm	Yes
DC mV resolution	1 μ V
Megohm range	up to 500 M Ω
Conductance	50.00 nS
Continuity beeper	Yes
Temperature (°C and °F)	-200 °C to 1350 °C
Battery/fuse access	Yes/Yes
Elapse time clock	Yes
Time of day clock	Yes
Min-Max-Avg	Yes
Frequency	Yes
Duty cycle/pulse width	Yes
Info button on board help	Yes
Hold	Yes
Isolated optical interface	Yes
Auto/touch hold	Yes
Reading memory	Yes
Log to PC	Yes
On board logging with TrendCapture	Yes
Logging memory	up to 10,000 readings



Preventive maintenance simplified. Rework eliminated.

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

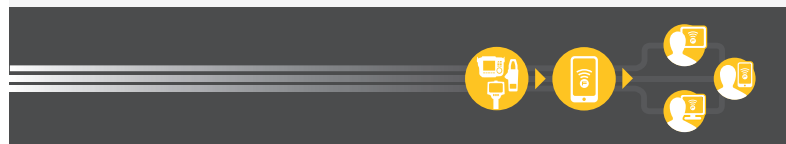
- Eliminate data-entry errors by saving measurements directly from the tool and associating them with the work order, report or asset record.
- Maximize uptime and make confident maintenance decisions with data you can trust and trace.
- Move away from clipboards, notebooks and multiple spreadsheets with a wireless one-step measurement transfer.
- Access baseline, historical and current measurements by asset.
- Share your measurement data using ShareLive™ video calls and emails.
- The 287 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

Fluke-287/FVF True-rms Logging Multimeter Combo Kit with TrendCapture

Optional accessories

IR3000FC Fluke Connect Infrared Connector



All trademarks are the property of their respective owners. WiFi or cellular service required to share data. Smartphone, wireless service and data plan not included with purchase. First 5 GB of storage is free. **Smart phone wireless service and data plan not included with purchase. Fluke Connect is not available in all countries.**

287 specifications

Function	Range and resolution	Basic accuracy
DC volts	50.000 mV, 500.00 mV, 5.0000 V, 50.000 V, 500.00 V, 1000.0 V	0.025 %
AC volts		0.4 % (true-rms)
DC current	500.00 µA, 5000.0 µA, 50.000 mA, 400.00 mA, 5.0000 A, 10.000 A	0.05 %
AC current		0.6 % (true-rms)
Temperature (excluding probe)	-200.0 °C to 1350.0 °C (-328.0 °F to 2462.0 °F)	1.0 %
Resistance	500.00 Ω, 5.0000 kΩ, 50.000 kΩ, 500.00 kΩ, 5.0000 MΩ, 50.00 MΩ, 500.0 MΩ	0.05 %
Capacitance	1.000 nF, 10.00 nF, 100.0 nF, 1.000 µF, 10.00 µF, 100.0 µF, 1000 µF, 10.00 mF, 100.00 mF	1.0 %
Frequency	99.999 Hz, 999.99 Hz, 9.9999 kHz, 99.999 kHz, 999.99 kHz	0.005 % + 1

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

Model	FLUKE-IR3000FC
Battery type	Two AAA Alkaline batteries, ANSI-24A IEC-LR03
Battery life	6 hours of continuous transmission
RF communications	2.4 GHz ISM Band
RF communication range	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
Temperature	Operating: -10 °C to 50 °C Storage: -20 °C to 60 °C
Certifications	CSA, FCC, CE, IC
Warranty	Three years
Weight	80 g
Size (HxWxL)	3.2 cm x 7.6 cm x 6.4 cm (1.25 in x 3.0 in x 2.5 in)
Compatibility	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.

Footnote: All trademarks are the property of their respective owners. Smart phone, wireless service and data plan not included with purchase. First 5 GB of storage is free. Compatible with iPhone 4x and up running iOS 7 or higher, iPad (in an iPhone frame on iPad) and Galaxy S4, Nexus 5, HTC One running Android™ 4.4.x or higher. Apple and the Apple logo are trademarks of Apple Inc. registered in the U.S. and other countries. App Store is a service mark of Apple Inc. Google Play is a trademark of Google Inc.

287/289

True-rms Digital Multimeters

Safety Information

A **Warning** identifies conditions and procedures that are dangerous to the user.

Warning

To prevent possible electrical shock, fire, or personal injury:

- Read “Safety Information” before using this Meter.
- Use this Meter only as specified in this manual or the protection provided by the Meter might be impaired.
- Do not use the Meter if it is damaged. Before you use the Meter, inspect the case. Look for cracks or missing plastic. Pay particular attention to the insulation surrounding the connectors.
- Make sure the battery door is closed and latched before operating the Meter.
- Remove test leads from the Meter before opening the battery door.
- Inspect the test leads for damaged insulation or exposed metal. Check the test leads for continuity. Replace damaged test leads before you use the Meter.
- Do not apply more than the rated voltage, as marked on the Meter, between the terminals or between any terminal and earth ground.
- Never operate the Meter with the cover removed or the case open.
- Use caution when working with voltages above 30 V ac rms, 42 V ac peak, or 60 V dc. These voltages pose a shock hazard.
- Use only the replacement fuses specified by the manual.
- Use the proper terminals, function, and range for measurements.

- **Avoid working alone.**
- **When measuring current, turn off circuit power before connecting the Meter in the circuit. Remember to place the Meter in series with the circuit.**
- **When making electrical connections, connect the common test lead before connecting the live test lead; when disconnecting, disconnect the live test lead before disconnecting the common test lead.**
- **Do not use the Meter if it operates abnormally. Protection may be impaired. When in doubt, have the Meter serviced.**
- **Do not operate the Meter around explosive gas, vapor, or dust.**
- **Use only 1.5 V AA batteries, properly installed in the Meter case, to power the Meter.**
- **When servicing the Meter, use only specified replacement parts.**
- **When using probes, keep fingers behind the finger guards on the probes.**
- **Do not use the Low Pass Filter option to verify the presence of hazardous voltages. Voltages greater than what is indicated may be present. First, make a voltage measurement without the filter to detect the possible presence of hazardous voltage. Then select the filter function.**
- **Only use test leads that have the same voltage, category, and amperage ratings as the meter and that have been approved by a safety agency.**
- **Use proper protective equipment, as required by local or national authorities when working in hazardous areas.**
- **Comply with local and national safety requirements when working in hazardous locations.**
- **To avoid circuit damage and possibly blowing the Meter's current fuse, do not place the probes across (in parallel with) a powered circuit when a lead is plugged into a current terminal. This causes a short circuit because the resistance through the Meter's current terminals is very low.**
- **To avoid possible electric shock or personal injury, do not use the Low Pass Filter option to verify the presence of hazardous voltages. Voltages greater than what is indicated may be present. First, make a voltage measurement without the filter to detect the possible presence of hazardous voltage. Then select the filter function.**
- **To avoid the potential for fire or electric shock, do not connect the thermocouple to electrically live circuits.**

- To avoid damage to the Meter and possible injury, never attempt an in-circuit current measurement where the open-circuit potential to earth is greater than 1000 V.
- To avoid electrical shock or personal injury, repairs or servicing not covered in this manual should be performed only by qualified personnel as described in the 287/289 Service Information.
- To avoid electrical shock or personal injury, remove the test leads and any input signals before replacing the battery or fuses. To prevent damage or injury, install *only* Fluke specified replacement fuses with the amperage, voltage, and speed ratings shown in the User's Manual.
- Do not exceed the Measurement Category (CAT) rating of the lowest rated individual component of a Product, probe, or accessory.
- Do not use the TL175 or TP175 test probes in CAT III or CAT IV environments without the probe tip fully extended and correct category rating visible in the window.
- When the TL175 is used with instruments or other accessories, the lowest category rating of the combination applies. One exception is when the probe is used with the AC172 or AC175.
- Measure a known voltage first to make sure that the Meter operates correctly. If you are unsure, have the Meter examined.

Safety Specifications

Battery Type: 6 AA Alkaline batteries, IEC LR6

Temperature:

Operating: -20 °C to +55 °C

Storage: -40 °C to +60 °C

Altitude: Operating: 3,000 m; Storage: 10,000 m

Frequency Overload Protection: Input is limited to the product of a V rms sinewave times frequency of 2×10^7 V-Hz.

Maximum voltage between any Terminal and Earth Ground:
1000 V

Fuse Protection for mA or μ A inputs: 0.44 A, 1000 V, IR,
10 kA

Fuse Protection for A input: 11 A, 1000 V, IR 17 kA

Safety
















General IEC 61010-1: Pollution Degree 2

Measurement IEC 61010-031: CAT IV 600V / CAT III 1000V

Electromagnetic Compatibility

IEC 61326-1: Portable Electromagnetic Environment;
IEC 61326-2-2

Symbols

Symbol	Description
	WARNING - RISK OF DANGER.
	WARNING. HAZARDOUS VOLTAGE. Risk of electric shock.
	Consult user documentation
	Battery
	Fuse
	AC (Alternating Current or Voltage)
	DC (Direct Current or Voltage)
	Continuity test or continuity beeper tone
	Conforms to European Union directives
	Conforms to relevant North American Safety Standards.
	Conforms to relevant Australian Safety and EMC standards.
	Conforms to relevant South Korean EMC Standards.
CAT II	Measurement Category II is applicable to test and measuring circuits connected directly to utilization points (socket outlets and similar points) of the low-voltage MAINS installation.
CAT III	Measurement Category III is applicable to test and measuring circuits connected to the distribution part of the building's low-voltage MAINS installation.
CAT IV	Measurement Category IV is applicable to test and measuring circuits connected at the source of the building's low-voltage MAINS installation.
	Double Insulation
	Earth ground
	This product complies with the WEEE Directive marking requirements. The affixed label indicates that you must not discard this electrical/electronic product in domestic household waste. Product Category: With reference to the equipment types in the WEEE Directive Annex I, this product is classed as category 9 "Monitoring and Control Instrumentation" product. Do not dispose of this product as unsorted municipal waste.