DISTRIBUTED BY COLTERLEC™

FLUKE

TECHNICAL DATA

Fluke GFL-1500 Solar Ground Fault Locator

END-TO-END FAULT SOLUTION

Identifyand locate activeground faults anywhere in the DC system with an easy-to-follow traceable signal

REDUCED TROUBLESHOOTING TIME

Reduce theamount oftime ittakes to locate active ground faults and decrease your exposure to electrical hazards with non-contact signal tracing

WORK SAFELY

CAT III 1500 V DC/CAT IV 600 V rated GFL-1500 Transmitter and GFL-1500 Receiver, with a GFL-1500 Clamp rated for use on insulated conductors up to 1500 V.

Revolutionise Fault Location, Maximise Solar Production

TheFlukeGFL-1500 Solar GroundFaultLocator isa frontline troubleshooting tool that helps technicians quickly pinpoint active ground faults in solar photovoltaic (PV) systems. It works by producing a traceable signal in the array, allowing for fast, intuitive, non-contact tracing directly to the fault location. This innovative approach eliminates the frustration of time-consuming, brute-force troubleshooting and reduces unnecessary exposure to electrical hazards.

In addition to improving safety and reducing downtime, this innovative solution redefines how technicians locate active ground faults in solar PV systems. By replacing complex, manual diagnostics with an easy-to-follow trace signal, the GFL-1500 streamlines fault isolation, helping teams restore system operation quickly and effectively.

The GFL-1500 Ground Fault Locator is a three-piece troubleshooting system designed to optimise technician workflow in the field, enabling faster and more confident fault resolution. This gives site managers greater assurance in system performance and uptime. The GFL-1500 system consists of the GFL-1500 Transmitter, GFL-1500 Receiver, and GFL-1500 Signal Tracing Clamp.

FaultTrack™ Technology — Solar Ground Fault Detection

The GFL-1500 utilises FaultTrackTM Technology to detect active faults and generate a traceable signal through the fault path, enabling technicians to follow that signal from the transmitter through the faulted path to the precise point of failure. Pinpointing the exact location of an active fault used to be a challenge—with FaultTrackTM Technology, that work is easier than ever.

In large-scale solar arrays, the challenge of finding active faults is often exacerbated by the difficulty of identifying string layouts with incomplete or outdated documentation. With a general understanding of your site's configuration, just a few connections, and non-contact tracing, the GFL-1500 enables technicians to identify the faulted branch and pinpoint the fault location within a string—without relying on detailed site maps or time-consuming test procedures. By combining multiple diagnostic functions into a single, easy-to-use system, the GFL-1500 delivers an unmatched ability to locate faults with non-contact signal tracing, making it an essential tool for high-efficiency solar maintenance and troubleshooting.

Ease-of-Use and Time Savings

The GFL-1500 is built to simplify solar ground fault detection in the field. From a central test location, technicians can begin tracing the fault path without repeatedly disconnecting conductors and brute-force testing each individual string. This streamlined approach saves valuable time and increases troubleshooting safety, enabling your team to solve problems quickly and confidently.

The GFL-1500 system includes both a signal tracing receiver and clamp, each suited to different stages of the diagnostic process. The clamp is especially useful for identifying the faulted combiner or string without making disconnections, even in noisy environments where signal clarity may be reduced. Once the affected solar string is identified, the signal tracing receiver or clamp can be used to precisely follow the fault path and pinpoint the issue within the string.

Designed for real-world conditions, the GFL-1500 is intuitive to operate, quick to deploy, and built for harsh environments, delivering an end-to-end troubleshooting solution that enables technicians to move efficiently from problem to resolution.

GFL-1500 Transmitter

Integrated Diagnostic Function

Analyse Function

Quickly identifiesthe presence of an active fault and provides key diagnostic details, such as estimated location of the fault based on the number of modules in the string, estimated resistance range and voltage to ground, enabling technicians to assess system status before they start tracing.

Fault Tracing Function

Guidestechniciansalongthe fault path using real-time audio-visual signal feedback, allowing for accurate and efficient localisation of the fault within the array.

Open Circuit Function

Helpstechnicians locate breaksin wiring within isolated strings by routing a traceable signal through the open circuit, giving technicians real-time audio-visual signal feedback to guide them directly to the point of interruption.

Mapping Function

Routes thetraceable signalthrough a healthy string, allowing technicians to identify and confirm string layout, which is especially helpful in complex or undocumented arrays.

Safety and Compliance

As utility-scale PV systems increasingly adopt 1500 V DC architectures, the demand for safe, accurate, higher voltage-rated diagnostic tools continues to grow. High-voltage DC systems offer greater efficiency through longer strings and fewer components, but they also operate at voltages that require heightened safety awareness and specialised equipment for troubleshooting. The Fluke GFL-1500 system includes:

- **Transmitter:** CAT III 1500 V DC, CAT IV 600 V, meets the rigorous safety standards outlined in IEC 61010-1 and 61010 -2- 0 3 0 .
- **Receiver:** CAT III 1500 V DC, CAT IV 600 V, meets IEC standard 61010 -1.
- **Signal Tracing Clamp:** Rated for use on insulated conductors up to 1500 V.

Whether you're working at the inverter, combiner, or module level, the GFL-1500 Ground Fault Locator has been rigorously tested for safety and durability to provide a rugged, safe, fast, and reliable solution for identifying ground faults in high-voltage environments—empowering technicians to work confidently and efficiently in the field.

Specif ications

General	Transmitter	Receiver	Clamp
Measurement category	CAT III 1500 V DC / CAT IV 600 V		Not category rated. Use on insulated conductors only, up to 1500 V
Operating voltage	1500 V DC / 600 V AC		Non-contact. Use on insulated conductors only, up to 1500 V
Trace signal operating frequency	FAULT & MAP: 6.25 kHz OPEN: 32.764 kHz		N/A
Trace signal indications	Graphical display, audible beep	Numeric, bar graph display, audible beep, LED	AC current
Trace signal current output (typical)	FAULT & MAP: Array HIGH mode: 30 mA RMS Array LOW mode: 6 mA RMS Unit HIGH mode: 120 mA RMS OPEN: Unit HIGH mode: 100 mA RMS Unit LOW mode: 30 mA RMS	N/A	N/A
Trace signal voltage output - open circuit (typical)	FAULT & MAP: Unit HIGH mode: 30 V RMS OPEN: Unit HIGH mode: 30 V RMS Unit LOW mode: 25 V RMS	N/A	N/A
Voltage range / Resolution (ANALYSE)	Range: 0-1500 V DC Resolution: 1 V No voltage measurement if high capacitance & resistance detected	N/A	N/A
Resistance ranges (ANALYSE)	≈ <5 kΩ (FAULT) ≈ 10 kΩ (FAULT) ≈ 50 kΩ ≈ 100 kΩ ≈ 500 kΩ ≈ >1 MΩ No resistance range if high capacitance & resistance detected	N/A	N/A
Range detection (typical)	N/A	FAULT & MAP: Array Mode Max distance via air: 4.75 m (15.6 ft) FAULT & MAP: Unit Mode Max distance via air: 5.9 m (19.4 ft) OPEN: Unit Mode Max (open air): 2.7 m (8.9 ft)	N/A
AC Current Measurement	**Transmitter**	**Receiver**	**Clamp**
Range	N/A	N/A	150 mA
Resolution	N/A	N/A	0.1 mA
Maximum conductor diameter	N/A	N/A	61 mm

Specif ications

Display Display type	Transmitter	Receiver	Clamp
Illumination Environmental	Graphic LCD Display		Segment LCD Display
Operating	Front light		Back light
temperature	**Transmitter**	**Receiver**	**Clamp**
	-20 °C to 50 °C		-10 °C to 50 °C
Operating Humidity (non-condensing)	95 %RH: 0 °C to <30 °C 75 %RH: 30 °C to <40 °C 45 %RH: 40 °C to 50 °C		90 %RH: 10 °C to <30°C 75 %RH: 30 °C to <40 °C 45 %RH: 40 °C to 50 °C
Operating Altitude	0 to 3 000 m		
Storage altitude	0 to 12 000 m		
Storage temperature and humidity (without batteries)	-20 °C to 70 °C, <95 %RH		-40 °C to 60 °C, <95 %RH
Transient protection	10.00 kV (1.2/50 µS surge)	N/A	N/A
Pollution degree	2		
IP rating	IP54 (Non-operating)	IP54	IP30 (Jaw Closed)
Drop test	1 m		
specifications	**Transmitter**	**Receiver**	**Clamp**
Power supply	8 x AA IEC LR6 alkaline or NiMH rechargeable	4 x AA IEC LR6 alkaline or NiMH rechargeable	2 x AA IEC LR6 alkaline
Battery life (typical) No buzzer or front light	FAULT & MAP Array Mode: approx. 15 h FAULT & MAP Unit Mode: approx. 8 h OPEN Unit Mode: approx. 15 h	Approx. 16 h	>150 h (without backlight and spotlight)
Low battery indication	Yes		
Dimensions (L x W x H)	Approx. 244 x 180 x 106 mm	Approx. 183 x 75 x 43 mm	Approx. 257 x 116 x 46 mm
Weight (batteries installed)	Approx. 2.04 kg	Approx. 0.27 kg	Approx. 0.6 kg

Test Lead Kit General Specifications

General specifications	
Includes	3x TL324 4mm to 4mm test leads (red, black, green),3x AC385 alligator clips (red, black, green), 2x TLPV1 MC4 to 4mm test leads (red, black)
Measurement category	CAT III 1500 V / CAT IV 1000 V (TL324 and AC385) CAT III 1500 V / CAT IV 600 V (TLPV1)
Operating current	30 A
Operating temperature	-20 °C to 50 °C
Storage temperature	-20 °C to 70 °C
Operating and storage humidity	95 %RH: 10 °C to <30 °C 75 %RH: 30 °C to <40 °C 45 %RH: -20 °C to <10 °C or 40 °C to 50 °C, non-condensing
Operating altitude	3000 m
Storage altitude	12 000 m
Pollution degree	2
Drop proof	1 m
Vibration	MIL-PRF-28800, class 2
Dimensions	TL324: 2 m, AC385: approx. 93 x 52 x 21 mm, TLPV1: 1.5 m
Weight	Approx. 0.48 kg

Ordering information

Model	Description
FLUKE-GFL-1500	1500 V Solar Ground Fault Locator. Includes: GFL-1500 Transmitter, GFL-1500 Receiver, GFL-1500 Clamp, MC4 Test Leads, 1500 V rated test leads, alligator clips, MC4 unlocking tool, soft carrying case, backpack style shoulder strap, AA Alkaline batteries (14)

Complimentary products

- **TL324-RGB** 1500 V rated test leads for the GFL-1500 Solar Ground Fault Locator
- **AC385-RGB** 1500 V rated alligator clips for use with TL324-RGB test leads
- **283 FC/PV** 1500 V rated TRMS digital multimeter and wireless current clamp
- **393 FC** 1500 V rated current clamp
- **PVA-1500** PV Analyser I-V Curve Tracer
- **PRV240** Proving unit
- **TLPV-UTOOL** MC4 unlocking tool

Fluke. Keeping your world up and running.™

Fluke Australia
4/42 Carrington Road
Castle Hill NSW 2154
Australia
Phone: 02 8850 3333
Web: www.fluke.com.au
Email: auinfo@fluke.com

©2025 Fluke Corporation.
Specifications subject to change without notice.
250458-en

Modification of this document is not permitted without written permission from Fluke Corporation.

COLTERLEC™
For more information
Call 1300 36 26 26 | sales@colterlec.com.au | www.colterlec.com.au