

# BGFT

## Battery Ground Fault Tracer



- Easily locates ground faults in ungrounded dc systems
- Operates in high electrical noise environment
- High/low switch provides the needed safety and power to locate high impedance faults
- Locates faults on systems with high capacitance

### DESCRIPTION

The Battery Ground Fault Tracer is an economical, easy-to-use instrument that identifies, traces and locates ground faults in ungrounded dc systems — on-line. It is particularly effective in high electrical noise environments, as the strength of the test signal can be adjusted.

The Battery Ground Fault Tracer accelerates fault location by eliminating trial-and-error procedures and because faults can be located without going off-line. It is particularly useful in any industry where supply of power for operating measurement, communication and control equipment is critical.

The high/low power switch provides the capability of locating high impedance faults with the switch in the 50 V range. In the 15 V range, the switch provides added safety.

### APPLICATIONS

The Battery Ground Fault Tracer, which consists of a line operated transmitter and a portable, battery-powered receiver, determines fault magnitude and severity. The transmitter connects to the battery bus and station ground.

Incorporating a resistance and capacitance bridge, the transmitter can be used to determine the fault's magnitude and severity prior to tracking the fault.

System capacitance can then be nulled from the measurement to prevent erroneous readings on the receiver. Immune to distributed noise in the system, Battery Ground Fault Tracer readings are unaffected by the presence of dc current and ac ripple up to 15 Amperes.

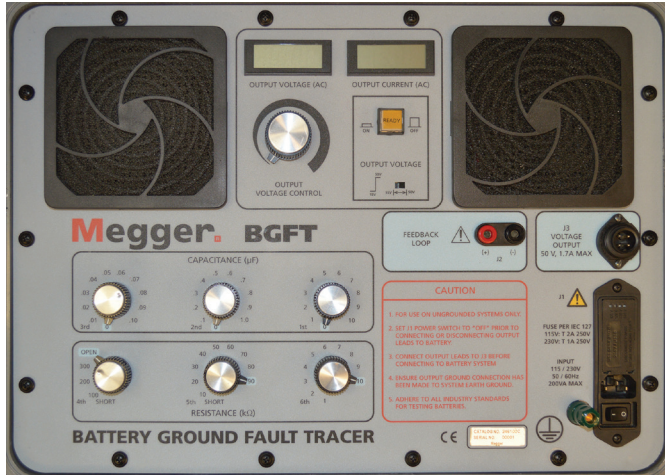
The transmitter can be left behind during tracing, which is performed quickly and easily using the hand-held receiver and clamp-on probe. The receiver provides digital display of signal amplitude, with a multiposition switch to adjust gain for optimal display resolution.

### PRINCIPLE OF OPERATION

The Battery Ground Fault Tracer transmits a 20 Hz signal through an energized or de-energized dc system. Feeder cables are tested for signal amplitude, which is inversely proportional to the fault impedance. Faults up to 399 k $\Omega$  are easily traced and isolated by clamping a direction-sensitive probe on the feeder cable and monitoring signal strength on the hand-held receiver.

### FEATURES AND BENEFITS

- Digital display of voltage and current signal amplitudes.
- Bridge measurement of fault resistance and system capacitance. (The use of the bridge is optional.)
- Wide fault resistance measurement range from 1 k $\Omega$  to 399 k $\Omega$ .
- Immune to distributed noise.
- Soft-start charging system to prevent sensitive relay tripping.
- Convenient, hand-held receiver.



- Receiver gain control for optimal display resolution.
- The ICLAMP will not seize up when placed on lines with high levels of DC current.

**SPECIFICATIONS**

**Power Source**

Transmitter: 246100C: 115 V AC ±10% @ 50/60Hz, 200 VA max  
 246100C-47: 230 V AC ±10% @ 50/60Hz, 200 VA max  
 Receiver: One 9-volt alkaline battery supplies up to 40 hours continuous use at 20° C (estimated).

**Source Voltage**

Variable from 0 to 15 V rms in low range  
 Variable from 0 to 50 V rms in high range

**Source Current**

Load dependent from 0 to 1.7 A rms

**Source Frequency**

20 Hz, ±2%

**Fault Resistance**

1 kΩ to 399 kΩ at 50 V; bridge accuracy ±10%

**Line Capacitance**

0.01 to 11.1 μF; bridge accuracy ±20%

**Display**

Transmitter: Separate 3-digit LCD meters for volts and current  
 Accuracy: ±5%  
 Receiver: Digital meter display up to 1.999 (three gain selections)

**Temperature Range**

Operating: 32° F to 105° F (0° C to 40° C)  
 Storage: -5° F to +130° F (-20° C to +55° C)

**Dimensions**

Transmitter: 7.5 H x 18.5 W x 14.6 D in. (19 H x 47 W x 37 D cm)  
 Receiver: 1.5 H x 3.5 W x 7.5 D in. (4 H x 9 W x 19 D cm)

**Weight**

Transmitter: 35 lb (15.9 kg)  
 Receiver: 0.66 lb (0.3 kg)

ORDERING INFORMATION	
Item (Qty)	Cat. No.
Dual-range Battery Ground Fault Tracer, 120 V AC, 50/60 Hz	246100C
Dual-range Battery Ground Fault Tracer, 230 V AC, 50/60 Hz	246100C-47
<b>Included Accessories</b>	
Fused source leads with interchangeable clamps, 20 ft (6 m) [1 pr]	29386-5
ICLAMP, 2 in. (50 mm) ID, with leads, 6 ft (1.8 m) [1 pr]	1009-339
US - AC power cord (with C/N 246100C only) [1]	17032
UK & EU - AC adapter kit (with C/N 246100C-47 only) [1]	2009-874
Feedback cable, 40 ft (12 m) [1]	29998
Padded accessory bag [1]	29996
Battery, 9 volt [1]	1482-1
Operator's manual [1]	AVTM246100C
<b>Optional Accessories</b>	
Mini-CT, 0.5 in. (12 mm) with 4.25 ft (1.3 m) lead	30595
Breaker panel current clamp	1012-351

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