COM-POWER

RF CURRENT PROBE
CLCE-227 V1.0

Features

- Frequency Range: 9 kHz to 230 MHz
- Fully Compliant with CISPR 16-1-2, Mil-Std 461 & DO-160
- 27 mm Probe Aperture Accommodates Cable Bundle Diameters up to one inch
- Suitable for Compliance-Level Conducted Emission Measurements and Current Monitoring During Conducted Susceptibility Tests
- Individual Calibration Included
- Three-Year Standard Warranty

Description

The CLCE-227 RF Current Probe is part of Com-Power's extensive line of radio frequency conducted emission/immunity test equipment and calibration accessories. The CLCE-227 was designed to accommodate cable bundles up to one inch in diameter. It incorporates a split-core ferrite into its rugged, circular enclosure. The probe enclosure is hinged, allowing the probe to be opened on one side in order to easily place the wire, cable(s) or cable bundle(s) to be tested into the probe aperture. This makes the CLCE-227 much more convenient to use than other non-split-core probes.

The current is measured inductively by clamping the probe around the line(s) to be tested. Essentially, a current probe is a toroidal transformer, with the line(s) under test acting as the primary, and the probe itself acting as the secondary. The probe's output voltage is measured across the 50Ω input impedance of the measuring instrument. This voltage is then converted to current by applying the probe's transfer impedance factor:

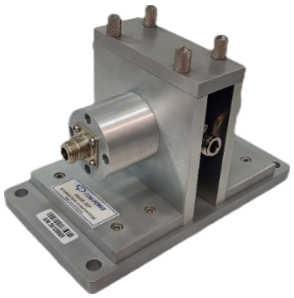
$$\underset{(\text{in } dB\mu A)}{\text{Current}} = \underset{(\text{in } dB\mu V)}{\text{Voltage}} - \underset{(\text{in } dB\Omega)}{\text{Transfer Impedance Factor } (Z_T)}$$

Application

In general, RF current probes are employed for the measurement of RF current flow on a wire, cable, or cable bundle. Applications include compliance measurements of disturbance currents per CISPR 15, CISPR 25 and CISPR 32, as well as RF current monitoring during conducted immunity/susceptibility tests per IEC 61000-4-6, MILSTD-461 and RTCA DO-160, where Bulk Current Injection Probes (BCIP) are used. The CLCE-227 can also be extremely useful for engineering applications such as diagnostics and troubleshooting.

Calibration Fixture

Current probes are calibrated using a calibration fixture with a coaxial-type arrangement. The CLCE-227 is designed to be used with the Com-Power FCLCE-227 Calibration Fixture (sold separately). The fixture is required for insertion loss/transfer impedance calibration, as well as CS114 test level calibration according to MIL-STD-461.

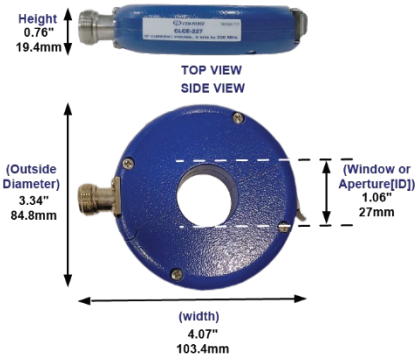


Calibration

As is the case with nearly all Com-Power products, each unit receives individual NIST-traceable calibration, and the data is provided along with a certificate of calibration. ISO 17025-accredited calibration is available for an additional charge.

Product Specifications & Product Dimensions

Product Specification	
Model	**CLCE-227**
Product Description	**RF Current Probe**
Application	**Conducted Emission Measurements and Current Monitoring During Conducted SusceptibilityTesting**
Standards	**CISPR 15/22/32, MIL-STD-461, RTCA Do-160**
Frequency Range	**9 kHz to 230 MHz**
Insertion Loss	**45 dB** *(nominal)*
Transfer Impedance	**-11 dBΩ** *(nominal)*
	0.28Ω *(nominal)*
Insertion Impedance	**<1 ohm**
Maximum Primary Current	**35 Amperes** *(DC-60 Hz)*
	25 Amperes *(400 Hz)*
	3 Amperes *(RF)*
	1200 Amperes *(8/20µs Pulse)*
Connector Type	**Type-N** *(female)*
Related Accessories Available from Com-Power	**FCLCE-227 Calibration Fixture** **SPA-932TG Spectrum Analyzer**
Product Dimensions	
Window or Aperture (ID)	**1.06"** *(27 mm)*
Outside Diameter	**3.34"** *(84.8 mm)*
Height	**0.76"** *(19.4 mm)*
Width	**4.07"** *(103.4 mm)*
Weight	**0.55 lbs.** *(0.25 kg)*
Weight with Box	**2.31 lbs.** *(1.05 kg)*
Box size (L x W x H)	**11.22" x 9.44" x 4.72"** *(285 x 240 x 120 mm)*



Typical Insertion Loss/Transfer Impedance Factors