



**CT-600**  
**CT-1000**  
Current or  
Voltage  
Output



Your **DIGITAL**  
**POWER ELECTRONICS**  
Partner.



## CT-600/CT-1000

- Closed-loop current transformer technology allows accurate monitoring of DC and AC bipolar currents up to  $\pm 600\text{A}$  (CT-600) and to  $\pm 1000\text{A}$  (CT-1000).
- Galvanic isolation between primary and secondary conductor for simple current sensing at different potential.
  - Standard current output and voltage output ("V"-version) available.

### FEATURES

- Monitoring of DC and AC currents
- Excellent Linearity
- Closed-loop detection
- Galvanically isolated from primary
- Low Temperature Drift
- Current-output or Voltage-output versions
- Wide Bandwidth
- High Accuracy
- UL 94 V-0 flammability grade
- LED indicates correct operation
- DB-9 Connector for rack/panel mounting

### APPLICATIONS

- Power Supplies
- Sensing Element in Calibration Systems
- Biomedical Devices
- Nuclear Magnetic Resonance (NMR)
- Test & Measurement Setups

The **0-FLUCS** (0-FLUX Current Sensor) family is based on a closed loop technology that allows accurate and precise monitoring of DC and AC currents with high bandwidth.

The CT-600 and CT-400 transducers are rated at a maximum bipolar primary current of 600A and 1000A with a transform ratio of 1:1500 and 1:2000.

Galvanic isolation between the primary and the secondary circuits allows to measure currents at a different potential and simplifies interfacing when using the 0-FLUCS as the feedback element of current regulated power supplies.

Output from the 0-FLUCS transducers can be chosen between two different versions: secondary current output or buffered voltage output (low TC shunt resistor and low-noise amplifier are embedded in the device).

A standard DB-9 connector is used for the transducer connections.

Main characteristics of the 0-FLUCS current transformers are negligible temperature coefficient on the secondary output current, excellent linearity and extremely low noise.

DC current transformers represents the ideal replacement for systems where Hall-effect sensors are used as current sensing elements and better performances are needed.





All CT-600 and CT-1000 devices also have different mounting holes in order to be easily installed in different configurations. Both self-threading screws and normal ones can be used.

Main application fields for these current transducers are precise and extremely stable regulated power supplies and power inverters.



### About Us

ELS Instruments (formerly CAEN ELS) is a leading company in the design of power supplies and state-of-the-art complete electronic systems for the Physics research world, having its main focus on dedicated solutions for the particle accelerator community and high-end industrial applications.

-  Power Supply Systems
-  Precision Current Measurements
-  Beamline Electronics Instrumentation
-  FMC and MicroTCA

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### 0-FLUCS Closed-Loop Technology

The PS1215 models are designed for optimal operation for the CAEN ELS 0-FLUCS current transducers.

Due to the excellent characteristics, the CT-600 and CT-1000 transducers can be used in a variety of calibration, acceptance testing and quality control applications in industrial, power generation and automotive fields.

Commercially available versions of the

CT-600 and CT-1000 current sensors are the standard current-output CT-600 and CT-1000 and the voltage-output version CT-600V and CT-1000V.

Different output voltage ratings - e.g.  $\pm 2.5$  V or  $\pm 5$  V - are available upon request for a minimum quantity.

Technical Specifications	CT-600	CT-1000
<b>Current Transform Ratio - N</b>	1:1500	1:2000
<b>Maximum DC Primary Current - <math>I_{P(DC)}</math></b>	$\pm 600$ A	$\pm 1000$ A
<b>Maximum RMS Primary Current - <math>I_{P(RMS)}</math></b>	424 A	707 A
<b>Current Polarity</b>	Bipolar	
<b>Maximum DC Secondary Current - <math>I_{S(DC)}</math></b>	$\pm 400$ mA	$\pm 500$ mA
<b>Maximum RMS Secondary Current - <math>I_{S(RMS)}</math></b>	283 mA	354 mA
<b>External Shunt Resistor Value - <math>R_s</math></b>	0...5 $\Omega$	0...2 $\Omega$
<b>Small Signal Bandwidth ( -1 dB ) - typ. BW</b>	> 150 kHz	
<b>Noise (RMS) - typ.</b>	< 1.5 ppm (@200 Hz) < 7 ppm (@50 kHz)	< 1.5 ppm (@200 Hz) < 10 ppm (@50 kHz)
<b>Output Voltage ("V"-version) - <math>V_{OUT}</math></b>	$\pm 10$ V	
<b>Output Voltage Ratio ("V" version) - <math>V_{OUT}/I_{P(DC)}</math></b>	(1/60) V/A	0.01 V/A
<b>Maximum Output Current - "V"-version</b>	$\pm 15$ mA	
<b>Temperature Coefficient - TC (typ.)</b>	< 0.5 ppm/K < 2 ppm/K ("V"-version)	
<b>Induction into Primary (typ.)</b>	< 25 $\mu$ V (RMS)	
<b>Linearity</b>	< 3 ppm < 15 ppm ("V"-version)	
<b>Offset (with factory trimming)</b>	< 10 ppm/FS	
<b>Protection Signal</b>	Yes - Primary Over-Current	
<b>Supply Voltage (<math>\pm 6\%</math>)</b>	$\pm 15$ V	
<b>Maximum Current Consumption</b>	50 mA + $I_s$	
<b>Connections</b>	DB-9 Connector	
<b>Mechanical (Outer) Dimensions</b>	107 x 91 x 50 mm	
<b>Primary Conductor Hole Diameter - <math>\emptyset</math></b>	30 mm	
<b>Maximum Weight</b>	450 g	600 g



0-FLUCS  
Status LED and signal

PS1215I - PS1215V  
Low-Noise Power Supplies  
for current transducers



Ordering Code	Acronym	Description
WCT600XAAAA	CT-600	600 A Primary Current 0-FLUCS , DB-9 connector
WCT600VXAAAA	CT-600V	600 A Primary Current 0-FLUCS , DB-9 connector, Voltage-Output
WCT1000XAAAA	CT-1000	1000 A Primary Current 0-FLUCS , DB-9 connector
WCT1000VXAAA	CT-1000V	1000 A Primary Current 0-FLUCS , DB-9 connector, Voltage-Output