

# CEVT

## Capacitive Electronic Voltage Transformers

High-voltage designs increasingly incorporate Intelligent Electronic Devices (IEDs) - making smart substations a reality. In the digital chain for voltage measurement, the CEVT uses the latest sensor technologies in voltage measurement for Low Power Instrument Transformers (LPIT) applications.

### High-Tech Voltage Sensors

Sensors are essential elements of measurement. In order to achieve the best accuracy for final metering or protection applications, sensors must be as accurate as possible and protected against electromagnetic perturbations (EMC) of GIS substations.

CEVT sensors are designed according to a GE patent which uses a double-sided Printed Circuit Board (PCB). This provides excellent stability in the measurements, even if temperature, pressure and voltages vary.

### Compatible with all GIS Types

Several sensor designs have been introduced to cover all types of high voltage equipment. CEVT sensors are available for the whole GE GIS range. Their small size allows them to fit into smaller enclosures, which means smaller substations.

### High Immunity Against EMC

Based on a GE patent, the sensors are created on a double-sided PCB (printed circuit board), providing high immunity against EMC and fast transient current and voltages. The current analog signal for measurement also provides perfect immunity against nearby magnetic fields.

## Key Benefits

- One single sensor for protection, metering and qualimetry
- Sensor enclosures are smaller than conventional VT-space gains for substations
- High electromagnetic immunity

## Technical Characteristics

(Associated with PC12 Primary Converter)

- Rated supply voltage  
48 Vdc (proprietary input)  
connected to PC1 power supply  
(48 - 350 Vdc / 100 - 240 Vac)  
Power cons. ~ 5 W @ 20°C
- Ambient temperature: -40°C up to 80°C
- Protection index: IP64, as per IEC standard
- EMC immunity standards  
IEC 61000-4-2,4,5,8,16 Level 4  
IEC 61000-4-3,6,17 Level 3
- Emissions standard: EN55022 Class A
- Communication standards  
IEC 61869 -1, -6, -7, -8, -9



## Less Maintenance

Thanks to the particular coating on the PCBs and highly accurate processing, the sensors are designed to work whether conditions are optimal or not.

An external memory (EEPROM) is associated with the sensor allowing all calibration values to be stored while the sensors are mounted. Thus, when a sensor is connected to a PC12 primary converter, the electronics automatically adjust the compensation gains related to calibration values found in the EEPROM. The components are therefore easily and quickly replaced.

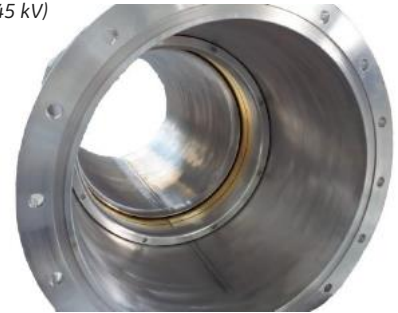
## Ratings (Sensor associated with PC12)

Module type		<b>PC12-3U 3 x CEVT*</b>
Rated voltage	kV	Up to 1100
Rated current	A	-
Delay time	$\mu$ s	< 500
Sample values output rate:		
- Protection channel	kSps	4.8 <sup>1</sup> / 4 <sup>2</sup> / 5.76 <sup>2</sup>
- Metering channel	kSps	4.8 <sup>1</sup> / 4 <sup>2</sup> / 5.76 <sup>2</sup>
- Qualimetry channel	kSps	14.4 <sup>1</sup> / 12.8 / 15.36 <sup>2</sup>
FFT Analysis Harmonics (qualimetry channel only)	Harmonic rank	100
Frequency domain (sensor input)	Hz	0-10 K
A/D converters	Qty	2 + 3 refs
Auxiliary Channels	Type	4/20 mA, RDT100
MTBF (acc. To MIL-HDBK-217F)	Hours	>350 000

\*CEVT : Capacitive Electronic Voltage Transformer  
1: Legacy, 2: Deprecated.



3-phase GIS design (145 kV)



Single-phase GIS design

### Important note:

This product may not be sold on its own.  
It must always be integrated in a global Low Power Instrument Transformers (LPIT) solution.

For more information please contact  
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### Worldwide Contact Center

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Imagination at work