

## CURRENT SENSOR WITH OUTPUT AMPLIFIER 5Vdc OR 10Vdc OUTPUTS

### DESCRIPTION

The CTG Current Transducer is a Hall-effect sensor integrated with an output amplifier. The CTG series offers a number of current ranges, outputs and sensor dimensions. Hall-effect current measurement is a non-contact technique that measures the magnetizing effects of current flowing in a conductor. This measurement type offers a number of benefits not afforded by conventional direct or contact (in-line) measurement. Some of these benefits are high electrical isolation between conductor and sensor output, high overload capability, fast response to input changes and no power consumption on measured circuit.

### FEATURES

- Accuracy of  $\pm 1\%$  F.S.
- 2200Vac line-to-output dielectric test.
- DC to 400Hertz response.
- Sensor and amplifier in one package.
- Available in split-core configurations.
- Output is proportional in direction and magnitude to the current flow through the window. (ac input yields ac output, dc input yields dc output)
- Overload capability to **10 times** rating (at 60Hz).
- Stability maintained during severe vibration.
- Models available to 5,000A.
- Response time less than 500 $\mu$ s.
- 8-foot cable length.

### APPLICATIONS

- Replaces shunts. No insertion loss.
- Ideal for use on ac systems with dc components and/or chopped waveforms.



**5 YEAR WARRANTY**



## MODEL SELECTION

### Circular Window Models



### Rectangular Window Models



Current Range	$\pm 10$ Vdc Output	$\pm 5$ Vdc Output	Sensor Size
0 - 100A	CTG-101	CTG-101X5	D*
0 - 200A	CTG-201	CTG-201X5	D*
0 - 300A	CTG-301	CTG-301X5	D*
0 - 400A	CTG-401	CTG-401X5	D*
0 - 500A	CTG-501	CTG-501X5	E*
	CTG-501FS	CTG-501FSX5	F
0 - 600A	CTG-601	CTG-601X5	E*
	CTG-601FS	CTG-601FSX5	F
0 - 800A	CTG-801	CTG-801X5	E*
	CTG-801FS	CTG-801FSX5	F
0 - 1000A	CTG-102	CTG-102X5	E*
	CTG-102FS	CTG-102FSX5	F
	CTG-102EES	CTG-102EESX5	EE
0 - 1500A	CTG-152	CTG-152X5	E*
	CTG-152FS	CTG-152FSX5	F
	CTG-152EES	CTG-152EESX5	EE
0 - 2000A	CTG-202	CTG-202X5	E*
	CTG-202FS	CTG-202FSX5	F
	CTG-202EES	CTG-202EESX5	EE
0 - 2500A	CTG-252	CTG-252X5	E*
	CTG-252FS	CTG-252FSX5	F
	CTG-252EES	CTG-252EESX5	EE
0 - 3000A	CTG-302EES	CTG-302EESX5	EE

Current Range	$\pm 10$ Vdc Output	$\pm 5$ Vdc Output	Sensor Size
0 - 500A	CTG-501HS	CTG-501HX5S	Z
0 - 600A	CTG-601HS	CTG-601HX5S	Z
0 - 800A	CTG-801HS	CTG-801HX5S	Z
0 - 1000A	CTG-102HS	CTG-102HX5S	Z
0 - 1500A	CTG-152HS	CTG-152HX5S	Z
0 - 2000A	CTG-202HS	CTG-202HX5S	Z
	CTG-202GS	CTG-202GX5S	G*
0 - 2500A	CTG-252GS	CTG-252GX5S	G*
	CTG-302HS	CTG-302HX5S	Z
0 - 3000A	CTG-302GS	CTG-302GX5S	G*
	CTG-402HS	CTG-402HX5S	Z
0 - 4000A	CTG-402HS	CTG-402HX5S	Z
0 - 5000A	CTG-502HS	CTG-502HX5S	Z

\* Standard sensor size "D" and "E" models have a solid core. For split-core models, add suffix "S" to model number. Split-core "D" and all of the "G" models are not UL listed.

### ORDERING INFORMATION

Example: 300Amp Split-Core Current Sensor with  $\pm 5$ V Output and Extended Temperature Range.

**CTG-301X5ST**

For optional CTG power supply, see PS-4753 spec sheet.

# OSI SPECIFICATIONS, CONNECTIONS & INSTALLATION MODEL CTG-

## SPECIFICATIONS

### INPUT

Current.....See Table..... dc/Peak ac  
 Over-current (without damage)..... 10 X rating  
 Frequency..... DC-400Hz

### INSTRUMENT POWER

.....Nominal .....±15Vdc  
 Range .....±13Vdc to ±18Vdc  
 Current.....<±20mAdc

### DIELECTRIC TEST (Conductor Through Window to Output)

Sensor size "D" and "E" (split-core) ..... 1000Vdc  
 All others ..... 2200Vdc

### OUTPUT

Load on output ..... ≥25kΩ  
 Response Time .....(typical) ..... 500µs  
 Saturation.....Approx. .... 13.5V @±15Vdc

**ACCURACY AND LINEARITY** .....±1.0% F.S.

### TEMPERATURE

Temperature Range .....Standard ..... 0°C to +40°C  
 Extended Temp. Range .... add "T" suffix ..... -20°C to +60°C  
 Temperature Effects .....±0.05%/°C

### PHYSICAL

Insulation.....600Vac  
 Option "S".....Split-core  
 Dimensions ..... See tables on following page

## CONNECTIONS

TABLE 1: SENSOR SIZES D & Z			
Plastic Connector, 8ft. Rubber Cable			
PINS	LEADS	TYPE	
1	WHITE	-	OUTPUT *
2	GREEN	+	
6	BLACK	-15V	INSTRUMENT POWER
8	RED	+15V	
1	WHITE	COM	

TABLE 2: SENSOR SIZES E, EE, F & G			
Metal Connector, 8ft. Rubber Cable			
PINS	LEADS	TYPE	
A	WHITE	-	OUTPUT *
B	GREEN	+	
C	BLACK	-15V	INSTRUMENT POWER
D	RED	+15V	
A	WHITE	COM	

\* "Red dot" side of CTG must face positive supply.

## INSTALLATION AND OPERATING INSTRUCTIONS

### INSTALLATION INSTRUCTIONS

1. Installation should be performed by qualified electricians only!
2. Make sure electrical service is disconnected before making any electrical connections.
3. Branch circuit protection is required to be provided in accordance with the National and Local codes of the inspection authority.
4. Route wires as required and secure to terminals per connection diagram on this sheet and on the unit.
5. Transducers are suitable for installation on 600Vac lines.

### OPERATING INSTRUCTIONS

1. This unit is intended for indoor use at altitudes up to 2000 meters.
2. Transient overvoltages according to Installation Category (overvoltage category) II, pollution Degree 2.
3. The output signal is intended to be "Not accessible to the user." To prevent contact with live circuits, the transducer is required to be mounted in an enclosure that requires the use of a tool for access.
4. If cleaning of the exterior surface is necessary, de-energize all services of supply (both measuring and instrument power circuits) and brush with a soft brush or blow off with low-pressure air. Use appropriate eye protection. Not suitable for hose-down cleaning.
5. Maximum relative humidity is 80 percent for temperatures up to 31°C decreasing linearly to 50 percent relative humidity at 40°C.
6. Maximum operating temperature range is -20°C to 60°C (refer to specifications for accuracy).



UL approved for USA and Canada



Direct Current (dc)

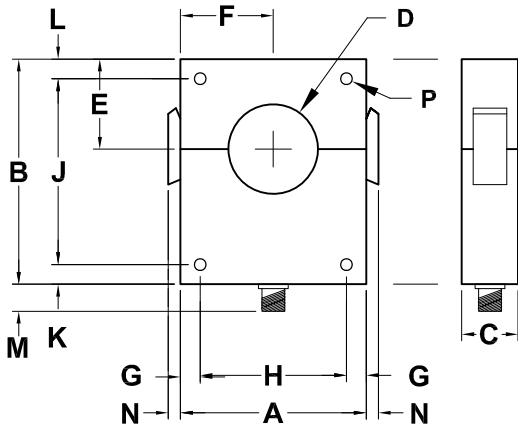
### WARRANTY STATEMENT

Ohio Semitronics Inc. warrants this unit to be free of defects in material and workmanship for a period of five years from date of shipment. This unit must not be used in any manner other than as specified in this document.

# OHIO SEMITRONICS, INC.

4242 REYNOLDS DRIVE \* HILLIARD, OHIO \* 43026-1264  
 PHONE: (614) 777-1005 \* FAX: (614) 777-4511  
[WWW.OHIOSEMITRONICS.COM](http://WWW.OHIOSEMITRONICS.COM) \* 1-800-537-6732

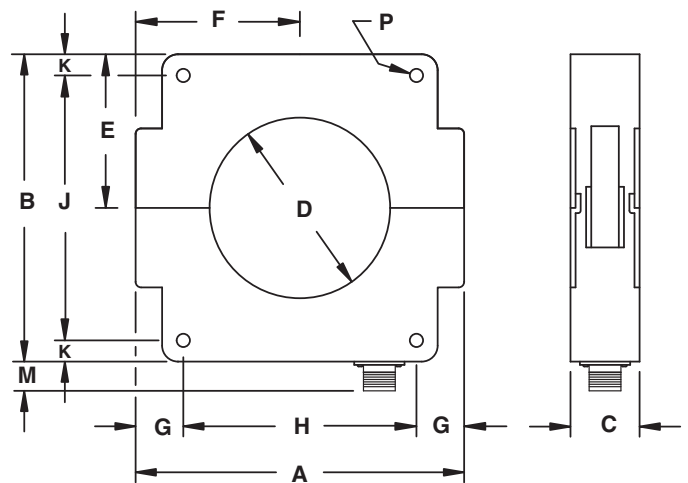
### CASE DIMENSIONS D & E



Dwg# 0902-00927-B Rev-A

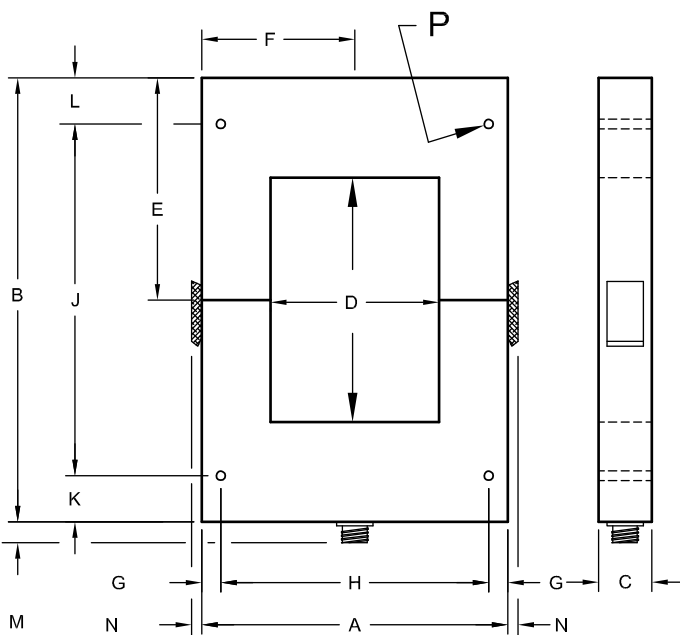
\* Standard sensor size "D" and "E" models have a solid core. Size "D" models have 2 mounting holes. (Dimensions "N" and "L" do not apply) For split-core models, add suffix "S" to model number.

### CASE DIMENSIONS F & EE



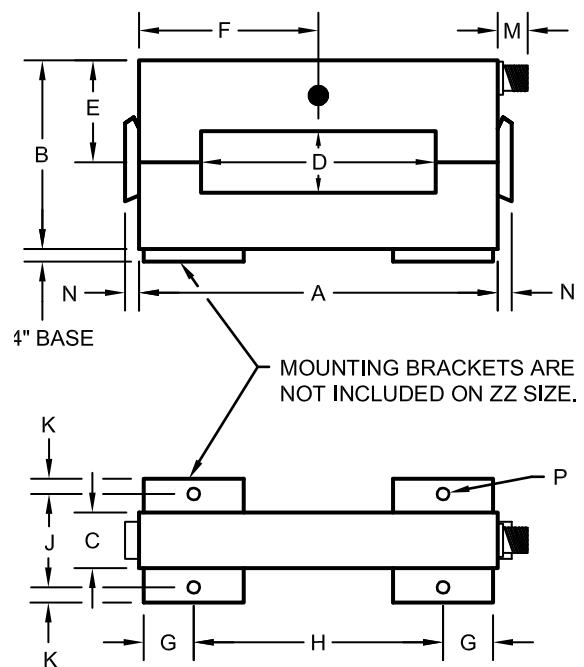
SENS. SIZE	SENSOR DIMENSIONS (inches)														WT. LBS.
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	
D	3 1/8	4	3/4	1 1/8	1 1/2	1 9/16	1/2	2 1/8	NA	1/2	NA	1/2	1/4*	11/64	0.75
E	4 1/8	5	1 1/4	2	2	2 1/16	7/16	3 1/4	4 1/8	7/16	7/16	5/8	5/16*	17/64	2.0
F	5 3/8	5 1/4	1 5/8	2 1/4	2 5/8	2 11/16	1 1/16	3 1/4	4 1/8	9/16	NA	5/8	NA	1/4	2.8
EE	7 3/4	7 1/4	1 5/8	4 1/4	3 5/8	3 7/8	1 1/8	5 1/2	6 1/4	1/2	NA	5/8	NA	5/16	4.5
G	7 3/4	12	1 3/4	3x6 1/2	6	3 7/8	5/8	6 1/2	10 3/4	5/8	5/8	5/8	5/16	5/16	12.3
Z	7 3/16	3 15/16	1 5/16	1 1/4 x 4 1/2	2 9/64	3 1/2	1	5	1 7/8	5/16	NA	1/2	5/16	3/16	2.8

### CASE DIMENSIONS G



Dwg# 0902-01046-B Rev -

### CASE DIMENSIONS Z



Dwg# 0902-00806-B Rev --