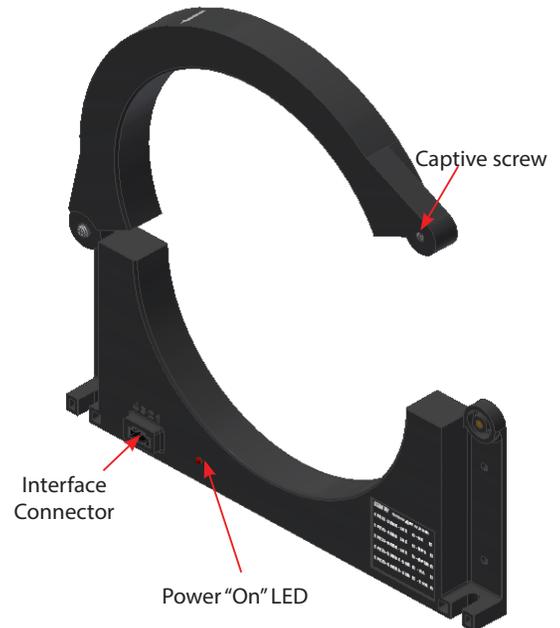
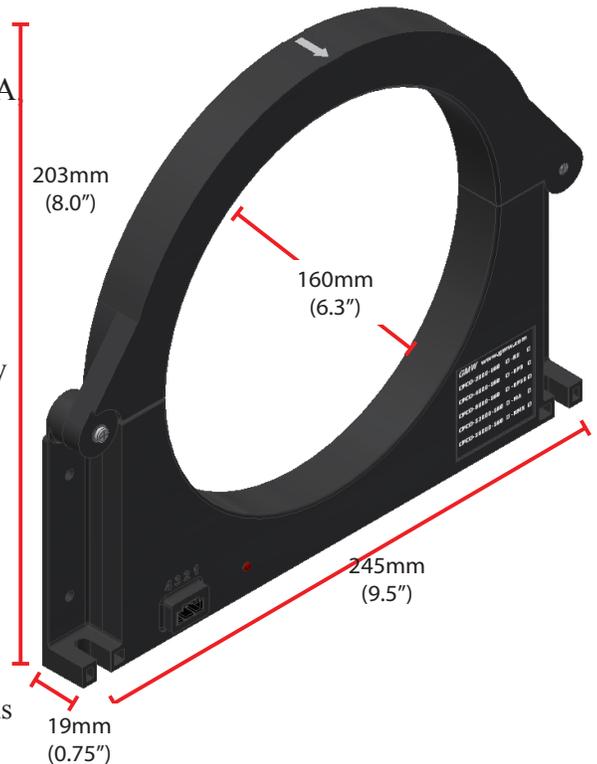


The CPCO Series (160mm aperture) Current Probes are Clamp On current sensors capable of measuring ac and dc currents available in ranges of $\pm 2000A$ $\pm 4000A$ $\pm 8000A$ $\pm 12000A$ $\pm 16000A$ with an accuracy of $\pm 1\%$ and non-linearity of $< \pm 0.5\%$. The bandwidth is dc to 40kHz. The Current Probe splits along a diameter allowing easy installation to existing cables without having to break the connection. A captive screw is used rather than a clip to ensure consistent closure under mechanical loading or vibration.

The Current Probes utilize Hall Effect sensing technology with no magnetic core. This eliminates magnetic hysteresis and non-linearity effects present in conventional open loop sensors with magnetic cores.

FEATURES

- Clamp On
- Light Weight $< 300g$
- Low Power $< 0.5W$ for Voltage Output Signal;
 $< 0.8W$ for 4-20mA Output Signal
- Operating Voltage: 11-31V Single rail power supply for all versions
- Current Ranges: $\pm 2000A$ $\pm 4000A$ $\pm 8000A$ $\pm 12000A$, $\pm 16000A$
- Accuracy: $\pm 1\%$
- Non-Linearity: $< \pm 0.5\%$
- Wide Bandwidth: dc to 40kHz
- Output Signal Options: Single Ended 5V, Bi Polar 5V, Bi Polar 10V, 4-20mA and RMS
- Power ON LED indicator
- Reverse power supply voltage protected
- High rejection of external magnetic fields, e.g. from external conductors
- Output short circuit protection (except for 4-20mA version)



ORDERING INFORMATION

Part Number Format:

CPCO - Current Range - Aperture - Output Signal Type

CPCO

CPCO = Current Probe Clamp On

Aperture

160mm

Current Range

2000 = $\pm 2000A$

4000 = $\pm 4000A$

8000 = $\pm 8000A$

12000 = $\pm 12000A$

16000 = $\pm 16000A$

Output Signal Type

SE = Single Ended, 5.0V \pm 5.0V

BP5 = Bi Polar, 0.0V \pm 5.0V

BP10 = Bi Polar, 0.0V \pm 10V

RMS = RMS, 0-3V

MA = 4-20mA Source, 12mA \pm 8mA

e.g. CPCO-8000-160-BP10

Current Probe Clamp On, 8000A, 160mm Diameter Aperture, Bi Polar $\pm 10V$ Output Signal

Revision Date: Jan 3, 2017



CPCO Series DC-AC Current Probe, Clamp On 160mm, ±2000A ±4000A ±8000A ±12000A, ±16000A

TABLE 1: ELECTRICAL SPECIFICATIONS

Specifications by Current Range							
Specification	Symbol	CPCO-2000	CPCO-4000	CPCO-8000	CPCO-12000	CPCO-16000	
Primary Current, Nominal	I_{PN}	±2000A	±4000A	±8000A	±12000A	±16000A	
Primary Current, Max	I_{PSAT}	±2500A	±5000A	±10000A	±15000A	±20000A	
Primary Current, Overload	I_{POL}	No Limit					
Sensitivity Accuracy	SA	±1 % of FS					
Non Linearity	NL	< ±0.5% of FS					
Sensitivity	SE Output	S	2.0mV/A	1.0mV/A	0.5mV/A	0.333mV/A	0.25mV/A
	BP5 Output		2.0mV/A	1.0mV/A	0.5mV/A	0.333mV/A	0.25mV/A
	BP10 Output		4mV/A	2.0mV/A	1.0mV/A	0.667mV/A	.5mV/A
	RMS Output		2mV/Arms	1.0mV/Arms	0.5mV/Arms	0.333mV/Arms	0.25mV/Arms
	MA Output	S	0.004mA/A	0.002mA/A	0.001mA/A	0.000667mA/A	
Bandwidth (-3dB)	BW	dc to 40kHz					
Hysteresis after ± I_{PSAT}	V_{HYS} or I_{HYS}	<0.05 % of FS					
Noise (3Hz to 1kHz)	SE Output	V_{NO}	<8mVrms	<4mVrms	<2mVrms	<1mVrms	<1mVrms
	BP5 Output		<8mVrms	<4mVrms	<2mVrms	<1mVrms	<1mVrms
	BP10 Output		<16mVrms	<8mVrms	<4mVrm	<2mVrms	<2mVrms
	RMS Output		<4mVrms	<2.0Vrms	<1mVrms	<0.5Vrms	<0.5Vrms
	MA Output	I_{NO}	8 μArms	4 μArms	2 μArms	1 μArms	1 μArms
Resolution		Noise (1 / Sensitivity)					
Dielectric Withstanding between Aperture ID and Connector Pins	U_W	>5000V (60Hz, Dwell Time 1 min.)					

Specifications by Output Signal Type							
Specification	Symbol	SE (single ended)	BP5 (Bi Polar 5V)	BP10 (Bi Polar 10V)	RMS (RMS)	MA (4-20mA)	
Output Signal, Nominal	V_{OUT} or I_{OUT}	5.0 ± 4.0V	0.0V ± 4.0V	0.0 ± 8.0V	0.0 to 3.0V	12 ± 8mA	
Output Signal, Max	$V_{OUTMSAT}$ or $I_{OUTMSAT}$	5.0 ± 5.0V	0.0V ± 5.0V	0.0 ± 10.0V	0.0 to 4.0V	12 ± 10mA	
Output Signal Current, Absolute Max	I_{OUTM}	2mA	±2mA	±2mA	2mA	22mA	
Capacitive Load, Absolute Max	C_{OUTM}	10nF	10nF	10nF	10nF	100nF	
Output Source Impedance	R_S	10 to 15Ω	10 to 15Ω	10 to 15Ω	10 to 15Ω	>100KΩ	
Offset at $I_p = 0$	V_{OE} or I_{OE}	±5mV ¹	±5mV ¹	±10mV ¹	±3mV	±0.012mA	
Maximum Response Time	T_R	<10μs	<10μs	<10μs	1s	<10μs	
Power Supply Voltage	V_C	11 to 31V	11 to 31V	11 to 15.5V	11 to 31V	Suggested Loop Load Resistance	
						100Ω	11-15V
						250Ω	11-24V
Power Supply Current, Max	I_C	<80mA	<80mA	<80mA	<80mA	<80mA + I_{OUT}	
Short Circuit Protection	I_{SHORT}	Continuous					<1 minute

Revision Date: Jan 3, 2017



CPCO Series DC-AC Current Probe, Clamp On 160mm, $\pm 2000A$ $\pm 4000A$ $\pm 8000A$ $\pm 12000A$, $\pm 16000A$

TABLE 2: MECHANICAL SPECIFICATIONS

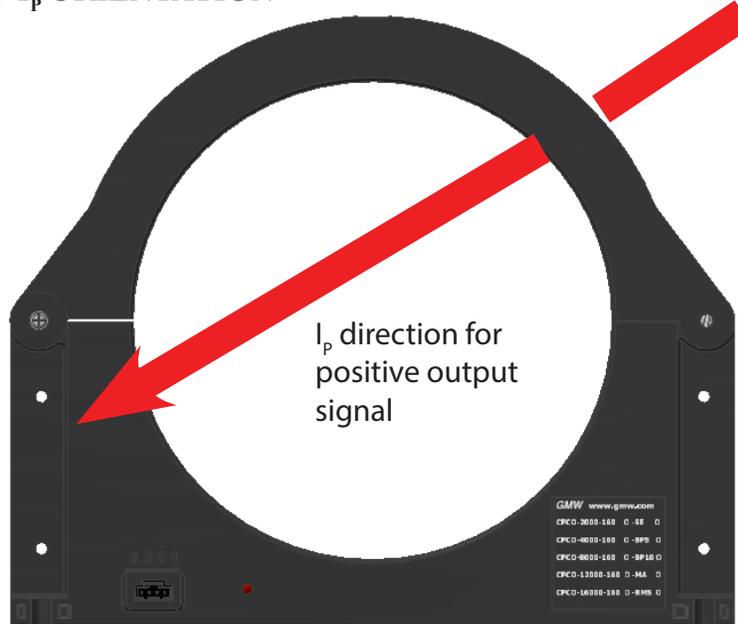
Specification	
Aperture Diameter	160mm (6.3")
Overall Size	203mm x 241mm x 19mm (8" x 9.5" x 0.75")
Weight	375g (0.83lb)
Housing Material	Nylon 66 (UL 94 V-0)
Encapsulant Material	Polybutadiene Resin (UL 94 V-0)

TABLE 2: ENVIRONMENTAL SPECIFICATIONS

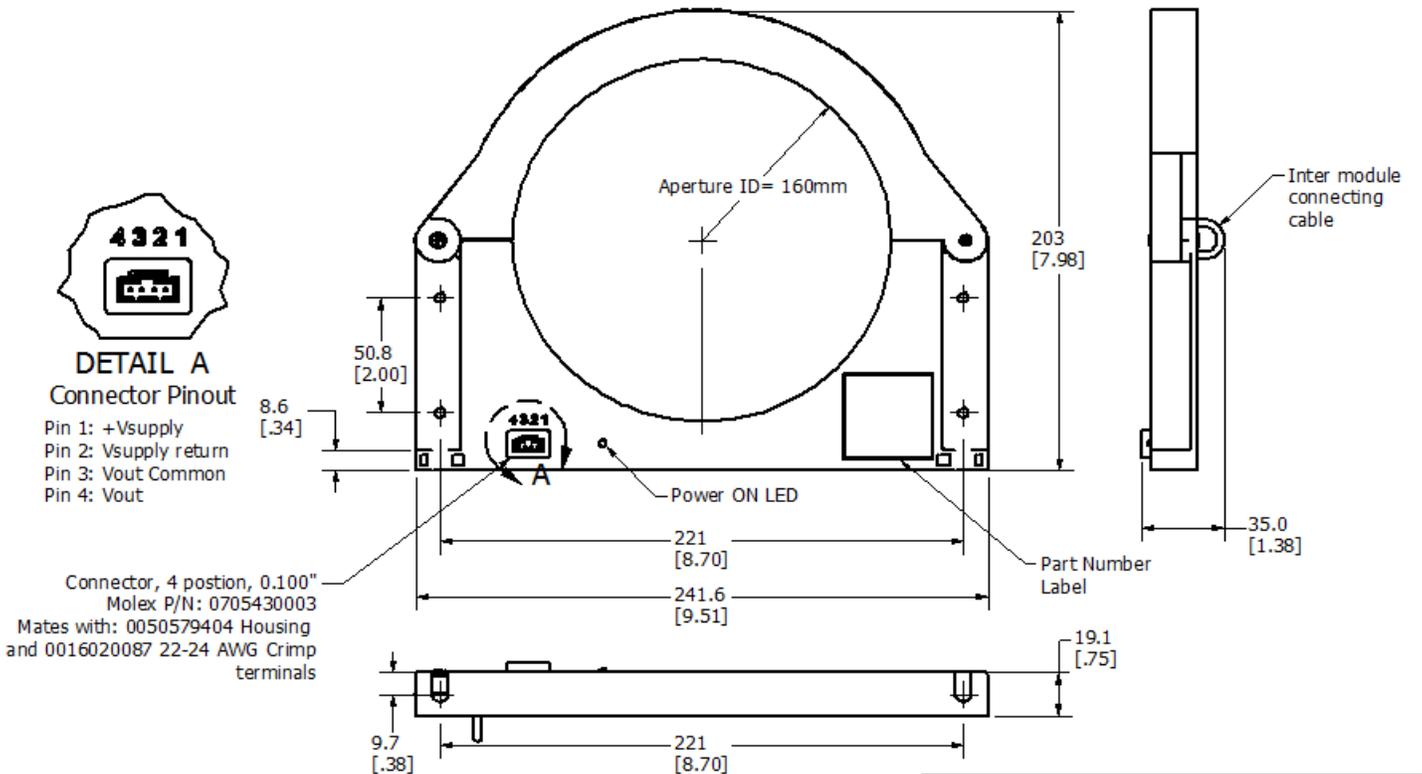
Specification			
Temperature, Operating		-40 to 85°C	
Temperature, Storage		-40 to 85°C	
T _c of Sensitivity		$\pm 200\text{ppm}/^\circ\text{C}$	
T _c of Zero		CPCO-2000	$\pm 3A/^\circ\text{C}$
		CPCO-4000	$\pm 3A/^\circ\text{C}$
		CPCO-8000	$\pm 3A/^\circ\text{C}$
		CPCO-12000	$\pm 3A/^\circ\text{C}$
		CPCO-16000	$\pm 3A/^\circ\text{C}$
Sealed		NEMA 5 equivalent	
Humidity, Operating		0-90% RH	
Humidity, Storage		20-60% RH	
External Magnetic Field Component, <0.2% of FS Output Signal Shift	In Plane	CPCO-2000	33mT (330G)
		CPCO-4000	67mT (670G)
		CPCO-8000	133mT (1330G)
		CPCO-12000	200mT (2000G)
		CPCO-16000	267mT (2670G)
	Longitudinal or Axial	All Models	400mT (4000 G)
Effect of Primary Conductor Position within Aperture (20mm diameter conductor)		< 1.0% of FS	
Effect of Another Conductor within 5mm of any outer surface of probe (20mm diameter conductor, $I \leq I_{PN}$)		<1.0% of FS	
Effect of Steel plate outside the Current Probe (200 x 200mm square plate)		In contact with any outer surface	< 1.0% of FS
		5mm from any outer surface	< 1.0% of FS

Revision Date: Jan 3,2017

DRAWING 1: PIN AND I_p ORIENTATION



DRAWING 3: OUTLINE DRAWING



Revision Date: Jan 3, 2017