

## DESCRIPTION

The SENIS COT series current transducer offer low current sensing with high voltage isolation capability. The SENIS COT sensor incorporates the high sensitivity Hall IC.

The COT current sensor is a compact high accuracy electrical current to analog voltage transducer. It is suitable for isolated measurement of current in the range of  $\pm 100A$ , with the frequency bandwidth DC to 50 KHz, and absolute accuracy better than 1%. The transducer is based on the measurement of the magnetic field produced by the current flow through a conductor. The magnetic field is measured by high performance integrated Hall magnetic sensor.

The COT current sensor provides a galvanic isolation between the primary and secondary electronic circuits. The small size, high resolution, excellent linearity and wide bandwidth make the COT current sensor ideal for accurate low cost current measurements.

## KEY FEATURES

- **Small size**
- **Excellent accuracy**
- **No insertion losses**
- **Wide frequency bandwidth**
- **Unipolar power supply**
- **Easy to assemble structure**
- **Galvanic isolation**



Figure 1: COT series current transducer

## TYPICAL APPLICATIONS

- Process control.
- Application in laboratories and in production lines, etc.
- Due its design the COT sensor can be used in any application that requires continuous current sensing (no time limit).

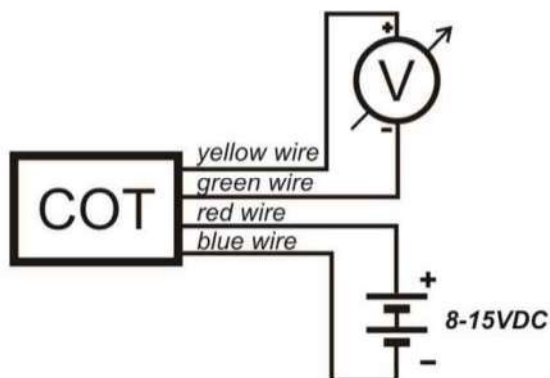


Figure 2: Connection diagram

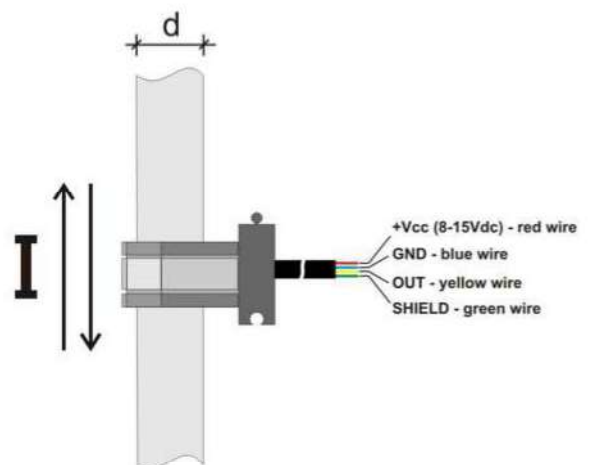


Figure 3: COT series current transducer

## Product dimensions and characteristics

Absolute Maximum Ratings					
Symbol	Parameter	Min	Typ	Max	Units
Tstg	Storage Temperature	-55		85	°C
Ta	Ambient Temperature	-40		85	°C
Vcc	Supply Voltage	7	12	24	Vdc
ESD	Electro Static Discharge	2000			V
B	Magnetic Field			20	mT

Recommended Operating Conditions					
Symbol	Parameter	Min	Typ	Max	Units
Ta	Ambient Temperature	-30	25	80	°C
Vcc	Supply Voltage	7	12	18	Vdc
Isup	Supply Current	15	17	20	mA

Electrical Characteristics					
Symbol	Parameter	Min	Typ	Max	Units
Ipn	Nominal primary rms current <sup>(1)</sup>		±100		A
Vcc	Supply Voltage	8	12	15	Vdc
Isup	Supply Current	15	17	20	mA
Voff	DC offset voltage @ T=23°C		20		mV
Vout	@ Ipn = 0A	2.49	2.5	2.51	V
Sout	Sensitivity @ 23°C and d=10 mm (diameter of the bare conductor as shown on Figure 3) <sup>(2)</sup>	13.5	15	16.5	mV/A
Tcs	Temp. coefficient of sensitivity		≤100		ppm/°C
Accuracy	Accuracy [%]		< 1		[%]
BW	Frequency bandwidth	DC		50	KHz
NL	Non-linearity over FS		<0.2		%
Blin	Magnetic field (linear output)	-7.5		7.5	mT
Bmax	Max. magnetic field (non-linear output)	-10		10	mT

note:

- (1) COT current transducer can be customized for the current range of ±50A
- (2) **Sout** is defined in relation to the conductor diameter of 10mm, reducing the diameter of the conductor results in an increase of sensitivity, increasing a conductor diameter will decrease the sensitivity.
- (3) Output cable has the standard length of 1m, can be customized on customer request.

