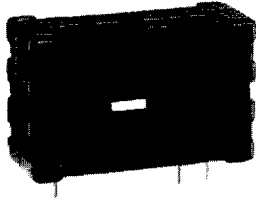


Solid State Sensors

Closed Loop Current Sensors

CSN Series



FEATURES

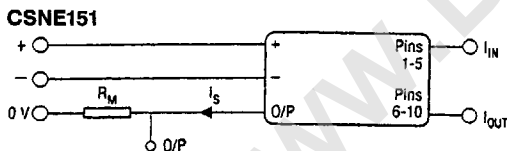
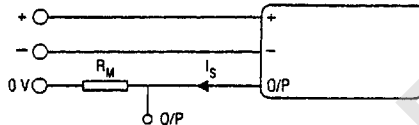
- Current sensing up to 600 amps
- Measures AC, DC and impulse currents
- Lowest cost/performance ratio
- Rapid response, no overshoot
- High overload capacity
- High level of electrical isolation between primary and secondary circuits
- Small size and weight

ORDER GUIDE

Catalog Listing	Current Range Amps	Supply Voltage VDC $\pm 5\%$	Coil Characteristics		Measuring Currents Nom.	Measuring Resistance Ohms*	Dim Dwg.
			Turns	Resistance			
CSNA111	70	± 15	1000	90 Ω @ 70°C	50 mA for 50 A	40 to 100	1
CSNB121	100	± 15	2000	160 Ω @ 70°C	25 mA for 50 A	40 to 100	1
CSNB131	100	± 15	2000	130 Ω @ 70°C	25 mA for 50 A	40 to 100	1
CSNC241	90	± 13	1000	50 Ω @ 70°C	50 mA for 50 A	40 to 100	1
CSNE151†	5-36	± 15	1000	110 Ω @ 70°C	25 mA for 25 A	100 to 320	2
CSNF163	150	± 15	1000	30 Ω @ 70°C	100 mA for 100 A	30 to 85	3
CSNF173	150	± 15	2000	80 Ω @ 70°C	50 mA for 100 A	20 to 150	3
CSNJ481	600	± 12 to ± 18 V	2000	25 Ω @ 70°C	150 mA for 300 A	10 to 70	4
CSNJ481-001**	600	± 12 to ± 18 V	2000	25 Ω @ 70°C	150 mA for 300 A	10 to 70	4
CSNJ481-002	600	± 12 to ± 18 V	2000	25 Ω @ 70°C	150 mA for 300 A	10 to 70	4
CSNJ481-003**	600	± 12 to ± 18 V	2000	25 Ω @ 70°C	150 mA for 300 A	10 to 70	4

*Minimum to maximum load resistance sensor can tolerate without destroying internal transistor.
 **Fitted with busbar.
 †Extended temperature range, other supply voltages, increased measuring ranges also available.

WIRING DIAGRAMS



PRIMARY PIN CONNECTIONS FOR CSNE151

Primary Turns	Primary Current Nom. I _{pn} (A)	Max. I _p (A)	Output Current (Ma)	Primary Resistance (m Ω)	Primary Pin Connections
1	25	36	25	0.3	
2	12	18	24	1.1	
3	8	12	24	2.5	
4	6	9	24	4.4	
5	5	7	25	6.3	

CLOSED LOOP SENSORS

Closed loop current sensors measure AC, DC and impulse currents over 0-25 Amp, 0-50 Amp, 0-100 Amp and 0-600 Amp ranges. The CSN Series is based on the principles of the Hall effect and the null balance or zero magnetic flux method (feedback system). The magnetic field on the sensor is constantly controlled at zero. The amount of current required to balance zero flux is the measure of the primary current flowing through the conductor, multiplied by the ratio of the primary to secondary windings. This closed loop current is the output from the device and presents an image of the primary current reduced by the number of secondary turns at any time. This current can be expressed as a voltage by passing it through a resistor.

CATALOG NUMBER SYSTEM

PLEASE NOTE: This matrix is intended only to aid you in identifying sensor catalog listings. It is not all-inclusive, and must not be used to form new listings.

Example: CSNA111

CSN Closed Loop Current Sensor

Current Range (Peak/RMS nom.)

- A ± 70 A/50 A rms nom.
- B ± 100 A/50 A rms nom.
- C ± 90 A/50 A rms nom.
- D ± 22 A/15 A rms nom.
- E ± 36 A/25 A rms Nom.
- F ± 150 A/100 A rms nom.
- J ± 600 A/300 A rms nom.

Supply Voltage

- 1 ± 15 V
- 2 ± 13 V
- 3 ± 5 V
- 4 ± 12 V to ± 18 V

Coil Characteristics

- 1 1:1000 turns/90 Ω @ 70°C
- 2 1:2000 turns/160 Ω @ 70°C
- 3 1:2000 turns/130 Ω @ 70°C
- 4 1:1000 turns/50 Ω @ 70°C
- 5 1:1000 turns/110 Ω @ 70°C
- 6 1:1000 turns/30 Ω @ 70°C
- 7 1:2000 turns/80 Ω @ 70°C
- 8 1:2000 turns/25 Ω @ 70°C

Housing Material

- 1 Polycarbonate/ABS blend
- 2 Polyester
- 3 Nylon/ABS blend, 15% glass filled

Solid State Sensors

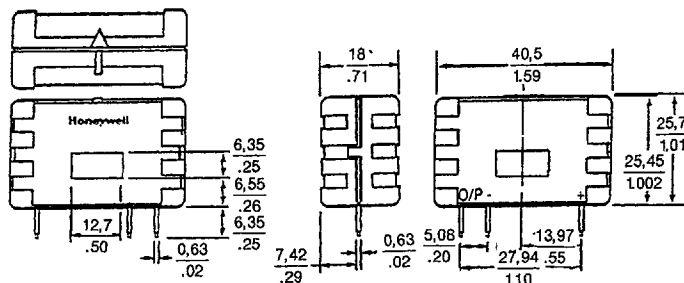
Closed Loop Current Sensors

CSN Series

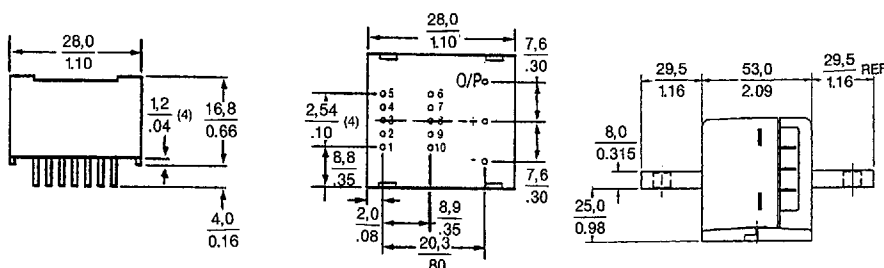
SPECIFICATIONS	CSNA111	CSNB121 CSNB131	CSNC241	CSNE151	CSNF163	CSNF173	CSNJ481 CSNJ481-001	CSNJ481-002
Offset Current at 25°C, mA max.	±0.20	±0.10	±0.20	±0.15	±0.40	±0.20	±0.03	±0.03
Temperature Drift, 0 to 70°C, mA	±0.35 typ. ±0.60 max.	±0.35 typ. ±0.60 max.	±0.35 typ. ±0.60 max.	±0.35 typ. ±0.60 max.	±0.35 typ. ±0.60 max.	±0.35 typ. ±0.60 max.	±0.35 typ. ±0.60 max.	±0.35 typ. ±0.60 max.
Linearity	0.1%	0.1%	±0.2%	0.2%	0.1%	0.1%	±0.1%	±0.1%
Supply Voltage	±15 V	±15 V	±15 V	±15 V	±15 V	±15 V	±12 to ±18 V	±12 to ±18 V
Galvanic Isolation, @ 50Hz/1min	2.5 kV rms			5 kV rms	3 kV rms		7.5 kV rms	
Accuracy	±0.5% of I_N (nominal current) at 25°C							
Response Time	< 1 μs							
Bandwidth	DC to 150 kHz							
Temperature	Operating: 0° to +70°C (32° to +158°F)						-40° to +85°C	0° to +70°C
	Storage: -25° to +85°C (-13° to +185°F)						-40° to +90°C	-25° to +85°C
Primary Circuit Connection	Thru-hole	Thru-hole	Thru-hole	Invasive on 10 pins	Thru-hole	Thru-hole	Thru-hole or BusBar	Thru-hole
Secondary Circuit Connection	3 pins	3 pins	3 pins	3 pins	3 pins	3 pins	3 pins	3 pins
Current Drain	10 mA (no load current) + output current (secondary current)						14 mA (±18V) + output current	
"In-Out" sense signal	To obtain positive measuring current on O/P terminal, current must flow in direction of arrow							
Mounting	PCB, 3 pins, hole size 0,95 mm			PCB, 13 pins	PCB, 5 pins	Faston, 3 pins		

MOUNTING DIMENSIONS (for reference only)

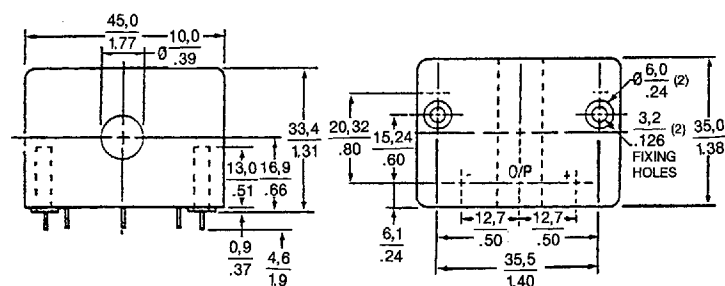
CSNA111, B121, B131, C241



CSNE151



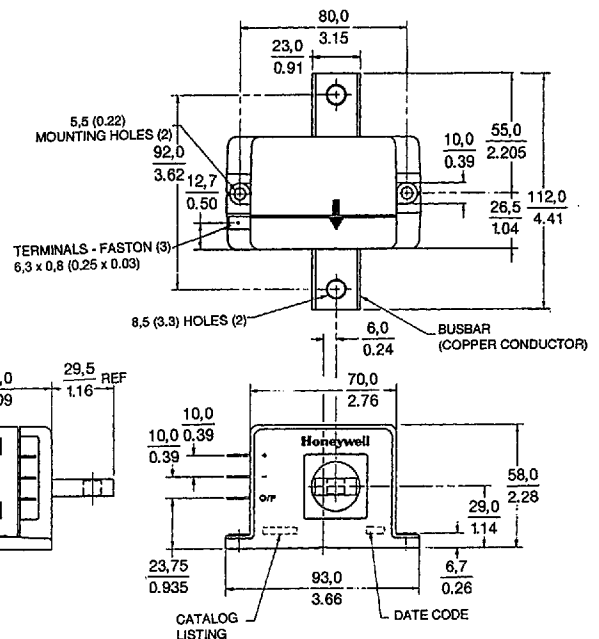
CSNF163/F173



Secondary Terminals

- Terminal (+) Supply +Ve
- Terminal (O/P) Output (measure)
- Terminal (-) Supply -Ve

CSNJ481



Current