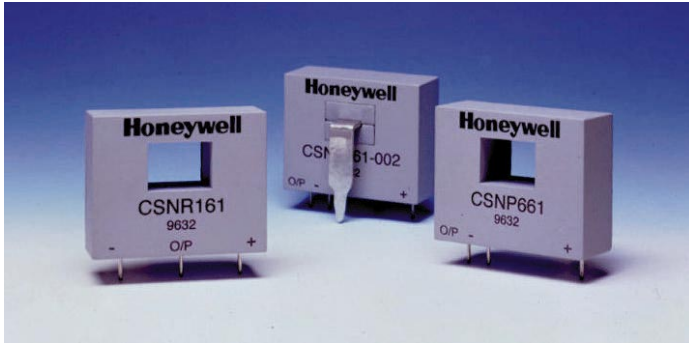


Solid State Sensors

Closed Loop Current Sensors

CSN Series



FEATURES

- Current sensing up to 1200 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

CLOSED LOOP SENSORS

Closed loop current sensors measure AC, DC and impulse currents over 0-25, 0-50, 0-100, 0-600 and 0-1200 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 flux in the sensor core 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.
- K** ± 1200 A/500 A rms nom.
- L** ± 600 A/300 A rms nom.
- M** ± 1200 A/500 A rms nom.
- P** ± 90 A/50 A rms nom.
- R** ± 200 A/125 A rms nom.
- T** ± 150 A/50 A rms nom.

Supply Voltage

- 1** ± 15 V
- 2** ± 13 V
- 3** ± 5 V
- 4** ± 12 V to 18 V
- 5** ± 15 V to 24 V
- 6** ± 12 V to 15 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
- 9** 1:5000 turns/50 Ω @ 85°C

Housing Material

- 1** Polycarbonate/ABS blend

Solid State Sensors

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CSNA, CSNB, CSNE SERIES ORDER GUIDE

Catalog Listing	Current Range Amps	Supply Voltage VDC $\pm 5\%$	Coil Characteristics		Meas. Currents Nom.	Meas. Resist (@ I_{nom})
			Turns	Resistance		
CSNA111	± 70	± 15	1000	90 Ω @ 70°C	50 mA for 50 A	40 to 130 Ω
CSNB121	± 100	± 15	2000	160 Ω @ 70°C	25 mA for 50 A	40 to 270 Ω
CSNB131	± 100	± 15	2000	130 Ω @ 70°C	25 mA for 50 A	40 to 300 Ω
CSNE151	$\pm 5-36$	± 15	1000	110 Ω @ 70°C	25 mA for 25 A	100 to 320 Ω
CSNE381*	$\pm 5-36$	$\pm 5V$	1000	66 Ω @ 70°C	25 mA for 25 A	0 to 84 Ω
CSNH151*	$\pm 4-43$	$\pm 15V$	1000	110 Ω @ 70°C	25 mA for 25 A	100 to 320 Ω

NOTE: Extended temperature range and potting also available.

* Contact the 800 number for more information.

SPECIFICATIONS

Catalog Listing	CSNA111	CSNB121	CSNB131	CSNE151
Offset Current @ 25°C, mA max.	± 0.20	± 0.10	± 0.10	± 0.10
Temperature Drift, 0 to 70°C, mA	± 0.35 typ. ± 0.60 max.	± 0.20 typ. ± 0.30 max.	± 0.20 typ. ± 0.30 max.	± 0.17 typ. ± 0.60 max.
Linearity	0.1%	0.1%	0.1%	0.2%
Supply Voltage	$\pm 15V$	$\pm 15V$	$\pm 15V$	$\pm 15V$
Galvanic Isolation @ 50 Hz/1 min.	2.5 kV rms			5 kV rms
Accuracy	$\pm 0.5\%$ of I_N (nominal Current) at 25°C			
Response Time	$< 1 \mu s$			
Bandwidth	DC to 150 kHz			
Temperature	Operating: 0 to 70°C (32 to 150°F)		Storage: -25 to 85°C (-13 to 185°F)	
Primary Circuit Connection	Thru-hole	Thru-hole	Thru-hole	Invasive on 10 pins
Secondary Circuit Connection	3 Pins	3 Pins	3 Pins	3 Pins
Current Drain	10 mA (no load current) + output current (secondary 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

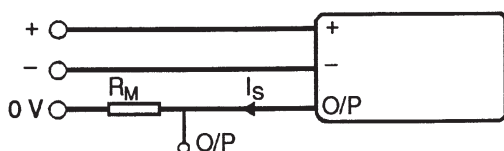
PRIMARY PIN CONNECTIONS FOR CSNE151

Primary Turns	Primary Current		Output Current (mA)	Primary Resistance (m Ω)	Primary Pin Connections
	Nom. I_{DN} (A)	Max. I_D (A)			
1	24	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	

Current

WIRING DIAGRAMS

CSNA111/CSNB121/CSNB131



CSNE151

