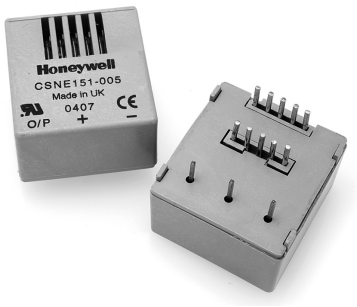
Honeywell

# Current Sensors Line Guide




**Past, future, and current excellence.** Honeywell Sensing and Control (S&C) offers a wide variety of current sensors to monitor alternating (ac) or direct (dc) current. From digital output detectors sensing a few hundred milliamps to linear sensors monitoring over one thousand amps, our comprehensive line provides superior, often accurate performance at a reduced cost. As well as the advantages you'd expect from an experienced provider offering decades of engineering expertise: thru-hole design, fast response times, output voltage isolation from input, minimum energy dissipation, and enhanced reliability with adjustable performance and built-in temperature compensation.

## FEATURES

### DIGITAL/INDUCTIVE CURRENT SENSORS
### CSDA Series.

**Features:** Open collector output • Digital output • ac or dc currents • Thru-hole design • Output voltage isolation from input • Minimum energy dissipation • Maximum current limited only by conductor size • Enhanced accuracy, low-cost sensing • RoHS compliant

**Benefits:** Single digital (TTL logic level, open collector) output that will sink 20 mA of output current. Provides logic level output that changes from Vcc to 0.4 V when sensed current exceeds the operate point. Will not be damaged by overcurrent in the sensed conductor. Potential applications include variable speed drives, overcurrent protection, ground fault detectors, current feedback control systems, robotics, UPS and telecommunication power supplies, welding power supplies, battery management systems, and wattmeters.

### CLOSED LOOP CURRENT SENSORS
### CSNB, CSNA, CSNC, CSNE, CSNF, CSNG, CSNJ, CSNK, CSNL, CSNM, CSNP, CSNR, CSNS, CSNT, and CSNX Series.

**Features:** Current sensing up to 1275 A • ac, dc, and impulse currents • In-line or thru-hole design • Competitive cost/performance ratio • Rapid response • Reduced overshoot • High overload capability • High level of electrical isolation between primary and secondary circuits • Industrial operating temperature range • Small size and weight • RoHS compliant • CE, UL approvals

**Benefits:** Based on the principles of the magnetoresistive or Hall effects, and the null balance or zero magnetic flux method (feedback system). Magnetic flux in the sensor core is constantly controlled at zero. Potential applications include variable speed drives, overcurrent protection, ground fault detectors, current feedback control systems, robotics, UPS and telecommunication power supplies, welding power supplies, battery management systems, and wattmeters.

### OPEN LOOP CURRENT SENSORS
### CSCA-A Series.

**Features:** ac, dc, and impulse currents • Competitive cost/performance ratio • Low power consumption • Compact size • High level of electrical isolation between primary and secondary circuits • Large primary aperture • RoHS compliant • CE, UL approvals

**Benefits:** Based on the principles of the Hall-effect wherein a Hall-effect device (HED) produces an output voltage linearly related to the amplitude and phase of a magnetic field applied to it. HED output is directly proportional to the amplitude and phase of the primary current. Potential applications include variable speed drives, overcurrent protection, ground fault detectors, current feedback control systems, robotics, UPS and telecommunication power supplies, welding power supplies, battery management systems, and wattmeters.

continued on back page

# Current Sensors Line Guide

**Common sense. Global leadership.**
Honeywell S&C offers linear (analog) open loop, digital, or closed-loop current sensors. When any of these sensors detect predetermined signals, the system then performs the designated task. For instance, the digital signal's logic level output may sound an alarm, start a motor, or open a valve. The linear signal duplicates the waveform — often ideal for feedback elements to control a motor, or regulate machine function. And Honeywell's new closed-loop current sensor with magnetoresistive (MR) technology offers amazing offset drift performance over a wide temperature range — with almost no thermal drift, for enhanced accuracy.

For proven engineering expertise, component dependability, and global support, trust Honeywell S&C.

| Digital/Inductive Current Sensors | CSDA Series |
|---|---|
| **Operate current** | 0.5 A.t. nom., 3.5 A.t. nom. |
| **Sensed current type** | ac or dc |
| **Output** | voltage |
| **Response time** | 100 µs |
| **Accuracy** | better than 0.5 % |
| **Mounting** | PCB mounting pins or screw mount |
| **Pinout style** | 3-pin PCB or 3-pin AMP connector |
| **Operating temperature** | -25 °C to 85 °C [-13 °F to 185 °F] |
| **Supply voltage** | 6 Vdc to 16 Vdc |



| Closed Loop Current Sensors | CSNX Series | CSNA Series | CSNF Series |
|---|---|---|---|
| **Sensed current range** | ±56 A | ±70 A, ±90 A, ±100 A | ±150 A, ±180 A, ±200 A |
| **Sensed current type** | ac, dc, impulse | ac, dc, impulse | ac, dc, impulse |
| **Output** | current | current | current |
| **Coil turns** | 2000 (50 Ohm coil) | 1000 (90 or 50 Ohm coil)<br>2000 (160 or 130 Ohm coil) | 1000 (30 Ohm coil)<br>2000 (100 Ohm coil) |
| **Response time** | < 0.2 µs | < 1 µs | < 0.5 µs |
| **Accuracy** | ±0.24 % | ±0.5 % | ±0.5 % |
| **Mounting** | PCB on 11-pins | PCB on 3-pins | PCB on 3-pins |
| **Pinout style** | unipolar | offset | center |
| **Operating temperature** | -40 °C to 85 °C<br>[-40 °F to 185 °F] | 0 °C to 70 °C<br>[32 °F to 158 °F] | -40 °C to 85 °C<br>[-40 °F to 185 °F] |
| **Supply voltage** | 4.75 Vdc to 5.25 Vdc | ±13 Vdc, ±15 Vdc | ±12 Vdc to ±15 Vdc |

## Closed Loop Current Sensors



| | CSNB Series | CSNC Series | CSNE Series |
|---|---|---|---|
| **Sensed current range** | ±100 A | ±90 A | ±36 A, ±90 A |
| **Sensed current type** | ac, dc | ac, dc | ac, dc, impulse |
| **Output** | current | current | current |
| **Coil turns** | 2000 | 1000 (50 Ohm coil) | 1000 (110 Ohm or 66 Ohm coil) |
| **Response time** | < 1 µs | < 1 µs | < 1 µs |
| **Accuracy** | ±0.5 % | ±0.5 % | ±0.5 % |
| **Mounting** | PCB on 3 pins | PCB on 3 pins | PCB on 13 pins |
| **Pinout style** | Offset | Offset | 5-pin |
| **Operating temperature** | 0 °C to 70 °C [32 °F to 158 °F] | -25 °C to 85 °C [-13 °F to 185 °F] | 0 °C to 70 °C [32 °F to 158 °F] |
| **Supply voltage** | ±15.0 Vdc | ±13.0 Vdc | ±12 Vdc to ±15 Vdc |

## Closed Loop Current Sensors



| | CSNG Series | CSNJ Series | CSNK Series |
|---|---|---|---|
| **Sensed current range** | ±180 A, ±200 A | ±600 A | ±1200 A |
| **Sensed current type** | ac, dc | ac, dc, impulse | ac, dc, impulse |
| **Output** | current | current | current |
| **Coil turns** | 2000 | 2000 | 5000 (50 Ohm coil) |
| **Response time** | < 0.5 µs | < 0.5 µs | < 1 µs |
| **Accuracy** | ±0.5 % | ±0.5 % | ±0.5 % |
| **Mounting** | PCB on 3 pins | panel | panel |
| **Pinout style** | offset | spade terminals (x 3) | Molex (3-way) |
| **Operating temperature** | -40 °C to 85 °C [-40 °F to 185 °F] | -40 °C to 85 °C [-40 °F to 185 °F] | -40 °C to 85 °C [-40 °F to 185 °F] |
| **Supply voltage** | ±15.0 Vdc | ±12.0 Vdc to ±18.0 Vdc | ±15 Vdc to ±18 Vdc |

# Current Sensors Line Guide

## Closed Loop Current Sensors




| | CSNL Series | CSNM Series | CSNP Series |
|---|---|---|---|
| **Sensed current range** | ±600 A | ±1000 A | ±90 A |
| **Sensed current type** | ac, dc | ac, dc | ac, dc |
| **Output** | current | current | current |
| **Coil turns** | 2000 | 3000 | 1000 |
| **Response time** | < 0.5 µs | < 1 µs | < 0.5 µs |
| **Accuracy** | ±0.5 % | ±0.5 % | ±0.5 % |
| **Mounting** | panel | panel | PCB on 3 pins |
| **Pinout style** | Molex (3-way) | Molex (3-way) | offset |
| **Operating temperature** | -40 °C to 85 °C [-40 °F to 185 °F] | -40 °C to 85 °C [-40 °F to 185 °F] | -40 °C to 85 °C [-40 °F to 185 °F] |
| **Supply voltage** | ±12.0 Vdc to ±18.0 Vdc | ±12.0 Vdc to ±18.0 Vdc | ±12.0 Vdc to ±15.0 Vdc |

## Closed Loop Current Sensors



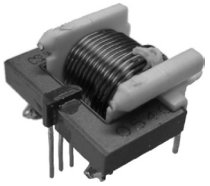

| | CSNS Series | CSNR Series | CSNT Series |
|---|---|---|---|
| **Sensed current range** | ±320 A, ±600 A | ±200 A | ±150 A |
| **Sensed current type** | ac, dc, impulse | ac, dc | ac, dc |
| **Output** | current | current | current |
| **Coil turns** | 2000 | 1000, 2000 | 2000 |
| **Response time** | < 0.5 µs | < 0.5 µs | < 0.5 µs |
| **Accuracy** | ±0.5 % | ±0.5 % | ±0.5 % |
| **Mounting** | panel | PCB on 3 pins | PCB on 3 pins |
| **Pinout style** | Molex (3-way) | center, offset | offset |
| **Operating temperature** | -40 °C to 85 °C [-40 °F to 185 °F] | -40 °C to 85 °C [-40 °F to 185 °F] | -40 °C to 85 °C [-40 °F to 185 °F] |
| **Supply voltage** | ±12 Vdc to ±18 Vdc | ±12.0 Vdc to ±15.0 Vdc | ±12.0 Vdc to ±15.0 Vdc |

## Open Loop Current Sensors

| | CSCA-A Series | CSLA Series | CSLH Series |
|---|---|---|---|
| **Sensed current range** | ±150 A, ±300 A<br>±600 A, ±900 A | ±57 A to ±950 A | ±9 A, ±45 A |
| **Sensed current type** | ac, dc, impulse | ac, dc | ac, dc |
| **Output** | voltage | voltage | sink/source |
| **Response time** | 3 µs to 7 µs | 3 µs, 8 µs | 3 µs |
| **Sensitivity** | – | various | 18.5 mV N* ±3.5 mV N* @ 5 Vdc or<br>282 mV N* -42, +82 mV N* @ 10 Vdc |
| **Mounting** | Molex connector<br>Gallant connector | PCB on 3-pins | PCB on 3-pins |
| **Pinout style** | – | 3-pin | 3-pin |
| **Operating temperature** | -10 °C to 80 °C<br>[14 °F to 176 °F] | -25 °C to 85 °C<br>[-13 °F to 185 °F] | -25 °C to 85 °C<br>[-13 °F to 185 °F] |
| **Supply voltage** | ±15 Vdc ±5 % | 8 Vdc to 16 Vdc<br>6 Vdc to 12 Vdc | 4.5 Vdc to 10.5 Vdc |

N = Number of turns

## Open Loop Current Sensors



| | CSLS Series | CSLT Series | CSLW Series |
|---|---|---|---|
| **Sensed current range** | ±60 A | ±100 A | ±1 A, ±5 A, ±40 mA, ±200 mA |
| **Sensed current type** | ac, dc | ac, dc | ac, dc |
| **Output** | sink/source | sink/source | sink/source |
| **Coil turns** | – | – | 12, 60, 300, 1500 |
| **Response time** | 3 µs | 3 µs | 3 µs |
| **Sensitivity** | 15 mV/AT ±2 mV/AT @ 5 Vdc | 15 mV/AT ±2 mV/AT @ 5 Vdc | various |
| **Mounting** | PCB | PCB | PCB |
| **Pinout style** | 3-pin | 3-pin | 5-pin |
| **Operating temperature** | -25 °C to 100 °C [-13 °F to 212 °F] | -25 °C to 100 °C [-13 °F to 212 °F] | -25 °C to 100 °C [-13 °F to 212 °F] |
| **Supply voltage** | 4.5 Vdc to 10.5 Vdc | 4.5 Vdc to 10.5 Vdc | 4.5 Vdc to 10.5 Vdc |

### CSLA Series.

**Features:** Linear output • ac or dc currents • Thru-hole design • Enhanced response time • Output voltage isolation from input • Minimum energy dissipation • Maximum current limited only by conductor size • Adjustable performance and built-in temperature compensation assures reliable operation • Enhanced accuracy, low-cost sensing • RoHS compliant

**Benefits:** Incorporates Honeywell's 91SS12-2 and SS94A1 linear output Hall-effect transducter (LOHET™). Sensing element is assembled in a printed circuit board mountable housing, available in four configurations. Potential applications include variable speed drives, overcurrent protection, ground fault detectors, current feedback control systems, robotics, UPS and telecommunication power supplies, welding power supplies, battery management systems, and wattmeters.

### CSLH Series.

**Features:** ac or dc currents • Miniature • Linear ratiometric output • Current sinking or sourcing output for interfacing flexibility • No insertion loss • Enhanced response time • Low-cost sensing • Minimum energy dissipation • Maximum current limited only by conductor size • Built-in temperature compensation promotes reliable operation • RoHs compliant

**Benefits:** Open-loop sensor incorporates Honeywell's SS490 Series miniature ratiometric linear Hall-effect sensor. Element is encapsulated in a PCB-mountable plastic package. Combination of sensor, flux collector, and housing comprises the current sensor assembly. Potential applications include motor control, HVAC and consumer tools, current monitoring of electronic circuits, overcurrent protection, ground fault detectors, robotics, industrial process control, UPS and telecommunication power supplies, welding current monitoring, battery management systems in mobile equipment, watt meters, and variable speed drives.

### CSLS, CSLT, CSLW Series.

**Features:** ac or dc currents • Linear ratiometric output • Current sinking or sourcing output for interfacing flexibility • No insertion loss • Enhanced response time • Compact size for applications with limited space • Enhanced accuracy, low-cost sensing • Minimum energy dissipation • Maximum current limited only by conductor size • Built-in temperature compensation promotes reliable operation • RoHs compliant

**Benefits:** Incorporate Honeywell's SS490 Series miniature ratiometric linear Hall-effect sensor. Element is encapsulated in a printed circuit board-mountable plastic package. Sensors are ratiometric. Potential applications include motor control in HVAC and consumer tools, current monitoring of electronic circuits, overcurrent protection, ground fault detectors, robotics, industrial process control, UPS and telecommunication power supplies, welding current monitoring, battery management systems in mobile equipment, watt meters, and variable speed drives.

**Warranty.** Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

For more information about Sensing and Control products, visit www.honeywell.com/sensing or call +1-815-235-6847
Email inquiries to info.sc@honeywell.com

**⚠ WARNING**
**PERSONAL INJURY**

- DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

**⚠ WARNING**
**MISUSE OF DOCUMENTATION**

- The information presented in this catalogue is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**

Sensing and Control
Automation and Control Solutions
Honeywell
1985 Douglas Drive North
Golden Valley, MN 55422 USA
+1-815-235-6847
**www.honeywell.com/sensing**

Honeywell

005895-1-EN IL50 GLO
June 2008

# X-ON Electronics

Largest Supplier of Electrical and Electronic Components

***Click to view similar products for*** Industrial Current Sensors ***category:***

***Click to view products by*** Honeywell ***manufacturer:***

Other Similar products are found below :

CSNS181 CSNS300M-001 5SHT-151-E 7SHT-301-E SAO-Q1N SAO-Q2N CSCA0075A000U12J01 SAO-S1N L34S1T5D15T BB-JC36S500-V BB-JC24S250-V CSNS300M-500 LA200-P ACS724LLCTR-10AB-T LPMG12 DCSA50 ECS40BC A-CS010B A-CS050B A-CS100B A-CS200B ACS758LCB-100B-PFF-T ACS712ELCTR-20A-T CS010GT12 CS030EK1 CS050B CS050BT12 CS100B CS200B CS200BKT5 CS200BT24 CS300B CS400B CS600B CSM006NPT3.3 CSM010PST5 CSM010SYA CSM015NPT5 CSM015SY CSM025AY CSM050LA/50mA CSM100AP/1:2000 CSM100LA/50mA DS050LTA CC6903SO-30A CC6903SO-20A CC6904SO-20A 20310200101 20310200102 20310500101