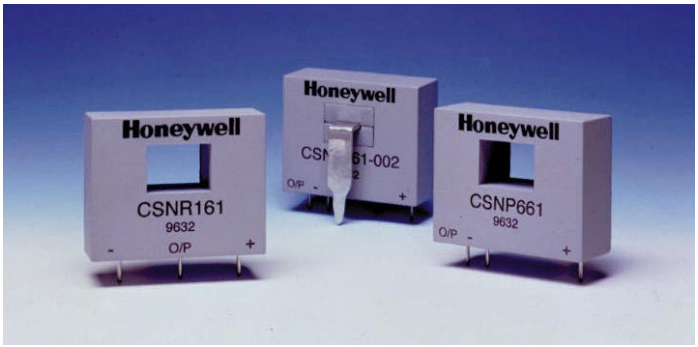



**FEATURES**

- 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
## Closed Loop Current Sensors

### CSNA, CSNB, CSNE SERIES ORDER GUIDE

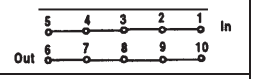
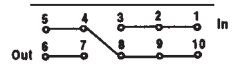
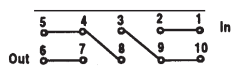
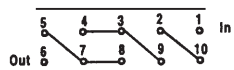
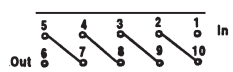
| Catalog Listing | Current Range Amps | Supply Voltage VDC ±5% | Coil Characteristics | | Meas. Currents Nom. | Meas. Resist (@ $I_{nom}$) |
|---|---|---|---|---|---|---|
| | | | Turns | Resistance | | |
| **CSNA111** | ±70 | ±15 | 1000 | 90Ω @ 70°C | 50 mA for 50 A | 40 to 130Ω |
| **CSNB121** | ±100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

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.<br>±0.60 max. | ±0.20 typ.<br>±0.30 max. | ±0.20 typ.<br>±0.30 max. | ±0.17 typ.<br>±0.60 max. |
| Linearity | 0.1% | 0.1% | 0.1% | 0.2% |
| Supply Voltage | ±15V | ±15V | ±15V | ±15V |
| Galvanic Isolation @ 50 Hz/1 min. | 2.5 kV rms | | | 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 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 |

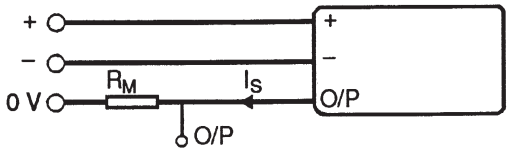
### PRIMARY PIN CONNECTIONS FOR CSNE151

| Primary Turns | Primary Current | | Output Current (mA) | Primary Resistance (mΩ) | 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 |  |

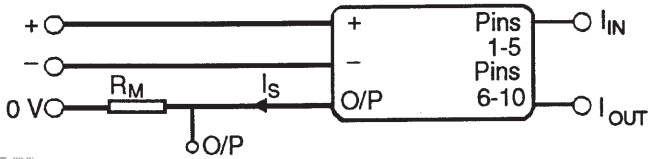


### WIRING DIAGRAMS

**CSNA111/CSNB121/CSNB131**



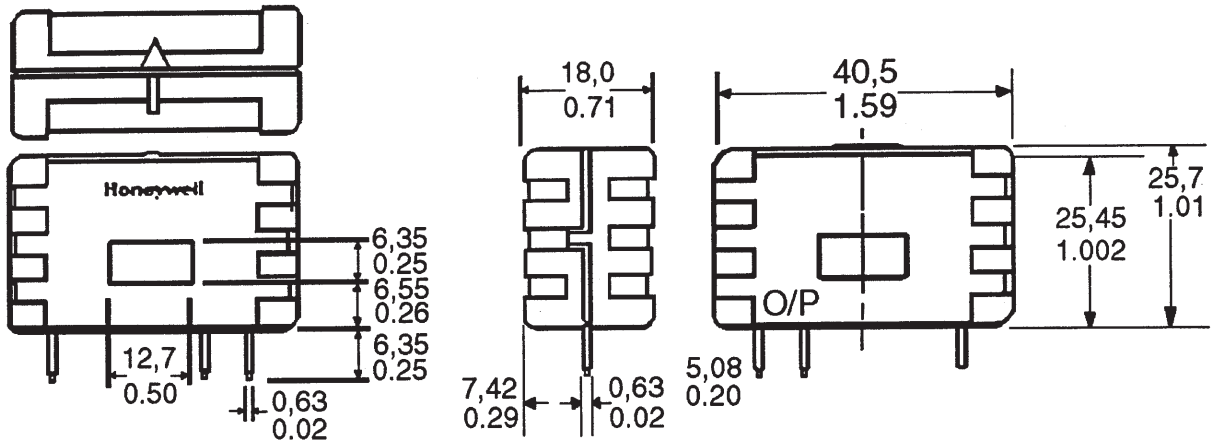

**CSNE151**



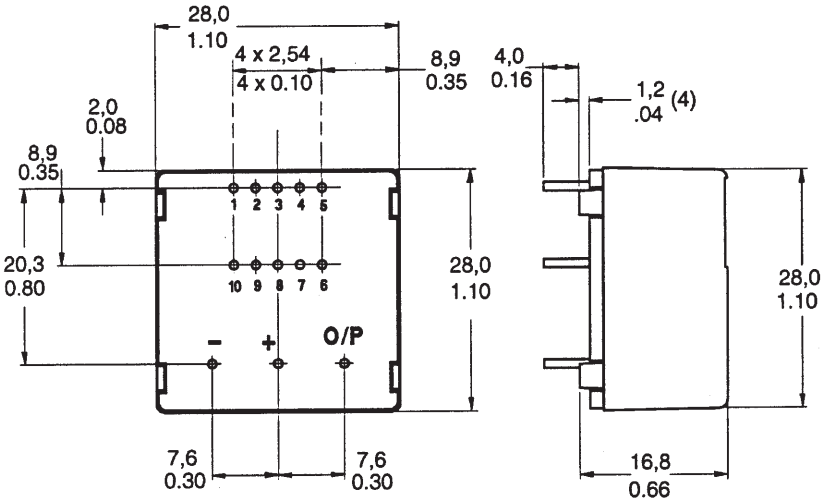

Current

**MOUNTING DIMENSIONS** (for reference only)

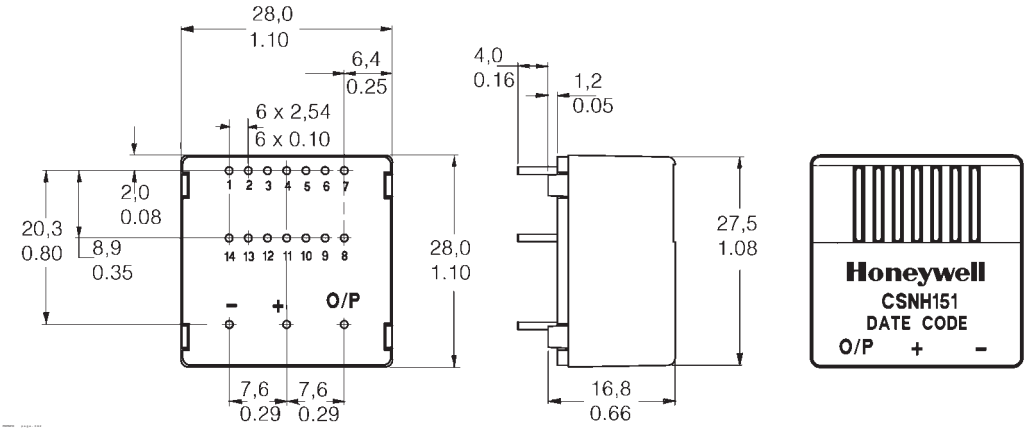
**CSNA111, CSNB121, CSNB131**




**CSNE151/CSNE381**




**CSNH151**



# Closed Loop Current Sensors

### CSNJ, CSNK SERIES ORDER GUIDE

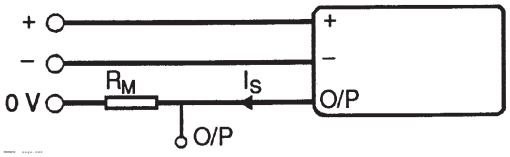
| Catalog Listings | Current Range Amps | Supply Voltage VDC ± 5% | Coil Characteristics | | Meas. Currents Nom. | Meas. Resist (@ $I_{nom}$) |
|---|---|---|---|---|---|---|
| | | | Turns | Resistance | | |
| **CSNJ481** | ±600 | ±12 to 18 | 2000 | 25Ω @ 70°C | 150 mA for 300 A | 0 to 70Ω |
| **CSNJ481-001*** | ±600 | ±12 to 18 | 2000 | 25Ω @ 70°C | 150 mA for 300 A | 0 to 70Ω |
| **CSNJ481-002** | ±600 | ±12 to 18 | 2000 | 25Ω @ 70°C | 150 mA for 300 A | 0 to 70Ω |
| **CSNJ481-003*** | ±600 | ±12 to 18 | 2000 | 25Ω @ 70°C | 150 mA for 300 A | 0 to 70Ω |
| **CSNK591** | ±1200 | ±15 to 24 | 5000 | 50Ω @ 70°C | 100 mA for 500 A | 0 to 130Ω |
| **CSNK591-001*** | ±1200 | ±15 to 24 | 5000 | 50Ω @ 70°C | 100 mA for 500 A | 0 to 130Ω |
| **CSNK591-002** | ±1200 | ±15 to 24 | 5000 | 50Ω @ 70°C | 100 mA for 500 A | 0 to 130Ω |
| **CSNK591-003*** | ±1200 | ±15 to 24 | 5000 | 50Ω @ 70°C | 100 mA for 500 A | 0 to 130Ω |

*Fitted with busbar

### SPECIFICATIONS

| Catalog Listings | CSNJ481 CSNJ481-001 | CSNJ481-002 CSNJ481-003 | CSNK591 CSNK591-001 | CSNK591-002 CSNK591-003 |
|---|---|---|---|---|
| Offset Current @ 25°C, mA max. | ±0.30 | ±0.30 | ±0.20 | ±0.20 |
| Temperature Drift, 0 to 70°C, mA | ±0.30 typ.<br>±0.50 max. | ±0.30 typ.<br>±0.50 max. | ±0.20 typ.<br>±0.30 max. | ±0.20 typ.<br>±0.30 max. |
| Linearity | ±0.1% | ±0.1% | ±0.1% | ±0.1% |
| Supply Voltage | ±12 to ±18V | ±12 to ±18V | ±15 to ±24V | ±15 to ±24V |
| Galvanic Isolation @ 50 Hz/1 min. | 7.5 kV rms | 7.5 kV rms | 6 kV rms | 6 kV rms |
| Accuracy | ±0.5% of $I_N$ (nominal Current) at 25°C | | | |
| Response Time | <1 μs | | | |
| Bandwidth | DC to 150 kHz | | | |
| Operating Temperature | −40 to 85°C<br>(−40 to 185°F) | 0 to 70°C<br>(32 to 158°F | −40 to 85°C<br>(−40 to 185°F) | 0 to 70°C<br>(32 to 158°F) |
| Storage Temperature | −40 to 90°C<br>(−40 to 194°F) | −25 to 85°C<br>(−13 to 85°F | −40 to 90°C<br>(−40 to 194°F) | −25 to 85°C<br>(−13 to 85°F) |
| Primary Circuit Connection | Thru-hole or busbar | Thru-hole or busbar | Thru-hole or busbar | Thru-hole or busbar |
| Secondary Circuit Connection | 3 pins | 3 pins | 3 pins | 3 pins |
| Current Drain | 14 mA (no load current) + output current | | 22 mA (24 V) + output current | |
| ''In-Out'' Sense Signal | To obtain positive measuring current on O/P terminal, current must flow in direction of arrow | | | |
| Mounting | Faston, 3 pins | | Push-on (spade), 3 terminals | |

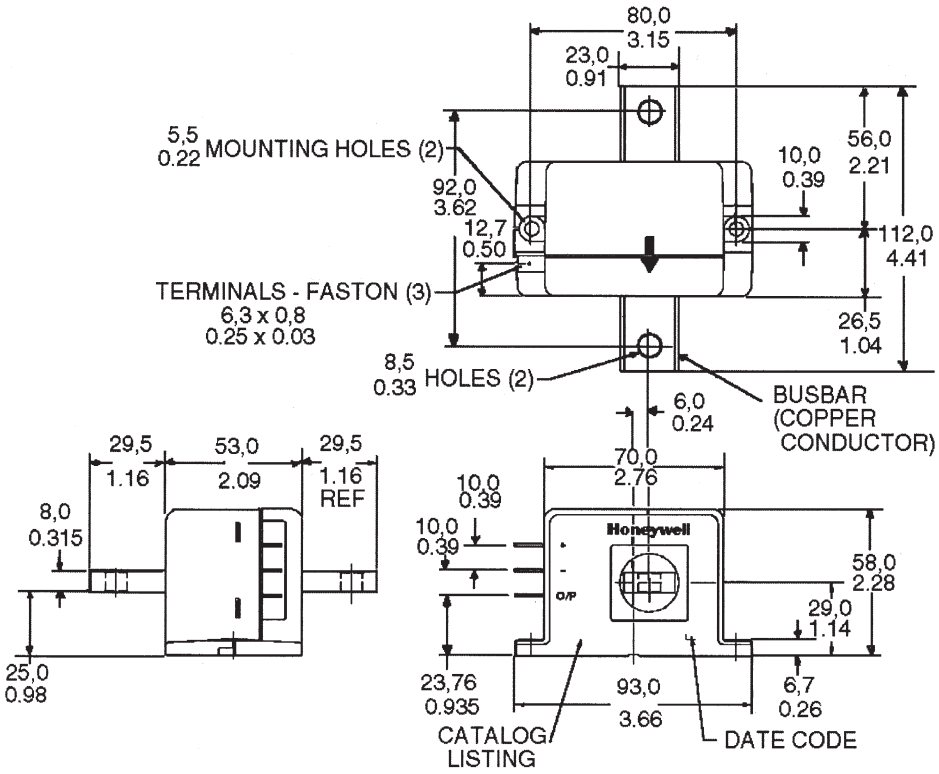
### WIRING DIAGRAM



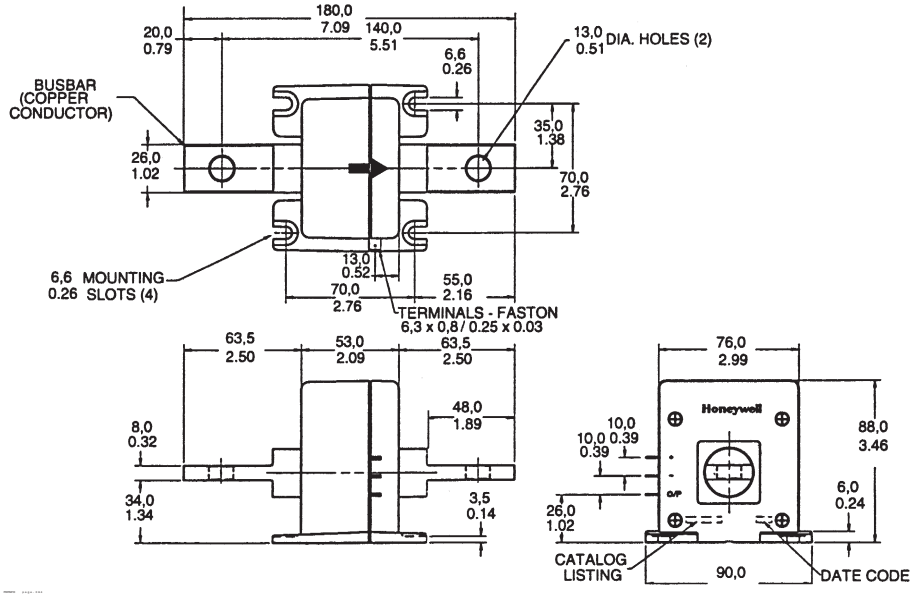

Current

**MOUNTING DIMENSIONS** (for reference only)

**CSNJ481**




**CSNK591**



# Closed Loop Current Sensors

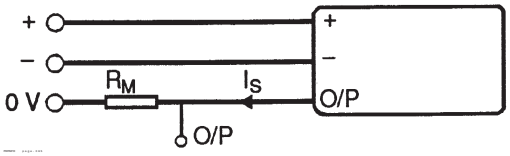
### CSNL, CSNM SERIES ORDER GUIDE

| Catalog Listings | Peak Current Range Amps | Supply Voltage VDC ± 5% | Coil Characteristics | | Meas. Currents Nom. | Meas. Resist (@ $I_{nom}$) |
|---|---|---|---|---|---|---|
| | | | Turns | Resistance | | |
| **CSNL181** | ±600 | ±12 to 18 | 2000 | 25Ω @ 70°C | 150 mA for 300 A | 0 to 70Ω |
| **CSNM191** | ±1000 | ±12 to 18 | 5000 | 50Ω @ 70°C | 100 mA for 500 A | 0 to 120Ω |

### SPECIFICATIONS

| Catalog Listings | CSNL181 | CSNM191 |
|---|---|---|
| Offset Current @ 25°C, mA max. | ±0.30 | ±0.20 |
| Temperature Drift, 0 to 70°C, mA | ±0.30 typ.<br>±0.50 max. | ±0.20 typ.<br>±0.30 max. |
| Linearity | ±0.1% | ±0.1% |
| Supply Voltage | ±12 to ±18V | ±12 to ±18V |
| Galvanic Isolation @ 50 Hz/1 min. | 7.5 kV rms | 7.5 kV rms |
| Accuracy | ±0.5% of $I_N$ (nominal Current) at 25°C | |
| Response Time | 500 ns | <1 μs |
| Bandwidth | DC to 150 kHz | |
| Operating Temperature | −40 to 85°C (−40 to 185°F) | |
| Storage Temperature | −40 to 90°C (−40 to 194°F) | |
| Primary Circuit Connection | Thru-hole | Thru-hole |
| Secondary Circuit Connection | 3 pins | 3 pins |
| Current Drain | 14 mA (no load current) + output current | |
| ''In-Out'' Sense Signal | To obtain positive measuring current on O/P terminal, current must flow in direction of arrow | |
| Mounting | Faston, 3 pins | |

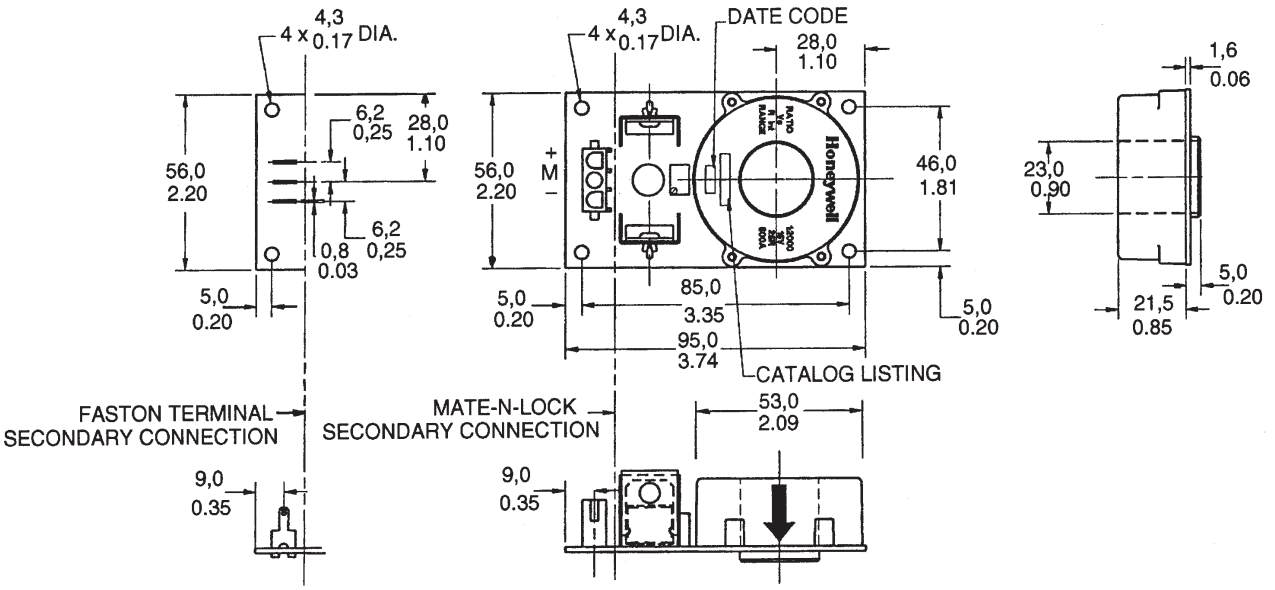
### WIRING DIAGRAM



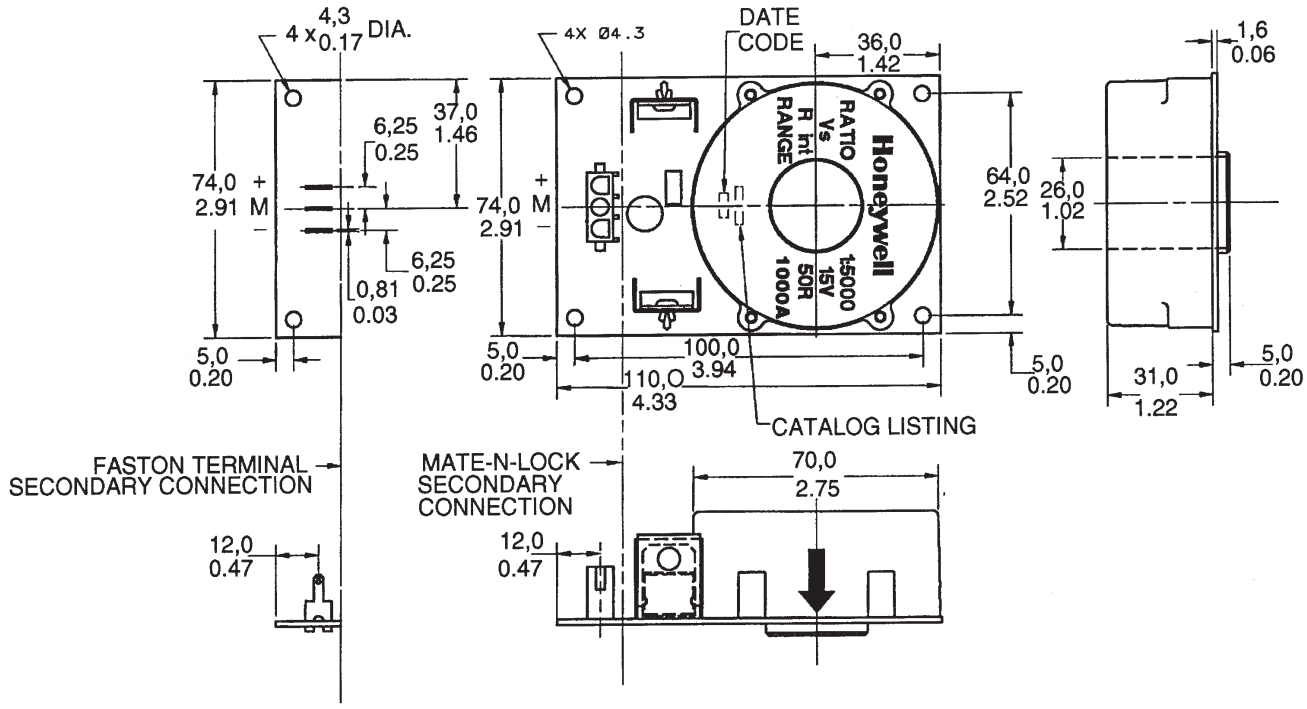

Current

**MOUNTING DIMENSIONS** (for reference only)

**CSNL181**




**CSNM191**



# Closed Loop Current Sensors

### CSNF, CSNR, CSNP, CSNT SERIES ORDER GUIDE

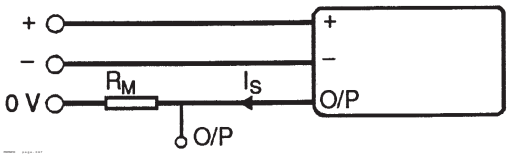
| Catalog Listings | Peak Current Range Amps | Supply Voltage VDC ± 5% | Coil Characteristics | | Meas. Currents Nom. | Meas. Resist (@ $I_{nom}$) |
|---|---|---|---|---|---|---|
| | | | Turns | Resistance | | |
| **CSNP661** | ±90 | ±12 to 15 | 1000 | 30Ω @ 70°C | 50 mA for 50 A | 50 to 100Ω |
| **CSNT651** | ±150 | ±12 to 15 | 2000 | 100Ω @ 70°C | 25 mA for 50 A | 40 to 75Ω |
| **CSNF161** | ±150 | ±12 to 15 | 1000 | 30Ω @ 70°C | 100 mA for 100 A | 10 to 40Ω |
| **CSNF151** | ±180 | ±12 to 15 | 2000 | 100Ω @ 70°C | 50 mA for 100 A | 10 to 75Ω |
| **CSNR161** | ±200 | ±12 to 15 | 1000 | 30Ω @ 70°C | 125 mA for 125 A | 30 to 40Ω |
| **CSNR151** | ±200 | ±12 to 15 | 2000 | 100Ω @ 70°C | 62.5 mA for 125 A | 10 to 40Ω |

NOTE: Busbar options available.

### SPECIFICATIONS

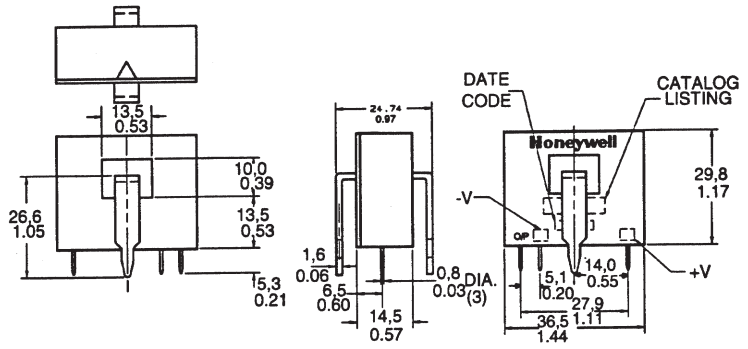
| Catalog Listings | CSNP661 | CSNT651 | CSNF161 | CSNF151 | CSNR161 | CSNR151 |
|---|---|---|---|---|---|---|
| Offset Current @ 25°C, mA max. | ±0.20 | ±0.10 | ±0.20 | ±0.10 | ±0.20 | ±0.10 |
| Temperature Drift, 0 to 70°C, mA | ±0.30 typ.<br>±0.50 max. | ±0.15 typ.<br>±0.25 max. | ±0.30 typ.<br>±0.50 max. | ±0.15 typ.<br>±0.25 max. | ±0.30 typ.<br>±0.60 max. | ±0.15 typ.<br>±0.30 max. |
| Linearity | ±0.1% | ±0.1% | ±0.1% | ±0.1% | ±0.1% | ±0.1% |
| Supply Voltage | ±12 to 15V | ±12 to 15V | ±12 to 15V | ±12 to 15V | ±12 to 15V | ±12 to 15V |
| Galvanic Isolation @ 50 Hz/1 min. | 3 kV rms | 3 kV rms | 3 kV rms | 3 kV rms | 3 kV rms | 3 kV rms |
| Accuracy | ±0.5% of $I_N$ (nominal Current) at 25°C | | | | | |
| Response Time | <500 ns | | | | | |
| Bandwidth | DC to 150 kHz | | | | | |
| Operating Temperature | −40 to 85°C (−40 to 185°F) | | −40 to 85°C (−40 to 185°F) | | | |
| Storage Temperature | −40 to 90°C (−40 to 194°F) | | −40 to 90°C (−40 to 194°F) | | | |
| Primary Circuit Connection | Thru-hole | | | | | |
| Secondary Circuit Connection | 3 pins | | | | | |
| Current Drain | 10 mA (no load current) + output current | | 14 mA (no load current) + output current | | | |
| ''In-Out'' Sense Signal | To obtain positive measuring current on O/P terminal, current must flow in direction of arrow | | | | | |
| Mounting | 3 pins | | | | | |
| Pin Style | A | A | B | B | B | B |

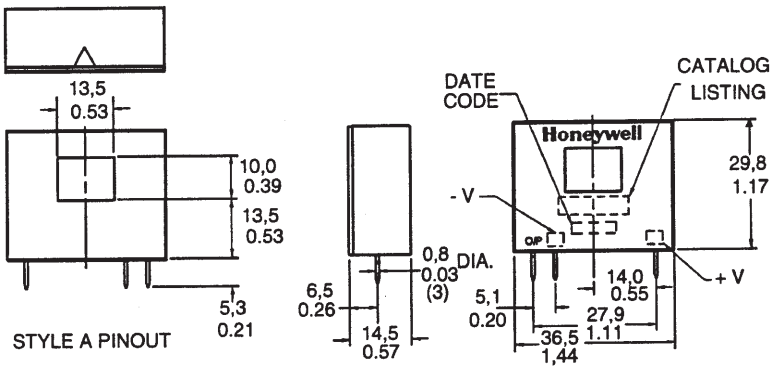
### WIRING DIAGRAM

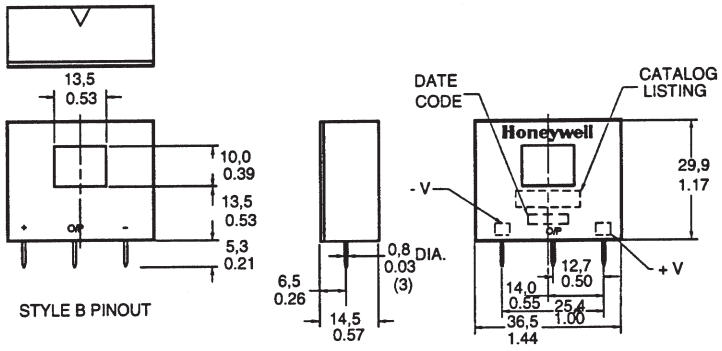



Current

**MOUNTING DIMENSIONS** (for reference only)



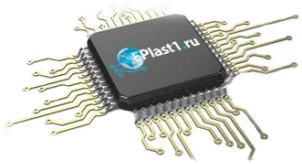
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.




**Как с нами связаться**

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