



Closed Loop Hall Current Sensor CYHCS-B101

This Hall Effect current sensor is based on closed loop compensating principle and can be used for measurement of DC and AC current, pulse currents etc. The output of the transducer reflects the real wave of the current carrying conductor.

| Product Characteristics | Applications |
|---|--|
| <ul style="list-style-type: none">• Excellent accuracy• Very good linearity• Small size and encapsulated• Less power consumption• Current overload capability | <ul style="list-style-type: none">• General Purpose Inverters• AC/DC Variable Speed Drivers• Battery Supplied Applications• Uninterruptible Power Supplies (UPS)• Switched Mode Power Supplies |

ELECTRICAL CHARACTERISTIC

| | CYHCS-B101-15A | CYHCS-B101-25A | CYHCS-B101-50A | |
|---------------------------------|-------------------|----------------|----------------|----|
| Nominal current | 15 | 25 | 50 | A |
| Measuring range | 30 | 50 | 100 | A |
| Number of secondary turns | 1200±1 | 1000±1 | 2000±2 | |
| Measuring resistance | 40 | 40 | 40 | Ω |
| Nominal analogue output current | 12.5±0.5% | 25±0.5% | 25±0.5% | mA |
| Supply voltage | ±15±5% | | | V |
| Accuracy at +25°C | 0.1 | | | % |
| Galvanic isolation | 50Hz, 1min, 2.5kV | | | kV |

ACCURACY DYNAMIC PERFORMANCE

| | | |
|---------------------------------|---------------------|------|
| Zero offset voltage at +25°C | ±0.2 | mA |
| Thermal drift of offset current | -40°C ~ +85°C, ±0.6 | mA |
| Linearity | ≤0.1 | %FS |
| di/dt accuracy followed | >50 | A/μs |
| Response time | <1 | μs |
| Bandwidth (-1db) | DC ~ 100 | kHz |

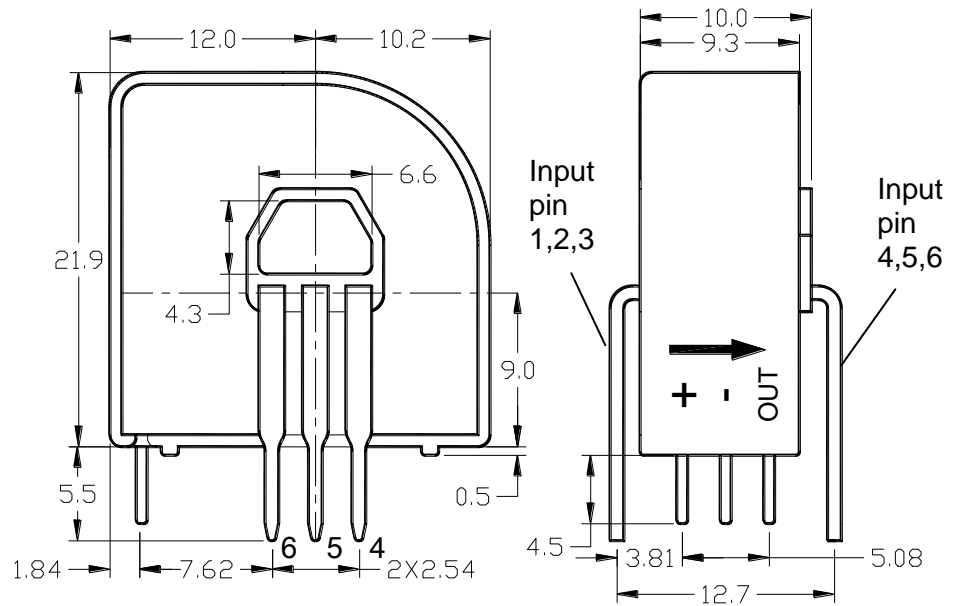
GENERAL CHARACTERISTIC

| | | |
|-----------------------|-----------------------|----|
| Operating temperature | -40 ~ +85 | °C |
| Storage temperature | -40 ~ +125 | °C |
| Current consumption | Output current + 10mA | mA |



Dimensions (mm)

+ +15V
- -15V
OUT: Output



Wiring diagram

| Number of Primary turns | Nominal current (A) | Output current (mA) | Primary resistance (mΩ) | Primary inductance (μH) | Pin connection |
|-------------------------|---------------------|---------------------|-------------------------|-------------------------|----------------|
| 1 | ±15 (±25, ±50) | ±12.5 (±25, ±25) | 0.18 | 0.013 | |
| 2 | ±7.5 (±12.5, ±25) | ±12.5 (±25, ±25) | 0.81 | 0.05 | |
| 3 | ±5 (±8.3, ±16.6) | ±12.5 (±25, ±25) | 1.62 | 0.12 | |

Application Notes

There are two inputs methods: 1) Cable Input using the sensor hole; 2) PCB Input using the input pins. You should only use one of these input models.

For the cable input model the current cable should be passed through the hole of the sensor. Taking the sensor CYHCS-B101-15A as example, the nominal current is 6A if the cable is passed through the hole one time. The nominal current is 7.5A or 5A if the cable is wired through the hole 2 or 3 times. In this input model please don't use the input pins.

For PCB input model one should wire the sensor according to the input pin connection shown in the above table. The 3 wiring diagrams correspond to the number of primary turns 1, 2 and 3. In this input model please don't use the hole of sensor as input.