ChenYang Technologies GmbH & Co KG

AC/DC Closed Loop Hall Current Sensor CYHCS-B200

This Hall Effect current sensor is based on closed loop principle and designed with a high galvanic isolation between primary conductor and secondary circuit. It 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
• Excellent accuracy • Very good linearity • Small size and encapsulated • Less power consumption • Current overload capability	• **Photovoltaic equipment** • General Purpose Inverters • AC/DC Variable Speed Drivers • Battery Supplied Applications • Uninterruptible Power Supplies (UPS) • Switched Mode Power Supplies

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ELECTRICAL CHARACTERISTIC

Part number	CYHCS-B200-10A	CYHCS-B200-20A	CYHCS-B200-25A	CYHCS-B200-40A
Nominal current	10A	20A	25A	40A
Measuring range	0 ~ 20A	0 ~ 40A	0 ~ 50A	0 ~80A
Internal measuring resistance	100Ω±0.5%	50Ω±0.5%	40Ω±0.5%	40Ω±0.5%
Turns ratio	1:1000	1:1000	1:1000	1:1600
Nominal analogue output voltage	+2.5VDC ± (1V ± 0.5%)			
Supply voltage	+5V ±5%			
Galvanic isolation	50Hz,1min, 2.5kV			

ACCURACY DYNAMIC PERFORMANCE

Zero offset voltage Ta=25°C	2.5 ±0.5%	V
Thermal drift of offset voltage Ip=0, Ta-25°C ~ +85°C	≤ ±0.5	mV/°C
Measuring accuracy, Ta=25°C	≤±0.7	% FS
Linearity	≤±0.1	%FS
Following accuracy di/dt	50	A/μs
Response time	<0.5	μS
Bandwidth (-1db)	DC ~ 200	kHz
Load resistance	≥10	kΩ

GENERAL CHARACTERISTIC

Operating temperature	-25 ~ +85	°C
Storage temperature	-40 ~ +100	°C
Current consumption Ip=0	<45	mA

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Relation between Input Current and Output Voltage

Take the sensor CYHCS-B200-30A as sample, the relation between the input current and output voltage is shown in the table 1, Fig.1 and Fig. 2

Table 1. Relation between the input current and output voltage

Input current (A)	-60	-45	-30	-15	0	15	30	45	60
Output voltage (V)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5

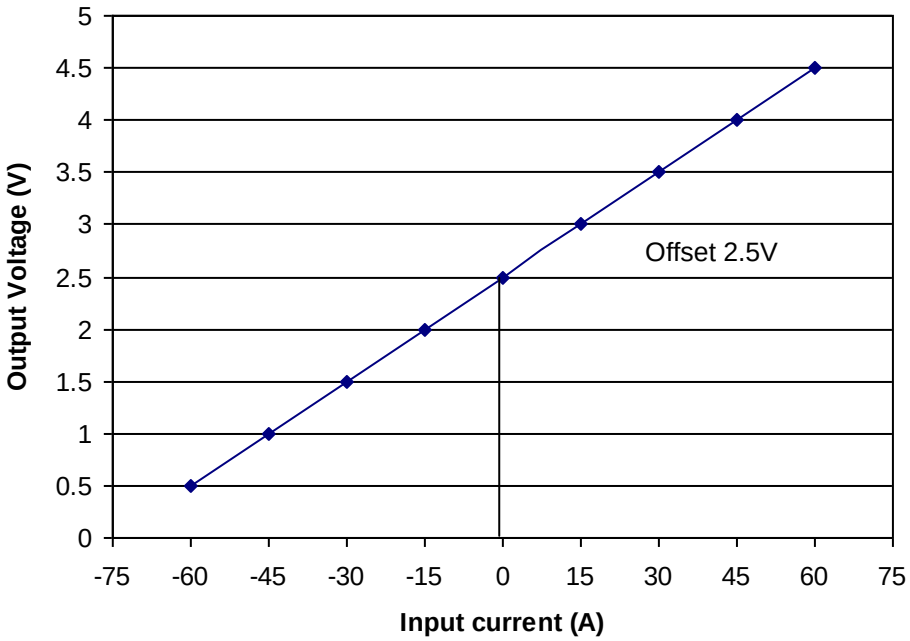

Fig. 1 Relation between the input current (DC) and output voltage (DC)

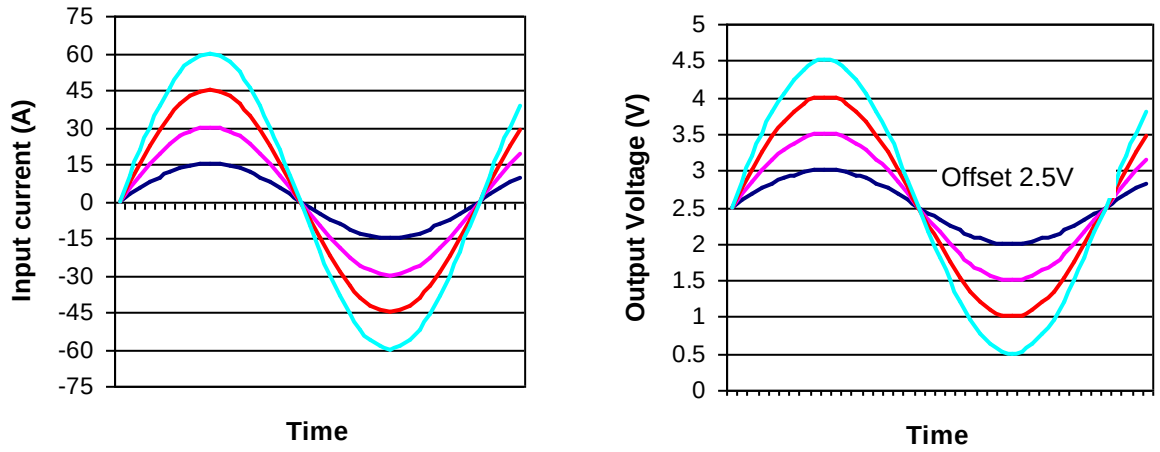

Fig. 2 Relation between the input current (AC) and output voltage (AC)

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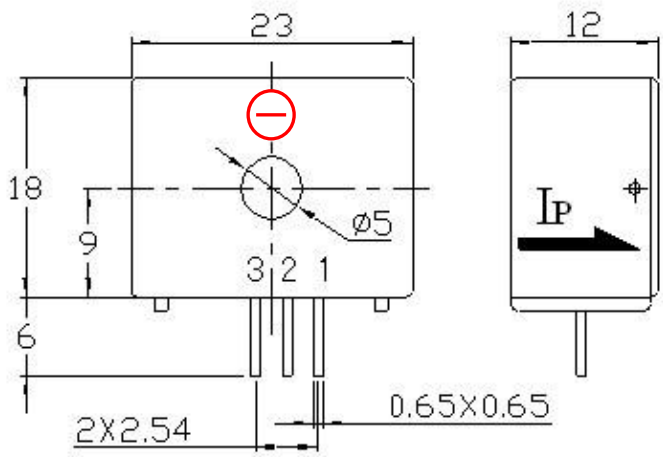
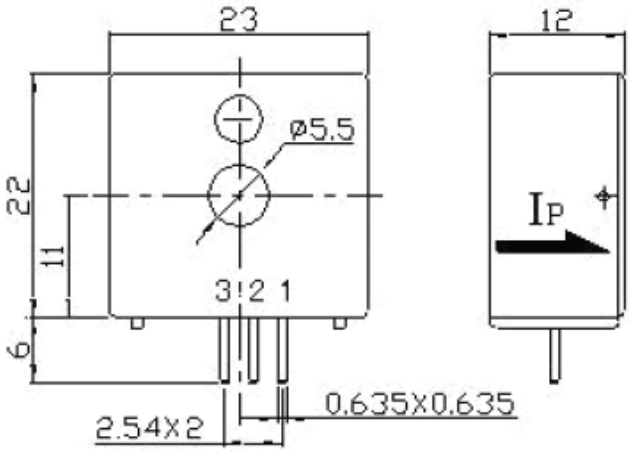
Dimensions (mm)



Terminal:

1(+): +5V
2(G): Ground
3(O): Output

Fig. 3 Dimensions of CYHCS-B200-10A and CYHCS-B200-20A



Terminal:

1(+): +5V
2(G): Ground
3(O): Output

Fig. 4 Dimensions of CYHCS-B200-25A and CYHCS-B200-40A

Connection

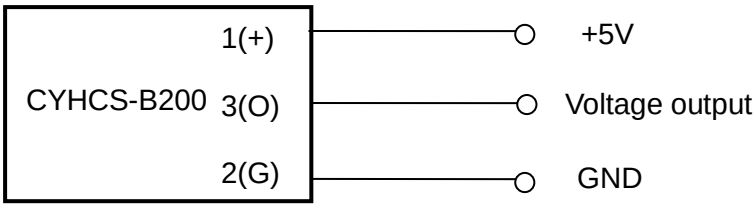


Fig. 5 Connection of CYHCS-B200

Notes:

1. Connect the terminals of power source, output respectively and correctly, never make wrong connection.
2. The in-phase output can be obtained when the current direction of current carrying conductor is the same as the direction of arrow marked above.
3. The best accuracy can be achieved when the window is fully filled with cable (current carrying conductor).

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