Closed Loop Precise Hall Current Sensor CYHCS-ES588

This Hall Effect current sensor is based on the closed loop compensating principle and designed with a high galvanic isolation between primary and secondary circuits. 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 • Switched Mode Power Supplies

Electrical Data/Input

Part number	Primary Rated Current I_r (A)	Measuring Range I_p(A)	Turns ratio	Internal measuring resistor (Ω)
CYHCS-ES588-10A	10	25	1:1131	100±0.1%
CYHCS-ES588-25A	25	62.5	1:1414	50±0.1%
CYHCS-ES588-50A	50	125	1:1414	25±0.1%
CYHCS-ES588-75A	75	187.5	1:1697	20±0.1%
CYHCS-ES588-100A	100	250	1:1885	16.6±0.1%

Rated Output Voltage:	+2.5VDC±0.884V ±0.5%FS
Supply Voltage	+5V ± 5%,
Reference voltage R:	+2.5VDC ±0.5% FS
Electric Offset Voltage	+2.5VDC ±0.5% FS
Current Consumption (at V_{out}=0V)	15mA
Isolation voltage (50/60Hz, 1min)	3.0kV
Accuracy:	0.5% FS
Linearity:	<0.1% FS
Thermal Drift of Offset Voltage,	±0.2mV/°C
Response Time:	< 1.0µs
Di/dt following accuracy:	100A/µs
Frequency Bandwidth (-1dB):	DC ~ 200 kHz

General Data

Ambient Operating Temperature:	-40°C ~ +85°C
Ambient Storage Temperature:	-40°C~ +125°C

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Relation between Input Current and Output Voltage

Take the sensor CYHCS-ES588-50A 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)	-125	-75	-50	-25	0	25	50	75	125
Output voltage (V)	0.29	1.174	1.616	2.058	2.5	2.942	3.384	3.826	4.71

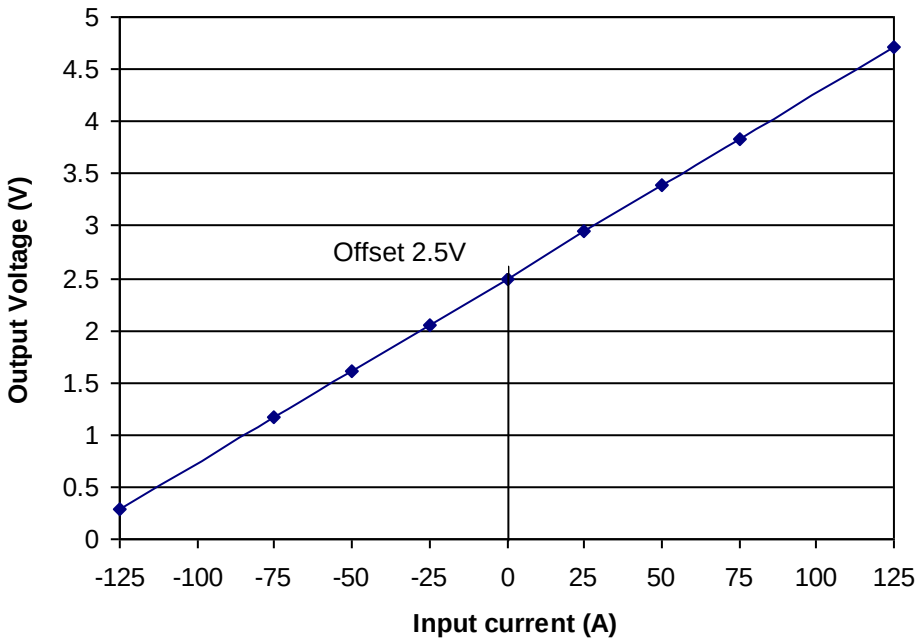

Fig. 1 Relation between the input current (DC) and output voltage (DC)

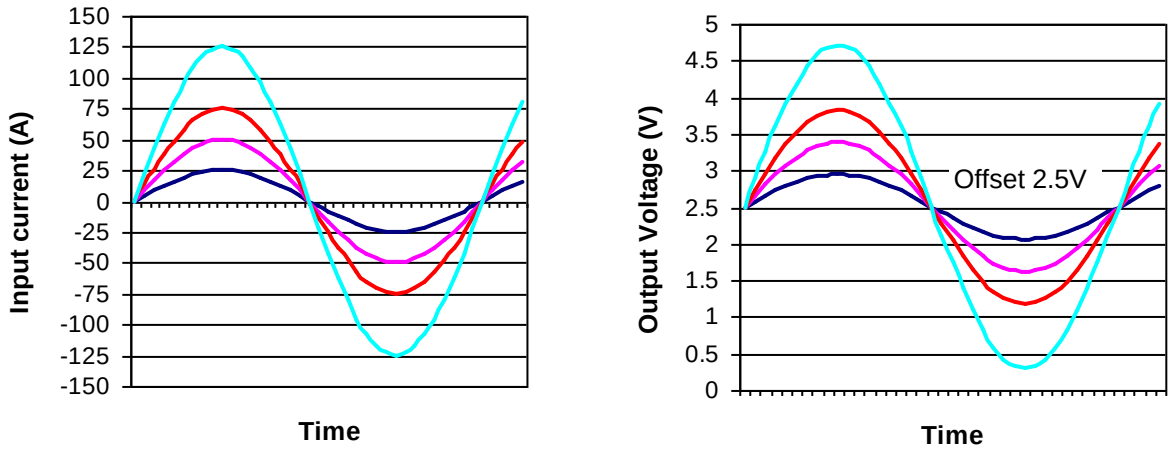

Fig. 2 Relation between the input current (AC) and output voltage (AC)

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Dimensions (mm)

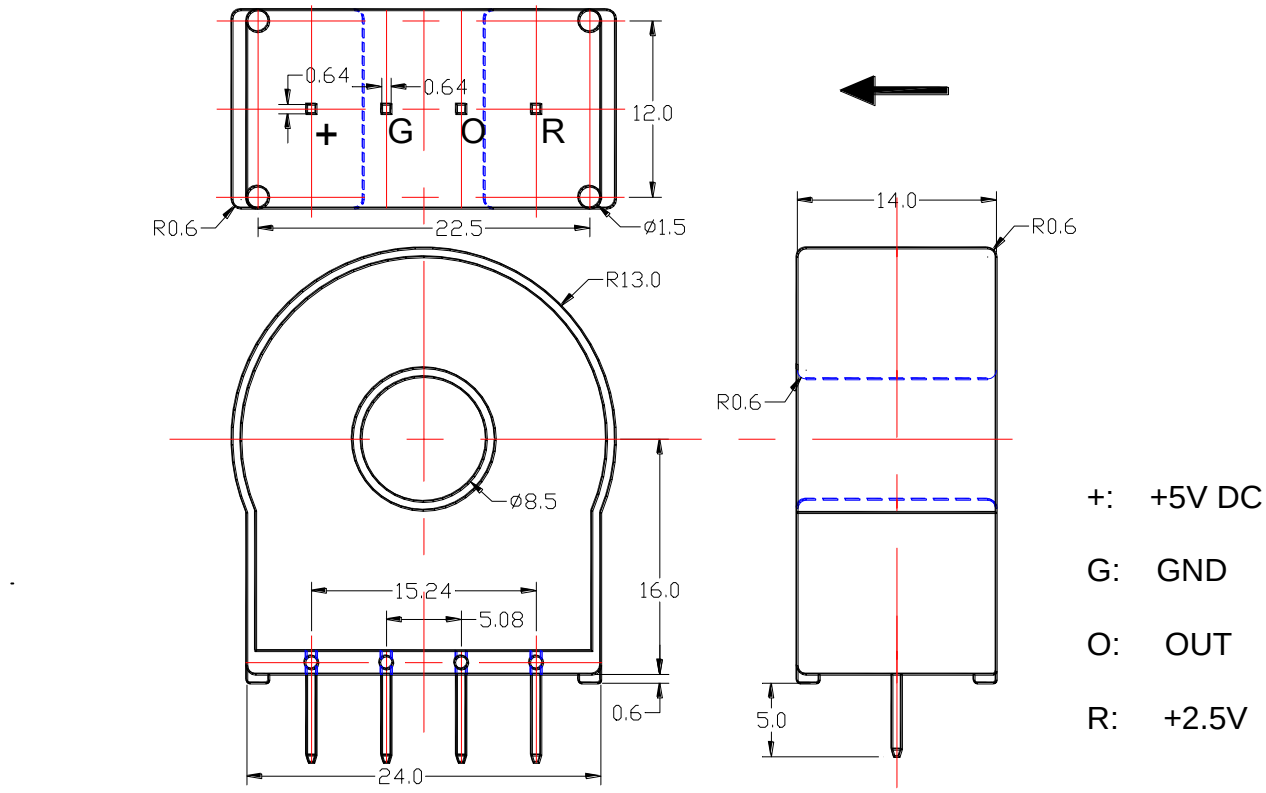
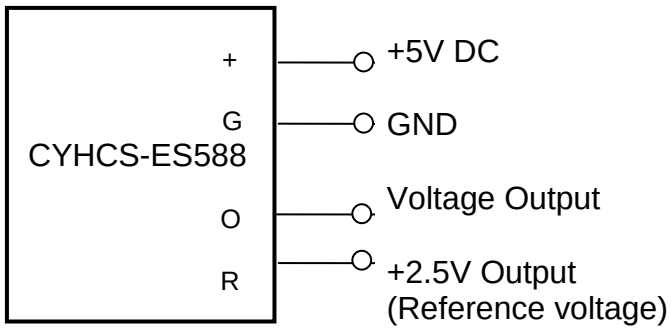


Fig. 3 Dimensions of CYHCS-ES588

Connection



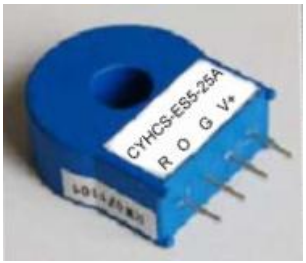


Fig. 4 Connection of CYHCS-ES588

Operating instructions

1. Connect the pins of power source, outputs respectively and correctly, never make wrong connection for DC current.
2. Temperature of the primary conductor should not exceed 100 °C.

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