Current Sensors

CYHCS-C2S

Split Core Hall Effect DC Current Sensor

This Hall Effect current sensor can be used for measurement of DC and AC current, pulsed currents etc. The output of the transducer reflects the real wave of the current carrying conductor.

Product Characteristics	Applications
• Excellent accuracy • Very good linearity • Light in weight • Less power consumption • Window structure • Electrically isolating the output of the transducer from the current carrying conductor • No insertion loss • Current overload capability	• Frequency conversion timing equipments • Various power supply • Uninterruptible power supplies (UPS) • Electric welding machines • Numerical controlled machine tools • Electrolyzing and electroplating equipments • Electric powered locomotive • Microcomputer monitoring • Electric power network monitoring

Electrical Data/Input

Primary Nominal RMS Current I_r (A)	Primary Current Measuring Range I_p(A) at Vcc=5V	Aperture Diameter (mm)	Part number
30	± 40.5	21	CYHCS-C2S-30A-C
50	± 67.5	21	CYHCS-C2S-50A-C
100	± 135	21	CYHCS-C2S-100A-C
200	± 270	21	CYHCS-C2S-200A-C
300	± 405	21	CYHCS-C2S-300A-C
400	± 540	21	CYHCS-C2S-400A-C
500	± 675	21	CYHCS-C2S-500A-C
600	± 810	21	CYHCS-C2S-600A-C

(Connector: Molex connector C=M; Phoenix Connector: C=P)

Supply Voltage	V_{cc}= +5V ± 5%
Current Consumption	I_c < 25mA
RMS Voltage for 2.5kV AC isolation test, 50/60Hz, 1min,	V_{is} <10mA
Output Voltage at I_r, T_A=25°C:	V_{out} = V_{oe} ±1.5V
Output Impedance:	R_{out} < 150Ω
Load Resistor:	R_L > 10kΩ
Accuracy at I_r, T_A=25°C (without offset),	X <1.0%
Linearity from 0 to I_r, T_A=25°C,	E_L <1.0% FS
Electric Offset Voltage, T_A=25°C,	V_{oe} =2.5±1.0%
Magnetic Offset Voltage (I_r →0)	V_{om} <±15mV
Thermal Drift of Offset Voltage,	V_{ot} <±1.0mV/°C
Thermal Drift (-10°C to 50°C),	T.C. < ±0.1% /°C
Response Time at 90% of I_P (f=1k Hz)	t_r < 7μs
Frequency Bandwidth (-3dB),	f_b = 0-20 kHz
Ambient Operating Temperature,	T_A = -25°C ~ +85°C
Ambient Storage Temperature,	T_S =-40°C ~ +100°C

Relation between Input Current and Output Voltage

Take the sensor CYHCS-C2S-100A 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)	-135	-100	-75	-50	0	50	75	100	135
Output voltage (V)	0.475	1.0	1.375	1.75	2.5	3.25	3.625	4.0	4.525

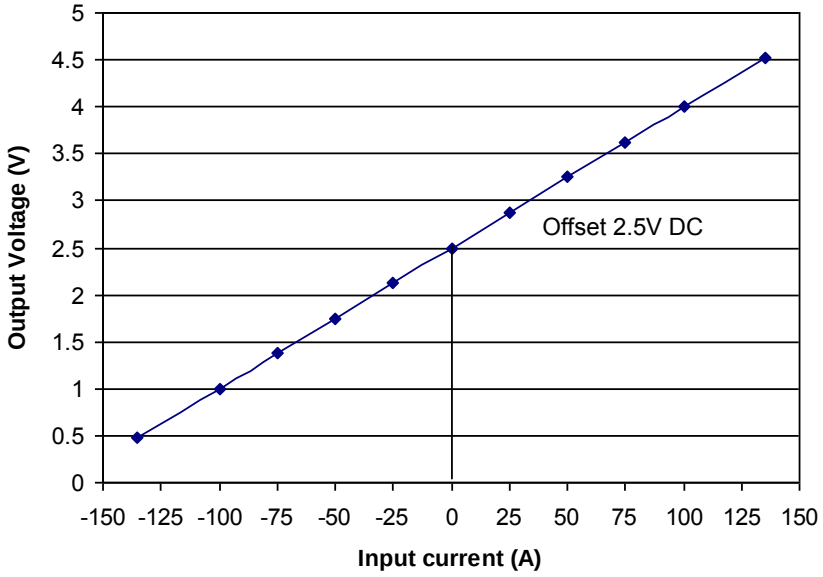


Fig. 1 Relation between the input current (DC) and output voltage (DC)

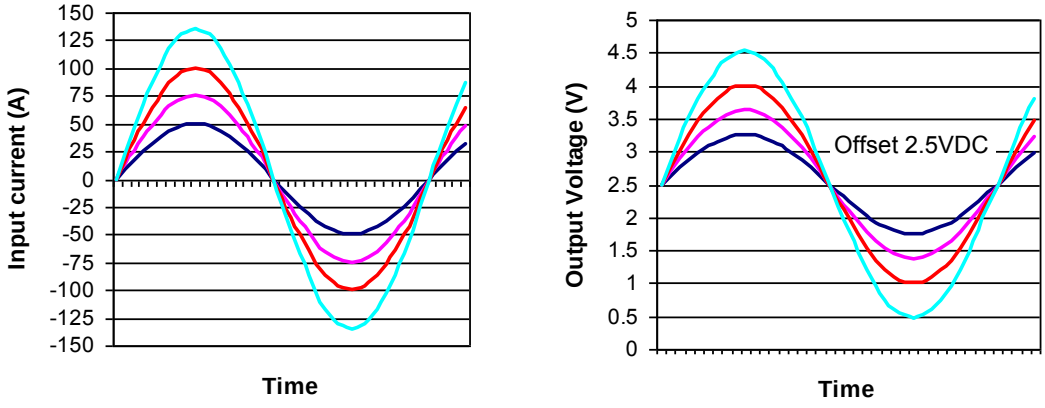
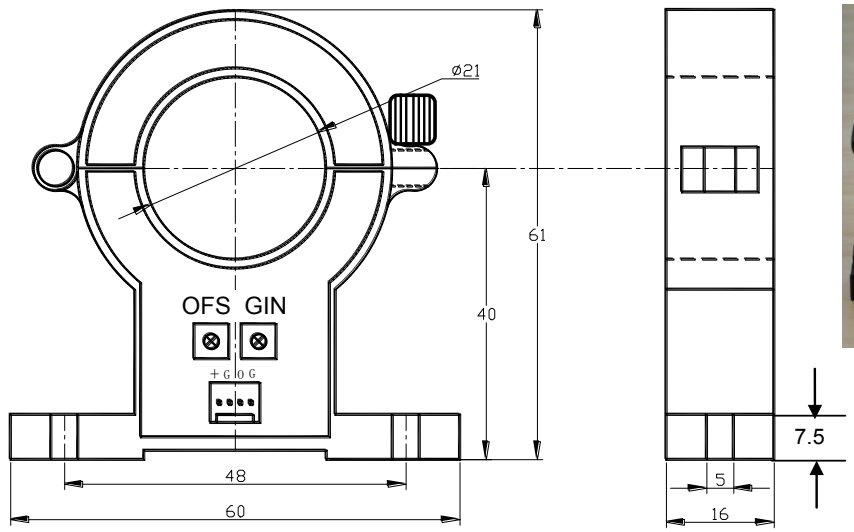
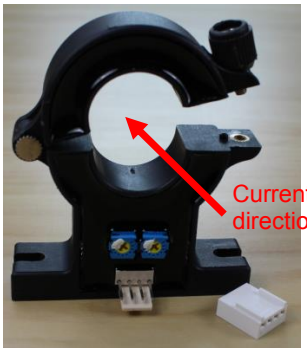


Fig. 2 Relation between the input current (AC) and output voltage (AC)

CYHCS-C2S Current Sensor

PIN Definition and Dimensions

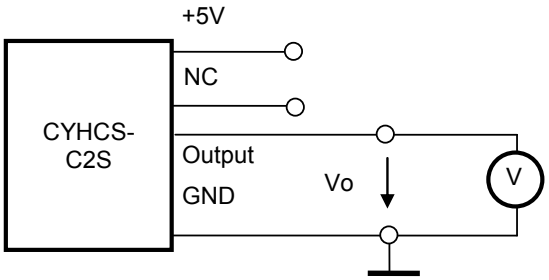




1(+): 5V
2(G): NC
3(O): Output
4(G): GND

OFS: Offset Adjustment GIN: Gain Adjustment

Connection

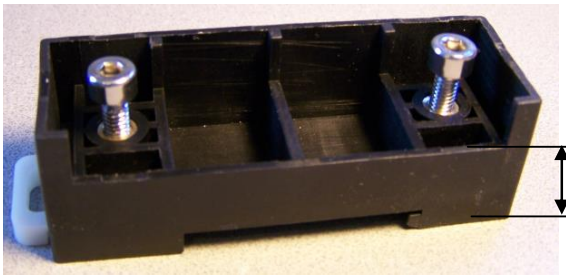


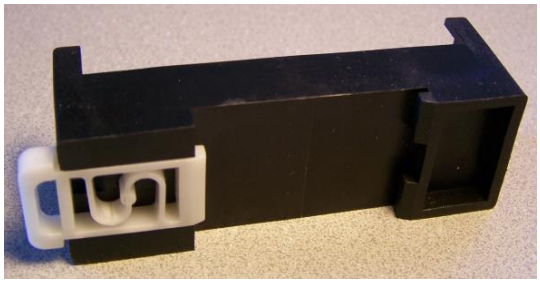
Notes:

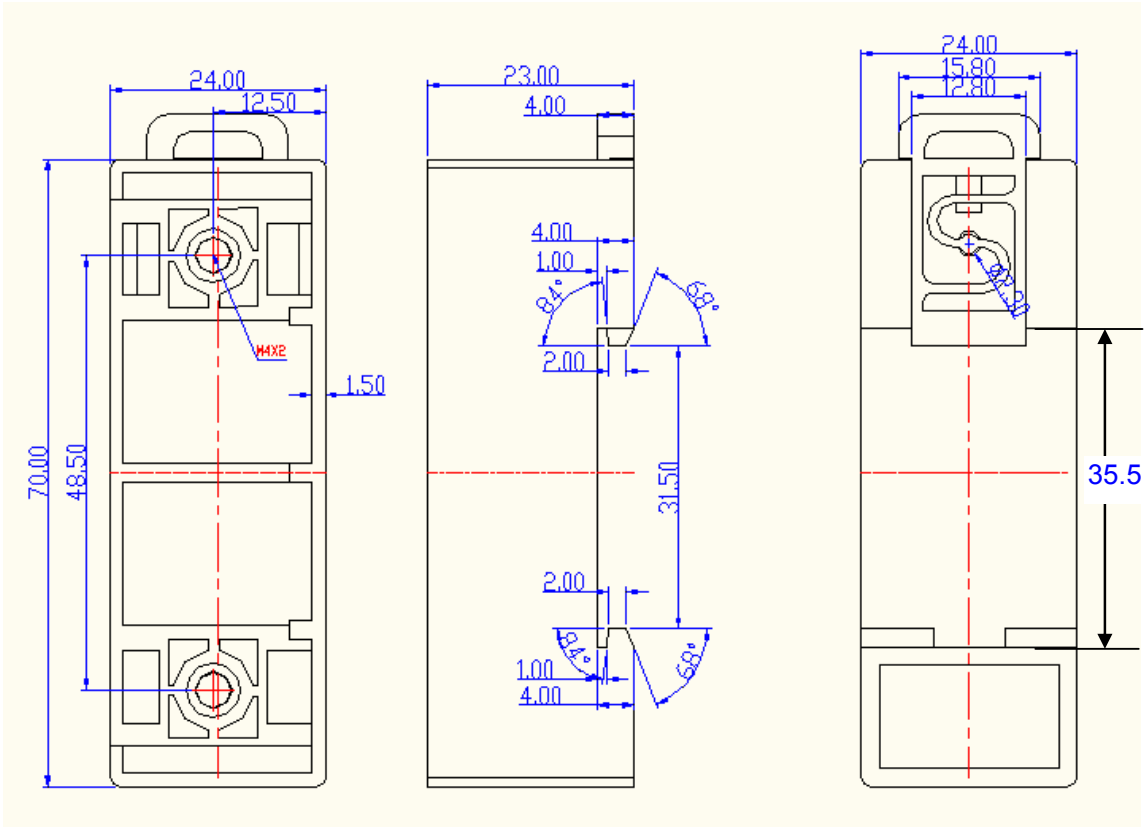
1. Connect the terminals of power source, outputs respectively and correctly, never make wrong connection.
2. Two potentiometers can be adjusted, only if necessary, by turning slowly to the required accuracy with a small screwdriver.
3. The best accuracy can be achieved when the window is fully filled with bus-bar (current carrying conductor).
4. The in-phase output can be obtained when the direction of current of current carrying conductor is the same as the direction of arrow marked on the transducer

DIN Rail Adapter CY-DRA88

The DIN Rail Adapter CY-DRA88 is designed for mounting the sensor on 35mm DIN Rail. It has the size 70 x 24 x 23mm. The height from bottom to mounting surface is 14.8mm.







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For more information and certifications, please contact:
Panel Components & Systems, Inc. ■ Phone: (800) 523-9194 ■ info@pc-s.com
Main Office: Stanhope, NJ Phone: (973) 448-9400