

Split Core Hall Current Sensor CYHCS-C2S

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
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 $V_{cc}=5V$	Aperture Diameter (mm)	Part number
50	± 67.5	21	CYHCS-C2S-50A
100	± 135	21	CYHCS-C2S-100A
200	± 270	21	CYHCS-C2S-200A
300	± 405	21	CYHCS-C2S-300A
400	± 540	21	CYHCS-C2S-400A
500	± 675	21	CYHCS-C2S-500A
600	± 810	21	CYHCS-C2S-600A

Supply Voltage
Current Consumption
RMS Voltage for 2.5kV AC isolation test, 50/60Hz, 1min,

$V_{cc} = +5V \pm 5\%$
 $I_c < 25mA$
 $V_{is} < 10mA$

Electrical Data/Output

Output Voltage at I_r , $T_A=25^\circ C$:
Output Impedance:
Load Resistor:

$V_{out} = V_{oe} \pm 1.5V$
 $R_{out} < 150\Omega$
 $R_L > 10k\Omega$

Accuracy

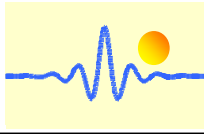
Accuracy at I_r , $T_A=25^\circ C$ (without offset),
Linearity from 0 to I_r , $T_A=25^\circ C$,
Electric Offset Voltage, $T_A=25^\circ C$,
Magnetic Offset Voltage ($I_r \rightarrow 0$)
Thermal Drift of Offset Voltage,
Thermal Drift ($-10^\circ C$ to $50^\circ C$),
Response Time at 90% of I_p ($f=1k$ Hz)
Frequency Bandwidth (-3dB),

$X < 1.0\%$
 $E_L < 1.0\%$ FS
 $V_{oe} = 2.5 \pm 1.0\%$
 $V_{om} \leq \pm 15mV$
 $V_{ot} < \pm 1.0mV/^\circ C$
T.C. $< \pm 0.1\% /^\circ C$
 $t_r < 7\mu s$
 $f_b = 0-20$ kHz

General Data

Ambient Operating Temperature,
Ambient Storage Temperature,

$T_A = -40^\circ C \sim +85^\circ C$
 $T_S = -55^\circ C \sim +125^\circ C$



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

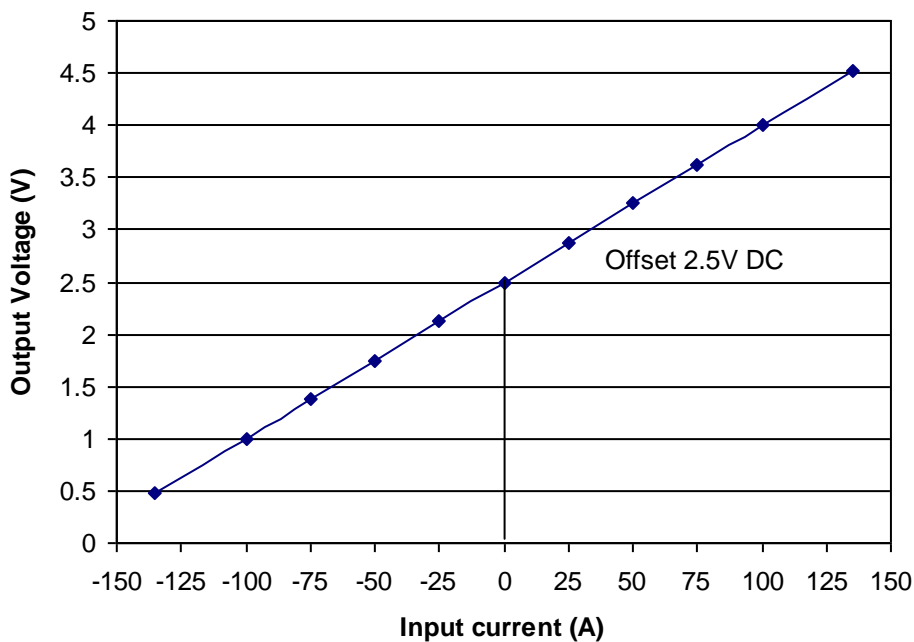


Fig. 1 Relation between the input current (DC) and output voltage (DC)

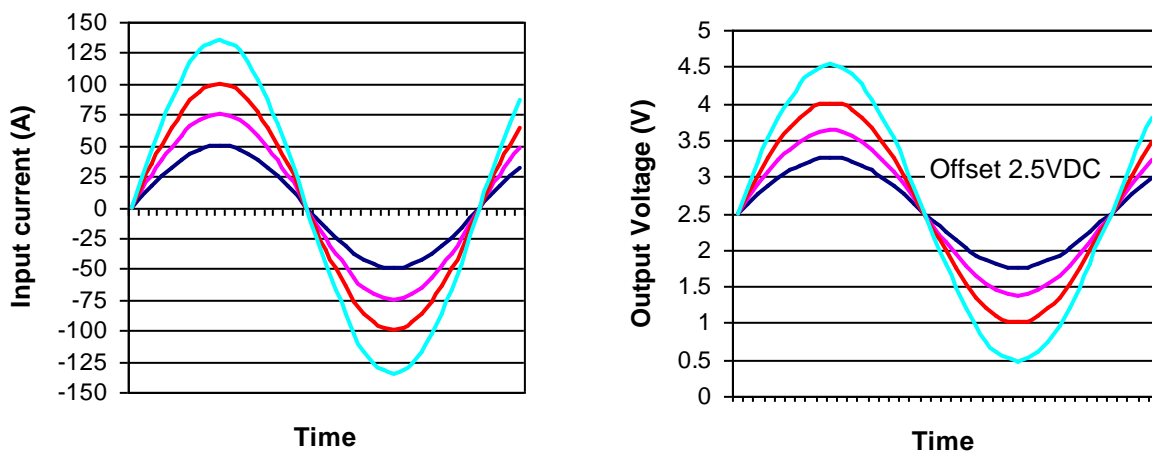
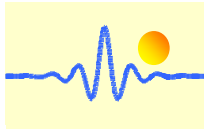
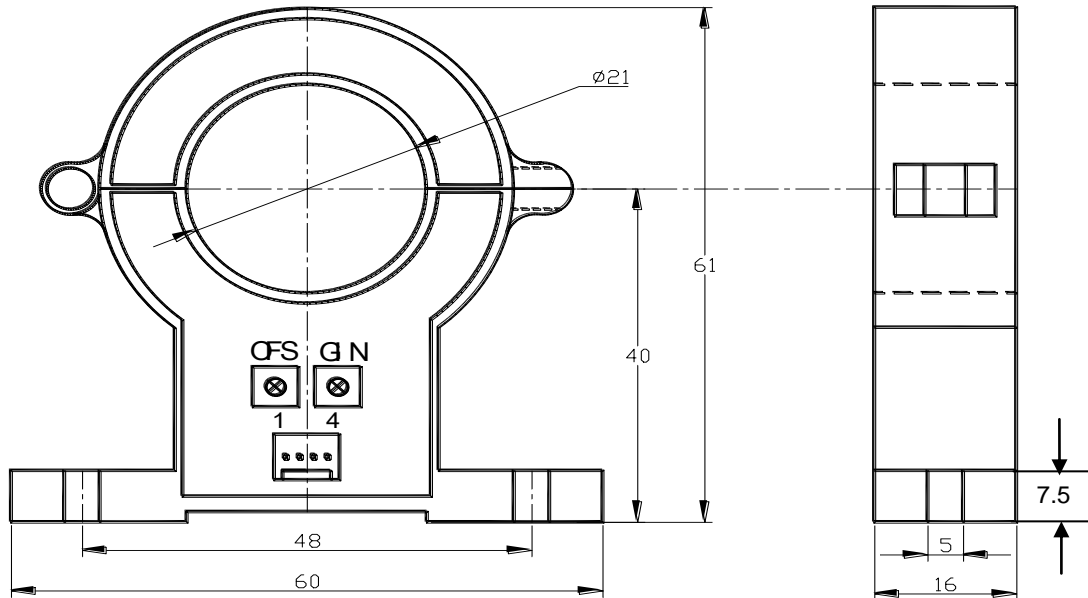


Fig. 2 Relation between the input current (AC) and output voltage (AC)



PIN Definition and Dimensions

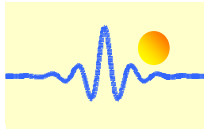


- 1: +5V DC
- 2: NC
- 3: OUTPUT
- 4: 0V (GND)



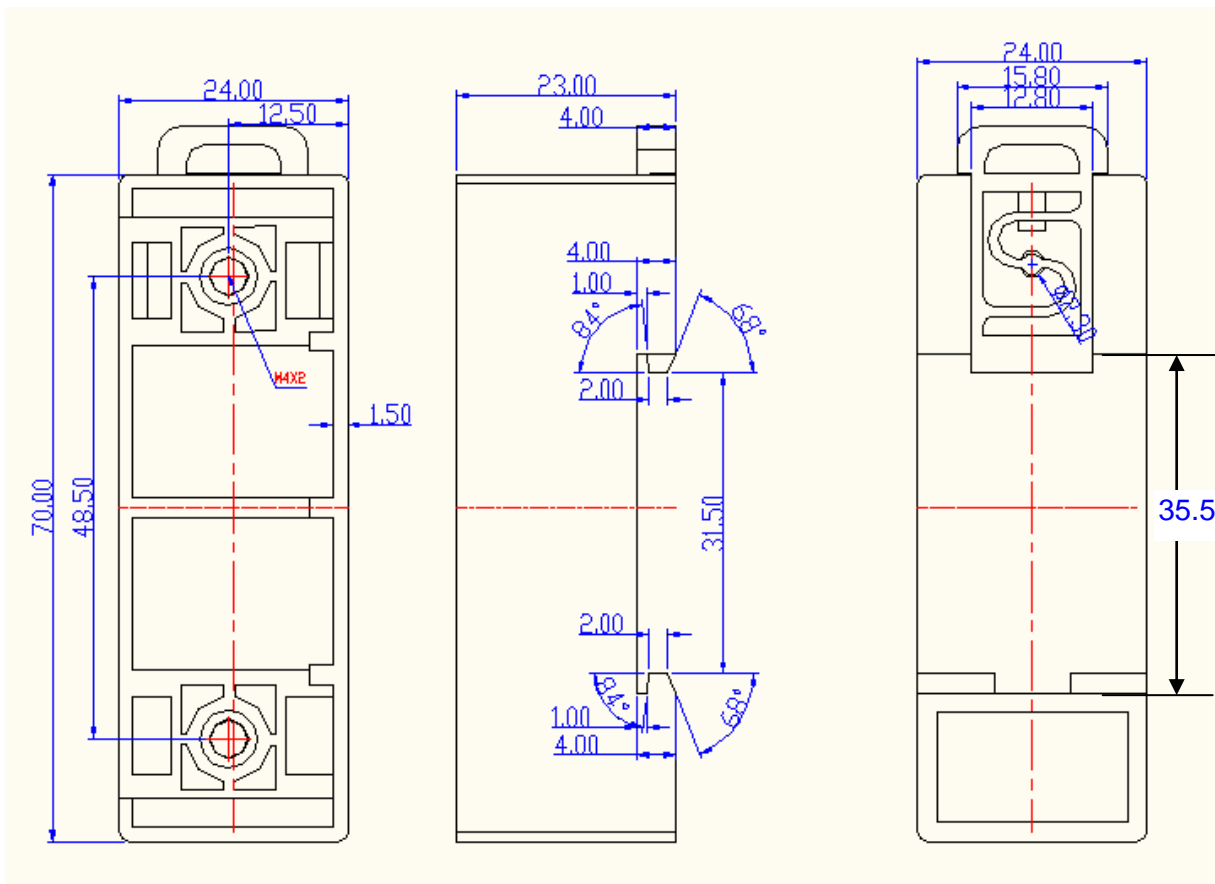
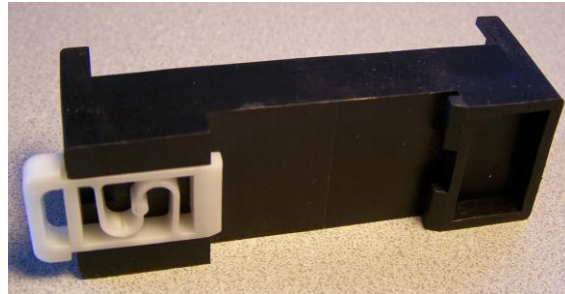
Notes:

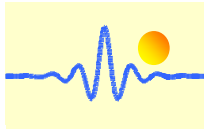
1. Connect the terminals of power source, outputs respectively and correctly, never make wrong connection.
2. Two potentiometers can be adjusted, only if necessary, by turning slowly to the required accuracy with a small screwdriver.
3. The best accuracy can be achieved when the window is fully filled 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.

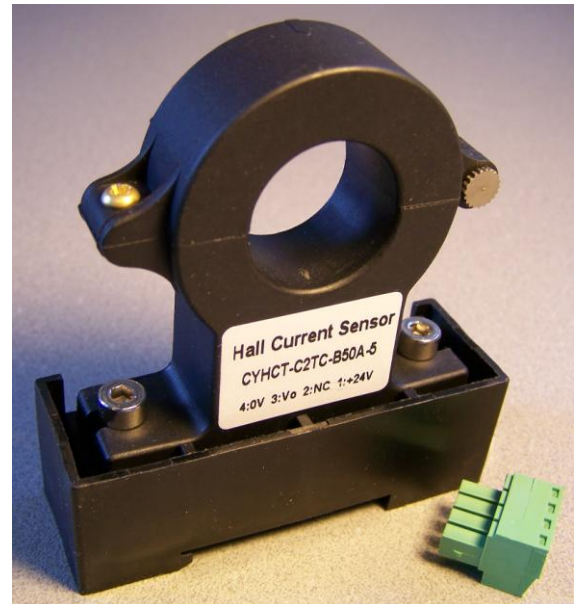
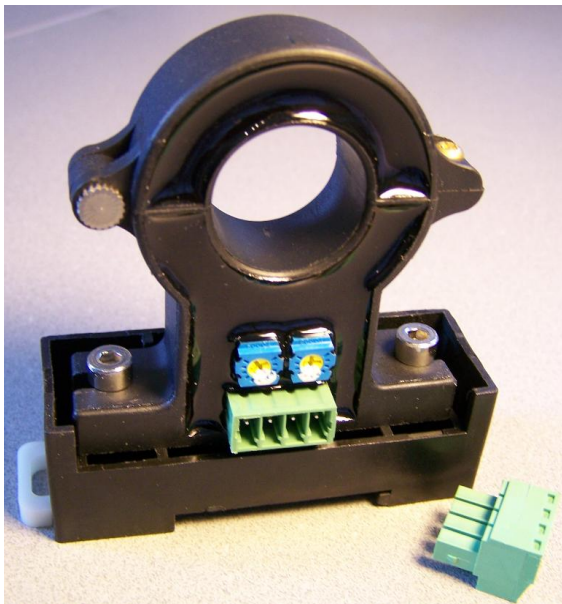




Mounting of Sensors



Sensor with Molex Connector
(The distance between the bottom und the middle of hole is 54.8mm)



Sensor with Phoenix Connector
(The distance between the bottom und the middle of hole is 54.8mm)