ChenYang
Technologies GmbH & Co KG

Split Core Hall AC/DC Current Sensor CYHCS-KE

This Spilt Core Hall Effect current sensor is based on open 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 • With Split Core, easy installation • Less power consumption • Window structure • Electrically isolating the output of the transducer from the current carrying conductor • No insertion loss • Current overload capability	• **Photovoltaic equipment** • Frequency conversion timing equipment • Various power supplies • Uninterruptible power supplies (UPS) • Electric welding machines • Transformer substation • Numerical controlled machine tools • Electric powered locomotive • Microcomputer monitoring • Electric power network monitoring

Electrical Data

Primary Nominal RMS Current I_r (A)	Measuring Range (A)	Output voltage (Analog) (V)	Window size (mm)	Part number (see application notes on page 3)
1000	0~±2000	x=0: ±4V ±1.0% x=1: ±5V ±1.0%	Standard: 164 x 36 Custom-made: 164 x 64	CYHCS-KE-01000A-xC
2000	0~±3000			CYHCS-KE-02000A-xC
5000	0~±7500			CYHCS-KE-05000A-xC
8000	0~±12000			CYHCS-KE-08000A-xC
10000	0~±15000			CYHCS-KE-10000A-xC
15000	0~±15000			CYHCS-KE-15000A-xC
20000	0~±20000			CYHCS-KE-20000A-xC

(Connector: C=S, Cable connection; C=P, Phoenix connector)

Supply Voltage	V_{cc}= ±15VDC
Current Consumption	I_c < 45mA
Galvanic isolation, 50/60Hz, 1min:	6kV
Isolation resistance @ 500 VDC	> 500 MΩ

Accuracy and Dynamic performance data

Accuracy at I_r, T_A=25°C (without offset),	E <±1.0% FS
Linearity from 0 to I_r, T_A=25°C,	E_L<±0.5% FS
Electric Offset Voltage, T_A=25°C,	25mV
Magnetic Offset Voltage,	30mV
Thermal Drift of Offset Voltage,	V_{ot} <±1.0mV/°C
Frequency bandwidth (- 3 dB):	DC-20kHz
Response Time at 90% of I_P	t_r ≤ 10µs
Load resistance:	10kΩ
Unit weight:	1390g

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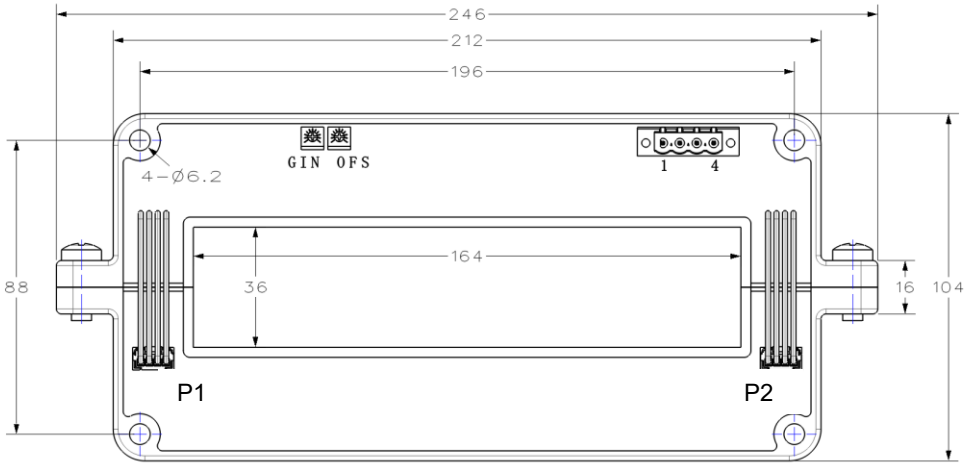
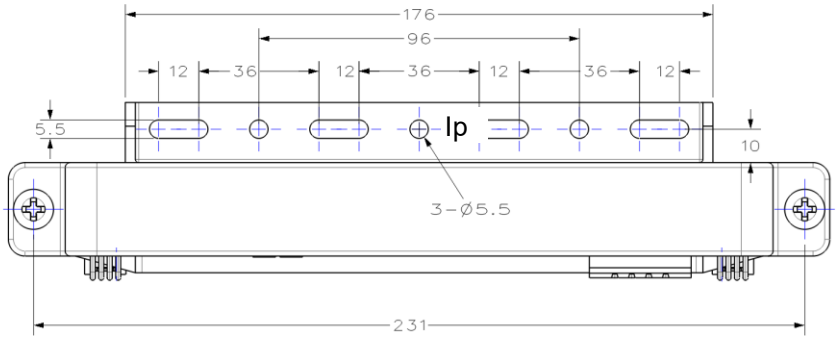
General Data

Ambient Operating Temperature,	T_A = -25°C ~ +85°C
Ambient Storage Temperature,	T_S =-40°C ~ +100°C

Dimensions





When the current under test is exceeding 5000A, please connect terminal P1 and terminal P2.

GIN: gain adjustment, OFS: offset adjustment
Window size: Standard: 164 x 36, Custom-made: 164 x 64

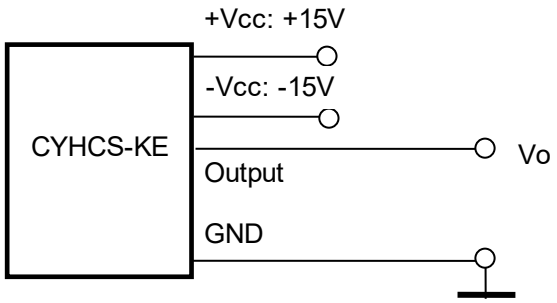
Pin Arrangement:

1(+): +Vcc
2(-): -Vcc
3(O): Output
4(G): Ground (GND)

Cable connection:

Red: +Vcc
Blue: -Vcc
Yellow: Output
Black: Ground (GND)

Sensor Connection:



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Notes:

1. Connect the terminals of power source, output 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 primary input cable is positioned at the center of sensor window and occupies over 50% of the window area.
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.

Application Notes

1) Part number CYHCS-KE-xxxxxA-xC

xxxxx: current value;
x: output voltage (**x**=0: 0~ ±4V ±1.0%; **x**=1: 0~ ±5V ±1.0%).
C: Connector (**C**=S, Cable connection; **C**=P, Phoenix connector)

Example 1: CYHCS-KE-10000A-0S Hall Effect AC/DC Current sensor with cable connection
Output signal: 0 ~ ±4V AC/DC
Power supply: ±15VDC
Rated input current: 0 ~ ±10000A AC/DC

Example 2: CYHCS-KE-10000A-1P Hall Effect AC/DC Current sensor with Phoenix connector
Output signal: 0 ~ ±5V AC/DC
Power supply: ±15VDC
Rated input current: 0 ~ ±10000A AC/DC

2) Relation between Input current and output signal

Current Sensor	CYHCS-KE-10000A-0S	CYHCS-KE-10000A-1P
Input current (A)	Output voltage Vo (V)	Output voltage Vo (V)
-10000	-4	-5
-7500	-3	-3.75
-5000	-2	-2.5
-2500	-1	-1.25
0	0	0
2500	1	1.25
5000	2	2.5
7500	3	3.75
10000	4	5

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