Split Core Hall Current Sensor CYHCT-KEV

This 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 current, DC 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 • Using split cores and easy mounting • Less power consumption • 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 supply • 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 DC Current I_r (A)	Measuring Range (A)	DC Output Voltage Vo(V)	Window Size (mm)	Part number (see application notes on page 3)
1000	0~±1000	x=0: 0-4V ±1.0% x=3: 0-5V ±1.0% x=8: 0-10V ±1.0%	Standard: 164 x 36 Custom-made: 164 x 64	CYHCT-KEV-U/B01000A-xnC
2000	0~±2000			CYHCT-KEV-U/B02000A-xnC
5000	0~±5000			CYHCT-KEV-U/B05000A-xnC
8000	0~±8000			CYHCT-KEV-U/B08000A-xnC
10000	0~±10000			CYHCT-KEV-U/B10000A-xnC
15000	0~±15000			CYHCT-KEV-U/B15000A-xnC
20000	0~±20000			CYHCT-KEV-U/B20000A-xnC

(U: unidirectional input current; B: bidirectional input current, please give U or B in Part number
Power supply: n=2, Vcc= +12VDC; n=3, Vcc =+15VDC; n=4, Vcc =+24VDC
Connector: C=S, Cable connection; C=P, Phoenix connector)

Supply Voltage	V_{cc}= +12V, +15V, +24VDC ± 5%
Output Voltage at I_r, T_A=25°C:	V_{out} =0- 4V, 0-5V, 0-10VDC
Current Consumption	I_c < 45mA
Galvanic isolation, 50/60Hz, 1min:	6kV rms
Output Impedance:	R_{out} < 150Ω
Load resistance:	10kΩ

Accuracy and Dynamic performance data

Accuracy at I_r, T_A=25°C,	X <±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,	V_{oe} <±0.5% of Output voltage Vo
Magnetic Offset Voltage (I_r →0)	V_{om} <±0.6% of Output voltage Vo
Thermal Drift of Offset Voltage,	V_{ot} <±1.0mV/°C
Response Time at 90% of I_P (f=1k Hz)	t_r < 1ms
Frequency Bandwidth (-3dB),	f_b = DC - 20 kHz
Case Material:	PBT
Unit weight:	1390g

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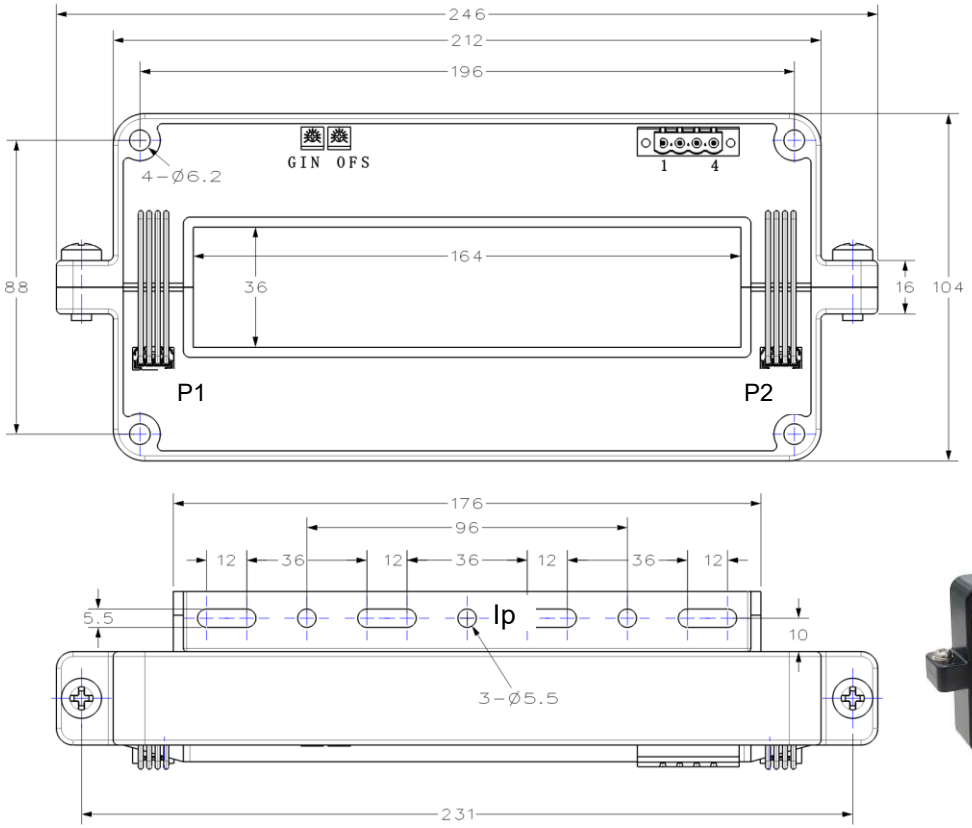
General Data

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

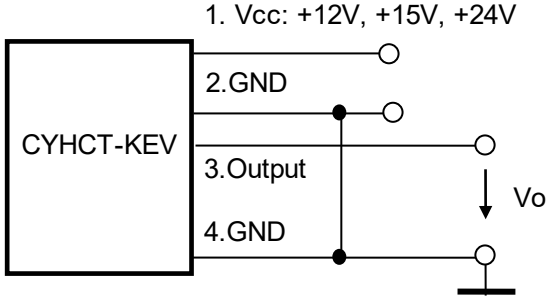
Pin Arrangement:

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

Cable connection:

Red: +Vcc
Blue: Ground (GND)
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 CYHCT-KEV-U/BxxxxxA-xnC

U/B: **U**: unidirectional input current; **B:** bidirectional input current.
xxxxx: current value.
x: output voltage (**x**=0: 0-4V ±1.0%; **x**=3: 0-5V ±1.0%; **x**=8: 0-10V ±1.0%);
n: power supply (**n**=2, *Vcc*= +12VDC; **n**=3, *Vcc* =+15VDC; **n**=4, *Vcc* =+24VDC),
C: Connector (**C**=S, Cable connection; **C**=P, Phoenix connector)

Example 1: CYHCT-KEV-U10000A-32S Hall Effect DC Current sensor with cable connection
Output signal: 0 – 5V DC
Power supply: +12V DC
Rated input current: 0 - 10000A DC (unidirectional)

Example 2: CYHCT-KEV-B10000A-84P Hall Effect DC Current sensor with Phoenix connector
Output signal: 0 – 10V DC
Power supply: +24V DC
Rated input current: -10000A - 0 - +10000A DC (bidirectional)

2) Relation between Input current and output signal

Current Sensor CYHCT-KEV-U10000A-32S	
Input current (A)	Output voltage Vo (V)
0	0
2500	1.25
5000	2.5
7500	3.75
10000	5

Current Sensor CYHCT-KEV-B10000A-84P	
Input current (A)	Output voltage Vo (V)
-10000	0
-7500	1.25
-5000	2.5
-2500	3.75
0	5
2500	6.25
5000	7.5
7500	8.75
10000	10

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