

Split Core Hall Current Sensor CYHCT-KEC

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 - Window structure with split core - 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

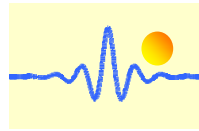
Primary Nominal DC Current I_r (A)	Measuring Range (A)	DC Output Current (mA)	Window Size (mm)	Part number (see application notes on page 3)
1000	0~±1000	4-20 ±1.0%	Standard: 164 x 36 Custom-made: 164 x 64	CYHCT-KEC-U/B01000A-nC
2000	0~±2000			CYHCT-KEC-U/B02000A-nC
5000	0~±5000			CYHCT-KEC-U/B05000A-nC
8000	0~±8000			CYHCT-KEC-U/B08000A-nC
10000	0~±10000			CYHCT-KEC-U/B10000A-nC
15000	0~±15000			CYHCT-KEC-U/B15000A-nC
20000	0~±20000			CYHCT-KEC-U/B20000A-nC

(U: unidirectional input current; B: bidirectional input current, please give U or B in Part number
Power supply: n=3, $V_{cc} = +12VDC \pm 5\%$; n=4, $V_{cc} = +15VDC \pm 5\%$; n=5, $V_{cc} = +24VDC \pm 5\%$
Connector: C=S, Cable connection; C=P, Phoenix connector)

Supply Voltage	$V_{cc} = +12V, +15V, +24VDC \pm 5\%$
Output current:	4-20mADC
Current Consumption	$I_c < 45mA + \text{Output current}$
Galvanic isolation, 50/60Hz, 1min:	6kV rms
Isolation resistance @ 500 VDC	> 500 MΩ

Accuracy and Dynamic performance data

Accuracy at I_r , $T_A = 25^\circ C$,	$X < \pm 1.0\% FS$
Linearity from 0 to I_r , $T_A = 25^\circ C$,	$E_L < \pm 0.5\% FS$
Electric Offset current, $T_A = 25^\circ C$,	4mA DC or 12mA DC
Thermal Drift of Offset Current,	$< \pm 0.005mA/^\circ C$
Response Time at 90% of I_P	$t_r < 1ms$
Load resistance:	80-250Ω
Frequency Bandwidth (-3dB),	$f_b = DC - 20 kHz$
Case Material:	PBT
Unit weight:	1390g

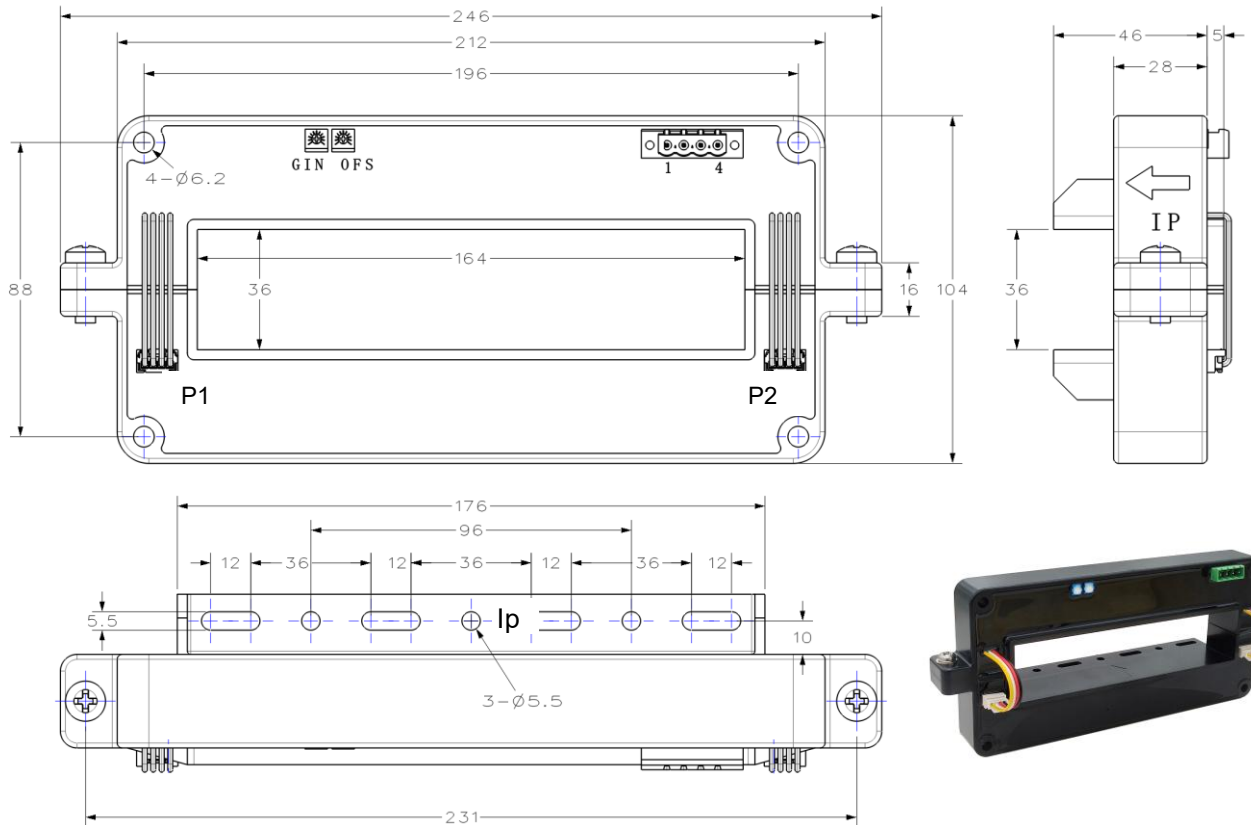


General Data

Ambient Operating Temperature,
Ambient Storage Temperature,

$T_A = -25^{\circ}\text{C} \sim +85^{\circ}\text{C}$
 $T_S = -40^{\circ}\text{C} \sim +100^{\circ}\text{C}$

Dimensions



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

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

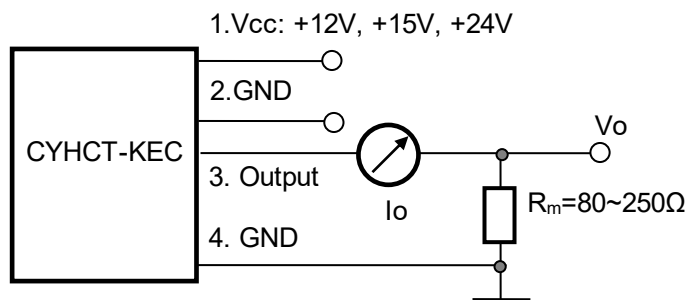
Pin Arrangement:

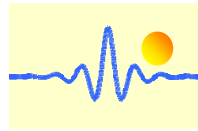
1(+): +Vcc
2(-): Ground (GND)
3(O): Output
4(G): Ground (GND)

Cable connection:

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

Sensor Connection:





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-KEC-U/BxxxxxA-nC

U/B **U**: unidirectional input current; **B**: bidirectional input current.
xxxxx: current value.
n: power supply (**n**=3, $V_{cc} = +12VDC \pm 5\%$; **n**=4, $V_{cc} = +15VDC \pm 5\%$; **n**=5, $V_{cc} = +24VDC \pm 5\%$)
C: Connector: **C**=S, Cable connection; **C**=P, Phoenix connector

Example 1: CYHCT-KEC-U10000A-5S Hall Effect DC Current sensor with cable connection
 Output signal: 4mA - 20mA DC
 Power supply: +24V DC
 Rated input current: 0 - 10000A DC (unidirectional)

Example 2: CYHCT-KEC-B10000A-3P Hall Effect DC Current sensor with Phoenix connector
 Output signal: 4mA – 12mA - 20mA DC
 Power supply: +12V DC
 Rated input current: -10000A - 0 - +10000A DC (bidirectional)

2) Relation between Input current and output signal

Current Sensor CYHCT-KEC-U10000A-5S		
Input current (A)	Output current I_o (mA)	Output voltage V_o (V) (Measuring resistance $R_m=250\Omega$)
0	4	1
2500	8	2
5000	12	3
7500	16	4
10000	20	5

Current Sensor CYHCT-KEC-B10000A-3P		
Input current (A)	Output current I_o (mA)	Output voltage V_o (V) (Measuring resistance $R_m=250\Omega$)
-10000	4	1
-7500	6	1.5
-5000	8	2
-2500	10	1.5
0	12	3
2500	14	3.5
5000	16	4
7500	18	4.5
10000	20	5