

Split Core Hall AC/DC Current Sensor CYHCS-K104

This Split 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
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 RMS Current I_r (A)	Measuring Range (A)	Output voltage (Analog) (V)	Window size (mm)	Part number (see application notes on page 3)
500	± 1000	x=0: ±4V ±1.0% x=1: ±5V ±1.0%	104 x 36	CYHCS-K104-500A-xC
1000	± 2000			CYHCS-K104-1000A-xC
1500	± 3000			CYHCS-K104-1500A-xC
2000	± 4000			CYHCS-K104-2000A-xC
3000	± 6000			CYHCS-K104-3000A-xC
5000	± 7500			CYHCS-K104-5000A-xC

(Connector: C=S, Screw connector; C=M, MOLEX connector)

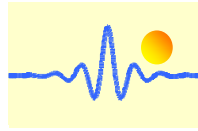
Supply Voltage	$V_{CC} = \pm 12V \sim \pm 15VDC$
Current Consumption	$I_C < 25mA$
Galvanic isolation, 50/60Hz, 1min:	6kV
Isolation resistance @ 500 VDC	> 500 MΩ

Accuracy and Dynamic performance data

Accuracy at I_r , $T_A=25^\circ C$ (without offset),	$E < 1.0\%$
Linearity from 0 to I_r , $T_A=25^\circ C$,	$E_L < 1.0\%$ FS
Electric Offset Voltage, $T_A=25^\circ C$,	25mV
Magnetic Offset Voltage,	30mV
Thermal Drift of Offset Voltage,	$V_{ot} < \pm 1.0mV/^\circ C$
Frequency bandwidth (- 3 dB):	DC-20kHz
Response Time at 90% of I_P	$t_r \leq 7\mu s$
Load resistance:	10kΩ

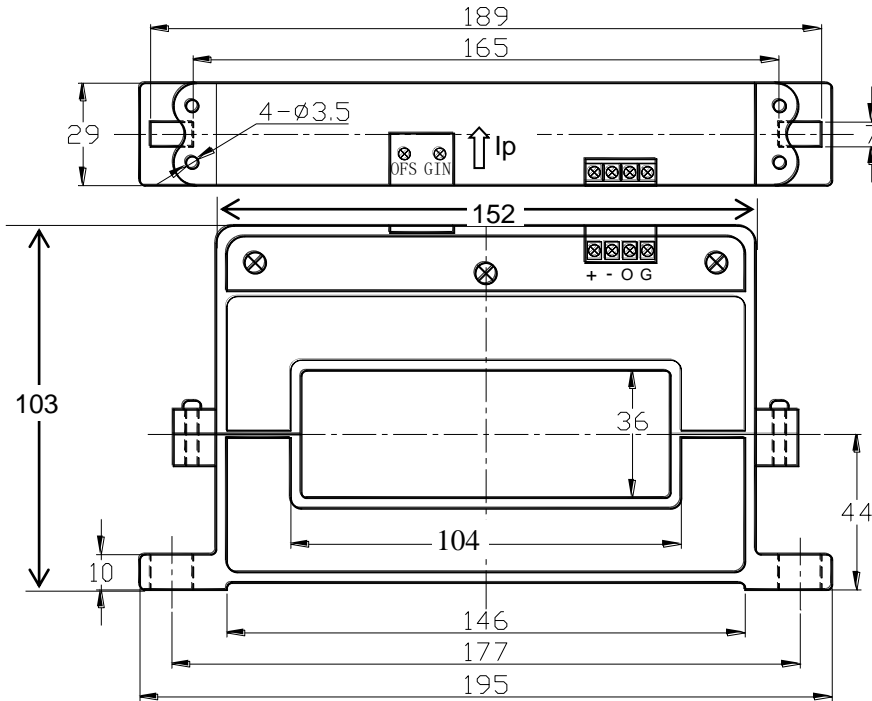
General Data

Ambient Operating Temperature,	$T_A = -25^\circ C \sim +85^\circ C$
Ambient Storage Temperature,	$T_S = -40^\circ C \sim +100^\circ C$



Dimensions

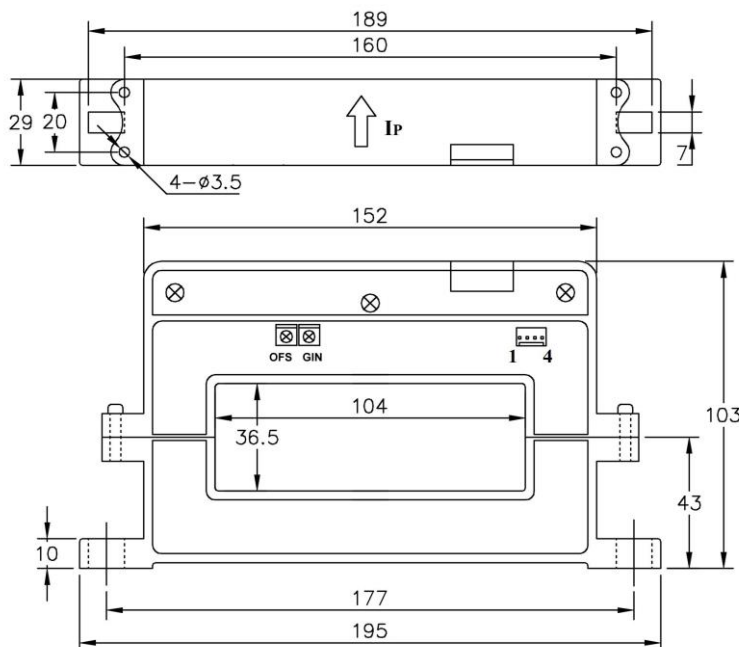
Screw connection



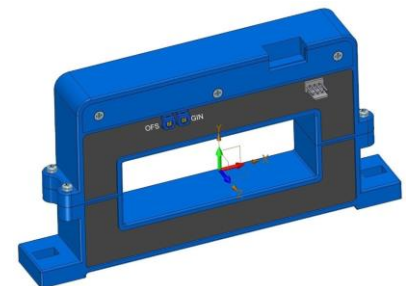
Pin Arrangement

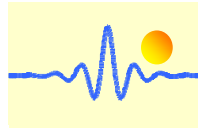
- 1(+): +15V
- 2(-): -15V
- 3(O): Output
- 4(G): GND

MOLEX Connection

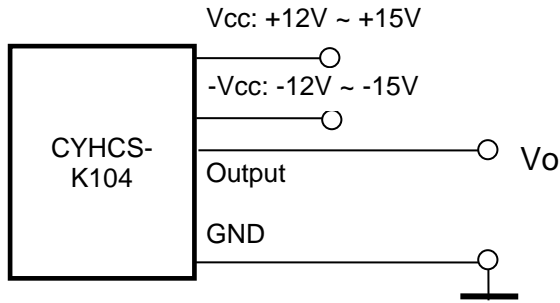


GIN: gain adjustment
OFS: offset adjustment





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 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.

Application Notes

1) Part number CYHCS-K104-xxxxA-xC

xxxx: current value;

x: output voltage ($x=0$: $0 \sim \pm 4V \pm 1.0\%$; $x=1$: $0 \sim \pm 5V \pm 1.0\%$);

C: Connector (**C=S**, Screw connector; **C=M**, MOLEX connector)

Example 1: CYHCS-K104-1000A-0S Hall Effect AC/DC Current sensor with screw connector
Output signal: $0 \sim \pm 4V$ AC/DC
Power supply: $\pm 12V \sim \pm 15VDC$
Rated input current: $0 \sim \pm 1000A$ AC/DC

Example 2: CYHCS-K104-1000A-1M Hall Effect AC/DC Current sensor with MOLEX connector
Output signal: $0 \sim \pm 5V$ AC/DC
Power supply: $\pm 12V \sim \pm 15VDC$
Rated input current: $0 \sim \pm 1000A$ AC/DC

2) Relation between Input current and output signal

Current Sensor	CYHCS-K104-1000A-0S	CYHCS-K104-1000A-1M
Input current (A)	Output voltage V_o (V)	Output voltage V_o (V)
-1000	-4	-5
-750	-3	-3.75
-500	-2	-2.5
-250	-1	-1.25
0	0	0
250	1	1.25
500	2	2.5
750	3	3.75
1000	4	5