

Hall Effect AC/DC Current Sensor CYHCS-KCA

This Hall Effect current sensor is based on open loop principle and designed with a split core and a high galvanic isolation between primary conductor and secondary circuit. It can be used for measurement of AC/DC current 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"> • Photovoltaic equipment • 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 Current I_r (A)	Primary Current Measuring Range I_p (A)	Output Voltage (analog) (V)	Part number
1000A	0 ~ ± 2000A	4 ± 1.0%	CYHCS-KCA-1000A
2000A	0 ~ ± 4000A		CYHCS-KCA-2000A
3000A	0 ~ ± 6000A		CYHCS-KCA-3000A
4000A	0 ~ ± 8000A		CYHCS-KCA-4000A
5000A	0 ~ ± 10000A		CYHCS-KCA-5000A
6000A	0 ~ ± 12000A		CYHCS-KCA-6000A
8000A	0 ~ ± 12000A		CYHCS-KCA-8000A
10000A	0 ~ ± 12000A		CYHCS-KCA-10000A

Supply Voltage:
Current Consumption
Isolation Voltage

$V_{cc} = \pm 15\text{VDC} \pm 5\%$
 $I_c < 35\text{mA}$
6kV, 50/60Hz, 1min

Electrical Data/Output

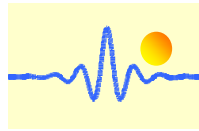
Output Voltage at I_r , $T_A = 25^\circ\text{C}$:
Output Impedance:
Load Resistor:

$V_{out} = 4\text{VDC}$
 $R_{out} < 150\Omega$
 $R_L > 10\text{k}\Omega$

Accuracy

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

$X < 1.0\%$
 $E_L < 1.0\% \text{ FS}$
 $V_{oe} < \pm 25\text{mV}$
 $V_{om} < \pm 30\text{mV}$
 $V_{ot} < \pm 1.0\text{mV}/^\circ\text{C}$
T.C. $< \pm 0.1\% / ^\circ\text{C}$
 $t_r < 10\mu\text{s}$
 $f_b = \text{DC}-3 \text{ kHz}$



General Data

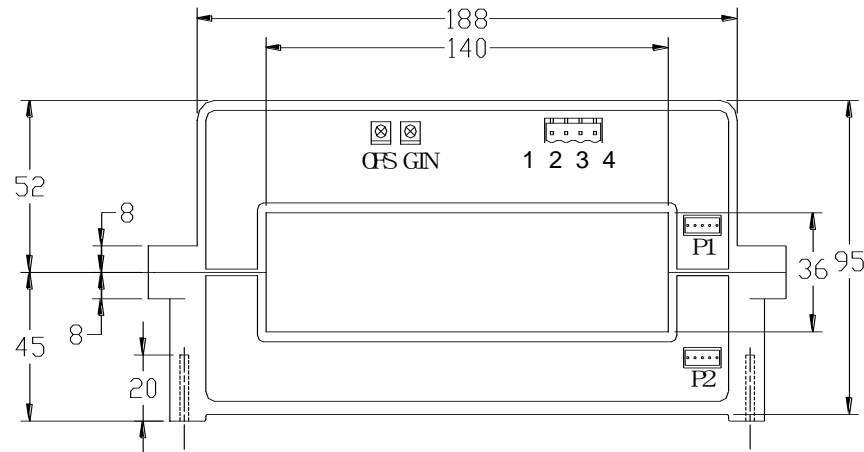
Ambient Operating Temperature,
Ambient Storage Temperature,

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

PIN Definition and Dimensions

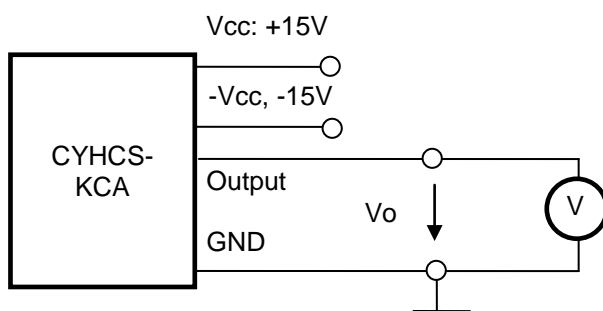
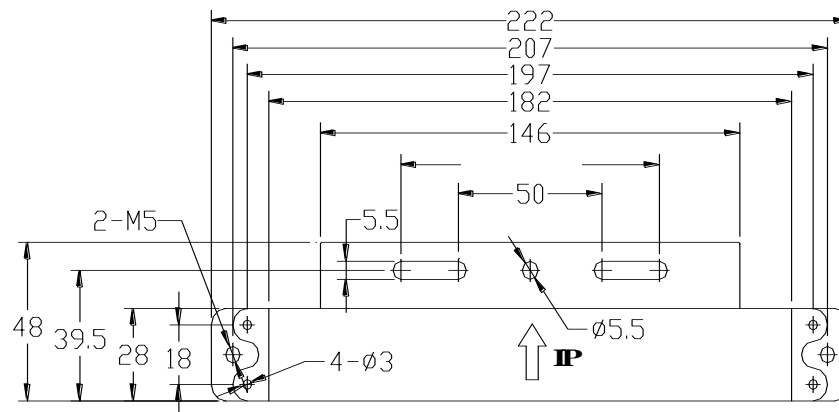
OFS: Offset Adjustment

GIN: Gain Adjustment



Pin arrangement:

- 1(V+): Vcc
- 2(V-): -Vcc
- 3(OUT): OUTPUT
- 4(GND): 0V (GND)



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