

## Split Core Hall Effect DC Current Sensor CYHCT-KCV

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 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"> <li>• Excellent accuracy</li> <li>• Very good linearity</li> <li>• Light in weight</li> <li>• Less power consumption</li> <li>• Window structure with split core</li> <li>• Electrically isolating the output of the transducer from the current carrying conductor</li> <li>• No insertion loss</li> <li>• Current overload capability</li> </ul>	<ul style="list-style-type: none"> <li>• Photovoltaic equipment</li> <li>• Frequency conversion timing equipment</li> <li>• Various power supply</li> <li>• Uninterruptible power supplies (UPS)</li> <li>• Electric welding machines</li> <li>• Numerical controlled machine tools</li> <li>• Electrolyzing and electroplating equipment</li> <li>• Electric powered locomotive</li> <li>• Microcomputer monitoring</li> <li>• Electric power network monitoring</li> </ul>

### Electrical Data/Input

Primary Nominal DC Current $I_r$ (A)	Primary Current Measuring Range $I_p$ (A)	Output Voltage (V)	Part number
1000A	0 ~ ± 1000A	x=0: 0-4V ±1.0% x=3: 0-5V ±1.0% x=8: 0-10V ±1.0% (For 0-10V output the power supply must be 15VDC or 24VDC)	CYHCT-KCV-U/B1000A-xn
2000A	0 ~ ± 2000A		CYHCT-KCV-U/B2000A-xn
3000A	0 ~ ± 3000A		CYHCT-KCV-U/B3000A-xn
4000A	0 ~ ± 4000A		CYHCT-KCV-U/B4000A-xn
5000A	0 ~ ± 5000A		CYHCT-KCV-U/B5000A-xn
6000A	0 ~ ± 6000A		CYHCT-KCV-U/B6000A-xn
8000A	0 ~ ± 8000A		CYHCT-KCV-U/B8000A-xn
10000A	0 ~ ± 10000A		CYHCT-KCV-U/B10000A-xn

(n=2,  $V_{cc}$ = +12VDC; n=3,  $V_{cc}$  =+15VDC; n=4,  $V_{cc}$  =+24VDC, n=5,  $V_{cc}$  =±12VDC, n=6,  $V_{cc}$  =±15VDC, n=7,  $V_{cc}$  =±24VDC, U: unidirectional, B: bidirectional)

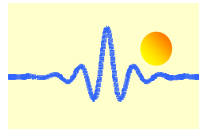
Supply Voltage:  $V_{cc}$ =+12V, +15V, +24V± 5%  
 Current Consumption:  $I_c$  < 50mA  
 Isolation Voltage: 6kV, 50/60Hz, 1min

### Electrical Data/Output

Output Voltage at  $I_r$ ,  $T_A$ =25°C:  $V_{out}$ =0- 4V, 0-5V, 0-10VDC  
 Output Impedance:  $R_{out}$  < 150Ω  
 Load Resistor:  $R_L$  > 10kΩ

### Accuracy

Accuracy at  $I_r$ ,  $T_A$ =25°C (without offset),  $X$  <1.0%  
 Linearity from 0 to  $I_r$ ,  $T_A$ =25°C,  $E_L$  <1.0% FS  
 Electric Offset Voltage,  $T_A$ =25°C,  $V_{oe}$  <25mV  
 Magnetic Offset Voltage ( $I_r \rightarrow 0$ ),  $V_{om}$  <±30mV  
 Thermal Drift of Offset Voltage,  $V_{ot}$  <±1.0mV/°C  
 Thermal Drift (-10°C to 50°C), T.C. < ±0.1% /°C  
 Response Time at 90% of  $I_p$  ( $f$ =1k Hz),  $t_r$  < 1ms  
 Frequency Bandwidth (-3dB),  $f_b$  = DC-3 kHz



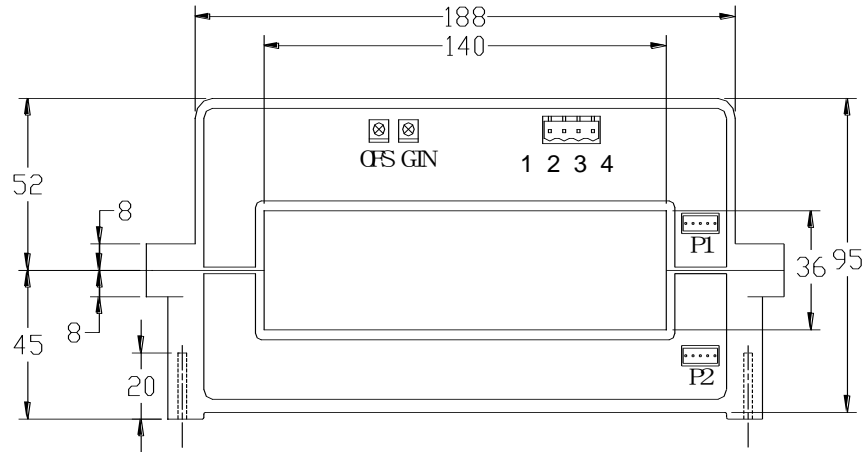
## General Data

Ambient Operating Temperature,  
Ambient Storage Temperature,

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

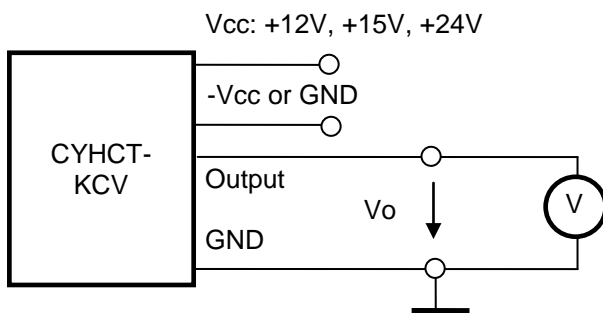
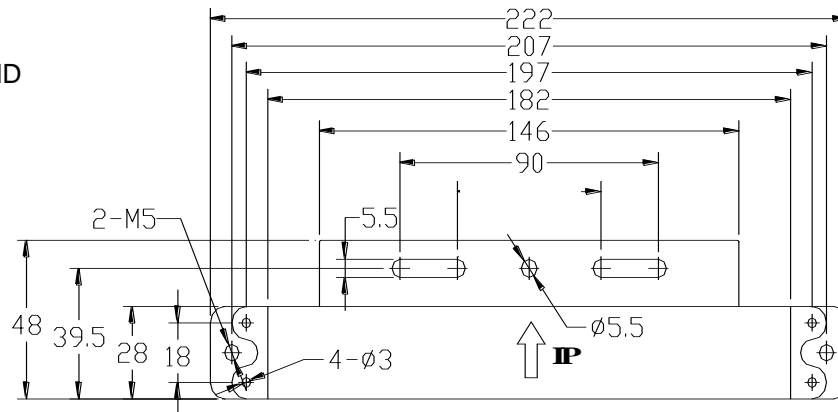
## PIN Definition and Dimensions

OFS: Offset Adjustment  
GIN: Gain Adjustment



### Pin arrangement:

1(V+): Vcc  
2(V-): -Vcc or GND  
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