Split Core Hall Effect DC Current Sensor CYHCT-KF2V

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.

<table>
<thead>
<tr>
<th>Product Characteristics</th>
<th>Applications</th>
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<tbody>
<tr>
<td>• Excellent accuracy</td>
<td>• Photovoltaic equipment</td>
</tr>
<tr>
<td>• Very good linearity</td>
<td>• Frequency conversion timing equipment</td>
</tr>
<tr>
<td>• Using split cores and easy mounting</td>
<td>• Various power supply</td>
</tr>
<tr>
<td>• Less power consumption</td>
<td>• Uninterruptible power supplies (UPS)</td>
</tr>
<tr>
<td>• Window structure with split core</td>
<td>• Electric welding machines</td>
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<td>• Electrically isolating the output of the transducer from the current carrying conductor</td>
<td>• Transformer substation</td>
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<td>• No insertion loss</td>
<td>• Numerical controlled machine tools</td>
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<tr>
<td>• Current overload capability</td>
<td>• Electric powered locomotive</td>
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<td></td>
<td>• Microcomputer monitoring</td>
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<td></td>
<td>• Electric power network monitoring</td>
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</tbody>
</table>

Electrical Data

<table>
<thead>
<tr>
<th>Primary Nominal DC Current $I_r$ (A)</th>
<th>Measuring Range (A)</th>
<th>DC Output Voltage (V)</th>
<th>Window Size (mm)</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>0~±500</td>
<td>$x=0$: 0-4V ±1.0%</td>
<td>85 x 27</td>
<td>CYHCT-KF2V-U/B500A-xn</td>
</tr>
<tr>
<td>600</td>
<td>0~±600</td>
<td>$x=3$: 0-5V ±1.0%</td>
<td></td>
<td>CYHCT-KF2V-U/B600A-xn</td>
</tr>
<tr>
<td>800</td>
<td>0~±800</td>
<td>$x=8$: 0-10V ±1.0%</td>
<td></td>
<td>CYHCT-KF2V-U/B800A-xn</td>
</tr>
<tr>
<td>1000</td>
<td>0~±1000</td>
<td></td>
<td></td>
<td>CYHCT-KF2V-U/B1000A-xn</td>
</tr>
<tr>
<td>1500</td>
<td>0~±1500</td>
<td></td>
<td></td>
<td>CYHCT-KF2V-U/B1500A-xn</td>
</tr>
<tr>
<td>2000</td>
<td>0~±2000</td>
<td></td>
<td></td>
<td>CYHCT-KF2V-U/B2000A-xn</td>
</tr>
<tr>
<td>3000</td>
<td>0~±3000</td>
<td></td>
<td></td>
<td>CYHCT-KF2V-U/B3000A-xn</td>
</tr>
</tbody>
</table>

(n=2, $V_{cc}$= +12VDC; n=3, $V_{cc}$= +15VDC; n=4, $V_{cc}$= +24VDC, U: unidirectional input current; B: bidirectional input current, please give U or B in Part number)

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

$I_c$ < 25mA

Galvanic isolation, 50/60Hz, 1min:

3kV 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,

$V_{os}$ < 50mV

Magnetic Offset Voltage ($I_r$ → 0)

$V_{om}$ < ±20mV

Thermal Drift of Offset Voltage,

$V_{ot}$ < ±1.0mV/°C

Response Time at 90% of $I_p$ ($f=1$kHz)

$i_t$ < 1ms

Frequency Bandwidth (-3dB),

$f_B$ = DC - 20 kHz

Case Material:

PBT

Markt Schwabener Str. 8
D-85464 Finsing
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Fax: +49 (0)8121 – 2574101
Email: info@cy-sensors.com
http://www.cy-sensors.com
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

Pin Arrangement

1: Vcc
2: Ground (GND)
3: Output
4: NC
5: NC

GIN: gain adjustment
OFS: offset adjustment

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.