

## Hall Effect AC/DC Current Sensor CYHCS-GBT

This Hall Effect current sensor is based on closed loop principle and designed with core structure 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"> <li>Excellent accuracy</li> <li>Very good linearity</li> <li>Light in weight</li> <li>Less power consumption</li> <li>Window structure, easily mounting</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 equipments</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 equipments</li> <li>Electric powered locomotive</li> <li>Microcomputer monitoring</li> <li>Electric power network monitoring</li> </ul>

### Electrical Data

Primary Nominal Current $I_r$ (A)	Primary Current Measuring Range $I_p$ (A)	Output Voltage (V)	Part number
10A	0 ~ ± 20A	2.5V±1V ±0.5%	CYHCS-GBT-10A
20A	0 ~ ± 40A		CYHCS-GBT-20A
25A	0 ~ ± 50A		CYHCS-GBT-25A
40A	0 ~ ± 80A		CYHCS-GBT-40A

Supply Voltage:

Current Consumption (at rated current)

Isolation Voltage

$V_{cc}=+5VDC\pm5\%$

$I_c < 16\sim35mA$

2,5kV, 50/60Hz, 1min

Output Voltage at  $I_r$ ,  $T_A=25^\circ C$ :

Output Impedance:

Load Resistor:

$V_{out}=2.5V\pm1V\pm0.5\%$

$R_{out} < 150\Omega$

$R_L > 10k\Omega$

Accuracy at  $I_r$ ,  $T_A=25^\circ C$  (without offset),

Linearity from 0 to  $I_r$ ,  $T_A=25^\circ C$ ,

Electric Offset Voltage,  $T_A=25^\circ C$ ,

Magnetic Offset Voltage ( $I_r \rightarrow 0$ )

Thermal Drift of Offset Voltage ( $I_p=0$ ,  $-25^\circ C \sim +85^\circ C$ ),

Thermal Drift ( $-10^\circ C$  to  $50^\circ C$ ),

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

Frequency Bandwidth (-3dB),

Standard:

$X < 0.5\%FS$

$E_L < 0.2\%FS$

$V_{oe} = 2.5V\pm25mV$

$V_{om} < \pm20mV$

$V_{ot} < \pm0.5mV/^\circ C$

T.C.  $< \pm0.12\% / ^\circ C$

$t_r \leq 1\mu s$

$f_b = DC-100$  kHz

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### General Data

Ambient Operating Temperature,

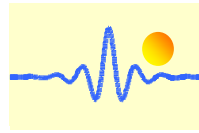
Ambient Storage Temperature,

Unit weight:

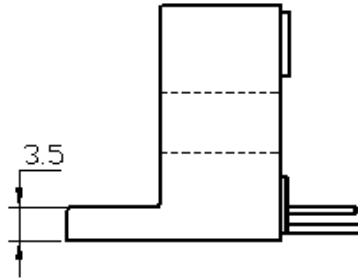
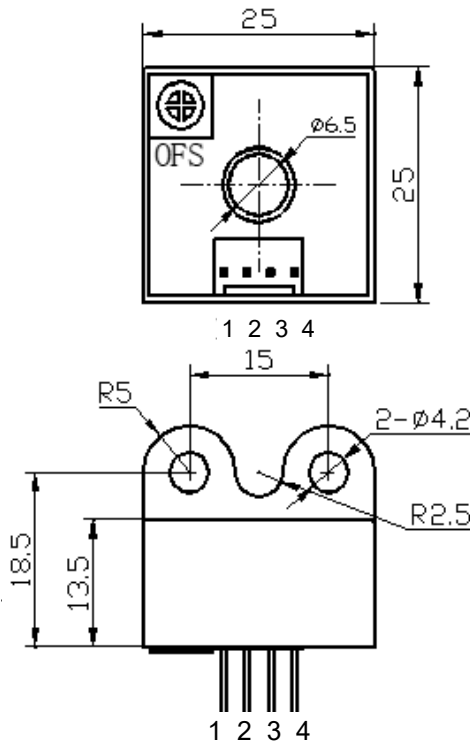
$T_A = -25^\circ C \sim +85^\circ C$

$T_S = -40^\circ C \sim +100^\circ C$

12g / unit



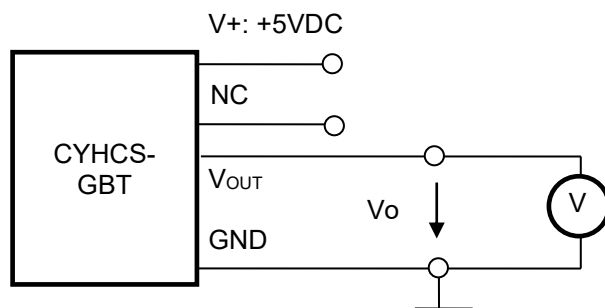
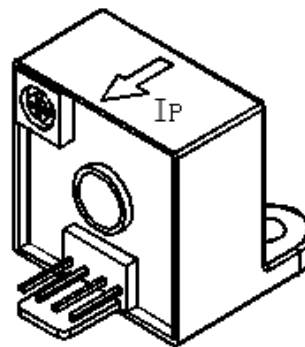
## PIN Definition and Dimensions



### Pin arrangement:

1 (V+):	+5V
2 (NC):	NC
3 (OUT):	V <sub>OUT</sub>
4 (GND):	0V (GND)

**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 busbar (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