ChenYang Technologies GmbH & Co KG

Hall Effect DC Current Sensor CYHCT-D6V

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 etc. The output of the transducer reflects the real wave of the current carrying conductor.

Product Characteristics	Applications
• Excellent accuracy • Very good linearity • Less power consumption • Window structure • Electrically isolating the output of the transducer from the current carrying conductor • No insertion loss • Current overload capability	• **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 DC Current I_r (A)	Measuring Range (A)	DC Output Voltage (V)	Part number (see application notes on page 4)
50	0 ~ ±50A	x=0: 0-4V ±1.0% x=3: 0-5V ±1.0% x=8: 0-10V ±1.0%	CYHCT-D6V-U/B50A-xnC
100	0 ~ ±100A		CYHCT-D6V-U/B100A-xnC
200	0 ~ ±200A		CYHCT-D6V-U/B200A-xnC
300	0 ~ ±300A		CYHCT-D6V-U/B300A-xnC
400	0 ~ ±400A		CYHCT-D6V-U/B400A-xnC
500	0 ~ ±500A		CYHCT-D6V-U/B500A-xnC
600	0 ~ ±600A		CYHCT-D6V-U/B600A-xnC
700	0 ~ ±700A		CYHCT-D6V-U/B700A-xnC
800	0 ~ ±800A		CYHCT-D6V-U/B800A-xnC
900	0 ~ ±900A		CYHCT-D6V-U/B900A-xnC
1000	0 ~ ±1000A		CYHCT-D6V-U/B1000A-xnC

(U: unidirectional input current; B: bidirectional input current, please give U or B in Part number
Power supply: n=2, *Vcc*= +12VDC ±5%; n=3, *Vcc* =+15VDC ±5%; n=4, *Vcc* =+24VDC±5%
Connector: C=S, Screw connector; C=M, MOLEX connector)

Supply Voltage:	V_{cc}=+12V, +15V, +24V± 5%
Current Consumption	I_c < 25mA
Isolation Voltage	2.5kV, 50/60Hz, 1min
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 at I_r, T_A=25°C,	X <1.0% FS
Linearity from 0 to I_r, T_A=25°C,	E_L <1.0% FS
Electric Offset Voltage, T_A=25°C,	V_{oe} <50mV
Magnetic Offset Voltage (I_r →0)	V_{om} <±20mV
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 - 20 kHz
Case Material:	PBT

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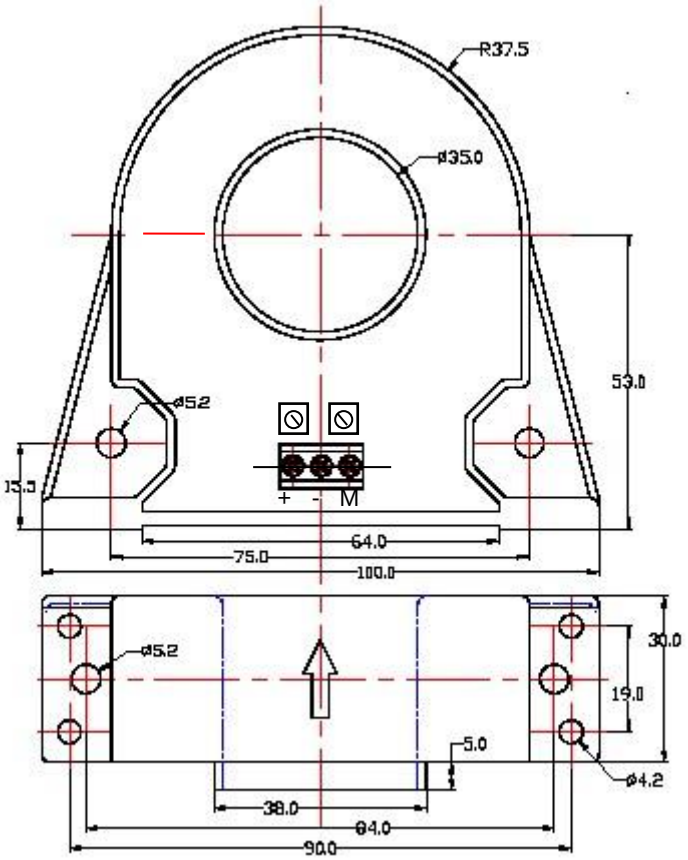
Ambient Operating Temperature,	T_A = -25°C ~ +85°C
Ambient Storage Temperature,	T_S =-40°C ~ +100°C

PIN Definition and Dimensions

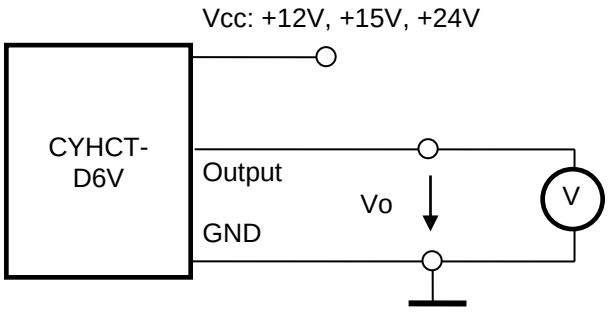
Screw connection



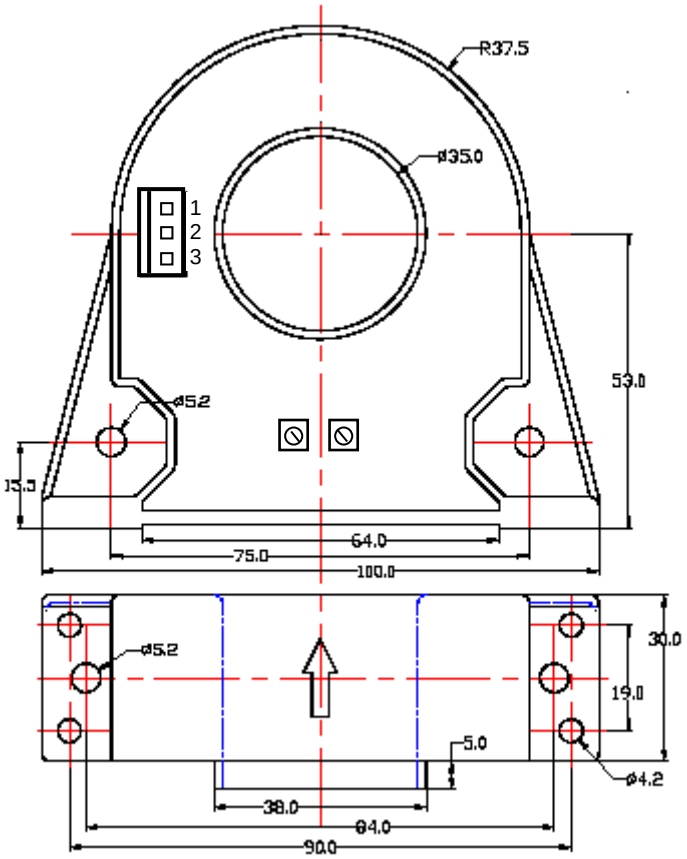
Current direction

Terminal Arrangement

1(+):	Vcc
2(-):	GND
3(M):	Output

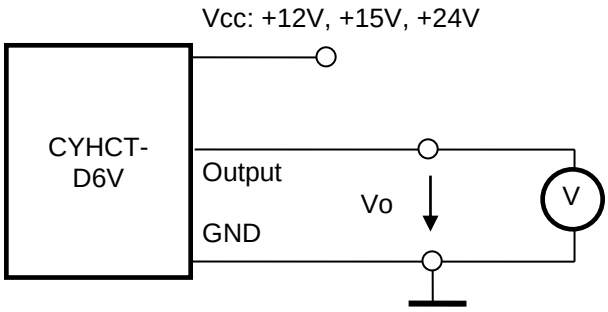


MOLEX Connection



Terminal Arrangement

1: Vcc
2: GND
3: Output



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

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Application Notes

1) Part number CYHCT-D6V-U/BxxxxA-xnC

U&B: **U:** unidirectional input current; **B:** bidirectional input current.
xxxx: current value.
x: output voltage (**x**=0: 0-4V ±1.0%; **x**=3: 0-5V ±1.0%; **x**=8: 0-10V ±1.0%);
n: power supply (**n**=2, Vcc= +12VDC; **n**=3, Vcc =+15VDC; **n**=4, Vcc =+24VDC,)
C: Connector: **C**=S, Screw connector; **C**=M, MOLEX connector

Example 1: CYHCT-D6V-U100A-32S Hall Effect DC Current sensor with screw connector
Output signal: 0 – 5V DC
Power supply: +12V DC
Rated input current: 0 - 100A DC (unidirectional)

Example 2: CYHCT-D6V-B100A-84M Hall Effect DC Current sensor with MOLEX connector
Output signal: 0 – 10V DC
Power supply: +24V DC
Rated input current: -100A - 0 - +100A DC (bidirectional)

2) Relation between Input current and output signal

Current Sensor CYHCT-D6V-U100A-32S	
Input current (A)	Output voltage Vo (V)
0	0
25	1.25
50	2.5
75	3.75
100	5

Current Sensor CYHCT-D6V-B100A-84M	
Input current (A)	Output voltage Vo (V)
-100	0
-75	1.25
-50	2.5
-25	3.75
0	5
25	6.25
50	7.5
75	8.75
100	10

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