

Split Core Hall Effect Current Sensor CYHCT-C11

This Hall Effect current sensor is based on open loop principle and can be used for measurement of DC currents. The output of the transducer reflects the real wave of the current carrying conductor. The sensors use split cores and are easily to mount.

Product Characteristics	Applications
<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Frequency conversion timing equipments• Various power supply• Uninterruptible power supplies (UPS)• Electric welding machines• Transformer substation• Electrolyzing and electroplating equipments• Electric powered locomotive• Electric power network monitoring

Electrical Data

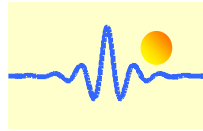
Measuring range M	3000A ~ 10000A DC
Linearity range	1.4 x M (measuring range)
Overload capacity	20 x M (measuring range)
Nominal output signals	0-4V, 0-5V, 0-20mA, 4-20mA,
Supply voltage	±12VDC, ±15VDC
Current consumption	20mA ~ 50mA + output current
Galvanic isolation	3KV RMS/50Hz/min

Accuracy and Dynamic Performances

Zero offset voltage	±20	mV
Hysteresis error	±10	mV
Thermal drift of offset current	≤300	ppm/°C
Response time	≤10 (di/dt=50A/μs)	μs
Accuracy	±1.0	%
Linearity	≤1.0	%FS

General Data

Operating temperature	-10 ~ +80	°C
Storage temperature	-25 ~ +85	°C



Definition of Part number:

CYHCT	-	C11	-	M	-	x	n
(1)		(2)		(3)		(4)	(5)

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Series name	Case style	Rated Input current (M=U/B + m)	Output signal	Power supply
CYHCT	C11	m = 3000A, 4000A, 5000A, 6000A, 7000A, 8000A, 9000A, 10000A	x=0: 0-4V DC x=3: 0-5V DC x=4: 0-20mA DC x=5: 4-20mA DC	n=5: ±12V DC n=6: ±15V DC

U: unipolar input current; B: bipolar input current

Output Signal of Custom Made Sensors:

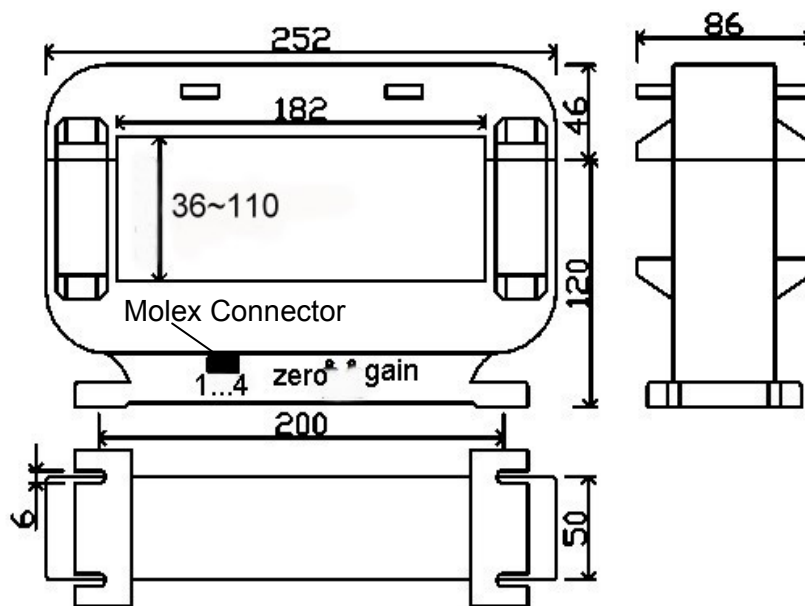
x=1: tracing voltage 5V, x=2: tracing current 20mA

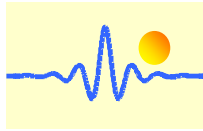
Example 1: CYHCT-C11-U5000A -45, Hall Effect DC Current sensor with
Output signal: 0-20mA DC
Power supply: ±12V DC
Rated input current: 0-5000A DC (unipolar)

Example 2: CYHCT-C11-B5000A -35, Hall Effect
DC Current sensor with
Output signal: 0-5V DC
Power supply: ±12V DC
Rated input current: -5000A ~ +5000ADC
(bipolar)



DIMENSIONS (mm)





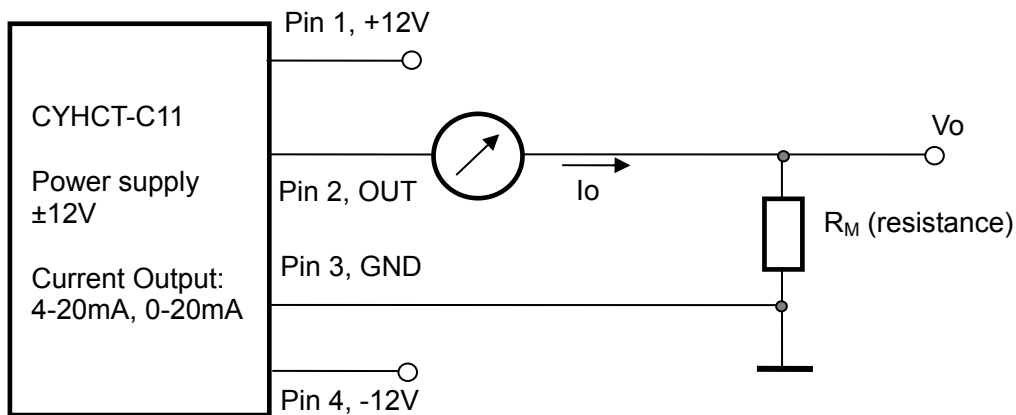
CONNECTION

The current carrying cable must pass through the window. The phase of output is the same as that of the current passing the window in the direction of the arrow indicated on the case.

Wiring of Terminals for case style C11:

1. +: +15V/+12V Power Supply
2. OUT: Output (0-5V, 0-4V, 0-20mA, 4-20mA)
3. GND: Ground
4. -: -15V/-12V Power Supply

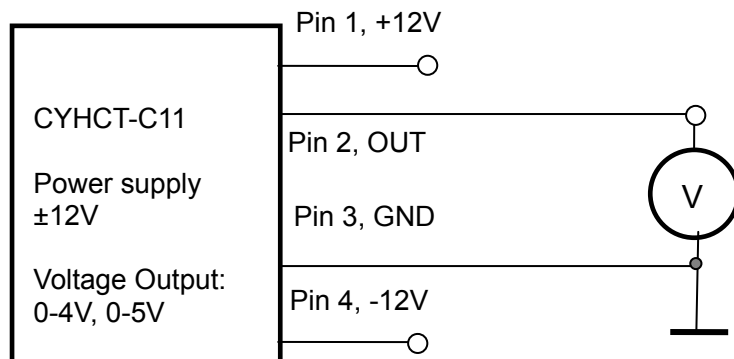
Current Output

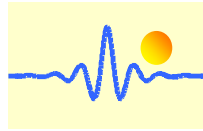


Relation between Input and Output (for $R_m=250 \Omega$):

Sensor CYHCT-C11-U5000A -45			Sensor CYHCT-C11-B5000A -45		
Input current (A)	Output current I_o (mA)	Output voltage V_o (V)	Input current (A)	Output current I_o (mA)	Output voltage V_o (V)
0	0	0	-5000	0	0
1250	5	1.25	-2500	5	1.25
2500	10	2.5	0	10	2.5
3750	15	3.75	2500	15	3.75
5000	20	5	5000	20	5

Voltage Output





Relation between Input and Output:

Sensor CYHCT-C11-U5000A -35		Sensor CYHCT-C11-B5000A -35	
Input current (A)	Output voltage (V)	Input current (A)	Output voltage (V)
0	0	-5000	0
1250	1.25	-2500	1.25
2500	2.5	0	2.5
3750	3.75	2500	3.75
5000	5	5000	5

Notes:

1. The input resistor of the secondary instrument should be higher than $2k\Omega$ ($R_L \geq 2k\Omega$)
2. Make sure that the input and output signals and power supply are correctly connected before the transducer is powered on. The transducer can be damaged by wrong connection.
3. The direction of the input current must be corresponding to the direction marked on the transducer case.
4. The zero point potentiometer W1 and gain potentiometer W2 are adjusted by calibrating the transducer before delivery. Don't readjust them normally. Don't open the transducer case!
5. The potentiometers can be adjusted, only if necessary, by turning slowly to the required accuracy with a small screwdriver. In this case a new calibration is necessary.
6. The best accuracy can be achieved when the window is fully filled with bus-bar (current carrying conductor). The bus-bar should be positioned in the center of the window if the window opening is bigger than the bus-bar. This can improve the accuracy
7. The temperature of the input current bus-bar should be not higher than 80°C
8. To obtain a good accuracy, the two parts of the transducer case must be good coupled. Pay attention to the numbers of the case parts. The numbers of the both parts should be oriented to the same direction when mounting.