Split Core Hall Effect AC/DC Current Sensor CYHCS-EKO

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 AC/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 • Split core 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 • Electrolyzing and electroplating equipment • Electric powered locomotive • Electric power network monitoring

Electrical Data

Primary Nominal Current I_r (A)	Measuring Range I_p(A)	Output signal (Analog)(V)	Window Size (mm)	Part number
500A	0 ~ ± 1000A	X=4V: 0 ~ ±4V X=5V: 0 ~ ±5V X=20mA: 0 ~ ±20mA X=40mA: 0 ~ ±40mA	Ø80	CYHCS-EKO-500A-X
1000A	0 ~ ± 2000A			CYHCS-EKO-1000A-X
2000A	0 ~ ± 3000A			CYHCS-EKO-2000A-X
5000A	0 ~ ± 6000A			CYHCS-EKO-5000A-X
8000A	0 ~ ± 10000A			CYHCS-EKO-8000A-X
10000A	0 ~ ± 12000A			CYHCS-EKO-10000A-X
12000A	0 ~ ± 15000A			CYHCS-EKO-12000A-X
15000A	0 ~ ± 18000A			CYHCS-EKO-15000A-X
20000A	0 ~ ± 24000A			CYHCS-EKO-20000A-X

Supply Voltage:	V_{cc}=±12V~±15VDC or ±15V~±24VDC
Current Consumption (Vc=±15VDC):	I_c < 50mA
Isolation Voltage:	6kV, 50/60Hz, 1min
Output Impedance:	R_{out} < 150Ω for voltage output
Load Resistor:	R_L > 10kΩ for voltage output
Accuracy at I_r, T_A=25°C (without offset):	E<1.0%FS for Ir<2000A E<0.5%FS for Ir≥2000A
Linearity from 0 to I_r, T_A=25°C:	E_L <1.0% FS for Ir<2000A E_L <0.5% FS for Ir≥2000A
Linear Measuring range:	1.2 ~2 times of measuring range
Overload capability:	3 times of measuring range
Electric Offset Voltage/current, T_A=25°C:	<±25mV/0.1mA
Magnetic Offset Voltage/current ($I_r \rightarrow 0$) :	<±25mV/0.1mA
Thermal Drift of Offset Voltage/current (I_p=0)	<±1.0mV/°C, 0.004mA/°C (T_A=-25°C~85°C):
Response Time at 90% of I_P (f=1k Hz):	t_r < 10μs
Frequency Bandwidth (-3dB):	f_b = DC - 6kHz
Ambient Operating Temperature:	T_A =-25°C ~ +85°C
Ambient Storage Temperature:	T_S =-40°C ~ +100°C
Unit Weight:	1165g/pc
Standard:	Q/320115QHKJ01-2016

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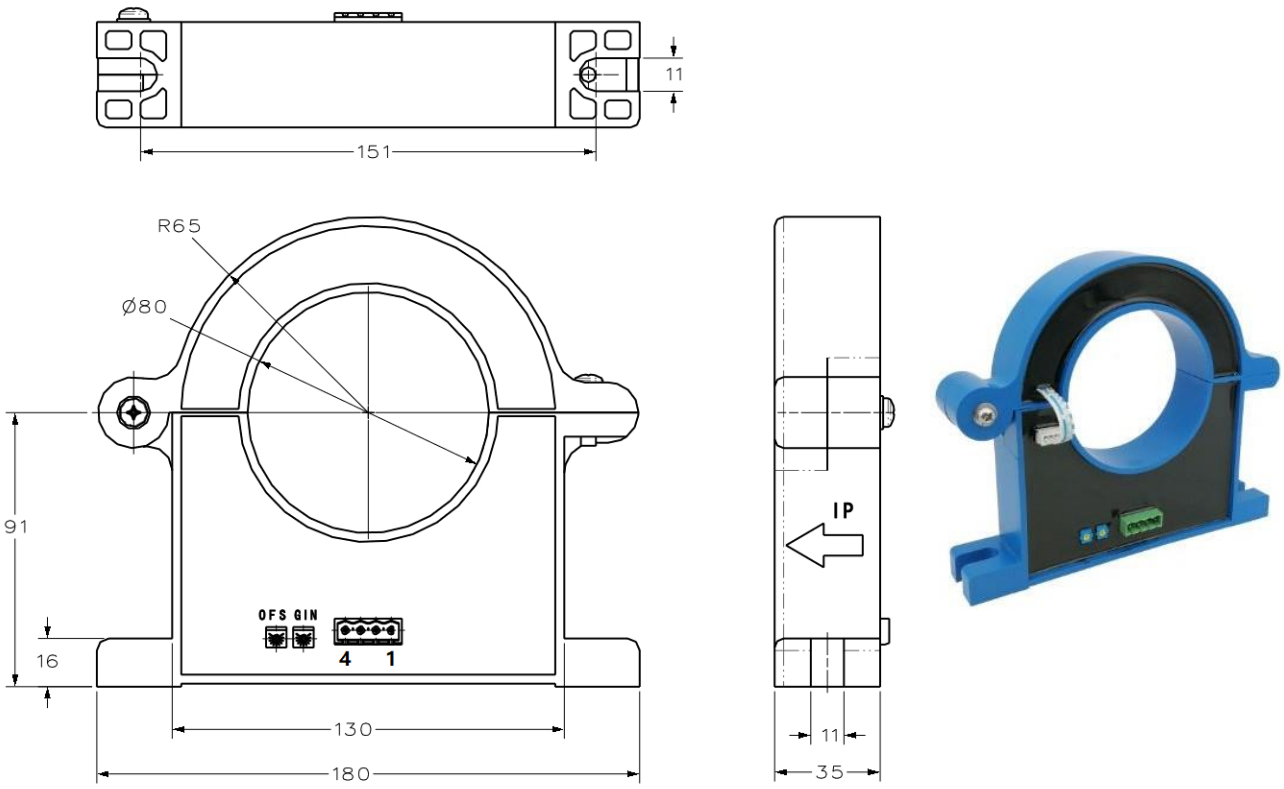
PIN Definition and Dimensions



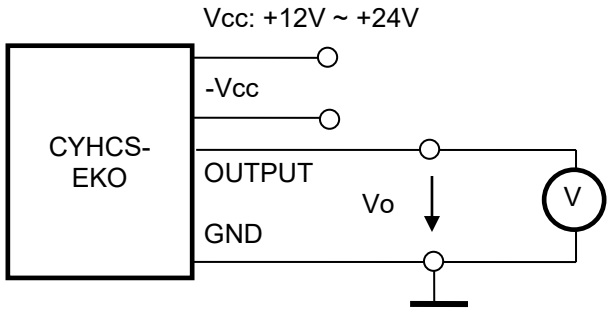
OFS: Offset Adjustment GIN: Gain Adjustment

Pin arrangement of connector:

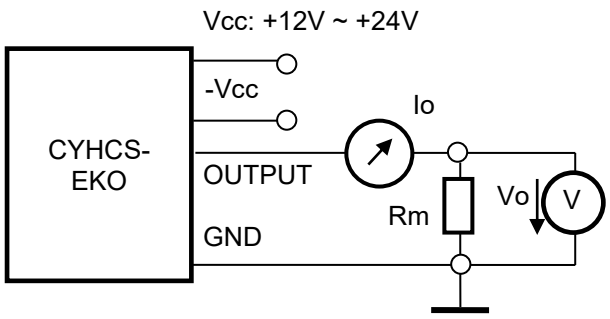
1: Vcc
2: -Vcc
3: OUTPUT
4: 0V (GND)

Cable connection:

Red:	Vcc
Blue:	-Vcc
Yellow:	OUTPUT
Black:	0V (GND)



a) Voltage output



b) Current output (Rm≤200Ω)

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Relation between Input Current and Output Voltage:

Sensor CYHCS-EKO-1000A-4V		Sensor CYHCS-EKO-2000A-5V	
Input current (A)	Output voltage (V)	Input current (A)	Output voltage (V)
0	0	0	0
±250	±1.0	±500	±1.25
±500	±2.0	±1000	±2.50
±750	±3.0	±1500	±3.75
±1000	±4.0	±2000	±5.00

Relation between Input Current and Output Current/Voltage (for $R_m \leq 200\ \Omega$):

Sensor CYHCS-EKO-2000A-20mA, Rm=200Ω		
Input current (A)	Output current Io(mA)	Output voltage Vo (V)
0	0	0
±500	±5	±1.0
±1000	±10	±2.0
±1500	±15	±3.0
±2000	±20	±4.0

Sensor CYHCS-EKO-2000A-40mA, Rm=150Ω		
Input current (A)	Output current Io(mA)	Output voltage Vo (V)
0	0	0
±500	±10	±1.5
±1000	±20	±3.0
±1500	±30	±4.5
±2000	±40	±6.0

Sensor CYHCS-EKO-2000A-40mA, Rm=200Ω		
Input current (A)	Output current Io(mA)	Output voltage Vo (V)
0	0	0
±500	±10	±2.0
±1000	±20	±4.0
±1500	±30	±6.0
±2000	±40	±8.0

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 current carrying conductor.
4. The in-phase output can be obtained when the current direction of current carrying conductor is the same as the direction of arrow marked on the transducer

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