Split Core Hall DC Current Sensor CYHCT-KC

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 rectified average value of the current in the carrying conductor.

Product Characteristics	Applications
• Excellent accuracy • Very good linearity • Using split cores and easy mounting • 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 Current (mA)	Window size (mm)	Part number (see application notes on page 3)
300	0~±300	4-20 ±1.0%	64x16	CYHCT-KC-U/B300A-n
500	0~±500			CYHCT-KC-U/B500A-n
600	0~±600			CYHCT-KC-U/B600A-n
800	0~±800			CYHCT-KC-U/B800A-n
1000	0~±1000			CYHCT-KC-U/B1000A-n
1500	0~±1500			CYHCT-KC-U/B1500A-n
2000	0~±2000			CYHCT-KC-U/B2000A-n

(U: unidirectional input current; B: bidirectional input current, please give U or B in Part number)
(n=3, *Vcc*= +12VDC ±5%; n=4, *Vcc* =+15VDC ±5%; n=5, *Vcc* =+24VDC±5%)

Supply Voltage	V_{cc}= +12V, +15V, +24VDC ± 5%
Current Consumption	I_c < 25mA + Output current
Galvanic isolation, 50/60Hz, 1min:	3kV rms
Isolation resistance @ 500 VDC	> 500 MΩ

Accuracy and Dynamic performance data

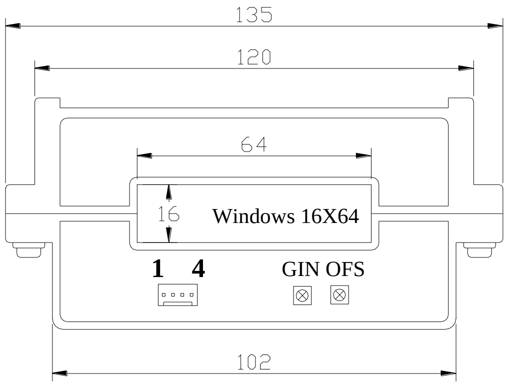
Accuracy at I_r, T_A=25°C,	X <±1.0% FS
Linearity from 0 to I_r, T_A=25°C,	E_L <±0.5% FS
Electric Offset current, T_A=25°C,	4mA DC or 12mA DC
Thermal Drift of Offset Current,	<±0.005mA/°C
Response Time at 90% of I_P	t_r < 1ms
Load resistance:	80-450Ω
Frequency Bandwidth (-3dB),	f_b = DC - 20 kHz

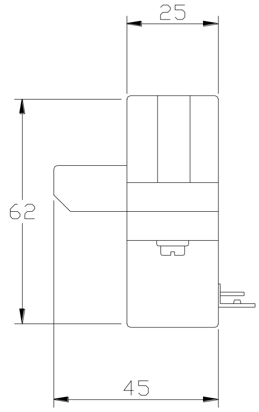
General Data

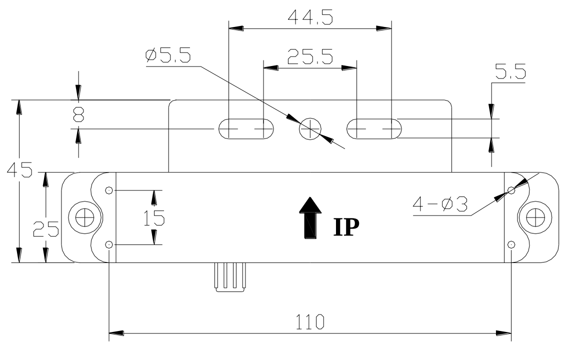
Ambient Operating Temperature,	T_A = -25°C ~ +85°C

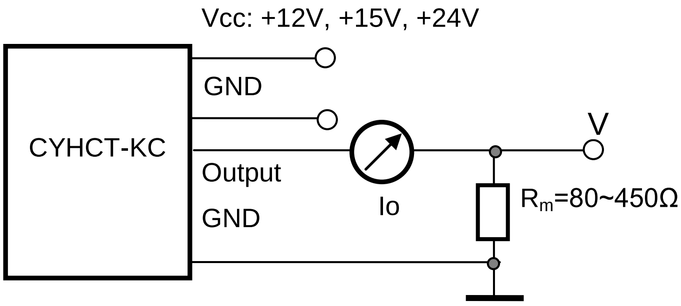
Ambient Storage Temperature,	T_S =-40°C ~ +100°C
Unit weight:	300g/unit
Case Material:	PBT

Dimensions









Pin Arrangement

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

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

Markt Schwabener Str. 8
D-85464 Finsing
Germany

Tel.: +49 (0)8121 – 2574100
Fax: +49 (0)8121– 2574101
Email: info@cy-sensors.com
http://www.cy-sensors.com

Application Notes

1) Part number CYHCT-KC-U/BxxxxA-n

U: unidirectional input current; **B:** bidirectional input current; **xxxx:** current value; **n:** power supply (**n**=3, *Vcc*= +12VDC ±5%; **n**=4, *Vcc* =+15VDC ±5%; **n**=5, *Vcc* =+24VDC±5%))

Example 1: CYHCT-KC-U1000A-5 Hall Effect DC Current sensor with
Output signal: 4mA - 20mA DC
Power supply: +24V DC
Rated input current: 0 - 1000A DC (unidirectional)

Example 2: CYHCT-KC-B1000A-3 Hall Effect DC Current sensor with
Output signal: 4mA – 12mA - 20mA DC
Power supply: +12V DC
Rated input current: -1000A - 0 - +1000A DC (bidirectional)

2) Relation between Input current and output signal

Current Sensor CYHCT-KC-U1000A-5		
Input current (A)	Output current Io(mA)	Output voltage Vo (V) (Measuring resistance Rm=250Ω)
0	4	1
250	8	2
500	12	3
750	16	4
1000	20	5

Current Sensor CYHCT-KC-B1000A-3		
Input current (A)	Output current Io(mA)	Output voltage Vo (V) (Measuring resistance Rm=250Ω)
-1000	4	1
-750	6	1.5
-500	8	2
-250	10	1.5
0	12	3
250	14	3.5
500	16	4
750	18	4.5
1000	20	5