

## Split Core Hall Effect DC Current Sensor CYHCT-S3K

The sensor CYHCT-S3K 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 real wave of the current carrying conductor.

Features and Advantages	Applications
<ul style="list-style-type: none"> <li>DC current measurement</li> <li>Output signal option (4-20mA, 0-5V, 0-10V)</li> <li>High isolation between primary and secondary circuits</li> <li>Split Core, easy installation</li> <li>Protection against overvoltage</li> <li>Protection against reversed polarity</li> <li>Output protection against electrical disturbances</li> </ul>	<ul style="list-style-type: none"> <li><b>Photovoltaic equipment</b></li> <li>Battery banks, such as, monitoring load current and charge current, verifying operation</li> <li>Transportation, measuring traction power or auxiliary loads</li> <li>Phase fired controlled heaters</li> <li>Directly connect to PLC</li> <li>Sense motor stalls and short circuits</li> <li>Industrial instrumentation</li> </ul>

### Specifications

Rated input current (DC)	25A,30A,40A,50A,60A,70A,80A,90A,100A,200A,300A,400A,500A		
Linear measuring range	1.2 times of rated input current		
Output signals	0-5VDC, 0-10VDC, 0-20mADC, 4-20mADC		
Power supply	+12V DC, +15VDC, +24V DC		
Measuring accuracy	Voltage output: $\pm 1.0\%$ for 25A~49A, $\pm 0.5\%$ for 50A~500A 4-20mA output: $\pm 1.0\%$ for 25A~49A, $\pm 0.5\%$ for 50A~500A 0-20mA output: $\pm 1.0\%$ for 25A ~ 500A		
Linearity at 25°C	Voltage output: $\pm 0.5\%$ for 25A~49A, $\pm 0.2\%$ for 50A~500A 4-20mA output: $\pm 0.5\%$ for 25A~49A, $\pm 0.2\%$ for 50A~500A 0-20mA output: $\pm 0.5\%$ for 25A ~ 500A		
Zero offset voltage	$\pm 10\text{mV}$	Hysteresis error:	$\pm 10\text{mV}$
Thermal drift of offset voltage	$\leq 300\text{ppm}/^\circ\text{C}$	Thermal Drift (-10°C to 50°C):	$< 1000\text{ppm}/^\circ\text{C}$
Galvanic isolation	3 kV DC, 1 min		
Isolation resistance	$\geq 100\text{M}\Omega$		
Response time	$< 1\text{ms}$ DC output		
Frequency Bandwidth (-3dB)	DC – 8kHz		
di/dt following accuracy	50A/ $\mu\text{s}$		
Overload capacity	5 times of rated current		
Current consumption	$\leq 25\text{mA}$ for voltage output, 25mA + Output current for current output		
Output load	Voltage output : $\geq 2\text{k}\Omega$ , Current output: $\leq 250\Omega$		
Mounting	Panel Screw mounting		
Case style and Window size	S3K with aperture $\varnothing 20\text{mm}$		
Protection of Case	IP20		
Operating temperature	-40°C ~ +85°C	Storage temperature	-55°C ~ +100°C
Relative humidity	$\leq 90\%$		
MTBF	$\geq 100\text{k}$ hours		

### Definition of Part number:

CYHCT	-	S3K	-	M	-	x	n
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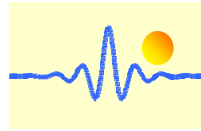
(1)

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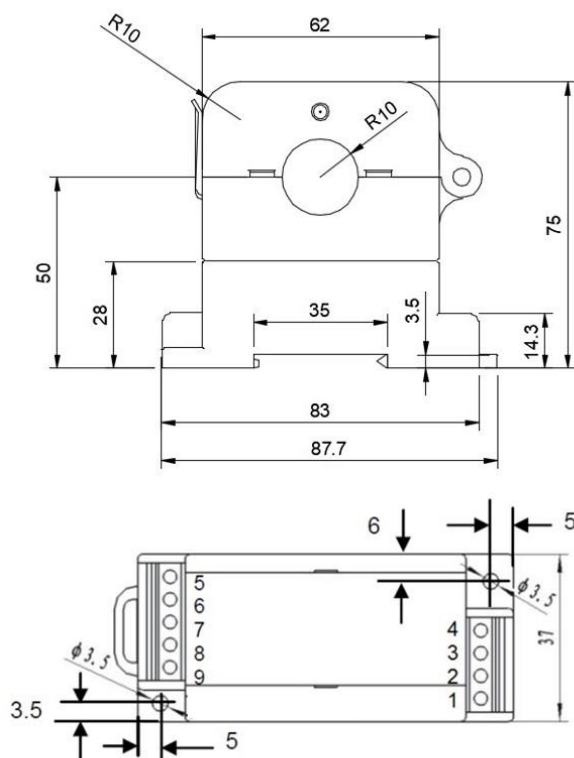
(1)	(2)	(3)	(4)	(5)
Series name	Case style	Rated Input current (M=U/B m)	Output signal	Power supply
CYHCT	S3K	m = 25A, 30A, 40A,50A,60A,70A, 80A, 90A,100A, 200A, 300A, 400A, 500A (other input current between 25A-500A)	<b>x=3:</b> 0-5V DC <b>x=4:</b> 0-20mA DC <b>x=5:</b> 4-20mA DC <b>x=8:</b> 0-10V DC	<b>n=2:</b> +12V DC <b>n=3:</b> +15V DC <b>n=4:</b> +24V DC

U: unidirectional; B: bidirectional (please give U or B in the part number)

**Example 1:** CYHCT-S3K-U100A -34, Hall Effect DC Current sensor with  
Output signal: 0-5V DC  
Power supply: +24V DC  
Rated input current: 0-100A DC

**Example 2:** CYHCT-S3K-U100A -54, Hall Effect DC Current sensor with  
Output signal: 4-20mA DC  
Power supply: +24V DC  
Rated input current: 0-100A DC

## DIMENSIONS (mm)

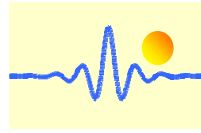


83 x 37 x 75mm

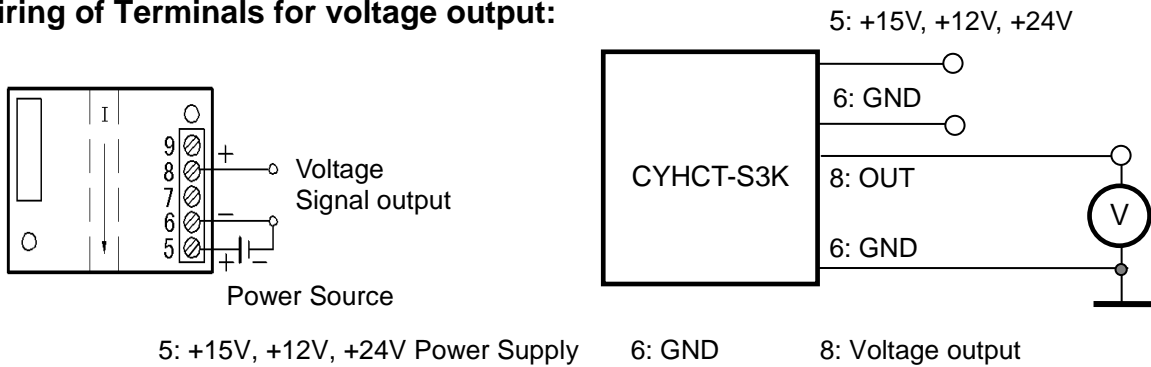


## CONNECTIONS

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.



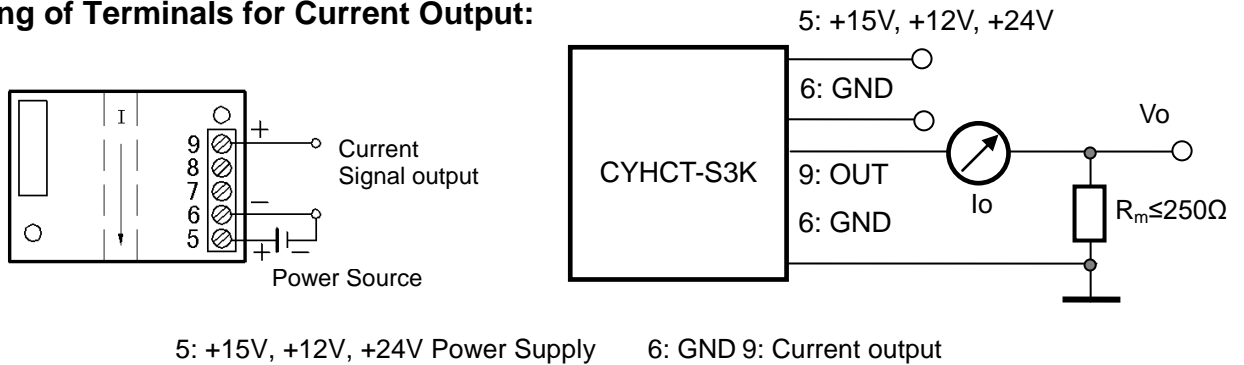
### Wiring of Terminals for voltage output:



### Relation between Input and Output:

Sensor CYHCT-S3K-U100A-34	
Input current (A)	Output voltage (V)
0	0
25	1.25
50	2.5
75	3.75
100	5

### Wiring of Terminals for Current Output:



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

Sensor CYHCT-S3K-U100A-54		
Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	4	1
25	8	2
50	12	3
75	16	4
100	20	5

### 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 screw driver.
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 case.