Hall Effect DC Current Sensor CYHCT-L20K

The sensor CYHCT-L20K 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
• DC current measurement • Output signal option (4-20mA, 0-5V, 0-10V) • High isolation between primary and secondary circuits • Protection against overvoltage • Protection against reversed polarity • Output protection against electrical disturbances	• **Photovoltaic equipment** • Battery banks, such as, monitoring load current and charge current, verifying operation • Transportation, measuring traction power or auxiliary loads • Phase fired controlled heaters • Directly connect to PLC • Sense motor stalls and short circuits • Industrial instrumentation

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	±5V DC, 0-5VDC, 0-10VDC, 0-20mADC, 4-20mADC		
Power supply	+12V DC, +15VDC, +24V DC		
Measuring accuracy	Voltage output: ±1.0% for 25A~49A, ±0.5% for 50A~500A 4-20mA output: ±1.0% for 25A~49A, ±0.5% for 50A~500A 0-20mA output: ±1.0% for 25A ~ 500A		
Linearity (10% - 100%), 25°C	Voltage output: ±0.5% for 25A~49A, ±0.2% for 50A~500A 4-20mA output: ±0.5% for 25A~49A, ±0.2% for 50A~500A 0-20mA output: ±0.5% for 25A ~ 500A		
Zero offset voltage	±10mV	Hysteresis error	±10mV
Thermal drift of offset voltage	≤300ppm/°C	Thermal Drift (-10°C to 50°C)	<1000ppm /°C
Galvanic isolation	3 kV DC, 1 min		
Isolation resistance	≥100MΩ		
Response time	≤10µs for instantaneous output, <1ms DC output		
Frequency Bandwidth (-3dB)	DC – 8kHz		
di/dt following accuracy	50A/µs		
Overload capacity	5 times of rated current		
Current consumption	≤25mA for voltage output, 25mA + Output current for current output		
Output load	Voltage output : ≥2kΩ, Current output: ≤250Ω		
Mounting	Panel Screw mounting		
Case style and Window size	L20K with aperture Ø20mm		
Protection of Case	IP20		
Operating temperature	-40°C ~ +85°C	Storage temperature	-55°C ~ + 100°C
Relative humidity	≤90%		
MTBF	≥ 100k hours		

Definition of Part number:

CYHCT	-	L20K	-	M	-	x	n
		(1)		(2)		(3)	(4) (5)

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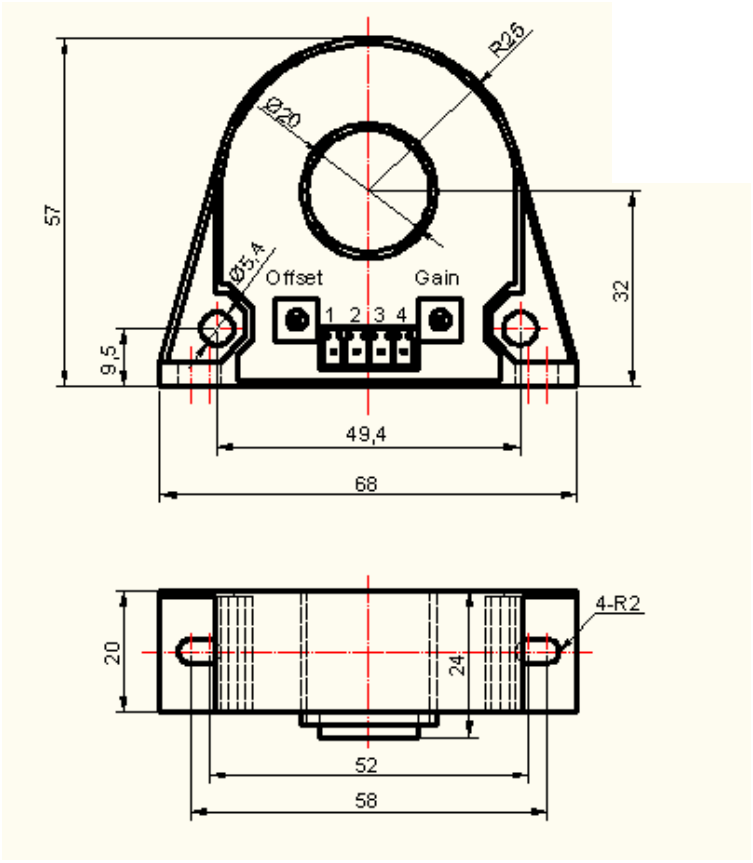
(1)	(2)	(3)	(4)	(5)
Series name	Case style	Rated Input current (M=U/B m)	Output signal	Power supply
CYHCT	L20K	m = 25A, 30A, 40A, 50A,60A,70A,80A,90A,100A, 200A, 300A, 400A, 500A (other input current between 25A-500A)	**x=1:** instantaneous voltage ±5V DC **x=3:** 0-5V DC **x=4:** 0-20mA DC **x=5:** 4-20mA DC **x=8:** 0-10V DC	n**=2:** +12V DC n=**3**: +15V DC n**=4:** +24V DC

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

Example 1: CYHCT-L20K-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-L20K-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)



Dimensions: 68mm x 57mm x 24mm, Aperture: Ø20 mm

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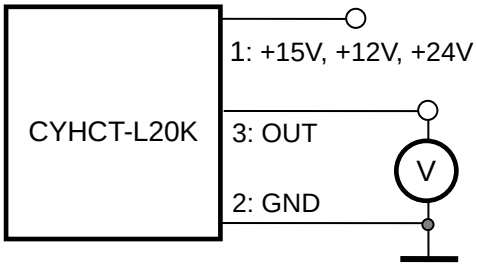
CONNECTIONS

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:

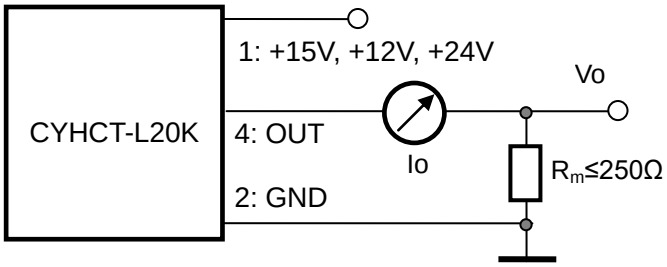


Relation between Input and Output:

Sensor CYHCT-L20K-U100A-34	
Input current (A)	Output voltage (V)
0	0
25	1.25
50	2.5
75	3.75
100	5

1: Power supply; 2: GND; 3: Voltage Output

Wiring of Terminals for Current Output:



1: Power supply; 2: GND; 4: Current Output

Relation between Input and Output (for R_m=250 Ω):

Sensor CYHCT-L20K-U100A-54		
Input current (A)	Output current Io(mA)	Output voltage Vo (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.

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