Split Core bidirectional Hall Effect DC Current Sensor CYHCT-L35B

The Hall Effect current sensor CYHCT-L35B 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 bidirectional DC current, DC pulse currents etc. The output of the transducer reflects the real wave of the input current in the carrying conductor.

Features and Advantages

- Bidirectional DC current measurement
- Output signal 0~±20mA, 0~±5V, 0~±10V
- High isolation between primary and secondary circuits
- Split Core, easy installation
- Protection against overvoltage
- Protection against reversed polarity
- Output protection against electrical disturbances

Applications

- **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

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Rated bidirectional DC input current	50A,60A,70A,80A,90A,100A,200A,300A,400A,500A,800A,1000A		
Linear measuring range	1.2 times of rated input current		
Output signals	0~±20mA, 0~±5V, 0~±10V		
Power supply	+12V DC, +15VDC, +24V DC		
Measuring accuracy at 25°C	voltage output: ±1.0% for 50A~99A, ±0.5% for 100A~1000A current output: ±1.0% for 50A ~ 1000A		
Linearity at 25°C	voltage output: ±0.5% for 50A~99A, ±0.3% for 100A~1000A current output: ±0.5% for 50A ~ 1000A		
Zero offset voltage	±10mV	Hysteresis error:	±10mV
Thermal drift of offset voltage	≤300ppm/°C	Thermal drift of offset current	≤400ppm/°C
Thermal Drift (-10°C to 50°C)	<1000ppm /°C		
Galvanic isolation	3 kV DC, 1 min	Isolation resistance	≥100MΩ
Response time	<1ms DC output		
Frequency Bandwidth (-3dB)	DC – 8kHz		
di/dt following accuracy	50A/µs		
Overload capacity	5 times of rated current		
Current consumption	≤30mA for voltage output, 30mA + output current for current output		
Output load	voltage output: ≥2kΩ, current output: ≤250Ω		
Mounting	Panel Screw mounting		
Case style and Window size	L35B with aperture Ø35mm		
Protection of Case	IP20		
Operating temperature	-40°C ~ +70°C	Storage temperature	-40°C ~ + 85°C
Relative humidity	≤90%		
MTBF	≥ 100k hours		

Definition of Part number:

CYHCT	-	L35B	-	m	-	x	n	C
		(1)		(2)		(3)	(4)	(5) (6)

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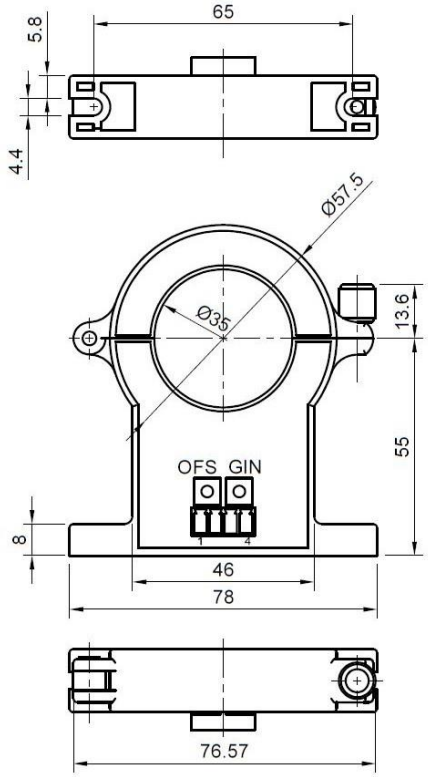
(1)	(2)	(3)	(4)	(5)	(6)
Series name	Case style	Rated Input current (bidirectional)	Output signal	Power supply	Connector
CYHCT	L35B	m = 50A, 60A,70A,80A, 90A, 100A, 200A, 300A, 400A, 500A, 800A,1000A (other input current between 50A-1000A)	**x=1:** 0~±5VDC **x=2:** 0~±20mADC	n**=2:** +12V DC n=**3**: +15V DC n**=4:** +24V DC	C**=M:** Molex Connector C=**P**: Phoenix Connector C=**S**: Cable Connection
			x=9: 0~±10V DC	n=4: +24V DC	

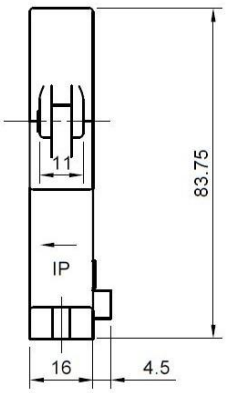
Example 1: CYHCT-L35B-100A-12M, Hall Effect DC Current sensor with Molex connector
Output signal: 0~±5V DC
Power supply: +12V DC
Rated input current: 0~±100A DC

Example 2: CYHCT-L35B-100A-23P, Hall Effect DC Current sensor with Phoenix connector
Output signal: 0~±20mA DC
Power supply: +15V DC
Rated input current: 0~±100A DC

Example 3: CYHCT-L35B-200A-94S3, Hall Effect DC Current sensor with 3m cable connection
Output signal: 0~±10VDC
Power supply: +24V DC
Rated input current: 0 ~± 200A DC

DIMENSIONS (mm) for MOLEX and Phoenix Connectors





Pin Arrangement

1:	Vcc	2:	GND
3:	Signal Output (Vo or Io)	4:	GND

OFS: Offset Adjustment GIN: Gain Adjustment
Dimensions: 83.75mm x 78mm x 16mm, Aperture: Ø35 mm

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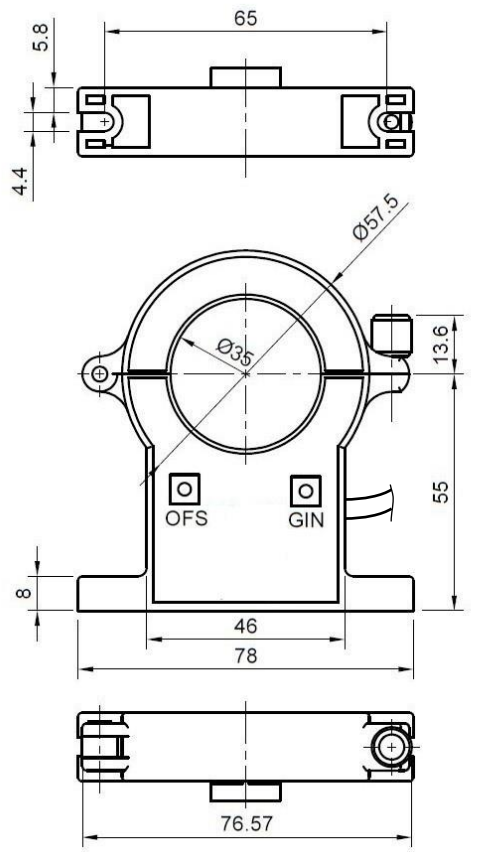
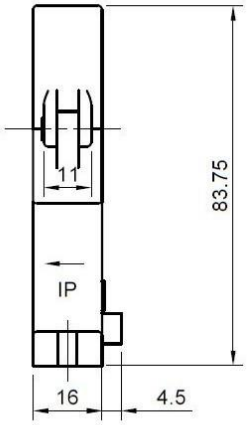
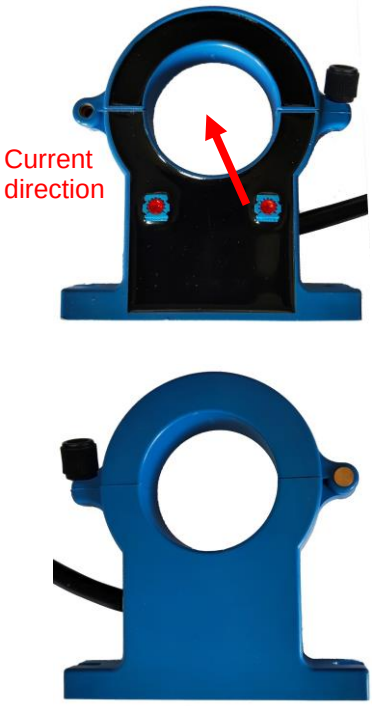
DIMENSIONS (mm) for Cable Connection







OFS: Offset Adjustment GIN: Gain Adjustment
Dimensions: 83.75mm x 78mm x 16mm, Aperture: Ø35 mm

Cable Arrangement

1. Red: Vcc: +12V, +15V, +24VDC
2. Blue: GND (ground)
3. Yellow: Vo or Io (voltage or current output)
4. Black: GND (ground)

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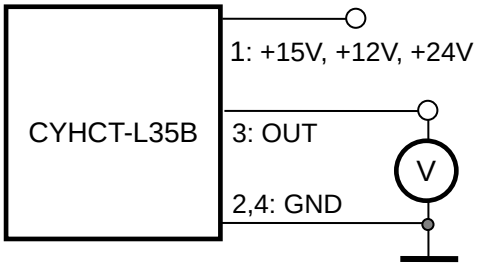
CONNECTIONS

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:

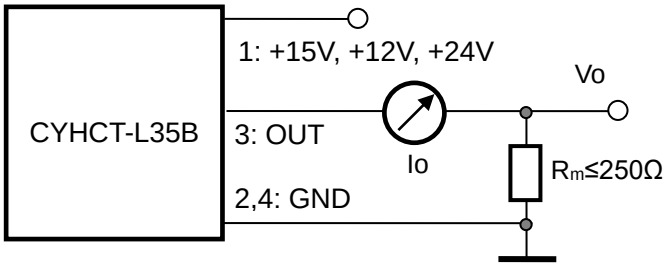


Relation between Input and Output:

Sensor CYHCT-L35B-100A-12M	
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; 3: Current Output

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

Sensor CYHCT-L35B-100A-23P		
Input current (A)	Output current Io(mA)	Output voltage Vo (V)
0	0	0
±25	±5	±1.25
±50	±10	±2.5
±75	±15	±3.73
±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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