

Split Core Hall Effect DC Current Sensor CYHCT-L35K

The sensor CYHCT-L35K 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"> DC current measurement Output signal option (4-20mA, 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 | <ul style="list-style-type: none"> 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 |

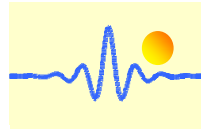
Specifications

| | | | |
|---------------------------------|---|--------------------------------|--|
| Rated input current (DC) | 50A,60A,70A,80A,90A,100A,200A,300A,400A,500A,800A,1000A | | |
| Linear measuring range | 1.2 times of rated input current | | |
| Output signals | 0-5VDC, 0-10VDC, 0-20mADC, 4-20mADC | | |
| Power supply | +12V DC, +15VDC, +24V DC | | |
| Measuring accuracy | Voltage output: $\pm 1.0\%$ for 50A~199A, $\pm 0.5\%$ for 200A~1000A 4-20mA output: $\pm 1.0\%$ for 50A~199A, $\pm 0.5\%$ for 200A~1000A 0-20mA output: $\pm 1.0\%$ for 50A ~ 1000A | | |
| Linearity at 25°C | Voltage output: $\pm 0.5\%$ for 50A~199A, $\pm 0.2\%$ for 200A~1000A 4-20mA output: $\pm 0.5\%$ for 50A~199A, $\pm 0.2\%$ for 200A~1000A 0-20mA output: $\pm 0.5\%$ for 50A ~ 1000A | | |
| 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/ μs | | |
| 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 | L35K with aperture $\varnothing 35\text{mm}$ | | |
| Protection of Case | IP20 | | |
| Operating temperature | $-40^\circ\text{C} \sim +70^\circ\text{C}$ | Storage temperature | $-40^\circ\text{C} \sim +85^\circ\text{C}$ |
| Relative humidity | $\leq 90\%$ | | |
| MTBF | $\geq 100\text{k}$ hours | | |

Definition of Part number:

| | | | | | | | | |
|-------|---|------|---|---|---|---|---|---|
| CYHCT | - | L35K | - | M | - | x | n | C |
|-------|---|------|---|---|---|---|---|---|

(1) (2) (3) (4) (5) (6)



| (1) | (2) | (3) | (4) | (5) | (6) |
|-------------|------------|--|---|--|--|
| Series name | Case style | Rated Input current (M=U/B m) | Output signal | Power supply | Connector |
| CYHCT | L35K | m = 50A, 60A, 70A, 80A, 90A, 100A, 200A, 300A, 400A, 500A, 800A, 1000A (other input current between 50A-1000A) | 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 | C=M: Molex Connector C=P: Phoenix Connector |

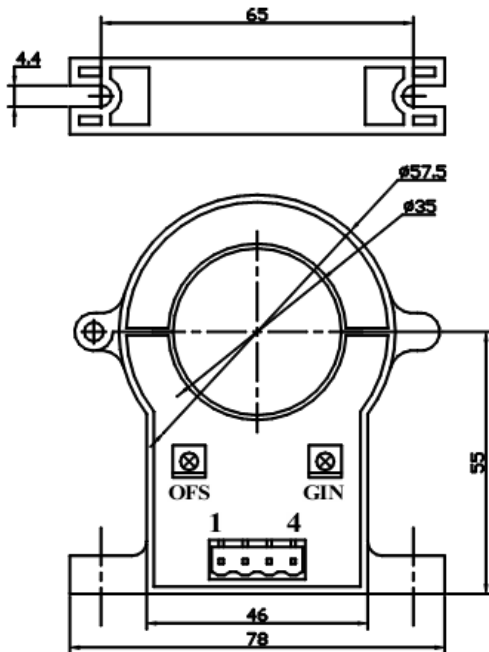
U: unidirectional;

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

Example 1: CYHCT-L35K-U100A -34M, Hall Effect DC Current sensor with Molex connector
Output signal: 0-5V DC
Power supply: +24V DC
Rated input current: 0-100A DC

Example 2: CYHCT-L35K-U100A -54P, Hall Effect DC Current sensor with Phoenix connector
Output signal: 4-20mA DC
Power supply: +24V DC
Rated input current: 0-100A DC

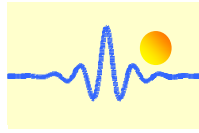
DIMENSIONS (mm)



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

Pin Arrangement

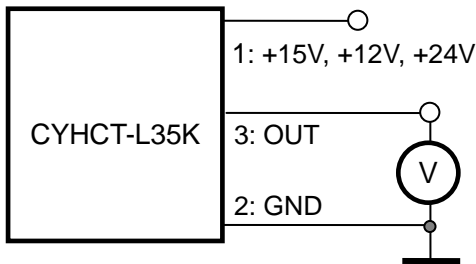
| | | | |
|----|---------------|----|-----|
| 1: | Vcc | 2: | GND |
| 3: | Signal Output | 4: | GND |



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:

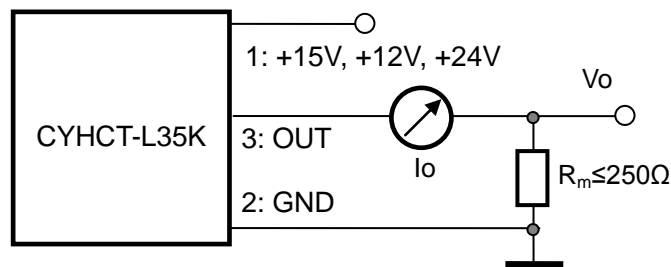


Relation between Input and Output:

| Sensor CYHCT-L35K-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; 3: Current Output

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

| Sensor CYHCT-L35K-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.