Hall Effect AC/DC Current Sensor CYHCS-WF3

The sensor CYHCS-WF3 is a Hall Effect Sensor for the measurement of AC/DC current. The sensor has a galvanic isolation between the high power primary and the secondary electronic circuits with voltage output.

Features and Advantages	Applications
• AC/DC current measurement • Output signal option (0-20mA, 4-20mA, 0-5V, ±5V, 0-10V) • 35mm DIN Rail • High isolation between primary and secondary circuits • No insertion losses • Split Core, easy installation	• **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

Specifications

Rated input current (DC current calibration)	50A ~ 800A
Linear measuring range	0-60A ~ 0-960A
Overload current capability	20 times of rated input current, 5sec
Output signals	±5VAC/DC, 0-5VDC, 0-10VDC, 0-20mADC, 4-20mADC
Power supply (voltage Ripple)	+12V DC, +24V DC, ±12V DC, ±15V DC (5%)
Measuring accuracy	±1.0%
Linearity (10% - 100%), 25°C	≤ ±0.5% FS
Zero offset voltage	±25mV
Thermal drift of offset voltage	≤±0.04%/°C
Galvanic isolation	6 kV AC, 50Hz, 1min
Isolation resistance	≥100MΩ
Response time	≤20μs for tracing output, ≤100ms DC voltage output, ≤150ms DC current output,
di/dt following accuracy	50A/μs
Current consumption	≤50mA
Output load	Voltage output : ≥2kΩ, Current output: ≤250Ω
Frequency range	DC ~ 5kHz
Case style and Window size	WF3 , Φ35mm
Operating temperature	-25°C ~ +70°C
Storage temperature	-45°C ~ + 85°C
Relative humidity	≤90%
MTBF	>50000h
Unit weight	200g

Definition of Part number:

CYHCS	-	WF3	-	m	-	x	n
(1)		(2)		(3)		(4)	(5)

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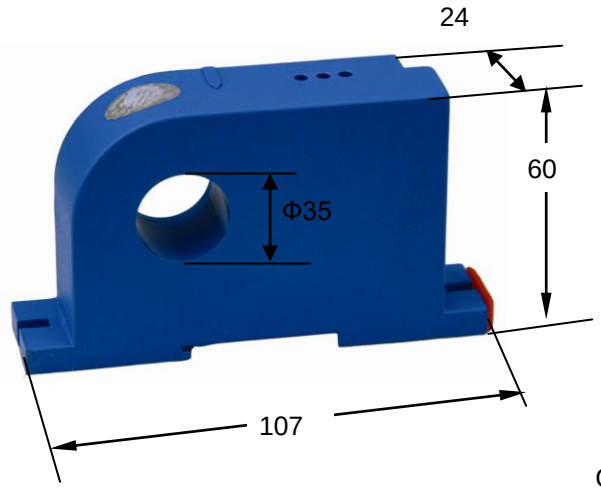
(1)	(2)	(3)	(4)	(5)
Series name	Case style	Rated Input current (m)	Output signal	Power supply
CYHCS	WF3	m = 50A, 100A, 200A, 300A, 400A, 500A, 600A, 700A, 800A	**x=1:** tracing voltage ±5V DC **x=3:** 0-5V DC **x=4:** 0-20mA DC **x=5:** 4-20mA DC **x=8:** 0-10V DC	n**=2:** +12V DC n**=4:** +24V DC n**=5:** ±12V DC n**=6:** ±15V DC

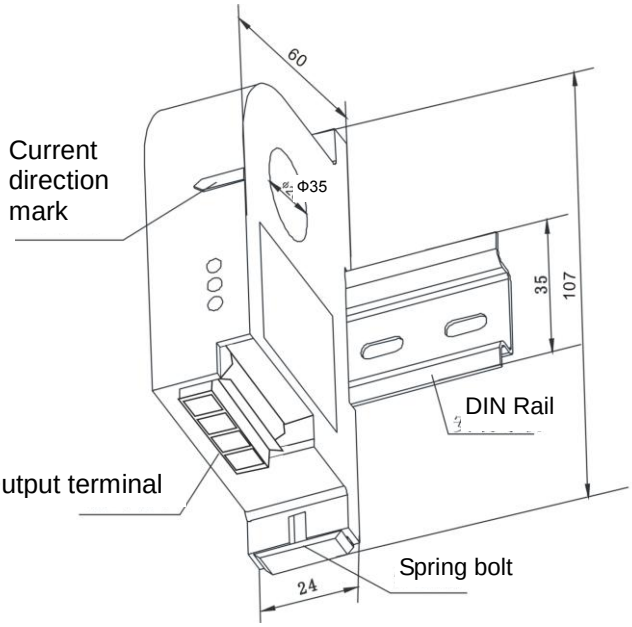
Example 1: CYHCS-WF3-400A -15, Hall Effect AC/DC Current sensor with
Output signal: tracing voltage ±5V AC/DC
Power supply: ±12V DC
Rated input current: 400A AC/DC

Example 2: CYHCS-WF3-400A -14, Hall Effect AC/DC Current sensor with
Output signal: tracing voltage ±5V AC/DC
Power supply: +24V DC
Rated input current: 400A AC/DC

Example 3: CYHCS-WF3-400A -54, Hall Effect AC/DC Current sensor with
Output signal: 4-20mA DC
Power supply: +24V DC
Rated input current: 400A AC/DC

DIMENSIONS (mm)





Dimensions: 107x 24 x 60mm, Aperture: Ø35 mm

Pin Arrangement:

+:	V+	-:	V- (or NC)
OUT:	Output	GND:	Ground

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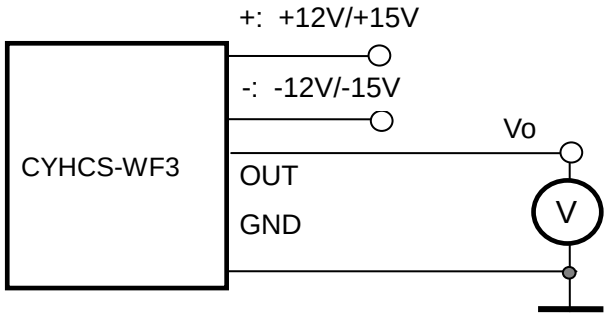
CONNECTIONS

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.

a) Wiring of Sensors Using Double Power Supplies

Voltage Output

+:	+15V/+12V
OUT:	Output
GND:	Ground
-:	-15V/-12V

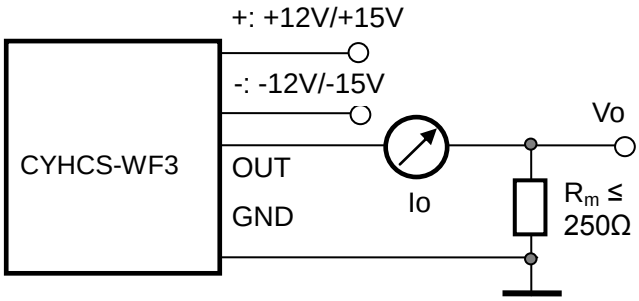


Relation between Input and Output:

Sensor CYHCS-WF3-400A-15	
Input current (A)	Output voltage (V)
-400	-5
-200	-2.5
0	0
200	2.5
400	5

Current Output

+:	+12V/+15V
OUT:	Output
GND:	Ground
-:	-12V/-15V



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

Sensor CYHCS-WF3-400A-55		
Input current (A, RMS/DC)	Output current Io(mA, DC)	Output voltage Vo (V, DC)
0	4	1
100	8	2
200	12	3
300	16	4
400	20	5

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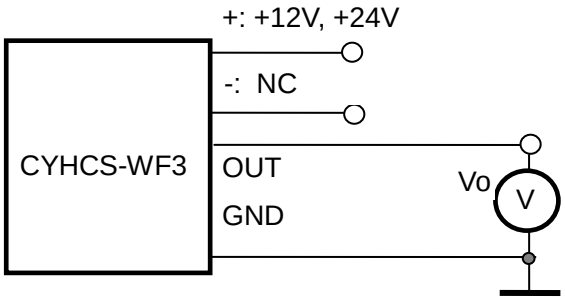
B) Wiring of Sensors Using Single Power Supply

Voltage Output

+:	+12V, +24V
OUT:	Output
GND:	Ground
-:	NC

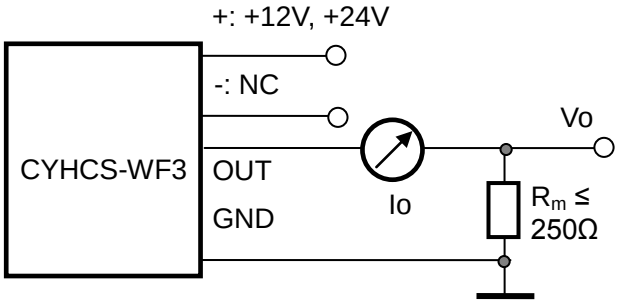


Relation between Input and Output:

Sensor CYHCS-WF3-400A-14	
Input current (A)	Output voltage (V)
-400	-5
-200	-2.5
0	0
200	2.5
400	5

Current Output

+):	+12V, +24V
OUT:	Output
GND:	Ground
-:	NC



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

Sensor CYHCS-WF3-400A-54		
Input current (A, RMS/DC)	Output current Io(mA, DC)	Output voltage Vo (V, DC)
0	4	1
100	8	2
200	12	3
300	16	4
400	20	5

Notes:

1. Connect the terminals of power source, outputs 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 case.

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