DC Leakage Current Sensor CYCT04-xnL20

This current sensor is based on magnetic modulation and compensation principle, and can be used for measurement of small DC current and leakage current, current difference between two or more conductors.

Product Characteristics:

- Application of Computer Aided Ageing Technology
- 100% Ageing Processing and Thermal Drift Test under high operating temperature in order to guarantee the long term stability of the sensors
- Custom makeable according to individual requirements
- Various current and voltage outputs are selectable
- Power supply options: +12VDC, +15VDC and 24VDC
- Sensors with window for contactless measurements

Applications:

- Isolation Monitoring of DC power systems and cable selection systems,
- Measurements of small DC currents and leakage currents etc.

Electrical Data

Measuring range M	10mA ~ 1A DC
Linearity range	1.2 x M (measuring range)
Nominal output signals	0-5V, 0-10V, 4-20mA DC
Supply voltage	+12VDC, +15VDC, 24VDC
Current consumption	20mA + output current
Galvanic isolation	2.5KV RMS/50Hz/ 1min
Measuring resistance for current output	≤250Ω

Thermal drift of zero offset	-25°C~+70°C	300	-40°C~+80°C	400	ppm/°C
Response time	≤120				ms
Accuracy	±1.0				%
Linearity	≤0.5				%FS
Electric Offset Voltage, TA=25°C	25				mV
Magnetic Offset Voltage (I_P=0)	20				mV

General Data

Operating temperature	-40 ~ +85	°C
Storage temperature	-40 ~ +85	°C
Window size	Φ20	mm
Case dimensions H x L x W	68 x 57 x 24	mm

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Definition of Part number:

CYCT04	-	x	n	L20	-	1.0	-	M
(1)		(2)	(3)	(4)		(5)		(6)

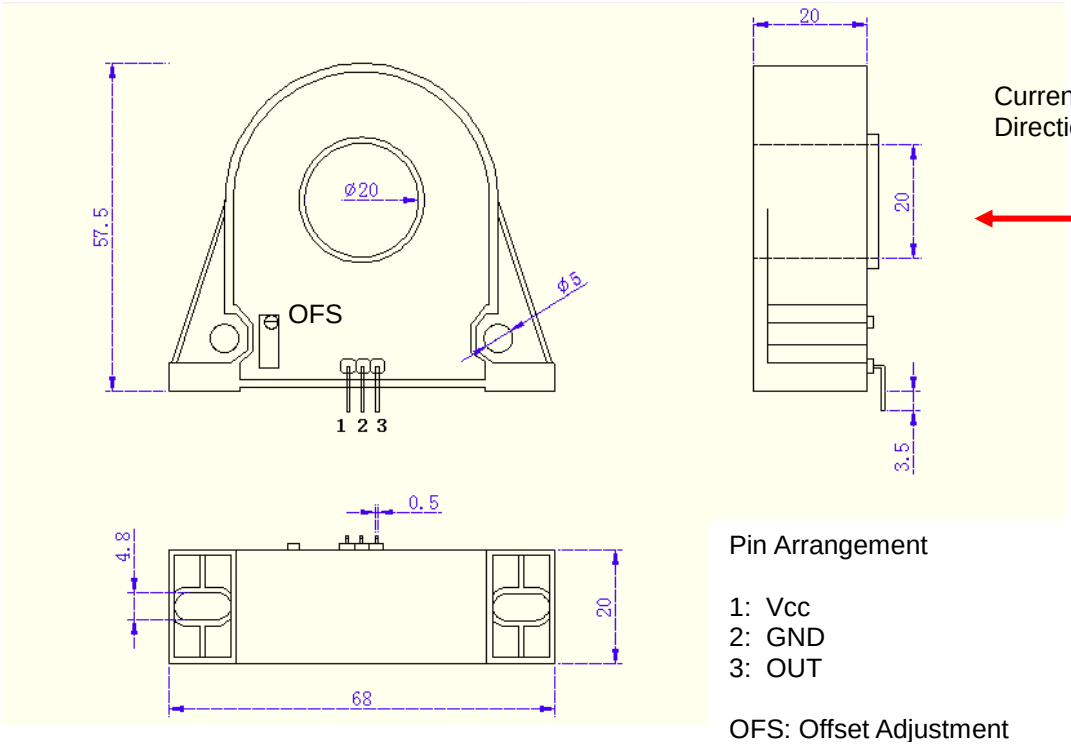
(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy	Rated Input current (M=U/B + m)
CYCT04	**x=3:** 0-5V DC **x=8:** 0-10V DC **x=5:** 4-20mA DC	n**=2:** +12V DC n**=3:** +15V DC n**=4:** +24V DC	M20A With aperture Ø20mm	1.0%	m = 10mA, 20mA, 50mA,100mA,200mA, 500mA, 1A

U: unidirectional input current; **B:** bidirectional input current

Example 1: CYCT04-34L20-1.0-U1A, DC Current sensor with
Output signal: 0-5V DC
Power supply: +24V DC
Rated input current: 0-1A DC (unidirectional)

Example 2: CYCT04-34L20-1.0-B1A, DC Current sensor with
Output signal: 0-5V DC
Power supply: +24V DC
Rated input current: -1A ~ +1ADC (bidirectional)

DIMENSIONS (mm) (PCB Mounting)



Pin Arrangement

1: Vcc
2: GND
3: OUT

OFS: Offset Adjustment

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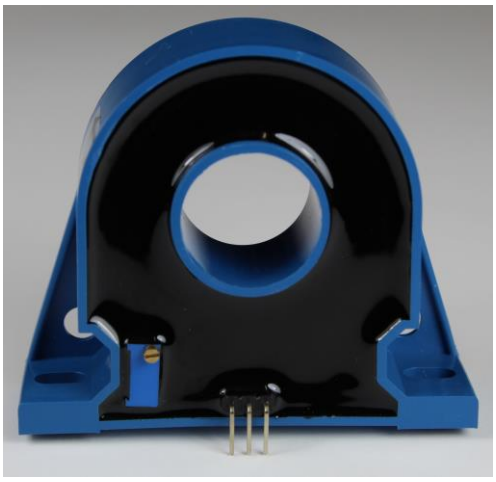
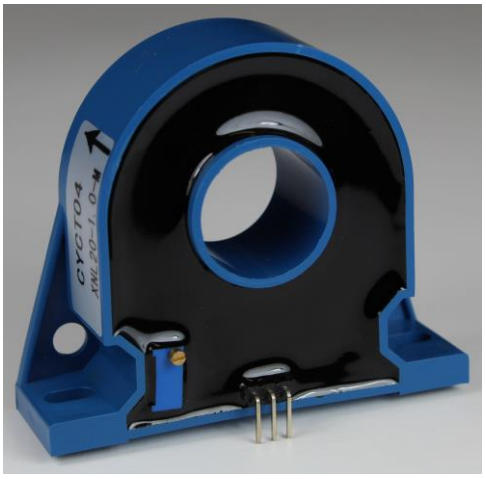
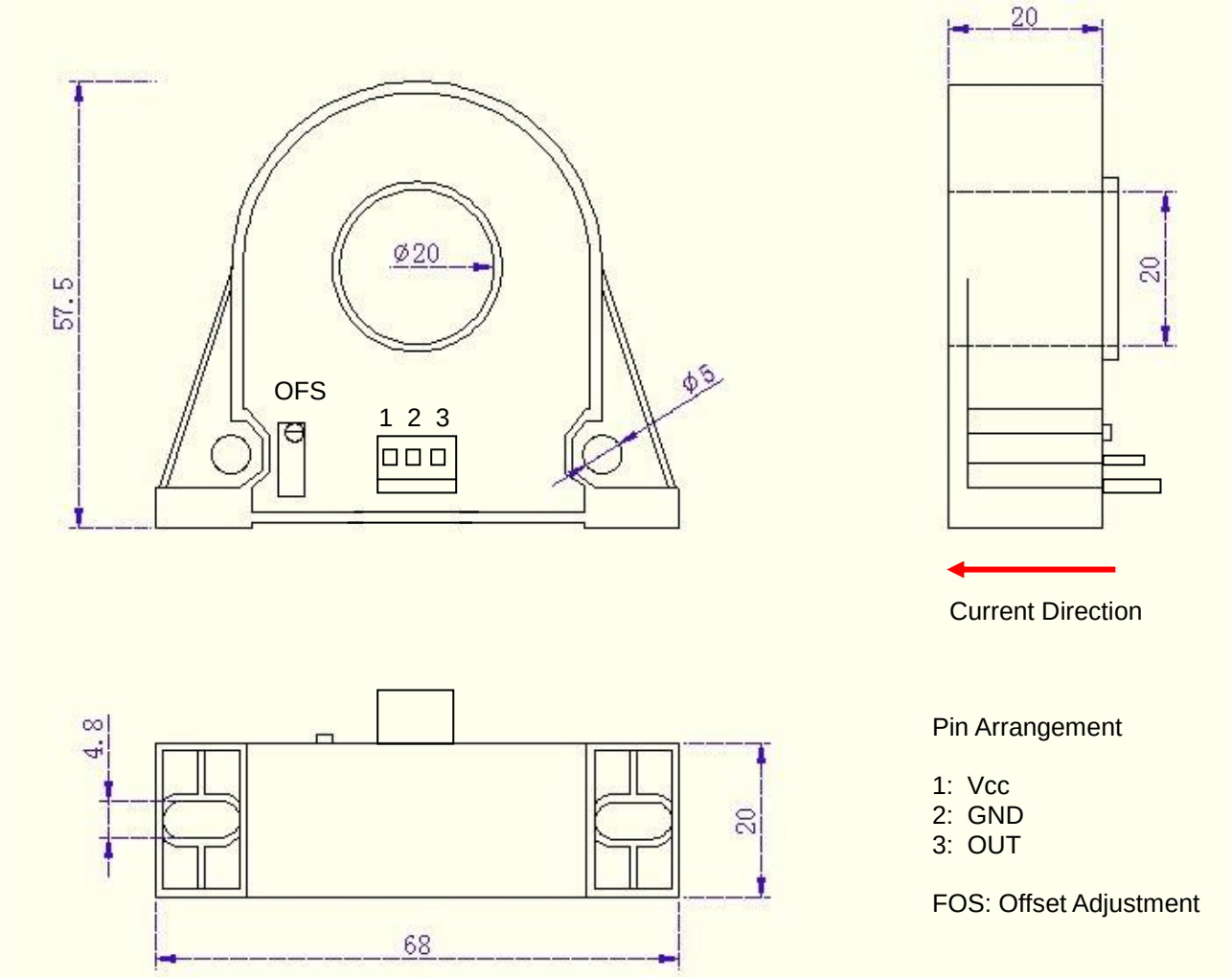




By Using 3 Pins MOLEX Connector



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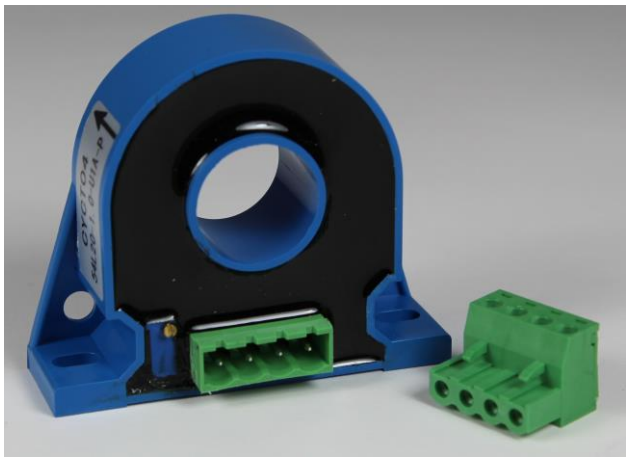
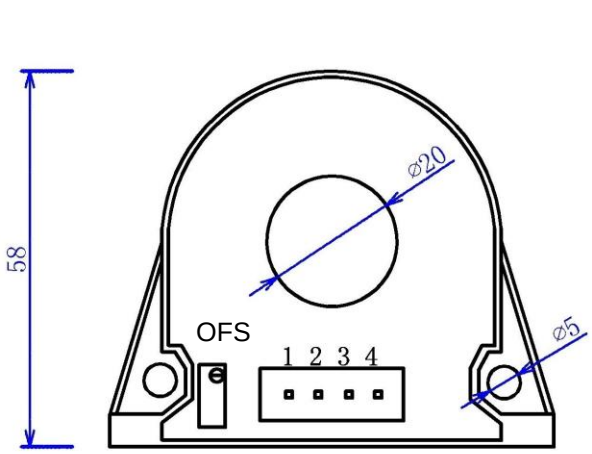
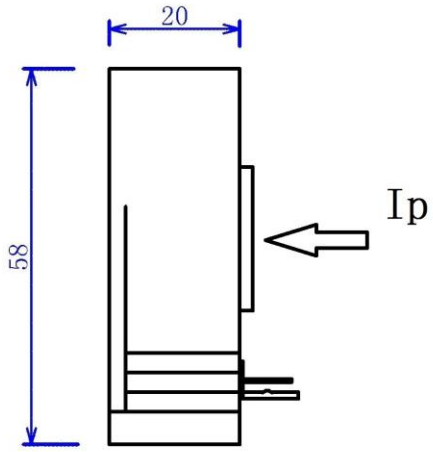
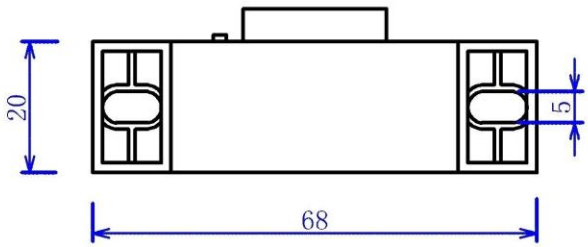
By Using Phoenix Connector









Pin Arrangement:

1 --- +Vcc
2 --- NC
3 --- OUT
4 --- GND

GND is for both power supply and output signal
OFS: Offset Adjustment

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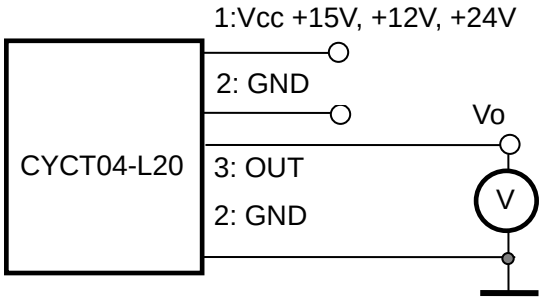
CONNECTIONS for Molex Connector

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) Voltage Output

1: Vcc +15V, +12V, +24V
2: GND
3: OUT

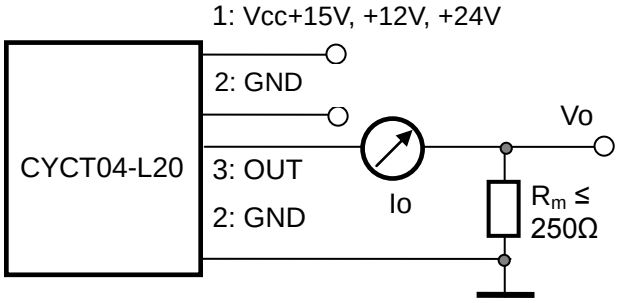


Relation between Input and Output:

Sensor CYCT04-34L20-1.0-U1A		Sensor CYCT04-34L20-1.0-B1A	
Input current (A)	Output voltage (V)	Input current (A)	Output voltage (V)
0	0	-1	0
0.25	1.25	-0.5	1.25
0.5	2.5	0	2.5
0.75	3.75	0.5	3.75
1	5	1	5

b) Current Output

1: Vcc +15V, +12V, +24V
2: GND
3: OUT



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

Sensor CYCT04-54L20-1.0-U1A			Sensor CYCT04-54L20-1.0-B1A		
Input current (A)	Output current Io(mA)	Output voltage Vo (V)	Input current (A)	Output current Io(mA)	Output voltage Vo (V)
0	4	1	-1	4	1
0.25	8	2	-0.5	8	2
0.5	12	3	0	12	3
0.75	16	4	0.5	16	4
1	20	5	1	20	5

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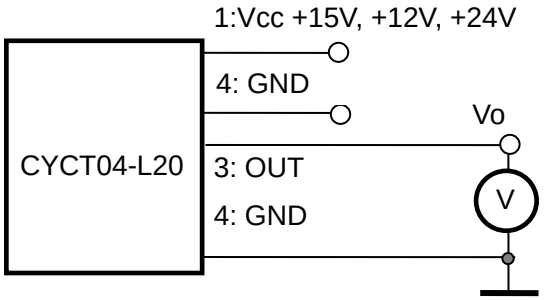
CONNECTIONS for Phoenix Connector

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.

c) Voltage Output

1: Vcc +15V, +12V, +24V
2: NC
3: OUT
4: GND

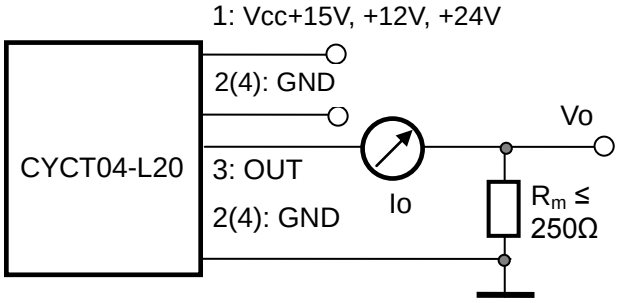


Relation between Input and Output:

Sensor CYCT04-34L20-1.0-U1A		Sensor CYCT04-34L20-1.0-B1A	
Input current (A)	Output voltage (V)	Input current (A)	Output voltage (V)
0	0	-1	0
0.25	1.25	-0.5	1.25
0.5	2.5	0	2.5
0.75	3.75	0.5	3.75
1	5	1	5

d) Current Output

1: Vcc +15V, +12V, +24V
2: NC
3: OUT
4: GND



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

Sensor CYCT04-54L20-1.0-U1A			Sensor CYCT04-54L20-1.0-B1A		
Input current (A)	Output current Io(mA)	Output voltage Vo (V)	Input current (A)	Output current Io(mA)	Output voltage Vo (V)
0	4	1	-1	4	1
0.25	8	2	-0.5	8	2
0.5	12	3	0	12	3
0.75	16	4	0.5	16	4
1	20	5	1	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 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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