

AC/DC Current Sensor CYCS11-xnL20ADC

This current sensor is based on magnetic modulation and compensation principle, and can be used for measurement of small AC/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: $\pm 12\text{VDC}$ and $\pm 15\text{VDC}$
- Sensors with window for contactless measurements

Applications:

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

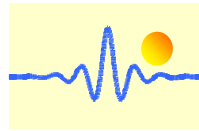
Electrical Data

Measuring range M	10mA ~ 1A AC/DC
Linearity range	1.2 x M (measuring range)
Nominal output signals	0-5VDC and -5V~+5VDC
Supply voltage	$\pm 12\text{VDC}$ and $\pm 15\text{VDC}$
Current consumption	20mA
Galvanic isolation	2KV RMS/50Hz/ 1min

Thermal drift of offset current	100~250	ppm/°C
Response time	≤ 120	ms
Accuracy	± 1.0	%
Linearity	≤ 1.0	%FS
Electric Offset Voltage, $T_A=25^\circ\text{C}$	25	mV
Magnetic Offset Voltage ($I_p=0$)	20	mV

General Data

Operating temperature	-25 ~ +70	°C
Storage temperature	-40 ~ +85	°C
Window size	$\Phi 20$	mm
Case dimensions H x L x W	99 x 70 x 25	mm



Definition of Part number:

CYCS11	-	x	n	L20	ADC	-	1.0	-	M
(1)		(2)	(3)	(4)	(5)		(6)		(7)

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Series name	Output signal	Power supply	Case style	Input current type	Accuracy	Rated Input current (M=U/B + m)
CYCS11	x=1: ±5V DC x=3: 0-5V DC	n=5: ±12V DC n=6: ±15V DC	L20 With aperture Ø20mm	AC: AC Current DC: DC current ADC: AC and DC Current	1.0%	m = 10mA, 20mA, 50mA, 100mA, 200mA, 500mA, 1A

U: unidirectional DC input current;

B: bidirectional DC input current

U and B are not used for AC input current.

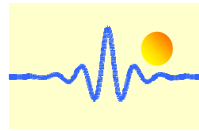
Example 1: CYCS11-35L20DC-1.0-U1A, DC Current sensor with
Output signal: 0-5V DC
Power supply: ±12V DC
Rated input current: 0-1A DC (unidirectional)

Example 2: CYCS11-36L20DC-1.0-B1A, DC Current sensor with
Output signal: 0-5V DC
Power supply: ±15V DC
Rated input current: -1A ~ +1ADC (bidirectional)

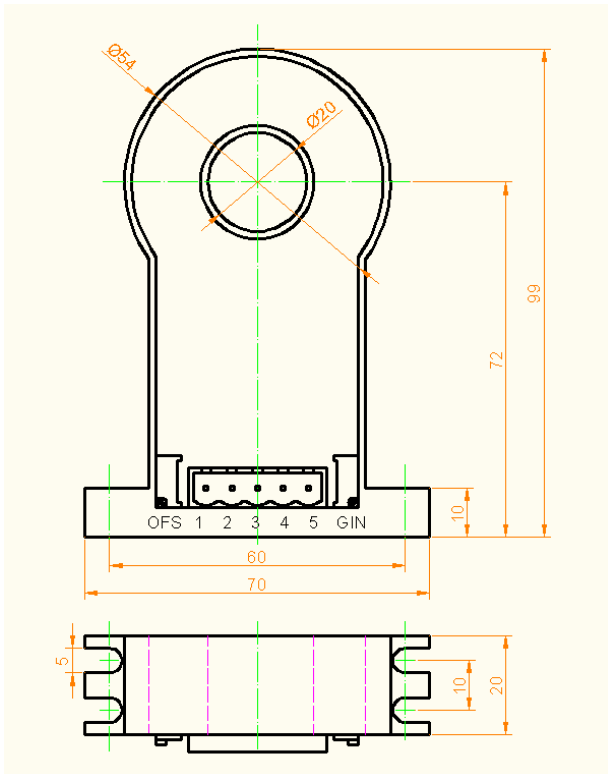
Example 3: CYCS11-35L20AC-1.0-1A, AC Current sensor with
Output signal: 0-5V DC
Power supply: ±12V DC
Rated input current: 0-1A AC

Example 4: CYCS11-36L20ADC-1.0-B1A , AC/DC Current sensor with
Output signal: 0-5V DC
Power supply: ±15V DC
Rated input current: -1A ~ +1A AC/DC (DC bidirectional)

Example 5: CYCS11-35L20ADC-1.0-U1A, AC/DC Current sensor with
Output signal: 0-5V DC
Power supply: ±12V DC
Rated input current: 0-1A AC/DC (DC unidirectional)



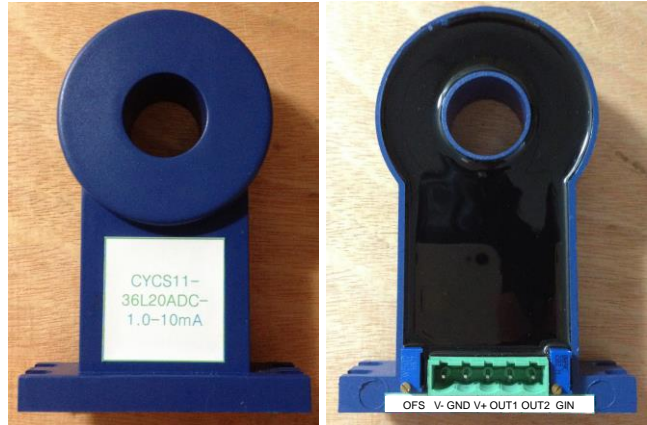
DIMENSIONS (mm)



Pin Arrangement

Pin	1	2	3	4	5
Function	V-	GND	V+	OUT1	OUT2

OUT1: DC output voltage for measuring DC current
OUT2: DC output voltage for measuring AC current



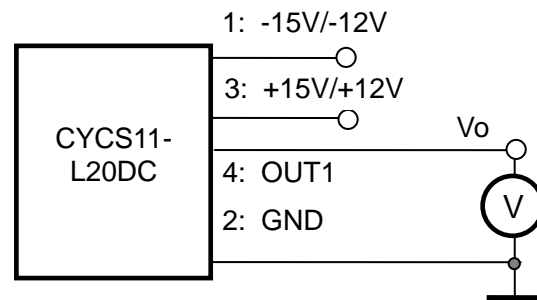
CONNECTIONS

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 for Measuring DC Current

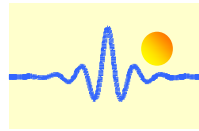
Voltage Output

- 1: -15V/-12V Power Supply
- 2: Ground
- 3: +15V/+12V Power Supply
- 4: Output for DC Measurement
- 5: NC



Relation between Input and Output:

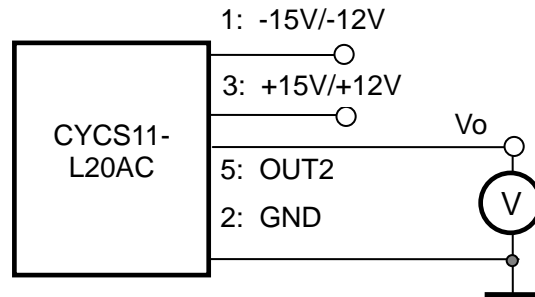
Sensor CYCS11-35L20DC-1.0-U1A		Sensor CYCS11-36L20DC-1.0-B1A	
Input current (A)	Output voltage OUT1(V)	Input current (A)	Output voltage OUT1(V)
0	0	-1	0
0.25	1.25	-0.5	1.25
0.5	2.5	0	2.5
0.75	3.75	0.5	3.75
1	5	1	5



b) Wiring of Sensors for Measuring AC Current

Voltage Output

- 1: -15V/-12V Power Supply
- 2: Ground
- 3: +15V/+12V Power Supply
- 4: NC
- 5: Output for DC Measurement



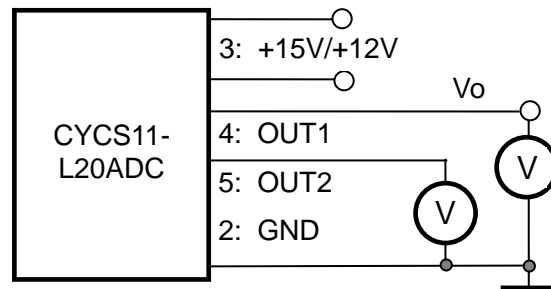
Relation between Input and Output:

Sensor CYCS11-35L20AC-1.0-1A	
Input current rms (A)	Output voltage OUT2 (V)
0	0
0.25	1.25
0.5	2.5
0.75	3.75
1	5

c) Wiring of Sensors for Measuring AC/DC Current

Voltage Output

- 1: -15V/-12V Power Supply
- 2: Ground
- 3: +15V/+12V Power Supply
- 4: Output for DC Measurement
- 5: Output for AC Measurement



Relation between Input and Output:

Sensor CYCS11-35L20ADC-1.0-U1A		Sensor CYCS11-36L20ADC-1.0-B1A		
Current (A) rms/DC	OUT1 & OUT2 (V)	Current rms (A)	Current DC(A)	OUT1 & OUT2 (V)
0	0	0	-1	0
0.25	1.25	0.25	-0.5	1.25
0.5	2.5	0.5	0	2.5
0.75	3.75	0.75	0.5	3.75
1	5	1	1	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.