

Bi-Directional DC Current Sensor CYCT03-xnS0

The **CYCT03-xnS0** DC Current Sensor/transducer works according Frequency Modulation and linear Photoelectrical Isolation principle, and is designed for applications to measurement and monitoring of DC current. The output voltage and current of this transducer is proportional to the input current. They are suitable for measurements and longtime monitoring of DC currents and can applied to power supply management, motor drivers, battery chargers and systems etc.

Specifications

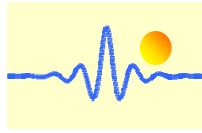
Rated input current (Ix)	±0.1mA ~ ±5A
Linear measuring range	100% rated input current
Overload capacity	10 times of rated input current, 1sec
Input response	Bi-directional DC and DC impulse current
Input resistance	$R_i=0.05V / I_x$, I_x : Input current
Output type	Instantaneous current or voltage value (tracing current or voltage)
Output signals DC	2.5V±2.5V, 12mA±8mADC, 10mA±10mA, 5V±5V
Measuring accuracy	±0.2% for voltage output, ±0.5% for current output
Load capacity	5mA for voltage output, 6V for current output
Response time	≤15μs for voltage output, ≤0.6ms for current output
Thermal drift	160ppm/°C
Power supply	+12VDC, +15VDC, +24VDC
Static current	30mA for voltage output, 33mA for current output
Isolation	Isolation between input and output, power supply at the output
Isolation withstanding voltage	1.5 kV DC, 1min
Operating temperature	-25°C ~ +70°C
Storage temperature	-40°C ~ + 85°C
Electrostatic discharge immunity	GB/T 17626.2 or contact discharge air discharge level 2,4kV
electrical fast transient burst immunity	GB/T 17626.4, signal port level 3, 1kV, level 2, 1kV power port.
surge (impact) immunity	GB/T 17626.5, level 2, 1kV.
Relative humidity	10% ~ 90%
Protection of Case	IP20
Material of Case	ABS (according to UL94V-0)
Mounting	DIN Rail
Case Style	S0 without aperture
MTBF	50000h
Unit weight	90g

Definition of Part number:

CYCT03	-	x	n	S0	-	A	-	B m
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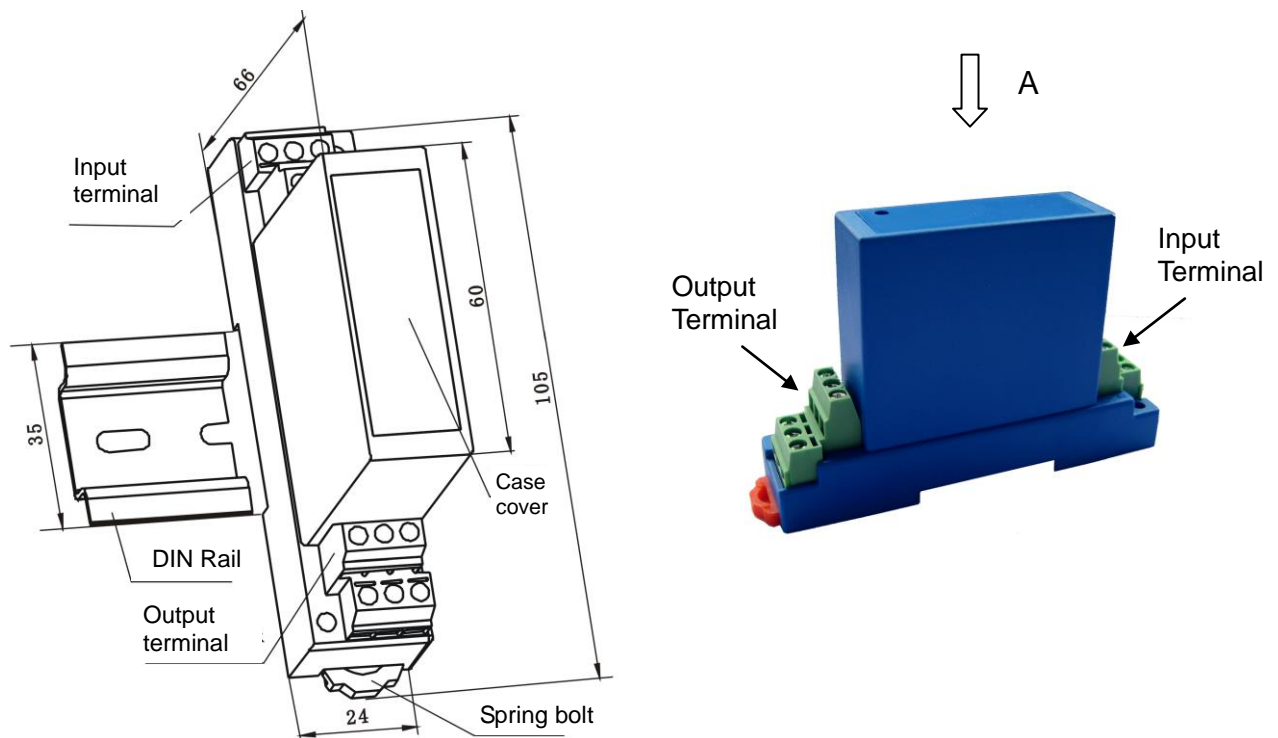
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(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class (A)	Input current range (m)
CYCT03	x=3: 2.5V±2.5V x=4: 10mA±10mA x=5: 12mA±8mA x=8: 5V±5V	n=2: +12V DC n=3: +15V DC n=4: +24V DC	S0	0.2% 0.5%	m=0.1mA~5A DC

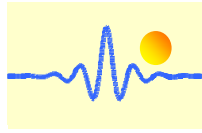


- Example 1:** CYCT03-34S0-0.2-B1A, DC Current Sensor with
Output voltage: $2.5V \pm 2.5DC$ (0-5VDC)
Power supply: +24V DC
Rated input current: $\pm 1A$ DC
Accuracy: $\pm 0.2\%$
- Example 2:** CYCT03-44S0-0.5-B1A, DC Current Sensor with
Output current: $10mA \pm 10mADC$ (0-20mADC)
Power supply: +24V DC
Rated input current: $\pm 1A$ DC
Accuracy: $\pm 0.5\%$
- Example 3:** CYCT03-54S0-0.5-B1A, DC Current Sensor with
Output signal: $12mA \pm 8mADC$ (4-20mADC)
Power supply: +24V DC
Rated input current: $\pm 1A$ DC
Accuracy: $\pm 0.5\%$

DIMENSIONS (mm)



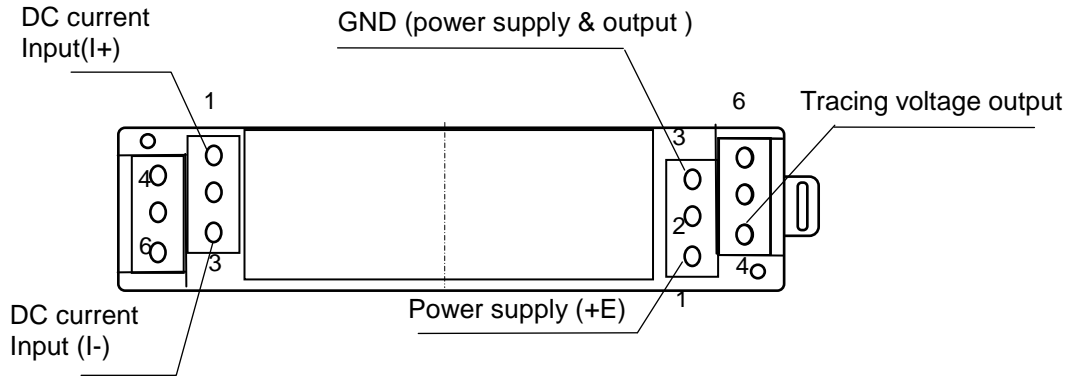
Dimensions: 105mm x 24mm x 66mm



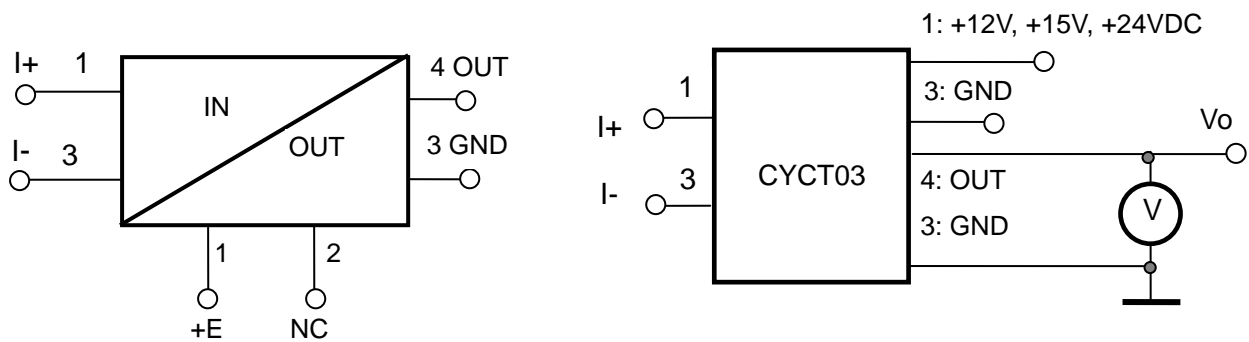
CONNECTION

Sensor with voltage output

View of A Direction



Please don't use the undefined terminals

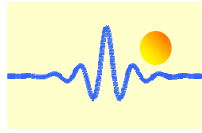


Input Terminals: 1, 3: Input Current I+ and I-;

Output Terminals: 1: Power Supply +E
3: GND (for power supply and output)
4: Tracing Voltage Output

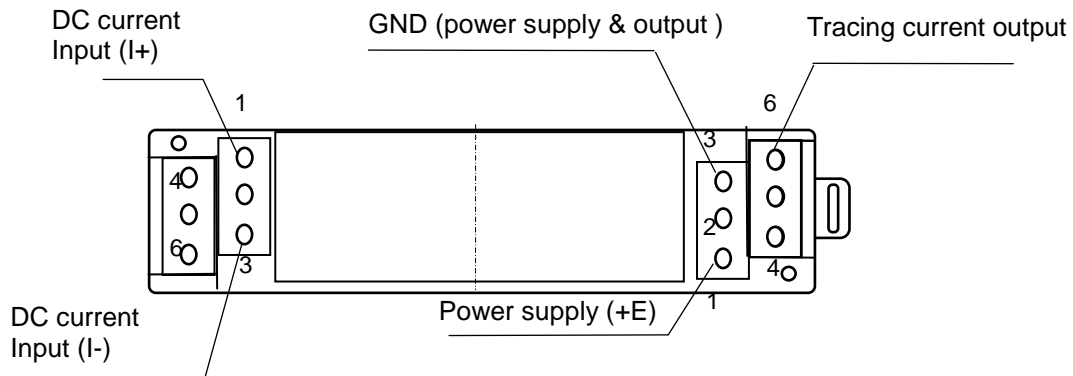
Relation between Input and Output:

Sensor CYCT03-34S0-0.2-B1A	
Input current (A)	Output voltage (V)
-1.0	0
-0.5	1.25
0	2.5
0.5	3.75
1.0	5

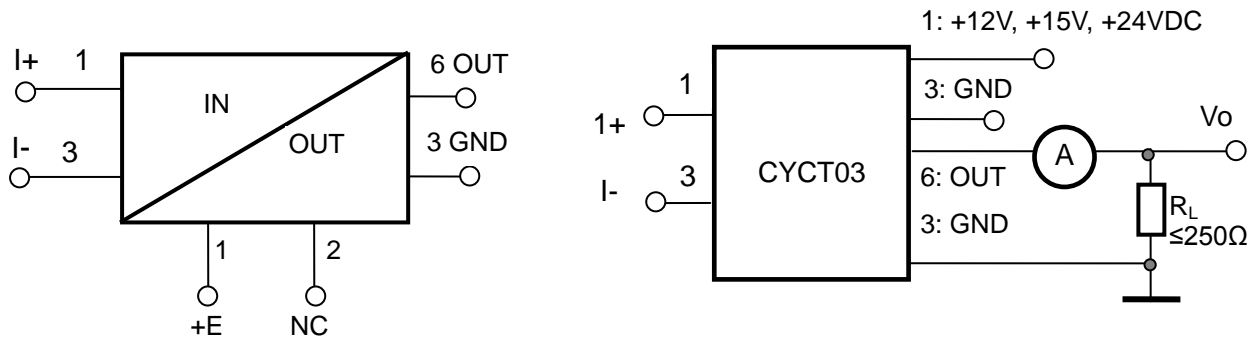


Sensor with current output

View of A Direction



Please don't use the undefined terminals



Input Terminals: 1, 3: Input Current I+ and I-;

Output Terminals: 1: Power Supply +E
3: GND (for power supply and output)
6: Tracing Current Output

Relation between Input and Output:

Sensor CYCT03-54S0-0.5-B1A ($R_L=250\Omega$)		
Input current (A)	Output Current (mA)	Output voltage (V)
-1.0	4	1
-0.5	8	2
0	12	3
0.5	16	4
1.0	20	5