

# Catalogue

## DC, AC and AC/DC Current Sensors

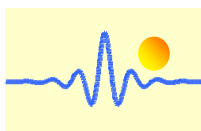
**Copyright© 2020, ChenYang Technologies GmbH & Co. KG**

All rights reserved. No part of this catalogue may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the copyright holder.

**Contact Address:**

Markt Schwabener Str. 8  
D-85464 Finsing  
Germany

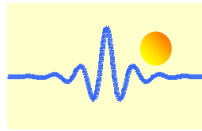
Tel: +49 (0)8121-2574100  
Fax: +49 (0)8121-2574101  
Email: [info@chenyang.de](mailto:info@chenyang.de)  
<http://www.chenyang.de>



---

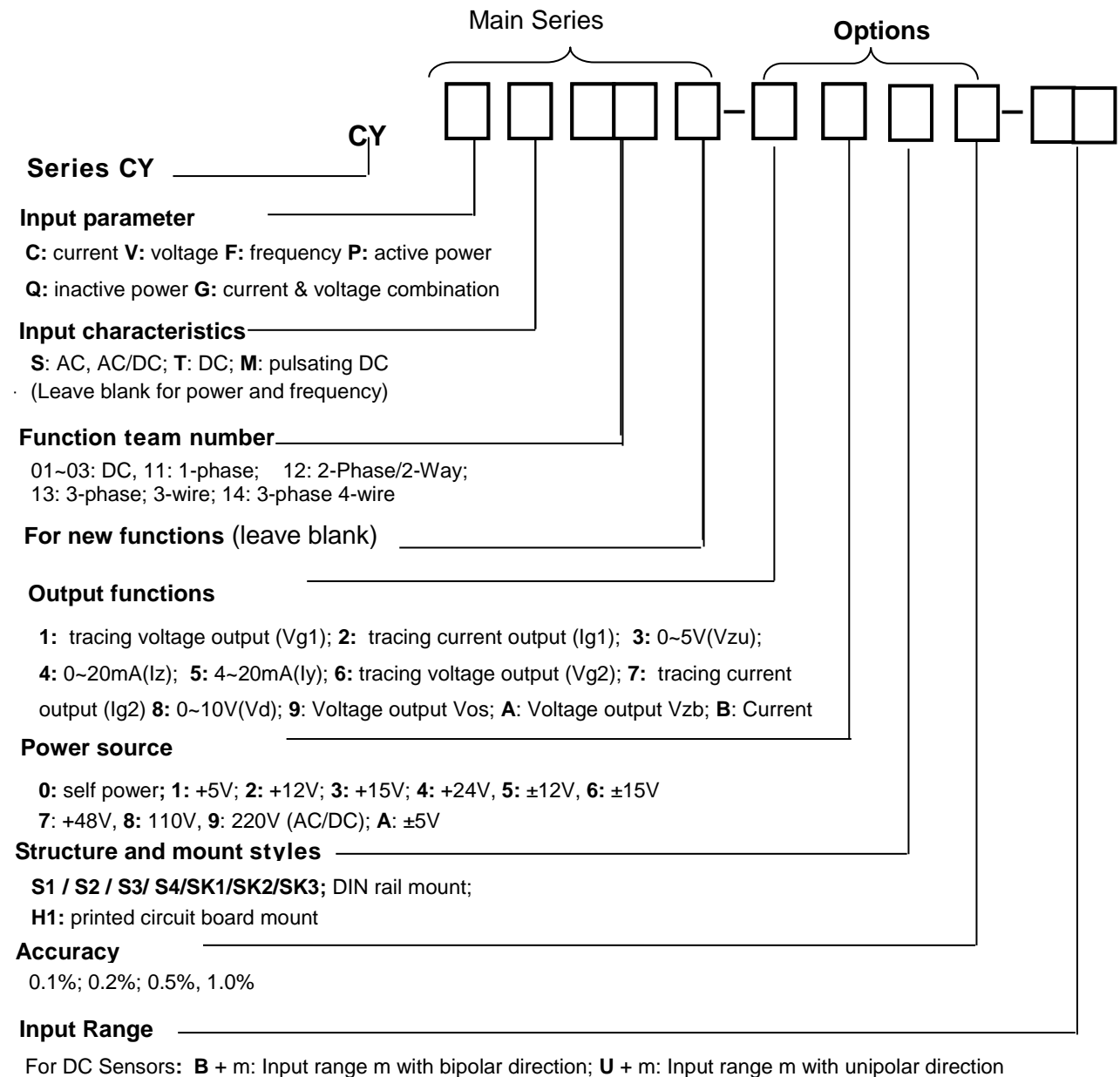
## Contents

Product Overview of Electric Analogue Sensors .....	1
AC/DC Current Sensor CYCS121G27 .....	6
DC Current Sensor CYCT01-xnS1 .....	8
DC Current Sensor CYCT02-xnS1 .....	11
DC Current Sensor CYCT01-xnU0.....	14
DC Current Sensor CYCT02-xnU0.....	17
DC Current Sensor CYCT01-xnS3.....	20
DC Current Sensor CYCT02-xnS2.....	24
DC Current Sensor CYCT03-L20 .....	28
DC Current Sensor CYCT03-xnS0.....	31
DC Current Sensor CYCT03-xnWS3.....	35
DC Current Sensor CYCT03-xnS3.....	38
DC Current Sensor CYCT04-LTAD .....	42
High Accurate AC Current Sensor CYCS411D47.....	44
High Accurate AC Current Sensor CYCS412D41.....	46
AC Current Sensor CYCS11-32H1 .....	48
AC/DC Current Sensor CYCS-xnS0.....	50
AC Current Sensor CYCS11-xnWS4.....	53
AC Current Sensor CYCS11A-xnWS4 .....	57
AC Current Sensor CYCS11-xnS2.....	60
AC Current Sensor CYCS11-xnWS9.....	63
AC Current Sensor CYCS11A-xnWS9 .....	67
AC Current Sensor CYCS11-LTAD .....	70
Self Power AC Current Sensor CYCS11-x0S3.....	72
Split Core Self Power AC Current Sensor CYCS11-x0S4 .....	74
AC Current Sensor CYCS11-xnWF2.....	77
AC Current Sensor CYCS11-xnWF3.....	81
Three Phase AC Current Sensor CYCS13-xnS3.....	85
Inquiry Guide of Analogue Sensors/Transducers .....	88



## Product Overview of Electric Analogue Sensors

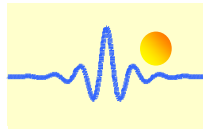
### Part Number



- **B:** Bipolar Input range, B20A means an input range of -20A DC ~ +20A DC
- **U:** Unipolar Input range, U20A means an input range of 0 ~ 20A DC

### Typical Example:

**CYCS11-32S3-0.5-5A** Single Phase AC Current Transducer, Output: 0-5V, Power Source: +12V, Accuracy: 0.5%, Case Style: S3 with Window Φ20mm, Input Range: 0-5A AC/RMS.



**CYCT03-32S3-1.0-U10A** DC Current Transducer, Output: 0-5V, Power Source: +12V, Accuracy: 1.0%, Case Style: S3 with Window  $\Phi$ 20mm, Input Range: 0~10A DC.

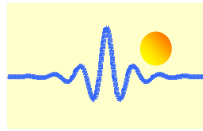
**CYCT03-A2S3-1.0-B10A** DC Current Transducer, Output: -5V ~+5VDC, Power Source: +12V, Accuracy: 1.0%, Case Style: S3 with Window  $\Phi$ 20mm, Input Range: -10A ~ +10A DC.

### Series Name

Current Sensors		Voltage Sensors	
Old Series Name	New Series Name	Old Series Name	New Series Name
CYIJ03	CYCS11-32H1	CYVJ03	CYVS11-xnD1
	CYCS11-xnS2		CYVS11-xnS2
	CYCS11-xnS3		
	CYCS11-xnS4		
	CYCS11-xnSK2		CYVS11-xnS3
	CYCS11-x0S4		
CYIJ31	CYCS13-xnS3	CYVJ31	CYVS13-xnS3
	CYCS13-xnSK3		CYVS13-xnSK1
CYIZ01	CYCT01-xnS1	CYVJ41	CYVS14-xnS3
	CYCT01-xnS3		CYVS14-xnSK1
CYIZ02	CYCT02-xnS1	CYVZ01	CYVT01-xnS1
			CYVT01-xnS2
	CYCT02-xnS2		CYVT01-xnS3
CYIZ06	CYCT03-xnS3	CYVZ02	CYVT01-xnS1
			CYVT01-xnS2
			CYVT01-xnS3

### Typical Operating Specifications

Item	Test condition	Index	
		Class 0.2	Class 0.5
Thermal Drift	+12V, 25°C	≤200ppm/°C	≤500ppm/°C
Output Ripple	+12V, 25°C	10mV	15mV
Output Load	+12V, 25°C Vz (3) output	≥2kΩ	
	+12V, 25°C Iz (4) and Iy (5) output	≤250Ω	
Operating Temperature	+12V	-10°C ~ +70°C	
Isolation Withstanding Voltage	1 min.	≤2500 V DC	
	1 min.	≤1500 V DC RMS	

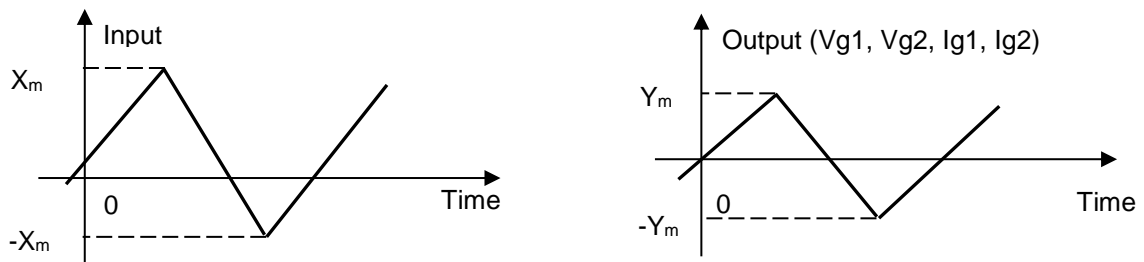


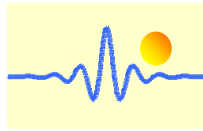
## Output Function Codes

Code	Symbol	Definition	Applications
1	Vg1	Tracing Voltage Output	5V ( $V_{p-p}$ ), suitable for AC/DC or peak value sampling system, quick response, high precision.
2	Ig1	Tracing Current Output	20mA ( $I_{p-p}$ ), suitable for AC/DC sampling and peak value sampling system, high precision, and quick response.
3	Vzu	DC Voltage Output	0-5V DC, can be connected direct to A/D converter, digit panel, indicator, PLC
4	Izu	DC Current Output	0-20mA DC, suitable for long distance signal transmission, resistance to interference.
5	Iy	DC Current Output	4-20mA DC, suitable for long distance signal transmission, resistance to interference.
6	Vg2	Tracing Voltage Output	4V ( $V_{p-p}$ ), suitable for AC/DC or peak value sampling system, quick response, high precision
7	Ig2	Tracing Current Output	20mA ~ 200mA ( $I_{p-p}$ ), suitable for AC/DC sampling and peak value sampling system, high precision, and quick response.
8	Vd	DC Voltage Output	0-10 V DC, can be connected direct to digit panel, indicator etc. (power source $\geq 15V$ ).
9	Vos	Tracing Voltage Output with Offset	+2.5VDC $\pm$ 1.0V or +2.5VDC $\pm$ 0.625V, suitable for single power supply systems
A	Vzb	DC Voltage Output	-5V ~ +5VDC, can be connected direct to A/D converter, digit panel, indicator, PLC
B	Izb	DC Current Output	-20mA ~ +20mADC, suitable for long distance signal transmission, resistance to interference.
F	F	OC frequency signal output	0~10 kHz frequency signal or custom frequency signal, photoelectric isolation OC output
J	J	Relay touch point	Use to inspect and offside alarm for AC/DC current and voltage
T	T	Special Output	Reserved for special output configurations.

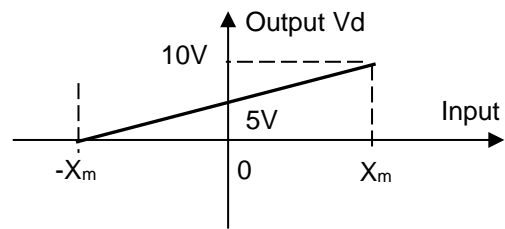
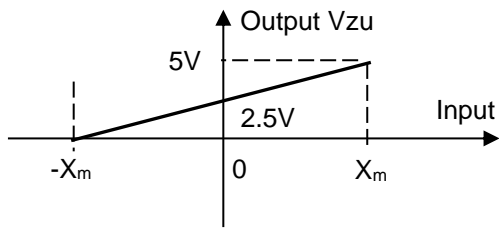
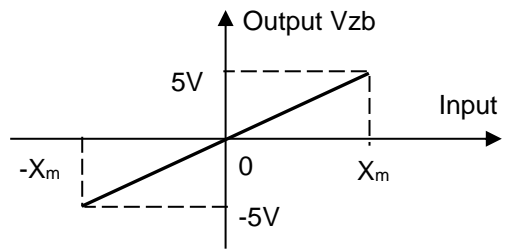
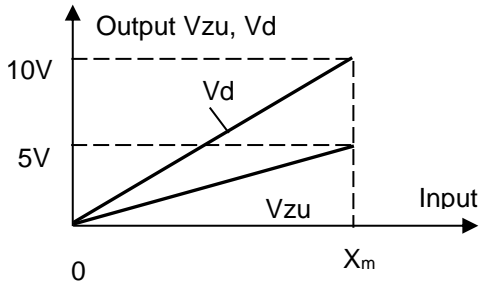
## Input / Output Graphs.

a) Tracing Voltage Output (Vg1, Vg2) or Tracing Current Output (Ig1, Ig2)

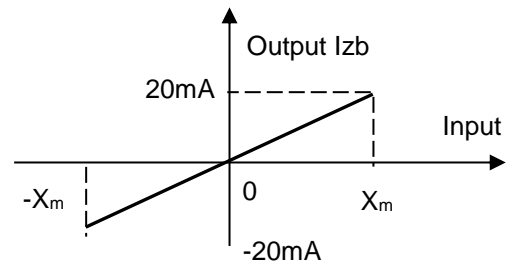
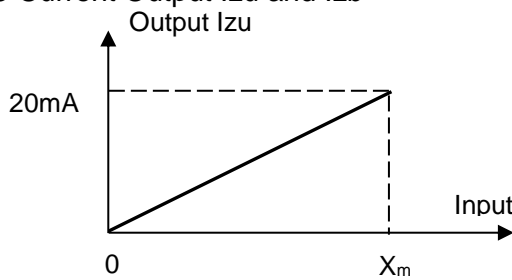




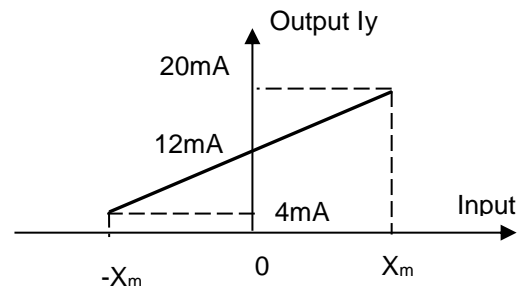
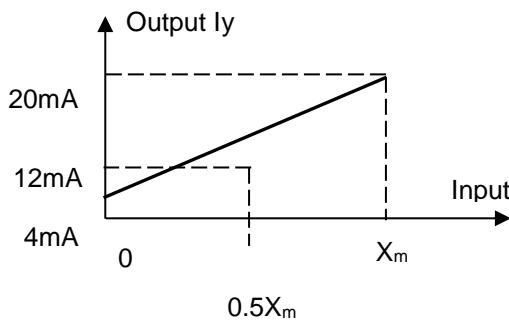
b) DC Voltage Output  $V_{zu}$ ,  $V_d$  and  $V_{zb}$



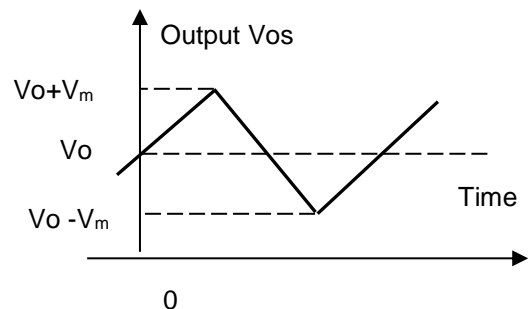
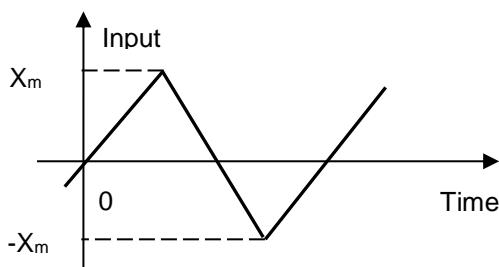
c) DC Current Output  $I_{zu}$  and  $I_{zb}$

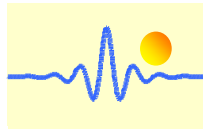


d) DC Current Output  $I_y$



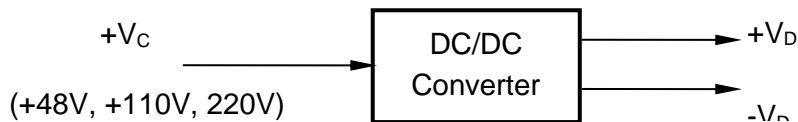
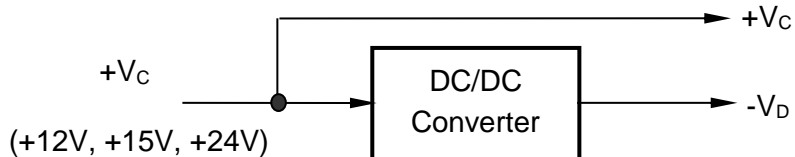
e) Tracing Voltage Output  $V_{os}$



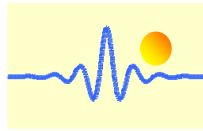


## Output Signal Limitations of Sensors with Single Power Supply

Internal DC/DC Converting of Single Power Supply:



Power supply $V_c$	Power supply $V_d$	Output Signal
+12VDC	-6VDC	Not 0-10VDC and -10V~+10VDC, all other output signals are available
+15VDC	-6VDC	Not -10V ~ +10VDC, all other output signals are available
+24VDC	-15VDC	All output signals are available
$\pm 12$ VDC	x	Not -10V ~ +10VDC, all other output signals are available
$\pm 15$ VDC	x	All output signals are available
+48VDC	$\pm 15$ VDC or $\pm 24$ VDC	All output signals are available
+110VDC	$\pm 15$ VDC or $\pm 24$ VDC	All output signals are available
220V DC/AC	$\pm 15$ VDC or $\pm 24$ VDC	All output signals are available



## AC/DC Current Sensor CYCS121G27

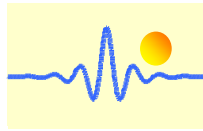
The **CYCS121G27** AC/DC current Sensor/Transducer works according to photoelectric isolation principle and is designed for applications to measurement and monitoring of small AC/DC current. The output signal of this transducer is proportional to input current. They are suitable for measurements and long time monitoring of C/DC currents etc.

The sensor has the advantages of high measuring accuracy, high reliability, low thermal drift, low current consumption, small size, PCB mounting etc.

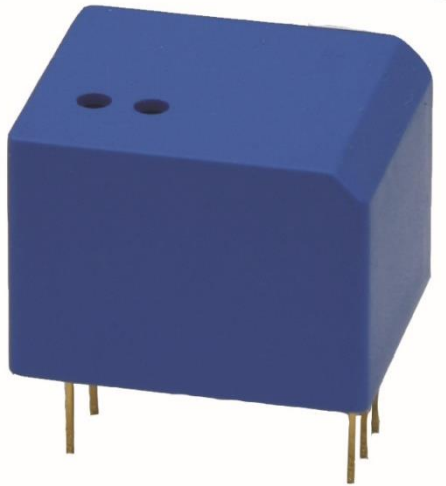
### Specifications

Part number	CYCS121G27
Rated input current range	0 ~ 0.1mA AC/DC
Linear measuring range	0 ~ 2 time of rated input current
Overload capacity	10 times
Frequency range	DC ~ 1.5kHz
Input resistance	Ri=1kΩ ±5%
Output signals	Tracing voltage 0-1V AC/DC
Measuring accuracy	0.5%
Load capacity	5mA
Response time	≤45μs
Thermal drift	150ppm/°C
Power supply	±12V DC
Static current	17mA
Isolation	Isolation between input and output, power supply at output
Isolation withstanding voltage	3 kV DC, 1min
Operating temperature	-10°C ~ +70°C
Storage temperature	-25°C ~ + 70°C
Relative humidity	10% ~ 90%
Protection of Case	IP20
Material of Case	ABS (According to UL94V-0)
Mounting	PCB
MTBF	30000 h
Unit weight	30g

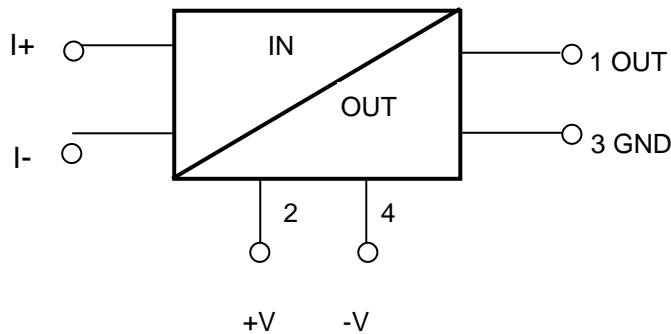
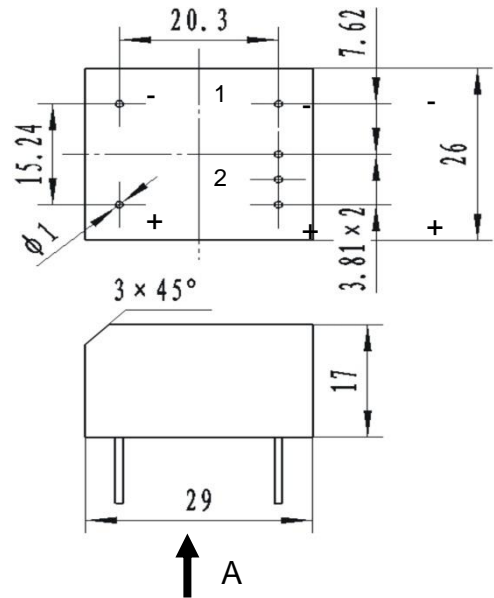




## DIMENSIONS (mm)



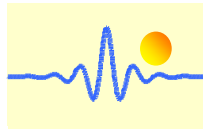
Viewing A



Dimensions: 29mm x 26mm x 17mm

### Notice:

1. Connect the input current correctly
2. Make sure that the polarities are in right connection
3. If a meter is used to calibrate the output of the transducer, please make sure that the accuracy of the meter is higher than the transducer.



## DC Current Sensor CYCT01-xnS1

The **CYCT01-xnS1** DC current sensor/transducer works according Photoelectrical Induction and is designed for applications to measurement and monitoring of DC current. The output signal (DC voltage or current) of this transducer is proportional to the input DC current. They are suitable for measurements and long time monitoring of DC currents and can applied to power supply management, DC motor drivers, battery chargers and systems etc.

### Specifications

Rated input current range	20mA, 50mA, 100mA, 200mA
Output signal	0-5VDC, 0-20 mA, 4-20 mA, 0-10V DC, frequency OC
Power supply	+12V, +15V, +24V DC
Measuring accuracy	0.5%
Isolation (three-isolation)	between input, output and power supply
Load resistance	≥2kΩ for voltage output, ≤250Ω for current output
Isolation withstanding voltage	2.5 kV DC, 1min, leakage current 1mA
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
Relative humidity	10% ~ 90%
Response time	≤10ms
Overload capacity	2 times
Quiescent power consumption	180mW – 300mW
Mounting	Din rail
Case style	S1 without aperture

### Definition of Part number:

CYCT01	-	x	n	S1	-	0.5	-	M
(1)		(2)	(3)	(4)		(5)		

(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (M=U/B+m)
CYCT01	<b>x=3:</b> 0-5V DC <b>x=4:</b> 0-20mA DC <b>x=5:</b> 4-20mA DC <b>x=8:</b> 0-10V DC <b>x=F:</b> Frequency OC**	<b>n=2:</b> +12V DC <b>n=3:</b> +15V DC <b>n=4:</b> +24V DC	S1	0.5%	<b>m=</b> 20mA, 50mA, 100mA, 200mA

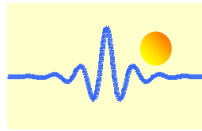
\*\* Frequency range: 10kHz, accuracy: 0.5%, response time is longer than those given in the table above

**U:** unipolar input current;      **B:** bipolar input current

### Output Signal of Custom Made Sensors:

**x=1:** tracing voltage 5V, **x=2:** tracing current 20mA

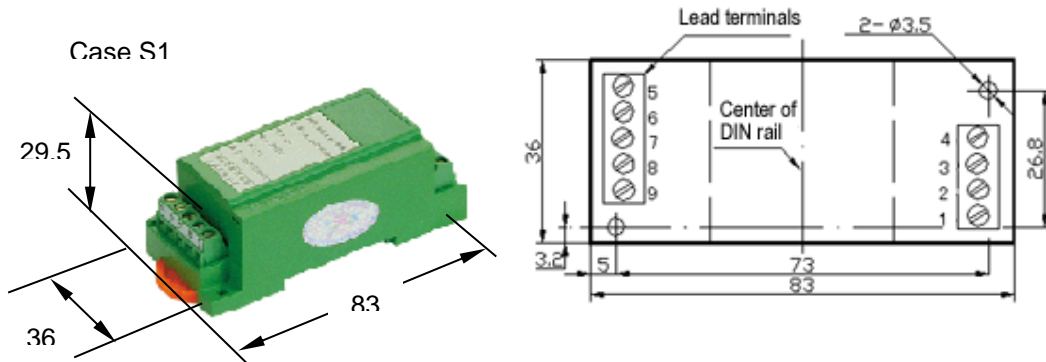
**Example 1:**                    CYCT01-32S1-0.5-U100mA, DC Current sensor with



Output signal: 0-5V DC  
 Power supply: +12V DC  
 Rated input current: 0-100mA DC (unipolar)

**Example 2:** CYCT01-54S1-0.5-B100mA, DC Current sensor with  
 Output signal: 4-20mA DC  
 Power supply: +12V DC  
 Rated input current: -100mA ~ +100mA DC (bipolar)

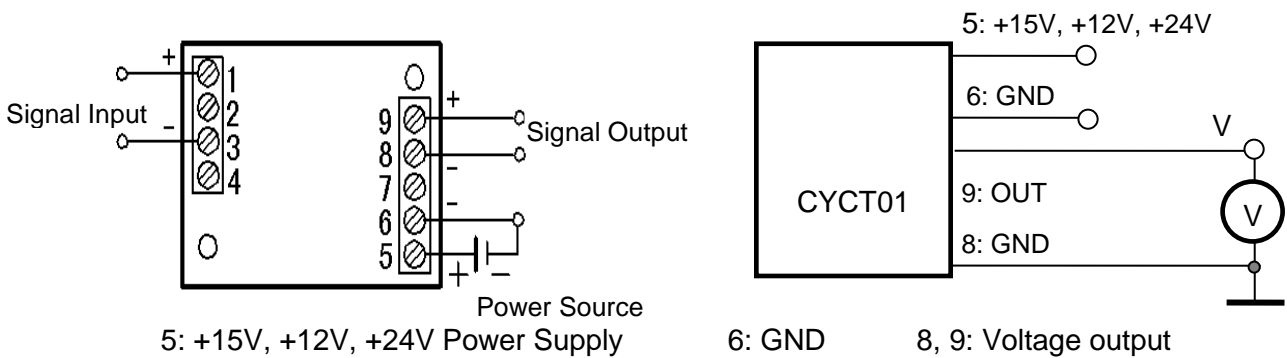
**DIMENSIONS (mm)**



Dimensions: 29.5mm x 83mm x 36mm

**CONNECTIONS**

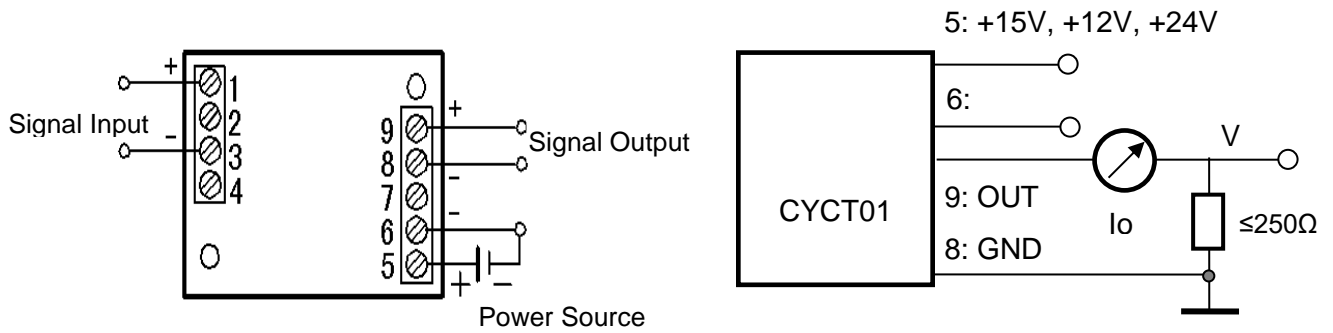
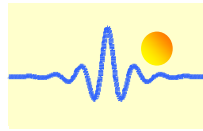
**Wiring of Terminals for voltage output:**



**Relation between Input and Output:**

Sensor CYCT01-32S1-0.5-U100mA		Sensor CYCT01-32S1-0.5-B100mA	
Input current (mA)	Output voltage (V)	Input current (mA)	Output voltage (V)
0	0	-100	0
25	1.25	-50	1.25
50	2.5	0	2.5
75	3.75	50	3.75
100	5	100	5

**Wiring of Terminals for Current Output:**

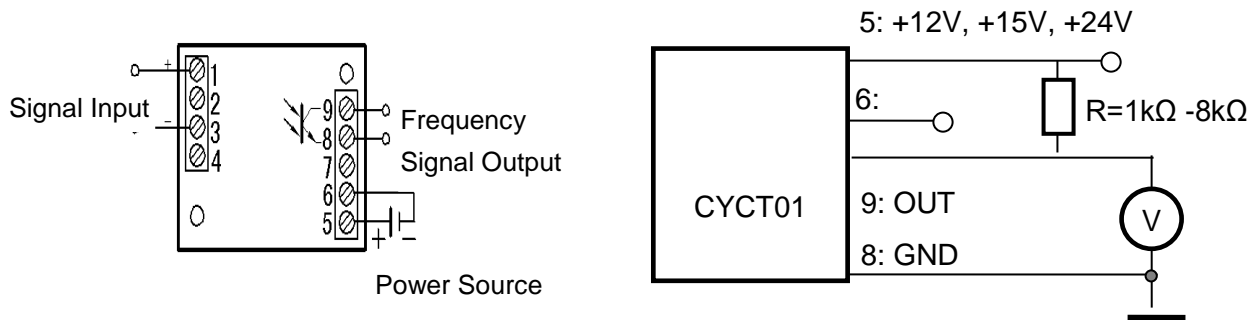


5: +15V, +12V, +24V Power Supply      6: GND      8, 9: Current output

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

Sensor CYCT01-54S1-0.5-U100mA			Sensor CYCT01-54S1-0.5-B100mA		
Input current (mA)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)	Input current (mA)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	4	1	-100	4	1
25	8	2	-50	8	2
50	12	3	0	12	3
75	16	4	50	16	4
100	20	5	100	20	5

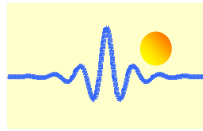
### Wiring of Terminals for OC Frequency Output:



The value of the pull-up resistor R should be selected in order to get a current of 4-5mA flowing through the pull-up resistor. For instance the pull-up resistor is  $24V/4.5mA=5.3k\Omega$  if you use a power supply +24VDC.

Recommended value of the pull-up resistor R

Power supply	+12V	+15V	+24V
Pull-up resistor R	2.6k $\Omega$	3.3k $\Omega$	5.3k $\Omega$



## DC Current Sensor CYCT02-xnS1

The **CYCT02-xnS1** DC current sensor/transducer works according Magnetic Modulation and is designed for applications to measurement and monitoring of DC current. The output signal (DC voltage or current) of this transducer is proportional to the input DC current. They are suitable for measurements and long time monitoring of DC currents and can applied to power supply management, DC motor drivers, battery chargers and systems etc.

### Specifications

Rated input current range	20mA, 50mA, 100mA, 200mA
Output signal	0-5VDC, 0-20 mA, 4-20 mA, 0-10V DC, frequency OC
Power supply	+12V, +15V, +24V DC
Measuring accuracy	0.5%
Isolation	between input, output and power supply
Load resistance	≥2kΩ for voltage output, ≤250Ω for current output
Isolation withstanding voltage	2.5 kV DC, 1min, leakage current 1mA
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
Relative humidity	10% ~ 90%
Response time	≤15ms
Overload capacity	2 times
Quiescent power consumption	200mW – 300mW
Mounting	Din rail
Case style	S1 without aperture

### Definition of Part number:

CYCT02	-	x	n	S1	-	0.5	-	M
(1)		(2)	(3)	(4)		(5)		

(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (M=U/B+m)
CYCT02	<b>x=3:</b> 0-5V DC <b>x=4:</b> 0-20mA DC <b>x=5:</b> 4-20mA DC <b>x=8:</b> 0-10V DC <b>x=F:</b> Frequency OC**	<b>n=2:</b> +12V DC <b>n=3:</b> +15V DC <b>n=4:</b> +24V DC	S1	0.5%	m= 20mA, 50mA, 100mA, 200mA

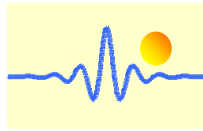
\*\* Frequency range: 10kHz, accuracy: 0.5%, response time is longer than those given in the table above

**U:** unipolar input current;      **B:** bipolar input current

### Output Signal of Custom Made Sensors:

**x=1:** tracing voltage 5V, **x=2:** tracing current 20mA

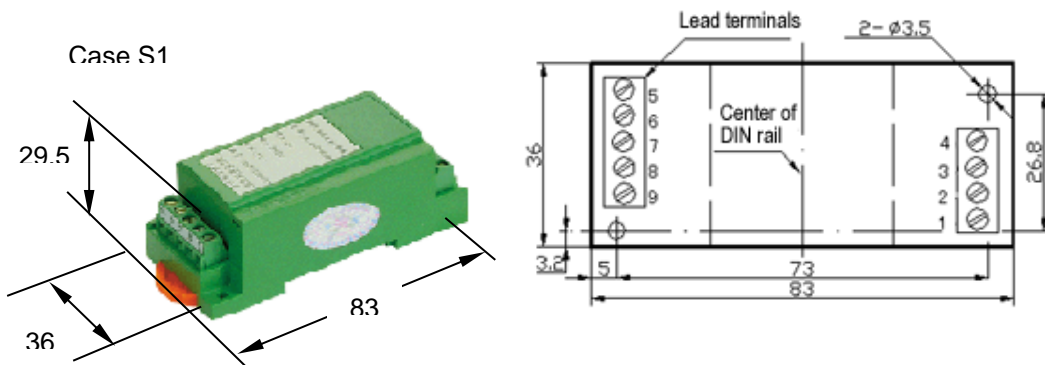
**Example 1:** CYCT02-32S1-0.5-U100mA, DC Current sensor with



Output signal: 0-5V DC  
 Power supply: +12V DC  
 Rated input current: 0-100mA DC (unipolar)

**Example 2:** CYCT02-54S1-0.5-B100mA, DC Current sensor with  
 Output signal: 4-20mA DC  
 Power supply: +12V DC  
 Rated input current: -100mA ~ +100mA DC (bipolar)

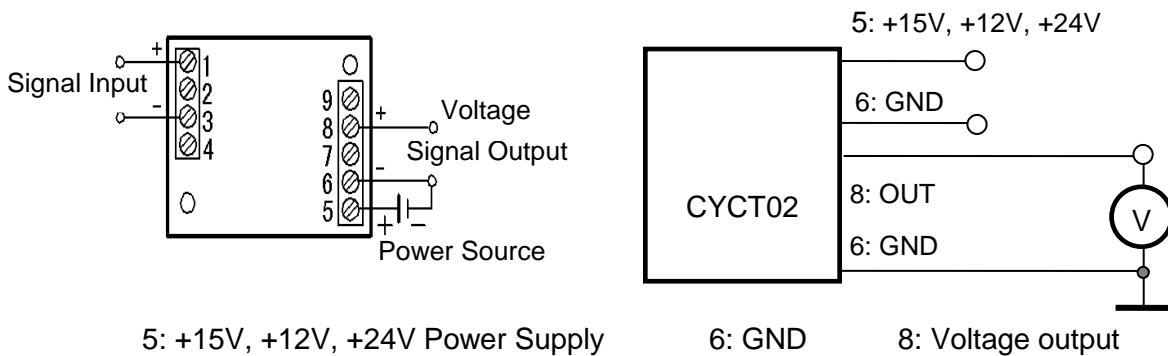
**DIMENSIONS (mm)**



Dimensions: 29.5mm x 83mm x 36mm

**CONNECTIONS**

**Wiring of Terminals for voltage output:**

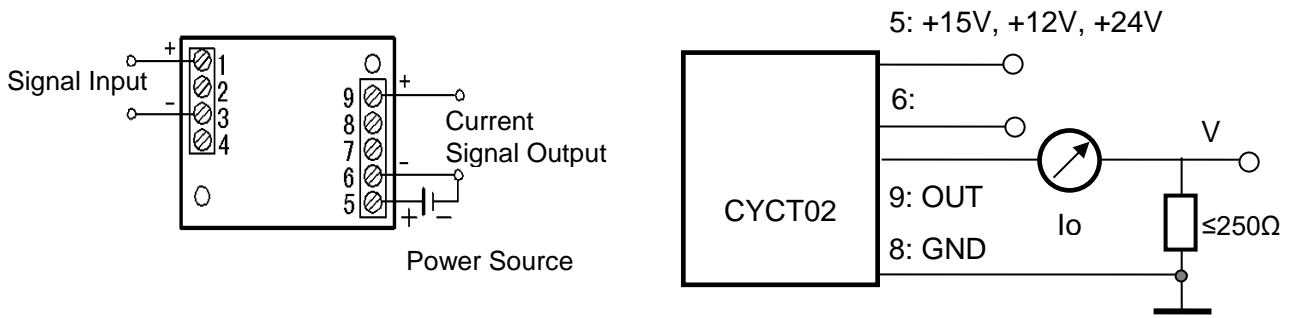
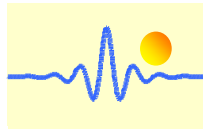


5: +15V, +12V, +24V Power Supply      6: GND      8: Voltage output

**Relation between Input and Output:**

Sensor CYCT02-32S1-0.5-U100mA		Sensor CYCT02-32S1-0.5-B100mA	
Input current (mA)	Output voltage (V)	Input current (mA)	Output voltage (V)
0	0	-100	0
25	1.25	-50	1.25
50	2.5	0	2.5
75	3.75	50	3.75
100	5	100	5

**Wiring of Terminals for Current Output:**

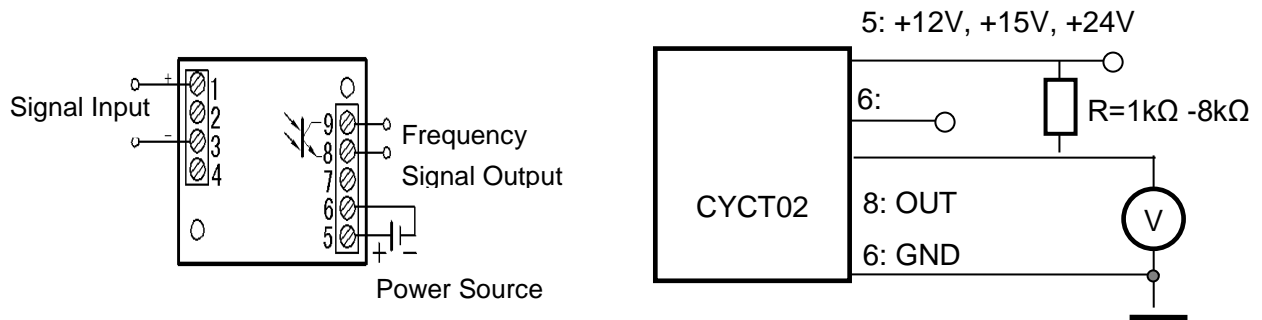


5: +15V, +12V, +24V Power Supply      6: GND      9: Current output

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

Sensor CYCT02-54S1-0.5-U100mA			Sensor CYCT02-54S1-0.5-B100mA		
Input current (mA)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)	Input current (mA)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	4	1	-100	4	1
25	8	2	-50	8	2
50	12	3	0	12	3
75	16	4	50	16	4
100	20	5	100	20	5

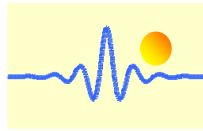
**Wiring of Terminals for OC Frequency Output:**



The value of the pull-up resistor R should be selected in order to get a current of 4-5mA flowing through the pull-up resistor. For instance the pull-up resistor is  $24V/4.5mA=5.3k\Omega$  if you use a power supply +24VDC.

Recommended value of the pull-up resistor R

Power supply	+12V	+15V	+24V
Pull-up resistor R	2.6kΩ	3.3kΩ	5.3kΩ



## DC Current Sensor CYCT01-xnU0

The **CYCT01-xnU0** DC Current sensor/transducer works according Magnetic Modulation and is designed for applications to measurement and monitoring of DC current. The output signal (DC voltage or current) of this transducer is proportional to the input DC current. They are suitable for measurements and long time monitoring of DC currents and can applied to power supply management, DC motor drivers, battery chargers and systems etc.

### Specifications

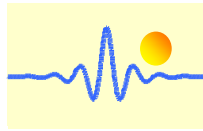
Rated input current DC	1mA, 5mA, 10mA, 50mA, 100mA, 500mA, 1A, 2A, 3A, 4A, 5A DC
Linear measuring range	0 - 1.2 times of rated input current
Overload capacity	10 times of rated input current
Input response	Uni-directional DC and DC impulse currents
Input resistance	$R_i=0.05V / I_x$ , $I_x$ : Input current
Output signals DC	0-5V, 0-10V, 0-20mA, 4-20mA DC
Measuring accuracy	0.2% for voltage output; 0.5% for current output; 0.5% for power supply 165-265VAC and +230V-360VDC
Load capacity	voltage output: 5mA; current output: 6V
Response time	≤350ms
Thermal drift	voltage output : 100-350ppm/°C; current output: 250-350ppm/°C
Power supply	+12VDC, +24VDC, 165-265VAC, +230-360VDC
Static current	Voltage output: 20mA; Current output: 23-27mA
Isolation	Isolation between input and output and power supply
Isolation withstanding voltage	2.5 kV DC, 1min for Input-Output and power supply – Input 1.5-2.5kV DC, 1min for power supply - output
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
Relative humidity	10% ~ 90%
Protection of Case	IP20
Material of Case	ABS (According to UL94V-0)
Mounting	DIN Rail
Case style	U0 without aperture
MTBF	50000h
Unit weight	90g

### Definition of Part number:

CYCT01	-	x	n	U0	-	0.2	-	m
(1)		(2)	(3)	(4)		(5)		(6)

(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (m)
CYCT01	<b>x=3:</b> 0-5V DC <b>x=4:</b> 0-20mA DC <b>x=5:</b> 4-20mA DC <b>x=8:</b> 0-10V DC	<b>n=2:</b> +12V DC <b>n=4:</b> +24V DC <b>n=8:</b> 165V-265VAC <b>n=9:</b> 230-360VDC	U0	0.2% 0.5%	1mA, 5mA, 10mA, 50mA, 100mA, 500mA, 1A, 2A, 3A, 4A, 5ADC

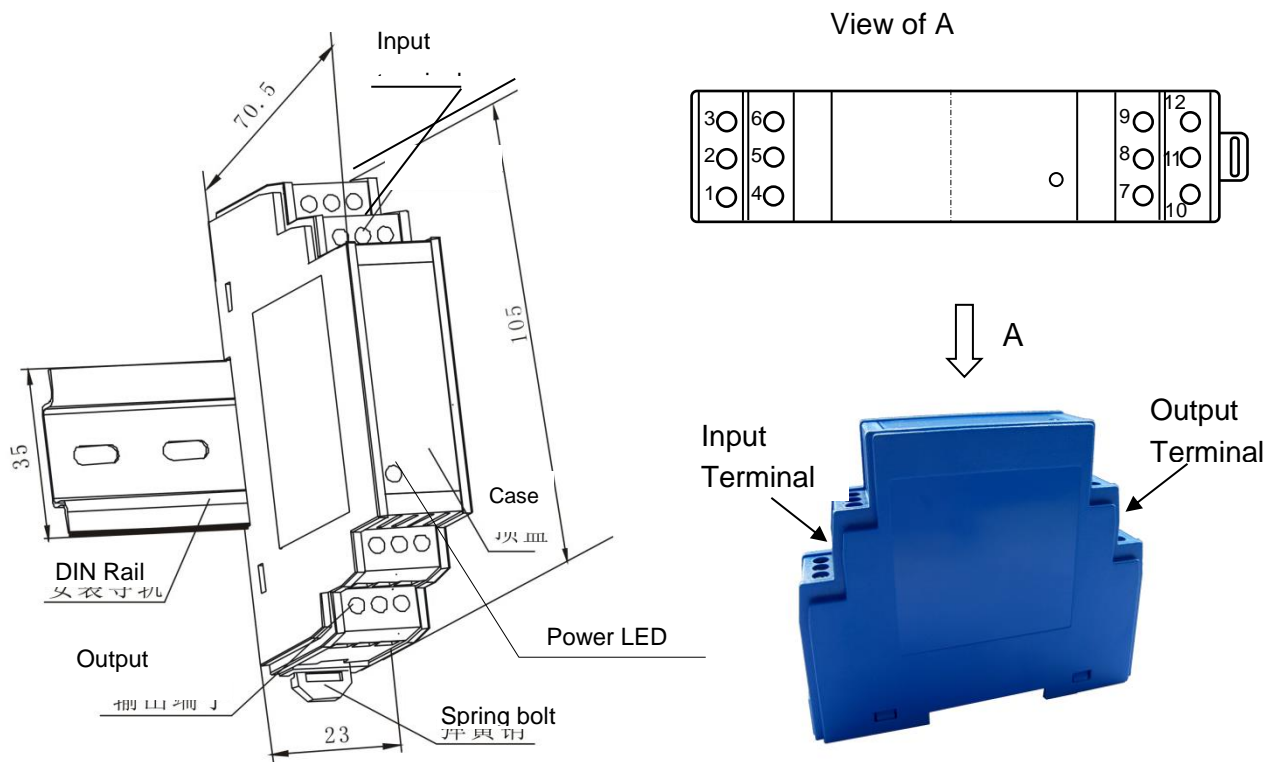




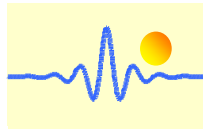
**Example 1:** CYCT01-32U0-0.2-100mA, DC Current sensor with  
Output signal: 0-5V DC  
Power supply: +12V DC  
Rated input current: 0-100mA DC

**Example 2:** CYCT01-54U0-0.5-100mA, DC Current sensor with  
Output signal: 4-20mA DC  
Power supply: +24V DC  
Rated input current: 0 -100mA DC

### DIMENSIONS (mm)

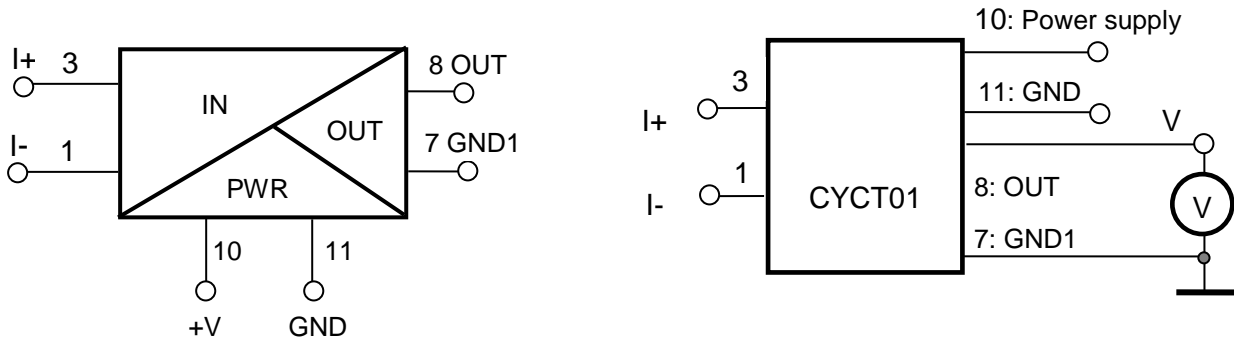


Dimensions: 105mm x 23mm x 70.5mm



## CONNECTIONS

### Wiring of Terminals for voltage output:

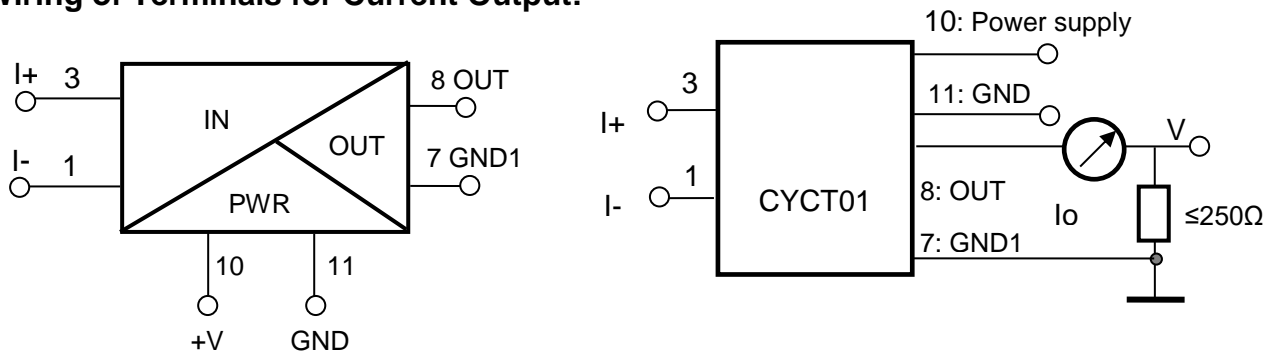


1, 3: Input Current; 10: +12V, +24V Power Supply 7, 11: GND 8: Voltage Output

### Relation between Input and Output:

Sensor CYCT01-32U0-0.2-100mA	
Input current (mA)	Output voltage (V)
0	0
25	1.25
50	2.5
75	3.75
100	5

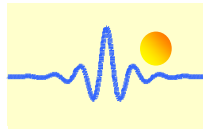
### Wiring of Terminals for Current Output:



1, 3: Input Current; 10: +12V, +24V Power Supply 7, 11: GND 8: Current Output

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

Sensor CYCT01-54U0-0.5-100mA		
Input current (mA)	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



## DC Current Sensor CYCT02-xnU0

The **CYCT02-xnU0** DC current sensor/transducer works according Magnetic Modulation and is designed for applications to measurement and monitoring of DC current. The output signal (DC voltage or current) of this transducer is proportional to the input DC current. They are suitable for measurements and long time monitoring of DC currents and can applied to power supply management, DC motor drivers, battery chargers and systems etc.

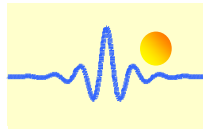
### Specifications

Rated input current DC	1mA, 5mA, 10mA, 50mA, 100mA, 500mA, 1A, 2A, 3A, 4A, 5A DC
Linear measuring range	0 - 1.2 times of rated input current
Overload capacity	10 times of rated input current
Input response	Uni-directional DC and DC impulse current
Input resistance	$R_i = 0.05V / I_x$ , $I_x$ : Input current
Output signals DC	0-5V, 0-10V, 0-20mA, 4-20mA DC
Measuring accuracy	0.2% for voltage output and 0-20mA output; 0.5% for 4-20mA output
Load capacity	voltage output: 5mA; current output: 6V
Response time	≤350ms
Thermal drift	voltage output : 100ppm/°C; current output: 150-250ppm/°C
Power supply	+12VDC, +24VDC
Static current	Voltage output: 10mA; Current output: 13-17mA
Isolation	Isolation between input and output, power supply at the output
Isolation withstanding voltage	2.5 kV DC, 1min
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ +70°C
Relative humidity	10% ~ 90%
Protection of Case	IP20
Material of Case	ABS (According to UL94V-0)
Mounting	DIN Rail
Case Style	U0 without aperture
MTBF	50000h
Unit weight	90g

### Definition of Part number:

CYCT02	-	x	n	U0	-	0.2	-	m
(1)		(2)	(3)	(4)		(5)		(6)

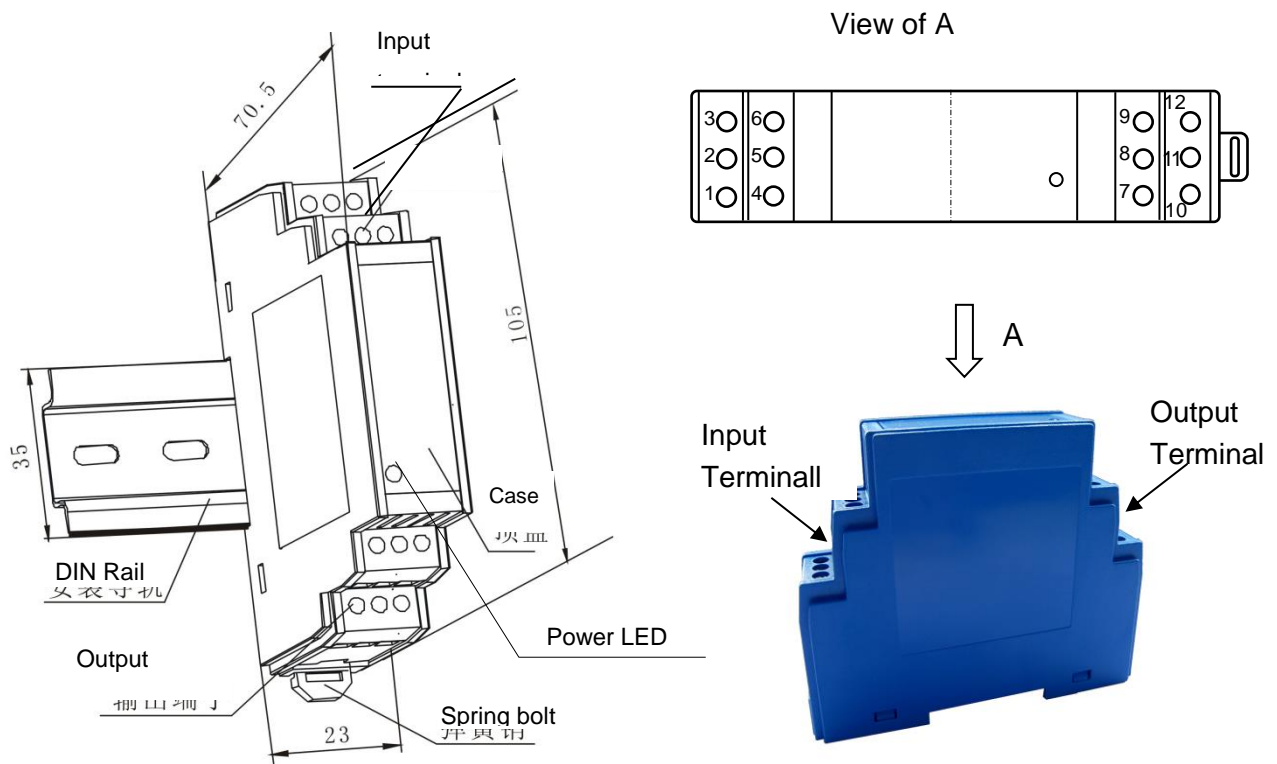
(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (m)
CYCT02	<b>x=3:</b> 0-5V DC	<b>n=2:</b> +12V DC	U0	0.2% 0.5%	1mA, 5mA, 10mA, 50mA, 100mA, 500mA, 1A, 2A, 3A, 4A, 5ADC
	<b>x=4:</b> 0-20mA DC	<b>n=4:</b> +24V DC			
	<b>x=5:</b> 4-20mA DC	<b>n=4:</b> +24V DC			
	<b>x=8:</b> 0-10V DC	<b>n=4:</b> +24V DC			



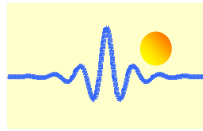
**Example 1:** CYCT02-32U0-0.2-100mA, DC Current sensor with  
Output signal: 0-5V DC  
Power supply: +12V DC  
Rated input current: 0-100mA DC

**Example 2:** CYCT02-54U0-0.5-100mA, DC Current sensor with  
Output signal: 4-20mA DC  
Power supply: +24V DC  
Rated input current: 0 -100mA DC

### DIMENSIONS (mm)

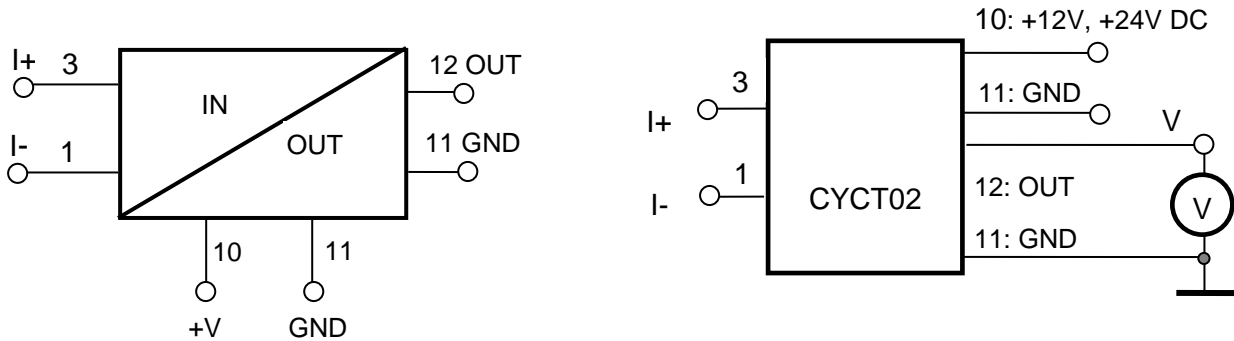


Dimensions: 105mm x 23mm x 70.5mm



## CONNECTIONS

### Wiring of Terminals for voltage output:

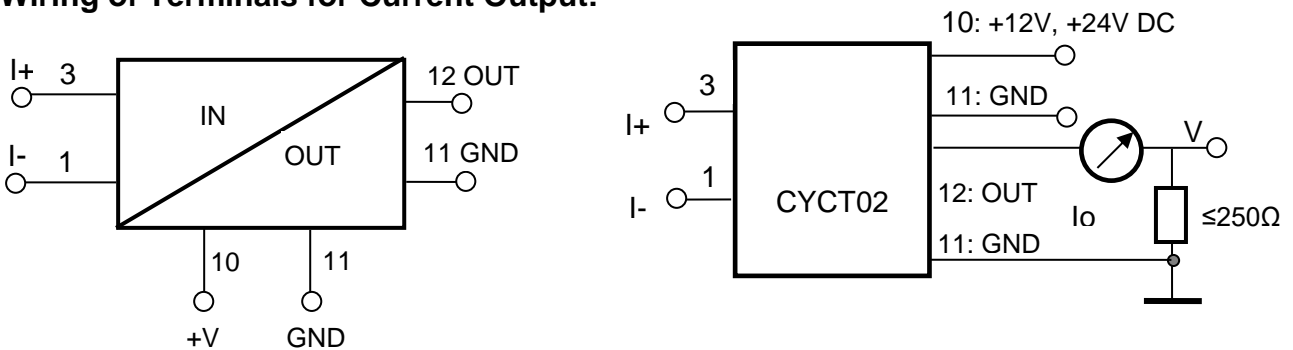


1,3: Input Current; 10: +12V, +24V Power Supply 11: GND 12: Voltage output

Relation between Input and Output:

Sensor CYCT02-32U0-0.2-100mA	
Input current (mA)	Output voltage (V)
0	0
25	1.25
50	2.5
75	3.75
100	5

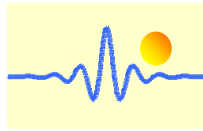
### Wiring of Terminals for Current Output:



1,3: Input Current; 10: +12V, +24V Power Supply 11: GND 12: Current output

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

Sensor CYCT02-54U0-0.5-100mA		
Input current (mA)	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



## DC Current Sensor CYCT01-xnS3

The **CYCT01-xnS3** DC current sensor/transducer works according Photoelectrical Induction and is designed for applications to measurement and monitoring of DC current. The output signal (DC voltage or current) of this transducer is proportional to the input DC current. They are suitable for measurements and long time monitoring of DC currents and can applied to power supply management, DC motor drivers, battery chargers and systems etc.

### Specifications

Rated input current range	500mA, 1A, 2A, 5A
Output signal	0-5VDC, 0-20 mA, 4-20 mA, 0-10V DC, frequency OC
Power supply	+12V, +15V, +24V DC, 110V DC/AC, 220VDC/AC
Measuring accuracy	0.5%
Isolation	between input, output and power supply
Load resistance	≥2kΩ for voltage output, ≤250Ω for current output
Isolation withstanding voltage	2.5 kV DC, 1min, leakage current 1mA
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
Relative humidity	10% ~ 90%
Response time	≤10ms
Overload capacity	2 times
Quiescent power consumption	180mW – 300mW
Mounting	Din rail
Case style	S3 without aperture

### Definition of Part number:

CYCT01	-	x	n	S3	-	0.5	-	M
(1)		(2)	(3)	(4)		(5)		

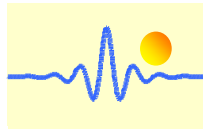
(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (M=U/B+m)
CYCT01	<b>x=3:</b> 0-5V DC <b>x=4:</b> 0-20mA DC <b>x=5:</b> 4-20mA DC <b>x=8:</b> 0-10V DC <b>x=F:</b> Frequency OC**	<b>n=2:</b> +12V DC <b>n=3:</b> +15V DC <b>n=4:</b> +24V DC <b>n=8:</b> 110V <b>n=9:</b> 220V	S3	0.5%	m= 500mA, 1A, 2A, 5A

\*\* Frequency range: 10kHz, accuracy: 0.5%, not for sensors with power supply 110V and 220V

**U:** unipolar input current;      **B:** bipolar input current

### Output Signal of Custom Made Sensors:

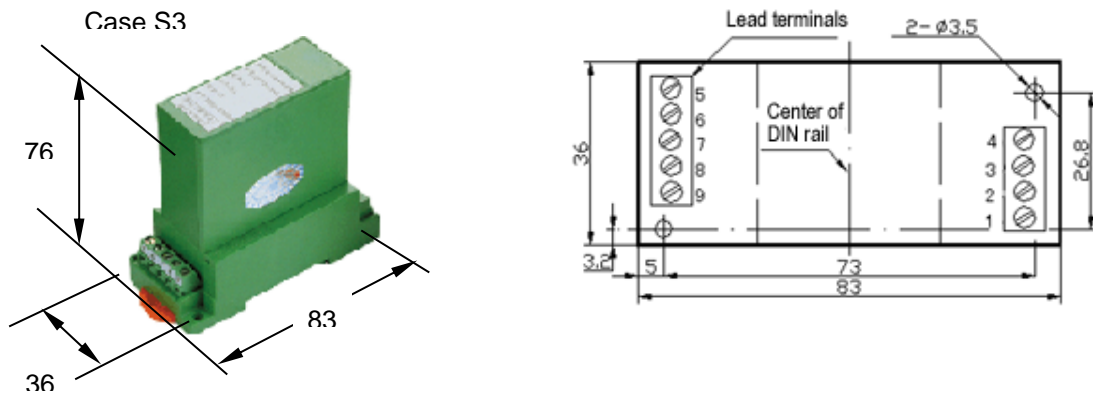
**x=1:** tracing voltage 5V, **x=2:** tracing current 20mA



**Example 1:** CYCT01-32S3-0.5-U2A, DC Current sensor with  
Output signal: 0-5V DC  
Power supply: +12V DC  
Rated input current: 0-2A DC (unipolar)

**Example 2:** CYCT01-54S3-0.5-B2A, DC Current sensor with  
Output signal: 4-20mA DC  
Power supply: +24V DC  
Rated input current: -2A ~ +2A DC (bipolar)

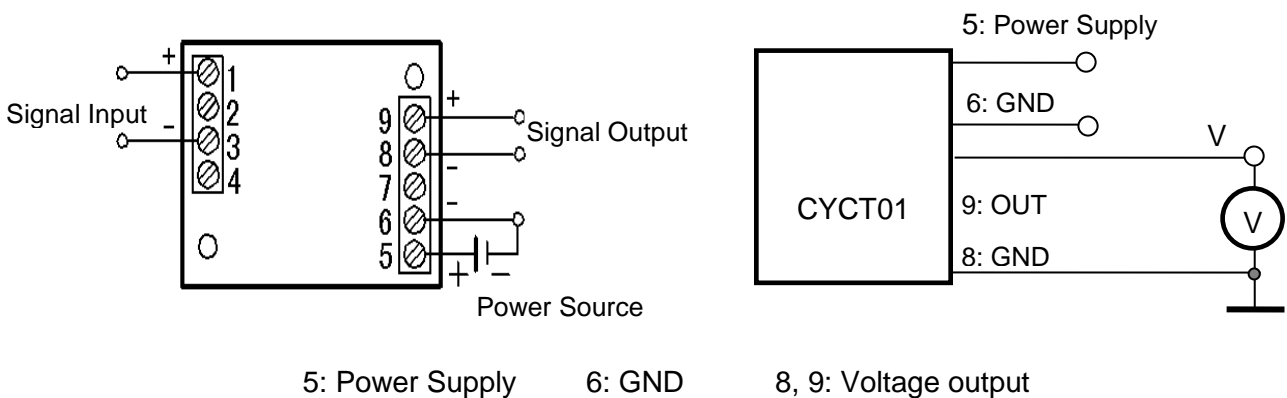
**DIMENSIONS (mm)**



Dimensions: 76mm x 83mm x 36mm

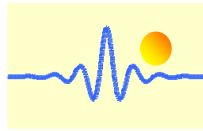
**CONNECTIONS**

**Wiring of Terminals for voltage output:**



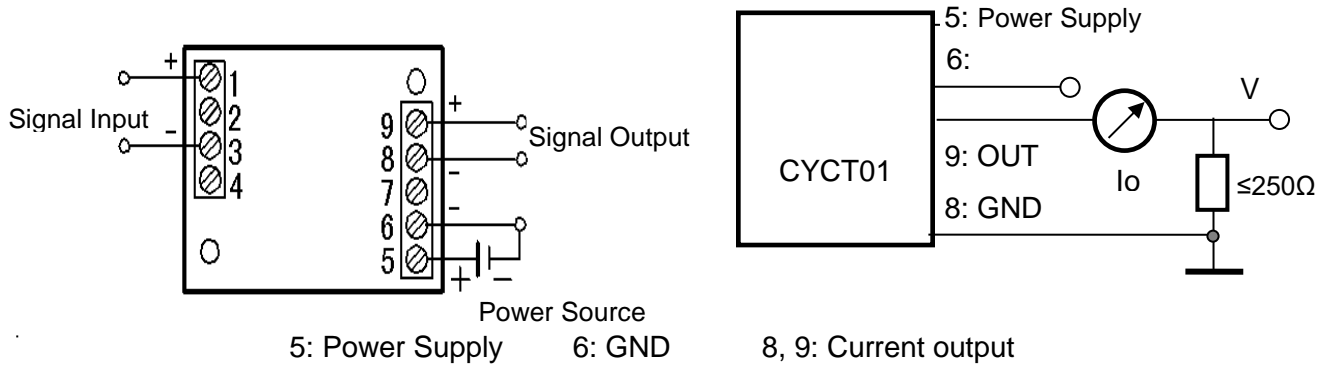
**Relation between Input and Output:**

Sensor CYCT01-32S3-0.5-U2A	Sensor CYCT01-32S3-0.5-B2A
----------------------------	----------------------------



Input current (A)	Output voltage (V)	Input current (A)	Output voltage (V)
0	0	-2	0
0.5	1.25	-1	1.25
1	2.5	0	2.5
1.5	3.75	1	3.75
2	5	2	5

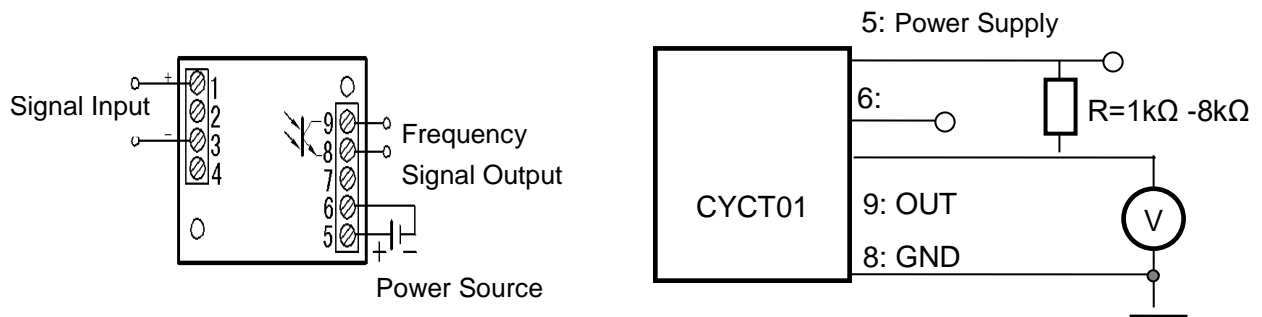
**Wiring of Terminals for Current Output:**



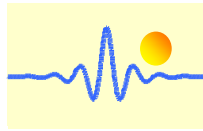
Relation between Input and Output (for  $R_m=250 \Omega$ ):

Sensor CYCT01-54S3-0.5-U2A			Sensor CYCT01-54S3-0.5-B2A		
Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)	Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	4	1	-2	4	1
0.5	8	2	-1	8	2
1	12	3	0	12	3
1.5	16	4	1	16	4
2	20	5	2	20	5

**Wiring of Terminals for OC Frequency Output (only for power supply +12V, +15V and +24V):**







The value of the pull-up resistor R should be selected in order to get a current of 4-5mA flowing through the pull-up resistor. For instance the pull-up resistor is  $24V/4.5mA=5.3k\Omega$  if you use a power supply +24VDC.

Recommended value of the pull-up resistor R

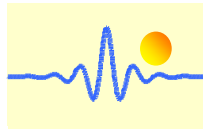
Power supply	+12V	+15V	+24V
Pull-up resistor R	2.6k $\Omega$	3.3k $\Omega$	5.3k $\Omega$

### Applications:

- Power supply management
- DC motor drives
- Battery chargers and systems
- Mobile applications.

### Notice:

- If the input signal is bi-directional DC or pulse DC, please give a remark in your order.
- This sensor works on three isolations principle therefore the output signal and the power source may not be grounded in common.
- If the input current is higher than 1A, it is necessary to connect terminals 1&2 and terminals 3&4 in parallel in order to reduce the input resistance at the input terminals.



## DC Current Sensor CYCT02-xnS2

The **CYCT02-xnS2** DC current sensor/transducer works according Magnetic Modulation and is designed for applications to measurement and monitoring of DC current. The output signal (DC voltage or current) of this transducer is proportional to the input DC current. They are suitable for measurements and long time monitoring of DC currents and can applied to power supply management, DC motor drivers, battery chargers and systems etc.

### Specifications

Rated input current range	500mA, 1A, 2A, 5A
Output signal	0-5VDC, 0-20 mA, 4-20 mA, 0-10V DC, frequency OC
Power supply	+12V, +15V, +24V DC
Measuring accuracy	0.5%
Isolation	between input, output and power supply
Load resistance	≥2kΩ for voltage output, ≤250Ω for current output
Isolation withstanding voltage	2.5 kV DC, 1min, leakage current 1mA
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
Relative humidity	10% ~ 90%
Response time	≤15ms
Overload capacity	2 times
Quiescent power consumption	200mW – 300mW
Mounting	Din rail
Case style	S2 without aperture

### Definition of Part number:

CYCT02	-	x	n	S2	-	0.5	-	M
--------	---	---	---	----	---	-----	---	---

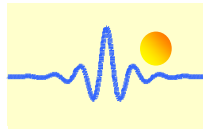
(1)                      (2)    (3)    (4)                      (5)

(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (M=U/B+m)
CYCT02	<b>x=3:</b> 0-5V DC <b>x=4:</b> 0-20mA DC <b>x=5:</b> 4-20mA DC <b>x=8:</b> 0-10V DC <b>x=F:</b> Frequency OC**	<b>n=2:</b> +12V DC <b>n=3:</b> +15V DC <b>n=4:</b> +24V DC	S2	0.5%	m= 500mA, 1A, 2A, 5A

\*\* Frequency range: 10kHz, accuracy: 0.5%, response time is longer than those given in the table above  
**U:** unipolar input current;      **B:** bipolar input current

### Output Signal of Custom Made Sensors:

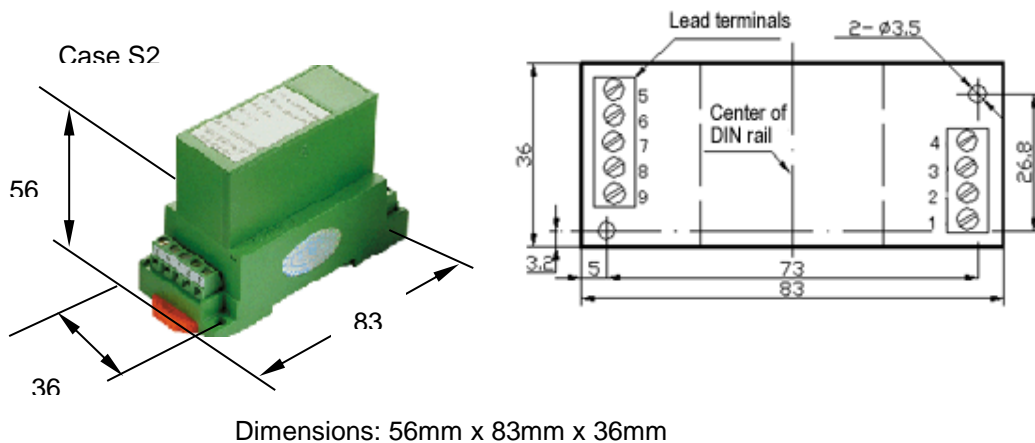
**x=1:** tracing voltage 5V, **x=2:** tracing current 20mA



**Example 1:** CYCT02-32S2-0.5-U2A, DC Current sensor with  
Output signal: 0-5V DC  
Power supply: +12V DC  
Rated input current: 0-2A DC (unipolar)

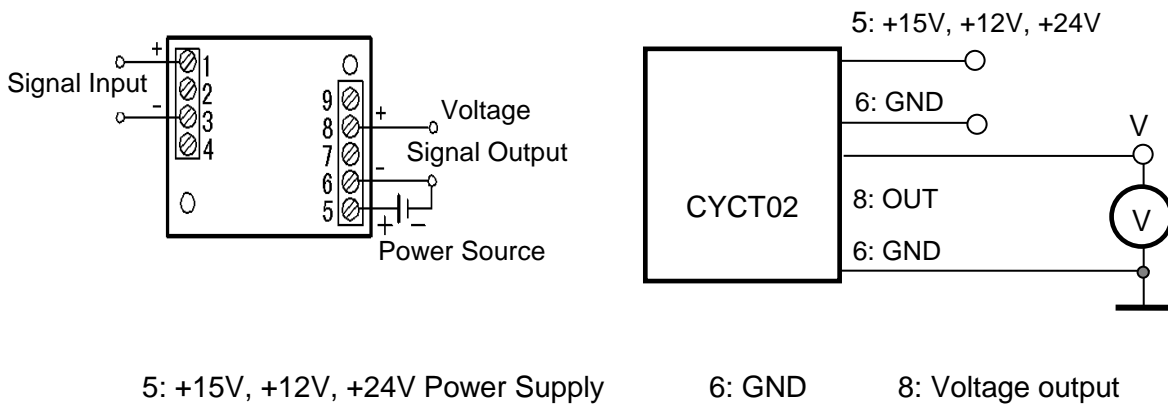
**Example 2:** CYCT02-54S2-0.5-B2A, DC Current sensor with  
Output signal: 4-20mA DC  
Power supply: +12V DC  
Rated input current: -2A ~ +2A DC (bipolar)

**DIMENSIONS (mm)**

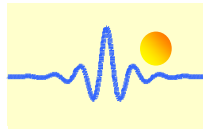


**CONNECTIONS**

**Wiring of Terminals for voltage output:**

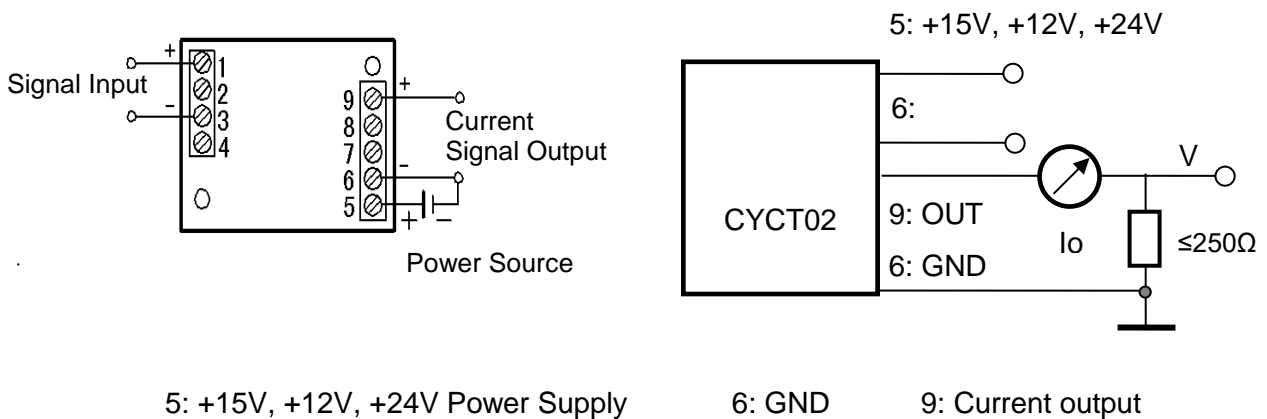


**Relation between Input and Output:**



Sensor CYCT02-32S2-0.5-U2A		Sensor CYCT02-32S2-0.5-B2A	
Input current (A)	Output voltage (V)	Input current (A)	Output voltage (V)
0	0	-2	0
0.5	1.25	-1	1.25
1	2.5	0	2.5
1.5	3.75	1	3.75
2	5	2	5

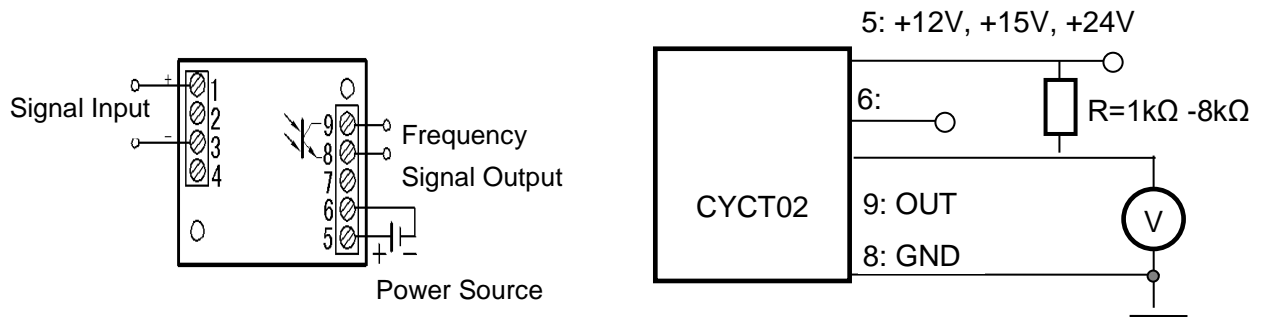
### Wiring of Terminals for Current Output:

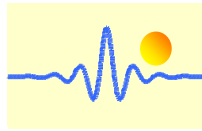


Relation between Input and Output (for  $R_m=250 \Omega$ ):

Sensor CYCT02-54S2-0.5-U2A			Sensor CYCT02-54S2-0.5-B2A		
Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)	Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	4	1	-2	4	1
0.5	8	2	-1	8	2
1	12	3	0	12	3
1.5	16	4	1	16	4
2	20	5	2	20	5

### Wiring of Terminals for OC Frequency Output:





The value of the pull-up resistor R should be selected in order to get a current of 4-5mA flowing through the pull-up resistor. For instance the pull-up resistor is  $24V/4.5mA=5.3k\Omega$  if you use a power supply +24VDC.

Recommended value of the pull-up resistor R

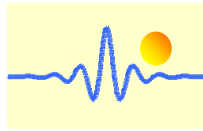
Power supply	+12V	+15V	+24V
Pull-up resistor R	2.6k $\Omega$	3.3k $\Omega$	5.3k $\Omega$

### Applications:

- Power supply management
- DC motor drives
- Battery chargers and systems
- Mobile applications.

### Notice:

- If the input signal is bi-directional DC or pulse DC, please give a remark in your order.
- The output and the power supply must be common grounded at terminal 6.
- If the input current is higher than 1A, it is necessary to connect terminals 1&2 and terminals 3&4 in parallel in order to reduce the input resistance at the input terminals.



## DC Current Sensor CYCT03-L20

The sensor **CYCT03-L20** is based on magnetic modulation principle and designed with a high galvanic isolation between primary conductor and secondary circuit. It can be used for measurement of DC current.

Features and Advantages	Applications
<ul style="list-style-type: none"> <li>• DC current measurement</li> <li>• High isolation between primary and secondary circuits</li> <li>• Protection against reversed polarity</li> <li>• Output protection against electrical disturbances</li> </ul>	<ul style="list-style-type: none"> <li>• DC motor drivers</li> <li>• Battery banks, such as, monitoring load current and charge current, verifying operation</li> <li>• Power supply management</li> <li>• Telecommunication application</li> </ul>

### Specifications

Rated input current range	500mA, 750mA, 1A, 2A, 3A, 5A, 10A, 15A, 20A, 25A
Output signal	0-5VDC, 0-20mA, 4-20mA, 0-10VDC
Power supply	+12VDC, +15VDC, +24VDC
Measuring accuracy	±1.0% FS
Linearity (10% - 100%), 25°C	±0.5% FS
Isolation	between input, output and power supply
Load resistance	≥2kΩ for voltage output, ≤250Ω for current output
Isolation withstanding voltage	2.5 kV DC, 1min, leakage current 1mA
Operating temperature	-40°C ~ +85°C
Storage temperature	-40°C ~ +85°C
Relative humidity	10% ~ 90%
Response time	≤120ms
Thermal drift of offset voltage	≤600ppm/°C
Thermal Drift (-40°C to 85°C)	<2200ppm /°C
Quiescent power consumption	500mW – 1300mW (depending on power supply)
Mounting	Panel Screw mounting
Case style	L20 with aperture Ø20mm

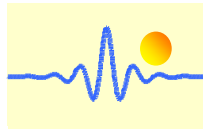
### Definition of Part number:

CYCT03	-	L20	-	M	-	x	
(1)		(2)		(3)		(4)	

(1)	(2)	(3)	(4)	(5)
Series name	Case style	Rated Input current (M=U/B+m)	Output signal	Power supply
CYCT03	L20	m = 500mA, 750mA, 1A, 2A, 3A, 5A, 10A, 15A, 20A, 25A	<b>x=3:</b> 0-5V DC <b>x=4:</b> 0-20mA DC <b>x=5:</b> 4-20mA DC <b>x=8:</b> 0-10V DC	<b>n=2:</b> +12V DC <b>n=3:</b> +15V DC <b>n=4:</b> +24V DC

U: unidirectional;

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

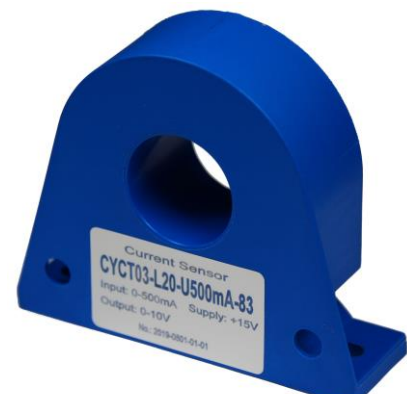
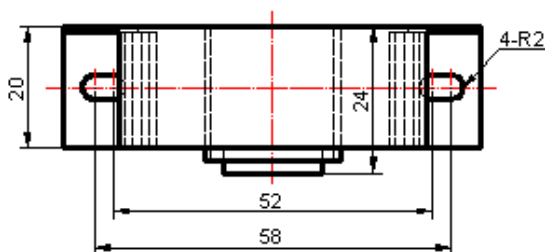
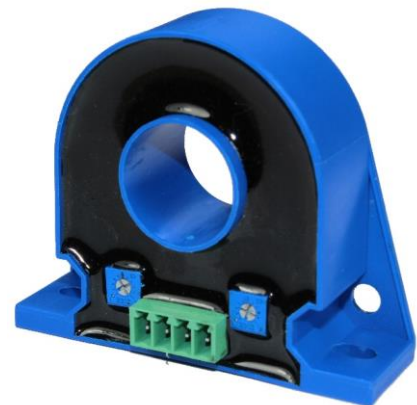
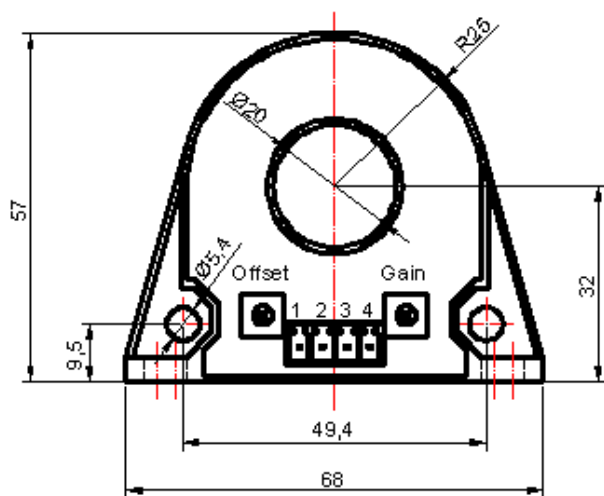


**Example 1:** CYCT03-L20-U10A -32, DC Current sensor with  
Output signal: 0-5V DC  
Power supply: +12V DC  
Rated input current: 0-10A DC

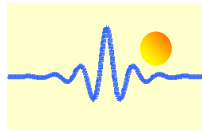
**Example 2:** CYCT03-L20-U10A -54, DC Current sensor with  
Output signal: 4-20mA DC  
Power supply: +24V DC  
Rated input current: 0-10A DC

**Example 3:** CYCT03-L20-U10A -84, DC Current sensor with  
Output signal: 0-10V DC  
Power supply: +24V DC  
Rated input current: 0-10A DC

### DIMENSIONS (mm)



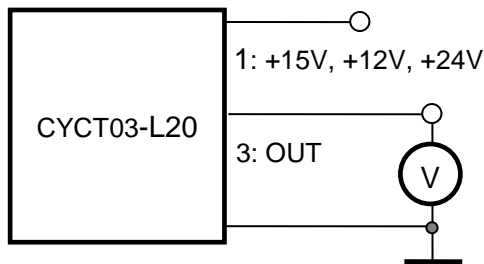
Dimensions: 68mm x 57mm x 24mm, Aperture: Ø20 mm



## CONNECTIONS

The current carrying cable must pass through the window. The current direction is indicated by the arrow on the case.

### Wiring of Terminals for voltage output:

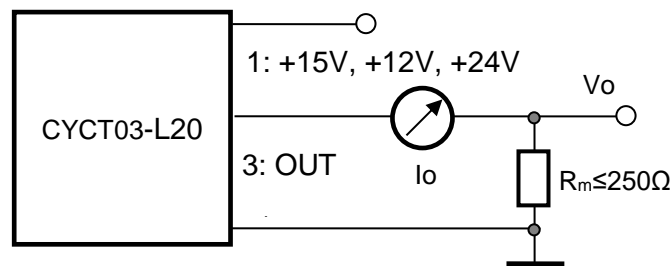


Relation between Input and Output:

Sensor CYCT03-L20-U10A-32	
Input current (A)	Output voltage (V)
0	0
2.5	1.25
5.0	2.5
7.5	3.75
10	5

1: Power supply; 2: GND; 3: Voltage Output; 4: GND

### Wiring of Terminals for Current Output:



1: Power supply; 2: GND; 3: Current Output; 4: GND

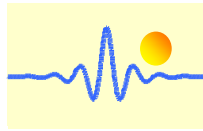
Relation between Input and Output (for  $R_m=250 \Omega$ ):

Sensor CYCT03-L20-U10A-54		
Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	4	1
2.5	8	2
5.0	12	3
7.5	16	4
10	20	5

### Notes:

1. Before powering on the device, make sure the polarities of all connections are correct. Avoid wrong connection.
2. The two potentiometers can (only if really necessary) be used to adjust the accuracy of the sensor by using a small screwdriver.
3. Make sure to use a measuring instrument which has a better accuracy than the sensor, when calibrating the sensor.
4. Best accuracy can be achieved if window is completely filled by the current-carrying conductor.





## 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

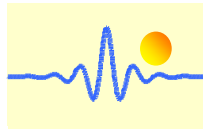
Rated input current (Ix)	±0.1mA ~ ±5A
Linear measuring range	100% rated input current
Overload capacity	10 times of rated input current, 1sec
Input response	Bi-directional DC and DC impulse current
Input resistance	$R_i=0.05V / I_x$ , $I_x$ : Input current
Output type	Instantaneous current or voltage 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
--------	---	---	---	----	---	---	---	---

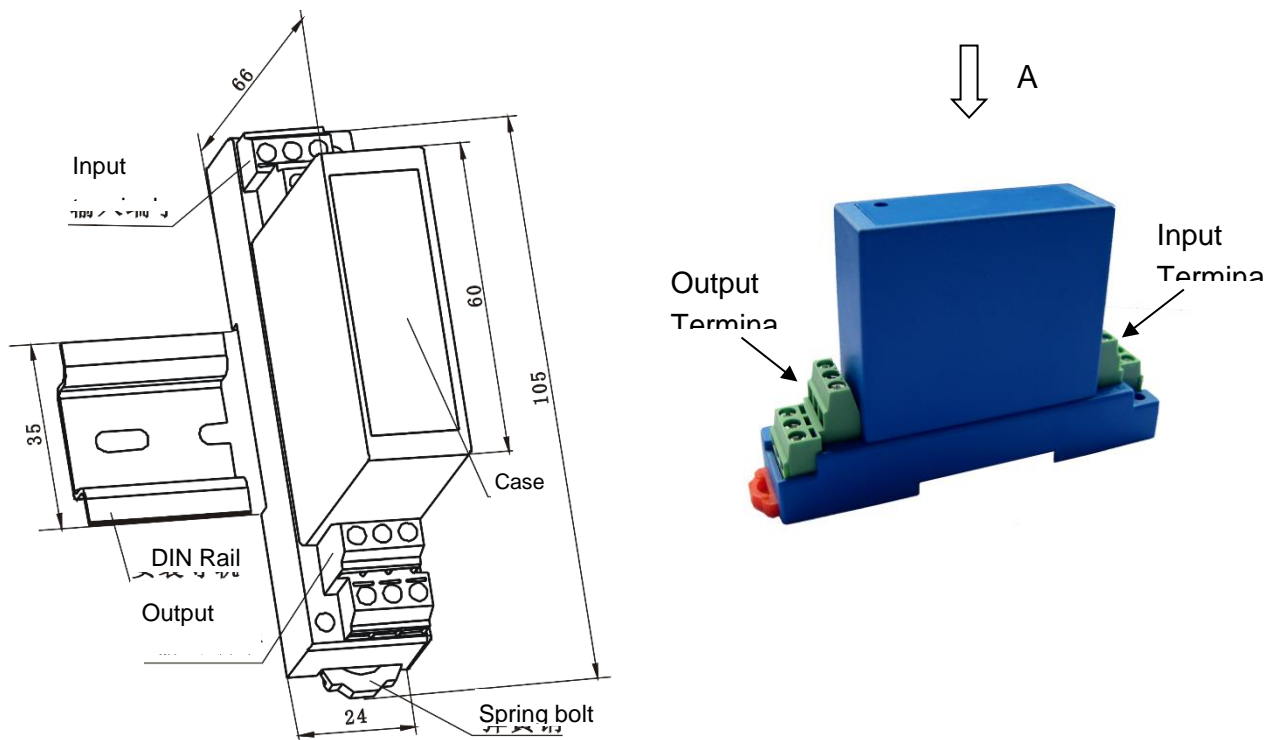
(1)                      (2)    (3)    (4)                      (5)

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

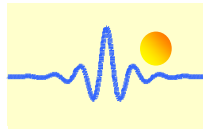


- Example 1:** CYCT03-34S0-0.2-B1A, DC Current Sensor with  
Output voltage: 2.5V±2.5DC (0-5VDC)  
Power supply: +24V DC  
Rated input current: ±1A DC  
Accuracy: ±0.2%
- Example 2:** CYCT03-44S0-0.5-B1A, DC Current Sensor with  
Output current: 10mA±10mADC (0-20mADC)  
Power supply: +24V DC  
Rated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

### DIMENSIONS (mm)



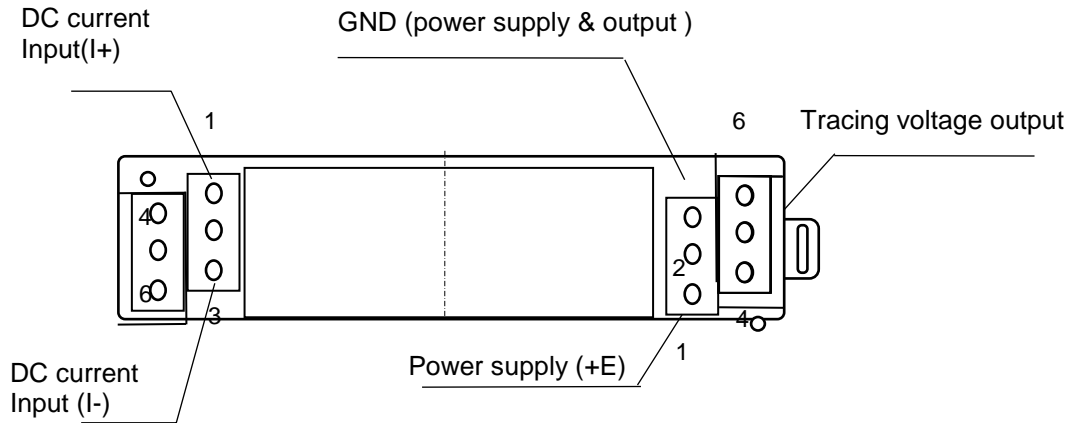
Dimensions: 105mm x 24mm x 66mm



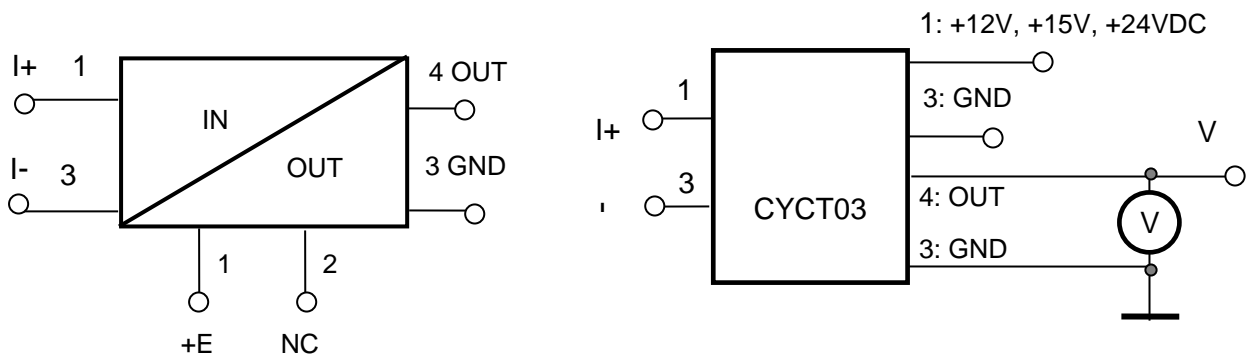
## CONNECTION

### Sensor with voltage output

#### View of A Direction



Please don't use the undefined terminals

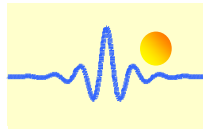


**Input Terminals:** 1, 3: Input Current I+ and I-;

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

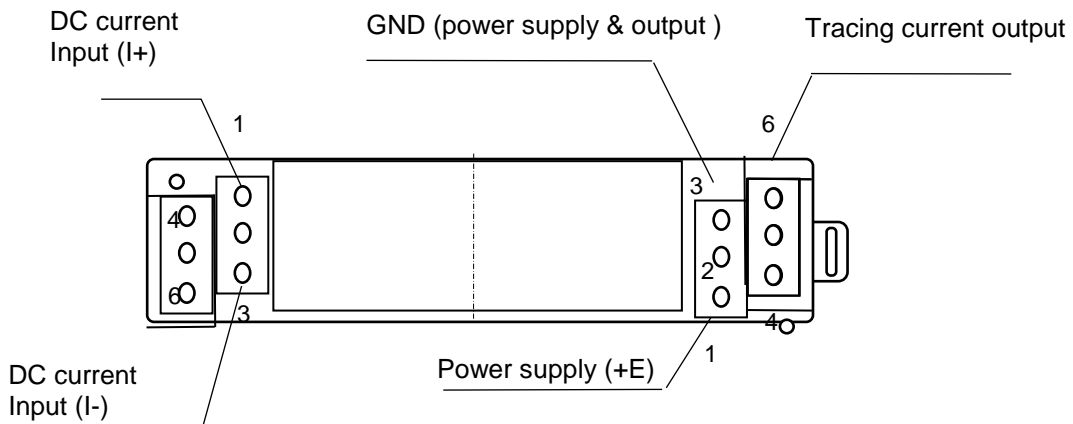
Relation between Input and Output:

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

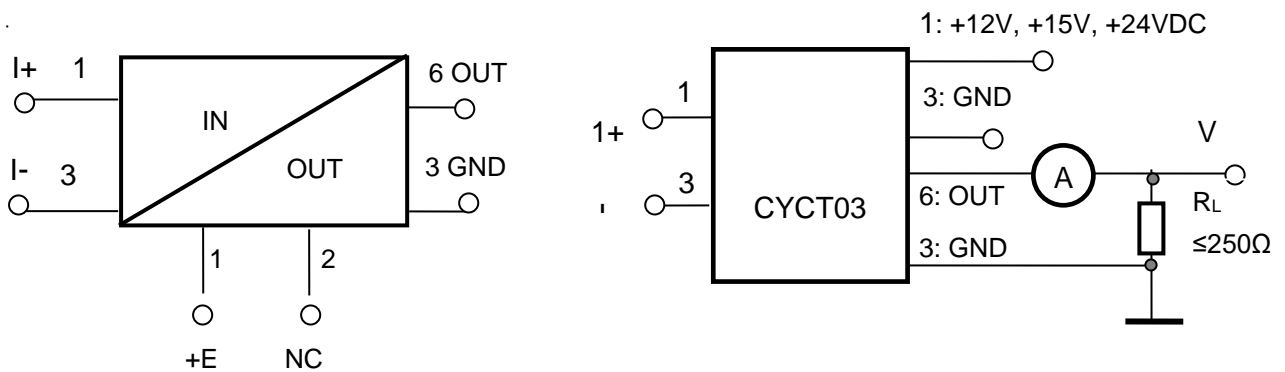


## Sensor with current output

### View of A Direction



Please don't use the undefined terminals

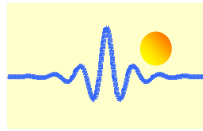


**Input Terminals:** 1, 3: Input Current I+ and I-;

**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 <sub>L</sub> =250Ω)		
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



## DC Current Sensor CYCT03-xnWS3

The **CYCT03-xnWS3** DC current sensor/transducer works according to Magnetic Modulation and is designed for applications to measurement and monitoring of DC current. The output signal (DC voltage or current) of this transducer is proportional to the input DC current.

Features and Advantages	Applications
<ul style="list-style-type: none"> <li>• DC current measurement</li> <li>• High isolation between primary and secondary circuits</li> <li>• Protection against reversed polarity</li> <li>• Output protection against electrical disturbances</li> </ul>	<ul style="list-style-type: none"> <li>• DC motor drivers</li> <li>• Battery banks, such as, monitoring load current and charge current, verifying operation</li> <li>• Power supply management</li> <li>• Telecommunication application</li> </ul>

### Specifications

Rated input current range	500mA, 750mA, 1A, 2A, 3A, 5A, 10A, 15A, 20A, 25A
Output signal	0-5VDC, 0-20 mA, 4-20 mA, 0-10V DC
Power supply	+12VDC, +15VDC, +24VDC
Measuring accuracy	1.0%
Linearity (10% - 100%), 25°C	±0.5% FS
Isolation	between input, output and power supply
Load resistance	≥2kΩ for voltage output, ≤250Ω for current output
Isolation withstanding voltage	2.5 kV DC, 1min, leakage current 1mA
Operating temperature	-40°C ~ +85°C
Storage temperature	-40°C ~ +85°C
Relative humidity	10% ~ 90%
Response time	≤120ms
Thermal drift of offset voltage	≤600ppm/°C
Thermal Drift (-40°C to 85°C)	<2200ppm /°C
Quiescent power consumption	500mW – 1300mW (depending on power supply)
Mounting	DIN rail
Case style	WS3 with aperture Ø20mm

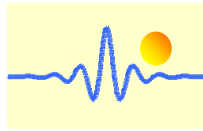
### Definition of Part number:

CYCT03	-	x	n	WS3	-	1.0	-	M
--------	---	---	---	-----	---	-----	---	---

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

(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (M=U/B+m)
CYCT03	<b>x=3:</b> 0-5V DC <b>x=4:</b> 0-20mA DC <b>x=5:</b> 4-20mA DC <b>x=8:</b> 0-10V DC	<b>n=2:</b> +12V DC <b>n=3:</b> +15V DC <b>n=4:</b> +24V DC	WS3	1.0%	m=500mA, 750mA, 1A, 2A, 3A, 5A, 10A, 15A, 20A, 25A

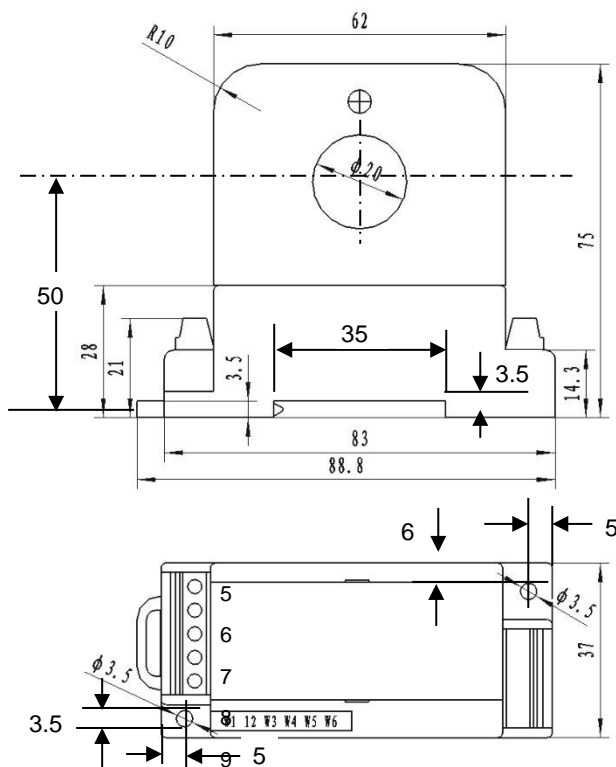
**U:** uni-directional input current; **B:** bi-directional input current



**Example 1:** CYCT03-32WS3-1.0-U10A, DC Current sensor with  
Output signal: 0-5V DC  
Power supply: +12V DC

**Example 2:** CYCT03-54WS3-1.0-B10A, DC Current sensor with  
Output signal: 4-20mA DC (12mA±8mA)  
Power supply: +24V DC  
Rated input current: -10A ~ 0A ~ +10ADC (bipolar)

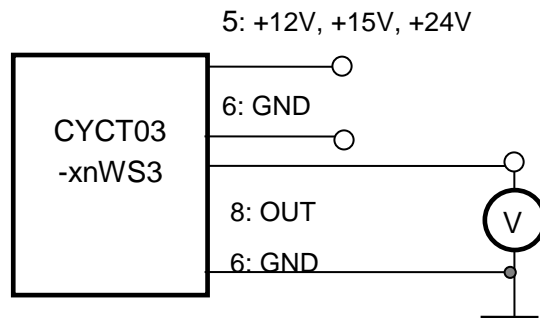
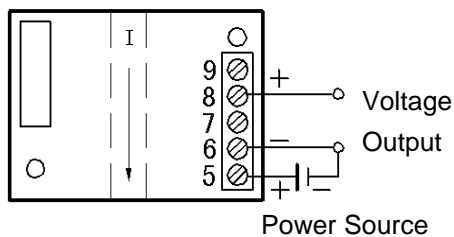
**DIMENSIONS (mm)**



Dimensions: 75mm x 83mm x 37mm, Aperture: Ø20 mm

**CONNECTIONS**

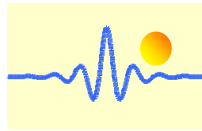
**Wiring of Terminals for voltage output:**



5: +12V, +15V, +24V Power Supply

6: GND

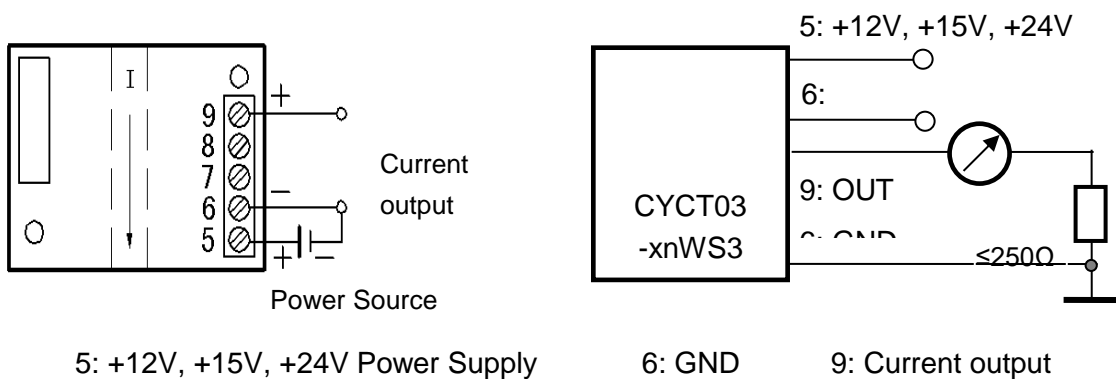
8: Voltage output



Relation between Input and Output:

Sensor CYCT03-32WS3-1.0-U10A		Sensor CYCT03-32WS3-1.0-B10A	
Input current (A)	Output voltage (V)	Input current (A)	Output voltage (V)
0	0	-10	0
2.5	1.25	-5	1.25
5	2.5	0	2.5
7.5	3.75	5	3.75
10	5	10	5

**Wiring of Terminals for Current Output:**

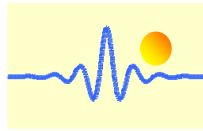


Relation between Input and Output (for  $R_m=250 \Omega$ ):

Sensor CYCT03-54WS3-1.0-U10A			Sensor CYCT03-54WS3-1.0-B10A		
Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)	Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	4	1	-10	4	1
2.5	8	2	-5	8	2
5	12	3	0	12	3
7.5	16	4	5	16	4
10	20	5	10	20	5

**Notice:**

1. Before powering on the device, make sure the polarities of all connections are correct. Avoid wrong connection.
2. The two potentiometers can (only if really necessary) be used to adjust the accuracy of the sensor by using a small screwdriver.
3. Make sure to use a measuring instrument which has a better accuracy than the sensor, when calibrating the sensor.
4. Best accuracy can be achieved if window is completely filled by the current-carrying conductor.
5. Output and power supply need to be grounded on pin 6.



## DC Current Sensor CYCT03-xnS3

The **CYCT03-xnS3** DC current sensor/transducer works according Magnetic Modulation and is designed for applications to measurement and monitoring of DC current. The output signal (DC voltage or current) of this transducer is proportional to the input DC current. They are suitable for measurements and long time monitoring of DC currents and can applied to power supply management, DC motor drivers, battery chargers and systems etc.

### Specifications

Rated input current range	1A, 2A, 5A, 10A, 20A
Output signal	0-5VDC, 0-20 mA, 4-20 mA, 0-10V DC, frequency OC
Power supply	+12V, +15V, +24V DC
Measuring accuracy	1.0%
Isolation	between input, output and power supply
Load resistance	≥2kΩ for voltage output, ≤250Ω for current output
Isolation withstanding voltage	2.5 kV DC, 1min, leakage current 1mA
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
Relative humidity	10% ~ 90%
Response time	≤100ms
Overload capacity	20 times
Quiescent power consumption	600mW – 700mW
Mounting	Din rail
Case style	S3 with aperture Ø20mm

### Definition of Part number:

CYCT03	-	x	n	S3	-	1.0	-	M
(1)		(2)	(3)	(4)		(5)		(6)

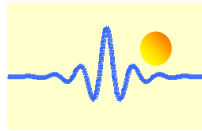
(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (M=U/B+m)
CYCT03	<b>x=3:</b> 0-5V DC <b>x=4:</b> 0-20mA DC <b>x=5:</b> 4-20mA DC <b>x=8:</b> 0-10V DC <b>x=F:</b> Frequency OC**	<b>n=2:</b> +12V DC <b>n=3:</b> +15V DC <b>n=4:</b> +24V DC	S3	1.0%	<b>m=</b> 1A, 2A, 5A, 10A, 20A

\*\* Frequency range: 10kHz, response time is longer than those given in the table above  
**U:** unipolar input current;      **B:** bipolar input current

### Output Signal of Custom Made Sensors:

**x=1:** tracing voltage 5V, **x=2:** tracing current 20mA

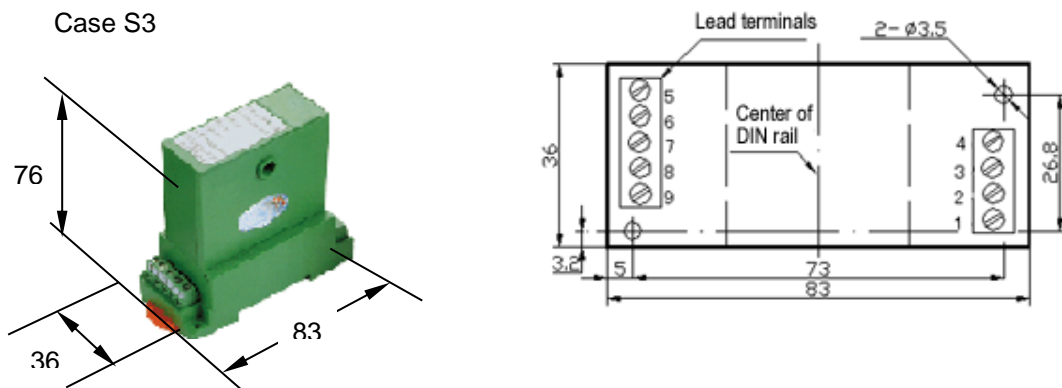




**Example 1:** CYCT03-32S3-1.0-U10A, DC Current sensor with  
Output signal: 0-5V DC  
Power supply: +12V DC  
Rated input current: 0-10A DC (unipolar)

**Example 2:** CYCT03-54S3-1.0-B10A, DC Current sensor with  
Output signal: 4-20mA DC  
Power supply: +24V DC  
Rated input current: -10A ~ +10ADC (bipolar)

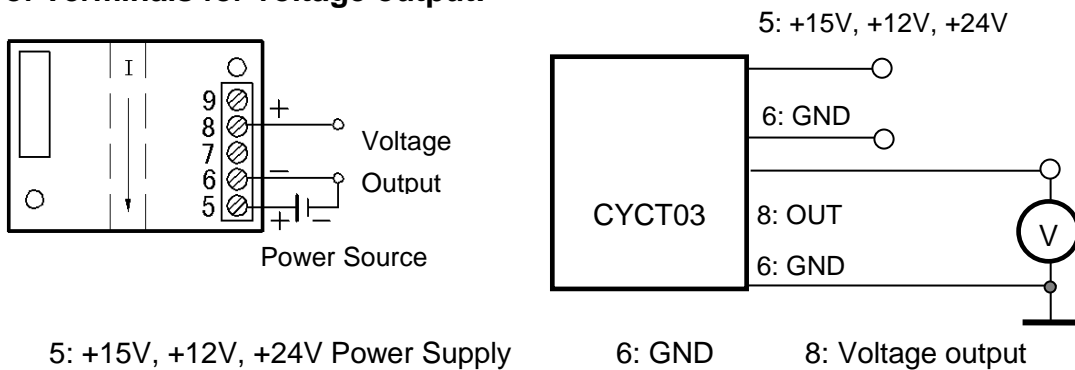
**DIMENSIONS (mm)**



Dimensions: 76mm x 83mm x 36mm,  
Window size : Ø 20mm

**CONNECTIONS**

**Wiring of Terminals for voltage output:**



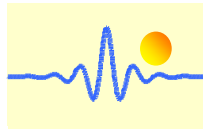
5: +15V, +12V, +24V Power Supply

6: GND

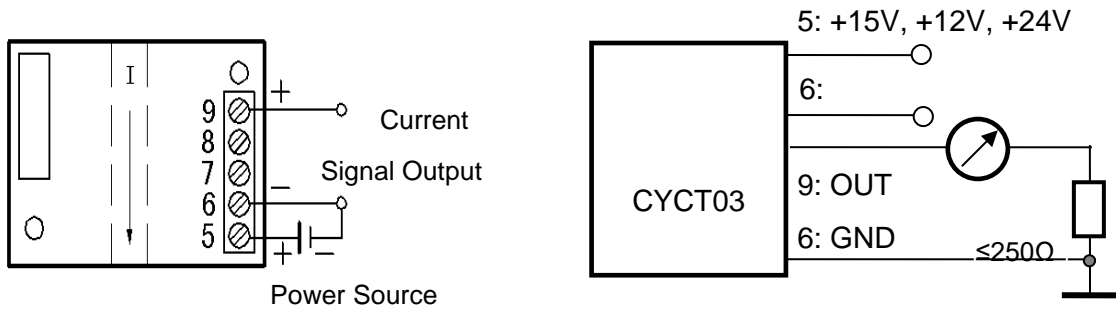
8: Voltage output

**Relation between Input and Output:**

Sensor CYCT03-32S3-1.0-U10A		Sensor CYCT03-32S3-1.0-B10A	
Input current (A)	Output voltage (V)	Input current (A)	Output voltage (V)
0	0	-10	0
2.5	1.25	-5	1.25
5	2.5	0	2.5
7.5	3.75	5	3.75
10	5	10	5



**Wiring of Terminals for Current Output:**

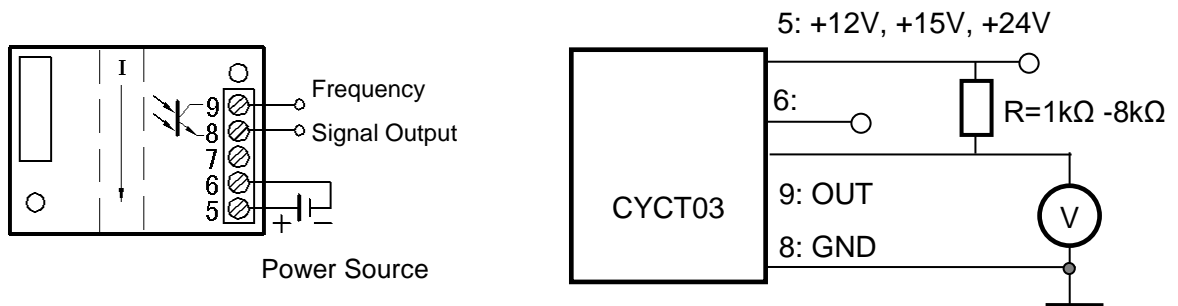


5: +15V, +12V, +24V Power Supply      6: GND      9: Current output

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

Sensor CYCT03-54S3-1.0-U10A			Sensor CYCT03-54S3-1.0-B10A		
Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)	Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	4	1	-10	4	1
2.5	8	2	-5	8	2
5	12	3	0	12	3
7.5	16	4	5	16	4
10	20	5	10	20	5

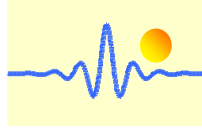
**Wiring of Terminals for OC Frequency Output:**



The value of the pull-up resistor R should be selected in order to get a current of 4-5mA flowing through the pull-up resistor. For instance the pull-up resistor is  $24V/4.5mA=5.3k\Omega$  if you use a power supply +24VDC.

Recommended value of the pull-up resistor R

Power supply	+12V	+15V	+24V
Pull-up resistor R	2.6k $\Omega$	3.3k $\Omega$	5.3k $\Omega$

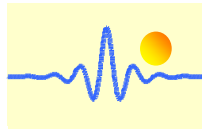


**Applications:**

- Power supply management
- DC motor drives
- Battery chargers and systems
- Mobile applications.

**Notice:**

- If the input signal is bi-directional DC or pulse DC, please give a remark in your order.
- The conductor carrying the input current should pass through the center of the aperture as perpendicularly as possible.
- Make sure that the polarities are in right connection. The output and the power supply must be common grounded at terminal 6.
- If a meter is used to calibrate the output of the transducer, please make sure that the accuracy of the meter is higher than the transducer.



## DC Current Sensor CYCT04-LTAD

This current sensor series is based on magnetic modulation principle and has good stability for measuring 1A ~ 100A DC current and high isolation between primary current and secondary output signal. This sensor can be used for measurement of DC currents.

### Product Characteristics

- Excellent accuracy
- Very good linearity
- Less power consumption
- Window structure
- Electrically isolating the output of the transducer from the current carrying conductor
- No insertion loss
- Current overload capability

### Applications

- Various power supply
- Communication systems
- Leakage current measurement
- Numerical controlled machine tools
- Current difference measurement
- Electric circuits measurement
- Microcomputer monitoring
- Electric power network monitoring

### Electrical Data

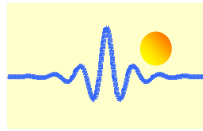
Primary Nominal Current $I_r$ (A)	Measuring Range (A)	Output Voltage (V)	Aperture Diameter (mm)	Part number
1	$\pm 2$	5 $\pm 0.5\%$	$\varnothing 20.0$	CYCT04-LTAD01A
5	$\pm 10$			CYCT04-LTAD05A
10	$\pm 20$			CYCT04-LTAD10A
20	$\pm 40$			CYCT04-LTAD20A
30	$\pm 60$			CYCT04-LTAD30A
40	$\pm 80$			CYCT04-LTAD40A
50	$\pm 100$			CYCT04-LTAD50A
60	$\pm 120$			CYCT04-LTAD60A
75	$\pm 150$			CYCT04-LTAD75A
100	$\pm 200$			CYCT04-LTAD100A

The primary nominal current can be selected between 1A und 100A DC

Supply Voltage	$V_{cc} = \pm 15V \pm 5\%$
Current Consumption	$I_c < 20mA$
Galvanic Isolation, 50/60Hz, 1min:	5.0kV
Isolation resistance @ 500 VDC	$> 500 M\Omega$

### Accuracy and Dynamic performance data

Accuracy at $I_r$ , $T_A=25^\circ C$ (without offset),	$X \leq \pm 0.5\%$
Linearity from 0 to $I_r$ , $T_A=25^\circ C$ ,	$E_L < 0.2\% FS$
Electric Offset Voltage, $T_A=25^\circ C$ ,	$V_{oe} < \pm 10mV$
Thermal Drift of Offset Voltage,	$V_{ot} < \pm 0.5mV/^\circ C$
Response Time at 90% of $I_P$ ( $f=1k Hz$ )	$t_r < 20ms$

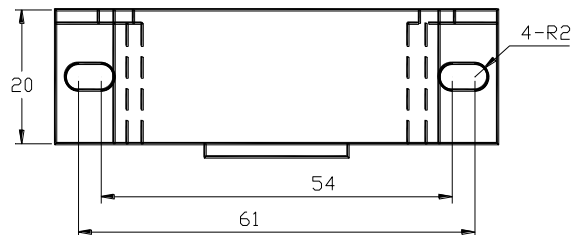
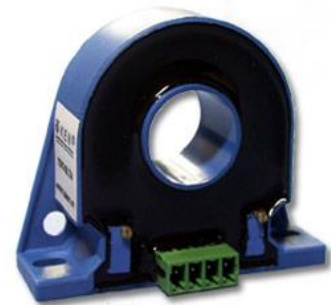
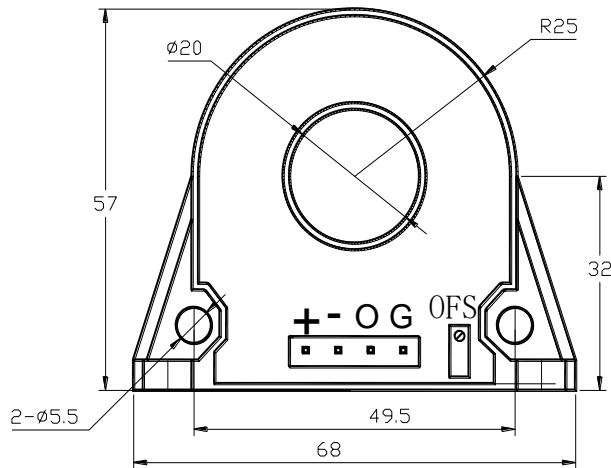


### General Data

Ambient Operating Temperature,  
Ambient Storage Temperature,

$T_A = -40^{\circ}\text{C} \sim +85^{\circ}\text{C}$   
 $T_S = -40^{\circ}\text{C} \sim +125^{\circ}\text{C}$

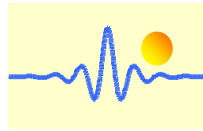
### PIN Definition and Dimensions



Terminal +: +15V,  
Terminal -: -15V,  
Terminal O: Output,  
Terminal G: ground

### 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 primary cable (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



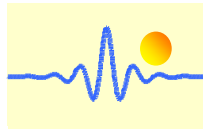
## High Accurate AC Current Sensor CYCS411D47

The **CYCS411D47** AC current Sensor/Transducer works according to electro-magnetic induction principle and is designed for applications to measurement and monitoring of single phase AC current. The output signal (AC voltage) of this transducer is proportional to the amplitude of input AC current. They are suitable for general applications such as fixed frequency voltage supplies etc.

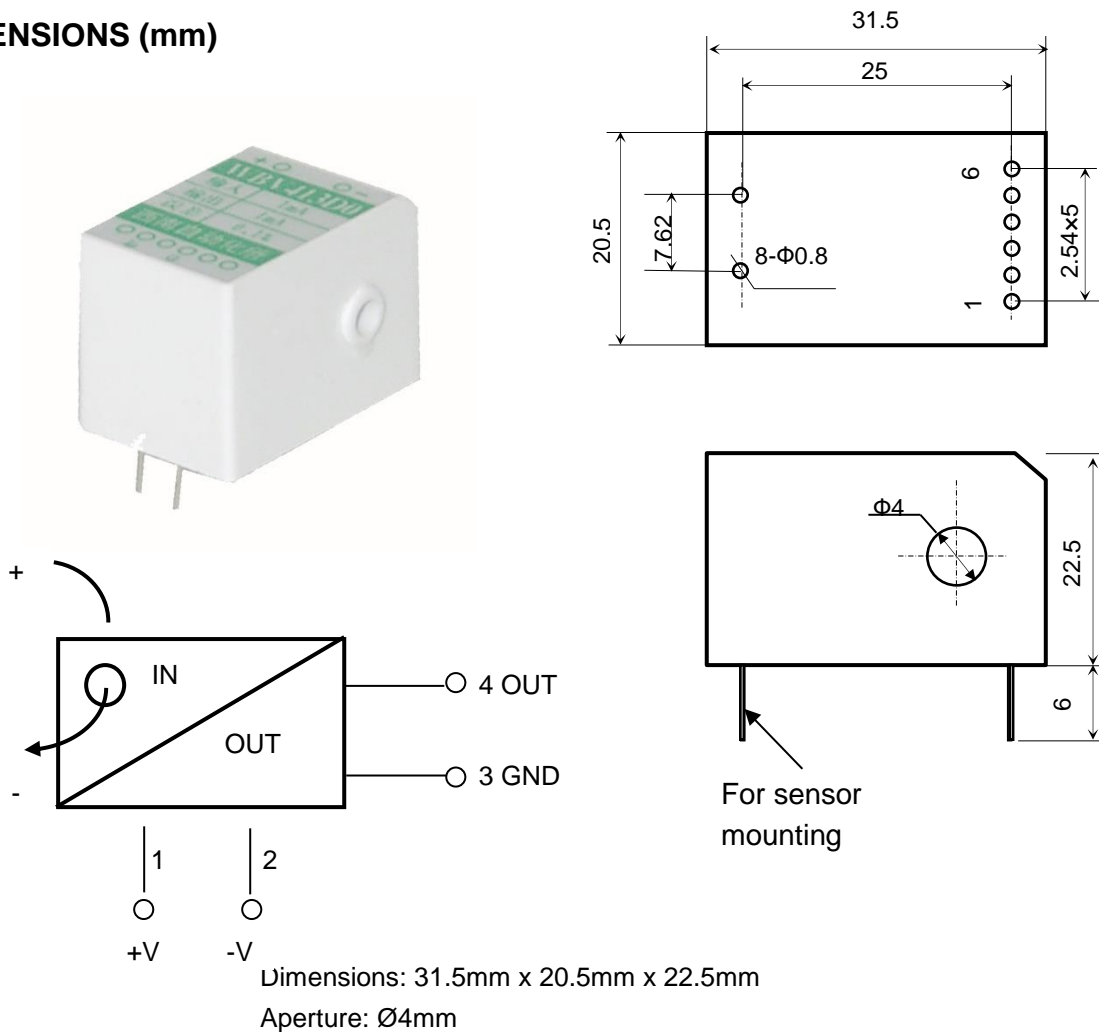
The sensor has the advantages of high measuring accuracy, high reliability, low thermal drift, low current consumption, small size, PCB mounting etc.

### Specifications

Part number	CYCS411D47-m-X, (X depends on power supply)
Rated input current range	m=0.5A, 1A, 2A, 3A, 5A, 8A
Linear measuring range	0 ~ 1.2 time of rated input current
Overload capacity	30 times
Frequency range	25Hz ~ 5 kHz
Output signals	Tracing voltage 0-5V AC
Measuring accuracy	0.1%
Load capacity	5mA
Response time	≤15μs
Thermal drift	150ppm/°C
Power supply	X=5 for ±12V DC, X=6 for ±15VDC
Static current	5mA
Isolation	Isoltion between input und output, power supply at output
Isolation withstanding voltage	2.5 kV DC, 1min
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
Relative humidity	10% ~ 90%
Isolation Capacity between input and outout	5pF (<1kHz)
CMRR	60dB (50Hz)
Protection of Case	IP20
Material of Case	ABS (According to UL94V-0)
Mounting	PCB
Window size	Ø4mm
MTBF	50000 h
Unit weight	30g



## DIMENSIONS (mm)

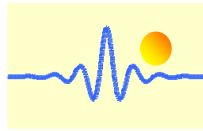


## Application:

- Multi-point current sensing and control panels
- Monitor lighting elements
- Monitor heating elements
- Remote current sensing
- Monitor motor faults

## Notice:

1. The conductor carrying the input current should pass through the center of the aperture as perpendicularly as possible.
2. Make sure that the polarities are in right connection.
3. If a meter is used to calibrate the output of the transducer, please make sure that the accuracy of the meter is higher than the transducer.



## High Accurate AC Current Sensor CYCS412D41

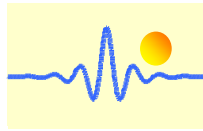
The **CYCS412D41** AC current Sensor/Transducer works according to electro-magnetic induction principle and is designed for applications to measurement and monitoring of single phase AC current. The output signal (DC voltage) of this transducer is proportional to the average effective value (RMS) of input AC current. They are suitable for general applications such as fixed frequency voltage supplies etc.

The sensor has the advantages of high measuring accuracy, high reliability, low thermal drift, low current consumption, small size, PCB mounting etc.

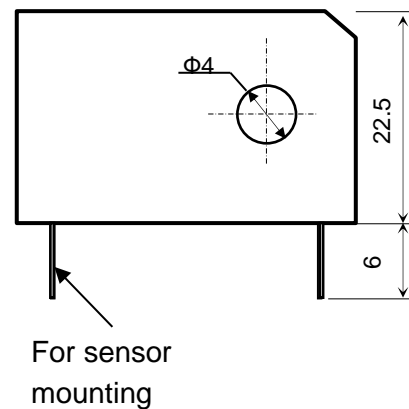
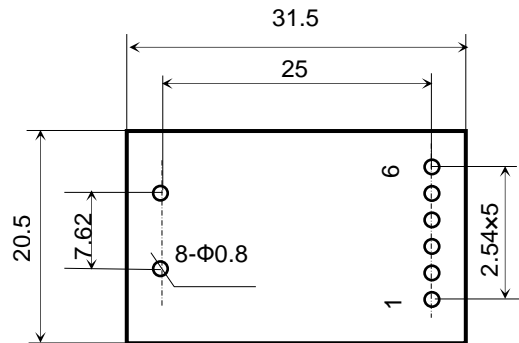
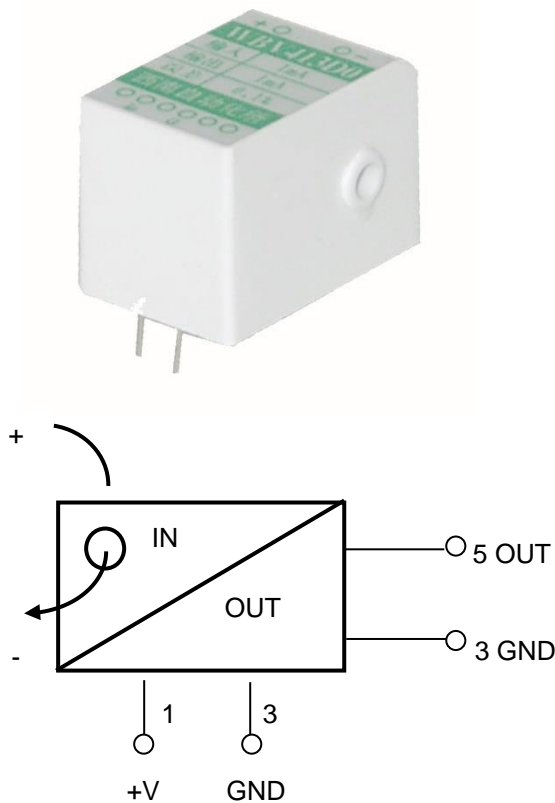
### Specifications

Part number	CYCS412D41-m-X, (X depends on power supply)
Rated input current range	m=0.5A, 1A, 2A, 3A, 5A, 8A
Linear measuring range	0 ~ 1.2 time of rated input current
Overload capacity	30 times
Frequency range	25Hz ~ 5 kHz
Output signals	0-5V DC (averaged effective value)
Measuring accuracy	0.2%
Load capacity	5mA
Response time	≤300ms
Thermal drift	150ppm/°C
Power supply	X=2 for +12V DC, X=4 for +24VDC
Static current	5mA
Isolation	Isolation between input and output, power supply at output
Isolation withstanding voltage	2.5 kV DC, 1min
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
Relative humidity	10% ~ 90%
Isolation Capacity between input and output	5pF (<1kHz)
CMRR	60dB (50Hz)
Protection of Case	IP20
Material of Case	ABS (According to UL94V-0)
Mounting	PCB
Window size	Ø4mm
MTBF	50000 h
Unit weight	30g





## DIMENSIONS (mm)



Dimensions: 31.5mm x 20.5mm x 22.5mm

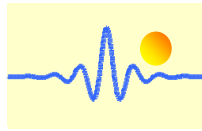
Aperture: Ø4mm

### Application:

- Multi-point current sensing and control panels
- Monitor lighting elements
- Monitor heating elements
- Remote current sensing
- Monitor motor faults

### Notice:

1. The conductor carrying the input current should pass through the center of the aperture as perpendicularly as possible.
2. Make sure that the polarities are in right connection. The output and the power supply must be common grounded at terminal 3.
3. If a meter is used to calibrate the output of the transducer, please make sure that the accuracy of the meter is higher than the transducer.



## AC Current Sensor CYCS11-32H1

The **CYCS11-32H1** AC current Sensor/Transducer works according electro-magnetic induction and is designed for applications to measurement and monitoring of single phase AC current. The output signal (DC voltage) of this transducer is proportional to the average effective value (RMS) of input AC current. They are suitable for general applications such as fixed frequency voltage supplies etc.

### Specifications

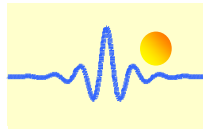
Rated input current range	0.5A, 1A, 5A, 10A, 15A, 25A
Frequency of Input current	Typ. 50-60Hz, max. 5kHz
Output signal	0-5V DC
Power supply	+12V DC
Measuring accuracy	0.5%
Isolation	between input, output power supply
Load resistance	$\geq 2k\Omega$
Isolation withstanding voltage	2.5 kV DC, 1min, leakage current 1mA
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
Relative humidity	10% ~ 90%
Response time	$\leq 400ms$
Overload capacity	20 times
Quiescent power consumption	200mW
Mounting	PCB
Case style and Window size	H1 with aperture $\varnothing 6.5mm$

### Definition of Part number:

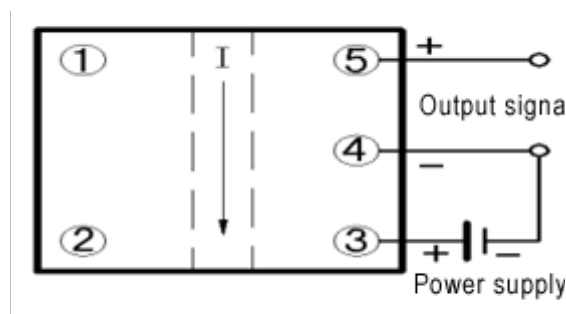
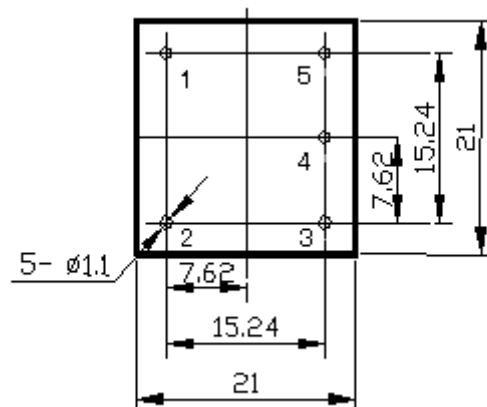
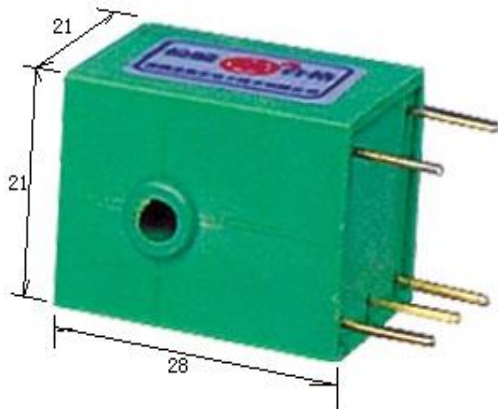
CYCS11	-	3	2	H1	-	0.5	-	m
(1)		(2)	(3)	(4)		(5)		(6)

(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (m)
CYCS11	x=1: tracing voltage 5V x=3: 0-5V DC	n=2: +12V DC	H1	0.5%	0.5A, 1A, 5A, 10A, 15A, 25A

**Typical Example:** CYCS11-32S4-0.5-10A, Single Phase AC Current sensor with  
Output signal: 0-5V DC  
Power supply: +12V DC  
Rated input current: 10A AC



## DIMENSIONS (mm)



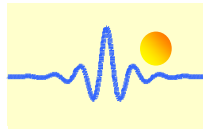
Dimensions: 28mm x 21mm x 21mm  
Aperture: Ø6.5 mm

## Applications:

- Multi-point current sensing and control panels
- Monitor lighting elements
- Monitor heating elements
- Remote current sensing
- Monitor motor faults

## Notice:

1. The conductor carrying the input current should pass through the center of the aperture as perpendicularly as possible.
2. Make sure that the polarities are in right connection. The output and the power supply must be common grounded at terminal 3.
3. If a meter is used to calibrate the output of the transducer, please make sure that the accuracy of the meter is higher than the transducer.



## AC/DC Current Sensor CYCS-xnS0

The **CYCS-xnS0** AC/DC current sensor/transducer works according Photoelectrical Induction and is designed for applications to measurement and monitoring of AC/DC current and DC impulse current. The output signal of this transducer is tracing voltage and proportional to the input AC/DC current. They are suitable for measurements and long time monitoring of DC, AC and impulse currents.

### Specifications

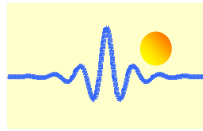
Rated input current	1mA, 5mA, 10mA, 50mA, 100mA, 500mA, 1A, 2A, 3A, 4A, 5A (DC calibration, option: AC calibration)
Linear measuring range	0 - 1.2 times of rated input current
Overload capacity	10 times of rated input current
Input frequency	±DC, 20Hz ~ 10kHz
Input resistance	$R_i=0.05V / I_x$ , $I_x$ : Input current
Output signals	Tracing voltage ±5V
Measuring accuracy	0.2%
Load capacity	5mA
Response time	≤15μs for tracing voltage output, 100ms for 0-5VDC
Thermal drift	150ppm/°C
Power supply	±12VDC, ±15VDC
Static current	30mA
Isolation	Isolation between input and output, power supply at the output
Isolation withstanding voltage	1.5 kV DC, 1min
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
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:

CYCS	-	x	n	S0	-	0.2	-	m
------	---	---	---	----	---	-----	---	---

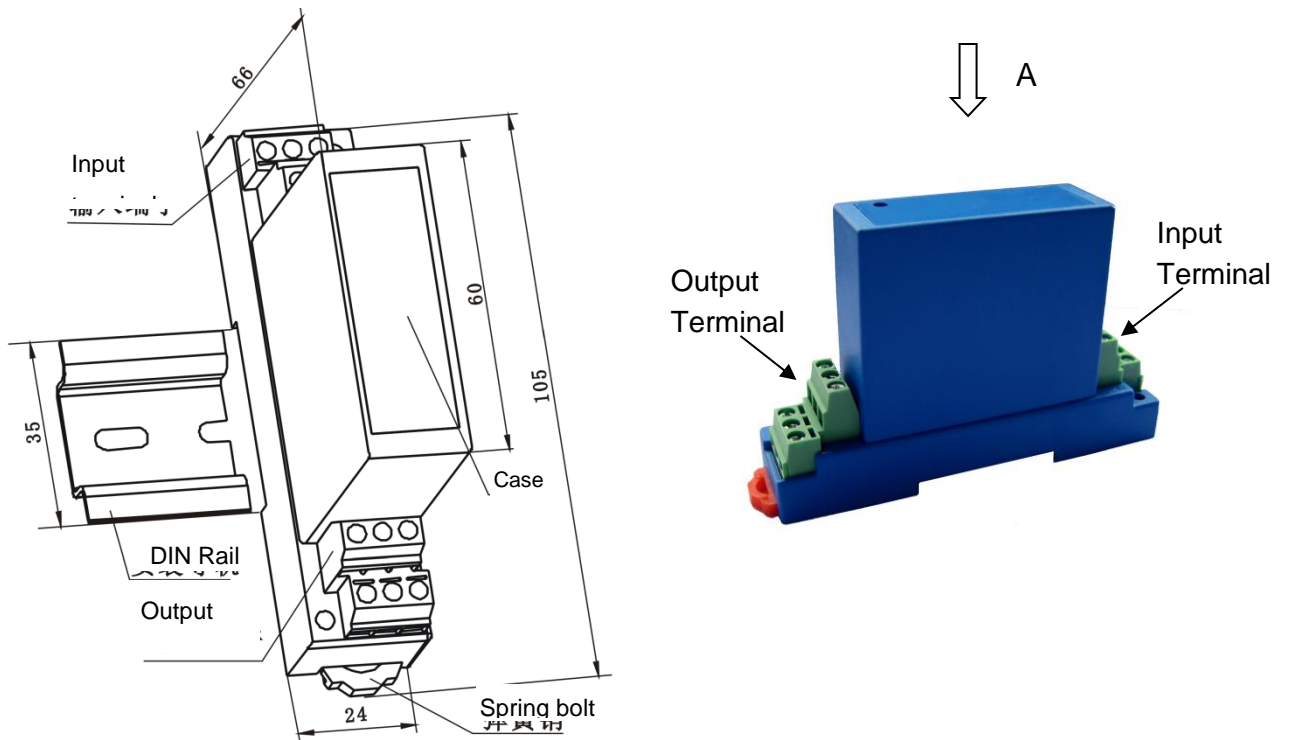
(1)                      (2)    (3)    (4)                      (5)                      (6)

(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (m)
CYCS	<b>x=1:</b> ±5V AC/DC	<b>n=5:</b> ±12V DC <b>n=6:</b> ±15V DC	S0	0.2%	1mA, 5mA, 10mA, 50mA, 100mA, 500mA, 1A, 2A, 3A, 4A, 5A

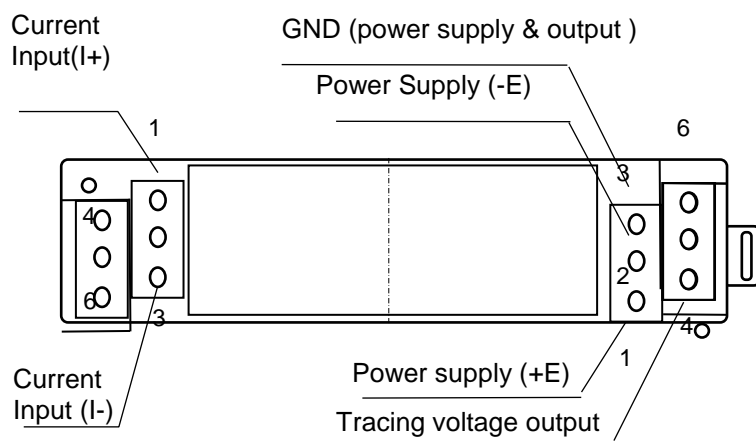


**Example 1:** CYCS-15S0-0.2-100mA, AC/DC Current sensor with  
Output signal:  $\pm 5V$  AC/DC  
Power supply:  $\pm 12V$  DC  
Rated input current:  $\pm 100mA$  AC/DC

**DIMENSIONS (mm)**

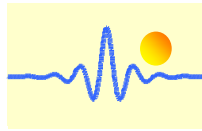


View of A

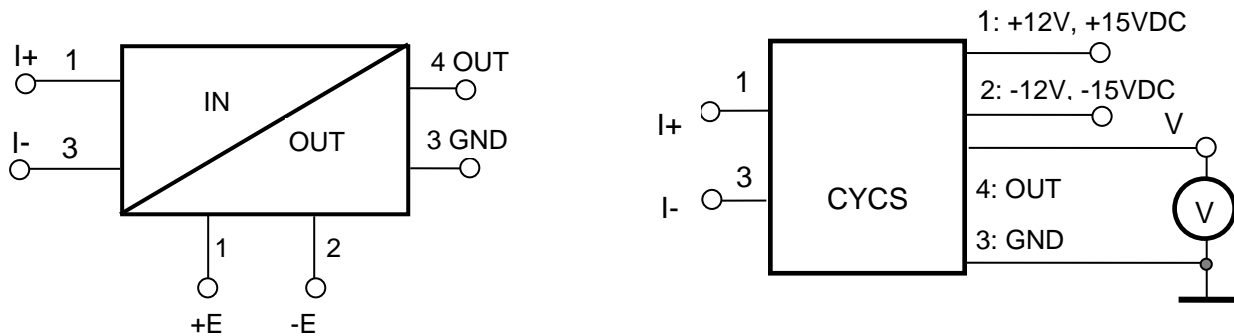


Please don't use the undefined terminals

Dimensions: 105mm x 24mm x 66mm



## CONNECTION



### Input Terminals:

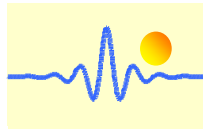
1, 3: Input Current I+ and I-;

### Output Terminals:

1, 2: Power Supply +E and -E  
3: GND (for power supply and output)  
4: Tracing Voltage Output

Relation between Input and Output:

Sensor CYCS-15S0-0.2-100mA	
Input current (mA)	Output voltage (V)
-100	-5
-50	-2.5
0	0
50	2.5
100	5



## AC Current Sensor CYCS11-xnWS4

The **CYCS11-xnWS4** AC current Sensor/Transducer works according electro-magnetic induction and is designed for applications to measurement and monitoring of single phase AC current. The output signal (voltage or current) of this transducer is proportional to the average effective value (RMS) of input AC current or reflects the input current wave. They are suitable for general applications such as fixed frequency voltage supplies etc.

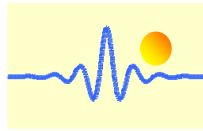
### Specifications

Rated input current AC	0.5A, 1A, 2A, 3A, 4A, 5A, 6A, 7A, 8A AC
Linear measuring range	0 - 1.2 times of rated input current
Overload capacity	30 times of rated input current, 5s
Input frequency	25Hz ~ 5kHz
Output signals	Tracing voltage 5VAC, 0-5VDC, 0-10VDC, 0-20mADC, 4-20mADC
Measuring accuracy	Tracing voltage: 0.1%; DC voltage output: 0.2%; DC current output: 0.5%
Load capacity	voltage output: 5mA; current output: 6V
Response time	Tracing output:15 $\mu$ s ; DC voltage and current output : 300ms
Thermal drift	Tracing voltage: 50ppm/ $^{\circ}$ C; DC voltage output: 150ppm/ $^{\circ}$ C DC current output: 300-350ppm/ $^{\circ}$ C
Power supply	$\pm$ 12VDC, $\pm$ 15VDC, +12VDC, +24VDC
Static current	Voltage output: 3-5mA; Current output: 3-7mA
Isolation	Isoltion between input and output, power supply at the output
Isolation voltage	2.5 kV DC, 1min
Operating temperature	-10 $^{\circ}$ C ~ +60 $^{\circ}$ C
Storage temperature	-25 $^{\circ}$ C ~ + 70 $^{\circ}$ C
Relative humidity	10% ~ 90%
Protection of Case	IP20
Material of Case	ABS (According to UL94V-0)
Mounting	DIN Rail
Case Style	WS4 with aperture $\Phi$ 4mm
MTBF	50000h
Unit weight	90g

### Definition of Part number:

CYCS11	-	x	n	WS4	-	0.2	-	m
(1)		(2)	(3)	(4)		(5)		(6)

(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (m)
CYCS11	<b>x=1:</b> 5VAC tracing**	<b>n=5:</b> $\pm$ 12V DC <b>n=6:</b> $\pm$ 15V DC	WS4	0.1% 0.2% 0.5%	0.5A, 1A, 2A, 3A, 4A, 5A, 6A, 7A, 8A
	<b>x=3:</b> 0-5V DC	<b>n=2:</b> +12V DC			
	<b>x=4:</b> 0-20mA DC	<b>n=4:</b> +24V DC			
	<b>x=5:</b> 4-20mA DC				
	<b>x=8:</b> 0-10V DC	<b>n=4:</b> +24V DC			

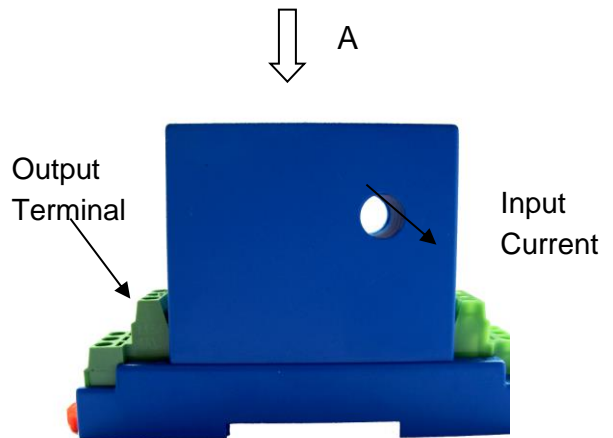
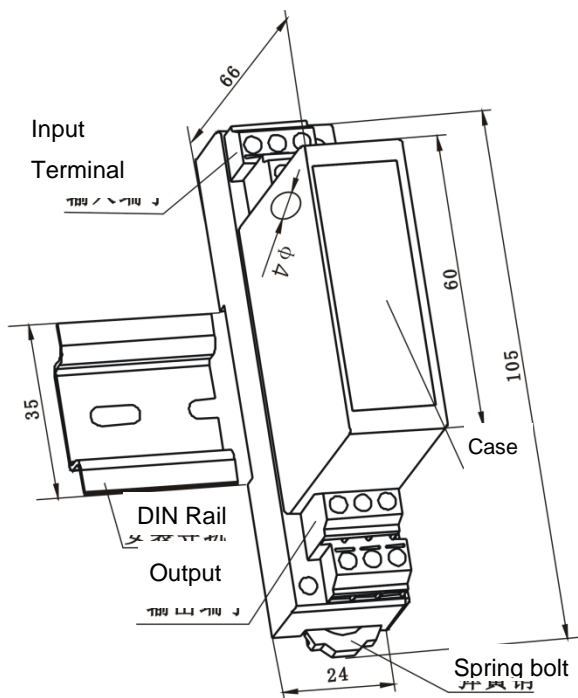


**Example 1:** CYCS11-15WS4-0.1-1A, AC Current sensor with  
Tracing output voltage: 5V AC  
Power supply:  $\pm 12V$  DC  
Rated input current: 0 -1A AC

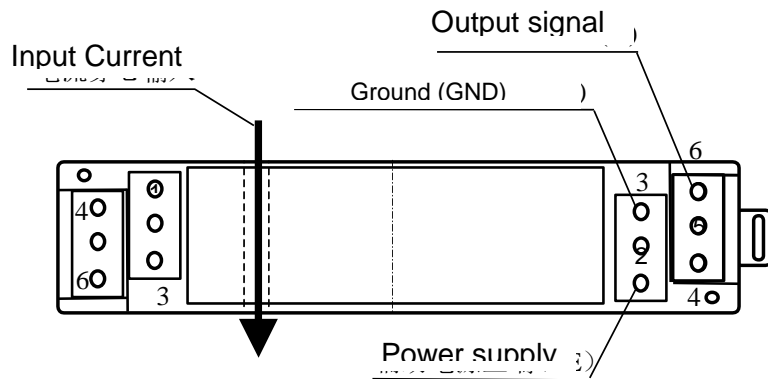
**Example 2:** CYCS11-32WS4-0.2-1A, AC Current sensor with  
Output signal: 0-5V DC  
Power supply: +12V DC  
Rated input current: 0-1A AC

**Example 3:** CYCS11-54WS4-0.5-1A, AC Current sensor with  
Output signal: 4-20mA DC  
Power supply: +24V DC  
Rated input current: 0 -1A AC

### DIMENSIONS (mm)

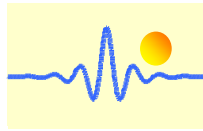


Dimensions: 105mm x 24mm x 66mm



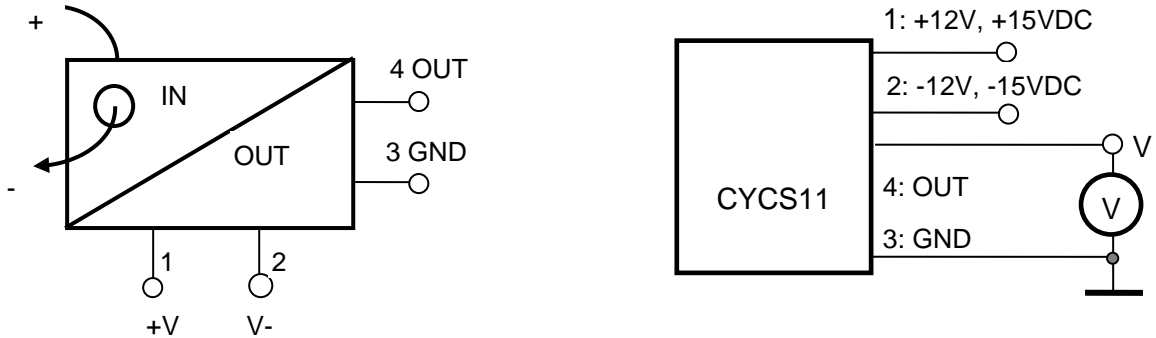
**View of A Direction**





## CONNECTIONS

### Wiring of Terminals for tracing voltage output:

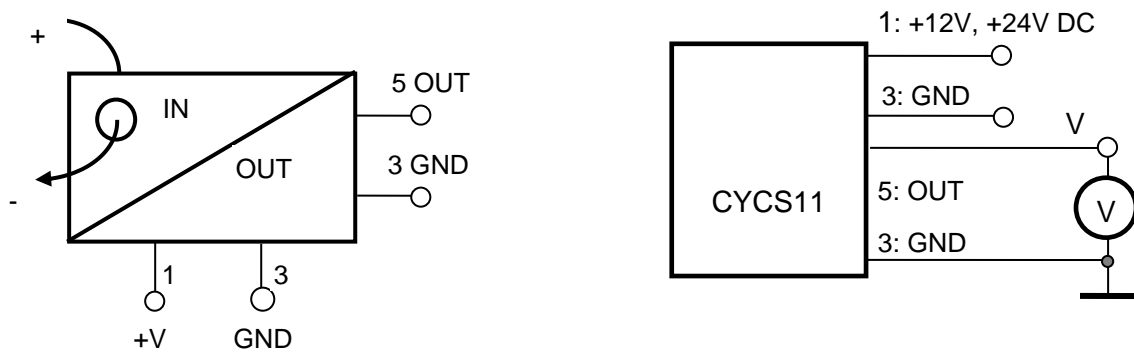


1, 2:  $\pm 12V, \pm 15V$  power supply; 3: GND; 4: tracing voltage output; 5,6: NC

### Relation between Input and Output:

Sensor CYCS11-15WS4-0.1-1A	
Input current (A)	Output voltage (V)
-1	-5
-0.5	-2.5
0	0
0.5	2.5
1	5

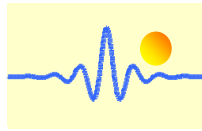
### Wiring of Terminals for DC Voltage Output:



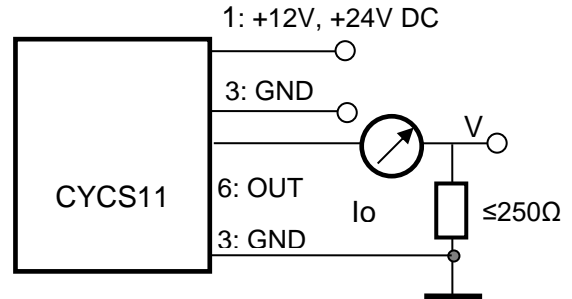
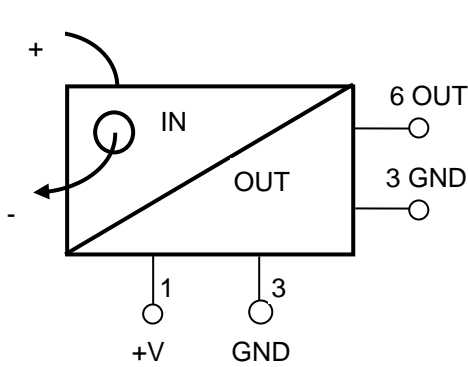
1: +12V, +24V Power Supply; 3: GND; 5: Voltage Output; 2,4,6: NC

### Relation between Input and Output:

Sensor CYCS11-32WS4-0.2-1A	
Input current (A)	Output voltage (V)
0	0
0.25	1.25
0.5	2.5
0.75	3.75
1	5



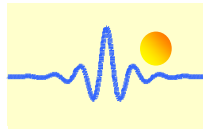
**Wiring of Terminals for DC Current Output:**



1: +12V, +24V Power Supply;      3: GND;      6: Current output;      2,4,5: NC

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

Sensor CYCS11-54WS4-0.5-1A		
Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	4	1
0.25	8	2
0.5	12	3
0.75	16	4
1	20	5



## AC Current Sensor CYCS11A-xnWS4

The **CYCS11A-xnWS4** AC current Sensor/Transducer works according electro-magnetic induction and is designed for applications to measurement and monitoring of single phase AC current. The output current of this transducer is proportional to the average effective value (RMS) of input AC current or reflects the input current wave. They are suitable for general applications such as fixed frequency voltage supplies etc.

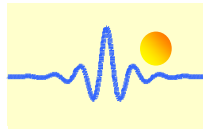
### Specifications

Rated input current AC	0.5A, 1A, 2A, 3A, 4A, 5A, 6A, 7A, 8A AC
Linear measuring range	0 - 1.2 times of rated input current
Overload capacity	30 times of rated input current, 5s
Input frequency	25Hz ~ 5kHz
Output signals	0-20mADC, 4-20mADC
Measuring accuracy	0.5%
Load capacity	6V
Response time	300~350ms
Thermal drift	Output 0-20mA : 300ppm/°C; Output 4-20mA : 350ppm/°C
Power supply	+12VDC, +24VDC, 165V~265VAC, 230V~360VDC
Static current	13mA
Isolation	Isolation between input, output and power supply
Isolation voltage	Input-Output : 2.5 kV DC, 1min, Supply-Input : 2.5 kV DC, 1min Output-Supply : 1.5kV ~2.5kV, 1 min
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
Relative humidity	10% ~ 90%
Protection of Case	IP20
Material of Case	ABS (According to UL94V-0)
Mounting	DIN Rail
Case Style	WS4 with aperture Φ4mm
MTBF	50000h
Unit weight	90g

### Definition of Part number:

CYCS11A	-	x	n	WS4	-	0.5	-	m
(1)		(2)	(3)	(4)		(5)		(6)

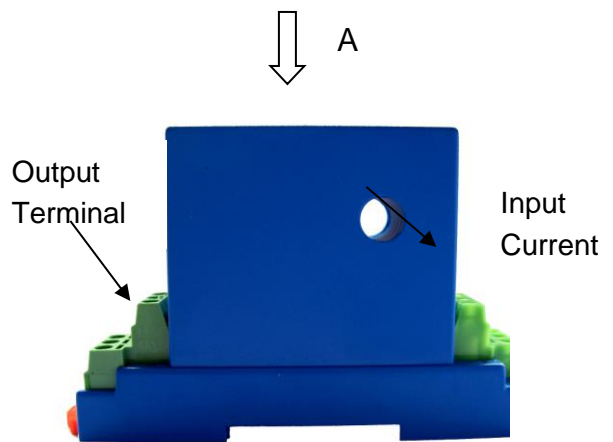
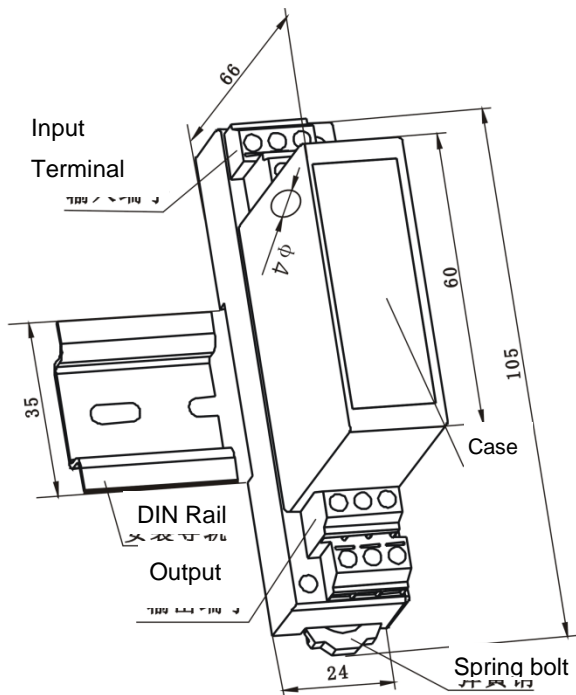
(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (m)
CYCS11A	x=4: 0-20mA DC x=5: 4-20mA DC	n=2: +12V DC n=4: +24V DC n=8: 165~265V AC n=9: 230~360V DC	WS4	0.5%	0.5A, 1A, 2A, 3A, 4A, 5A, 6A, 7A, 8A



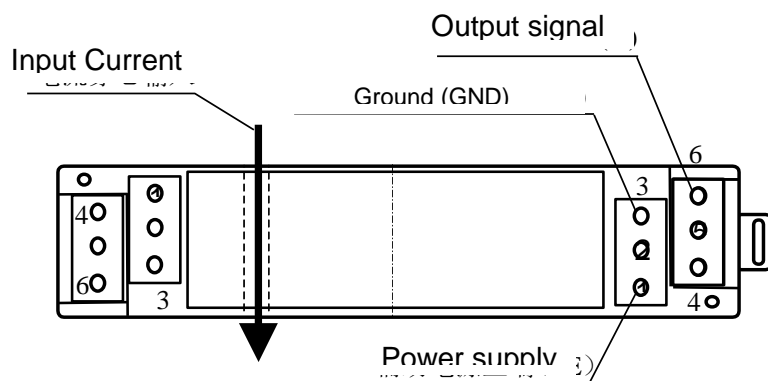
**Example 1:** CYCS11A-54WS4-0.5-1A, AC Current sensor with  
Output signal: 4-20mA DC  
Power supply: +24V DC  
Rated input current: 0 -1A AC

**Example 2:** CYCS11A-48WS4-0.5-1A, AC Current sensor with  
Output current: 0-20mA DC  
Power supply: 165~265V AC  
Rated input current: 0 -1A AC

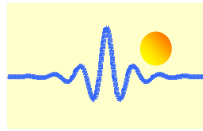
**DIMENSIONS (mm)**



Dimensions: 105mm x 24mm x 66mm

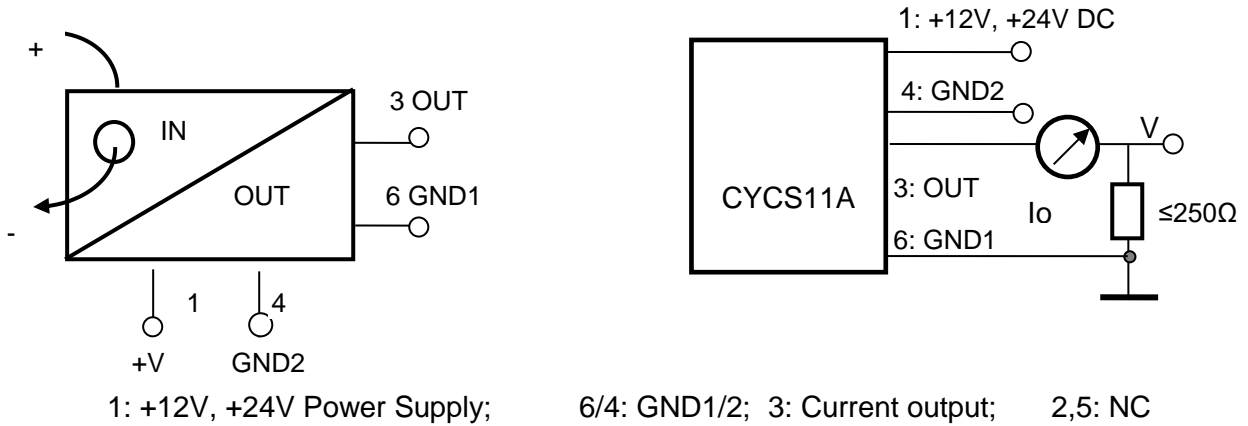


**View of A Direction**



## CONNECTIONS

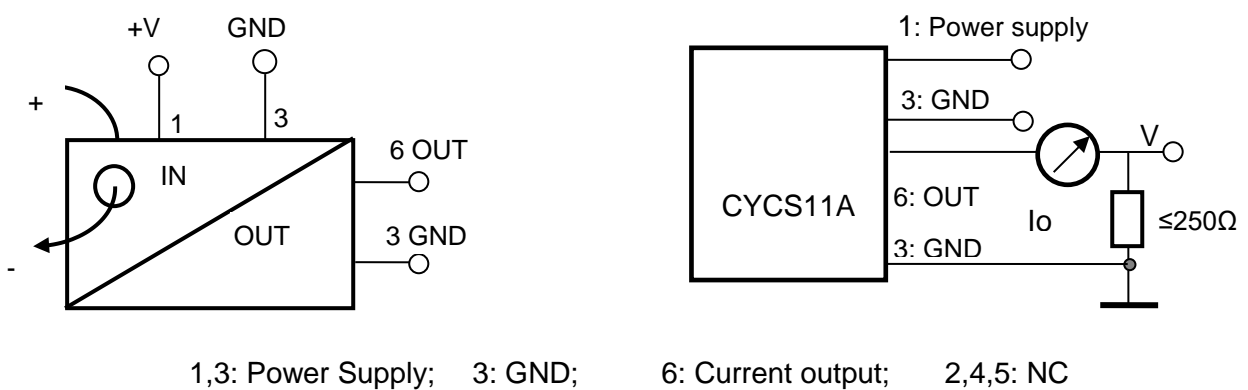
### Wiring of Terminals with Power Supply +12V and +24V:



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

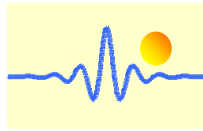
Sensor CYCS11A-54WS4-0.5-1A		
Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	4	1
0.25	8	2
0.5	12	3
0.75	16	4
1	20	5

### Wiring of Terminals with Power Supply 165~265VAC and 230~360VDC:



Relation between Input and Output:

Sensor CYCS11A-48WS4-0.5-1A		
Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	0	0
0.25	5	1.25
0.5	10	2.5
0.75	15	3.75
1	20	5



## AC Current Sensor CYCS11-xnS2

The **CYCS11-xnS2** AC Current Sensor/Transducer works according electro-magnetic induction and is designed for applications to measurement and monitoring of single phase AC current. The output signal (DC voltage or current) of this transducer is proportional to the average effective value (RMS) of input AC current. They are suitable for general applications such as fixed frequency voltage supplies etc.

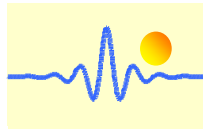
### Specifications

Rated input current range	5A,10A,15A,25A
Frequency of Input current	Typ. 50-60Hz, max. 5kHz
Output signal	5V (tracing), 0-5VDC, 0-20mA, 4-20mA, 0-10V DC
Power supply	+12V, +15V, +24V DC
Measuring accuracy	0.5%
Isolation	between input, output and power supply
Load resistance	≥2kΩ for voltage output, ≤250Ω for current output
Isolation withstanding voltage	2.5 kV DC, 1min, leakage current 1mA
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
Relative humidity	10% ~ 90%
Response time	≤400ms
Overload capacity	20 times
Quiescent power consumption	360mW – 450mW
Mounting	Din rail
Case style and Window size	S2 with aperture Ø6.5mm

### Definition of Part number:

CYCS11	-	x	n	S2	-	0.5	-	m
(1)		(2)	(3)	(4)		(5)		(6)

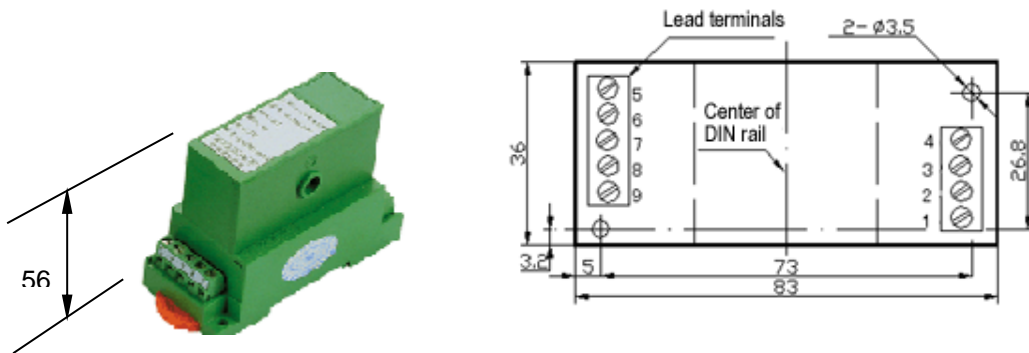
(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (m)
CYCS11	<b>x=1:</b> 5V (Vp, tracing) <b>x=3:</b> 0-5V DC <b>x=4:</b> 0-20mA DC <b>x=5:</b> 4-20mA DC <b>x=8:</b> 0-10V DC	<b>n=2:</b> +12V DC <b>n=3:</b> +15V DC <b>n=4:</b> +24V DC	S2	0.5%	5A,10A,15A,25A



**Example 1:** CYCS11-32S2-0.5-10A, Single Phase AC Current sensor with  
Output signal: 0-5V DC  
Power supply: +12V DC  
Rated input current: 10A AC/RMS

**Example 2:** CYCS11-54S2-0.5-10A, Single Phase AC Current sensor with  
Output signal: 4-20mA DC  
Power supply: +24V DC  
Rated input current: 100A AC/RMS

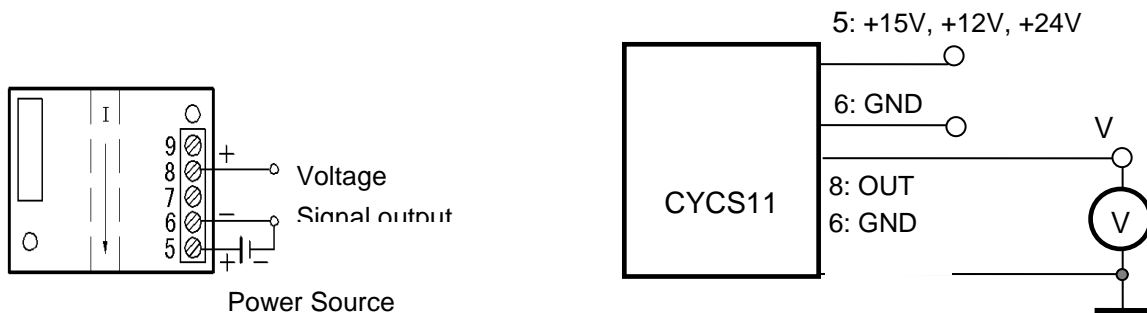
**DIMENSIONS (mm)**



Dimensions: 56mm x 83mm x 36mm  
Aperture: Ø6.5mm

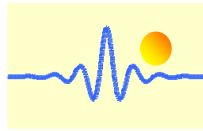
**CONNECTIONS**

**Wiring of Terminals for voltage output:**



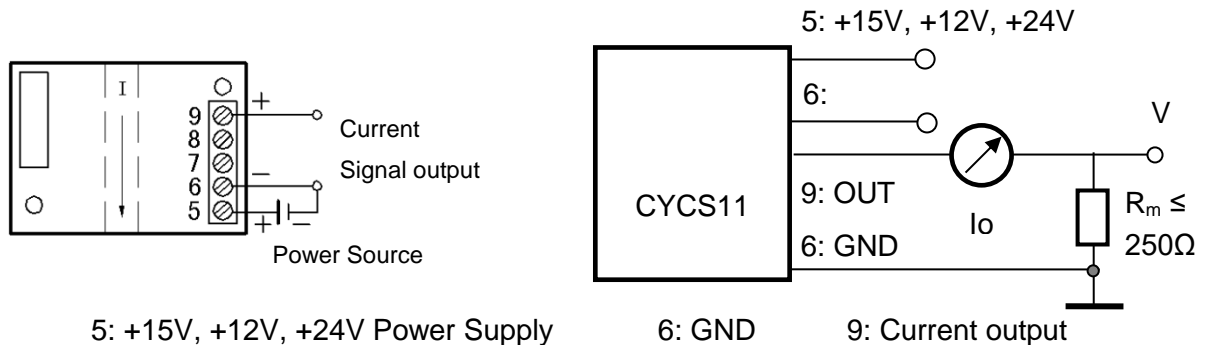
5: +15V, +12V, +24V Power Supply      6: GND      8: Voltage output

Relation between Input and Output:



Sensor CYCS11-32S2-0.5-10A	
Input current (A)	Output voltage (V)
0	0
2.5	1.25
5	2.5
7.5	3.75
10	5

### Wiring of Terminals for Current Output:



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

Sensor CYCS11-54S2-0.5-10A		
Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	4	1
2.5	8	2
5	12	3
7.5	16	4
10	20	5

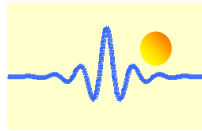
### Application:

- Multi-point current sensing and control panels
- Monitor lighting elements
- Monitor heating elements
- Remote current sensing
- Monitor motor faults

### Notice:

1. The conductor carrying the input current should pass through the center of the aperture as perpendicularly as possible.
2. Make sure that the polarities are in right connection. The output and the power supply must be common grounded at terminal 6.
3. If a meter is used to calibrate the output of the transducer, please make sure that the accuracy of the meter is higher than the transducer.





## AC Current Sensor CYCS11-xnWS9

The **CYCS11-xnWS9** AC current Sensor/Transducer works according electro-magnetic induction and is designed for applications to measurement and monitoring of single phase AC current. The output signal (voltage or current) of this transducer is proportional to the average effective value (RMS) of input AC current or reflects the input current wave. They are suitable for general applications such as fixed frequency voltage supplies etc.

### Specifications

Rated input current AC	5A, 10A, 15A, 20A, 25A, 30A, 35A, 40A, 45A, 50A AC
Linear measuring range	0 - 1.2 times of rated input current
Overload capacity	30 times of rated input current, 5s
Input frequency	25Hz ~ 5kHz
Output signals	Tracing voltage 5VAC, 0-5VDC, 0-10VDC, 0-20mADC, 4-20mADC
Measuring accuracy	Tracing voltage: 0.1%; DC voltage output: 0.2%; DC current output: 0.5%
Load capacity	voltage output: 5mA; current output: 6V
Response time	Tracing output: 15 $\mu$ s ; DC voltage and current output : 300ms
Thermal drift	Tracing voltage: 50ppm/ $^{\circ}$ C; DC voltage output: 150ppm/ $^{\circ}$ C DC current output: 300-350ppm/ $^{\circ}$ C
Power supply	$\pm$ 12VDC, $\pm$ 15VDC, +12VDC, +24VDC
Static current	Voltage output: 3-5mA; Current output: 3-7mA
Isolation	Isolation between input and output, power supply at the output
Isolation voltage	2.5 kV DC, 1min
Operating temperature	-10 $^{\circ}$ C ~ +60 $^{\circ}$ C
Storage temperature	-25 $^{\circ}$ C ~ + 70 $^{\circ}$ C
Relative humidity	10% ~ 90%
Protection of Case	IP20
Material of Case	ABS (According to UL94V-0)
Mounting	DIN Rail
Case Style	WS9 with aperture $\Phi$ 9mm
MTBF	50000h
Unit weight	90g

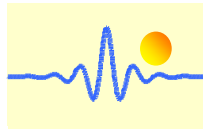
### Definition of Part number:

CYCS11	-	x	n	WS9	-	0.2	-	m
--------	---	---	---	-----	---	-----	---	---

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

(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (m)
CYCS11	<b>x=1:</b> 5VAC tracing**	<b>n=5:</b> $\pm$ 12V DC <b>n=6:</b> $\pm$ 15V DC	WS9	0.1% 0.2% 0.5%	5A, 10A, 15A, 20A, 25A, 30A, 35A, 40A, 45A, 50A AC
	<b>x=3:</b> 0-5V DC	<b>n=2:</b> +12V DC			
	<b>x=4:</b> 0-20mA DC	<b>n=4:</b> +24V DC			
	<b>x=5:</b> 4-20mA DC				
	<b>x=8:</b> 0-10V DC	<b>n=4:</b> +24V DC			

**Example 1:** CYCS11-15WS9-0.1-10A, AC Current sensor with Tracing output voltage: 5V AC

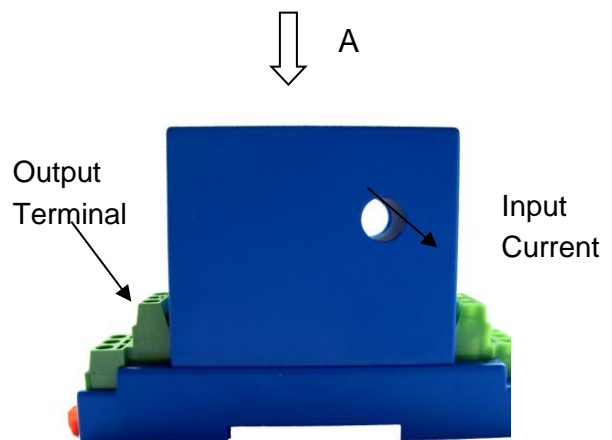
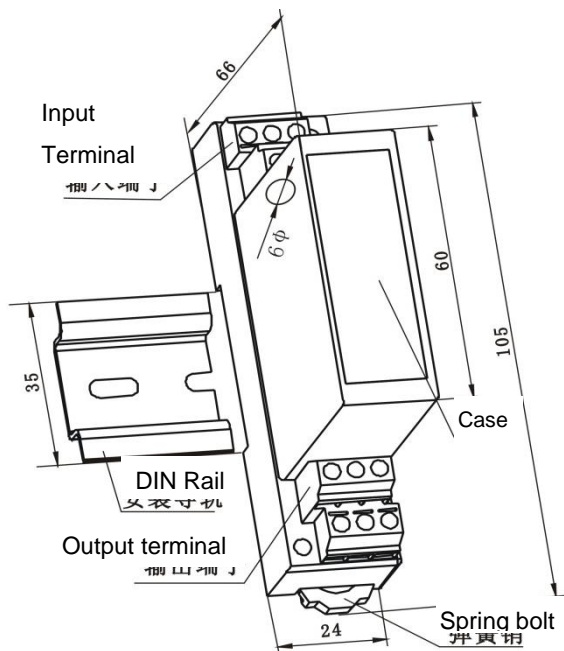


Power supply:  $\pm 12V$  DC  
Rated input current: 0 -10A AC

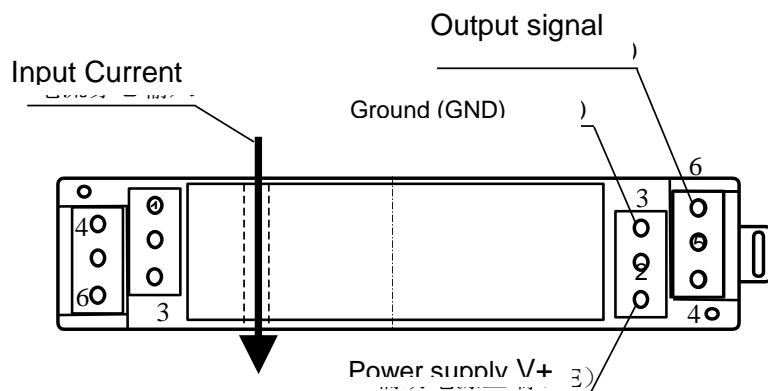
**Example 2:** CYCS11-32WS9-0.2-10A, AC Current sensor with  
Output signal: 0-5V DC  
Power supply: +12V DC  
Rated input current: 0-10A AC

**Example 3:** CYCS11-54WS9-0.5-10A, AC Current sensor with  
Output signal: 4-20mA DC  
Power supply: +24V DC  
Rated input current: 0 -10A AC

### DIMENSIONS (mm)

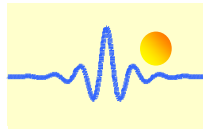


Dimensions: 105mm x 24mm x 66mm

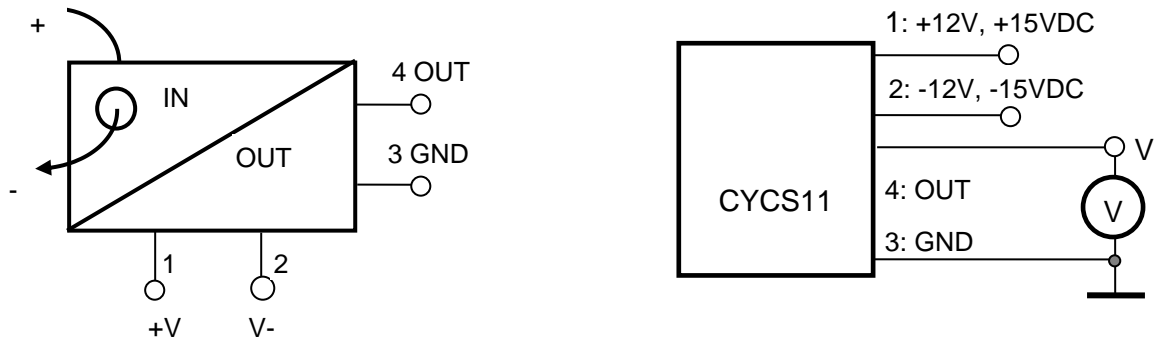


**View of A Direction**

### CONNECTIONS



**Wiring of Terminals for tracing voltage output:**

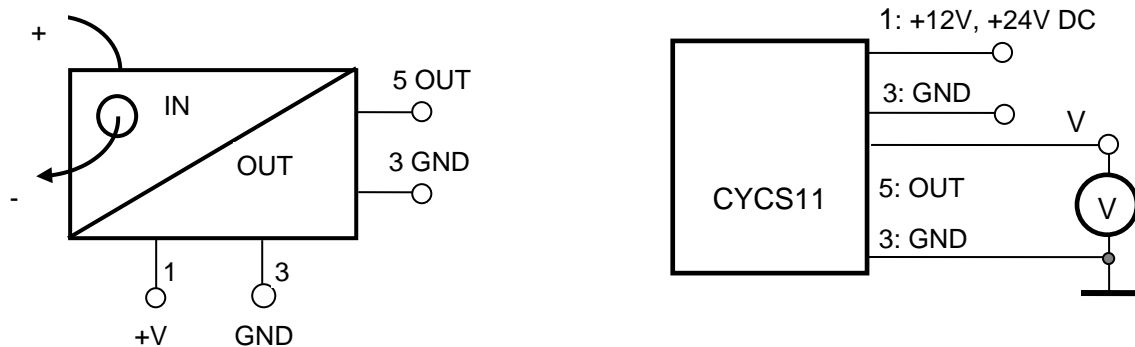


1, 2:  $\pm 12V, \pm 15V$  power supply; 3: GND; 4: tracing voltage output; 5,6: NC

**Relation between Input and Output:**

Sensor CYCS11-15WS9-0.1-10A	
Input current (A)	Output voltage (V)
-10	-5
-5	-2.5
0	0
5	2.5
10	5

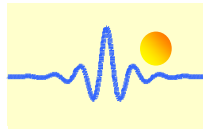
**Wiring of Terminals for DC voltage output:**



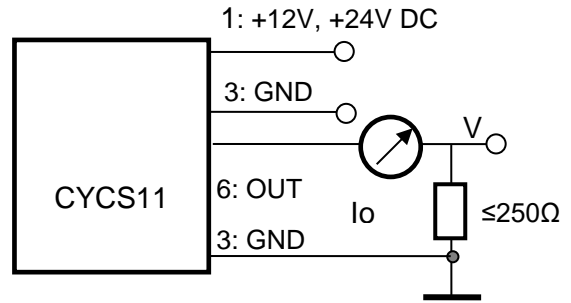
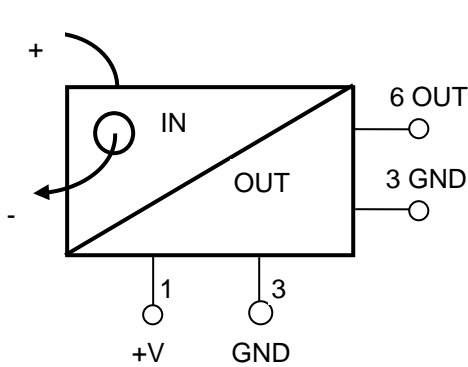
1: +12V, +24V Power Supply; 3: GND; 5: Voltage Output; 2,4,6: NC

**Relation between Input and Output:**

Sensor CYCS11-32WS9-0.2-10A	
Input current (A)	Output voltage (V)
0	0
2.5	1.25
5	2.5
7.5	3.75
10	5



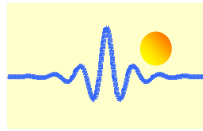
**Wiring of Terminals for DC Current Output:**



1: +12V, +24V Power Supply;      3: GND;      6: Current output;      2,4,5: NC

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

Sensor CYCS11-54WS9-0.5-10A		
Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	4	1
2.5	8	2
5	12	3
7.5	16	4
10	20	5



## AC Current Sensor CYCS11A-xnWS9

The **CYCS11A-xnWS9** AC current Sensor/Transducer works according electro-magnetic induction and is designed for applications to measurement and monitoring of single phase AC current. The output current of this transducer is proportional to the average effective value (RMS) of input AC current or reflects the input current wave. They are suitable for general applications such as fixed frequency voltage supplies etc.

### Specifications

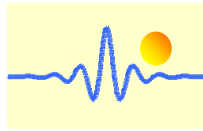
Rated input current AC	5A, 10A, 15A, 20A, 25A, 30A, 35A, 40A, 45A, 50A AC
Linear measuring range	0 - 1.2 times of rated input current
Overload capacity	30 times of rated input current, 5s
Input frequency	25Hz ~ 5kHz
Output signals	0-20mADC, 4-20mADC
Measuring accuracy	0.5%
Load capacity	6V
Response time	300~350ms
Thermal drift	Output 0-20mA : 300ppm/°C; Output 4-20mA : 350ppm/°C
Power supply	+12VDC, +24VDC, 165V~265VAC, 230V~360VDC
Static current	13mA
Isolation	Isolation between input, output and power supply
Isolation voltage	Input-Output : 2.5 kV DC, 1min, Supply-Input : 2.5 kV DC, 1min Output-Supply : 1.5kV ~2.5kV, 1 min
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
Relative humidity	10% ~ 90%
Protection of Case	IP20
Material of Case	ABS (According to UL94V-0)
Mounting	DIN Rail
Case Style	WS9 with aperture Φ9mm
MTBF	50000h
Unit weight	90g

### Definition of Part number:

CYCS11A	-	x	n	WS9	-	0.5	-	m
---------	---	---	---	-----	---	-----	---	---

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

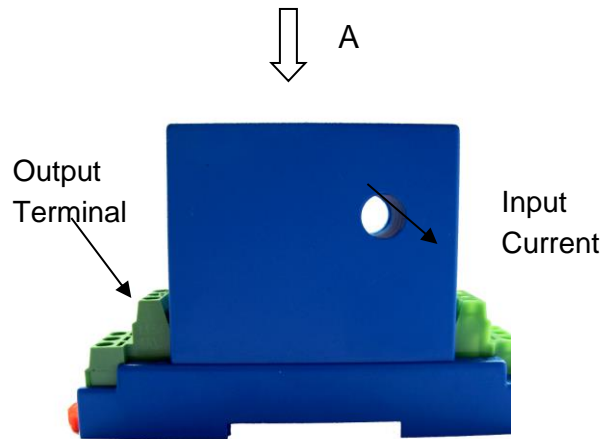
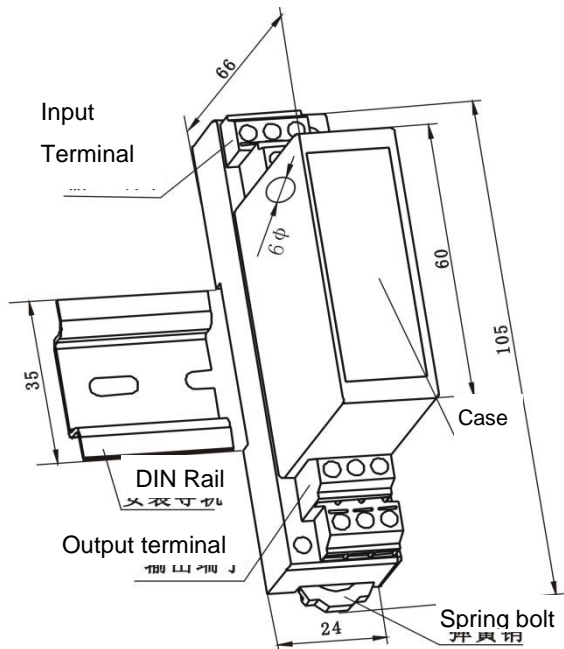
(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (m)
CYCS11A	x=4: 0-20mA DC x=5: 4-20mA DC	n=2: +12V DC n=4: +24V DC n=8: 165~265V AC n=9: 230~360V DC	WS9	0.5%	5A, 10A, 15A, 20A, 25A, 30A, 35A, 40A, 45A, 50A AC



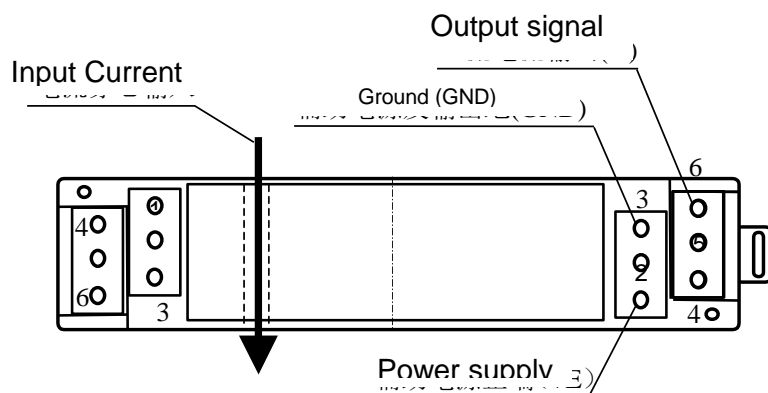
**Example 1:** CYCS11A-54WS9-0.5-10A, AC Current sensor with  
Output signal: 4-20mA DC  
Power supply: +24V DC  
Rated input current: 0 -10A AC

**Example 2:** CYCS11A-48WS9-0.5-10A, AC Current sensor with  
Output current: 0-20mA DC  
Power supply: 165~265V AC  
Rated input current: 0 -10A AC

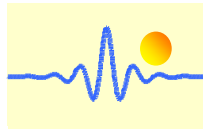
### DIMENSIONS (mm)



Dimensions: 105mm x 24mm x 66mm

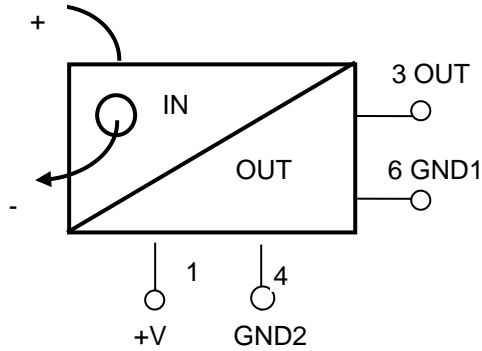


**View of A Direction**

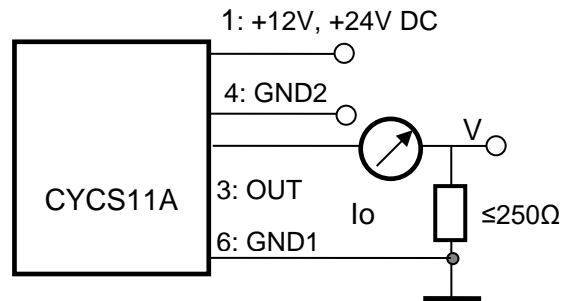


## CONNECTIONS

### Wiring of Terminals with Power Supply +12V and +24V:



1: +12V, +24V Power Supply;

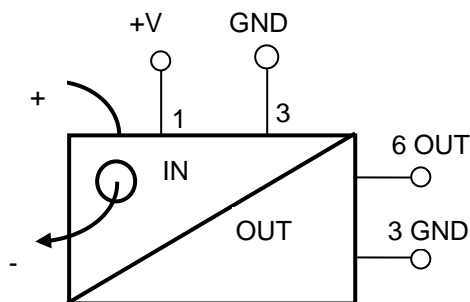


6/4: GND1/2; 3: Current output; 2,5: NC

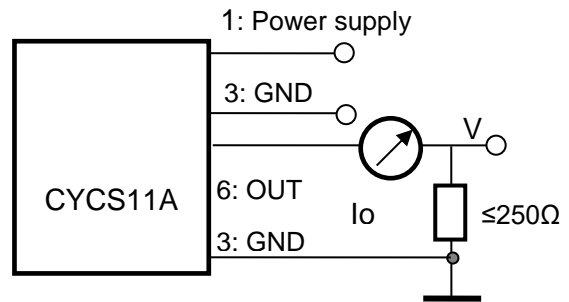
Relation between Input and Output (for  $R_m=250\ \Omega$ ):

Sensor CYCS11A-54WS9-0.5-10A		
Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	4	1
2.5	8	2
5	12	3
7.5	16	4
10	20	5

### Wiring of Terminals with Power Supply 165~265VAC and 230~360VDC:



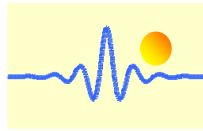
1,3: Power Supply; 3: GND;



6: Current output; 2,4,5: NC

Relation between Input and Output:

Sensor CYCS11A-48WS9-0.5-10A		
Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	0	0
2.5	5	1.25
5	10	2.5
7.5	15	3.75
10	20	5



## AC Current Sensor CYCS11-LTAD

This current sensor series is based on electromagnetic induction principle and has good stability for measuring 1A ~ 100A AC current and high isolation between primary current and secondary output signal. This sensor can be used for measurement of different AC currents.

### Product Characteristics

- Excellent accuracy
- Very good linearity
- Less power consumption
- Window structure
- Electrically isolating the output of the transducer from the current carrying conductor
- No insertion loss
- Current overload capability

### Applications

- Various power supply
- Communication systems
- Leakage current measurement
- Numerical controlled machine tools
- Current difference measurement
- Electric circuits measurement
- Microcomputer monitoring
- Electric power network monitoring

### Electrical Data

Primary Nominal Current $I_r$ AC (A)	Measuring Range AC (A)	Output Current DC (mA)	Aperture Diameter (mm)	Part number
1	$\pm 2$	4-20mA DC $\pm 0.5\%$	$\varnothing 20.0$	CYCS11-LTAD01A
5	$\pm 10$			CYCS11-LTAD05A
10	$\pm 20$			CYCS11-LTAD10A
20	$\pm 40$			CYCS11-LTAD20A
30	$\pm 60$			CYCS11-LTAD30A
40	$\pm 80$			CYCS11-LTAD40A
50	$\pm 100$			CYCS11-LTAD50A
60	$\pm 120$			CYCS11-LTAD60A
75	$\pm 150$			CYCS11-LTAD75A
100	$\pm 200$			CYCS11-LTAD100A

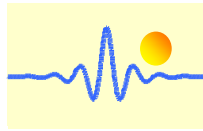
The primary nominal current can be selected between 1A und 100A AC

Supply Voltage	$V_{cc} = +24VDC \pm 5\%$
Current Consumption	$I_c < 20mA$
Galvanic Isolation, 50/60Hz, 1min:	2.5kV
Isolation resistance @ 500 VDC	$> 500 M\Omega$

### Accuracy and Dynamic performance data

Accuracy at $I_r$ , $T_A=25^\circ C$ (without offset),	$X < \pm 0.5\%$
Linearity from 0 to $I_r$ , $T_A=25^\circ C$ ,	$E_L < 0.5\% FS$
Electric Offset Current, $T_A=25^\circ C$ ,	$V_{oe} < +4mA$
Thermal Drift of Offset Current,	$V_{ot} < \pm 0.05mA/^\circ C$
Response Time at 90% of $I_P$ ( $f=1k Hz$ )	$t_r < 20ms$
Frequency range:	50~1000Hz



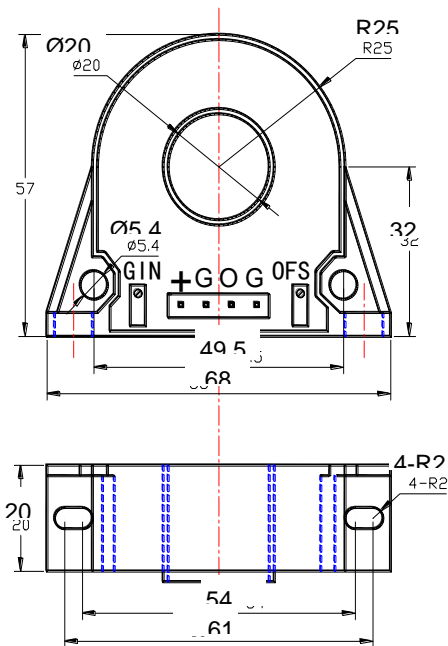


### General Data

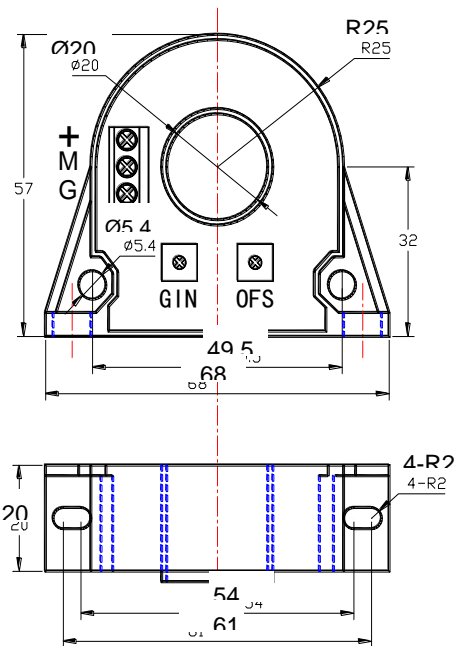
Ambient Operating Temperature,  
Ambient Storage Temperature,

$T_A = -40^{\circ}\text{C} \sim +85^{\circ}\text{C}$   
 $T_S = -40^{\circ}\text{C} \sim +125^{\circ}\text{C}$

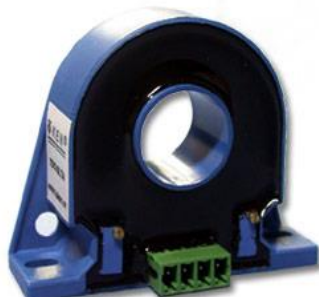
### PIN Definition and Dimensions



+: +24V  
G: GND  
O: OUT  
G: GND

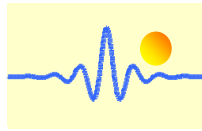


+: +24V  
M: OUT  
G: GND



### 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 primary cable (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



## Self Power AC Current Sensor CYCS11-x0S3

This device **CYCS11-x0S3** is a self-powered 1-element ac current transducer. The input and outputs are electrically isolated from each other. It needs no external power supply. Its ac current input is achieved by passing through the aperture Ø20mm of the case. The output is voltage 0-5V DC, 0-10VDC or tracing 5V. It can be widely applied to various measuring and controlling systems such as communication system, electrical power system, railway and various industrial control systems.

### Specifications

Rated input current range	2A, 5A, 10A, 20A, 50A, 75A, 100A, 150A, 200A
Frequency of Input current	Typ. 50-60Hz, max. 5kHz
Output signal	0-5V DC, 0-10VDC
Measuring accuracy	1.0%
Linearity error	0.2%
Isolation	between input and output
Load resistance	≥1MΩ
Isolation withstanding voltage	2.5 kV DC, 1min, leakage current 1mA
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
Relative humidity	10% ~ 90%
Response time	≤500ms
Overload capacity	20 times
Frequency range	45 ~ 65Hz
Mounting	Din rail/screw
Case style and Window size	S3 with aperture Ø20mm

### Definition of Part number:

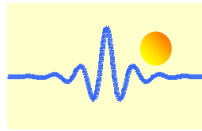
CYCS11	-	x	0	S3	-	1.0	-	m
(1)		(2)	(3)	(4)		(5)		(6)

(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (m)
CYCS11	x=3: 0-5V DC	0: none	S3	1.0%	2A, 5A, 10A,20A, 50A, 75A,100A, 150A, 200A
	x=8: 0-10V DC				20A, 50A, 75A 100A, 150A, 200A

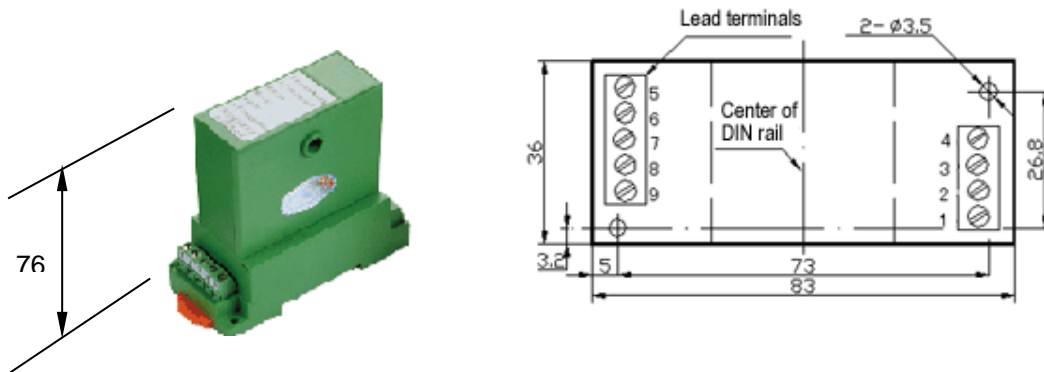
CYCS11-30S3: Output voltage 0-5V DC, input current 2A ~ 200A

CYCS11-80S3: Output voltage 0-10V DC, input current 20A ~ 200A

**Typical Example:** CYCS11-30S3-1.0-50A Split Core Self Power AC Current sensor with  
Output signal: 0-5V DC  
Rated input current: 50A AC/RMS, Accuracy: 1.0%



## Dimensions (mm)

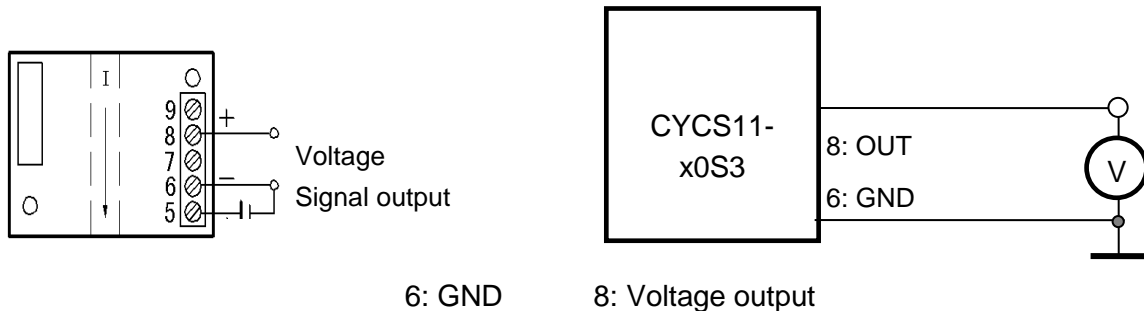


Dimensions: 76mm x 83mm x 36mm

Aperture: Ø20mm

## Connection

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.

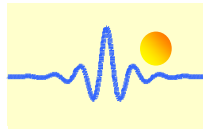


## Application:

1. Multi-point current sensing and control panels
2. Monitor motor faults
3. Monitor heating elements
4. Monitor lighting elements

## Notice:

1. If you want to open/ close the split core, press and move the orange bolt to the open/close direction.
2. The conductor carrying the input current should pass through the center of the aperture as perpendicularly as possible. And then lock the bolt.
3. Make sure that the polarities are in right connection.
4. If a meter is used to calibrate the output of the transducer, please make sure that the accuracy of the meter is higher than the transducer.



## Split Core Self Power AC Current Sensor CYCS11-x0S4

This device **CYCS11-x0S4** is a self-powered 1-element ac current transducer. The input and outputs are electrically isolated from each other. It needs no external power supply. Its ac current input is achieved by passing through the aperture of the case. The output is 0-5V dc or 0-10V dc voltage. It can be applied widely to various measuring and controlling systems such as communication system, electrical power system, railway and various industrial control systems.

### Specifications

Rated input current range	20A, 50A, 75A, 100A, 150A, 200A
Frequency of Input current	Typ. 50-60Hz, max. 5kHz
Output signal	0-5V, 0-10V, tracing voltage 5V
Measuring accuracy	1.0%
Isolation	between input and output
Load resistance	≥3MΩ
Isolation withstanding voltage	2.5 kV DC, 1min, leakage current 1mA
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
Relative humidity	10% ~ 90%
Response time	≤500ms
Overload capacity	20 times
Frequency range	45 ~ 65Hz
Mounting	Din rail/screw
Case style and Window size	S4 with aperture Ø31mm

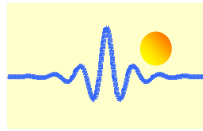
### Definition of Part number:

CYCS11	-	x	0	S4	-	1.0	-	m
(1)		(2)	(3)	(4)		(5)		(6)

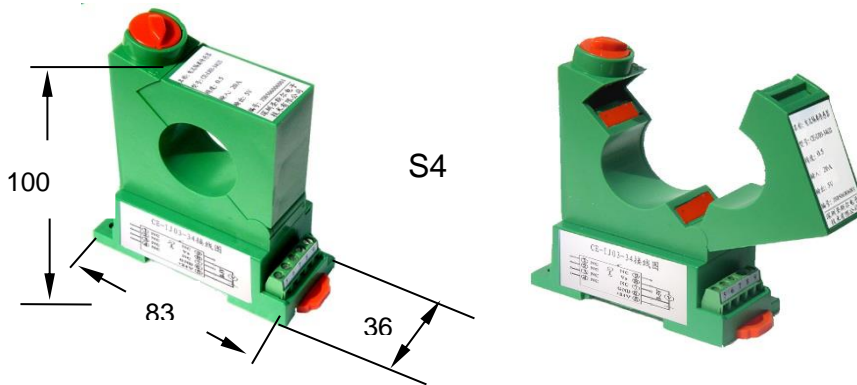
(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (m)
CYCS11	<b>x=1:</b> tracing voltage 5V <b>x=3:</b> 0-5V DC	<b>0:</b> none	S4	1.0%	20A, 50A, 75A, 100A, 150A, 200A
	<b>x=8:</b> 0-10V DC				100A, 150A, 200A

CYCS11-30S4: Output voltage 0-5V DC, input current 20A, 50A and 75A, 100A, 150A and 200A  
 CYCS11-80S4: Output voltage 0-10V DC, input current 100A, 150A and 200A

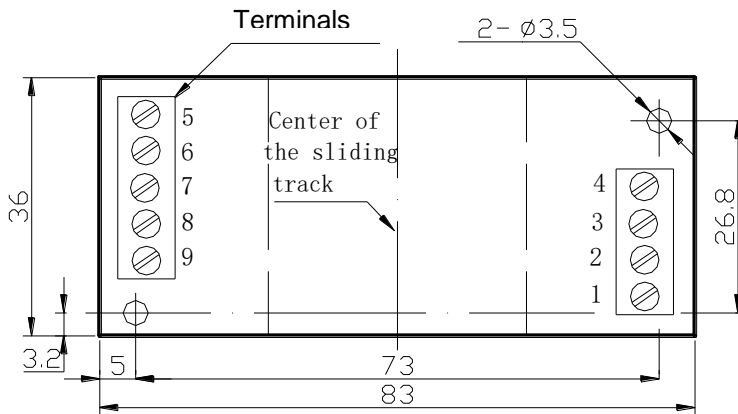
**Typical Example:** CYCS11-30S4-1.0-50A Split Core Self Power AC Current sensor with  
 Output signal: 0-5V DC  
 Rated input current: 50A AC/RMS  
 Accuracy: 1.0%



**DIMENSIONS (mm)**



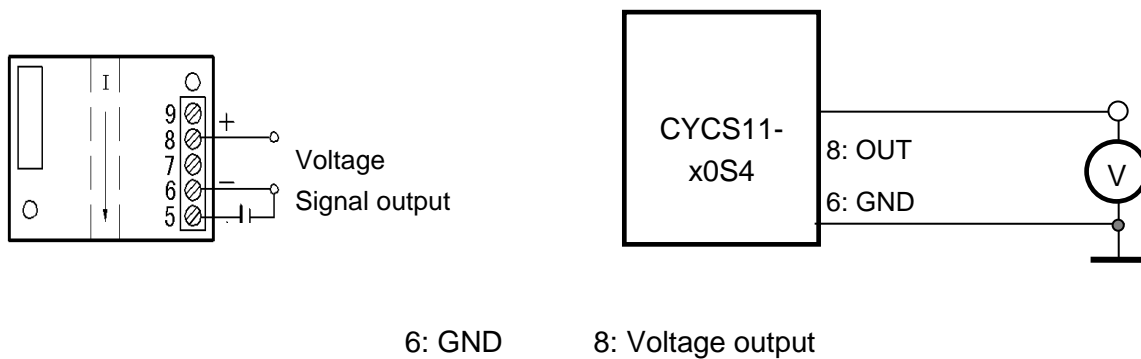
Dimensions: 100mm x 83mm x 36mm  
Aperture: Ø31 mm



Mounting Dimensions

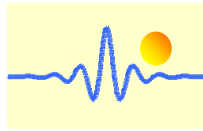
**CONNECTION**

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.



6: GND

8: Voltage output

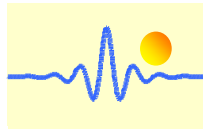


**Applications:**

- Multi-point current sensing and control panels
- Monitor motor faults
- Monitor heating elements
- Monitor lighting elements

**Notice:**

1. If you want to open/ close the split core, press and move the orange bolt to the open/close direction
2. The conductor carrying the input current should pass through the center of the aperture as perpendicularly as possible. And then lock the bolt.
3. Make sure that the polarities are in right connection.
4. If a meter is used to calibrate the output of the transducer, please make sure that the accuracy of the meter is higher than the transducer.



## AC Current Sensor CYCS11-xnWF2

The **CYCS11-xnWF2** AC current Sensor/Transducer works according electro-magnetic induction and is designed for applications to measurement and monitoring of single phase AC current. The output signal (voltage or current) of this transducer is proportional to the average effective value (RMS) of input AC current or reflects the input current wave. They are suitable for general applications such as fixed frequency voltage supplies etc.

### Specifications

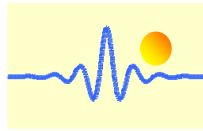
Rated input current AC	30A, 50A, 100A, 150A, 200A, 250A, 300A, 350A, 400A AC
Linear measuring range	0 - 1.2 times of rated input current
Overload capacity	30 times of rated input current, 5s
Input frequency	25Hz ~ 5kHz
Output signals	Tracing voltage 5VAC, 0-5VDC, 0-10VDC, 0-20mADC, 4-20mADC
Measuring accuracy	Tracing voltage: 0.1%; DC voltage output: 0.2%; DC current output: 0.5%
Load capacity	voltage output: 5mA; current output: 6V
Response time	Tracing output:15 $\mu$ s ; DC voltage and current output : 300ms
Thermal drift	Tracing voltage: 150ppm/ $^{\circ}$ C; DC voltage output: 200ppm/ $^{\circ}$ C DC current output: 300-350ppm/ $^{\circ}$ C
Power supply	$\pm$ 12VDC, $\pm$ 15VDC, +12VDC, +24VDC
Static current	Voltage output: 5mA; Current output: 3-7mA
Isolation	Isolation between input and output, power supply at the output
Isolation voltage	2.5 kV DC, 1min
Operating temperature	-10 $^{\circ}$ C ~ +60 $^{\circ}$ C
Storage temperature	-25 $^{\circ}$ C ~ + 70 $^{\circ}$ C
Relative humidity	10% ~ 90%
Protection of Case	IP20
Material of Case	ABS (According to UL94V-0)
Mounting	DIN Rail
Case Style	WF2 with aperture $\Phi$ 20mm
MTBF	50000h
Unit weight	90g

### Definition of Part number:

CYCS11	-	x	n	WF2	-	0.2	-	m
--------	---	---	---	-----	---	-----	---	---

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

(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (m)
CYCS11	<b>x=1:</b> 5VAC tracing**	<b>n=5:</b> $\pm$ 12V DC <b>n=6:</b> $\pm$ 15V DC	WF2	0.1% 0.2% 0.5%	30A, 50A, 100A, 150A, 200A, 250A, 300A, 350A, 400A AC
	<b>x=3:</b> 0-5V DC	<b>n=2:</b> +12V DC			
	<b>x=4:</b> 0-20mA DC	<b>n=4:</b> +24V DC			
	<b>x=5:</b> 4-20mA DC				
	<b>x=8:</b> 0-10V DC	<b>n=4:</b> +24V DC			

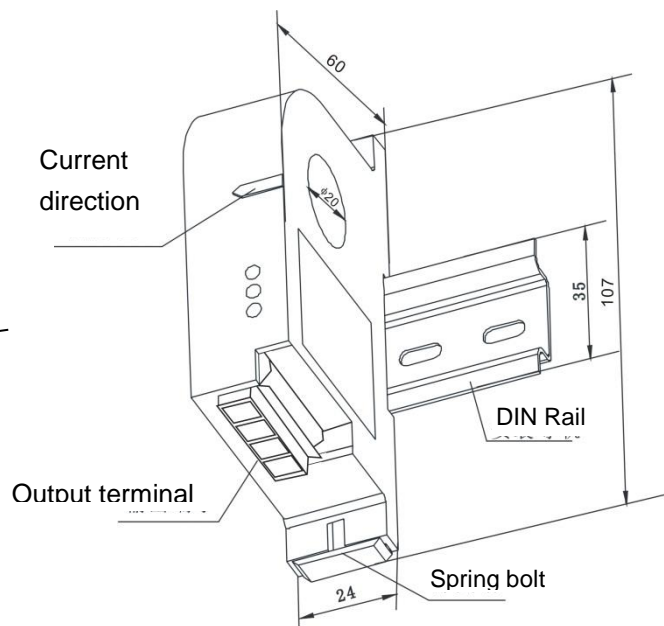
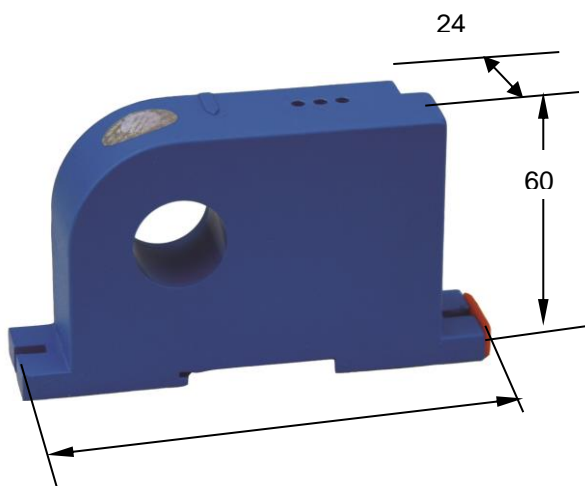


**Example 1:** CYCS11-15WF2-0.1-100A, AC Current sensor with  
Tracing output voltage: 5V AC  
Power supply:  $\pm 12V$  DC  
Rated input current: 0 -100A AC

**Example 2:** CYCS11-32WF2-0.2-100A, AC Current sensor with  
Output signal: 0-5V DC  
Power supply: +12V DC  
Rated input current: 0-100A AC

**Example 3:** CYCS11-54WF2-0.5-100A, AC Current sensor with  
Output signal: 4-20mA DC  
Power supply: +24V DC  
Rated input current: 0 -100A AC

### DIMENSIONS (mm)

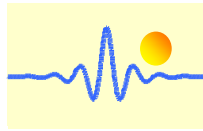


Dimensions: 107x 24 x 60mm, Aperture:  $\varnothing 20$  mm

#### Pin Arrangement:

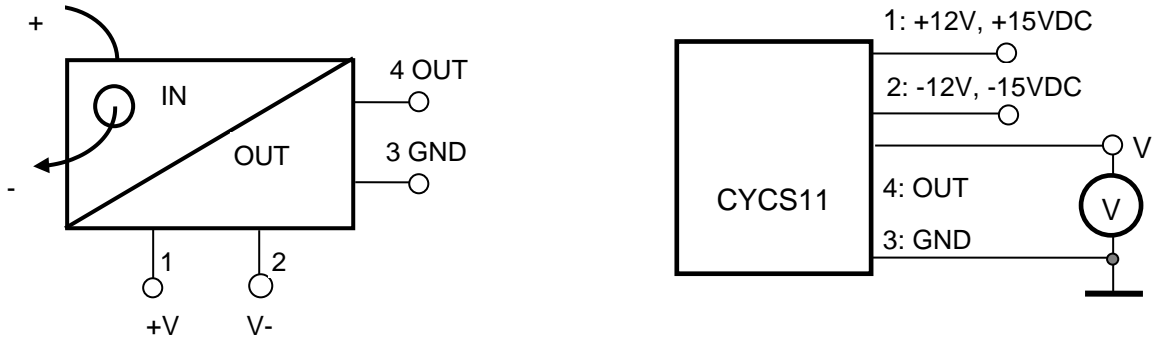
+	V+	-:	V- (or NC)
OUT:	Output	GND:	Ground





## CONNECTIONS

### Wiring of Terminals for tracing voltage output:

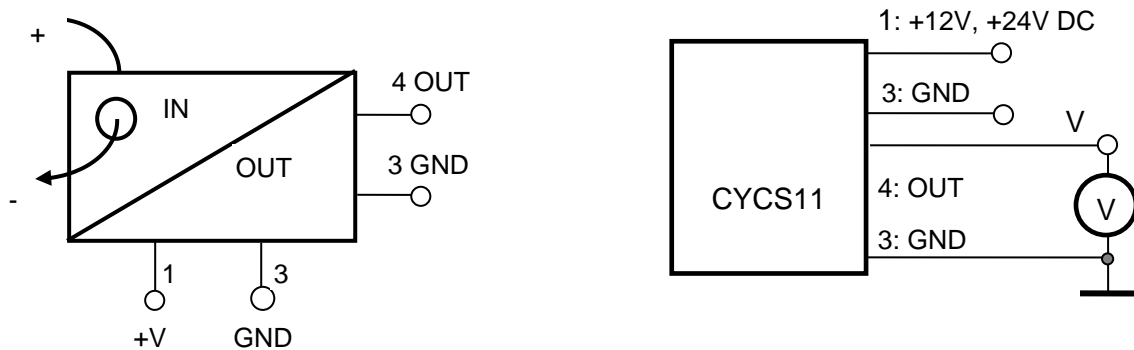


1, 2:  $\pm 12V, \pm 15V$  power supply;    3: GND;    4: tracing voltage output;

### Relation between Input and Output:

Sensor CYCS11-15WF2-0.1-100A	
Input current (A)	Output voltage (V)
-100	-5
-50	-2.5
0	0
50	2.5
100	5

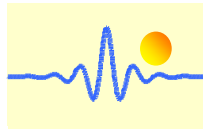
### Wiring of Terminals for DC voltage output:



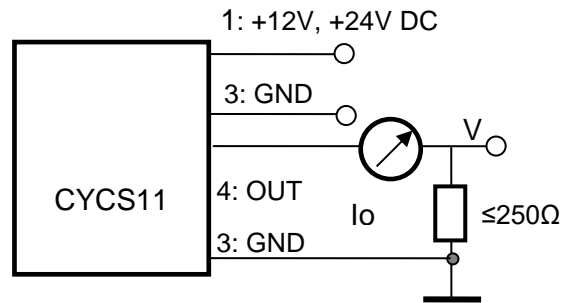
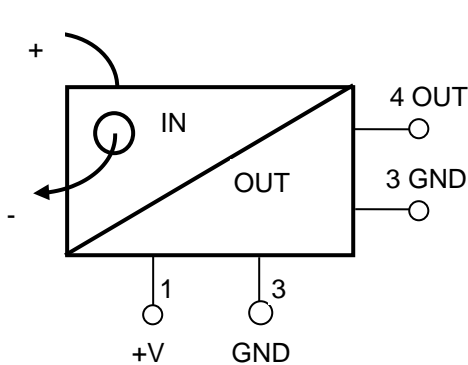
1: +12V, +24V Power Supply;    3: GND;    4: Voltage Output;    2: NC

### Relation between Input and Output:

Sensor CYCS11-32WF2-0.2-10A	
Input current (A)	Output voltage (V)
0	0
25	1.25
50	2.5
75	3.75
100	5



**Wiring of Terminals for DC Current Output:**



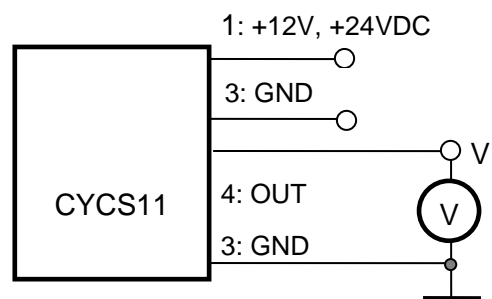
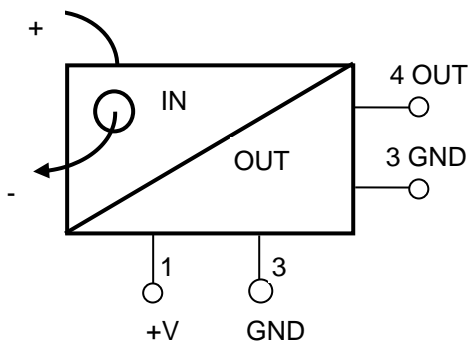
1: +12V, +24V Power Supply;      3: GND;      4: Current output;      2: NC

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

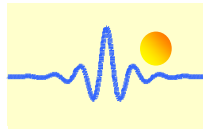
Sensor CYCS11-54WF2-0.5-10A		
Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	4	1
25	8	2
50	12	3
75	16	4
100	20	5

**NOTE**

The power supply for sensors with tracing voltage output is normally  $\pm 12VDC$  and  $\pm 15VDC$ . Custom made sensors with tracing voltage output can be powered with  $+12VDC$  and  $+24VDC$ . The sensor connection is shown in the following:



1: +12V, +24V power supply;      3: GND;      4: tracing voltage output;      2: NC



## AC Current Sensor CYCS11-xnWF3

The **CYCS11-xnWF3** AC current Sensor/Transducer works according electro-magnetic induction and is designed for applications to measurement and monitoring of single phase AC current. The output signal (voltage or current) of this transducer is proportional to the average effective value (RMS) of input AC current or reflects the input current wave. They are suitable for general applications such as fixed frequency voltage supplies etc.

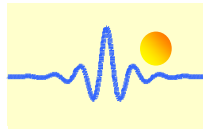
### Specifications

Rated input current AC	50A, 100A, 150A, 200A, 250A, 300A, 350A, 400A, 450A, 500A AC
Linear measuring range	0 - 1.2 times of rated input current
Overload capacity	30 times of rated input current, 5s
Input frequency	25Hz ~ 5kHz
Output signals	Tracing voltage 5VAC, 0-5VDC, 0-10VDC, 0-20mADC, 4-20mADC
Measuring accuracy	Tracing voltage: 0.2%; DC voltage output: 0.2%; DC current output: 0.5%
Load capacity	voltage output: 5mA; current output: 6V
Response time	Tracing output:15 $\mu$ s ; DC voltage and current output : 300ms
Thermal drift	Tracing voltage: 150ppm/ $^{\circ}$ C; DC voltage output: 200ppm/ $^{\circ}$ C DC current output: 300-350ppm/ $^{\circ}$ C
Power supply	$\pm$ 12VDC, $\pm$ 15VDC, +12VDC, +24VDC
Static current	Voltage output: 5mA; Current output: 3-7mA
Isolation	Isolation between input and output, power supply at the output
Isolation voltage	2.5 kV DC, 1min
Operating temperature	-10 $^{\circ}$ C ~ +60 $^{\circ}$ C
Storage temperature	-25 $^{\circ}$ C ~ + 70 $^{\circ}$ C
Relative humidity	10% ~ 90%
Protection of Case	IP20
Material of Case	ABS (According to UL94V-0)
Mounting	DIN Rail
Case Style	WF3 with aperture $\Phi$ 35mm
MTBF	50000h
Unit weight	150g

### Definition of Part number:

CYCS11	-	x	n	WF3	-	0.2	-	m
(1)		(2)	(3)	(4)		(5)		(6)

(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (m)
CYCS11	<b>x=1:</b> 5VAC tracing** <b>x=3:</b> 0-5V DC <b>x=4:</b> 0-20mA DC <b>x=5:</b> 4-20mA DC <b>x=8:</b> 0-10V DC	<b>n=5:</b> $\pm$ 12V DC <b>n=6:</b> $\pm$ 15V DC <b>n=2:</b> +12V DC <b>n=4:</b> +24V DC <b>n=4:</b> +24V DC	WF3	0.2% 0.5%	50A, 100A, 150A, 200A, 250A, 300A, 350A, 400A, 450A, 500A AC

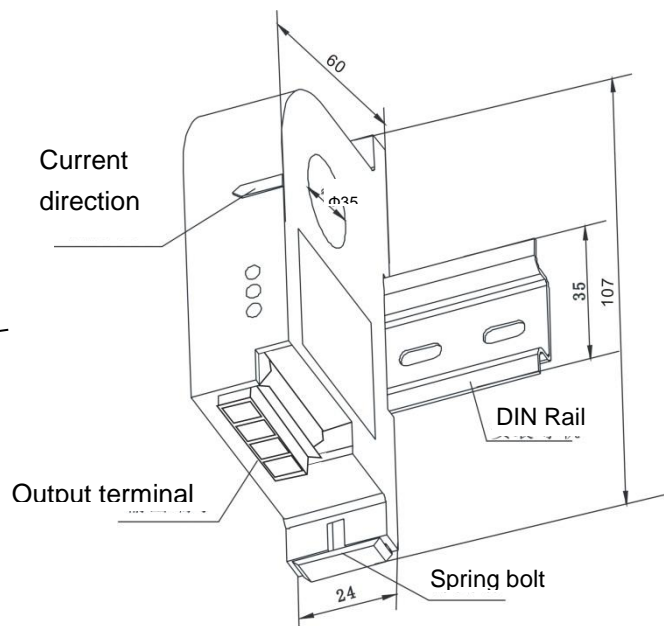
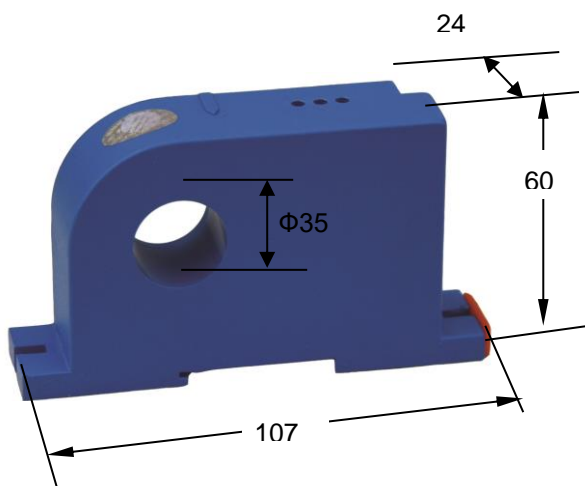


**Example 1:** CYCS11-15WF3-0.2-100A, AC Current sensor with  
Tracing output voltage: 5V AC  
Power supply:  $\pm 12V$  DC  
Rated input current: 0 -100A AC

**Example 2:** CYCS11-32WF3-0.2-100A, AC Current sensor with  
Output signal: 0-5V DC  
Power supply: +12V DC  
Rated input current: 0-100A AC

**Example 3:** CYCS11-54WF3-0.5-100A, AC Current sensor with  
Output signal: 4-20mA DC  
Power supply: +24V DC  
Rated input current: 0 -100A AC

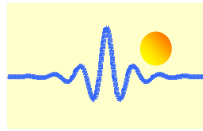
### DIMENSIONS (mm)



Dimensions: 107x 24 x 60mm, Aperture:  $\varnothing 35$  mm

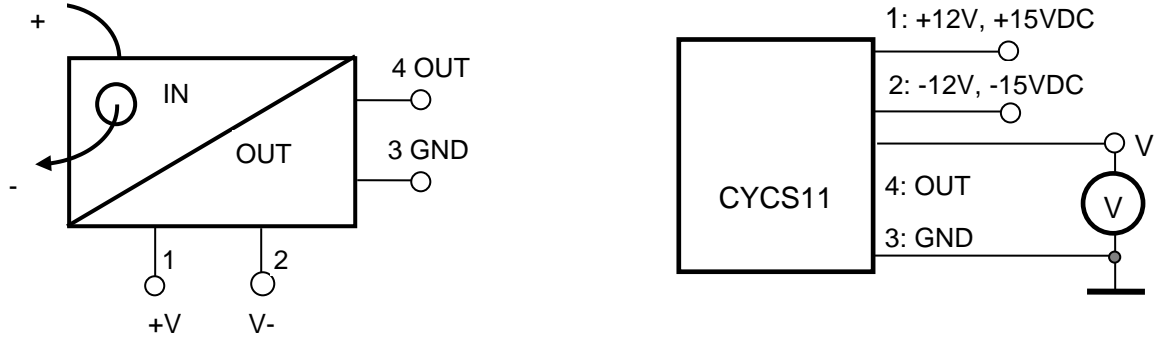
#### Pin Arrangement:

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



## CONNECTIONS

### Wiring of Terminals for tracing voltage output:

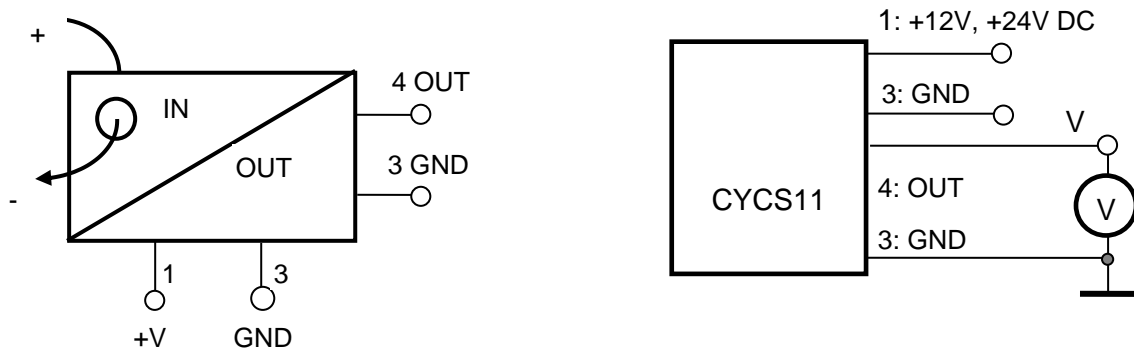


1, 2:  $\pm 12V, \pm 15V$  power supply; 3: GND; 4: tracing voltage output;

### Relation between Input and Output:

Sensor CYCS11-15WF3-0.2-100A	
Input current (A)	Output voltage (V)
-100	-5
-50	-2.5
0	0
50	2.5
100	5

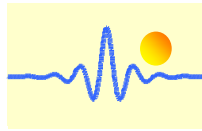
### Wiring of Terminals for DC voltage output:



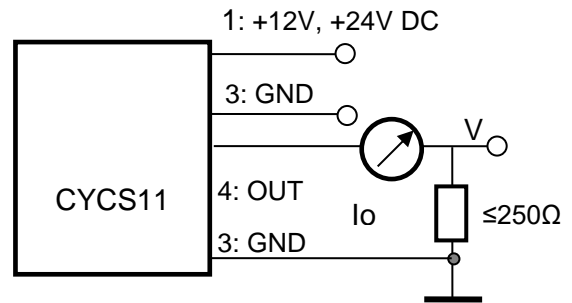
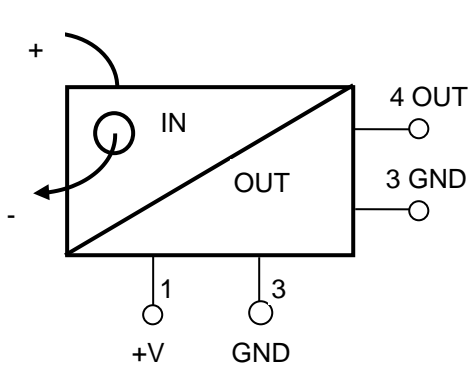
1: +12V, +24V Power Supply; 3: GND; 4: Voltage Output; 2: NC

### Relation between Input and Output:

Sensor CYCS11-32WF3-0.2-10A	
Input current (A)	Output voltage (V)
0	0
25	1.25
50	2.5
75	3.75
100	5



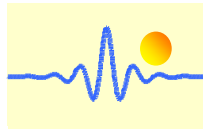
**Wiring of Terminals for DC Current Output:**



1: +12V, +24V Power Supply;      3: GND;      4: Current output;      2: NC

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

Sensor CYCS11-54WF3-0.5-10A		
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



## Three Phase AC Current Sensor CYCS13-xnS3

The **CYCS13-xnS3** AC current Sensor/Transducer works according electro-magnetic induction and is designed for applications to measurement and monitoring of three phase AC current. The output signals (DC voltage or current) of this transducer are proportional to the average effective value (RMS) of input AC currents. They are suitable for general applications such as fixed frequency voltage supplies and sinusoid currents etc.

### Specifications

Rated input current range	1A,2A,5A,10A,15A,25A
Frequency of Input current	Typ. 50-60Hz, max. 5kHz
Output signal	5V (tracing), 0-5VDC, 0-20mA, 4-20mA, 0-10VDC
Output load	≥2kΩ for voltage output, ≤250Ω for current output
Power supply	+12V, +15V, +24V DC
Measuring accuracy	0.5%
Isolation	between input, output and power supply
Isolation withstanding voltage	2.5 kV DC, 1min, leakage current 1mA
Operating temperature	-10°C ~ +60°C
Storage temperature	-25°C ~ + 70°C
Thermal drift	<500ppm/°C
Relative humidity	10% ~ 90%
Response time	≤300ms
Overload capacity	20 times
Quiescent power consumption	350mW – 480mW
Mounting	Din rail
Case style and Window size	S3 with aperture Ø6.5mm

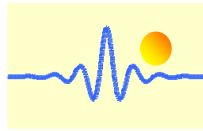
### Definition of Part Number:

CYCS13	-	x	n	S3	-	0.5	-	m
--------	---	---	---	----	---	-----	---	---

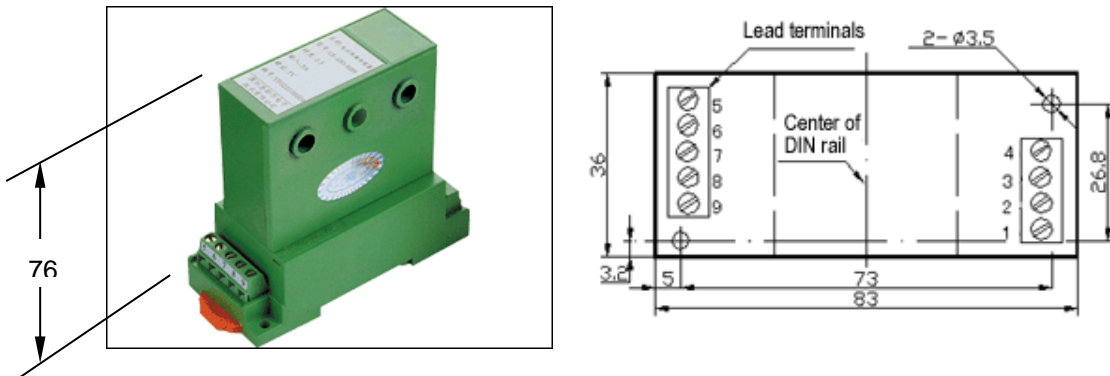
(1)                      (2)    (3)    (4)                      (5)                      (6)

(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class	Input current range (m)
CYCS13	x=1: 5V (Vp, tracing) 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	S3	0.5%	1A,2A,5A, 10A,15A,25A

**Typical Example:** CYCS13-52S3-0.5-10A, three phase AC current sensor with  
Output signal: 4-20mA DC  
Power supply: +12V DC  
Rated input current: 10A AC/RMS

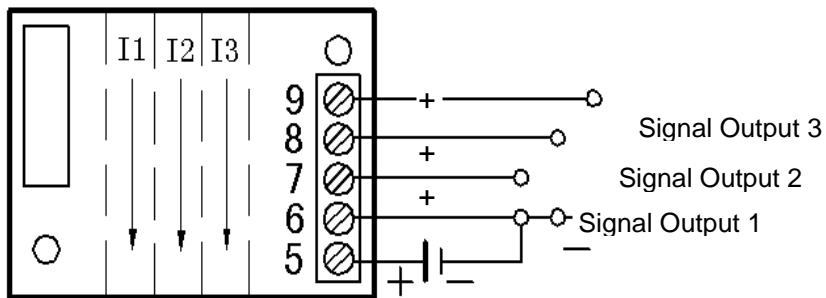


**DIMENSIONS (mm)**



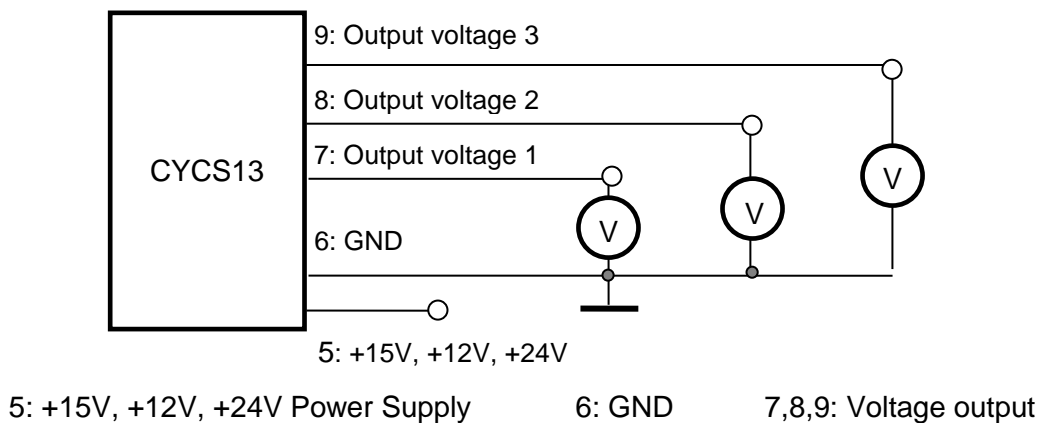
Dimensions: 76mm x 83mm x 36mm  
Aperture: Ø6.5mm

**CONNECTIONS**

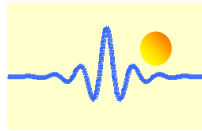


Power Source, +15V or +12V or +24V

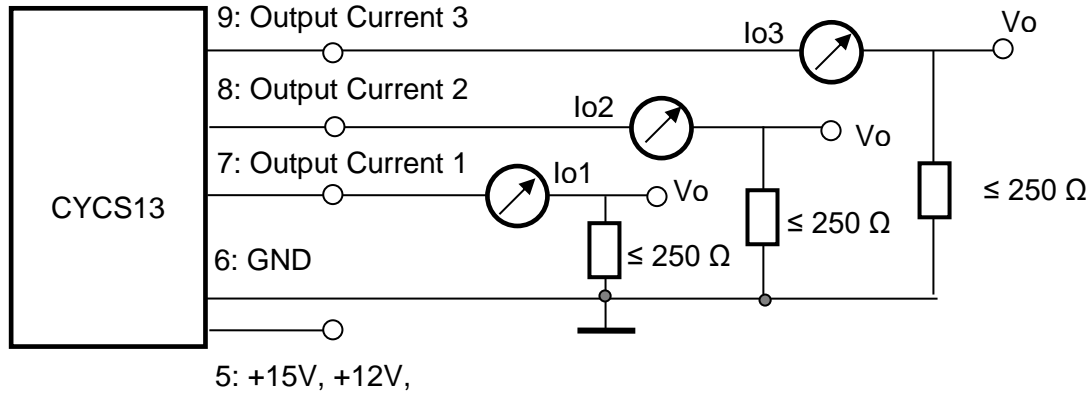
**Wiring of Terminals for voltage output:**







### Wiring of Terminals for Current Output:



5: +15V, +12V, +24V Power Supply

6: GND

7,8,9: Current output

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

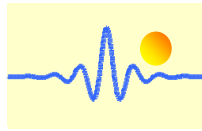
Sensor CYCS13-52S3-0.5-10A		
Input current (A)	Output current $I_o$ (mA)	Output voltage $V_o$ (V)
0	4	1
2.5	8	2
5	12	3
7.5	16	4
10	20	5

### Application:

- Phase fired controlled heaters
- Quickly varying motor loads
- Chopped wave form drivers
- Harmonic currents

### Notice:

1. There is no polarity requirement for the input current connection.
2. Use an external current transformer for applications with current higher than 25A. Connect the secondary leads of the current transformer to the inputs of the transducer.
3. The output signal and the power source are common grounded at terminal 6.



## **Inquiry Guide of Analogue Sensors/Transducers**

In order to process your inquiry quickly, you should give us the following information in your inquiry:

### **1) Your Company Info:**

- Company name,
- Customer no if you have purchased any products from ChenYang Technologies,
- Shipment address and bill address with zip code,
- VAT number if your country is the member of EU (European Union),
- Contact person,
- Telephone number and fax number of contact person,
- Company website address and
- Inquiry no and date. etc.

### **2) Description of Inquiry (see product overview and data sheets):**

- Product name (DC Current Sensor, Single Phase AC Current Sensor, ...)
- Part number (CYCT02-94S2-0.2-B2A, CYCS11-32S3-0.5-5A, ...)
- Power supply (+24VDC, +12V DC, ...)
- Output signal (current -20mA ~ +20mA, voltage 0-5V DC, ...)
- Input signal range (-2A ~ +2A DC, 0-5A DC, ...)
- Accuracy (1.0%, 0.5%, 0.2%)
- Special requirements (window size, custom connector etc.)
- Annual quantity and Lot Size
- Target price
- Shipment method (Express, economical shipment, collection etc.)
- Quantity of samples
- Application Info and beginning date of your project etc.