

## Bi-Directional DC Voltage Sensor CYVT03-xnS0

The **CYVT03-xnS0** DC voltage sensor/transducer works according to Frequency Modulation and Photoelectrical Isolation principle, and is designed for applications to measurement and monitoring of DC voltage. The output voltage and current of this transducer is proportional to the input voltage. They are suitable for measurements and longtime monitoring of DC voltages and can be applied to power supply management, motor drivers, battery chargers and systems etc.

### Specifications

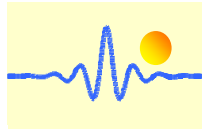
Rated input voltage (U <sub>x</sub> )	75mV, 3V, 50V, 100V, 250V, 300V, 500V DC
Linear measuring range	0 - 1.2 times of rated input voltage
Overload capacity	2 times of rated input voltage, 1sec
Input response	Bi-directional DC and DC impulse voltage
Input resistance	$R_i > 1M\Omega$ for $U_x \leq 1V$ , $R_i = U_x \times 10k\Omega/V$ for $U_x > 1V$ , $U_x$ : input voltage
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	2.5 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:

CYVT03	-	x	n	S0	-	A	-	B m
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(1)                      (2)    (3)    (4)                      (5)                      (6)

(1)	(2)	(3)	(4)	(5)	(6)
Series name	Output signal	Power supply	Case style	Accuracy class (A)	Input voltage range (m)
CYVT03	<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=75mV-500V DC

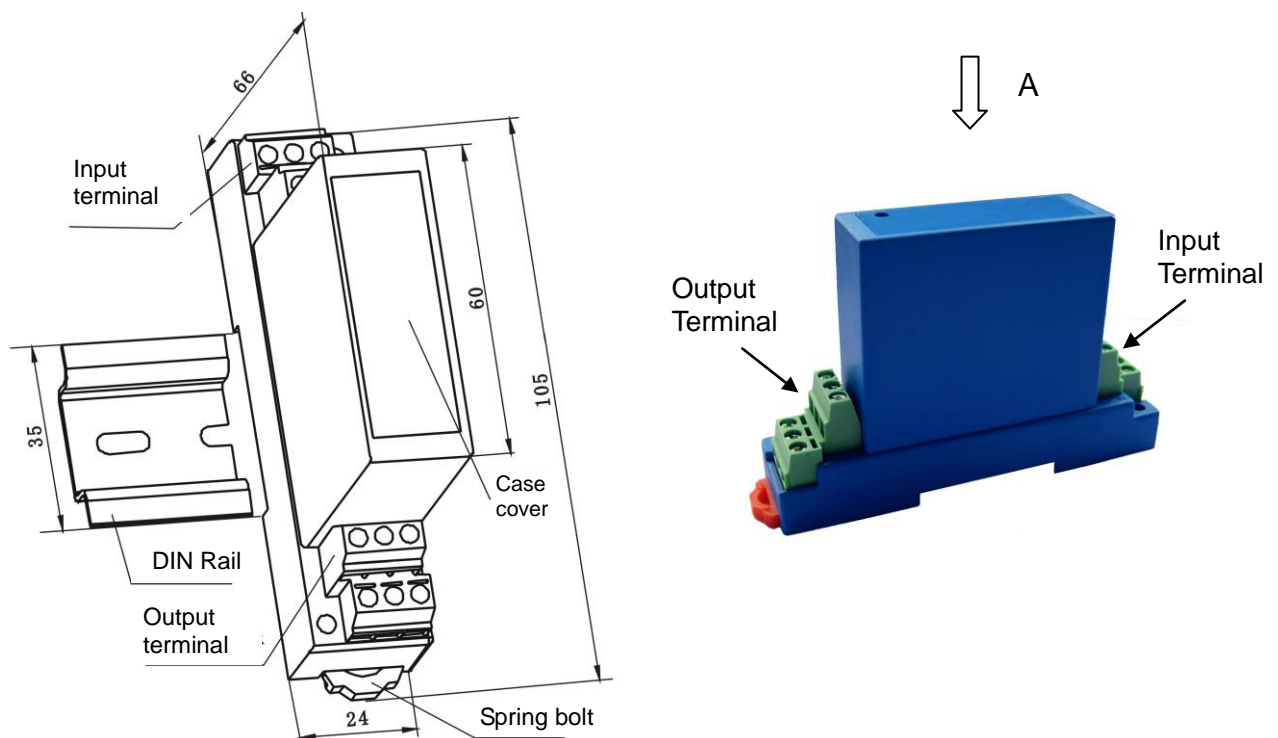


**Example 1:** CYVT03-34S0-0.2-B100V, DC voltage sensor with  
Output voltage:  $2.5V \pm 2.5DC$  (0-5VDC)  
Power supply: +24V DC  
Rated input voltage:  $\pm 100V$  DC  
Accuracy:  $\pm 0.2\%$

**Example 2:** CYVT03-44S0-0.5-B100V, DC voltage sensor with  
Output current:  $10mA \pm 10mADC$  (0-20mADC)  
Power supply: +24V DC  
Rated input voltage:  $\pm 100V$  DC  
Accuracy:  $\pm 0.5\%$

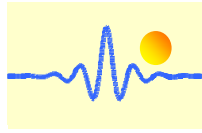
**Example 3:** CYVT03-54S0-0.5-B100V, DC voltage sensor with  
Output signal:  $12mA \pm 8mADC$  (4-20mADC)  
Power supply: +24V DC  
Rated input voltage:  $\pm 100V$  DC  
Accuracy:  $\pm 0.5\%$

## DIMENSIONS (mm)



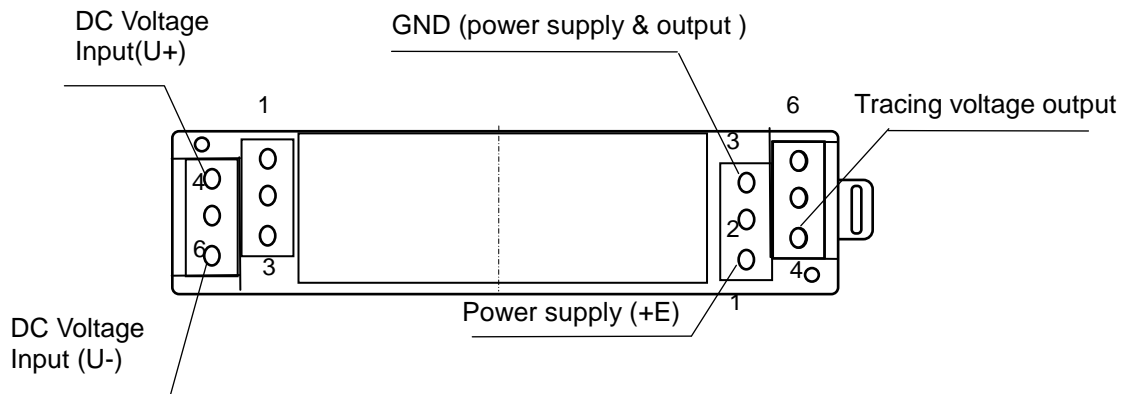
View of A Direction

Dimensions: 105mm x 24mm x 66mm

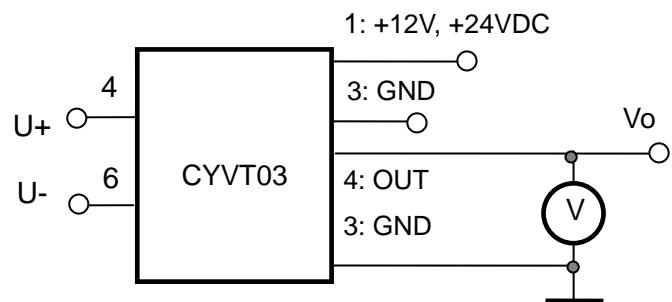
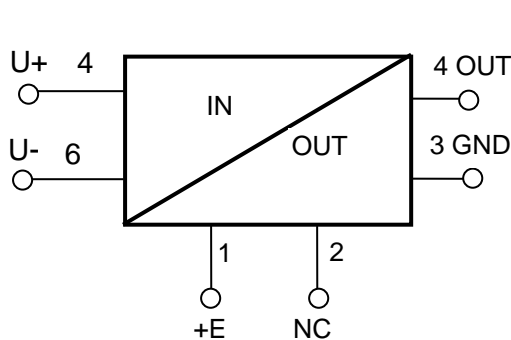


## CONNECTION

### Sensor with voltage output



Please don't use the undefined terminals

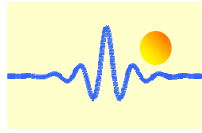


**Input Terminals:** 4, 6: Input voltage U+ and U-;

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

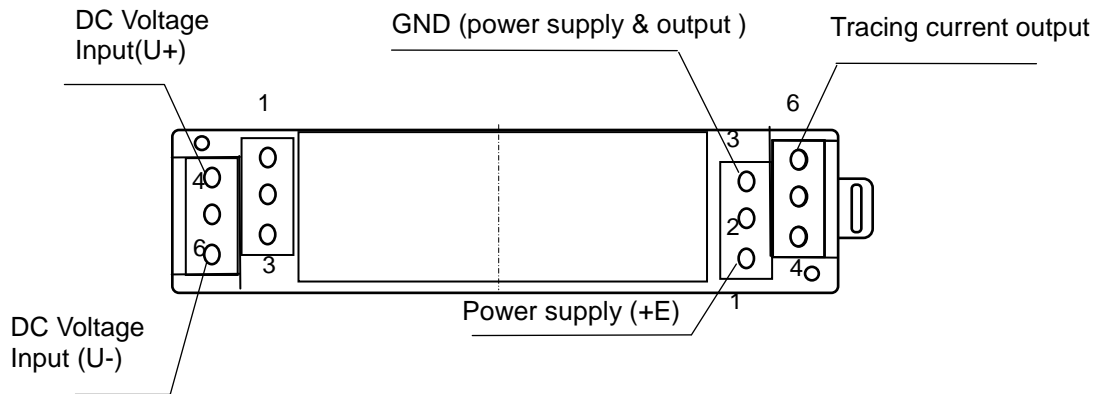
Relation between Input and Output:

Sensor CYVT03-34S0-0.2-B100V	
Input Voltage (V)	Output voltage (V)
-100	0
-50	1.25
0	2.5
50	3.75
100	5

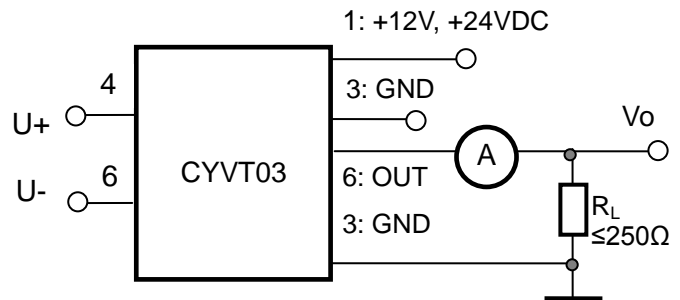
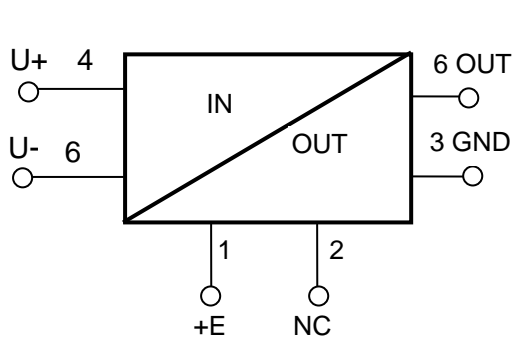


## Sensor with current output

View of A Direction



Please don't use the undefined terminals



**Input Terminals:** 4, 6: Input voltage U+ and U-;

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

Relation between Input and Output:

Sensor CYVT03-54S0-0.5-B100V ( $R_L=250\Omega$ )		
Input Voltage (V)	Output Current (mA)	Output voltage (V)
-100	4	1
-50	8	2
0	12	3
50	16	4
100	20	5