# Catalogue

# AC/DC Voltage Sensors



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# Contents



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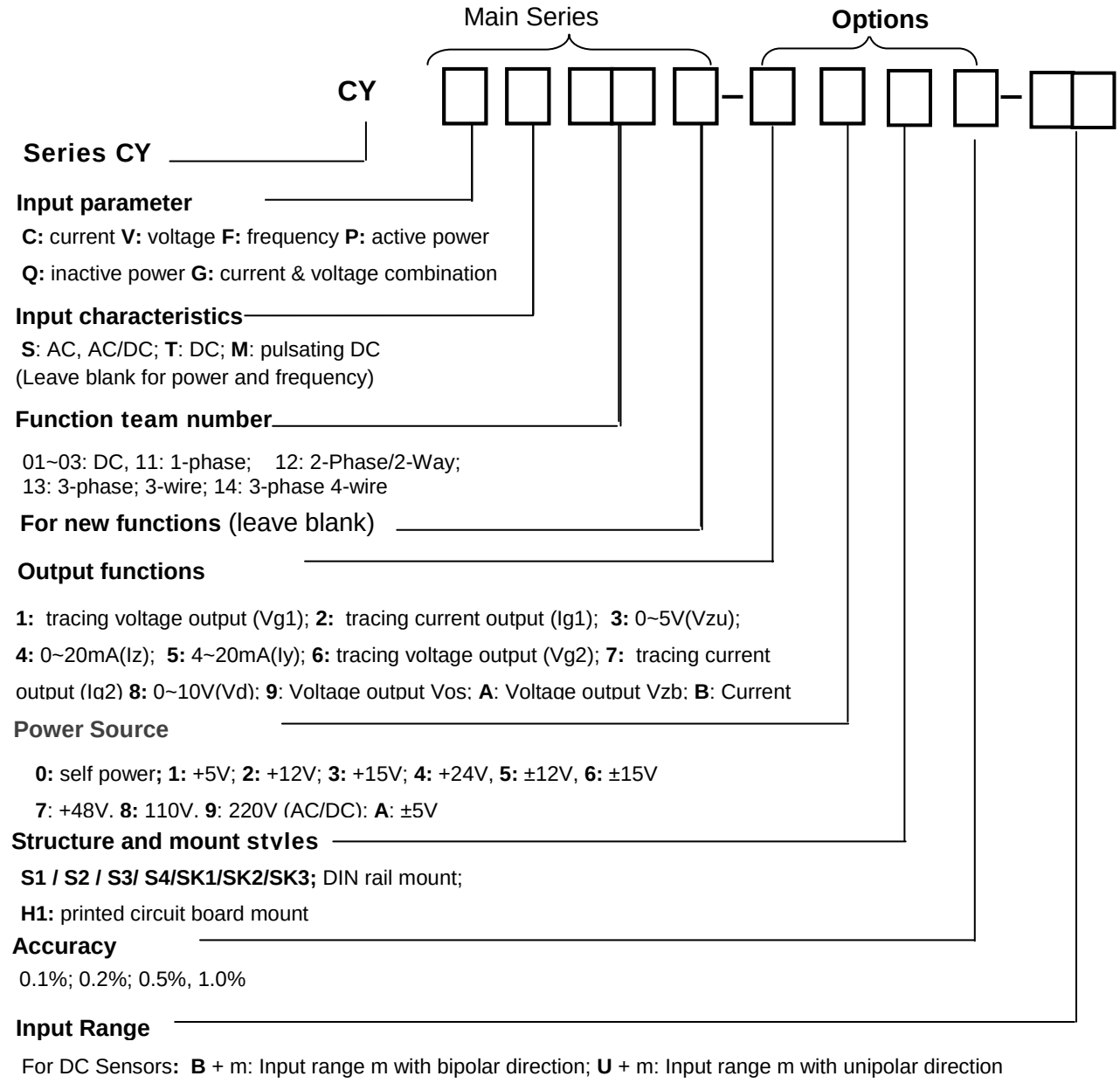
# Product Overview of Electric Analogue Sensors

## 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.

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**CYCT03-32S3-1.0-U10A** DC Current Transducer, Output: 0-5V, Power Source: +12V, Accuracy: 1.0%, Case Style: S3 with Window Φ20mm, 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 Φ20mm, 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 | | |
| | CYCS11-xnS3 | | CYVS11-xnS2 |
| | 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 |
| | CYCT02-xnS2 | | CYVT01-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<br>Vz (**3**) output | ≥2kΩ | |
| | +12V, 25°C<br>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 | |

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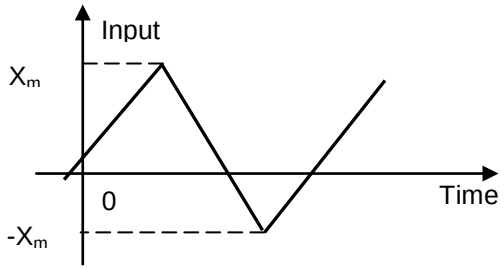
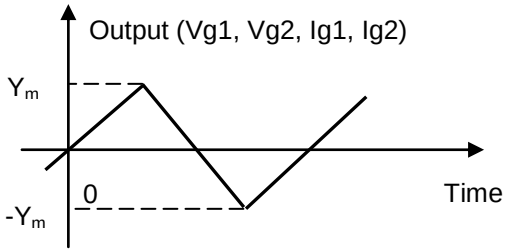
## Output Function Codes

| 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 ≥15V). |
| 9 | Vos | Tracing Voltage Output with Offset | +2.5VDC +/-1.0V or +2.5VDC +/-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. |

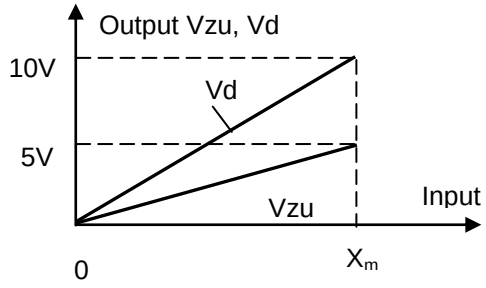
## Input / Output Graphs.

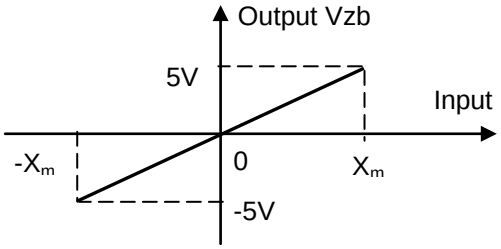
a) Tracing Voltage Output (Vg1, Vg2) or Tracing Current Output (Ig1, Ig2)

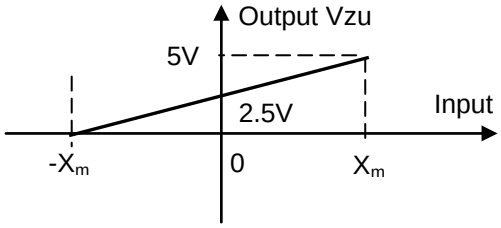


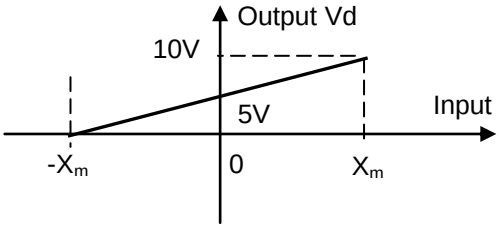



b) DC Voltage Output Vzu, Vd and Vzb

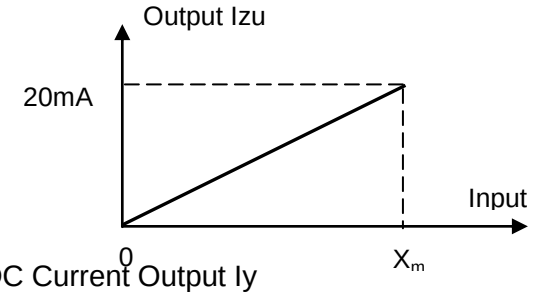


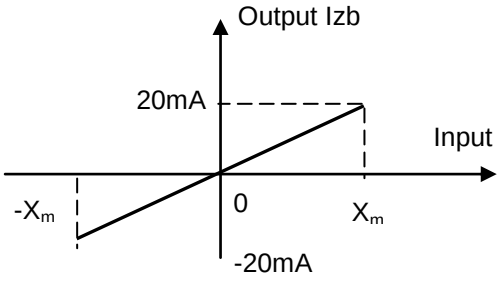



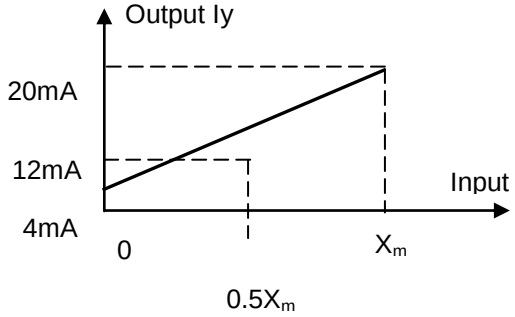



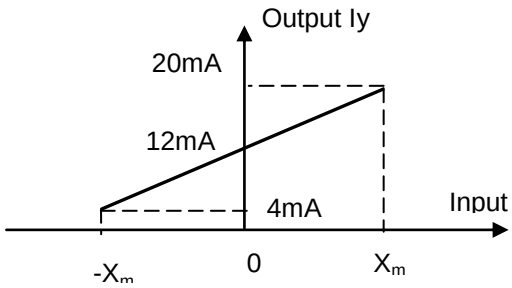

c) DC Current Output Izu and Izb



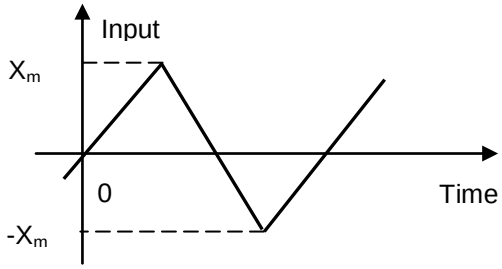



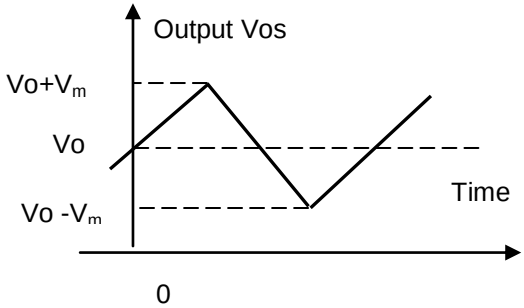

d) DC Current Output Iy




e) Tracing Voltage Output Vos

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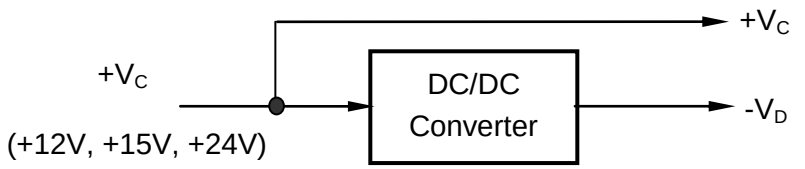
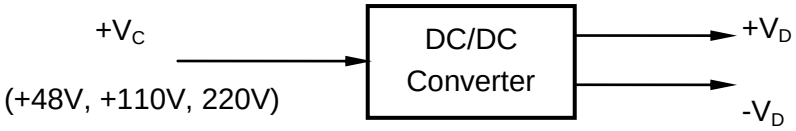
**Output Signal Limitations of Sensors with Single Power Supply**

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 |
| ±12VDC | x | Not -10V ~ +10VDC, all other output signals are available |
| ±15VDC | x | All output signals are available |
| +48VDC | ±15VDC or ±24VDC | All output signals are available |
| +110VDC | ±15VDC or ±24VDC | All output signals are available |
| 220V DC/AC | ±15VDC or ±24VDC | All output signals are available |

# DC Voltage Sensors CYVT01-xnS1 and CYVT01-xnS2

The **CYVT01-xnS1** and **CYVT01-xnS2** DC voltage sensors/transducers work according Linear Photoelectrical Isolation and are designed for applications to measurement and monitoring of DC voltage. The output signal (DC voltage or current) of these transducers is proportional to the input DC voltage. They are suitable for measurements and long time monitoring of DC voltages and can applied to power supply management, DC motor drivers, battery chargers and systems etc.

## Specifications

| **Part number** | **CYVT01-xnS1** | **CYVT01-xnS2** |
|---|---|---|
| Rated input voltage range | 10mV, 50mV, 75mV, 1V, 5V, 10V, 50V, 75V, 100V, 200V, 500V, 600V, 700V, 800V, 900V, 1000V | 10mV, 50mV, 75mV, 1V, 5V, 10V, 50V, 75V, 100V, 200V, 500V 1000V |
| Output signal | 0-5VDC, 0-20 mA, 4-20 mA, 0-10V DC, frequency OC | 0-5VDC, 0-20mA, 4-20 mA, 0-10V DC, frequency OC |
| Power supply | +12V, +15V, +24V DC | +12V, +15V, +24V DC |
| Measuring accuracy | 0.5% | 0.5% |
| Isolation (three-isolation) | between input, output and power supply | between input, output and power supply |
| Load resistance | ≥2kΩ for voltage output, ≤250Ω for current output | ≥2kΩ for voltage output, ≤250Ω for current output |
| Isolation withstanding voltage | 2.5 kV DC, 1min, leakage current 1mA | 2.5 kV DC, 1min, leakage current 1mA |
| Operating temperature | -10°C ~ +60°C | -10°C ~ +60°C |
| Storage temperature | -25°C ~ + 70°C | -25°C ~ + 70°C |
| Relative humidity | 10% ~ 90% | 10% ~ 90% |
| Response time | ≤400ms | ≤400ms |
| Overload capacity | 2 times | 2 times |
| Quiescent power consumption | 300mW – 380mW | 300mW – 380mW |
| Mounting | Din rail | Din rail |
| Case style | S1 without aperture | S2 without aperture |

## Definition of Part number:

| CYVT01 | - | x | n | S1 | - | 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 voltage range (M=U/B + m) |
| CYVT01 | **x=3:** 0-5V DC<br>**x=4:** 0-20mA DC<br>**x=5:** 4-20mA DC<br>**x=8:** 0-10V DC<br>**x=F:** Frequency OC** | n**=2:** +12V DC<br>n**=3:** +15V DC<br>n**=4:** +24V DC | S1 | 0.5% | m=10mV, 50mV, 1V, 5V, 10V, 50V,75mV, 75V, 100V, 200V, 500V, 600V, 700V, 800V,900V, 1000V |

| | | | | | |
|---|---|---|---|---|---|
| CYVT01 | **x=3:** 0-5V DC<br>**x=4:** 0-20mA DC<br>**x=5:** 4-20mA DC<br>**x=8:** 0-10V DC<br>**x=F:** Frequency OC** | n**=2:** +12V DC<br>n**=3:** +15V DC<br>n**=4:** +24V DC | S2 | 0.5% | m=<br>10mV, 50mV, 75mV,<br>1V, 5V, 10V, 50V,<br>75V, 100V, 200V,<br>500V, 1000V |

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

## Output Signal of Custom Made Sensors:

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

**Example 1:** CYVT01-32S1-0.5-U100V, DC Voltage sensor with
Output signal: 0-5V DC
Power supply: +12V DC
Rated input voltage: 0-100V DC (unipolar)

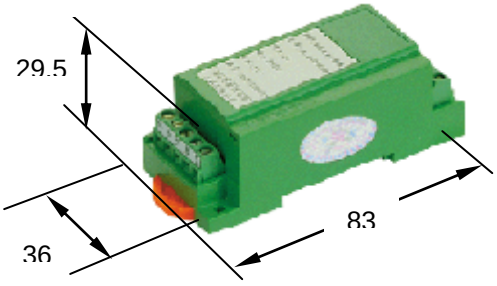
**Example 2:** CYVT01-54S1-0.5-B100V, DC Voltage sensor with
Output signal: 4-20mA DC
Power supply: +24V DC
Rated input voltage: -100V ~ +100V DC (bipolar)

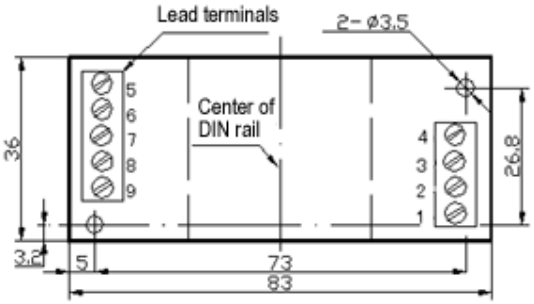
**Example 3:** CYVT01-32S2-0.5-U1000V, DC Voltage sensor with
Output signal: 0-5V DC
Power supply: +12V DC
Rated input voltage: 0-1000V DC (unipolar)

**Example 4:** CYVT01-54S2-0.5-B1000V, DC Voltage sensor with
Output signal: 4-20mA DC
Power supply: +24V DC
Rated input voltage: -1000V ~ +1000V DC (bipolar)

## DIMENSIONS (mm)

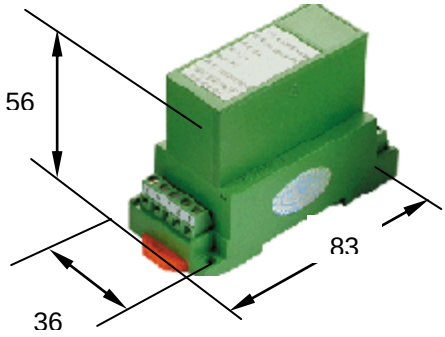
Case S1

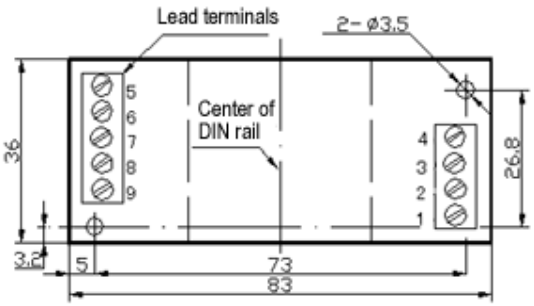



Dimensions: 29.5mm x 83mm x 36mm

Case S2

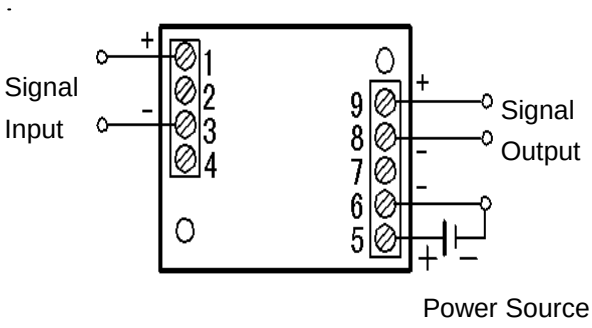


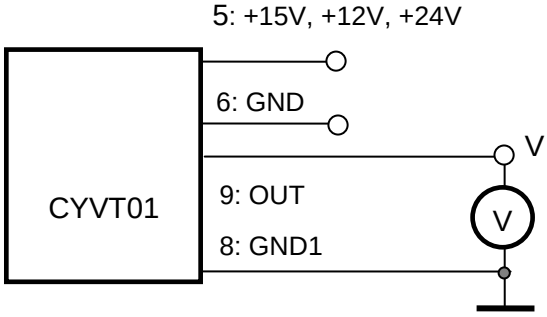




Dimensions: 56mm x 83mm x 36mm

## CONNECTIONS

### Wiring of Terminals for voltage output:



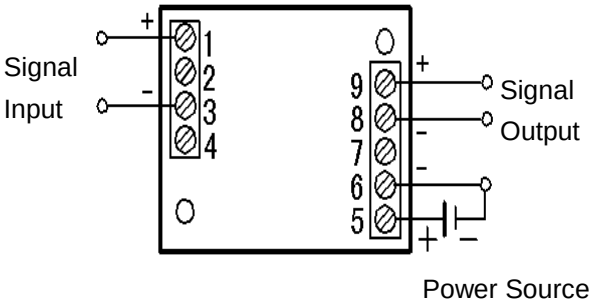

5: +15V, +12V, +24V Power Supply  6: GND  8, 9: Voltage output

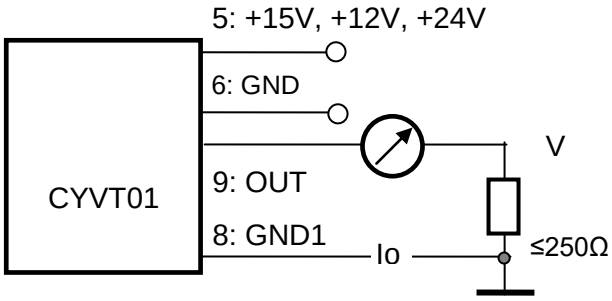
Relation between Input and Output:

| Sensor CYVT01-32S1-0.5-U100V | | Sensor CYVT01-32S1-0.5-B100V | |
|---|---|---|---|
| Input voltage (V) | Output voltage (V) | Input voltage (V) | 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 |

| Sensor CYVT01-32S2-0.5-U1000V | | Sensor CYVT01-32S2-0.5-B1000V | |
|---|---|---|---|
| Input voltage (V) | Output voltage (V) | Input voltage (V) | Output voltage (V) |
| 0 | 0 | -1000 | 0 |
| 250 | 1.25 | -500 | 1.25 |
| 500 | 2.5 | 0 | 2.5 |
| 750 | 3.75 | 500 | 3.75 |
| 1000 | 5 | 1000 | 5 |

## Wiring of Terminals for Current Output:



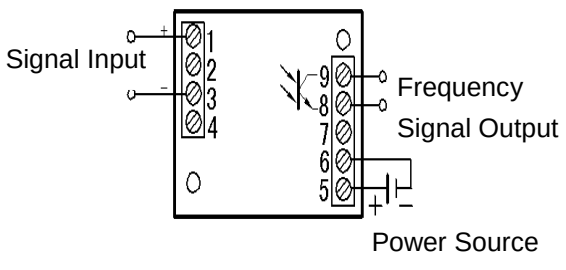

5: +15V, +12V, +24V Power Supply  6: GND  8,9: Current output

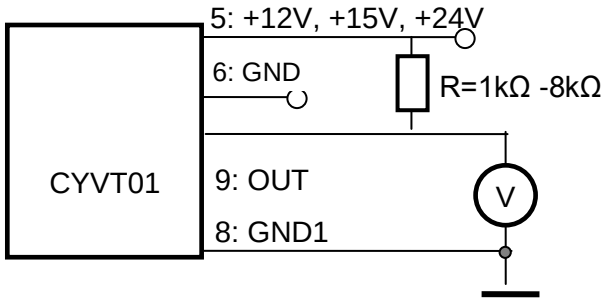
Relation between Input and Output (for $R_m$=250 Ω):

| Sensor CYVT01-54S1-0.5-U100V | | | Sensor CYVT01-54S1-0.5-B100V | | |
|---|---|---|---|---|---|
| Input voltage (V) | Output current Io(mA) | Output voltage Vo (V) | Input voltage (V) | Output current Io(mA) | Output voltage Vo (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 |

| Sensor CYVT01-54S2-0.5-U1000V | | | Sensor CYVT01-54S2-0.5-B1000V | | |
|---|---|---|---|---|---|
| Input voltage (V) | Output current Io(mA) | Output voltage Vo (V) | Input voltage (V) | Output current Io(mA) | Output voltage Vo (V) |
| 0 | 4 | 1 | -1000 | 4 | 1 |
| 250 | 8 | 2 | -500 | 8 | 2 |
| 500 | 12 | 3 | 0 | 12 | 3 |
| 750 | 16 | 4 | 500 | 16 | 4 |
| 1000 | 20 | 5 | 1000 | 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=5.3kΩ 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 |

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# DC Voltage Sensors CYVT01-xnU0 and CYVT02-xnU0

The **CYVT01-xnU0** and **CYVT02-xnU0** DC voltage sensors/transducers work according Magnetic Modulation and are designed for applications to measurement and monitoring of DC voltage. The output signal (DC voltage or current) of these transducers is proportional to the input DC voltage. They are suitable for measurements and long time monitoring of DC voltages and can applied to power supply management, DC motor drivers, battery chargers and systems etc.

## Specifications

| **Part number** | **CYVT01-xnU0** | **CYVT02-xnU0** |
|---|---|---|
| Rated input voltage (Ux) | 10mV-1000V DC | 10mV-1000V DC |
| Linear measuring range | 0 - 1.2 times of rated input voltage | 0 - 1.2 times of rated input voltage |
| Overload capacity | 2 times of rated input voltage | 2 times of rated input voltage |
| Input response | Uni-directional DC and DC impulse voltage | Uni-directional DC and DC impulse voltage |
| Input resistance<br>. | $R_i$>1MΩ for Ux≤1V, $R_i=U_x$ *x 10kΩ/V* for Ux >1V, $U_x$ : input voltage | $R_i$>1MΩ for Ux≤1V, $R_i=U_x$ *x 10kΩ/V* for Ux>1V, $U_x$ : input voltage |
| Output signals DC | 0-5V, 0-10V, 0-20mA, 4-20mA 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 | 0.2% for voltage output and 0-20mA output; 0.5% for 4-20mA output |
| Load capacity | voltage output: 5mA; current output: 6V | voltage output: 5mA; current output: 6V |
| Response time | ≤350ms | ≤350ms |
| Thermal drift | voltage output : 100-350ppm/°C; current output: 250-350ppm/°C | voltage output : 100ppm/°C; current output: 150-250ppm/°C |
| Power supply | +24VDC, 165-265VAC, +230-360VDC | +12VDC, +24VDC |
| Static current | Voltage output: 20mA; Current output: 13-17mA | Voltage output: 10mA; Current output: 13-17mA |
| Isolation | Isoltion between input and output and power supply | Isoltion between input and output, power supply at the output |
| Isolation withstanding voltage | 2.5 kV DC, 1min for Input-Output and power supply – Input<br>1.5-2.5kV DC, 1min for power supply - output | 2.5 kV DC, 1min |
| Operating temperature | -10°C ~ +60°C | -10°C ~ +60°C |
| Storage temperature | -25°C ~ + 70°C | -25°C ~ + 70°C |
| Relative humidity | 10% ~ 90% | 10% ~ 90% |
| Protection of Case | IP20 | IP20 |
| Material of Case | ABS (According to UL94V-0) | ABS (According to UL94V-0) |
| Mounting | DIN Rail | DIN Rail |
| Case Style | U0 without aperture | U0 without aperture |
| MTBF | 50000h | 50000h |
| Unit weight | 90g | 90g |

## Definition of Part number:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| CYVT01 | - | 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 Voltage range (m) |
| CYVT01 | **x=3:** 0-5V DC<br>**x=4:** 0-20mA DC<br>**x=5:** 4-20mA DC<br>**x=8:** 0-10V DC | n**=4:** +24V DC<br>n**=8:** 165V-265VAC<br>n**=9:** 230-360VDC | U0 | 0.2%<br>0.5% | m=10mV-1000V DC |
| CYVT02 | **x=3:** 0-5V DC<br>**x=4:** 0-20mA DC<br>**x=5:** 4-20mA DC | n**=2:** +12V DC<br>n**=4:** +24V DC | U0 | 0.2%<br>0.5% | m=10mV-1000V DC |
| | **x=8:** 0-10V DC | n**=4:** +24V DC | | | |

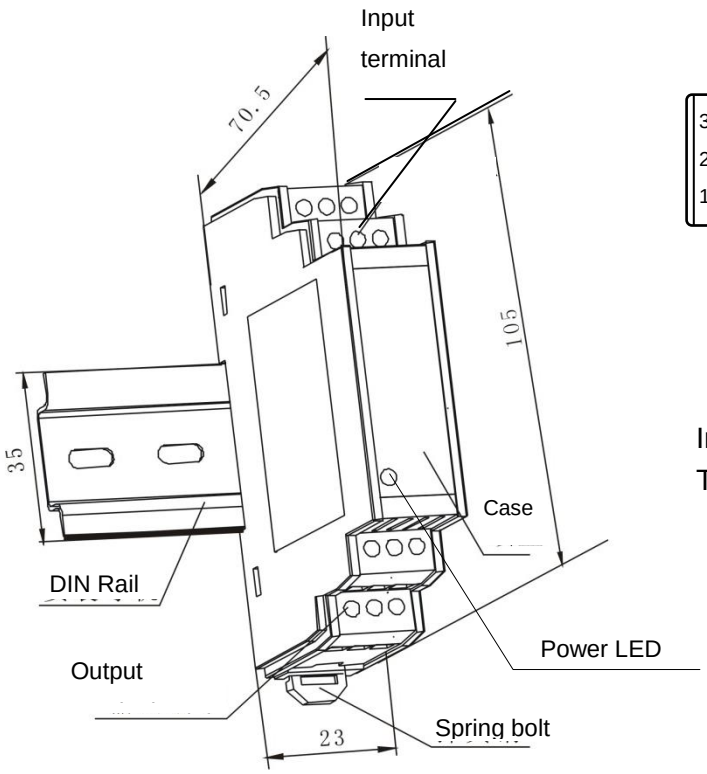
**Example 1:** CYVT01-34U0-0.2-100V, DC voltage sensor with
Output signal: 0-5V DC
Power supply: +24V DC
Rated input voltage: 0-100V DC

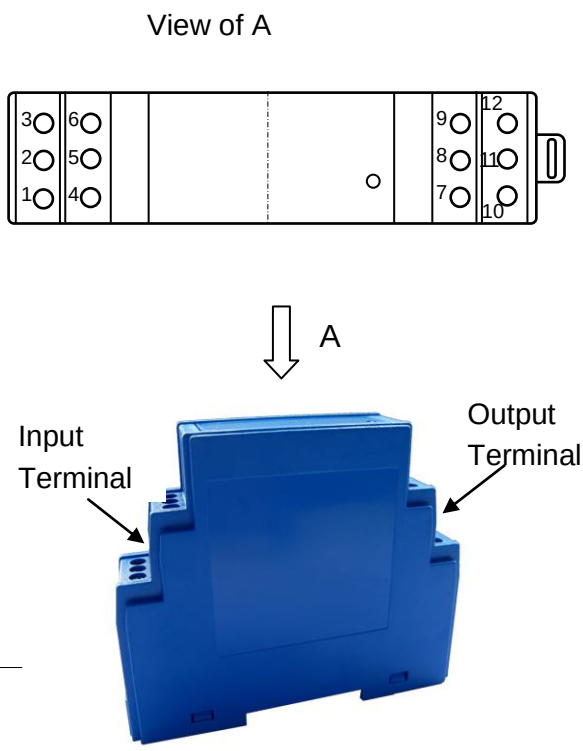
**Example 2:** CYVT01-54U0-0.5-100V, DC voltage sensor with
Output signal: 4-20mA DC
Power supply: +24V DC
Rated input voltage: 0 -100V DC

**Example 3:** CYVT02-32U0-0.2-100V, DC voltage sensor with
Output signal: 0-5V DC
Power supply: +12V DC
Rated input voltage: 0-100V DC

**Example 4:** CYVT02-54U0-0.5-100V, DC voltage sensor with
Output signal: 4-20mA DC
Power supply: +24V DC
Rated input voltage: 0 -100V DC

## DIMENSIONS (mm)

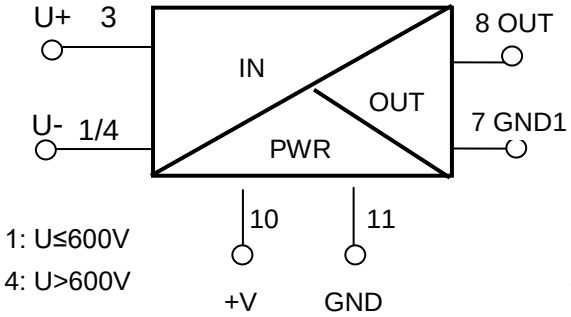


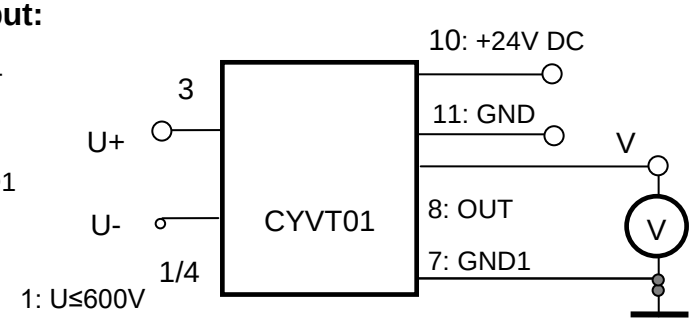




Dimensions: 105mm x 23mm x 70.5mm

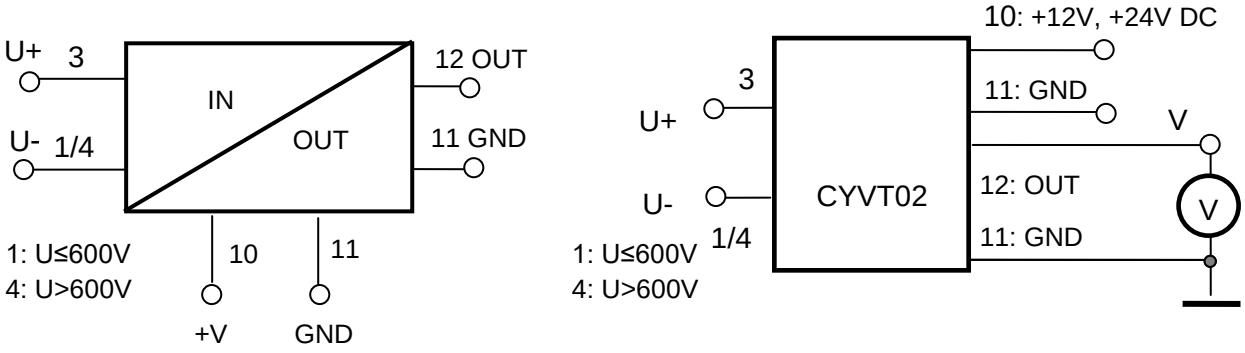
## CONNECTIONS

### Wiring of Terminals for voltage output:




1/4,3: Input Voltage; 10: +24V Power Supply 7,11: GND 8: Voltage output

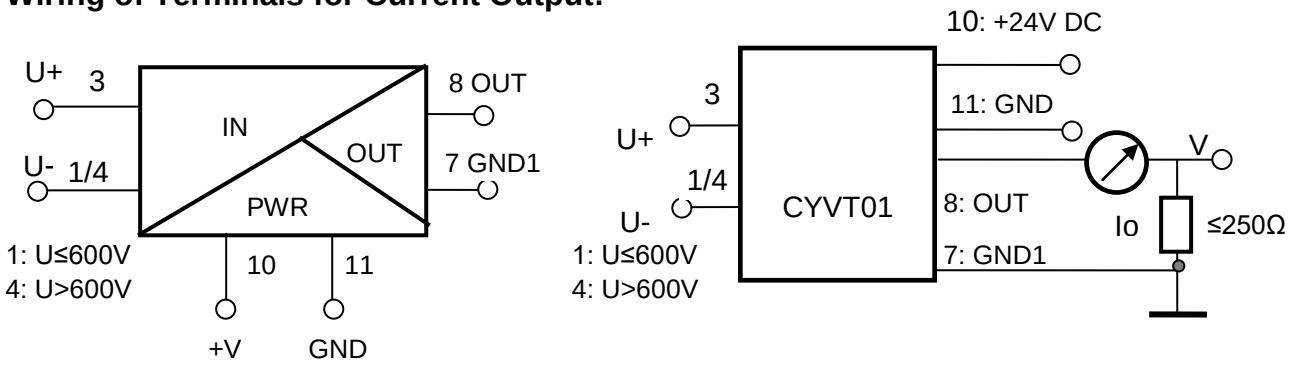



1/4,3: Input Voltage; 10: +12V, +24V Power Supply 11: GND 12: Voltage output

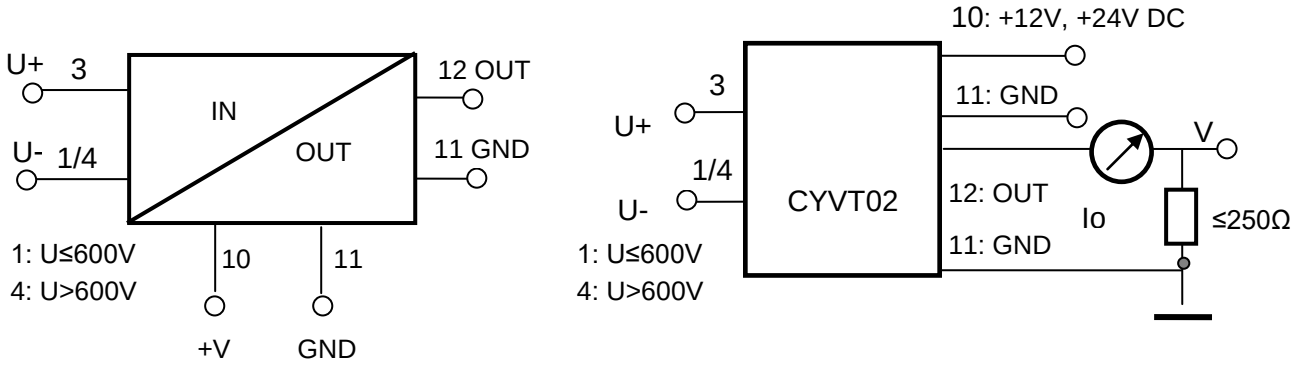
Relation between Input and Output:

| Sensor CYVT01-34U0-0.2-100V | | Sensor CYVT02-32U0-0.2-100V | |
|---|---|---|---|
| Input Voltage (V) | Output voltage (V) | Input Voltage (V) | Output voltage (V) |
| 0 | 0 | 0 | 0 |
| 25 | 1.25 | 25 | 1.25 |
| 50 | 2.5 | 50 | 2.5 |
| 75 | 3.75 | 75 | 3.75 |
| 100 | 5 | 100 | 5 |

## Wiring of Terminals for Current Output:




1/4,3: Input Voltage; 10: +24V Power Supply 7,11: GND 8: current output




1/4,3: Input Voltage; 10: +12V, +24V Power Supply 11: GND 12: Current output

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

| Sensor CYVT01-54U0-0.5-100V | | | Sensor CYVT02-54U0-0.5-100V | | |
|---|---|---|---|---|---|
| Input Voltage (V) | Output current Io (mA) | Output voltage Vo (V) | Input Voltage (V) | Output current Io (mA) | Output voltage Vo (V) |
| 0 | 4 | 1 | 0 | 4 | 1 |
| 25 | 8 | 2 | 25 | 8 | 2 |
| 50 | 12 | 3 | 50 | 12 | 3 |
| 75 | 16 | 4 | 75 | 16 | 4 |
| 100 | 20 | 5 | 100 | 20 | 5 |

# DC Voltage Sensors CYVT02-xnS1 and CYVT02-xnS2

The **CYVT02-xnS1** and **CYVT02-xnS2** DC voltage sensors/transducers work according Electromagnetic Induction and are designed for applications to measurement and monitoring of DC voltage. The output signal (DC voltage or current) of these transducers are proportional to the input DC voltage. They are suitable for measurements and long time monitoring of DC voltages and can applied to power supply manage-ment, DC motor drivers, battery chargers and systems etc.

## Specifications

| **Part number** | **CYVT02-xnS1** | **CYVT02-xnS2** |
|---|---|---|
| Rated input voltage range | 10mV, 50mV, 75mV, 1V, 5V, 10V, 50V, 75V, 100V, 200V, 500V, 600V, 700V, 800V, 900V, 1000V | 10mV, 50mV, 75mV, 1V, 5V, 10V, 50V, 75V, 100V, 200V, 500V, 1000V |
| Output signal | 0-5VDC, 0-20 mA, 4-20 mA, 0-10V DC, frequency OC | 0-5VDC, 0-20 mA, 4-20 mA, 0-10V DC, frequency OC |
| Power supply | +12V, +15V, +24V DC | +12V, +15V, +24V DC |
| Measuring accuracy | 0.5% | 0.5% |
| Isolation | between input, output and power supply | between input, output and power supply |
| Load resistance | ≥2kΩ for voltage output, ≤250Ω for current output | ≥2kΩ for voltage output, ≤250Ω for current output |
| Isolation withstanding voltage | 2.5 kV DC, 1min, leakage current 1mA | 2.5 kV DC, 1min, leakage current 1mA |
| Operating temperature | -10°C ~ +60°C | -10°C ~ +60°C |
| Storage temperature | -25°C ~ + 70°C | -25°C ~ + 70°C |
| Relative humidity | 10% ~ 90% | 10% ~ 90% |
| Response time | ≤400ms | ≤400ms |
| Overload capacity | 2 times | 2 times |
| Quiescent power consumption | 200mW – 300mW | 200mW – 300mW |
| Mounting | Din rail | Din rail |
| Case style | S1 without aperture | S2 without aperture |

## Definition of Part number:

| CYVT02 | - | x | n | S1 | - | 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 voltage range (M=U/B+m) |
| CYVT02 | **x=3:** 0-5V DC<br>**x=4:** 0-20mA DC | n**=2:** +12V DC | S1 | 0.5% | m =10mV, 50mV, 1V, 5V, 10V, 50V,75mV, |

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| | | | | | |
|---|---|---|---|---|---|
| | **x=5:** 4-20mA DC<br>**x=8:** 0-10V DC<br>**x=F:** Frequency OC** | n**=3:** +15V DC<br>n**=4:** +24V DC | | | 75V, 100V, 200V, 500V, 600V, 700V, 800V,900V, 1000V |
| CYVT02 | **x=3:** 0-5V DC<br>**x=4:** 0-20mA DC<br>**x=5:** 4-20mA DC<br>**x=8:** 0-10V DC<br>**x=F:** Frequency OC** | n**=2:** +12V DC<br>n**=3:** +15V DC<br>n**=4:** +24V DC | S2 | 0.5% | m =<br>10mV, 50mV, 75mV, 1V, 5V, 10V, 50V, 75V, 100V, 200V, 500V, 1000V |

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

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

## Output Signal of Custom Made Sensors:

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

**Example 1:** CYVT02-32S1-0.5-U100V, DC Voltage sensor with
Output signal: 0-5V DC
Power supply: +12V DC
Rated input voltage: 0-100V DC (unipolar)

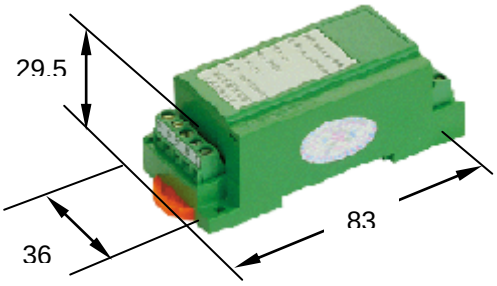
**Example 2:** CYVT02-54S1-0.5-B100V, DC Voltage sensor with
Output signal: 4-20mA DC
Power supply: +24V DC
Rated input voltage: -100V ~ +100V DC (bipolar)

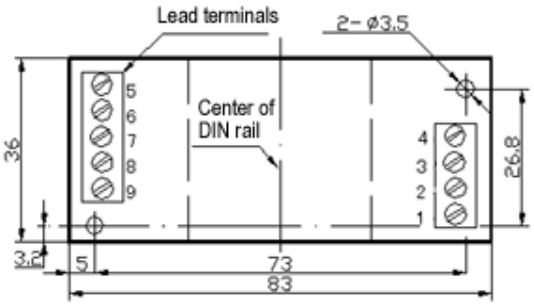
**Example 3:** CYVT02-32S2-0.5-U1000V, DC Voltage sensor with
Output signal: 0-5V DC
Power supply: +12V DC
Rated input voltage: 0-1000V DC (unipolar)

**Example 4:** CYVT02-54S2-0.5-B1000V, DC Voltage sensor with
Output signal: 4-20mA DC
Power supply: +24V DC
Rated input voltage: -1000V ~ +1000V DC (bipolar)

## DIMENSIONS (mm)

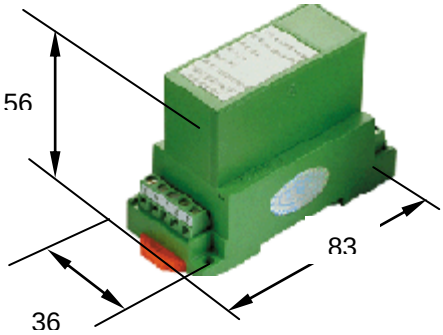
Case S1

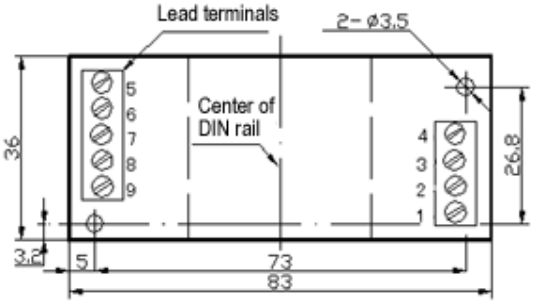



Dimensions: 29.5mm x 83mm x 36mm

Case S2

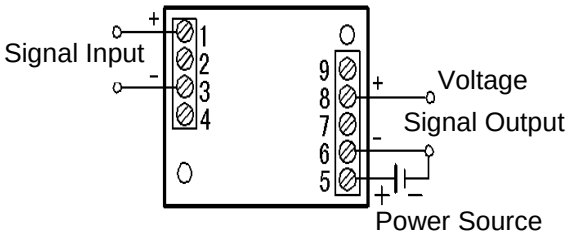


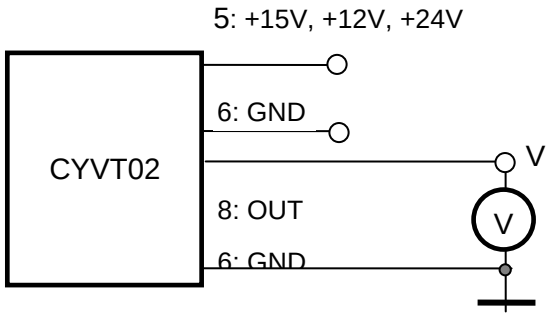




Dimensions: 56mm x 83mm x 36mm

## CONNECTIONS

### Wiring of Terminals for voltage output:



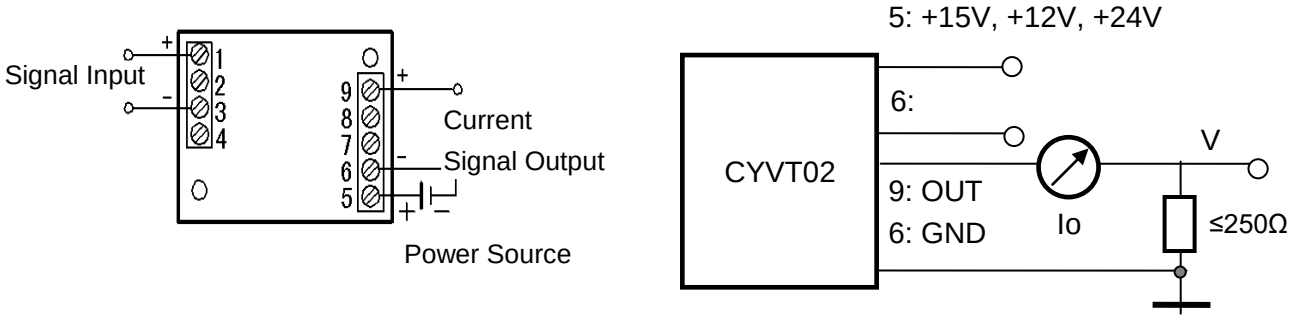

5: +15V, +12V, +24V Power Supply  6: GND  8: Voltage output

Relation between Input and Output:

| Sensor CYVT02-32S1-0.5-U100V | | Sensor CYVT02-32S1-0.5-B100V | |
|---|---|---|---|
| Input voltage (V) | Output voltage (V) | Input voltage (V) | 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 |

| Sensor CYVT02-32S2-0.5-U1000V | | Sensor CYVT02-32S2-0.5-B1000V | |
|---|---|---|---|
| Input voltage (V) | Output voltage (V) | Input voltage (V) | Output voltage (V) |
| 0 | 0 | -1000 | 0 |
| 250 | 1.25 | -500 | 1.25 |
| 500 | 2.5 | 0 | 2.5 |
| 750 | 3.75 | 500 | 3.75 |
| 1000 | 5 | 1000 | 5 |

**Wiring of Terminals for Current Output:**



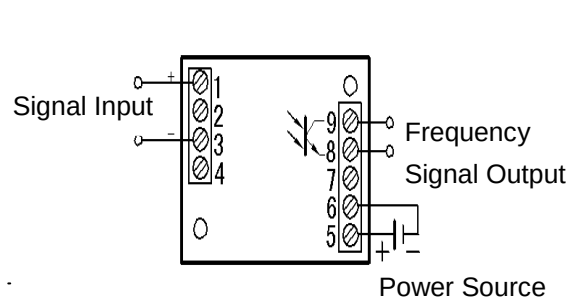

5: +15V, +12V, +24V Power Supply  6: GND  9: Current output

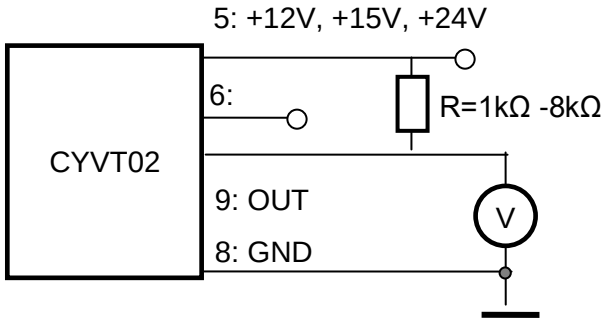
Relation between Input and Output (for $R_m$=250 Ω):

| Sensor CYVT02-54S1-0.5-U100V | | | Sensor CYVT02-54S1-0.5-B100V | | |
|---|---|---|---|---|---|
| Input voltage (V) | Output current Io(mA) | Output voltage Vo (V) | Input voltage (V) | Output current Io(mA) | Output voltage Vo (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 |

| Sensor CYVT02-54S2-0.5-U1000V | | | Sensor CYVT02-54S2-0.5-B1000V | | |
|---|---|---|---|---|---|
| Input voltage (V) | Output current Io(mA) | Output voltage Vo (V) | Input voltage (V) | Output current Io(mA) | Output voltage Vo (V) |
| 0 | 4 | 1 | -1000 | 4 | 1 |
| 250 | 8 | 2 | -500 | 8 | 2 |
| 500 | 12 | 3 | 0 | 12 | 3 |
| 750 | 16 | 4 | 500 | 16 | 4 |
| 1000 | 20 | 5 | 1000 | 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=5.3kΩ 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 |

# AC/DC Voltage Sensor CYVS-xnS0

The **CYVS-xnS0** AC/DC voltage sensor/transducer works according Linear Photoelectrical Isolation and is designed for applications to measurement and monitoring of AC/DC voltage and DC impulse voltage. The output voltage of this transducer is proportional to the input voltage. They are suitable for measurements and long time monitoring of AC/DC voltages and can applied to power supply management, motor drivers, battery chargers and systems etc.

## Specifications

| | |
|---|---|
| Rated input voltage (Ux) | 50mV-500V AC/DC (DC calibration, option: AC calibration) |
| Frequency range | DC , 20Hz–10kHz |
| Linear measuring range | 0 - 1.2 times of rated input voltage |
| Overload capacity | 2 times of rated input voltage |
| Input response | Bi-directional DC and AC voltages |
| Input resistance | $R_i$>1MΩ for Ux≤1V, $R_i=U_x$ *x 10kΩ/V* for Ux >1V, $U_x$ : input voltage |
| Output signals DC | Tracing voltage ±5V |
| Measuring accuracy | 0.2% |
| Load capacity | voltage output: 5mA |
| Response time | ≤15μs |
| Thermal drift | 150ppm/°C |
| Power supply | ±12VDC, ±15VDC |
| Static current | 25mA |
| 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:

| CYVS | - | 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 Voltage range (m) |
| CYVS | **x=1:** ±5V DC | n**=5:** ±12V DC<br>n**=6:** ±15V DC | S0 | 0.2% | m=50mV-500V AC/DC |

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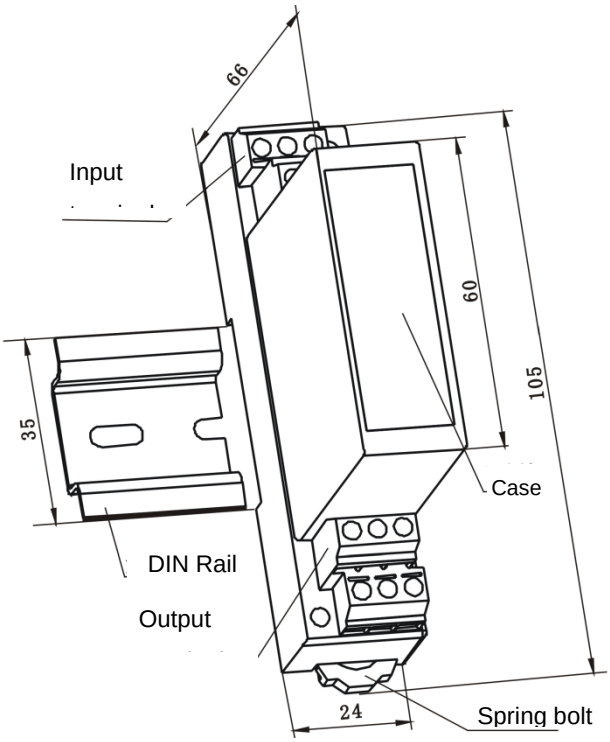
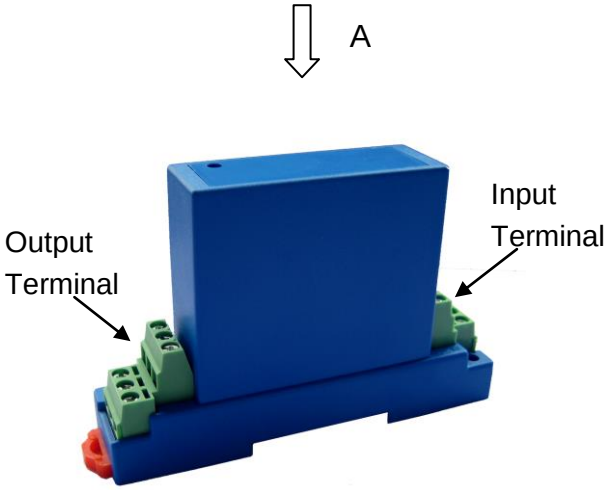
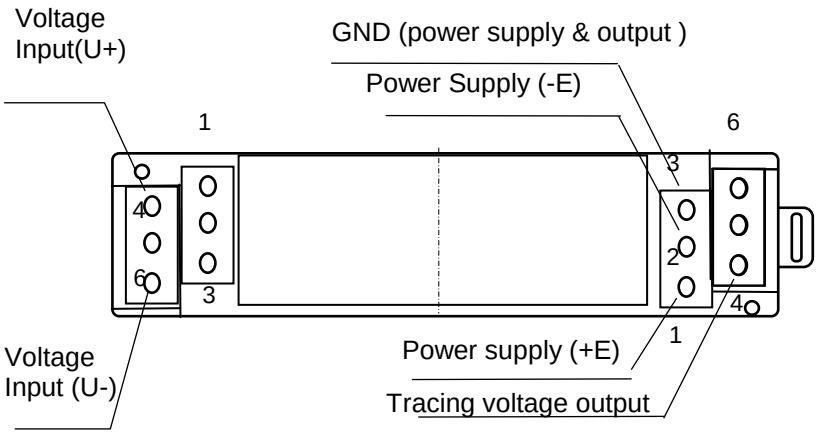
**Example 1:** CYVS-15S0-0.2-100V, AC/DC voltage sensor with
Output signal: ±5V AC/DC
Power supply: ±12V DC
Rated input voltage: ±100V AC/DC

## DIMENSIONS (mm)



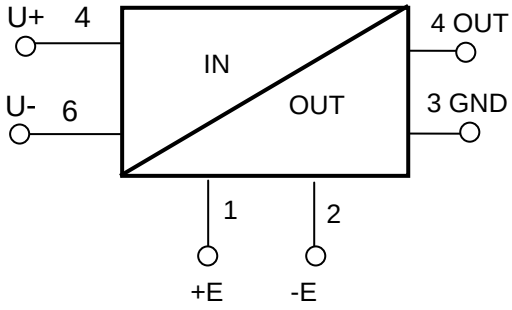

View of A

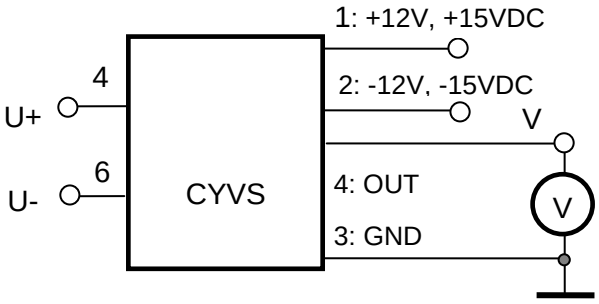



Please don‘t use the undefined terminals

Dimensions: 105mm x 24mm x 66mm

## CONNECTION




**Input Terminals:**

4, 6: Input Current U+ and U-;

**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 CYVS-15S0-0.2-100V | |
|---|---|
| Input Voltage (V) | Output voltage (V) |
| -100 | -5 |
| -50 | -2.5 |
| 0 | 0 |
| 50 | 2.5 |
| 100 | 5 |

# AC/DC Voltage Sensor CYVS-xnU0

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

## Specifications

| | |
|---|---|
| Rated input voltage (Ux) | 50mV-1000V AC/DC (DC calibration, option: AC calibration) |
| Frequency range | DC – 5kHz |
| Linear measuring range | 0 - 1.2 times of rated input voltage |
| Overload capacity | 2 times of rated input voltage |
| Input response | Bi-directional DC and AC voltages |
| Input resistance | $R_i$>1MΩ for Ux≤1V, $R_i=U_x$ *x 10kΩ/V* for Ux >1V, $U_x$ : input voltage |
| Output signals DC | 0-5V, 0-10V, 0-20mA, 4-20mA DC |
| Measuring accuracy | 0.5% |
| Load capacity | voltage output: 5mA; current output: 6V |
| Response time | ≤250ms |
| Thermal drift | voltage output : 250ppm/°C; current output: 300-350ppm/°C |
| Power supply | +12VDC, +24VDC |
| Static current | Voltage output: 34mA; Current output: 34-38mA |
| 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 | U0 without aperture |
| MTBF | 50000h |
| Unit weight | 90g |

## Definition of Part number:

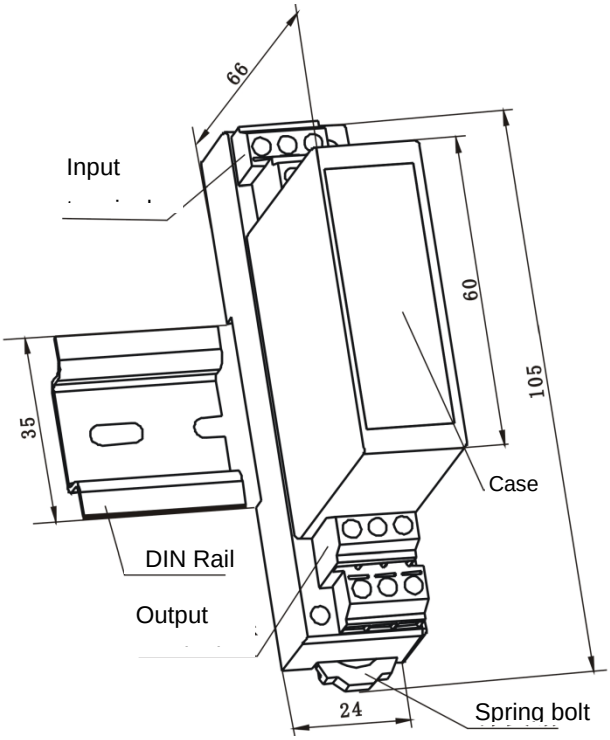
| CYVS | - | x | n | U0 | - | 0.5 | - | m |
|---|---|---|---|---|---|---|---|---|
| | | (1) | | (2) | (3) | (4) | (5) | (6) |

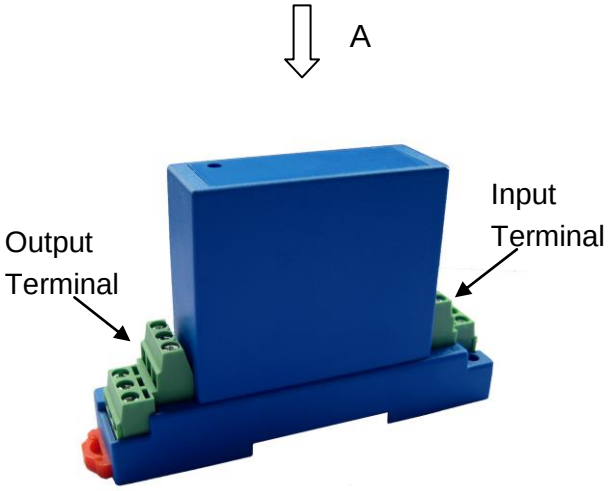
| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| Series name | Output signal | Power supply | Case style | Accuracy class | Input Voltage range (m) |
| CYVS | **x=3:** 0-5V DC<br>**x=4:** 0-20mA DC<br>**x=5:** 4-20mA DC | n**=2:** +12V DC<br>n**=4:** +24V DC | U0 | 0.5% | m=50mV-1000V AC/DC |
| | **x=8:** 0-10V DC | n**=4:** +24V DC | | | |

**Example 1:** CYVS-32U0-0.5-100V, AC/DC voltage sensor with
Output signal: 0-5V DC
Power supply: +12V DC
Rated input voltage: 0-100V AC/DC

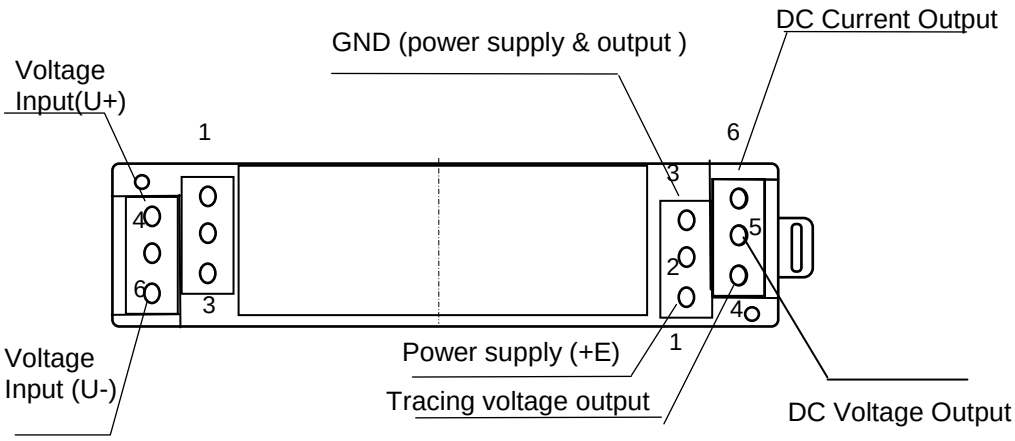
**Example 2:** CYVS-54U0-0.5-100V, AC/DC voltage sensor with
Output signal: 4-20mA DC
Power supply: +24V DC
Rated input voltage: 0 -100V AC/DC

## DIMENSIONS (mm)




View of A

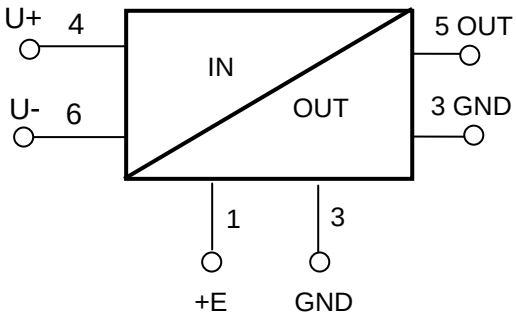


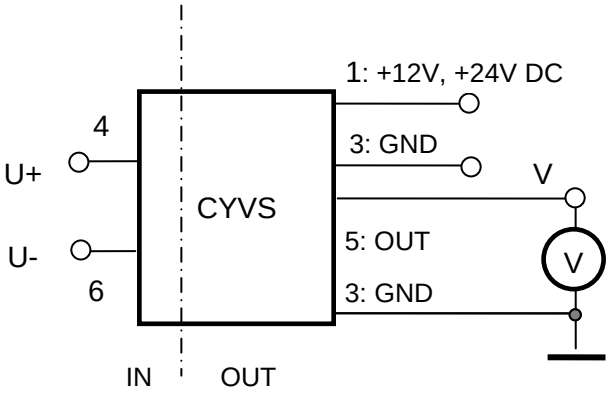

Please don‘t use the undefined terminals

Dimensions: 105mm x 24mm x 66mm

## CONNECTIONS

### Wiring of Terminals for voltage output:



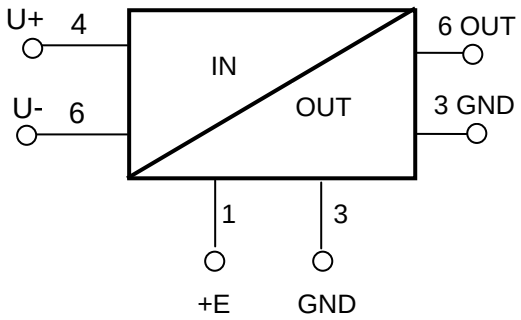

4, 6: Input Voltage; 1: +12V or +24V Power Supply 3: GND 5: Voltage output

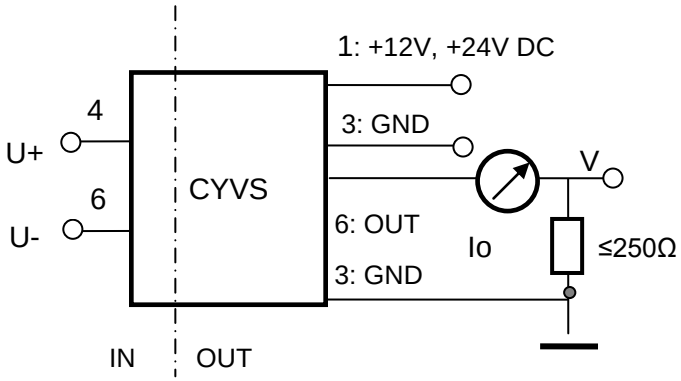
Relation between Input and Output:

.

| Sensor CYVS-32U0-0.5-100V | |
|---|---|
| Input Voltage (V) | Output voltage (V) |
| 0 | 0 |
| 25 | 1.25 |
| 50 | 2.5 |
| 75 | 3.75 |
| 100 | 5 |

### Wiring of Terminals for Current Output:




4, 6: Input Voltage; 1: +12V or +24V Power Supply 3: GND 6: Current output

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

| Sensor CYVS-54U0-0.5-100V | | |
|---|---|---|
| Input Voltage (V) | Output current Io(mA) | Output voltage Vo (V) |
| 0 | 4 | 1 |
| 25 | 8 | 2 |
| 50 | 12 | 3 |
| 75 | 16 | 4 |
| 100 | 20 | 5 |

# High Accurate AC Voltage Sensor CYVS411D07

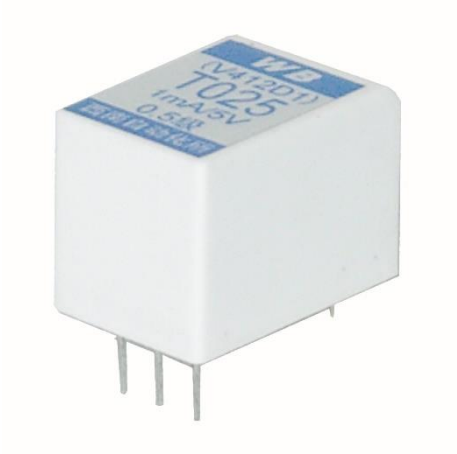
induction principle and is designed for applications to measurement and monitoring of single phase AC voltage. The output signal (AC voltage) of this transducer is proportional to the amplitude of input AC voltage. They are suitable for general applications such as fixed frequency voltage supplies etc.

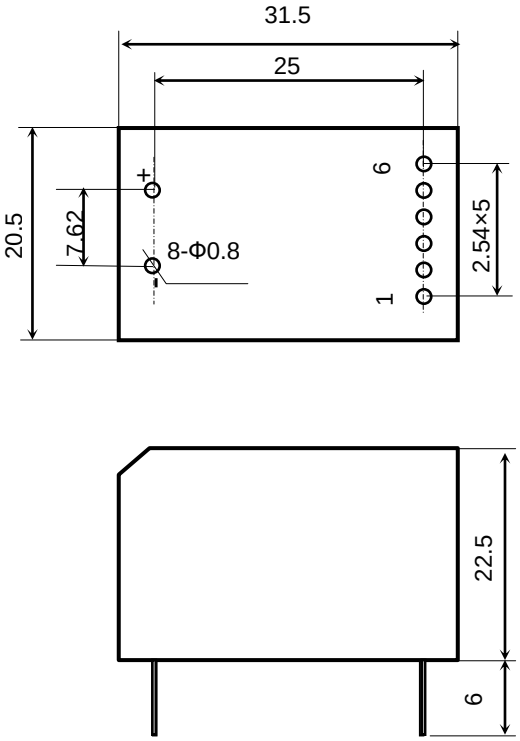
The sensor has the advantages of high measuring accuracy, high reliability, low thermal drift, low current consumption, small size, PCB mounting etc.

## Specifications

| | |
|---|---|
| Part number | CYVS411D07-m-X, (X depends on power supply) |
| Rated input voltage range | m=10V ~ 1000V AC (it needs to connect a resistor in value of 1kΩ/V at the input for limiting the input current) |
| Linear measuring range | 0 ~ 1.2 time of rated input voltage |
| Overload capacity | 2 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 | 80ppm/°C |
| Power supply | X=5 for ±12V DC, X=6 for ±15VDC |
| Static Voltage | 5mA |
| Isolation | Isolation 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 |
| MTBF | 50000 h |
| Unit weight | 30g |

## DIMENSIONS (mm)






Dimensions: 31.5mm x 20.5mm x 22.5mm

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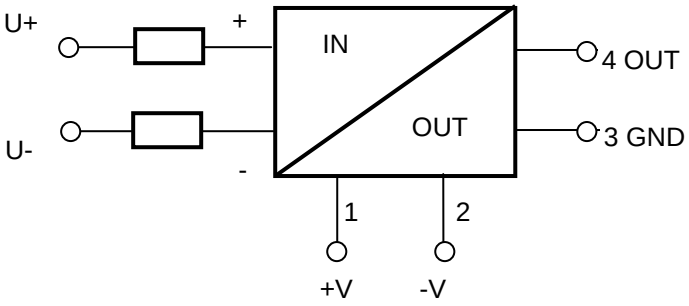
## Connection



# Accurate AC Voltage Sensor CYVS412D01

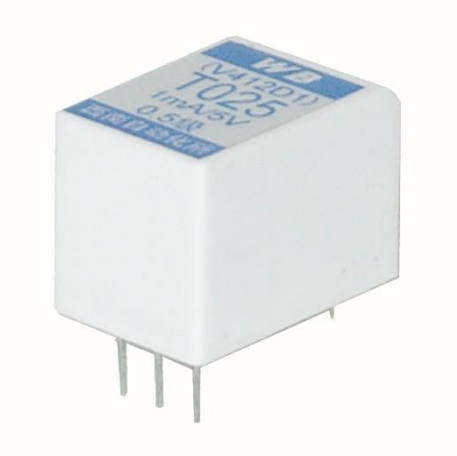
The **CYVS412D01** AC Voltage Sensor/Transducer works according to electro-magnetic induction principle and is designed for applications to measurement and monitoring of single phase AC voltage. The output signal (AC voltage) of this transducer is proportional to the amplitude of input AC voltage. They are suitable for general applications such as fixed frequency voltage supplies etc.

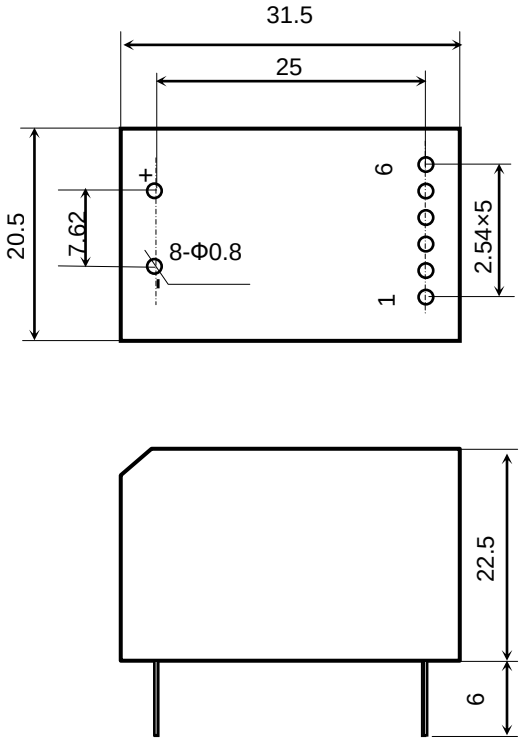
The sensor has the advantages of high measuring accuracy, high reliability, low thermal drift, low current consumption, small size, PCB mounting etc.

## Specifications

| | |
|---|---|
| Part number | CYVS412D01-m-X, (X depends on power supply) |
| Rated input voltage range | m=10V ~ 1000V AC (it needs to connect a resistor in value of 1kΩ/V at the input for limiting the input current) |
| Linear measuring range | 0 ~ 1.2 time of rated input voltage |
| Overload capacity | 2 times |
| Frequency range | 25Hz ~ 5 kHz |
| Output signals | DC voltage: 0-5V DC |
| 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 Voltage | 5mA |
| Isolation | Isolation 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 |
| MTBF | 50000 h |
| Unit weight | 30g |

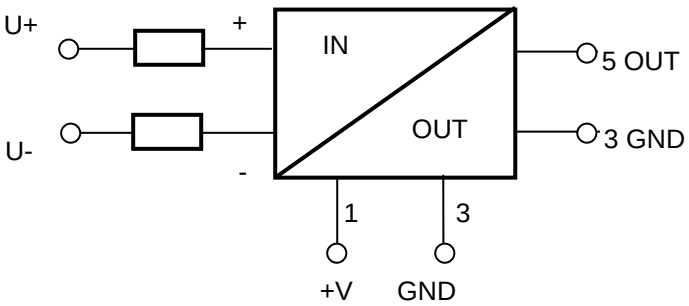
## DIMENSIONS (mm)






. Dimensions: 31.5mm x 20.5mm x 22.5mm

## Connection



# AC Voltage Sensors CYVS11-xnU0 and CYVS11A-xnU0

The **CYVS11-xnU0** and **CYVS11A-xnU0** AC voltage sensors/transducers work according Electro-Magnetic Induction and are designed for applications to measurement and monitoring of AC voltage. The output signal (DC voltage or current) of these transducers are proportional to the input AC voltage. They are suitable for measurements and long time monitoring of AC voltages and can applied to power supply manage-ment, AC motor drivers, battery chargers and systems etc.

## Specifications

| **Part number** | **CYVS11-xnU0** | **CYVS11A-xnU0** |
|---|---|---|
| Rated input voltage (Ux) | 10V-1000V AC | 10V-1000V AC |
| Linear measuring range | 0 - 1.2 times of rated input voltage | 0 - 1.2 times of rated input voltage |
| Overload capacity | 2 times of rated input voltage | 2 times of rated input voltage |
| Frequency of input voltage | Typ. 50Hz, 60Hz, max. 5kHz | Typ. 50Hz, 60Hz, max. 5kHz |
| Input resistance | $R_i=U_x$ *x 1kΩ /V*, $U_x$ : input voltage | $R_i=U_x$ *x 10kΩ/V*, $U_x$ : input voltage |
| Output signals DC | Tracing voltage 5VAC, 0-5VDC, 0-10VDC, 0-20mADC, 4-20mA DC | 0-5V, 0-10V, 0-20mA, 4-20mA DC |
| Measuring accuracy<br>. | 0.1% for tracing voltage output;<br>0.2% for voltage output;<br>0.5% for current output | 0.5% |
| Load capacity | voltage output: 5mA; current output: 6V | voltage output: 5mA; current output: 6V |
| Response time | 15µs for tracing voltage output ; 300ms for DC output | ≤350ms |
| Thermal drift | voltage output : 50-80ppm/°C; current output: 300ppm/°C | 350ppm/°C |
| Power supply | ±12VDC, ±15VDC, +12VDC, +24VDC | 165-265VAC, +230-360VDC |
| Static current | Voltage output: 10mA; Current output: 13-17mA | |
| Isolation | Isolation between input and output, power supply at the output | Isolation between input and output and power supply |
| Isolation withstanding voltage | 2.5 kV DC, 1min | 2.5 kV DC, 1min for Input-Output and power supply – Input<br>2.5kV DC, 1min for power supply - output |
| Operating temperature | -10°C ~ +60°C | -10°C ~ +60°C |
| Storage temperature | -25°C ~ + 70°C | -25°C ~ + 70°C |
| Relative humidity | 10% ~ 90% | 10% ~ 90% |
| Protection of Case | IP20 | IP20 |
| Material of Case | ABS (According to UL94V-0) | ABS (According to UL94V-0) |
| Mounting | DIN Rail | DIN Rail |
| Case Style | U0 without aperture | U0 without aperture |
| MTBF | 50000h | 50000h |
| Unit weight | 90g | 90g |

## Definition of Part number:

| CYVS11 | - | 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 Voltage range (m) |
| CYVS11 | **x=1:** 5VAC tracing** | n**=5:** ±12V DC<br>n**=6:** ±15V DC | U0 | 0.2%<br>0.5% | m=10V-1000V AC |
| | **x=3:** 0-5V DC<br>**x=4:** 0-20mA DC<br>**x=5:** 4-20mA DC | n**=2:** +12V DC<br>n**=4:** +24V DC | | | |
| | **x=8:** 0-10V DC | n**=4:** +24V DC | | | |
| CYVS11A | **x=1:** 0-5VAC<br>**x=3:** 0-5V DC<br>**x=4:** 0-20mA DC<br>**x=5:** 4-20mA DC<br>**x=8:** 0-10V DC | n**=8:** 165V-265VAC<br>n**=9:** 230-360VDC | U0 | 0.5% | m=10V-1000V AC |

**Example 1:** CYVS11-32U0-0.2-100V, AC voltage sensor with
Output signal: 0-5V DC
Power supply: +12V DC
Rated input voltage: 0-100V AC

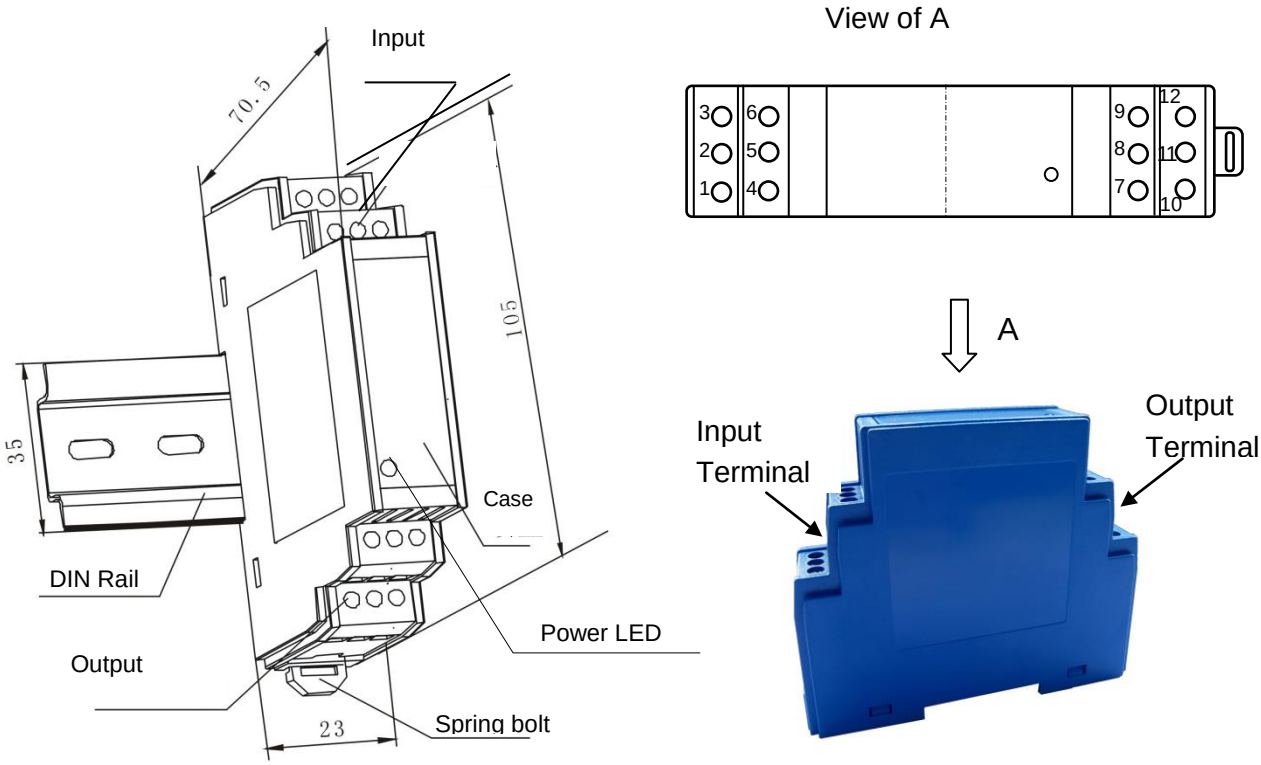
**Example 2:** CYVS11-35U0-0.1-100V, AC voltage sensor with
Output signal: 0-5V AC
Power supply: ±12V DC
Rated input voltage: 0-100V AC

**Example 3:** CYVS11-54U0-0.5-100V, AC voltage sensor with
Output signal: 4-20mA DC
Power supply: +24V DC
Rated input voltage: 0 -100V AC

**Example 4:** CYVS11A-38U0-0.2-100V, AC voltage sensor with
Output signal: 0-5V DC
Power supply: 165-265V AC
Rated input voltage: 0-100V AC

**Example 5:** CYVS11A-58U0-0.5-100V, AC voltage sensor with
Output signal: 4-20mA DC
Power supply: 165-265V AC
Rated input voltage: 0 -100V AC

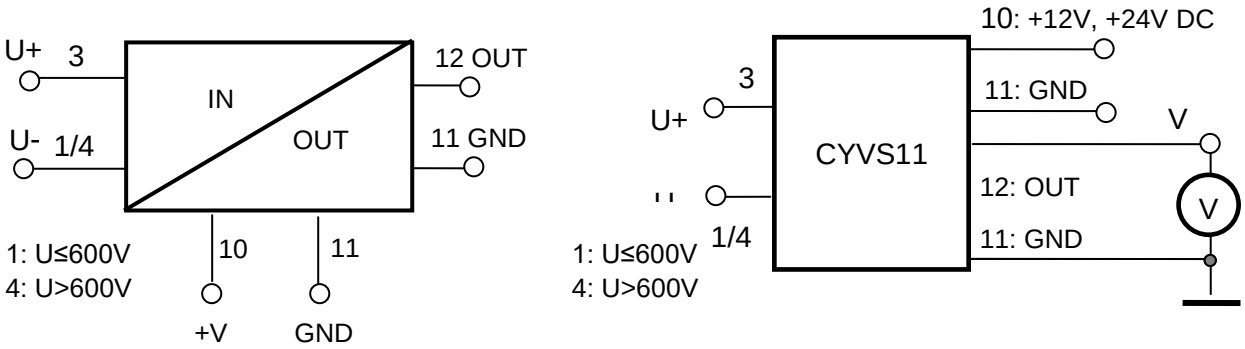
## DIMENSIONS (mm)



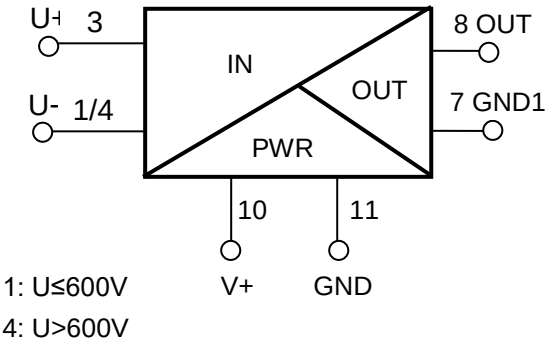

Dimensions: 105mm x 23mm x 70.5mm

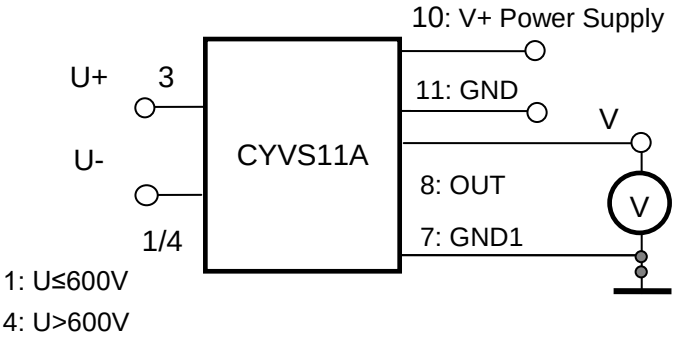
## CONNECTIONS

### Wiring of Terminals for voltage output:




1/4,3: Input Voltage; 10: +12V, +24V Power Supply 11: GND 12: Voltage output



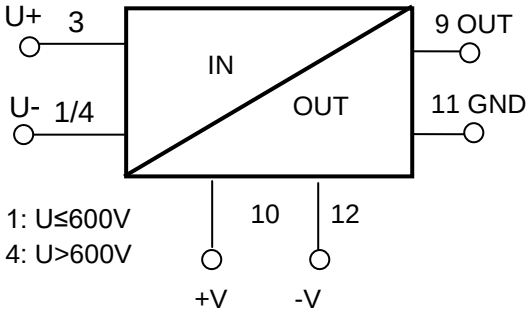



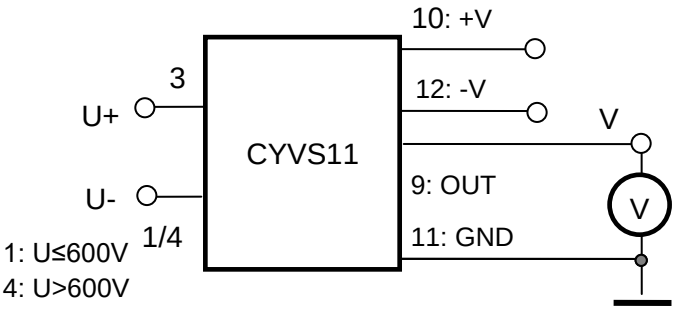

1/4,3: Input Voltage; 10, 11: Power Supply 7: GND 8: Voltage output

Relation between Input and Output:

| Sensor CYVS11-32U0-0.2-100V | | Sensor CYVS11A-38U0-0.5-100V | |
|---|---|---|---|
| Input Voltage (V) | Output voltage (V) | Input Voltage (V) | Output voltage (V) |
| 0 | 0 | 0 | 0 |
| 25 | 1.25 | 25 | 1.25 |
| 50 | 2.5 | 50 | 2.5 |
| 75 | 3.75 | 75 | 3.75 |
| 100 | 5 | 100 | 5 |

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



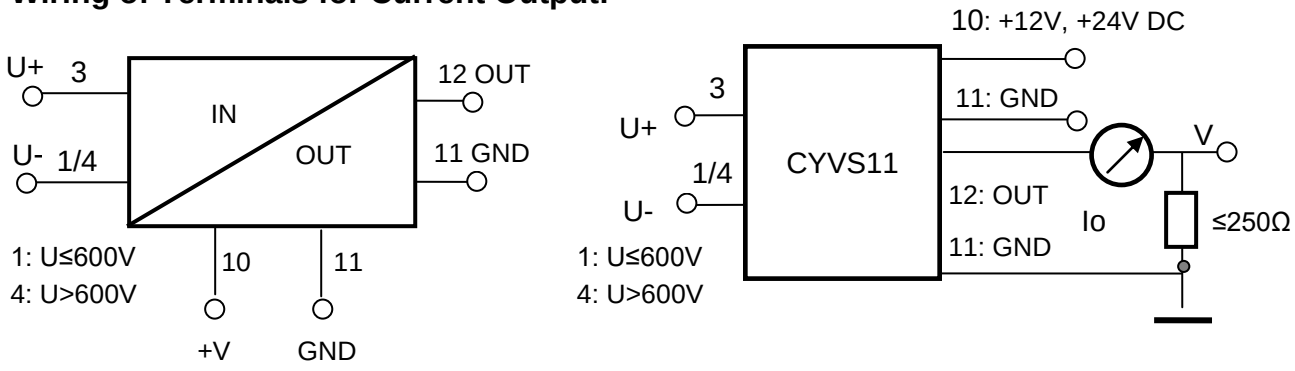




1/4,3: Input Voltage; 10, 12: Power Supply 11: GND 9: Voltage output

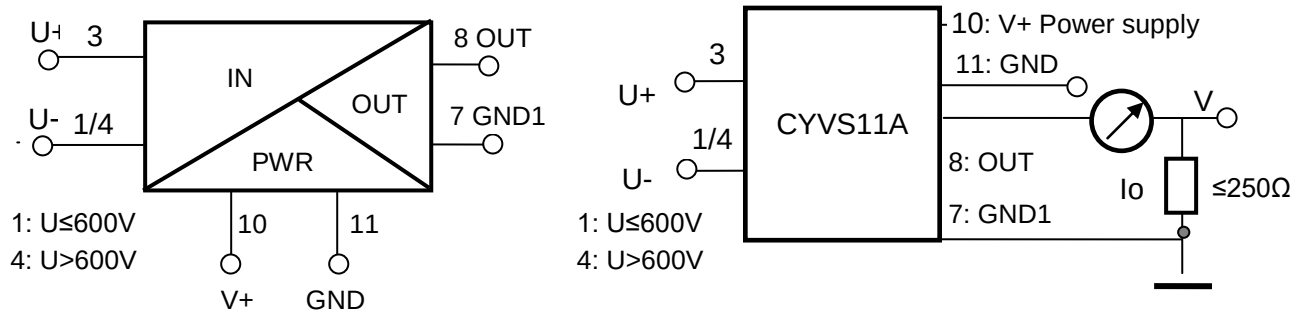
Relation between Input and Output:

| Sensor CYVS11-32U0-0.2-100V | |
|---|---|
| Input Voltage (V) | Output voltage (V) |
| 0 | 0 |
| 25 | 1.25 |
| 50 | 2.5 |
| 75 | 3.75 |
| 100 | 5 |

## Wiring of Terminals for Current Output:




1/4,3: Input Voltage; 10: +12V, +24V Power Supply 11: GND 12: Current output




1/4,3: Input Voltage; 10, 11: Power Supply 7: GND 8: current output

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

| Sensor CYVS11-54U0-0.5-100V | | | Sensor CYVS11A-58U0-0.5-100V | | |
|---|---|---|---|---|---|
| Input Voltage (V) | Output current Io (mA) | Output voltage Vo (V) | Input Voltage (V) | Output current Io (mA) | Output voltage Vo (V) |
| 0 | 4 | 1 | 0 | 4 | 1 |
| 25 | 8 | 2 | 25 | 8 | 2 |
| 50 | 12 | 3 | 50 | 12 | 3 |
| 75 | 16 | 4 | 75 | 16 | 4 |
| 100 | 20 | 5 | 100 | 20 | 5 |

# AC Voltage Sensor CYVS11-xnS2

The **CYVS11-xnS2** AC Voltage Sensor/Transducer works according electro-magnetic induction and is designed for applications to measurement and monitoring of single phase AC voltage. The output signal (DC voltage or current) of this transducer is proportional to the average effective value (RMS) of input AC voltage. They are suitable for general applications such as fixed frequency voltage supplies etc.

## Specifications

| | |
|---|---|
| Rated input voltage range | 10V, 50V ,100V, 110V, 220V, 250V, 380V, 400V, 500V, 1000V |
| Frequency of input voltage | Typ. 50Hz, 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 | ≤300ms |
| Overload capacity | 2 times |
| Quiescent power consumption | 180mW – 250mW |
| Mounting | Din rail |
| Case style | S2 without aperture |

## Definition of Part number:

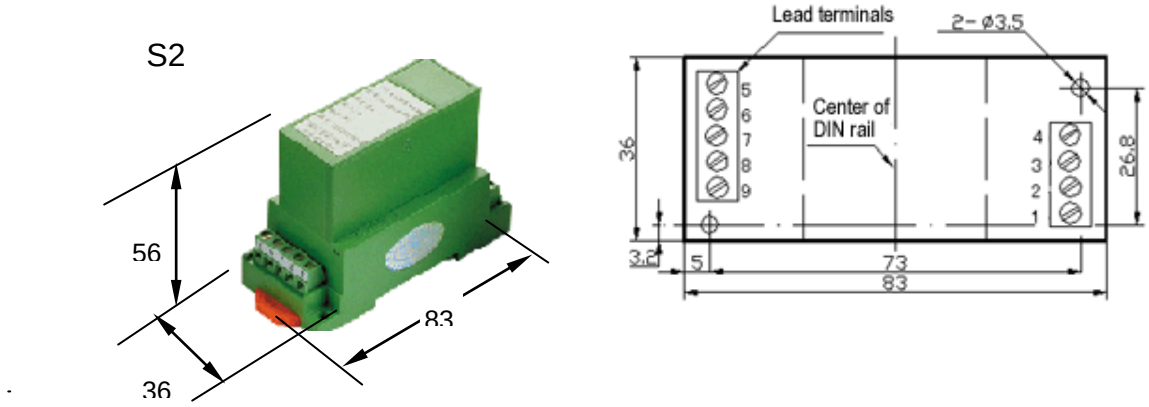
| CYVS11 | - | x | n | S2 | - | 0.5 | - | m |
|---|---|---|---|---|---|---|---|---|
| (1) | | (2) | (3) | (4) | | (5) | | (6) |

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| Series name | Output signal | Power supply | Case style | Accuracy class | Input voltage range (m) |
| CYVS11 | **x=1:** 5V (Vpp, tracing)<br>**x=3:** 0-5V DC<br>**x=4:** 0-20mA DC<br>**x=5:** 4-20mA DC<br>**x=8:** 0-10V DC | n**=2:** +12V DC<br>n**=3:** +15V DC<br>n**=4:** +24V DC | S2 | 0.5% | 10V, 50V, 100V, 110V, 220V, 250V, 380V, 400V, 500V, 1000V |

**Example 1:** CYVS11-32S2-0.5-100V, Single Phase AC Voltage sensor with
Output signal: 0-5V DC
Power supply: +12V DC
Rated input voltage: 100V AC/RMS

**Example 2:** CYVS11-54S2-0.5-100V, Single Phase AC Voltage sensor with
Output signal: 4-20mA DC
Power supply: +24V DC
Rated input voltage: 100V AC/RMS

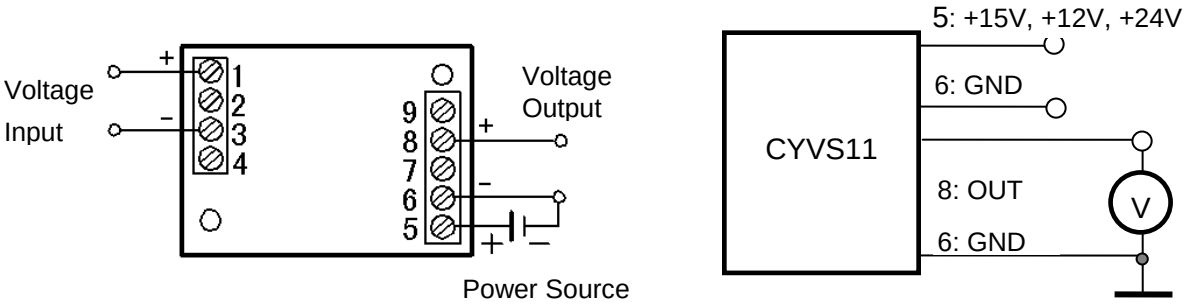
## DIMENSIONS (mm)




Dimensions: 56mm x 83mm x 36mm

## CONNECTIONS

### Wiring of Terminals for voltage output:

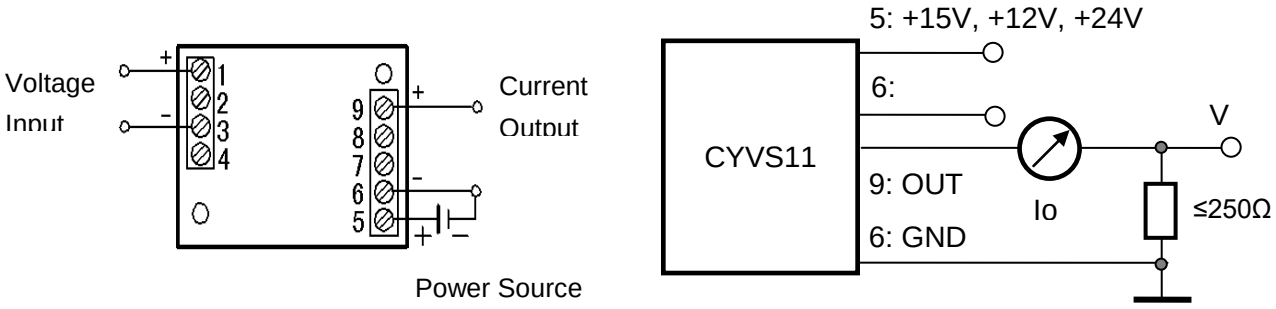



5: +15V, +12V, +24V Power Supply  6: GND  8: Voltage output

Relation between Input and Output:

| Sensor CYVS11-32S2-0.5-100V | |
|---|---|
| Input Voltage (V) | Output voltage (V) |
| 0 | 0 |
| 25 | 1.25 |
| 50 | 2.5 |
| 75 | 3.75 |
| 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 Ω):

| Sensor CYVS11-54S2-0.5-100V | | |
|---|---|---|
| Input Voltage (V) | Output current Io(mA) | Output voltage Vo (V) |
| 0 | 4 | 1 |
| 25 | 8 | 2 |
| 50 | 12 | 3 |
| 75 | 16 | 4 |
| 100 | 20 | 5 |

## Application:

- Monitor for over/under voltage
- Power monitoring
- Multi-point instrumentation needs
- Sense phase loss

## Notice:

- Selection of output signal: Please select power source >12V at 0~10V output.
- 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.

# 3-Phase 3-Wire AC Voltage Sensor CYVS13-xnU0

The **CYVS13-xnU0** AC Voltage Sensor/Transducer works according electro-magnetic induction and is designed for applications to measurement and monitoring of 3-Phase 3-Wire AC voltage. The output signals (DC voltage or current) of this transducer are proportional to the average effective value (RMS) of input AC voltages. They are suitable for general applications such as fixed frequency voltage supplies and sinusoid voltages etc.

## Specifications

| | |
|---|---|
| Rated input voltage (Ux) | 10V-500V AC |
| Linear measuring range | 0 - 1.2 times of rated input voltage |
| Overload capacity | 2 times of rated input voltage |
| Frequency of Input voltage | Typ. 50Hz, 60Hz, max. 5kHz |
| Input resistance | $R_i$=0.667$U_x$ *x 1k*Ω /V, $U_x$ : input voltage |
| Output signals DC | 0-5V, 0-10V, 0-20mA, 4-20mA DC |
| Measuring accuracy | 0.5% |
| Load capacity | voltage output: 5mA; current output: 6V |
| Response time | ≤300ms |
| Thermal drift | voltage output : 250ppm/°C; current output: 350ppm/°C |
| Power supply | +12VDC, +24VDC |
| Static current | Voltage output: 8mA; 0-20mA output: 12mA; 4-20mA output: 35mA |
| 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:

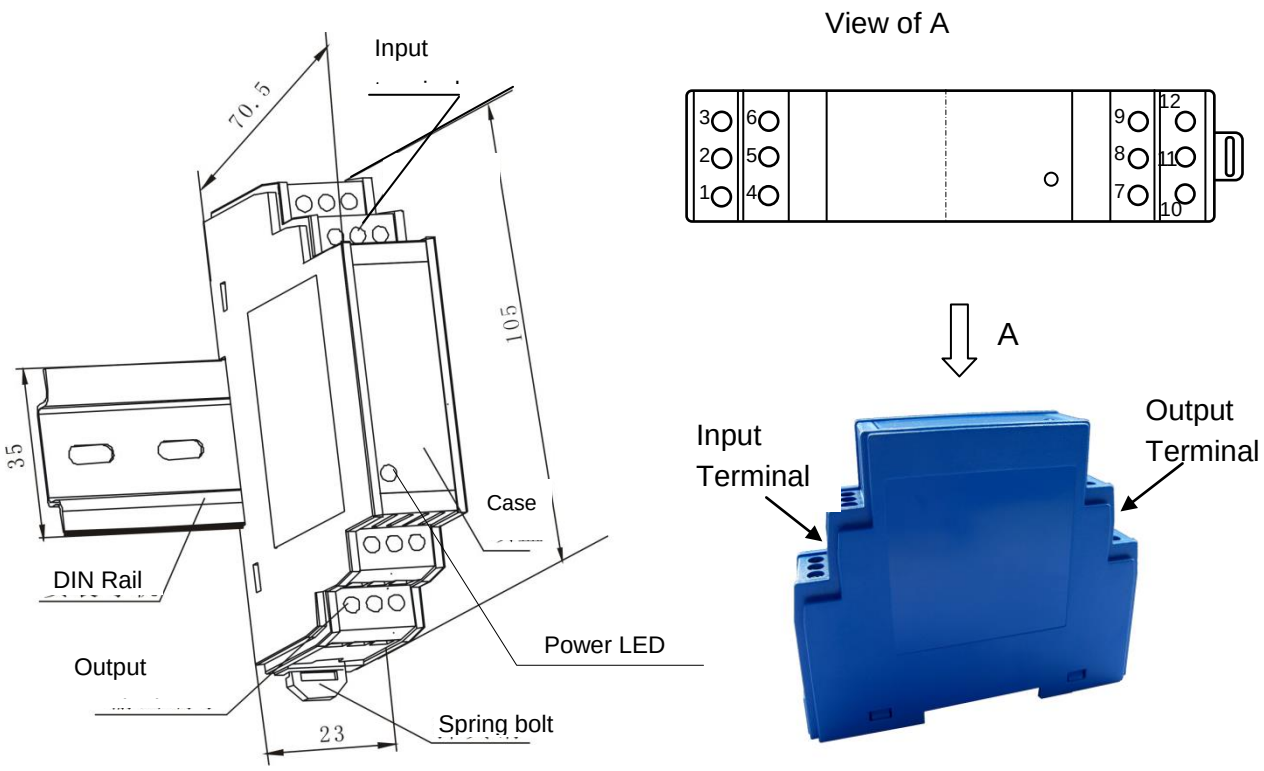
| CYVS13 | - | x | n | U0 | - | 0.5 | - | m |
|---|---|---|---|---|---|---|---|---|
| | | (1) | | (2) | (3) | (4) | (5) | (6) |

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| Series name | Output signal | Power supply | Case style | Accuracy class | Input Voltage range (m) |
| CYVS13 | **x=1:** 0-5VAC<br>**x=3:** 0-5V DC<br>**x=4:** 0-20mA DC<br>**x=5:** 4-20mA DC | n**=2:** +12V DC<br>n**=4:** +24V DC | U0 | 0.5% | m=10V-500V AC |
| | **x=8:** 0-10V DC | n**=4:** +24V DC | | | |

**Example 1:** CYVS13-32U0-0.2-100V, 3-phase 3 wire AC voltage sensor with
Output signal: 0-5V DC
Power supply: +12V DC
Rated input voltage: 0-100V AC

**Example 2:** CYVS13-54U0-0.5-100V, 3-phase 3 wire AC voltage sensor with
Output signal: 4-20mA DC
Power supply: +24V DC
Rated input voltage: 0 -100V AC

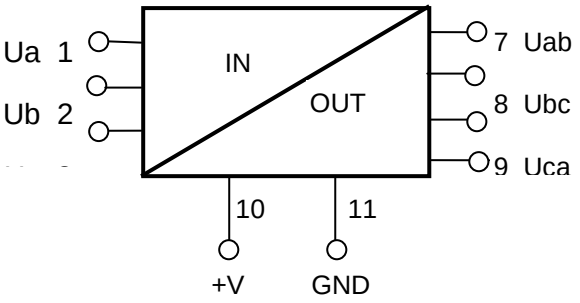
## DIMENSIONS (mm)



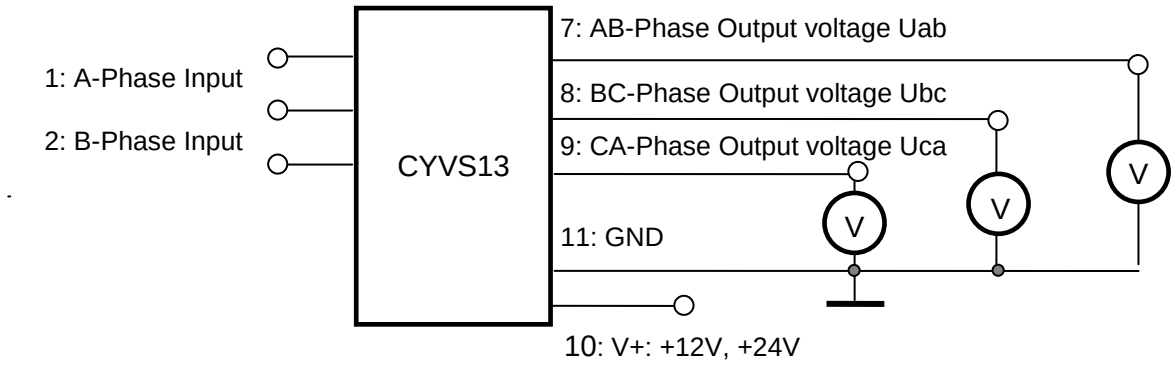

Dimensions: 105mm x 23mm x 70.5mm

## CONNECTIONS

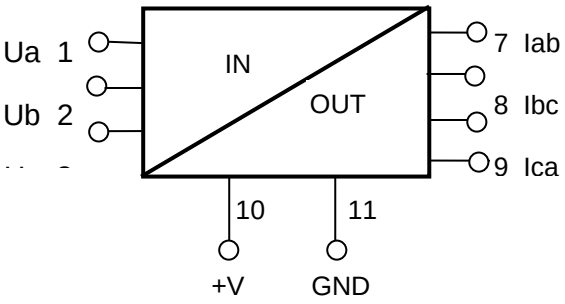
### Wiring of Terminals for voltage output:



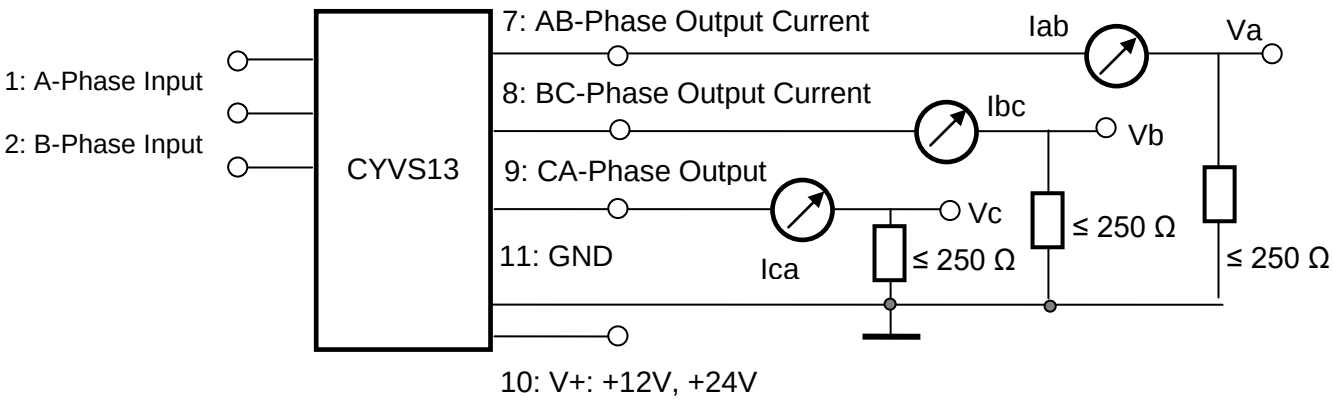

1,2,3: Voltage Inputs Ua, Ub, Uc
7,8,9: voltage Outputs Uab, Ubc, Uca
10: Power supply




### Wiring of Terminals for Current Output:




1,2,3: Voltage Inputs Ua, Ub, Uc
7,8,9: Current Outputs Iab, Ibc, Ica
10: Power supply



# 3-Phase 3-Wire AC Voltage Sensor CYVS13-xnS3

The **CYVS13-xnS3** AC Voltage Sensor/Transducer works according electro-magnetic induction and is designed for applications to measurement and monitoring of 3-Phase 3-Wire AC voltage. The output signals (DC voltage or current) of this transducer are proportional to the average effective value (RMS) of input AC voltages. They are suitable for general applications such as fixed frequency voltage supplies and sinusoid voltages etc.

## Specifications

| | |
|---|---|
| Rated input voltage range | 50V, 75V, 100V, 200V, 250V, 300V, 380V, 400V, 500V |
| Frequency of input voltage | Typ. 50Hz, 60Hz, max. 5kHz |
| Output signal | 0-5VDC, 0-20 mA, 4-20 mA, 0-10V DC |
| 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 |
| 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 | ≤250ms |
| Overload capacity | 2 times |
| Quiescent power consumption | 400mW – 500mW |
| Mounting | Din rail |
| Case style | S3 without aperture |

## Definition of Part Number:

| CYVS13 | - | 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 voltage range (m) |
| CYVS13 | **x=1:** 0-5VAC<br>**x=3:** 0-5V DC<br>**x=4:** 0-20mA DC<br>**x=5:** 4-20mA DC<br>**x=8:** 0-10V DC | n**=2:** +12V DC<br>n**=3:** +15V DC<br>n**=4:** +24V DC | S3 | 0.5% | 50V, 75V, 100V, 200V, 250V, 300V, 380V, 400V, 500V |

**Example 1:** CYVS13-32S3-0.5-380V, 3-Phase 3-Wire AC voltage sensor with
Output signal: 0-5V DC
Power supply: +12V DC
Rated input voltage: 380V AC/RMS

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Germany

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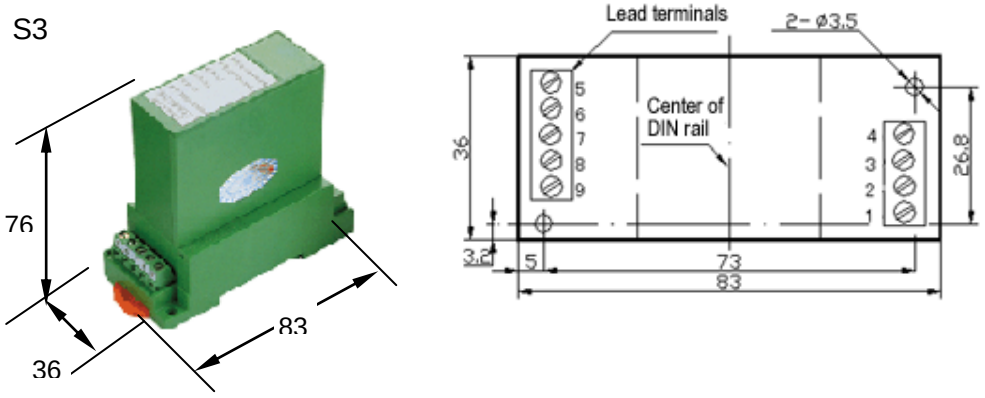
Fax: +49 (0)8121-2574101
Email: info@chenyang.de
http://www.chenyang.de

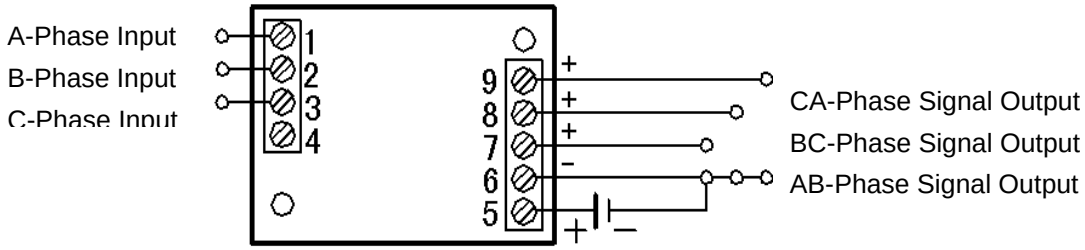
**Example 2:** CYVS13-54S3-0.5-380V, 3-Phase 3-Wire AC voltage sensor with
Output signal: 4-20mA DC
Power supply: +24V DC
Rated input voltage: 380V AC/RMS

## DIMENSIONS (mm)




Dimensions: 76mm x 83mm x 36mm

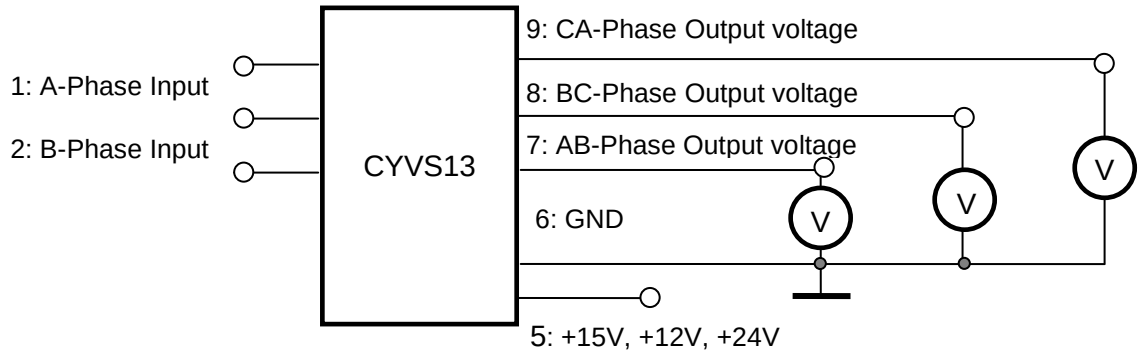
## CONNECTIONS




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

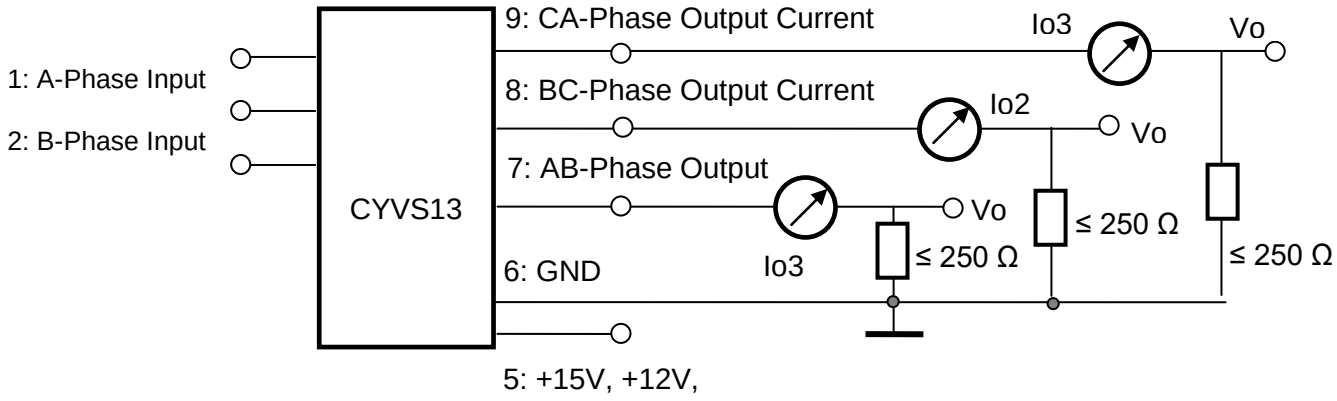
3-Phase 3-Wire AC Voltage sensor

## Wiring of Terminals for voltage output:




5: +15V, +12V, +24V Power Supply  6: GND  7, 8, 9: 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 Ω):

| Sensor CYVS13-54S3-0.5-380V | | |
|---|---|---|
| Voltage Input (V) | Output current Io(mA) | Output voltage Vo (V) |
| 0 | 4 | 1 |
| 95 | 8 | 2 |
| 190 | 12 | 3 |
| 285 | 16 | 4 |
| 380 | 20 | 5 |

## Application:

- Harmonic voltages
- Chopped waveform drivers
- Quickly varying voltage supplies
- Phase fired controlled devices

## Notice:

1. There is no polarity requirement for the input current connection.
2. The output signal and the power source are common grounded at terminal 6.
3. The output at terminal 7 corresponds to the line voltage $V_{AB}$, the output at terminal 8 is line voltage $V_{BC}$, and the output at terminal 8 presents line voltage $V_{CA}$

# 3-Phase 4-Wire AC Voltage Sensor CYVS14-xnU0

The **CYVS14-xnU0** AC Voltage Sensor/Transducer works according electro-magnetic induction and is designed for applications to measurement and monitoring of 3-Phase 4-Wire AC voltage. The output signals (DC voltage or current) of this transducer are proportional to the average effective value (RMS) of input AC voltages. They are suitable for general applications such as fixed frequency voltage supplies and sinusoid voltages etc.

## Specifications

| | |
|---|---|
| Rated input voltage (Ux) | 10V-500V AC |
| Linear measuring range | 0 - 1.2 times of rated input voltage |
| Overload capacity | 2 times of rated input voltage |
| Frequency of Input voltage | Typ. 50Hz, 60Hz, max. 5kHz |
| Input resistance | $R_i$=$U_x$ *x 1kΩ /V*, $U_x$ : input voltage |
| Output signals DC | 0-5V, 0-10V, 0-20mA, 4-20mA DC |
| Measuring accuracy | 0.5% |
| Load capacity | voltage output: 5mA; current output: 6V |
| Response time | ≤300ms |
| Thermal drift | voltage output : 250ppm/°C; current output: 350ppm/°C |
| Power supply | +12VDC, +24VDC |
| Static current | Voltage output: 8mA; 0-20mA output: 8mA; 4-20mA output: 20mA |
| 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:

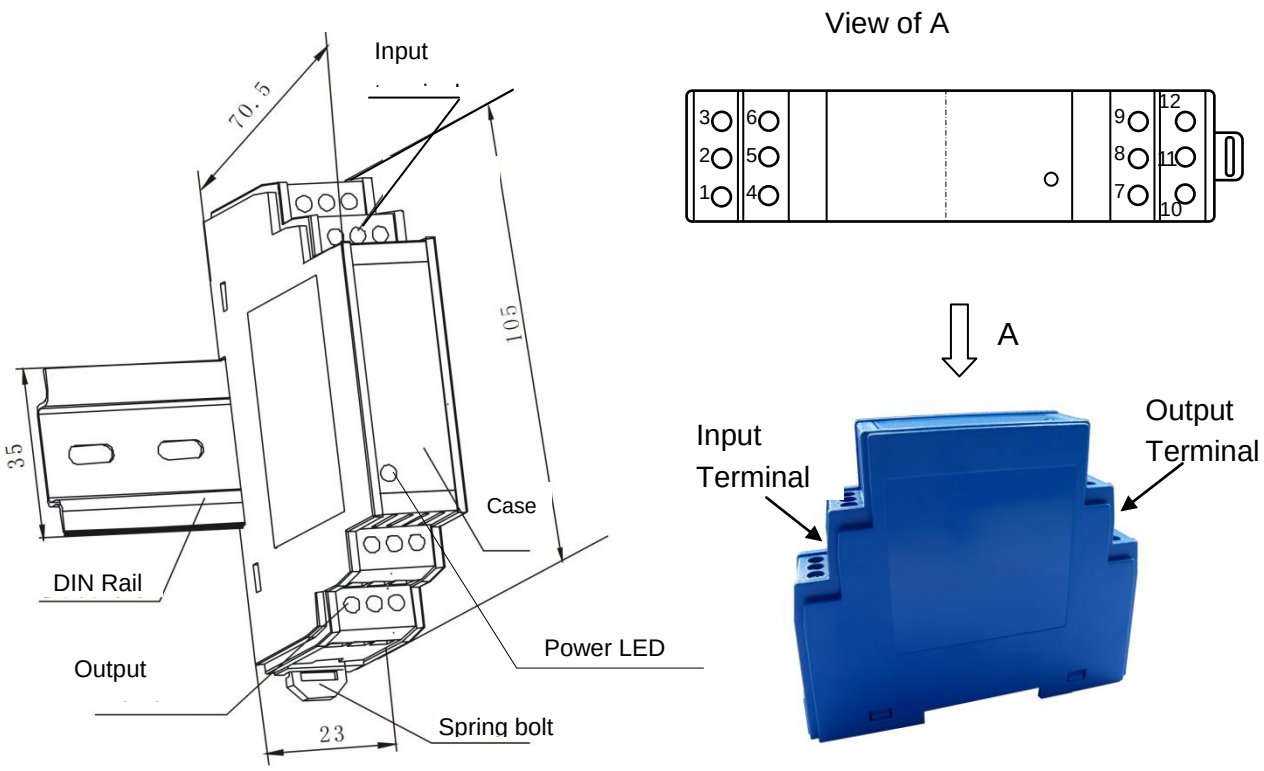
| CYVS14 | - | x | n | U0 | - | 0.5 | - | m |
|---|---|---|---|---|---|---|---|---|
| | | (1) | | (2) | (3) | (4) | (5) | (6) |

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| Series name | Output signal | Power supply | Case style | Accuracy class | Input Voltage range (m) |
| CYVS14 | **x=1:** 0-5VAC<br>**x=3:** 0-5V DC<br>**x=4:** 0-20mA DC<br>**x=5:** 4-20mA DC | n**=2:** +12V DC<br>n**=4:** +24V DC | U0 | 0.5% | m=10V-500V AC |
| | **x=8:** 0-10V DC | n**=4:** +24V DC | | | |

**Example 1:** CYVS14-32U0-0.2-100V, 3-phase 4 wire AC voltage sensor with
Output signal: 0-5V DC
Power supply: +12V DC
Rated input voltage: 0-100V AC

**Example 2:** CYVS14-54U0-0.5-100V, 3-phase 4 wire AC voltage sensor with
Output signal: 4-20mA DC
Power supply: +24V DC
Rated input voltage: 0 -100V AC

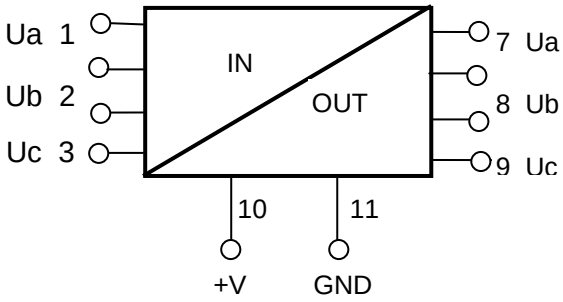
## DIMENSIONS (mm)



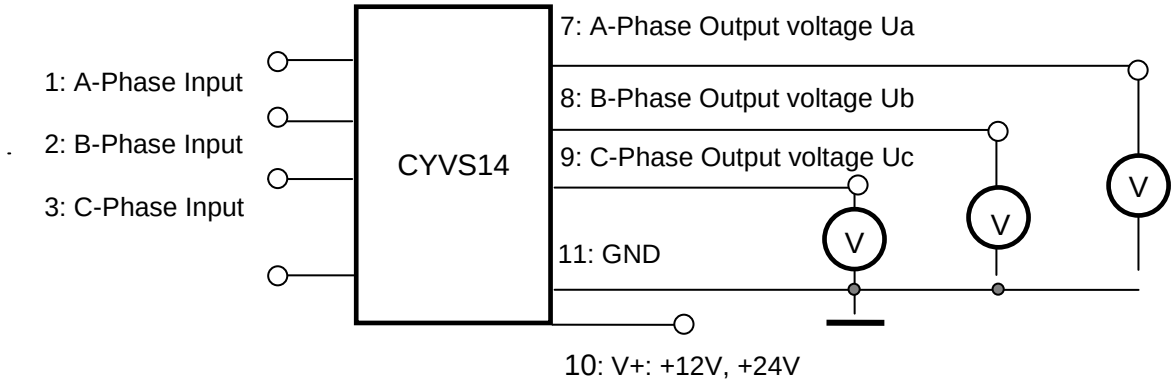

Dimensions: 105mm x 23mm x 70.5mm

## CONNECTIONS

### Wiring of Terminals for voltage output:

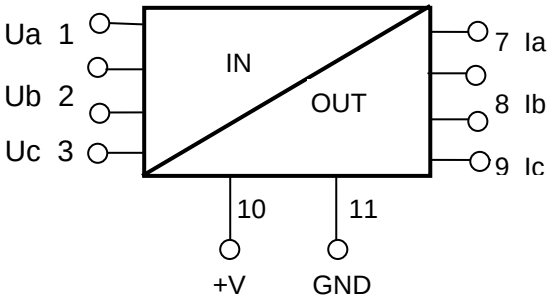



1,2,3: Voltage Inputs Ua, Ub, Uc
6: N: neutral
7,8,9: voltage Outputs Ua, Ub, Uc
10: Power supply

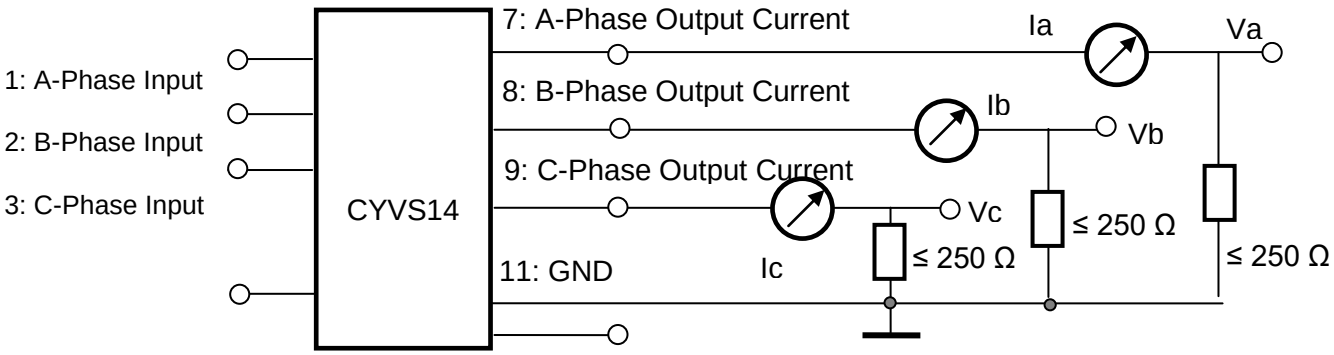



10: V+: +12V, +24V

### Wiring of Terminals for Current Output:




1,2,3: Voltage Inputs Ua, Ub, Uc
6: N: neutral
7,8,9: Current Outputs Ia, Ib, Ic
10: Power supply




10: V+: +12V, +24V

# 3-Phase 4-Wire AC Voltage Sensor CYVS14-xnS3

The **CYVS14-xnS3** AC Voltage Sensor/Transducer works according electro-magnetic induction and is designed for applications to measurement and monitoring of 3-Phase 4-Wire AC voltage. The output signals (DC voltage or current) of this transducer are proportional to the average effective value (RMS) of input AC voltages. They are suitable for general applications such as fixed frequency voltage supplies and sinusoid voltages etc.

## Specifications

| | |
|---|---|
| Rated input voltage range | 50V, 75V, 100V, 200V, 250V, 300V, 380V, 400V, 500V |
| Frequency of input voltage | Typ. 50Hz, 60Hz, max. 5kHz |
| Output signal | 0-5VDC, 0-20 mA, 4-20 mA, 0-10V DC |
| 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 |
| 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 | ≤250ms |
| Overload capacity | 2 times |
| Quiescent power consumption | 400mW – 500mW |
| Mounting | Din rail |
| Case style | S3 without aperture |

## Definition of Part Number:

| CYVS14 | - | 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 voltage range (m) |
| CYVS14 | **x=1:** 0-5VAC<br>**x=3:** 0-5V DC<br>**x=4:** 0-20mA DC<br>**x=5:** 4-20mA DC<br>**x=8:** 0-10V DC | n**=2:** +12V DC<br>n**=3:** +15V DC<br>n**=4:** +24V DC | S3 | 0.5% | 50V, 75V, 100V, 200V, 250V, 300V, 380V, 400V, 500V |

**Typical Example:** CYVS14-54S3-0.5-380V, 3-Phase 4-Wire AC voltage sensor with
Output signal: 4-20mA DC
Power supply: +24V DC
Rated input voltage: 380V AC/RMS

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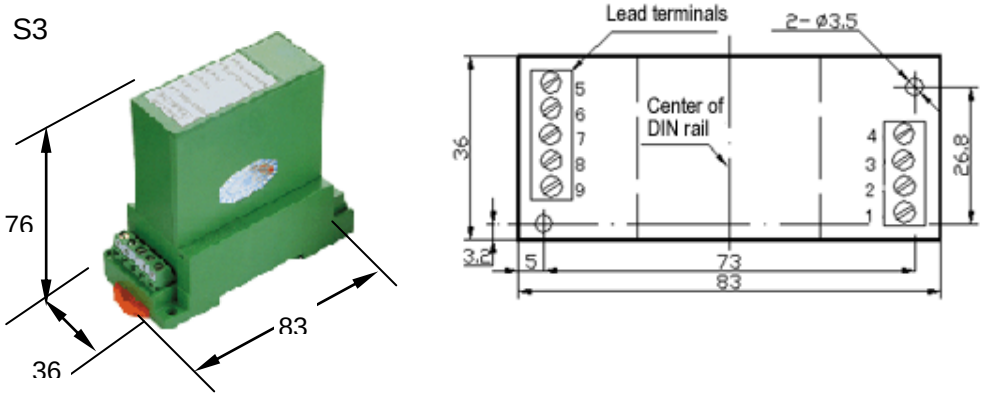
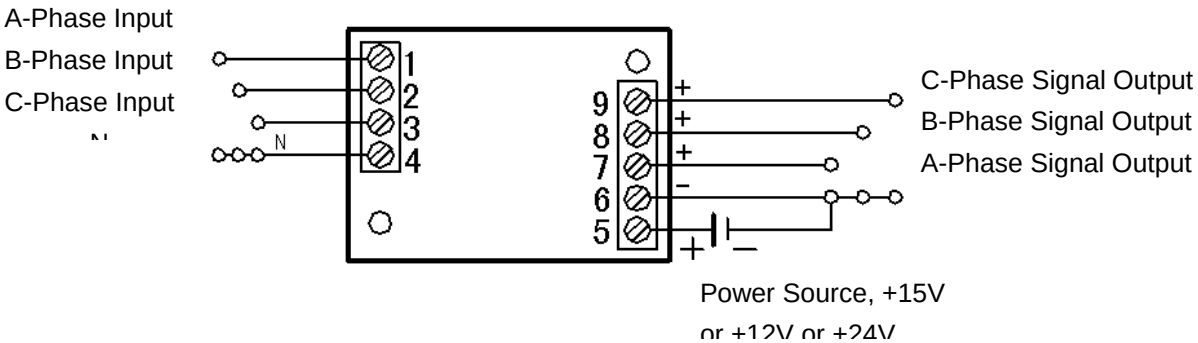
http://www.chenyang.de

## DIMENSIONS (mm)



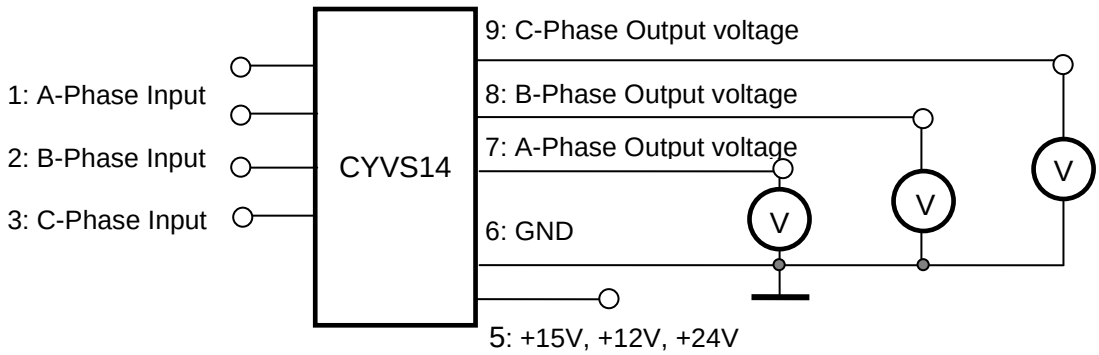

Dimensions: 76mm x 83mm x 36mm

## CONNECTIONS



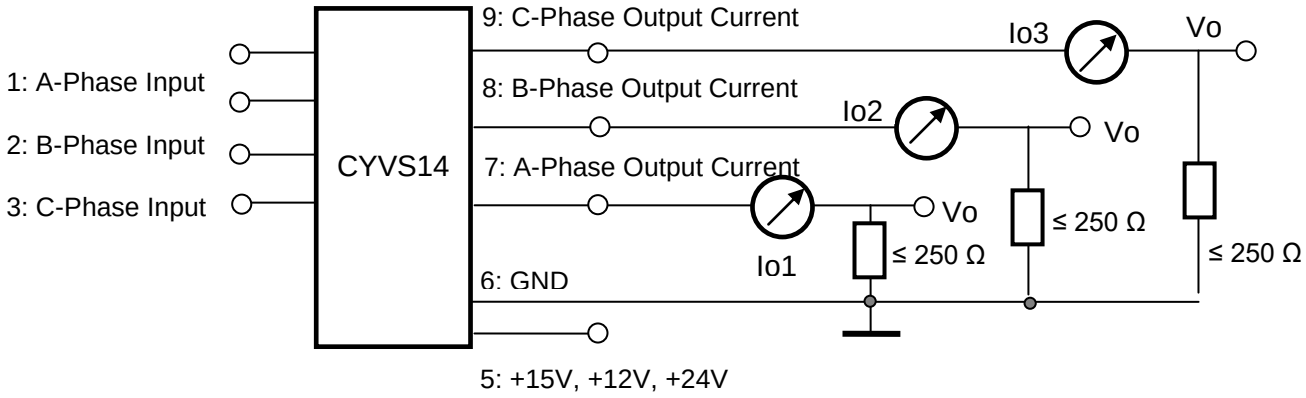

3-Phase 4-Wire AC voltage

## Wiring of Terminals for voltage output:




5: +15V, +12V, +24V Power Supply  6: GND  7, 8, 9: 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 Ω):

.

| Sensor CYVS14-54S3-0.5-380V | | |
|---|---|---|
| Voltage Input (V) | Output current Io(mA) | Output voltage Vo (V) |
| 0 | 4 | 1 |
| 95 | 8 | 2 |
| 190 | 12 | 3 |
| 285 | 16 | 4 |
| 380 | 20 | 5 |

## Application:

- Harmonic voltages
- Chopped waveform drivers
- Quickly varying voltage supplies
- Phase fired controlled devices

## Notice:

1. There is no polarity requirement for the input current connection.

2. The output signal and the power source are common grounded at terminal 6.

3. The output at terminal 7 corresponds to the phase voltage $V_A$, the output at terminal 8 is phase voltage $V_B$, and the output at terminal 8 presents phase voltage $V_C$

# 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.