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- **Power Semiconductors**
- **Electrical Measurement**
- **Process Control**

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## **USER MANNUAL**

### **FWBV412H29 AC Voltage Transducer**

Technical Service: 86 816 2778156  
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ISO9001 ISO14000 ISO18000  
Certified



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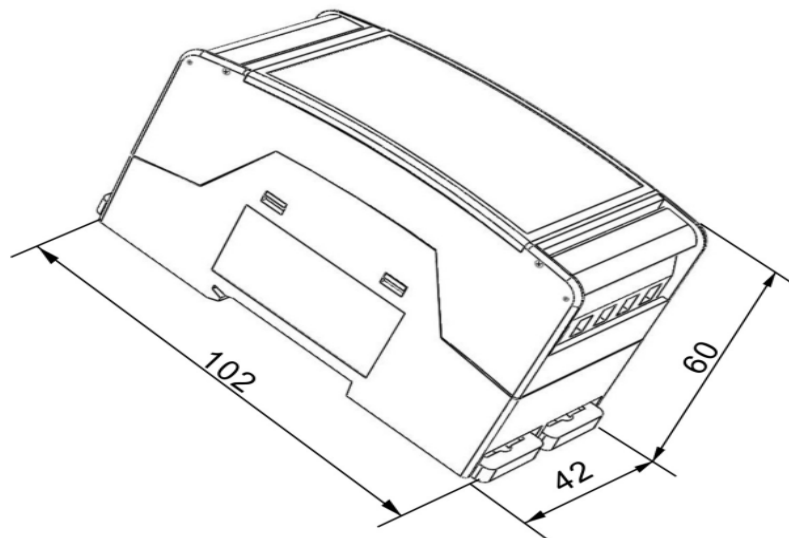
## FWBV412H29 AC Voltage Transducer

### Product Description and Application

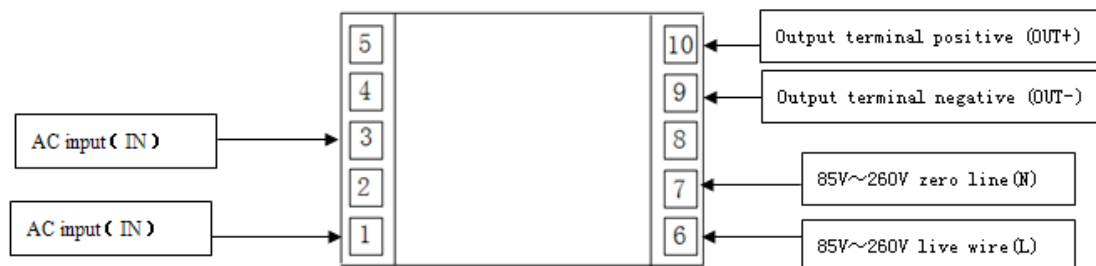
FWBV412H29 converts AC input voltage into a load independent output signal dc 0V-5V or 1V-5V. It has adopted electromagnetic isolation principle and average measurement method for real time measurement of AC voltage (in any wave form) from electric net or electric circuit.

The product has certain advantages of total galvanic isolation among input, output and auxiliary power, high accuracy, low drifting by temperature, and wide temperature bearable range, etc. The product meets EN61326: 2006 and EN60100: 2001 standard.

### Product Dimensional Drawing (unit: mm)



### Product Terminal Identification Drawing



#### Terminal definition table

1	IN
3	IN
6	L
7	N
9	OUT-
10	OUT+

## Key Technical Data:

1. Input/Output: AC 10V-500V input; DC 0-5V or 0-10V output;
2. Accuracy: 0.2%;
3. Input Impedance (R):  $U_x \geq 10V$        $R_i = U_x \times 1k \Omega / V$ ;
4. Linear Range: 0-120% of nominal input
5. Responding Time: 200mS
6. Over Load Capacity: 2 times of nominal input, for 1 second, repeat 10 times with 10 seconds' interval.
7. Maximum Load: 5mA
8. Auxiliary Power: AC/DC 85V-265V;
9. Isolation Voltage: input and output  $\geq 2500V_{dc}$ , for 1 minute  
     Auxiliary Power and input  $\geq 2500V_{dc}$ , for 1 minute  
     Auxiliary Power and output  $\geq 2500V_{dc}$ , for 1 minute
10. Output Ripple:  $\leq 10mV$
11. Drifting by Temperature:  $350 \times 10^{-6} / ^\circ C$
12. Ambient Temperature:  $-25^\circ C \sim +70^\circ C$

## Instruction of Installation

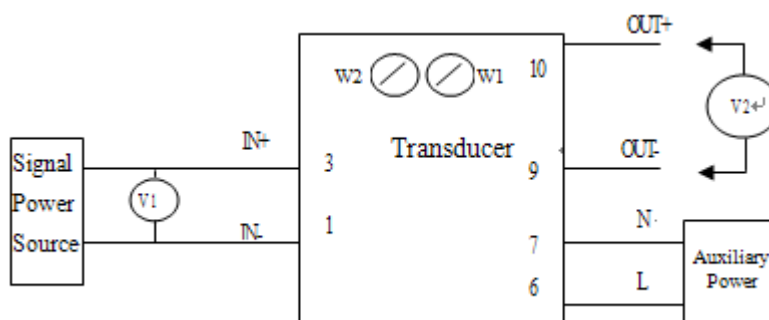
1. The product has adopted structure compliance with EN50022; suitable for DIN rail mounting NS35/7.5, NS35/15. Installation steps are as following (please reference to dimensional drawing):

- Step 1: Immobilize one side of product's mounting trough to the DIN mounting rail;
- Step 2: Pull out the spring clasp;
- Step 3: Place whole mounting trough to the DIN mounting rail properly;
- Step 4: Release spring clasp to make sure the installation.

2. The product has calibrated before out of factory. After correctly wiring, it can be powered and used immediately. But for further precise signal sampling, user need to warm-up the product for 3 minutes before use.

3. basic testing method for accuracy

- (1) According to the terminal definition table to connect the testing circuit;



- (2) The testing must to be done under the following conditions;

Auxiliary power: nominal input  $\pm 5\%$

Ambient temperature:  $25^\circ C \pm 5^\circ C$

Relative humidity: RH(45~75)%

Accuracy for signal power source instrument: 0.05

(3) warming up the transducer for 3 minutes

(4) using output monitoring meter V1 to measuring the output of signal power source instrument, set a any input value which is within the measuring range of the transducer  $U_r$ . (for e.g. if input value is 100V, the output is 0V-5V, the expected output value  $U_z$  should be calculated as:

$$U_z = 5V \times U_r / 100V$$

(5) using output monitoring meter V2 to measuring the output voltage  $V_0$  of the transducer, the basic introduced error  $\gamma$  of the transducer should be calculated as:

$$\gamma = (U_0 - U_z) / 5V \times 100\%$$

(6) Repeating (4) (5), if calculated absolute value is less than the given accuracy value of the transducer, it shows the transducer's accurate grade is qualified.

## Caution:

1. Pay attention to the auxiliary power information, especially the auxiliary power grade, and polarity, other wise will damage the product.
2. Pay attention to the wire connection; wrong terminal connection will cause malfunction of the product and even damage the product;
3. The product only be used for testing the AC wave shape that with low harmonic wave.
4. Don't dismantle the product, and carry with care to avoiding bump and fall of the product;
5. If the product has been using under the environment with strong Electromagnetic field interference, please pay attention that the output signal wire should use shielded wire. And double-pointed of the shielding layer should be connected with protective earth. For product intensive installation, the space between each product should not be smaller than 10mm.
6. Only use identified terminals.
7. The input that be given by the product tab means the virtual value of the AC signal .
8. There is no lightning strike prevention circuit design in this product. For out door and hazardous environment using, please add protective alternatives.
9. when the transducer's input exceeds the rated input, the output of the transducer will exceed the rating. If this condition isn't expected, you can increase a protective circuit to restrict the extent at the fan-out of the transducer.
10. This product uses fire prevent ABS crust, its temperature withstand is only limited as +85°C, higher than this limitation will cause the product deformation. Please use and store carefully.
11. please do not destroy or change the product label, symbol, and do not disassemble the sensor, or else we will not provide the product warranty.

12. The product can't be recycled.

**Warranty:**

- (a) Product Warranty: Seller warrants that upon Delivery the Product to be supplied by Weibo shall be completely new and shall comply in all respects with the Technical Specification confirmed with Buyer.
- (b) Warranty Period: Three-year warranty of free charge of repairing the product, and any purchase made in six months, Weibo will provide free charge of change and return the product if damage and problem caused by product quality.

Note: Transportation fee of repaired and returned product will be borne by Buyer

**Product Input-Output characteristic curve**

