

## For your safety

### ● Before use

- Only use the rating fuse (current, voltage and fusing characteristics) specified for this unit.

Please note that using fuses other than those specified may cause fire. Also be sure to turn off the power and unplug the power cable at least one minute before replacing a fuse.

### ● Precautions regarding electric shock

- Before connecting to an object to be measured and external control circuit, ensure that the protective grounding has been securely established and the power of the unit is turned off.

Failure of protective grounding or connection while the power is turned on may cause an electric shock.


- Before touching a voltage/current output part, ensure that the power has been turned off.

Touching a circuit while the unit is turned on may cause an electric shock.

- Be sure to use the power supply with specified voltage/current/frequency.

Using a power supply other than that specified may cause an electric shock, fire, or damage of the unit.

### ● About protective grounding

-  is the symbol for protective grounding. Be sure to establish a protective grounding before energizing the unit. Failure of protective grounding may cause an electric shock. Also ensure that the grounding wire has a cross section of 1 mm<sup>2</sup> or more and thicker than that used for power supply.

- When absence or inadequate protective grounding is suspected, do not turn on the power switch.

### ● About installation and connection

- Do not install the unit in an unstable place.

Dropping or falling of the unit may result in injury or damage of the unit.

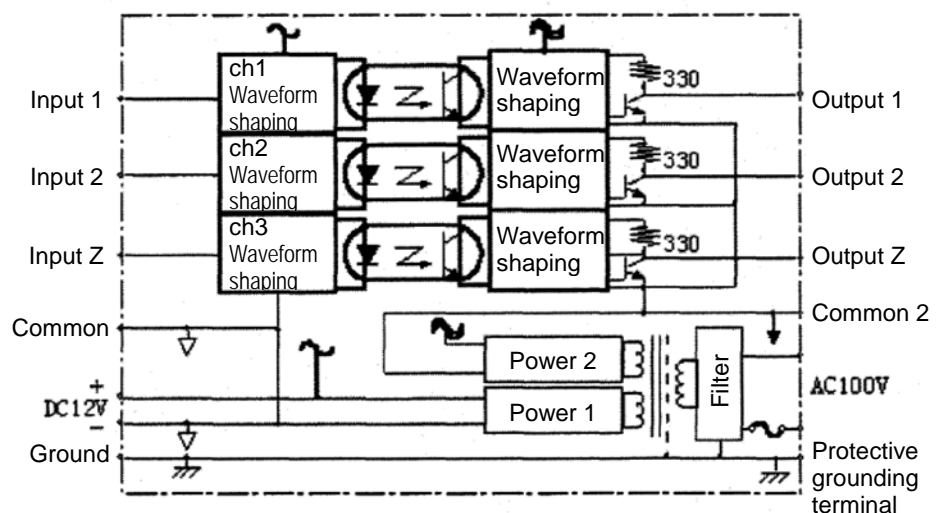
- Do not install the unit in a place filled with oily smoke, steam, moisture or dust.

Electricity could conduct the oil, water or dust to cause a fire or electric shock.

## ◆ Overview

The PA-330Z Isolation Pulse Transmitter receives rectangular waveform output from the RP series rotary encoder, and reshapes the input signal waveform to drive the photo-coupler. The signal isolated by light is amplified and its waveform is reshaped to serve as a voltage output. While 3-phase output is the standard, an optional processing function of input frequency into a double edge or quad edge output or an open collector output can be provided.

## ◆ Block diagram



## ◆ Features

- This unit receives square wave output from an RP series instrument with a photo-coupler and performs light-isolated amplification and reshapes the waveform and transmits the resultant signal with a low impedance.
- This unit can supply 12 VDC power to an RP series unit.

## ◆ Operation

### ● Cable connection

Remove the upper lid and connect the power supply, input and output cables to the respective terminals. Use the supplied press-fit terminals (applicable wire diameter 0.25 to 1.6 mm<sup>2</sup>) and specified tools to complete the cable-end finish. Also be sure to use the grounding conductor having a cross section of 1 mm<sup>2</sup> that is thicker than that of power cable for connecting to grounding terminal.

### ● Output signal

The output signal is given as the output of voltage across the transistor collector having a resistance of approximately 330 Ω and the common 2.

It is approximately 10 V under the load of 5 kΩ. Also, when the cable is extended 10 m or more for a long-distance transfer of an output signal, secure the impedance matching by employing a terminal resistor corresponding to the cable impedance. In this case, the output voltage is equal to the ratio of terminal resistance and output impedance (330 Ω). Failure of impedance

matching may result in a blurred waveform, linking, or waveform interference across double phase outputs. When impedance matching is implemented by using an r Ω terminal resistor, the HI level voltage V of an output signal will be given by the expression as follows.

$$V = \frac{r}{330 + r} \cdot 12$$

### ● Power supply

Before turning on the power, check the supplied voltage and rated power voltage for this unit.

When the rated power voltage has been changed due to an optional modification, the changed power voltage is described on the power connection part (AC line) of the connecting terminal block. Accordingly, supply the corrected rated voltage. (When no description is given, use the rated voltage of 100 VAC.)

Additionally, this unit can supply the power 12 VDC/0.15 A for the rotary encoder. (Depending on the rated power voltage for a rotary encoder, this additional power supply cannot be used. Please check it before use.)

### ● Fuse replacement

When the fuse is blown out because of some reason, determine faults causing the blow out, and replace the fuse only after removing the fault. The replacing fuse should be 0.2 A/250 V time-lag fuse for a rated power voltage of 100 or 110 VAC, and 0.1 A/250 V time-lag fuse for 200 or 220 VAC.

### ● Wiring and piping

Wiring and piping of this unit shall be done by one of the following 4 methods.

- (1) Drill a hole in a grommet with a membrane and insert the cable through it. In this case, dust and drip protection cannot be guaranteed.
- (2) Use the thick steel cable conduit (nominal diameter φ16).

