

Instruction Manual

Signal Transducer Model 7574

I-01476

We thank you for your purchase of this product. Please take care that this instruction manual is certainly delivered to the person in charge of operating it. For safety use of this product, please observe the following caution and also read the instructions to follow before the initial operation for proper operation of this transducer.

⚠ CAUTION

- To prevent electric shock, observe the following cautions:**
- ◆ Never make power line connections with active lines.
 - ◆ Ensure firm and tight connections to the terminals.
 - ◆ Do not touch the power source terminals while the product is powered on.
- To avoid electric shock, failure or abnormal heat-up of the product, do not use it in such places where:**
- ◆ exposed to rain, water drops or direct sunlight.
 - ◆ high temperature or humidity, much dust or corrosive gas.
 - ◆ affected by external noise, radio waves or static electricity.

● Check at Delivery

When the 7574 is delivered to you, please check that its specifications conform to your requirement and that there is no damage in transit. This transducer is carefully inspected before delivery from factory under our strict quality control program, but if you find any defect or inconvenience, please inform us of the model name, serial number etc. of the product.

● Cautions for Use

- ① This product is a precision instrument, so please take utmost care for its transportation, installation or any other handling of it.
- ② No power on-off switch is provided on this product, so it immediately starts to work when connected to the power source.
- ③ In case of fear that the noise or surge is frequently generated on the power source line, a noise preventive solution must be taken.
- ④ Use this product within the range of its specifications and rates.

● Product Outline

This product is a compact isolated DC/pulse signal transducer which converts the DC voltage or current input to a desired series of pulse signal proportional to the input.

Thanks to its plug-in mount system, the installation can be done in an action on to the DIN rail, noticeably saving the time for installation work.

■ Installation

1) Mounting

Mount the attached socket on to the DIN rail or fix it with M4 screws.

When two or more transducers are installed in series, keep a clearance in between the transducers as **Fig.1** shows.

2) Location

Install the transducer in the place of ambient temperature $-5\sim 55^{\circ}\text{C}$, humidity 90%RH or less and no dew condensation.

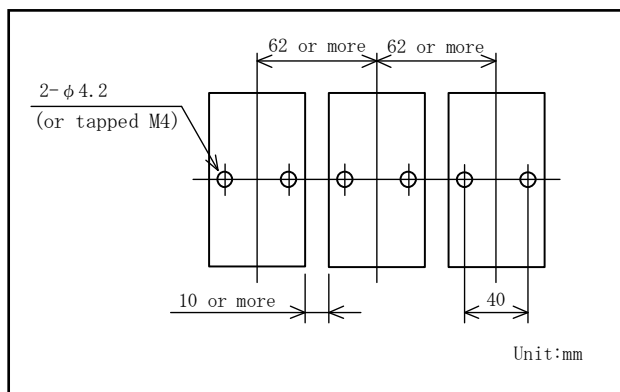


Fig.1

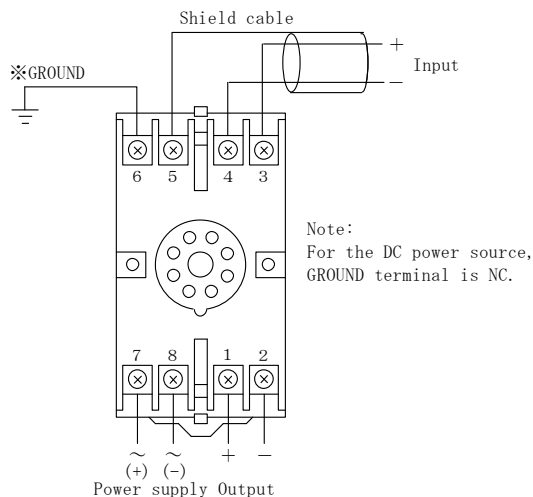
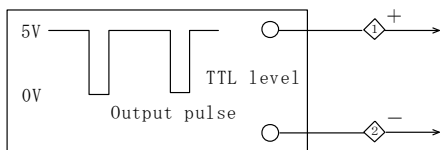


Fig.2

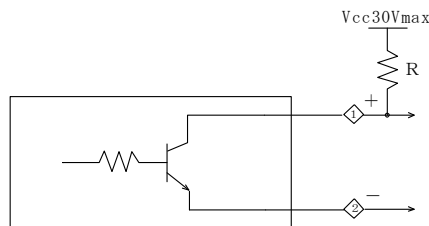
3) Connection

1. Terminal screws of this transducer are M3.5. Make firm and correct connections by using crimp type terminal or equivalent.
2. Make the connections as per the connection diagram **Fig.2**. Use the cables to meet the rated capacity of the circuit.
3. When the power source line is affected by an external noise, make a grounding of the G terminal ⑥.
4. The circuit for each output specification is as **Fig.3** shows. Make a connection suitable to each output specification.

Voltage pulse



Open collector



Relay contact

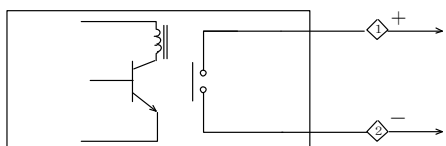


Fig.3

■Output specifications

- 1) The output is forcibly stopped in the range 0~10% (adjustable) of the rated input voltage or current, and which we call Output Cut-Off. When the transducer in the output cut-off status, the LED on the front of the transducer is lit up.
- 2) The output frequency is adjustable in the range 0~10kHz for the high frequency and 0~130 pulses per minute for the low frequency. Adjustment the frequency with the output range adjustment switch provided on the front of transducer, referring to **Table 1**. A five output specifications are prepared to meet various applications.

- ① DC voltage pulse (LOW pulse) for high frequency Model 7574-□□-1-□
 Output signal voltage : DC5V (TTL level Fo=5)
 Pulse width : Approximately 30 μs
- ② Open collector (ON pulse) for high frequency Model 7574-□□-2-□
 Maximum rate : DC30V 50mA
 Pulse width : Approximately 30 μs
- ③ DC voltage pulse (LOW pulse) for low frequency Model 7574-□□-3-□
 Output signal voltage : DC5V (TTL level Fo=5)
 Pulse width : Approximately 30ms
- ④ Open collector (ON pulse) for low frequency Model 7574-□□-4-□
 Maximum rate : DC30V 50mA
 Pulse width : Approximately 30ms
- ⑤ Relay contact for low frequency Model 7574-□□-5-□
 Contact capacity : AC250V 0.5V (resistive load)
 DC30V 0.5A (resistive load)
 Relay life : Mechanically 50 million times or more
 Electrically one million times or more
 Working time : Approximately 30ms

Switc h No.	Maximum output	
	Low frequency	High frequency
0	65~130 pulses/min	5k~10k Hz
1	32~65 pulses/min	2.5k~5k Hz
2	16~32 pulses/min	1.25k~2.5k Hz
3	8~16 pulses/min	625~1.25k Hz
4	4~8 pulses/min	312~625 Hz
5	2~4 pulses/min	156~312 Hz
6	1~2 pulses/min	78~156 Hz
7	0.5~1 pulses/min	39~78 Hz
8	0.25~0.5 pulses/min	20~39 Hz
9	8~15 pulses/h	10~20Hz
A	4~8 pulses/h	5~10 Hz
B	2~4 pulses/h	2.5~5 Hz
C	1~2 pulses/h	1.25~2.5 Hz
D	0.5~1 pulses/h	36~75 pulses/min
E	0.24~0.5 pulses/h	18~36 pulses/min
F	0.12~0.24 pulses/h	9~18 pulses/min

Table 1

■ Adjustment

- 1) The transducer is adjusted within its tolerance at the time of delivery from factory. It is however recommended to calibrate the transducer approximately once per year in order to maintain its accuracy over long term.
- 2) When calibrate the transducer, make a connection of referential voltage source and frequency counter as shown at **Fig.4**. A zero adjustment of the output is difficult due to the circuit configuration of the output. Consequently, it is recommended to select and set a certain point among the range 10~20% as a first calibration point, and calibrate the transducer with this first calibration point and the second one at 100% of the rated input.

As an example, we explain for the case of the rated input DC0~10V and the rated output 0~8kHz. Firstly, we select the 1kHz as the value easier to measure on ZERO adjustment side. The input voltage corresponding to this frequency should be $DC10V \times 1kHz/8kHz=DC1.25V$. Make an input of DC1.25V with the referential voltage source and adjust the ZERO VR so that the output can be 1kHz. Secondly, make an input of the rated input DC10V and adjust the SPAN VR so that the output can be 8kHz. Repeat these adjustment some times so that the rated output 1kHz~8kHz corresponding to the rated input DC1.25V~10V is obtained. The adjustment in the lower range of the output frequency is very difficult, so the recommended is to make the adjustment switching the output frequency to the higher range. (**Note-1**) And after the adjustment, reset the range to the original range. The adjustable range is, in case of standard specifications, +/-3% of span for ZERO adjustment, and 50~100% of the selected range for SPAN adjustment.

Note-1 The relation between the output frequency and the SW for setting of the output range is that, when the number of SW is increased (or decreased) by 1, the output frequency is multiplied to a 1/2 times (or 2 times). For example, when the SW is at No.4 and 8 pulses/min, a change of SW to No.3 makes 16 pulses/min, No.5 makes 4 pulses/min and No.6 makes 2 pulses/min.

- 3) Calibrated the transducer in the ambient condition 23°C+/-2°C, 75%RH or less.

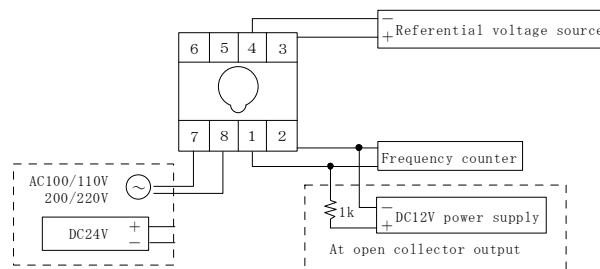
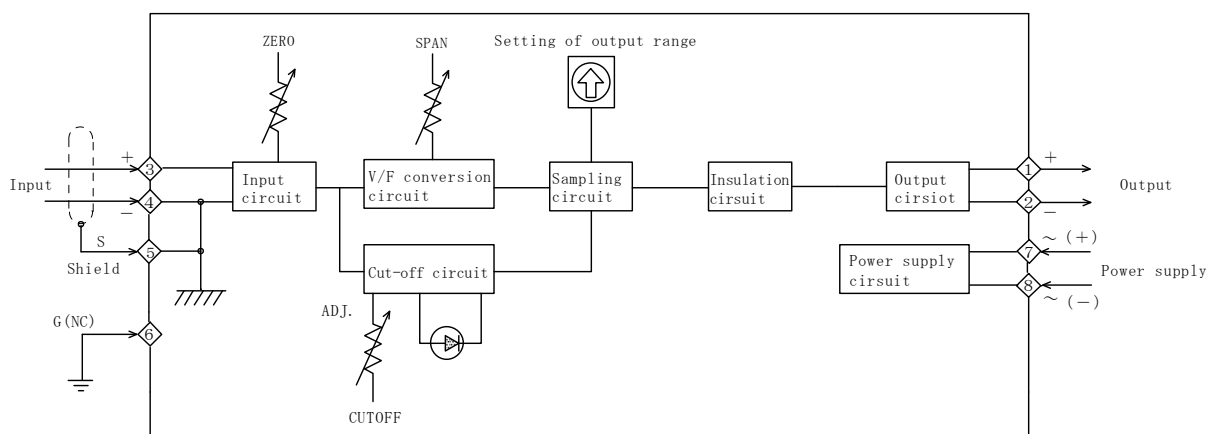


Fig.4

■ Block diagram



() are for the DC power supply.

■ External dimensions

