

■ Overview And Principle

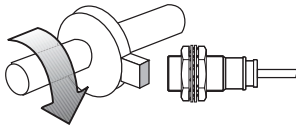
◎ Overview

Reduction of human material and improve efficiency are the eternal theme given to production machinery equipment. And the speed of maximum efficiency for each machine is fixed.

Because of this, we need to know how the machine is currently operating in some condition.

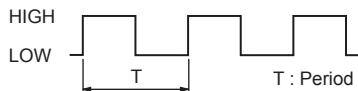
The devices that measure the revolution and moving distance of the machine are called the revolution-indicator and speed meter.

◎ Period measuring method



● Period measuring method

When the measured object is rotating every cycle, the signal is detected by the sensor. This method is measuring the period of these signals and then calculating.



$$\text{rps} = \frac{1}{T (\text{sec})} = f (\text{Hz})$$

$$\text{rpm} = \frac{1}{T (\text{sec})} \times 60 (\text{sec}) = f (\text{Hz}) \times 60 (\text{Sec.})$$

$$\times f = \frac{1}{T} (\text{Hz})$$

◎ rps / rpm

- rps is the unit of revolution per second.
E.g.) 1rps=1 revolution at 1 second
- rpm is the unit of revolution per minute.
E.g.) 1rpm= 1 revolution at 1 minute
- relation between rpm and rps
rpm = rps×60 (sec.)

◎ Measuring input specification

Input frequency for solid state is max. 50kHz, and for relay contact is max. 45Hz. If the range of ON/OFF input signal for solid state is more than 10μs and for relay contact is more than 11ms, it is able to be measured.

◎ Measuring accuracy

Measuring accuracy is high, and does not decrease in high speed rotation adopted period measuring method in the micro computer.

◎ Measuring impact on rotation

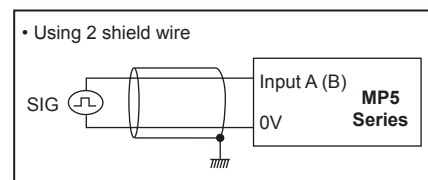
No effects to the rotation because of non-contact measuring for using proximity sensor, gear sensor, photoelectric sensor and rotary encoder.

◎ Selection

The more wide selection with various product size, several operation modes and output modes is available.

■ Proper Usage

- If input line is long or in the place occurring noise, please use shield wire certainly.
- In order to prevent inductive noise, please separate wires from high voltage wire and power cable.
- This product needs to install power switch or circuit breaker to cut the power supply.
- The switch or circuit breaker should be installed close to user to operate easily.
- Please do not use in following environments to avoid the damage of the products
 - Place where there is severe vibration or impact
 - Place where there are direct ray of the sun
 - Place where strong magnetic force or electric noise are generated
- Storage
 - When store items for long term, avoid direct sunlight, keep in -20 to 60°C temperature range and under 35 to 85% relative humidity. Keep the packaged products like factory condition.
- This product may be used in the following environments.
 - It shall be used indoor.
 - Altitude up to 2,000m
 - Pollution degree 2
 - Installation category II



- Keep distance between power line and measuring input line.

(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) Door/Area Sensors

(D) Proximity Sensors

(E) Pressure Sensors

(F) Rotary Encoders

(G) Connectors/ Sockets

(H) Temperature Controllers

(I) SSRs / Power Controllers

(J) Counters

(K) Timers

(L) Panel Meters

(M) Tacho / Speed / Pulse Meters

(N) Display Units

(O) Sensor Controllers

(P) Switching Mode Power Supplies

(Q) Stepper Motors & Drivers & Controllers

(R) Graphic/ Logic Panels

(S) Field Network Devices

(T) Software