

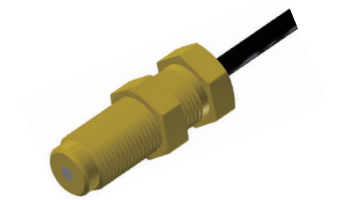
Speed measurement

Positive and reverse tachometric
transducer



P.45 ▣

Magnetoelectric tachometric transducer



P.49 ▣

Positive and reverse tachometric transducer



SPH3A0 series positive and reverse tachometric transduce is detected by Hall principle, which only needs to fix two corresponding magnets on the axis and wheel (two magnets are distributed symmetrically, and the N pole of one magnet must face to the sensor, and the S pole of the other magnet must face to the sensor), and fix the arrow of the detection surface of the sensor probe to face the arc of the magnet rotation.

When the wheel or axis rotates, the magnet sweeps the sensor probe along the direction of the arrow, Line 2(blue line) outputs positive rotation signal (low level), Line 4(white line) outputs positive rotation speed pulse signal; conversely, Line 2(blue line) outputs reverse rotation signal (high level), Line 4(white line) outputs reverse rotation speed pulse signal.

Inquiry Soway

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Data download

www.sowaysensor.com/product/

Stable performance, high reliability, long service life

Strong anti-interference capability, good frequency characteristic and capable of conducting continuous measurement

Compact size, simple structure, no contact, small starting torque

Wide service temperature range

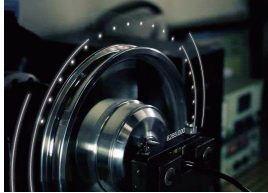
Application area



Rotation monitoring of commercial concrete vehicle



Measurement of rotating speed of machinery and equipment



Motor speed detection

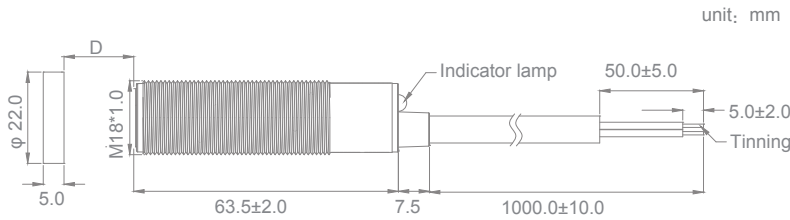


Measurement of rotating speed of construction machinery

Basic performance parameter

Model	SPH3A0
Supply voltage	5 ~ 24V DC
Output mode	Open-collector output
Open-collector output	5 ~ 10mm
Working temperature	-20 ℃~+80 ℃, humidity ≤90%
Leve of protection	IP65
Anti-vibration ability	Under normal use conditions, 5G
Signal condition	Line 2 outputting high and low signal represents the direction. At the initial state and during positive rotation, low level is output, green light is on, positive rotation direction is consistent with the arrow direction. During reverse rotation, high level is output, red light is on, reverse rotation direction is opposite to the arrow direction. Line 4 outputs speed pulse signal, which is square wave signal.

External dimensions



Wiring method

Line number	Lead specification	Cable color definition
Line 1	Positive Pole of Power Supply	Red
Line 2	Positive and reverse rotation signal output	Blue
Line 3	Negative Pole of Power Supply	Black
Line 4	Speed signal output	White

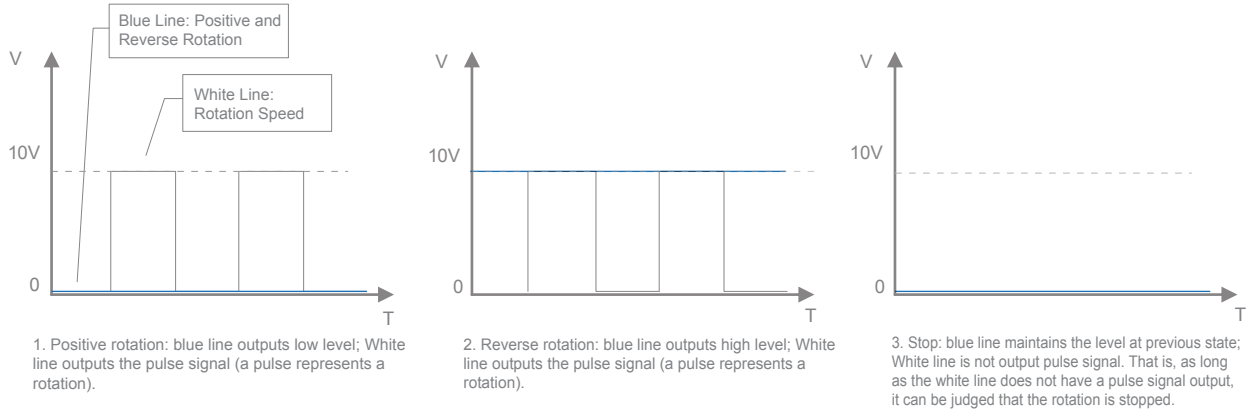
- Position detection
- Angle measurement
- Speed measurement
- Displacement measurement
- Liquid level measurement
- Flow measurement
- Pressure measurement
- Temperature and humidity measurement
- Current measurement
- Special sensor

Positive and reverse tachometric transducer
Magnetoelectric tachometric transducer



Position detection
Angle measurement
Speed measurement
Displacement measurement
Liquid level measurement
Flow measurement
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Temperature and humidity measurement
Current measurement
Special sensor

Output characteristic

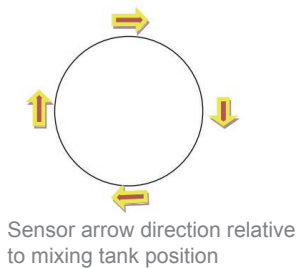


※Note: This figure takes the 12 V power supply as an example; the high level is about 10 V.

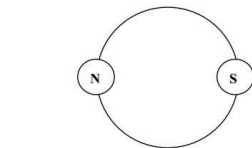
Method of installation



Rotating sensor installation effect drawing

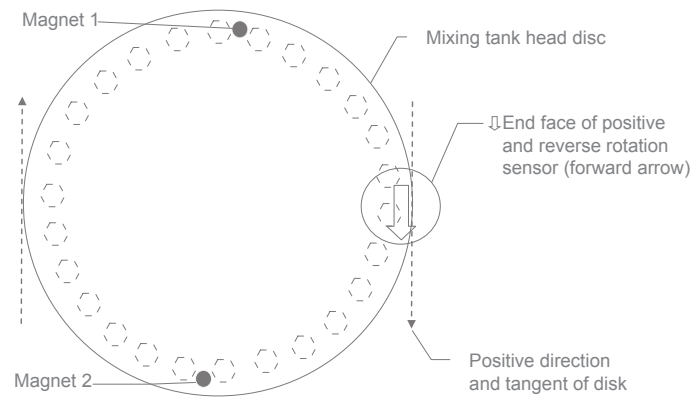


Sensor arrow direction relative to mixing tank position



chematic diagram of a magnet Smounted on the mixing tank.

Location diagram of sensor, magnet and mixing tank



※Note: Refer to the figure on the right after installation to verify if the installation is correct.

According to the above diagram, the polarity of the surfaces of magnet 1 and magnet 2 facing the sensor are different; The installation direction of the sensor (front arrow direction) is shown in the above figure. Keep the arrow on the end face of the sensor pointing to the positive rotation direction, and the arrow direction is consistent with (parallel to) the tangent direction of the disk.

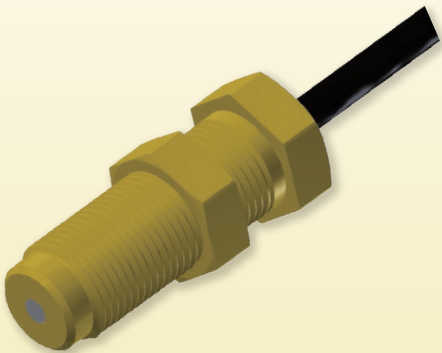
Precautions

1. When the mixing tank stops turning, the positive and reverse output of the sensor remains the original state. That is, low level is maintained when the positive rotation stops, and high level is maintained when the reverse rotation stops;
2. The supply voltage shall not exceed the range, otherwise it will cause damage to the core components;
3. The recommended installation distance between sensor probe and magnet is 5-15mm;
4. The stall detection time is 1 minute, if the actual speed is too slow, resulting in the interval between two normal signals exceeding 1 minute, it can be solved by increasing the number of magnets. The number of magnets is even, the magnetic poles N/S are placed at interval;
5. Be careful to avoid moving parts and the serious heat spots of the vehicle as far as possible in wiring, and make sure the binding is firm;
6. Connect the signal cord first and then the power cord. The wiring should be connected strictly according to the specification. When connectthe sensor four-core with the positive pole of the power supply, 0.2A fuse wire must be connected (to prevent short circuit and damage to theoriginal line).

Position detection
Angle measurement
Speed measurement
Displacement measurement
Liquid level measurement
Flow measurement
Pressure measurement
Temperature and humidity measurement
Current measurement
Special sensor

Positive and reverse tachometric transducer
Magnetolectric tachometric transducer

Magnetolectric tachometric transducer



Magnetolectric tachometric transducer, can directly absorb mechanical energy from the object being measured and convert into electrical signal output because of its simple structure, small volume and no need of power supply. It has strong anti-interference capability and wide temperature tolerance range, and is not affected by air pollution, oil pollution and other media on the test site. It is often used in electronic control engine to judge the current rotating speed and position of the crankshaft. Through the rotation of the signal disk, the cutting of the magnetic force line and the induction of core are achieved, and the signal Output. Through the modulation in the electronic control unit, high precision square wave signal is obtained.

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- It has high reliability and can work in the environment of smog, oil and gas, water vapor and so on.
- Compact structure, compact size, easy to install
- Strong output signal, wide range of measurement

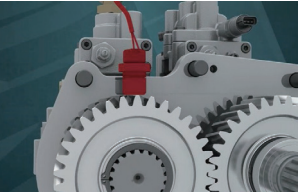
Application area



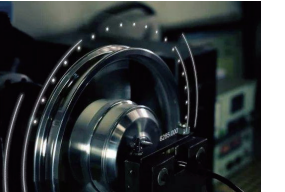
Measurement of rotating speed of machinery and equipment



Detection of engine speed



Detection of gear speed



Detection of motor speed

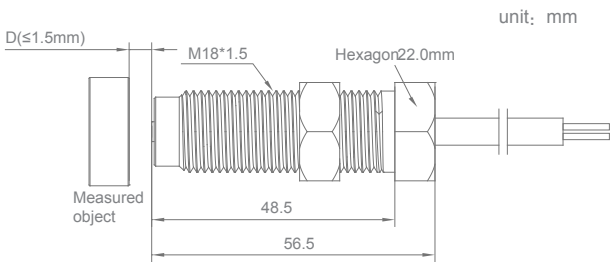
Basic performance parameter

Model	SPI18-10
Supply voltage	5 ~ 24V DC
Output mode	AC sine wave output (if it is rotating at a constant speed), 0.5~8.0Vp-p
Detection distance	0.5 ~ 3.0mm
Speed range	10~2000HZ/S
Leve of protection	IP65
Anti-vibration ability	Under normal use conditions, 5G
Working environment	Temperature-40 ℃~+125 ℃, Humidity <=90%
Object to be measured	Ferromagnetic material, gear or notched parts-40 ℃~+125 ℃, humidity <=90%

Wiring method

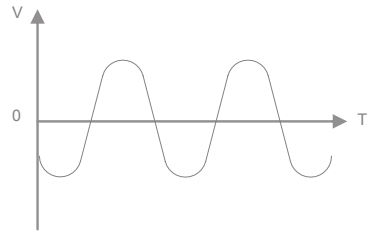
Cable color definition	Lead specification
Red	Output +
Black	Output -

Machine size



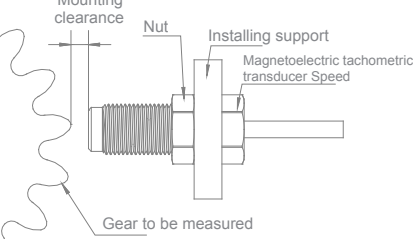
Output characteristic

Red and black lines output a sine wave



Method of installation

Tachometric transducer installation diagram



Precautions

- 1.The object to be measured by the magnetolectric tachometric transducer is ferromagnetic, and the output is AC voltage;
- 2.The sensor probe is 0.5-3.0 mm away from the metal to be measured. If it is too close, device would be damaged. And if it is too far, the output is very small.

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Temperature and humidity measurement
Current measurement
Special sensor

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