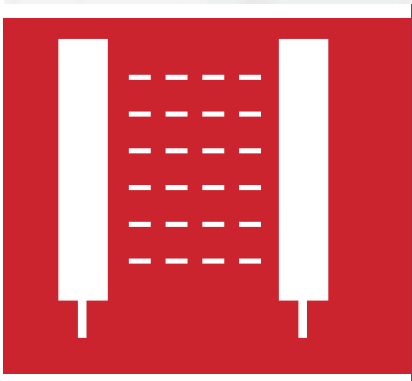
HNC

Sensor

**HNC Electric Limited**


**ALL FOR AUTOMATION**

Rotary encoder
Proximity sensor/ Photoelectric sensor
Area Sensor

# CATALOG


## Company Introduction

HNC Electric is an automation & drive focused global company, providing global customers with control, display, drive and system solutions & other related products and services, under the support of its excellent electrical and electronic technology as well as strong control technical force.

HNC Electric listen and understand our clients requirement, by improving and upgrading our product functions and performance continuously , we provide and develop perfect products and solutions according to different requirement of the industry. Ourproducts have been used and applied successfully in packing, printing, textiles, plastic injection, elevator, machine tool, robot,wood cutting, stone carving, ceramic, glass, paper making industry, crane, fan & pump, new energy resources etc.

In order to provide more complete service and product for our customers internationally, meeting our customers expectations in the respect of time of delivery, solution support, after sales services and product customization support, HNC Electric has been searching for capable companies as our business partners, product agents and distributors, bringing good product quality and professional service to our clients globally. Up until now, we have already got customers and business partnerships built up in over 40 countries, which include Europe, North America, South America, Asian-pacific region, Middle East and Australia etc.

# Main application fields

New energy automation

Crane Industry

Textile field

Industrial robot

Automated assembly line

Elevator Industrial field

Construction field

Motor field

Field of public facilities

Research field

Power field

Automobile field

# HNC Sensor

## Automation creates the future !

1/ Independent brand - making the Chinese manufacturing win with quality

2/ Outstanding quality - strict production process

3/ Innovation R & D - master the core technology

4/ Serving the society - create a win-win situation

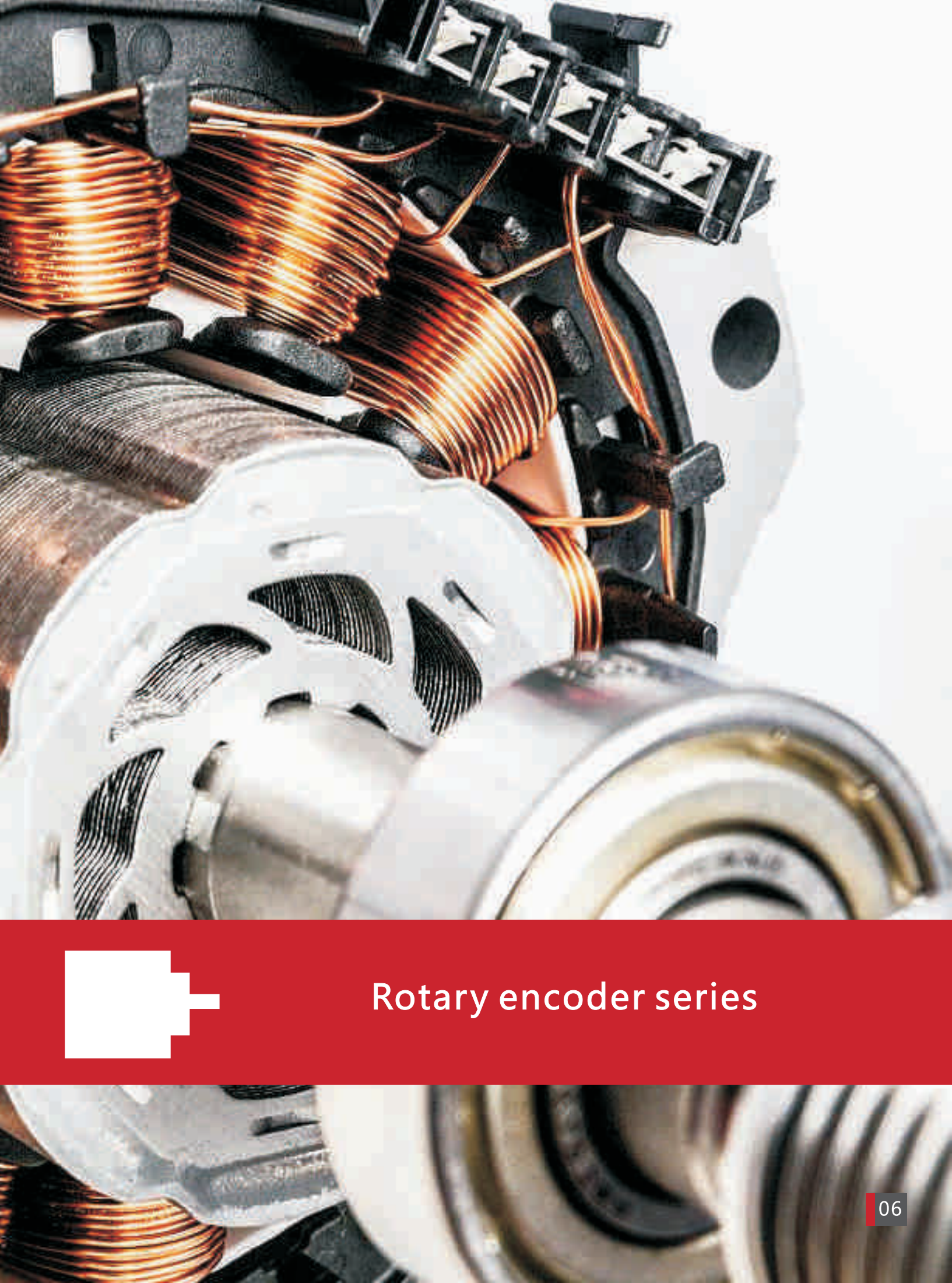
5/ Enterprise spirit - honesty, cooperation and collaboration

# Product Contents

# Fast index



MORE



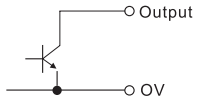
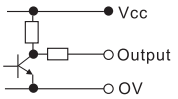
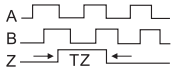
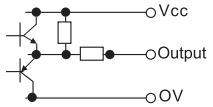
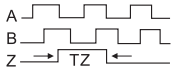
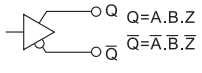
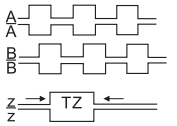
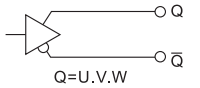
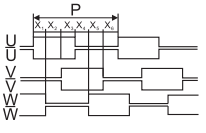
# Rotary encoder series

# Introduction of encoder

## ▶ Working principle

Rotary encoder is displacement transducer composed of optic, mechanical and electric technology. A displacement transducer converts mechanical displacement of angular displacement. The mechanical displacement such as angular speed will become relevant electrical pulse or digital signals output by photoelectric conversion. It applies photoelectric scanning principle, its reading system is based on rotation of radial index plate, this index plate is consisted of alternate nonopaque window and opaque widow, this system used in vertical irradiation of infrared source, when encoder axis drives the index plate's rotation, light from luminescent device through the rotating index plate,indicator plate's cover,to form varied optical signal and be felt by sensitive device, this sensitive device transfers received optical signal variation to electrical signal variation,produce initial signal, this signal will be disposalied by following circuit, output pulse(code)signal.

## ▶ Encoder output circuit and waveform

| Signal output way | Code number | Cirout explanation | Output circut | Output wave paltern(CW) |
|---|---|---|---|---|
| Collector plough output | C | The circuit that output directly form collector of transistor |  | Connect load resistance,as model E shown in the following circuit and waveform |
| Voltage output | E | The circuit that transistorized emitter grounded andcollector output with load resistance |  |  |
| Push-Pull output | F | The output ciricult after two transistorized emitters butt-joint this circuit has fast reaction rate and also can convey in the long distance. |  |  |
| Line driver output | L<br>T | Output signal output by special IC long line drives, receiver must use the device which are well-matched. |  <br>IC:AM26C31I ET7272 |  |
| Measure U、V、W、signal output in the hole position of AC motor | U | 3Way signal(electric degrees)of electrical engineering nonbrush's phase 120°difference |  <br>Q=U.V.W<br>Q̄=Ū.V̄.W̄ |  |



Note: seeing the encoder from wellenenden,when clockwise is positice rotation,signal A is ahend 90° to signal B, when counter-clockwise is tating,in a contrary,signal B is ahead 90°to signal A .

## ▶ Installation and operation attentions

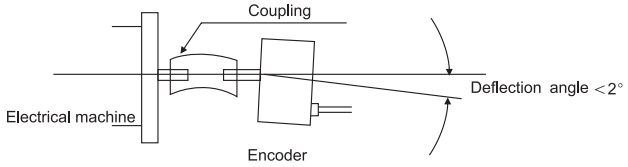
### Machine aspect

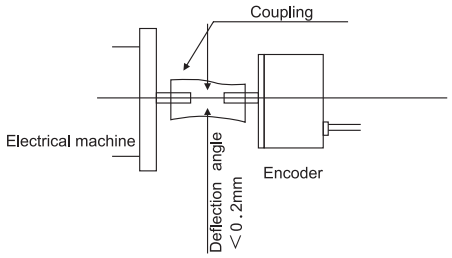
·Connecting driver between encoder and customer output axis should use elastic coupling nylon teeth of synchronization with connection ,avoid using rigidity connection, so that cause the damage of encoder shafting and code plate by reason of customer axis 'float and pulsation.
·When encoder installs, you should push in the tied up axis lightly, forbid knocking by hammer and collision ,in order to avoid damaging encoder shafting and code plate.
·When installing, please take notice that allowable axis load ,can't exceed the limit load.
·Should guarantee encoder axis and customer output axis'misalignment<0.2mm,declination angle with axes<2.
·Take notice that it should not exceed this electric limit rotate speed ,if it exceed the limit rotate speed allowable by encoder ,electric signal may be lose.

Nmax=(highest response frequency/L)×60 r/min (L is grating pulse count )

·If long –time service, please examine the parts connected with encoder found ationmass and whether clamping screw become flexible, electric signal may be lose .

Machines connection requirement:




### Electric aspect

·Please don't let encoder output line and power line etc twist together or transfer in the same pipeline,also not suitable to use near the switchboard to avoid interference.
·When wiring ,should apply shielded cable (can use connection mode as right )
·Before installing and powering on ,should attentively check whether product instruction conform to encoder type or not ,whether or not the connection is correct ,the wrong connection will lead internal circuit to fault .
·When transferring in long distance ,should consider signal decrease factor, select output way of low output impedance and strong anti-interference performance .
·Pulse signal's convection distance is related to the following factor :frequency, output circuit ,input circuit, transmission line ,delivery frequency.

### Ambient aspect

Because the encoder is precision instrument,please notice having no earthquake source all around .
·If encoder is not leakage proof structure ,don't splash water ,oil etc, cover the protecting hood when necessity.
·Please notice if or not ambient temperature ,humidity in range of encoder's operating requirement .

Notice:installation or operating unsuitable will impact the capability and service lige of encoder.

# S25S Incremental encoder series

## Application and features

ODΦ25 Solid shaft, bore diameter Φ4.
Miniature,light weight ,easy to mount.
Applied for various automation equipment.

## ▶ Model Explanation

| S | 25 | S | 4 | -F- | ( 1000 ) | BZ | 5-26 | E | 2 | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model S: Incremental encoder<br>S□: Speciall definition | OD 25:Φ25mm | Shaft type: Solid shaft | 4:Φ4mm | Output configuration : F: Push-pull C: Open collector E: Voltage | Resolution 100-1024P/R | Outputsignal: B:AB BZ:ABZ | Supply voltage 5:5V 5-26:5-26V | Outlet way E: Bottom outlet | Cable 2 : 2m | Customized informat |

## ▶ Cable Color Explanation

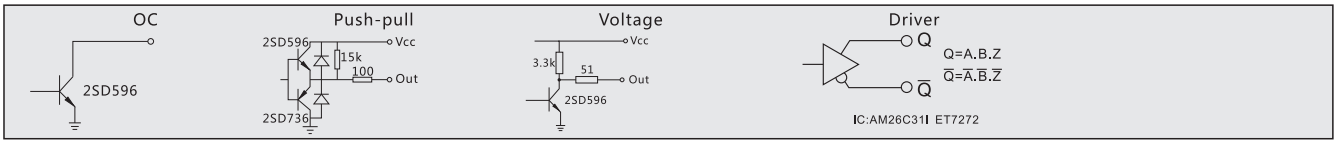
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

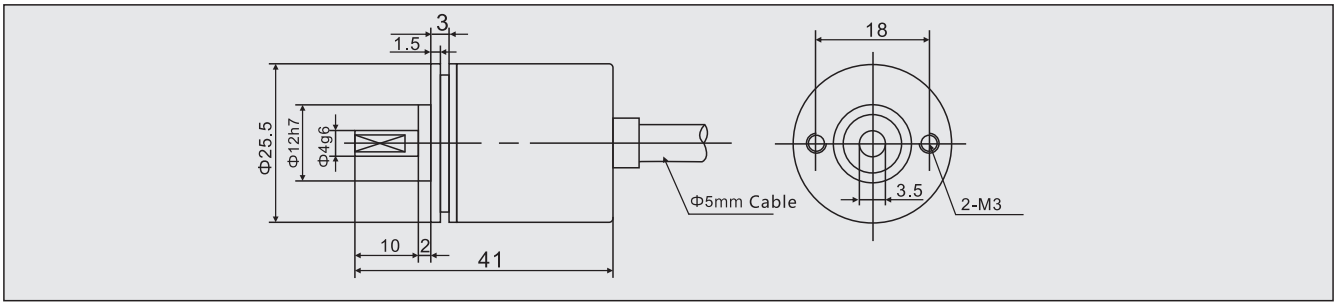
## ▶ Specification

| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤60mA | ≤60mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 50KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s² , 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP50 |
| weight | About 0.15kg | | |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



# S30S Incremental Encoder Series

## Application and features

ODΦ30 Half hollow shaft, bore diameter Φ4.
Miniature,light weight ,easy to mount.
Applied for various automation equipment.

## ▶ Model Explanation

| S | 30 | S | 4 | -F- | ( 1000 ) | BZ | 5-26 | E | 2 | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | OD<br>30:Φ30mm | Shaft type:<br>Solid shaft | 4:Φ4MM | Output configuration :<br>F: Push-pull<br>C:Open collector<br>E: Voltage | Resolution<br>100-1024P/R | Outputsignal:<br>B:AB两相<br>BZ:ABZ | Supply voltage<br>5:5V<br>5-26:5-26V | Outlet way<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Customized informat |

## ▶ Cable Color Explanation

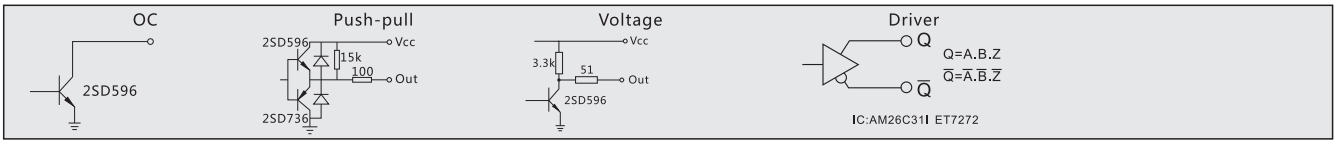
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

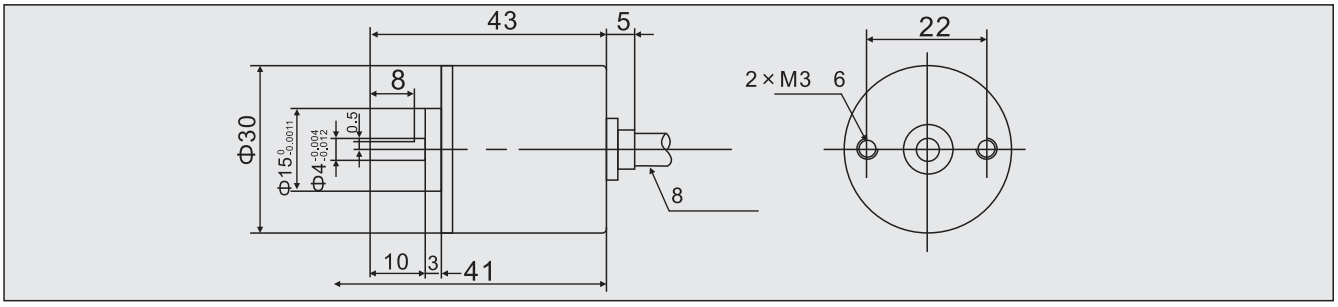
## ▶ Specification

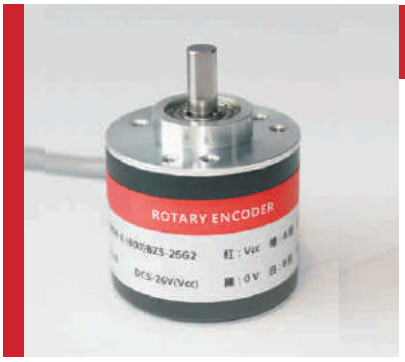
| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤60mA | ≤60mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 50KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s² , 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP50 |
| weight | About 0.15kg | | |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)






# S38S Incremental Encoder Series

HNC Sensor

## Application and features

ODΦ38 Half hollow shaft, bore diameter Φ6 .
Miniature,light weight ,easy to mount.
Applied for various automation equipment.

## ▶ Model Explanation

| S | 38 | S | 6 | -F- | ( 1000 ) | BZ | 5-26 | G | 2 | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br><br>S□:<br>Speciall definition | OD<br>38:Φ38mm | Shaft type:<br>Solid shaft | 6:Φ6mm<br>8:Φ8mm | Output configuration :<br>F: Push-pull<br>C: Open collector<br>E: Voltage<br>L:AM26LS31 Driver output<br>(driving element AM26LS31)<br>T:ICHD7 Driver output<br>(driving element ICHD7) | Resolution<br>10-5000P/R | Outputsignal:<br>B:AB<br>BZ:ABZ | Supply voltage<br>5:5V<br>5-26:5-26V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Customized informat |

## ▶ Cable Color Explanation

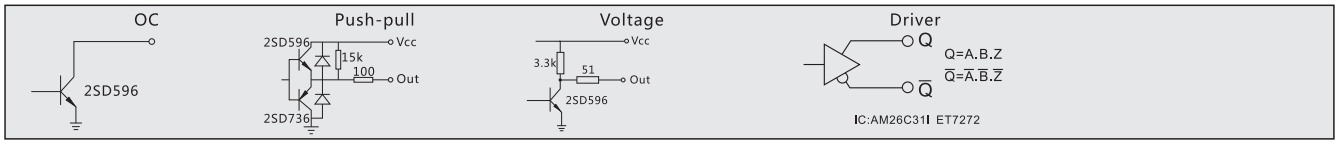
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

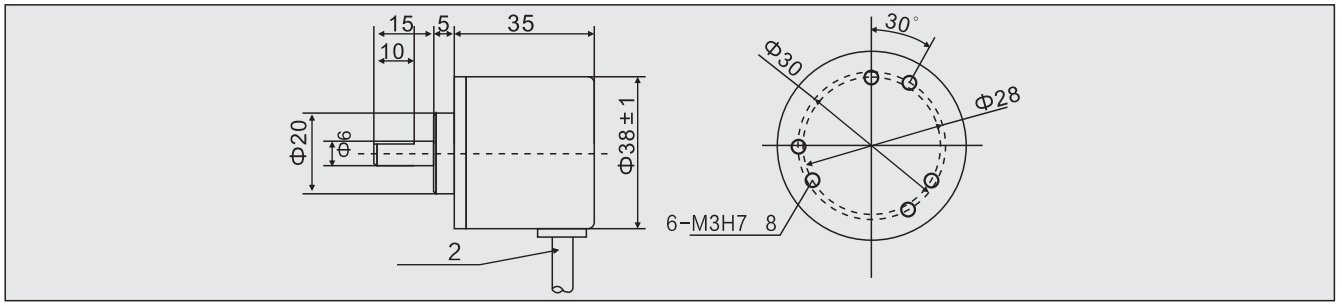
## ▶ Specification

| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤60mA | ≤60mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 100KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s² , 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP50 |
| weight | About 0.15kg | | |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)




# SG38S Incremental Encoder Series

HNC Sensor

**Waterproof**

## Application and features

ODΦ38 Half hollow shaft, bore diameter Φ6 or Φ8.
Miniature,light weight ,easy to mount,Waterproof IP:66.
Applied for various automation equipment
Anti connection protection and short circuit protection and high electromagnetic interference.

## ▶ Model Explanation

| SG | 38 | S | 6 | -F- | ( 1000 ) | BZ | 5-26 | F | 2 | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S :<br>Incremental encoder<br><br>S □<br>Speciall definition | OD<br>38:Φ38MM | Shaft type:<br>Solid shaft | 6:Φ6mm | Output configuration :<br>F: Push-pull<br>C: Open collector<br>E: Voltage<br>L:AM26LS31 Driver output (driving element AM26LS31)<br>T:ICHD7 Driver output (driving element ICHD7) | Resolution<br>10-5000P/R | Outputsignal:<br>B:AB<br>BZ:ABZ | Supply voltage<br>5:5V<br>5-26:5-26V<br>12-24:12-24V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Customized informat |

## ▶ Cable Color Explanation

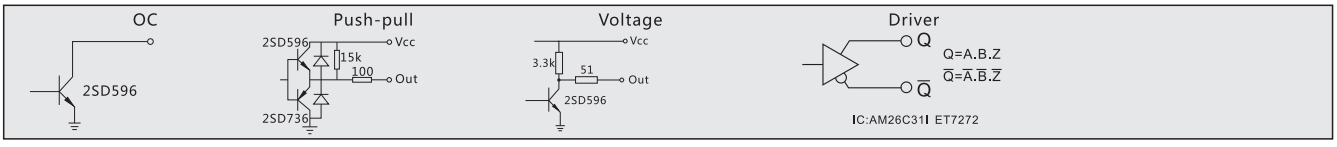
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

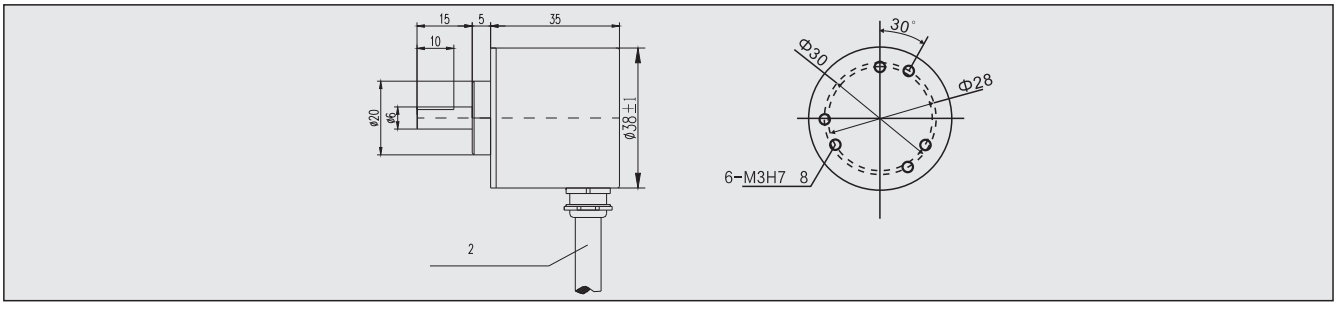
## ▶ Specification

| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤60mA | ≤60mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 150KHz | 150KHz | 150KHz |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s² , 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP66 |
| weight | About 0.15kg | | |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



# S50S Incremental Encoder Series


## Application and features

The outer diameter of hollow shaft, with 50, 6 or 8 mm diameter apertureCan bear higher axial and radial load It is applied to measurement, automatic control, robot, printing and packaging, numerical control and so on.

## Model Explanation

| S | 50 | S | 8 | -F- | ( 1000 ) | BZ | 5-26 | G | 2 | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S :<br>Incremental encoder<br>S □:<br>Speciall definition | OD<br>50:Φ38mm | Shaft type:<br>Solid shaft | 6:Φ6mm<br>8:Φ8mm | Output configuration :<br>F: Push-pull<br>C:Open collector<br>E: Voltage<br>L:AM26LS31 Driver output<br>(driving element AM26LS31)<br>T:ICHD7 Driver output<br>(driving element ICHD7) | Resolution<br>10-5000P/R | Outputsignal:<br>B:AB<br>BZ:ABZ | Supply voltage<br>5:5V<br>5-26:5-26V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Customized informat |

## Cable Color Explanation

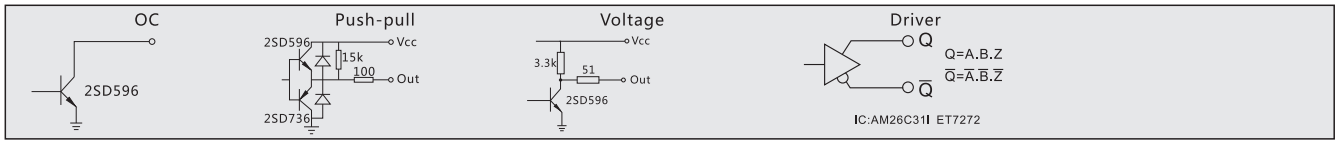
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

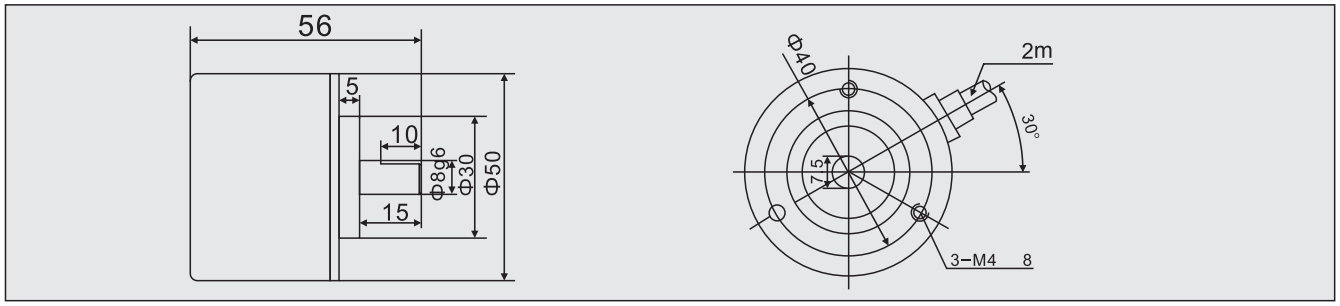
## Specification

| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤60mA | ≤60mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 100KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s² , 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP55 |
| weight | About 0.3kg | | |

## Example for output circuit




## Mounting Dimensions(Unit:mm)




# S58S Incremental Encoder Series

## Application and features

The outer diameter of 58mm, the spigot shaft diameter 36mm, diameter of 10mm
Strong load capacity and long working life of stainless steel shaft
An aerial plug can be selected according to the requirements of the customer

## ▶ Model Explanation

| SG | 58 | S | 10 | -F- | ( 1000 ) | BZ | 5-26 | G | 2 | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S :<br>Incremental encoder<br><br>S □:<br>Speciall definition | OD<br>58:Φ58mm | Shaft type:<br>Solid shaft | 10:Φ10mm | Output configuration :<br>F: Push-pull<br>C: Open collector<br>E: Voltage<br>L:AM26LS31 Driver output<br>(driving element AM26LS31)<br>T:ICHD7 Driver output<br>(driving element ICHD7) | Resolution<br>10-2500P/R | Outputsignal:<br>B:AB<br>BZ:ABZ | Supply voltage<br>5:5V<br>5-26:5-26V<br>12-24:12-24V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Customized informat |

## ▶ Cable Color Explanation

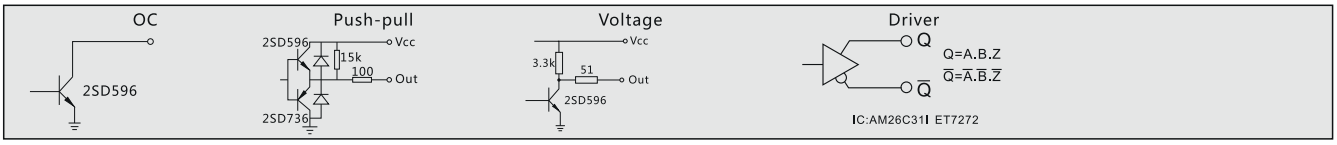
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 : Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

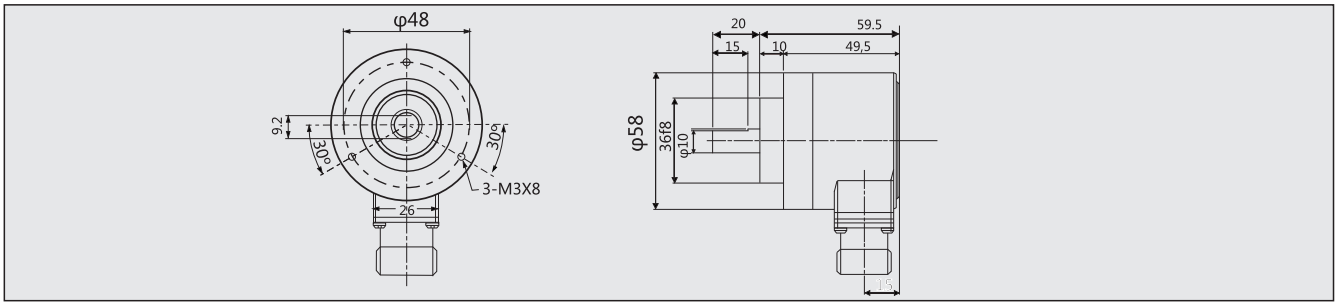
## ▶ Specification

| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤60mA | ≤60mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 50KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s² , 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP 66 |
| weight | About 0.15kg | | |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



# S58S Incremental Encoder Series

## Application and features

The outer diameter of phi 58, Phi 15 diameter hollow shaft.
Can bear higher axial and radial load
The long line drive output type has strong anti-interference ability.
It is applied to zero position correction and signal segmentation of CNC machine tools .

## Model Explanation

| S | 58 | S | 15 | -L- | ( 1024 ) | BZ | 5 | C | 2 | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | OD<br>58:Φ58mm | Shaft type<br>Solid shaft | 15:Φ15mm<br>10:Φ10mm | Output configuration :<br>F: Push-pull<br>C:Open collector<br>E: Voltage<br>L:AM26LS31 Driver output<br>(driving element AM26LS31)<br>T:ICHD7 Driver output<br>(driving element ICHD7) | Resolution<br>10-2500P/R | Outputsignal:<br>B:AB<br>BZ:ABZ | Supply voltage<br>5:5V<br>5-26:5-26V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>C:<br>Plug | Cable<br>2 : 2m | Customized informat |

## Cable Color Explanation

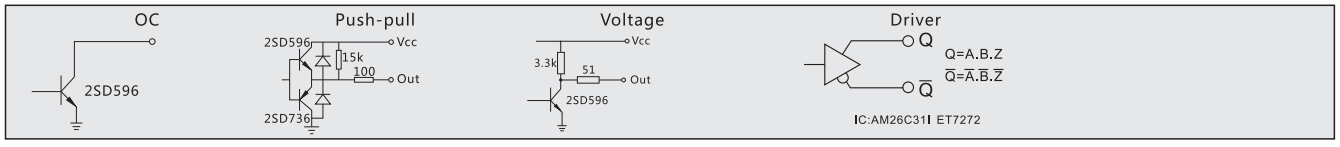
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

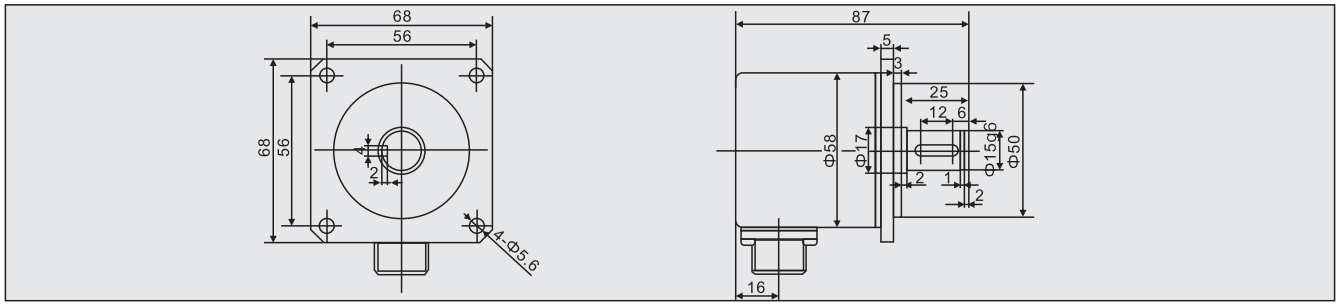
## Specification

| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤60mA | ≤60mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 100KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s² , 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP56 |
| weight | About 0.5kg | | |

## Example for output circuit




## Mounting Dimensions(Unit:mm)




# S38H Incremental Encoder Series

## Application and features

ODΦ38 Half hollow shaft, bore diameter Φ6 or Φ8.
Miniature,light weight ,easy to mount.
The double wing spring accessory is installed to avoid direct damage to the encoder.

## Model Explanation

| S | 38 | H | 8 | -F- | ( 1000 ) | BZ | 5-26 | G | 2 | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | OD<br>38:Φ38mm | Shaft type:<br>Half hollow shaft | 6:Φ6mm<br>8:Φ8mm<br>12:Φ12mm | Output configuration :<br>F: Push-pull<br>C:Open collector<br>E: Voltage<br>L:AM26LS31 Driver output<br>(driving element AM26LS31)<br>T:ICHD7 Driver output<br>(driving element ICHD7) | Resolution<br>10-5000P/R | Outputsignal:<br>B:AB<br>BZ:ABZ | Supply voltage<br>5:5V<br>5-26:5-26V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Customized informat |

## Cable Color Explanation

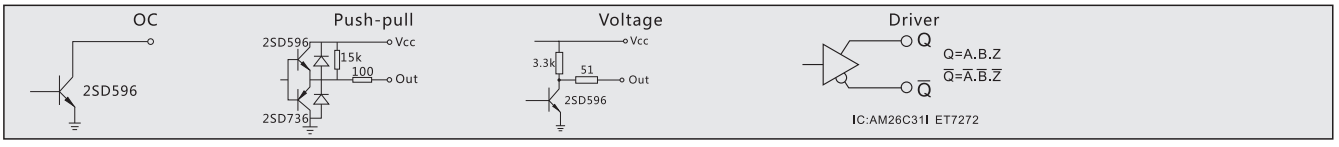
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

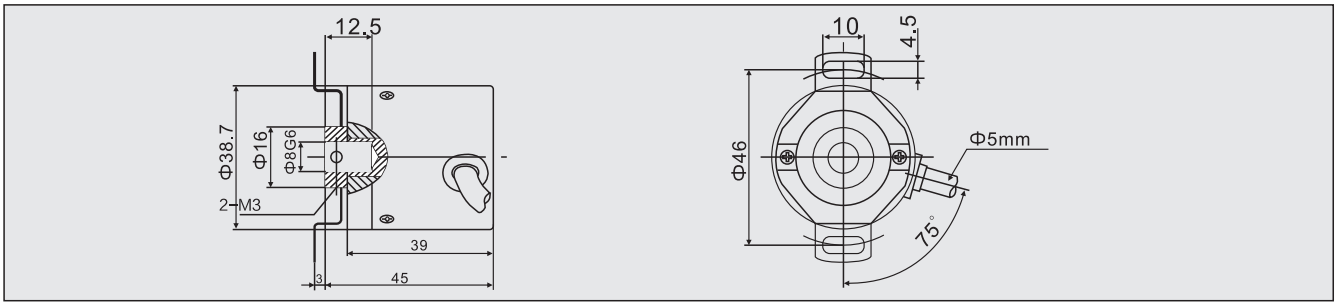
## Specification

| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤60mA | ≤60mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 100KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s² , 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP55 |
| weight | About 0.18kg | | |

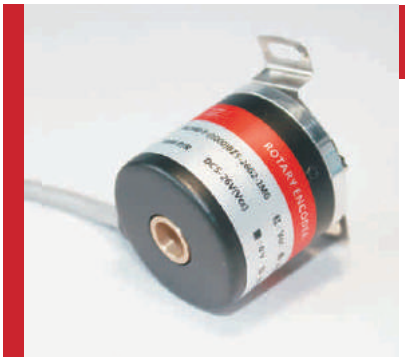
## Example for output circuit




## Mounting Dimensions(Unit:mm)



# S38T Incremental Encoder Series



## Application and features

ODΦ38 Hollow shaft, bore diameter Φ8 or Φ9
The double wing spring accessory is installed to avoid direct damage to the encoder
Direct use with motor
Protection grade IP55 and standard protection requirements

## ▶ Model Explanation

| S | 38 | T | 8 | -F- | ( 1000 ) | BZ | 5-26 | G | 2 | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | OD<br>38:Φ38mm | Shaft type:<br>Hollow shaft | 8:Φ8mm<br>9:Φ9mm | Output configuration :<br>F: Push-pull<br>C:Open collector<br>E: Voltage<br>L:AM26LS31 Driver output<br>(driving element AM26LS31)<br>T:ICHD7 Driver output<br>(driving element ICHD7) | Resolution | Outputsignal:<br>B:AB<br>BZ:ABZ | Supply voltage<br>5:5V<br>5-26:5-26V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Customized informat |

## ▶ Cable Color Explanation

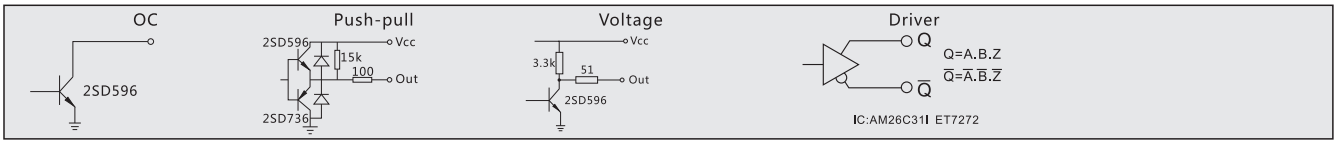
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

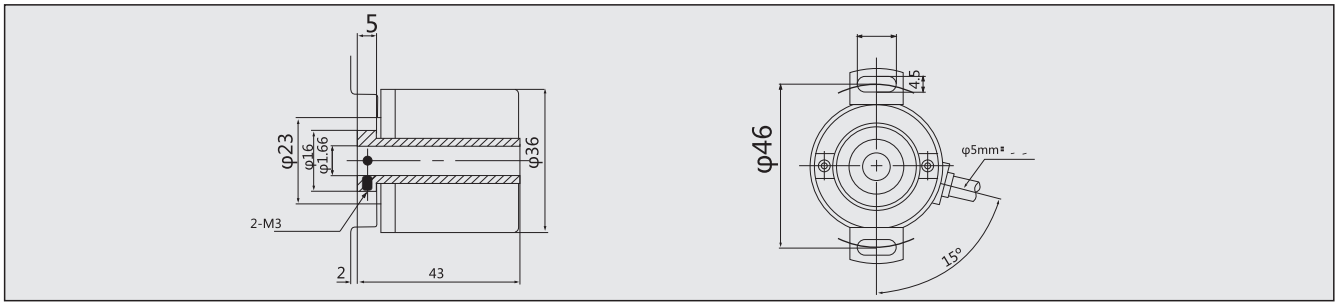
## ▶ Specification

| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤60mA | ≤60mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 100KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s², 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP55 |
| weight | About 0.18kg | | |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)




# S50T Incremental Encoder Series

## Application and features

The outer diameter of hollow shaft, with 50, 8 or 10 mm diameter aperture.
It can be equipped with two shaft extension wheel mechanism for synchronous rotation length measurement.
Widely used in all kinds of mechanical and industrial control.

## ▶ Model Explanation

| S | 50 | T | 8 | -F- | ( 1000 ) | BZ | 5-26 | G | 2 | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | OD<br>38:Φ38mm | Shaft type:<br>Hollow shaft | 6:Φ6mm<br>8:Φ8mm<br>10:Φ10mm<br>12:Φ12mm | Output configuration :<br>F: Push-pull<br>C:Open collector<br>E: Voltage<br>L:AM26LS31 Driver output<br>(driving element AM26LS31)<br>T:ICHD7 Driver output<br>(driving element ICHD7) | Resolution<br>100-2000P/R | Outputsignal:<br>B:AB<br>BZ:ABZ | Supply voltage<br>5:5V<br>5-26:5-26V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Customized informat |

## ▶ Cable Color Explanation

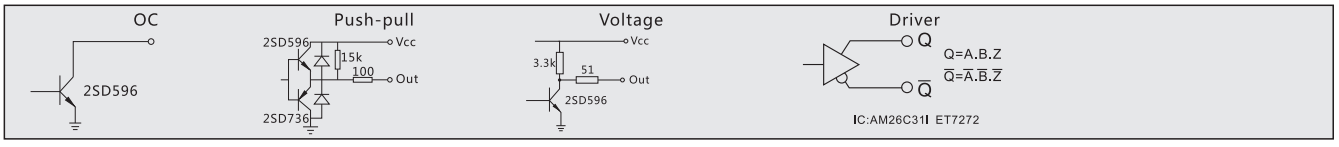
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

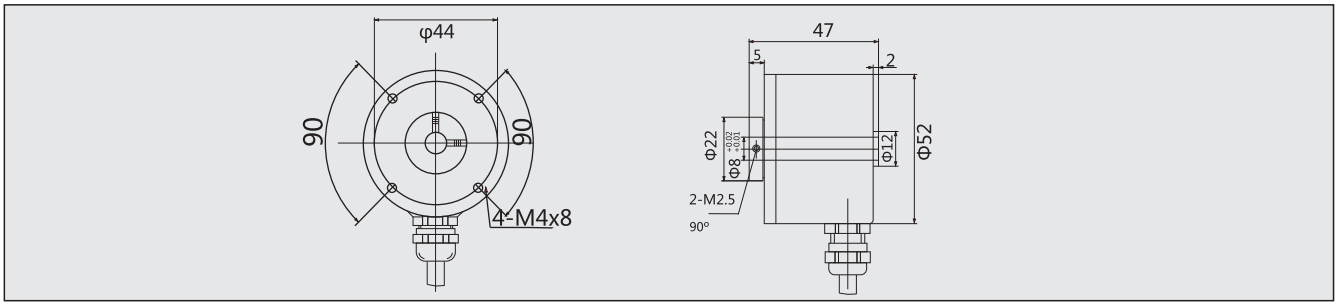
## ▶ Specification

| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤60mA | ≤60mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 100KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s² , 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP55 |
| weight | About 0.3kg | | |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



# S60T Incremental Encoder Series

## Application and features

The outer diameter of hollow shaft, with 60, 12 or 10 mm diameter aperture
The double wing spring accessory is installed to avoid direct damage to the encoder.
Direct use with motor

## Model Explanation

| S | 60 | T | 12 | -F- | ( 1000 ) | BZ | 5-26 | G | 2 | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | OD<br>60:Φ60mm | Shaft type:<br>Hollow shaft | 10:Φ10mm<br>12:Φ12mm | Output configuration :<br>F: Push-pull<br>C:Open collector<br>E: Voltage<br>L:AM26LS31 Driver output<br>(driving element AM26LS31)<br>T:ICHD7 Driver output<br>(driving element ICHD7) | Resolution<br>100-2500P/R | Outputsignal:<br>B:AB<br>BZ:ABZ | Supply voltage<br>5:5V<br>5-26:5-26V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Customized informat |

## Cable Color Explanation

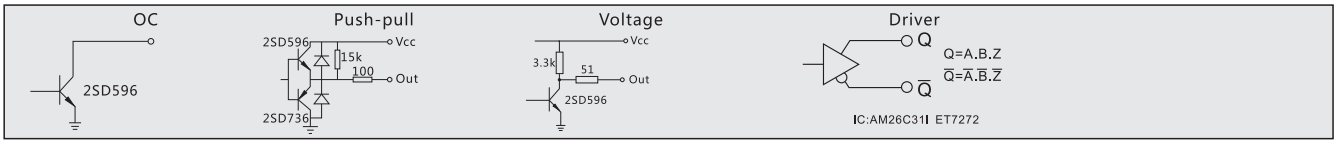
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 : Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

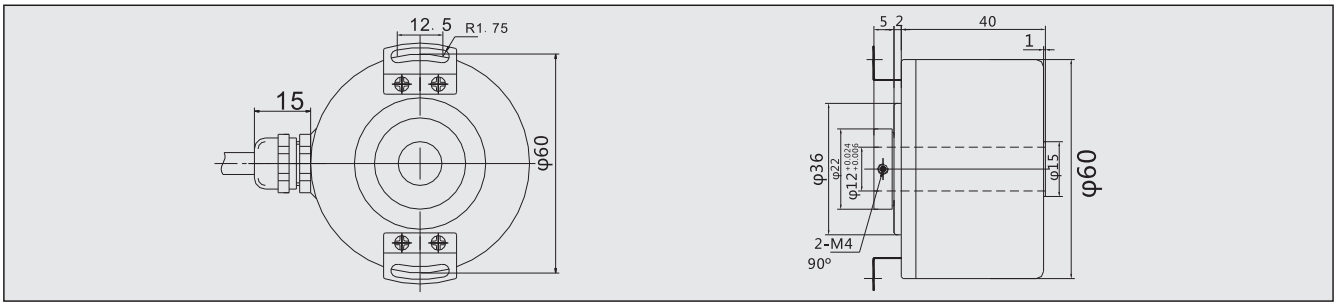
## Specification

| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤120mA | ≤120mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 100KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s² , 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP55 |
| weight | About 0.4kg | | |

## Example for output circuit




## Mounting Dimensions(Unit:mm)




# S80T Incremental Encoder Series

## Application and features

The outer diameter of hollow shaft, with 80, 20 or 30 mm diameter aperture
Thin design, no keyway lock ring and shaft hole multiselect specifications
It is mainly used for elevator, light industry machinery, displacement and speed measurement.

## Model Explanation

| S | 80 | T | 20 | -F- | ( 1000 ) | BZ | 5-26 | G | 2 | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | OD<br>80:Φ80mm | Shaft type:<br>Hollow shaft | 16:Φ16mm<br>18:Φ18mm<br>20:Φ20mm<br>22:Φ22mm<br>25:Φ25mm<br>30:Φ30mm | Output configuration :<br>F: Push-pull<br>C:Open collector<br>E: Voltage<br>L:AM26LS31 Driver output<br>(driving element AM26LS31)<br>T:ICHD7 Driver output<br>(driving element ICHD7) | Resolution<br>100-2500P/R | Outputsignal:<br>B:AB<br>BZ:ABZ | Supply voltage<br>5:5V<br>5-26:5-26V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Customized informat |

## Cable Color Explanation

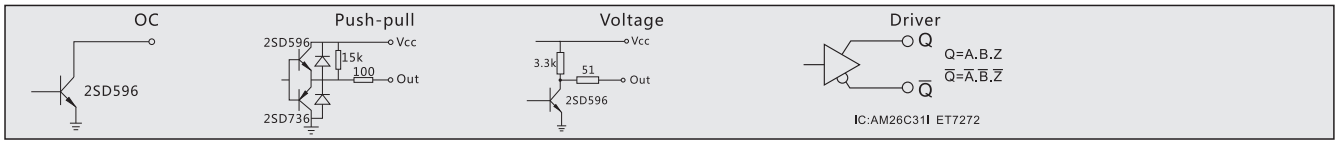
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

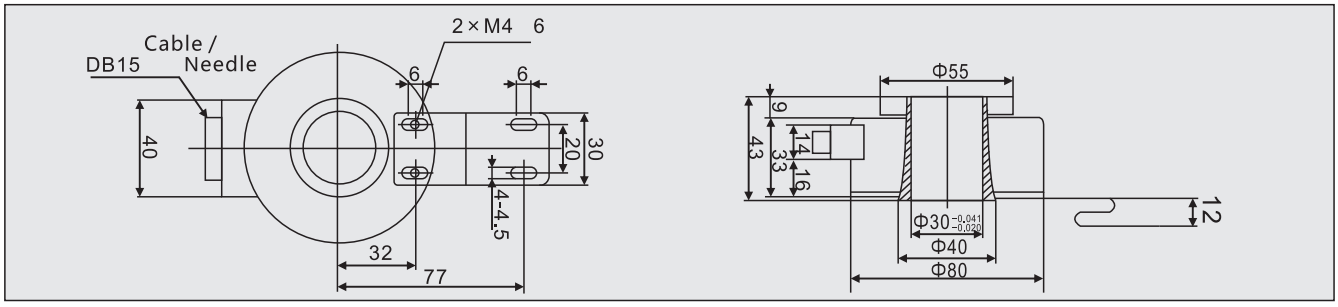
## Specification

| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤120mA | ≤120mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 100KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s² , 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP54 |
| weight | About 0.6kg | | |

## Example for output circuit




## Mounting Dimensions(Unit:mm)



# S100T Incremental Encoder Series

## Application and features

The outer diameter of hollow shaft, with 100, 30 or 45 mm diameter aperture
Thin design, no keyway lock ring and shaft hole multiselect specifications
It is mainly used for elevator, light industry machinery, displacement and speed measurement.

## Model Explanation

| S | 100 | T | 30 | -F- | ( 1000 ) | BZ | 5-26 | G | 2 | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | OD<br>100:Φ100mm | Shaft type:<br>Hollow shaft | 30:Φ30mm<br>35:Φ35mm<br>38:Φ38mm<br>40:Φ40mm<br>45:Φ45mm | Output configuration :<br>F: Push-pull<br>C:Open collector<br>E: Voltage<br>L:AM26LS31 Driver output<br>(driving element AM26LS31)<br>T:ICHD7 Driver output<br>(driving element ICHD7) | Resolution<br>100-2500P/R | Outputsignal:<br>B:AB<br>BZ:ABZ | Supply voltage<br>5:5V<br>5-26:5-26V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Customized informat |

## Cable Color Explanation

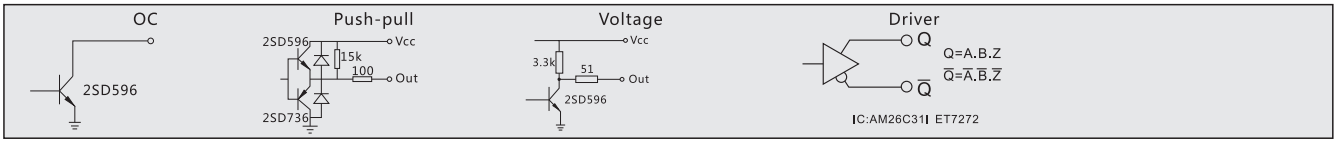
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

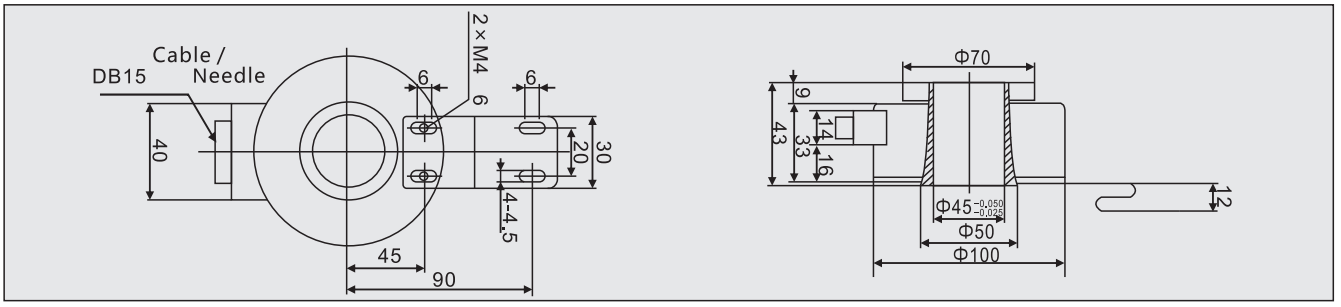
## Specification

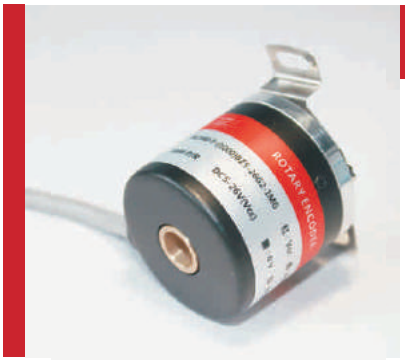
| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤120mA | ≤120mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 100KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s² , 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP54 |
| weight | About 0.7kg | | |

## Example for output circuit




## Mounting Dimensions(Unit:mm)





# S38Z Incremental Encoder Series

## Application and features

ODΦ38 Half hollow shaft, bore diameter Φ6 or Φ8.
Miniature,light weight ,easy to mount.
Applied for various automation equipment.

## ▶ Model Explanation

| S | 38 | Z | 8 | -F- | ( 1000 ) | BZ | 5-26 | G | 2 | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | OD<br>38:Φ38mm | Shaft type:<br>Cone shaft | 8:Φ8mm<br>9:Φ9mm | Output configuration :<br>F: Push-pull<br>C:Open collector<br>E: Voltage<br>L:AM26LS31 Driver output<br>(driving element AM26LS31)<br>T:ICHD7 Driver output<br>(driving element ICHD7) | Resolution | Outputsignal:<br>B:AB<br>BZ:ABZ | Supply voltage<br>5:5V<br>5-26:5-26V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Customized informat |

## ▶ Cable Color Explanation

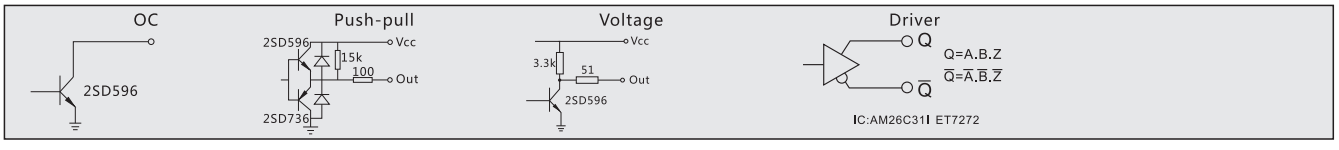
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 : Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

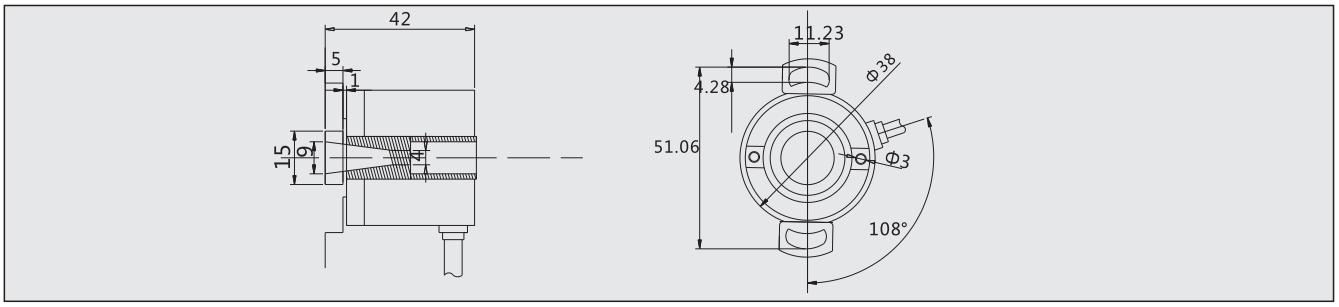
## ▶ Specification

| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤60mA | ≤60mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 100KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s² , 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP55 |
| weight | About 0.18kg | | |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



# SSF48Z Incremental Encoder Series

## Application and features

The aperture is 9 holes or 8 holes with cone shaft axis
With ABZ and UVW six channel signal, equipped with RS422 can provide 12 way signal, compatible with TTL.
It is widely used in the field of automation control, such as communication private clothing unit, etc.,
or is especially suitable for supporting the use of servo motors.
The maximum resolution is 2500PPR, and the polar frequency can reach 6 poles

## Model Explanation

| S | SF48 | Z | 9 | -4P- | 2500 | BZ | 5 | G | 0.2 | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | OD<br>48:Φ48mm | Shaft type:<br>Cone shaft | 8:Φ8mm<br>9:Φ9mm | Pair of poles<br>2P 3P 4P 5P 6P 8P | Resolution<br>1000 1024<br>2048 2500 | Outputsignal:<br>B:ABZA/B/Z/<br>BZ:ABZUVW<br>A/B/Z/<br>U/V/W/ | Supply voltage<br>5:5V | Outlet way<br>G:<br>Side outlet | Cable<br>0.2 : 0.2m | Customized informat |

## Cable Color Explanation

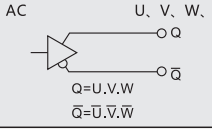
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 14 | Red | Black | Green | White | Yellow | GN/BK | WH/BK | YE/BK | N.C |
| U V W U/ V/ W/ | | | Brown | Gray | Orange | BN/BK | GY/BK | OG/BK | N.C |

Note1 : Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

## Specification

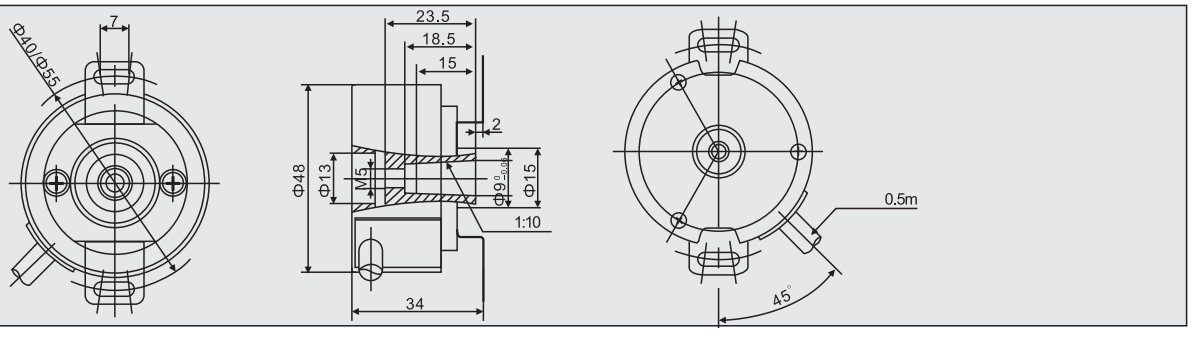
| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | | |
| Mains voltage | +5V±5% | | |
| Current consumption | ≤200mA | | |
| Allowable load | 20mA | | |
| Signal high electrical level | ≥2.5V | | |
| Signal low electrical level | ≤0.5V | | |
| Rise /down time | ≤200ns | | |
| Response frequency | 150KHz | | |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s² , 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP54 |
| weight | About 0.15kg | | |

## Example for output circuit




Measure U、V、W、signal output in the hole position of AC motor

## Mounting Dimensions(Unit:mm)



# SLX50S Incremental Encoder Series

## Application and features

The size of the drawing box is 50*50, and the measuring stroke is 2M,
which is suitable for short distance measurement.
The appearance is strong, wear-resistant, accurate, and imported flexible steel wire.
It is mainly used for hydraulic system, linear motion system control, displacement strain detection and so on.

## ▶ Model Explanation

| SLX | 50 | S | -F- | ( 1000 ) | BZ | 5-26 | G | 2 | -2m | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | Size | Shaft type:<br>Solid shaft | Output configuration :<br>F: Push-pull<br>C:Open collector<br>E: Voltage<br>L:AM26LS31 Driver output<br>(driving element AM26LS31)<br>T:ICHD7 Driver output<br>(driving element ICHD7) | Resolution<br>10-5000P/R | Outputsignal:<br>B:AB<br>BZ:ABZ | Supply voltage<br>5:5V<br>5-26:5-26V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Length of steel wire<br>2:2m | Customized informat |

## ▶ Cable Color Explanation

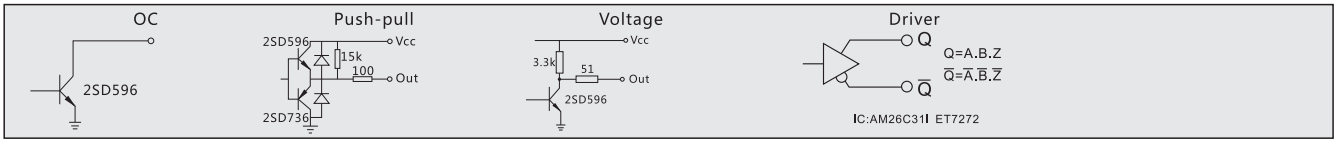
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 : Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

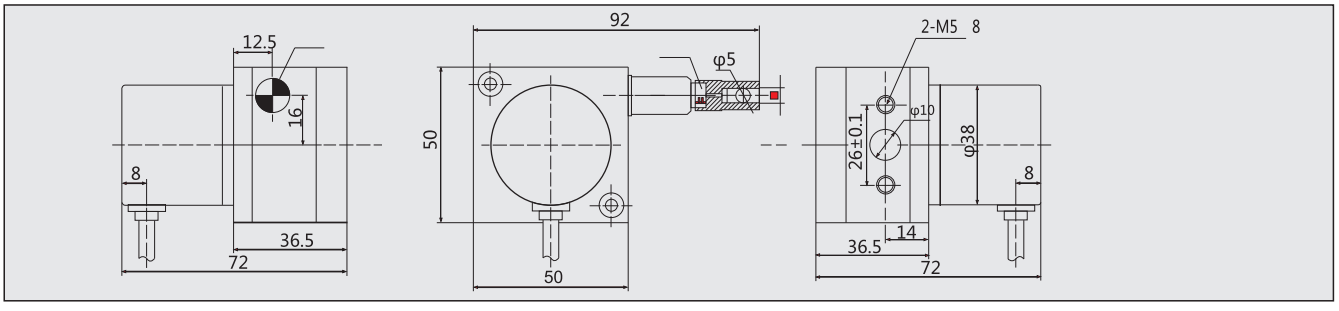
## ▶ Specification

| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤120mA | ≤120mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 100KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | 0-2000mm | Repetition precision | 0.01% |
| Axial load | 0.1, 0.04, 0.02, 0.01, 0.005 | Maximum round-trip speed | 300mm/s |
| Storque | 100mm | Reciprocating frequency | 20Hz |
| Tiptop rotate speed | Aluminium alloy | Response frequency | 200Hz |
| Runing inertia | Oxidizing sand blasting | Life | 200-500 2-5million times |
| Allowable acceleration | 0.6mm | Anti vibration | 10Hz-1500Hz 10G |
| weight | 0.05%FS | Impact resistance | 50G |

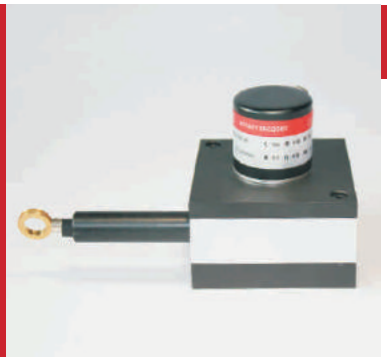
## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



# SLX78S Incremental Encoder Series



## Application and features

The size of the drawing box is 78*78, and the measuring stroke is 3M,
which is suitable for short distance measurement.
The appearance is strong, wear-resistant, accurate, and imported flexible steel wire.
It is mainly used for hydraulic system, linear motion system control.

## ▶ Model Explanation

| SLX | 78 | S | -F- | ( 1000 ) | BZ | 5-26 | G | 2 | -3m | □ |
|---|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | Size | Shaft type:<br>Solid shaft | Output configuration :<br>F: Push-pull<br>C:Open collector<br>E: Voltage<br>L:AM26LS31 Driver output<br>(driving element AM26LS31)<br>T:ICHD7 Driver output<br>(driving element ICHD7) | Resolution<br>10-5000P/R | Outputsignal:<br>B:AB<br>BZ:ABZ | Supply voltage<br>5:5V<br>5-26:5-26V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Length of steel wire<br>3:3m | Customized informat |

## ▶ Cable Color Explanation

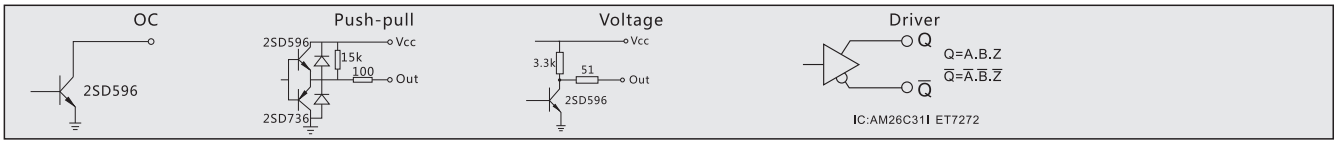
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 : Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

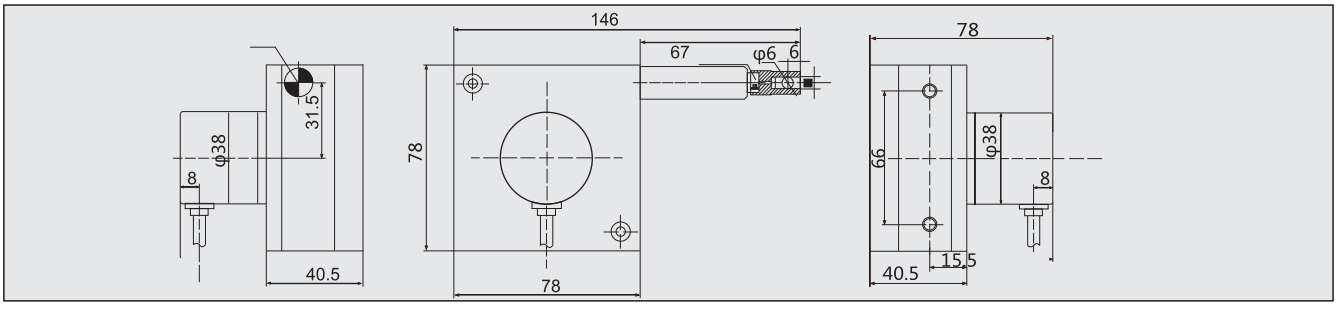
## ▶ Specification

| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤120mA | ≤120mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 100KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | 0-2000mm | Repetition precision | 0.01% |
| Axial load | 0.1, 0.04, 0.02, 0.01, 0.005 | Maximum round-trip speed | 300mm/s |
| Storque | 100mm | Reciprocating frequency | 20Hz |
| Tiptop rotate speed | Aluminium alloy | Response frequency | 200Hz |
| Runing inertia | Oxidizing sand blasting | Life | 200-500 2-5million times |
| Allowable acceleration | 0.6mm | Anti vibration | 10Hz-1500Hz 10G |
| weight | 0.05%FS | Impact resistance | 50G |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



# SLX63A Incremental Encoder Series

## Application and features

The size of the drawing box is 63*63, and the measuring stroke is 2m,
which is suitable for short distance measurement.
The appearance is strong, wear-resistant, accurate, and imported flexible steel wire.
It is mainly used for hydraulic system, linear motion system control.

## ▶ Model Explanation

| SLX | 63 | A | -4-20MA- | 2 | 24 | F | 2 | □ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | Size | Type of output<br>S: Digital output<br>A: Analog output | Output configuration:<br>4-20mA<br>0-5V<br>0-10V<br>0-5K<br>0-10K<br>485 | Stroke<br>2m | Supply voltage<br>5:5V<br>24:24V<br>12:12V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Customized informat |

## ▶ Cable Color Explanation

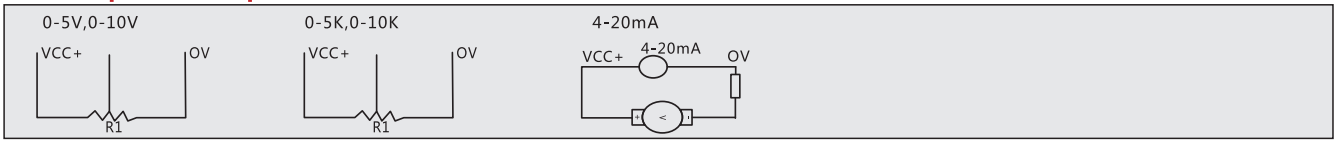
| Signal | VCC | 0V | Signal output | | | | Shield |
|---|---|---|---|---|---|---|---|
| 4-20mA | White | Black | | | | | N.C |
| 0-5V,0-10V,0-5K,0-10K | Red | Black | White | | | | N.C |

Note1 : Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

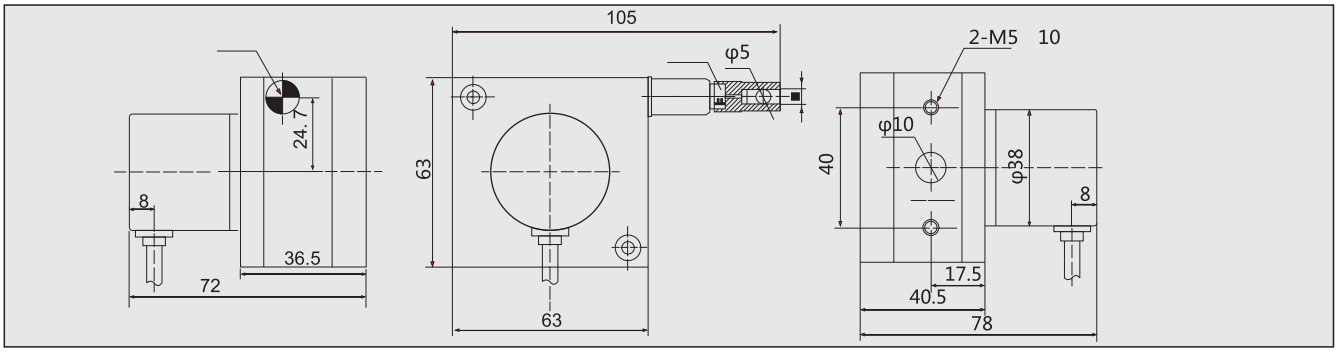
## ▶ Specification

| Electric parametar | | | |
|---|---|---|---|
| Signal | Analog signal | Electrical interface | Plug or cable |
| Voltage | 5-30V | Tensile strength | 2N-5N |
| Maximum input current | 20mA | Cable length | 2m |
| Zero point fullness | Adjustable | Working temperature | -30°C-+90°C |
| Short circuit protection | Yes | | |
| Protection grade | IP54 Standard IP54 | | |
| **Detailed parameters** | | | |
| Measuring stroke | 0-2000mm | Repetition precision | 0.01% |
| Resolving power | 0.1, 0.04, 0.02, 0.01, 0.005 | Maximum round-trip speed | 300mm/s |
| Hub circumference | 100mm | Reciprocating frequency | 20Hz |
| Shell material | Aluminium alloy | Response frequency | 200Hz |
| Surface treatmentl | Oxidizing sand blasting | Life | 200-500 2-5million times |
| Wire rope | 0.6mm | Anti vibration | 10Hz-1500Hz 10G |
| Linear precision | 0.05%FS | Impact resistance | 50G |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



# SLX115A Incremental Encoder Series

## Application and features

The size of the drawing box is 115*115, and the measuring stroke is 15m,
which is suitable for short distance measurement.
The appearance is strong, wear-resistant, accurate, and imported flexible steel wire.
It is mainly used for hydraulic system, linear motion system control,
displacement strain detection and so on.

## ▶ Model Explanation

| S LX | 115 | A | -4-20MA- | 5 | 24 | F | 2 | □ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | Size | type of output<br>S: digital output<br>A: analog output | Output configuration :<br>4-20mA<br>0-5V<br>0-10V<br>0-5K<br>0-10K<br>485 | Stroke<br>5m | Supply voltage<br>5:5V<br>24:24V<br>12:12V | Outlet way<br>G:<br>Side outlet<br>F:<br>Side outlet waterproof<br>E:<br>Bottom outlet | Cable<br>2 : 2m | Customized informat |

## ▶ Cable Color Explanation

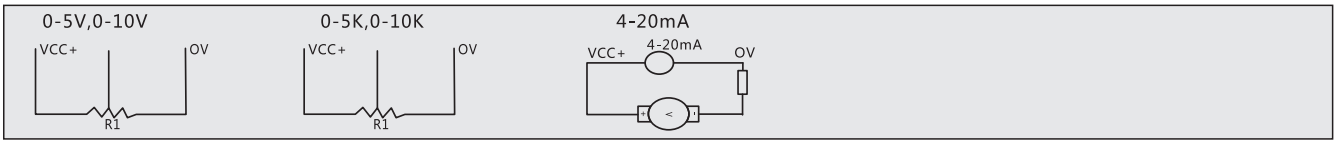
| Signal | VCC | 0V | Signal output | | | | Shield |
|---|---|---|---|---|---|---|---|
| 4-20mA | White | Black | | | | | N.C |
| 0-5V,0-10V,0-5K,0-10K | Red | Black | White | | | | N.C |

Note1 : Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

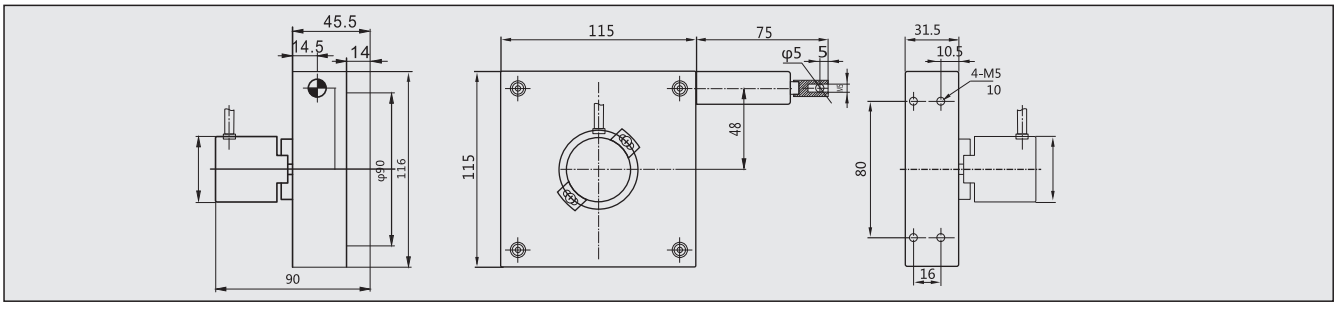
## ▶ Specification

| Electric parametar | | | |
|---|---|---|---|
| Signal | Analog signal | Electrical interface | Plug or cable |
| Voltage | 5-30V | Tensile strength | 2N-5N |
| Maximum input current | 20mA | Cable length | 2m |
| Zero point fullness | Adjustable | Working temperature | -30°C-+90°C |
| Short circuit protection | Yes | | |
| Protection grade | IP54 Standard IP54 | | |
| **Detailed parameters** | | | |
| Measuring stroke | 0-2000mm | Repetition precision | 0.01% |
| Resolving power | 0.1, 0.04, 0.02, 0.01, 0.005 | Maximum round-trip speed | 300mm/s |
| Hub circumference | 100mm | Reciprocating frequency | 20Hz |
| Shell material | Aluminium alloy | Response frequency | 200Hz |
| Surface treatmentl | Oxidizing sand blasting | Life | 200-500万次 2-5million times |
| Wire rope | 0.6mm | Anti vibration | 10Hz-1500Hz 10G |
| Linear precision | 0.05%FS | Impact resistance | 50G |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



# S60 Incremental Encoder Series

## Application and features

Diameter with 100, the thickness of only 25mm
Manual pulse generator, metal gear and rotation feel clear.
Zero position correction and signal segmentation for CNC machine tools, printing machines.

## ▶ Model Explanation

| S | 60 | -001 | -F- | ( 100 ) | B | 5 | □ |
|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | OD<br>60:Φ60MM | Code | Output configuration :<br>C: Open collector<br>E: Voltage<br>L:AM26LS31 Driver output | Resolution<br>10-100P/R | Output signal<br>B:AB | Supply voltage<br>5:5V<br>12:12V | Customized informat |

## ▶ Cable Color Explanation

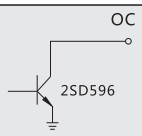
| Signal | VCC | 0V | A | B | Z | A/ | B/ | Z/ | Shield |
|---|---|---|---|---|---|---|---|---|---|
| 5 wires | Red | Black | Green | White | Yellow | - | - | - | N.C |
| 8 wires | Red | Black | Green | White | Yellow | Brown | Gray | Orange | N.C |

Note1 : Please refer to color table or product instruction to connect wires.Chang of wire color will not be informed respectively.
Note2 : Standard cable length is 2m.Other length can be customized.

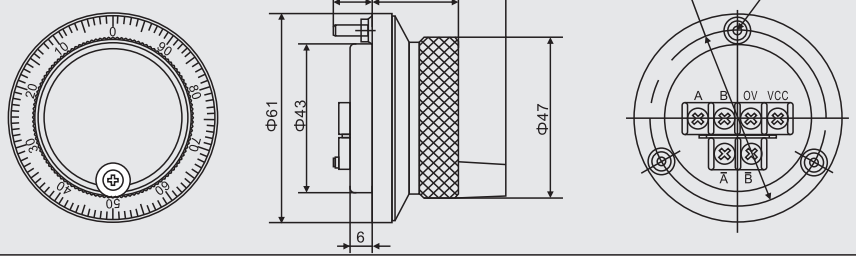
## ▶ Specification

| Electric parametar | | | |
|---|---|---|---|
| Output circuit | Drivers L | C、E、F | Drivers T |
| Mains voltage | +5V±5% | +5V~24v | +8V~24V |
| Current consumption | ≤60mA | ≤120mA | ≤120mA |
| Allowable load | 20mA | 30 mA | 20mA |
| Signal high electrical level | ≥2.5V | ≥VCC*70%V | ≥VCC*70%V |
| Signal low electrical level | ≤0.5V | ≤0.5V | ≤0.5V |
| Rise /down time | ≤100ns | ≤1us | ≤100ns |
| Response frequency | 100KHz | 100KHz | 100KHz |
| **Mechanical and Environmental** | | | |
| Radial load | ≤30N | Concussion resist | 1000m/s² , 6ms |
| Axial load | ≤15N | Vibration resist | 100m/s²,10~200Hz |
| Storque | ≤2×10⁻³N.m | Working temperature | - 20℃~+85℃ |
| Tiptop rotate speed | 6000r/min | Storing temperature | - 20℃~+85℃ |
| Runing inertia | 20g/cm² | Relatively humidity | ≤RH85% No icing |
| Allowable acceleration | 1×10⁴rad/s² | Protect grade | IP54 |
| weight | About 0.7kg | | |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



# Proximity sensor series

# Introduction of proximity sensor

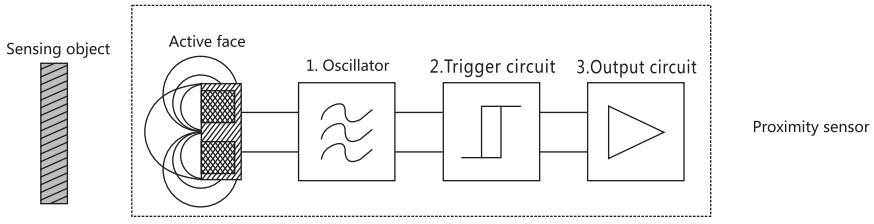
## ▶ Definition

Proximity sensor is a general term of sensors that adopts non-contact way to detect the approaching information or presentation information of the object .It is an advanced replacement to limit switch, travel switch .The movement information and presence information of objects can be converted into electric signal by a proximity sensor.
Proximity sensors can be divided into several types, including Inductive type, Capacitive, type, Photoelectric type, Ultrasonic type, Magnetic type, Displacement type.

## ▶ Operating Principle

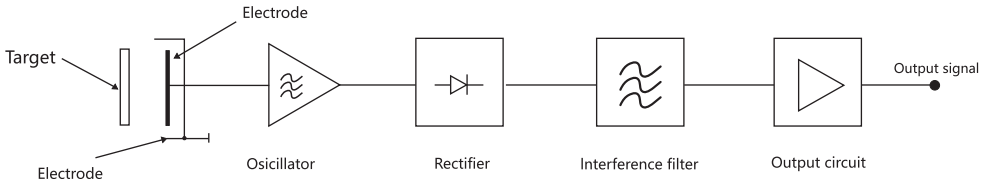
**• Inductive proximity sensor**

When the conductor is approaching a proximity sensor that can generate electromagnetic field, there will be formation of eddy current inside the conductor.
Usually, a proximity sensor is made up of3 parts as below:1:an oscillator 2:a trigger circuit 3:an output circuit
The coil of the oscillator will generate alternating magnetic field on the surface of the sensor after power on. When a metalo bject is approaching the sensing surface , it will generate eddy current inside the object. Then energy emitted from the oscillator will be weakened. Finaiiy it will stop vibrating. When the metal object is getting away from the active face, the oscillator start vibrating again. The actions of starting vibration and stopping vibration will be converted into switching signals(ON/OFF)by trigger circuit.




**• Capacitive proximity sensor**

The active component of capacitive sensor is a disk shaped sensor electrode inside a screening can. These two electrodes from a capacitor with a basic capacitance Cg. When a target approaches upon the sensor area, the capacitance alters by the value C. The capacitor is a member component of an RC oscillator. The output voltage U is dependent upon the effective capacitance Ca=Cg+C between the sensor electrode and the screen
Potential. The oscillator output voltage is rectified, filtered and the interference pulses suppressed. This forms a switching signal which is converted to an output signal in the output stage.




**• Inductive analogue output sensor**

Inductive sensors with analogue output work in the same way as standard inductive sensors. When a metal target approaches the active face of the sensor, energy is drawn from the oscillator. The ratio of the energy loss is proportional to the distance between the target and the sensor. The energy loss is converted to an analogue signal which is made linear and amplified. A standard analogue signal is available at the output(0 ~ 10V and/or 0 ~ 20mA).

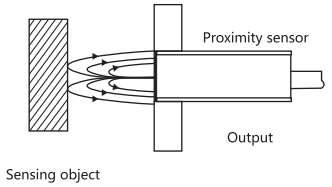
## Basic terms of proximity sensor

**• Output Function**

**N. O.:**
Normally open. When there is no object approaching， no signal output; When there is an object approaching output a signal.
**N. C.:**
Normally closed . When there is no object approaching , there are continuous output signals; When there is an object approaching ,no output signal
**N.O.+N.C.:**
Normally open +Normally closed. When there is an object approaching the circuit that doesn't have output signals before will have output signals.

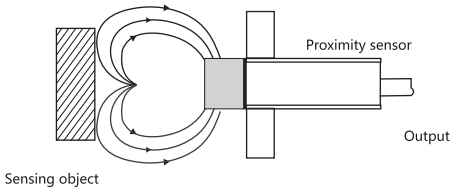
**• Shield**

Magnetic' flux concentrate on the front part of the sensor .
Side part of the coil is covered by metal in this mounting method .




**• Unshield**

Magnetic' flux spread on the front part of the sensor .
Side part of the coil is not covered by metal .
In this mounting method ,
the detection might be influenced by surrounding metals.




## Notice of proximity sensor

**Voltage of power**

Please don not use voltage which exceed rating voltage . If exceed the rating voltage or use the AC power (above AC100)on the sensor which work with DC power that will cause damage .

**Shorted load**

Only when the power supply is right connected and the voltage is in rating voltage , the short load protection is valid .

**Wiring error**

Please confirm the load is connected to the sensor correctly . Or it might cause damage to the sensor .

**Connection without load**

If the sensor is connected to the power supply directly, the inner components might be burned.

## Application and features

Ideal for a variety of applications
With a metal connector that can be tightened security
With an easy-to-see indicator ,deeper mounting holes,and tightening flats for wrenches.

## Model Explanation

| S | I | 04 | -1 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | Cylindrical inductive proximity sensor | OD:<br>04:4mm | Sensing distance :<br>1:1mm | Output configuration :<br>N:NPN DC 3-wire,NPN<br>P:PNP DC 3-wire,PNP | Operation mode:<br>K<br>B | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

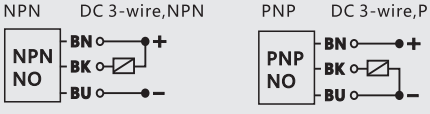
## Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SI04-01NK-Z | Shielded | 1mm | N:NPN DC 3-wire,NPN<br>P:PNP DC 3-wire,PNP | K NO<br>B: NC | |

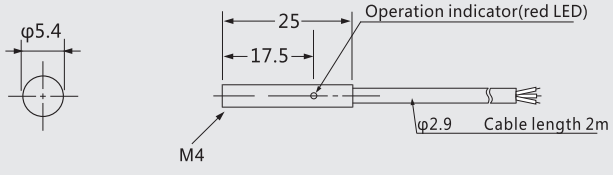
## Specification

| Type | SI04-01N/P |
|---|---|
| Voltage | NPN/PNP 10-30VDC |
| Sensing distance | 1mm |
| Leakage current | 10mA max. |
| Load current | 100mA max. |
| Polarity protection | Yes |
| Indicator | Operation indicator (Red LED) |
| Ambient temperature | -25~+70°C(with no icing) |
| Ambient humidity | Operating/Storage:35~95°RH |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case |
| Dielectric strength | AC500V max. 50~60Hz 1min Between current -carrying parts and case |
| Repeat precision | <3% |
| Load current | <0.1mA |
| Backlash | 1-20% |
| Drop | <2.5V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions |
| Degree of protection | IEC IP67 |
| Case | Brass-nicke plated |

## Example for output circuit




## Mounting Dimensions(Unit:mm)



## Application and features

Ideal for a variety of applications
With a metal connector that can be tightened security
With an easy-to-see indicator ,deeper mounting holes,and tightening flats for wrenches.

## Model Explanation

| S | I | 05 | -1 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | Cylindrical inductive proximity sensor | OD:<br>05:5mm | Sensing distance :<br>1:1mm | Output configuration :<br>N:NPN DC 3-wire,NPN<br>P:PNP DC 3-wire,PNP | Operation mode:<br>K:<br>B: | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

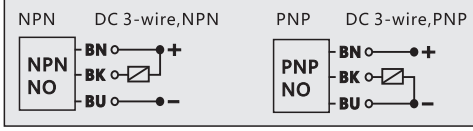
## Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SI05-01NK-Z | Shielded | 1mm | N:NPN DC 3-wire,NPN<br>P:PNP DC 3-wire,PNP | K NO<br>B: NC | |

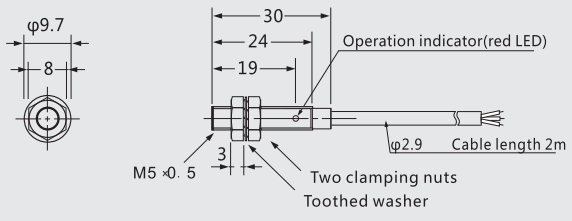
## Specification

| Type | SI05-01N/P |
|---|---|
| Voltage | NPN/PNP 10-30VDC |
| Sensing distance | 1mm |
| Leakage current | 10mA max. |
| Load current | 100mA max. |
| Polarity protection | Yes |
| Indicator | Operation indicator (Red LED) |
| Ambient temperature | -25~+70°C(with no icing) |
| Ambient humidity | Operating/Storage:35~95°RH |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case |
| Dielectric strength | AC500V max. 50~60Hz 1min Between current -carrying parts and case |
| Repeat precision | <3% |
| Load current | <0.1mA |
| Backlash | 1-20% |
| Drop | <2.5V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions |
| Degree of protection | IEC IP67 |
| Case | Brass-nicke plated |

## Example for output circuit




## Mounting Dimensions(Unit:mm)



# Cylindrical inductive proximity sensor SI08 series

## Application and features

Ideal for a variety of applications
With a metal connector that can be tightened security
With an easy-to-see indicator ,deeper mounting holes,and tightening flats for wrenches.

## Model Explanation

| S | I | 08 | -02 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | Cylindrical inductive proximity sensor | OD:<br>08:8mm | Sensing distance :<br>1.5:1.5mm<br>02:2mm | Output configuration :<br>N:NPN DC 3-wire,NPN<br>P:PNP DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

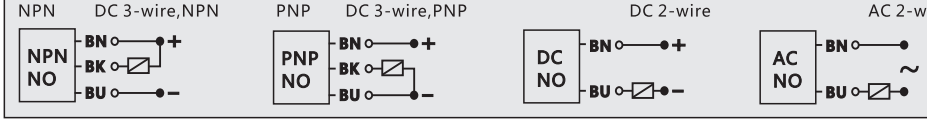
## Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SI08-02NK-Z | Unshielded | 2mm | N:NPN DC 3-wire,NPN<br>P:PNP DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | K NO<br>B: NC | Cable line/Plug |
| SI08-1.5NK-Z | Shielded | 1.5mm | | | |

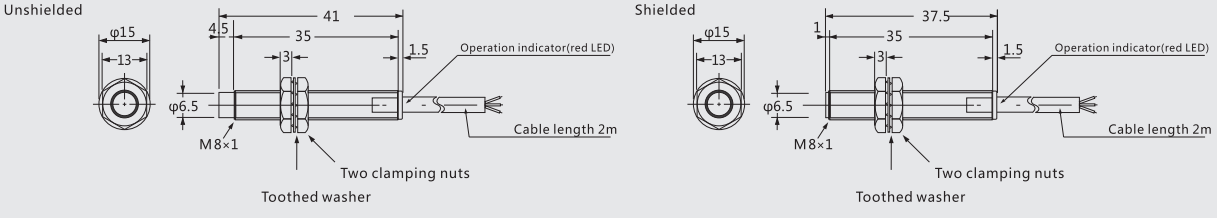
## Specification

| Type | SI08-02/1.5N/P/D/A | |
|---|---|---|
| Voltage | NPN/PNP/DC:10-30VDC | AC:220VAC |
| Sensing distance | 2mm/1.5mm | |
| Leakage current | <10mA/ <10mA/<1mA | <3mA |
| Polarity protection | Yes/Yes | |
| Indicator | Operation indicator(Red LED) | |
| Ambient temperature | -25~+70°C(with no icing) | |
| Ambient humidity | Operating/Storage:35~95°RH | |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC500V max. 50~60Hz 1min Between current -carrying parts and case | |
| Repeat precision | <3% | |
| Load current | <150mA/<150mA/<100mA | <150mA |
| Backlash | 1-20% | |
| Drop | <2.5V/<2.5V/<6V | <10V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions | |
| Shock resistance | 500m/s²X , Y , Z 10 500m/s² 10 times each X , Y and Z directions | |
| Degree of protection | IEC IP67 | |
| Case | Brass-nicke plated | |

## Example for output circuit




## Mounting Dimensions(Unit:mm)



## Application and features

Ideal for a variety of applications
With a metal connector that can be tightened security
With an easy-to-see indicator ,deeper mounting holes,and tightening flats for wrenches.

## Model Explanation

| S | I | 12 | -04 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | Cylindrical inductive proximity sensor | OD:<br>12:12mm | Sensing distance :<br>04:4mm<br>02:2mm | Output configuration :<br>N:NPN DC 3-wire,NPN<br>P:PNP DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

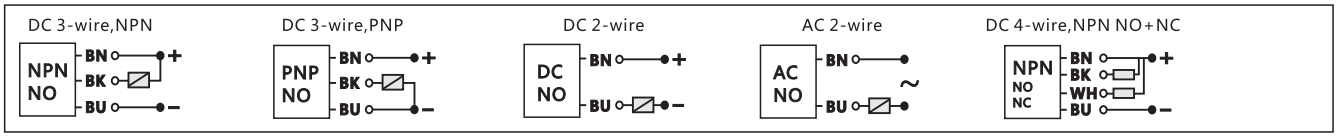
## Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SI12-04NK-Z | Unshielded | 4mm | N:NPN DC 3-wire,NPN<br>P:PNP DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | K: NO<br>B: NC<br>KB: NO+NC | Cable line/Plug |
| SI12-02NK-Z | Shielded | 2mm | | | |

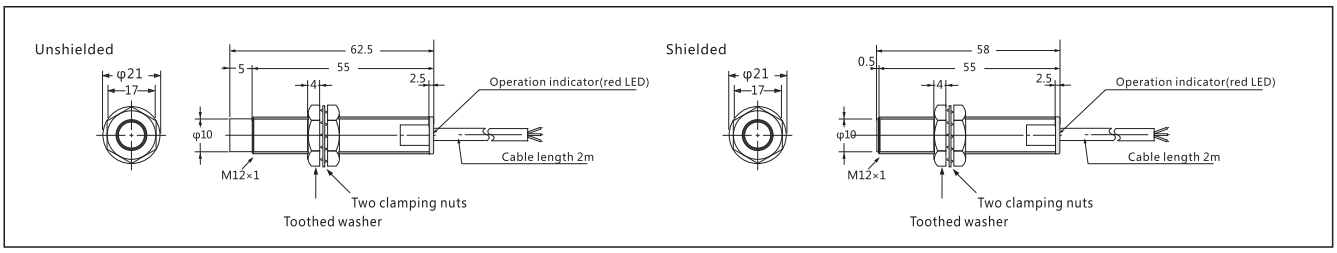
## Specification

| Type | SI12-04/02N/P/D/A | |
|---|---|---|
| Voltage | NPN/PNP/DC:10-30VDC | AC:220VAC |
| Sensing distance | 4mm/2mm | |
| Leakage current | <15mA/ <15mA/<1mA | <3mA |
| Polarity protection | Yes | |
| Indicator | Operation indicator(Red LED) | |
| Ambient temperature | -25~+70°C( with no icing) | |
| Ambient humidity | Operating/Storage:35~95°RH | |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC500V max. 50~60Hz 1min Between current -carrying parts and case | AC2000V max. |
| Repeat precision | <3% | |
| Load current | <200mA/<200mA/<100mA | <200mA |
| Backlash | 1-20% | |
| Drop | <2.5V/<2.5V/<6V | <10V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions | |
| Shock resistance | 500m/s²X , Y , 500m/s² 10 times each X , Y and Z directions | |
| Degree of protection | IEC IP67 | |
| Case | Brass-nicke plated | |

## Example for output circuit




## Mounting Dimensions(Unit:mm)



# Cylindrical inductive proximity sensor SI18 series

## Application and features

Ideal for a variety of applications
With a metal connector that can be tightened security
With an easy-to-see indicator ,deeper mounting holes,and tightening flats for wrenches.

## Model Explanation

| S | I | 18 | -08 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | Cylindrical inductive proximity sensor | OD:<br>18:18mm | Sensing distance :<br>08:8mm<br>05:5mm | Output configuration :<br>N:DC 3-wire,NPN<br>P:DC 3-wire,PNP<br>D:DC 2-wire<br>A:AC 2-wire | Operation mode:<br>K:NO<br>B:NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

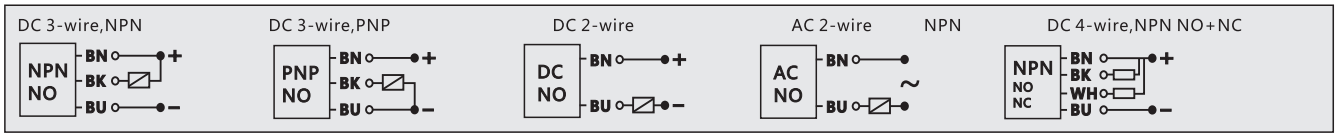
## Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SI18-08NK-Z | Unshielded | 8MM | N:DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | K: NO<br>B: NC<br>KB:NO+NC | Cable line/Plug |
| SI18-05NK-Z | Shielded | 5MM | | | |

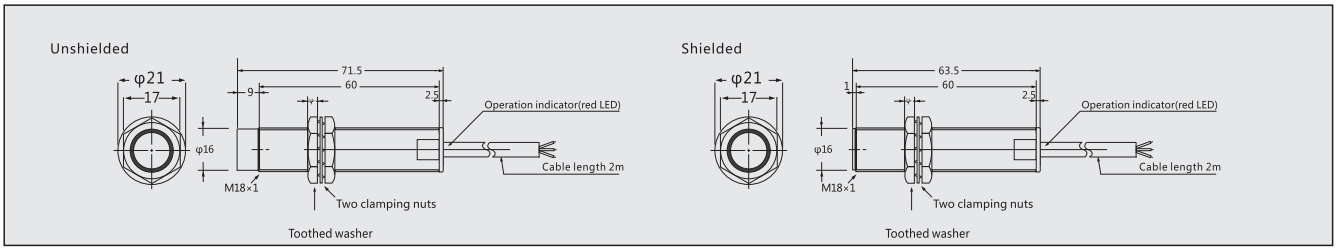
## Specification

| Type | SI18-0805N/P/D/A | |
|---|---|---|
| Voltage | NPN/PNP/DC:10-30VDC | AC:220VAC |
| Sensing distance | 8mm/5mm | |
| Leakage current | <15mA/ <15mA/<1mA | <3mA |
| Polarity protection | Yes | |
| Indicator | Operation indicator(Red LED) | |
| Ambient temperature | -25~+70°C(with no icing) | |
| Ambient humidity | Operating/Storage:35~95°RH | |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC1000V max. 50~60Hz 1min Between current -carrying parts and case | AC2000V max. |
| Repeat precision | <3% | |
| Load current | <200mA/<200mA/<100mA | <300mA |
| Backlash | 1-20% | |
| Drop | <2.5V/<2.5V/<6V | <10V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions | |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions | |
| Degree of protection | IEC IP67 | |
| Case | Brass-nicke plated | |

## Example for output circuit




## Mounting Dimensions(Unit:mm)



## Application and features

Ideal for a variety of applications
With a metal connector that can be tightened security
With an easy-to-see indicator ,deeper mounting holes,and tightening flats for wrenches.

## ▶ Model Explanation

| S | I | 30 | -15 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | Cylindrical inductive proximity sensor | OD:<br>30:30mm | Sensing distance :<br>15:15mm<br>10:10mm | Output configuration :<br>N:NPN DC 3-wire,NPN<br>P:PNP DC 3-wire,PNP | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

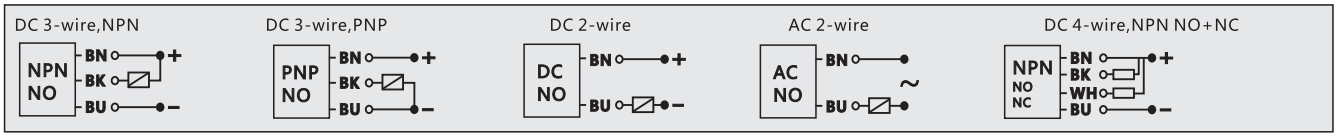
## ▶ Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SI30-15NK-Z | Unshielded | 15mm | N:NPN DC 3-wire,NPN<br>P:PNP DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | K:NO<br>B:NC<br>KB:NO+NC | Cable line/Plug |
| SI30-10NK-Z | Shielded | 10mm | | | |

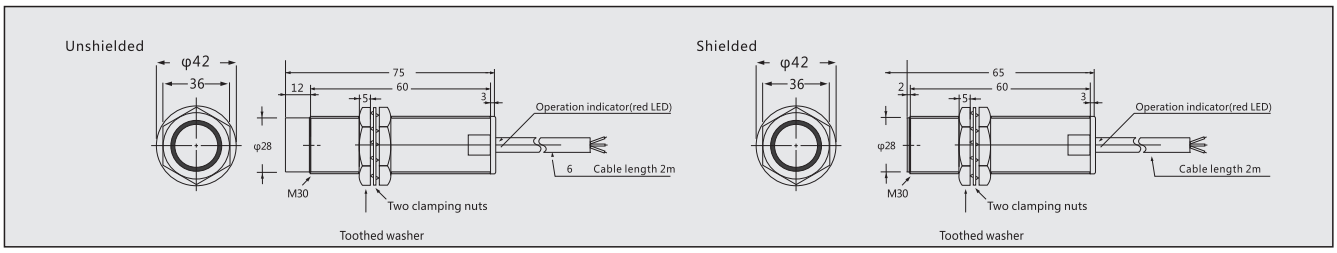
## ▶ Specification

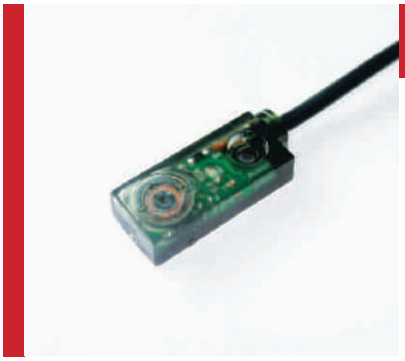
| Type | SI30-15/10N/P/D/A | |
|---|---|---|
| Voltage | NPN/PNP/DC:10-30VDC | AC:220VAC |
| Sensing distance | 15mm/10mm | |
| Leakage current | <15mA/ <15mA/<1mA | <3mA/ |
| Polarity protection | Yes | |
| Indicator | Operation indicator(Red LED) | |
| Ambient temperature | -25~+70°C(with no icing) | |
| Ambient humidity | Operating/Storage:35~95°RH | |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC1000V max. 50~60Hz 1min Between current -carrying parts and case | AC2000V max. |
| Repeat precision | <3% | |
| Load current | <200mA/<200mA/<100mA | <300mA |
| Backlash | 1-20% | |
| Drop | <2.5V/<2.5V/<6V | <10V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions | |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions | |
| Degree of protection | IEC IP67 | |
| Case | Brass-nicke plated | |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)





## Application and features

In many different variations for various purposes.
Easy to install,without special mounting braket.
With an easy-to-see indicator

## ▶ Model Explanation

| S | F | -W3 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | category:<br>F:<br>Rectangular Inductive proximity sensor | size :<br>12*6*30 mm<br>Sensing distance :<br>3:3mm | Output configuration :<br>N:DC 3-wire,NPN<br>P:DC 3-wire,PNP | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

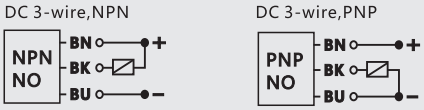
## ▶ Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SF-W3NK-Z | Unshielded | 3mm | N: DC 3-wire,NPN<br>P: DC 3-wire,PNP | K: NO<br>B: NC | Cable line/Plug |

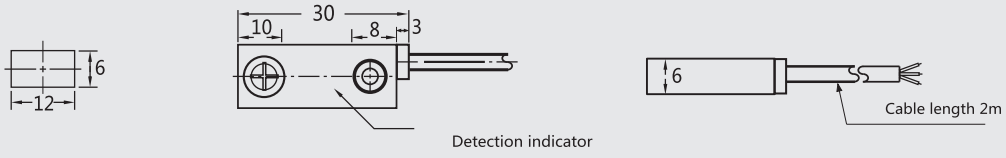
## ▶ Specification

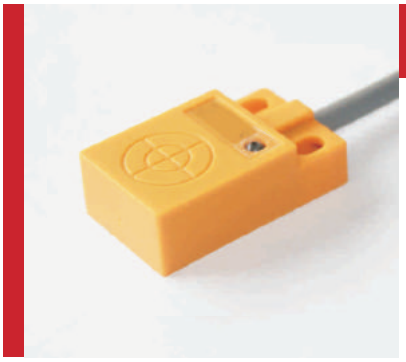
| Type | SF-W3N/P |
|---|---|
| Voltage | NPN/PNP 10-30VDC |
| Sensing distance | 3mm |
| Leakage current | <10mA |
| Polarity protection | Yes |
| Indicator | Operation indicator(Red LED) |
| Ambient temperature | -25~+70°C(with no icing) |
| Ambient humidity | Operating/Storage:35~95°RH |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case |
| Dielectric strength | AC1000V max. 50~60Hz 1min Between current -carrying parts and case |
| Repeat precision | <3% |
| Load current | <100mA |
| Backlash | 1-20% |
| Drop | <2.5V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions |
| Degree of protection | IEC IP67 |
| Case | PAR |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)





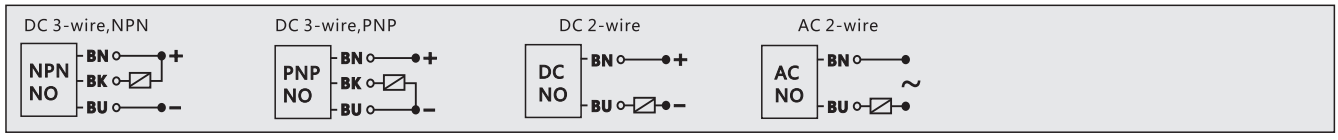
## Application and features

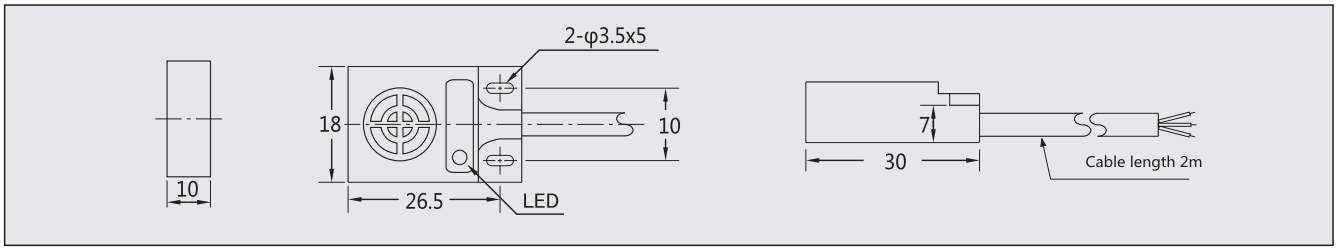
A wealth of models ideal for limit control,Counting control,and other applications.
Easy installation,high-speed pulse generator,high-speed rotation control and more.

| S | F | -W5 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | category:<br>F:<br>Rectangular Inductive proximity sensor | size :<br>18*10*30.5 mm<br>Sensing distance :<br>5:5mm | Output configuration :<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

| | | | | | |
|---|---|---|---|---|---|
| SF-W5NK-Z | Unshielded | 5mm | N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | K: NO<br>B: NC | Cable line Plug |

| Type | SF-W5N/P/D/A | |
|---|---|---|
| Voltage | NPN/PNP/DC:10-30VDC | AC:220VAC |
| Sensing distance | 5mm | |
| Leakage current | <10mA/ <10mA/<1mA | <3mA |
| Polarity protection | Yes/Yes | |
| Indicator | Operation indicator(Red LED) | |
| Ambient temperature | -25~+70°C(with no icing) | |
| Ambient humidity | Operating/Storage:35~95°RH | |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC500V max. 50~60Hz 1min Between current -carrying parts and case | AC2000V max. |
| Repeat precision | <3% | |
| Load current | <200mA/<200mA/<100mA | <200mA |
| Backlash | 1-20% | |
| Drop | <2.5V/<2.5V/<6V | <10V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions | |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions | |
| Degree of protection | IEC IP67 | |
| Case | PBT | |



# Rectangular proximity sensor SF04 series

## Application and features

A wealth of models ideal for limit control,Counting control,and other applications.
Easy installation,high-speed pulse generator,high-speed rotation control and more.

## ▶ Model Explanation

| S | F | -04 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | category:<br>F:<br>Rectangular Inductive proximity sensor | size :<br>18*18*34 mm<br>Sensing distance :<br>04:4mm | Output configuration :<br>N:DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

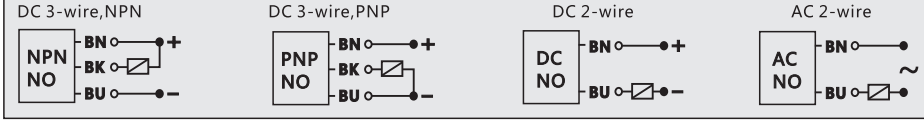
## ▶ Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SF-04NK-Z | Unshielded | 4mm | N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | K:NO<br>B:NC | Cable line/Plug |

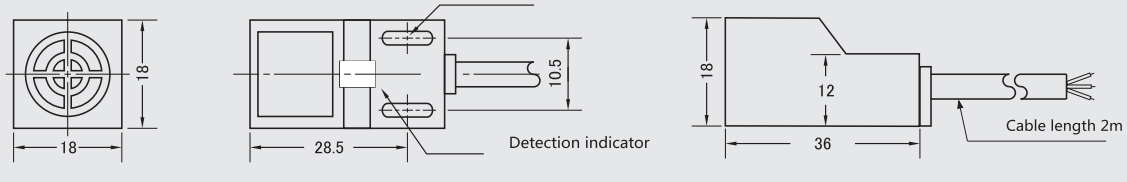
## ▶ Specification

| Type | SF-04N/P/D/A | |
|---|---|---|
| Voltage | NPN/PNP/DC:10-30VDC | AC:220VAC |
| Sensing distance | 5mm | |
| Leakage current | <10mA/ <10mA/<1mA | <3mA |
| Polarity protection | Yes/Yes | |
| Indicator | Operation indicator(Red LED) | |
| Ambient temperature | -25~+70°C(with no icing) | |
| Ambient humidity | Operating/Storage:35~95°RH | |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC500V max. 50~60Hz 1min Between current -carrying parts and case | AC2000V max. |
| Repeat precision | <3% | |
| Load current | <200mA/<200mA/<100mA | <200mA |
| Backlash | 1-20% | |
| Drop | <2.5V/<2.5V/<6V | <10V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions | |
| Shock resistance | 500m/s²X , Y , Z各方向10次 500m/s² 10 times each X , Y and Z directions | |
| Degree of protection | IEC IP67 | |
| Case | PBT | |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



## Application and features

A wealth of models ideal for limit control,Counting control,and other applications.
Easy installation,high-speed pulse generator,high-speed rotation control and more.

## ▶ Model Explanation

| S | F | -25 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | category:<br>F:<br>Rectangular Inductive proximity sensor | size :<br>25*25*38 mm<br>Sensing distance :<br>5:5mm | Output configuration :<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

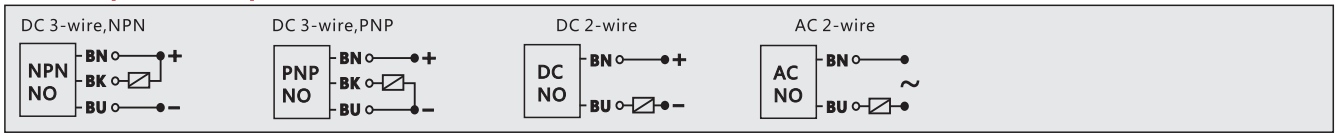
## ▶ Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SF-25NK-Z | Unshielded | 5mm | N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | K: NO<br>B: NC | Cable line/Plug |

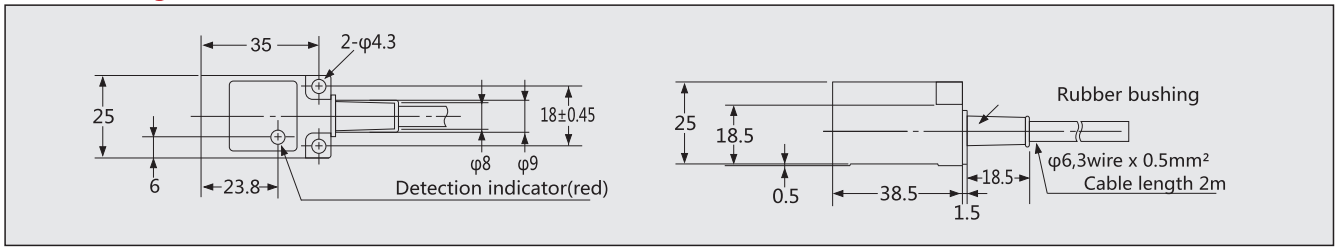
## ▶ Specification

| Type | SF-25N/P/D/A | |
|---|---|---|
| Voltage | NPN/PNP/DC:10-30VDC | AC:220VAC |
| Sensing distance | 5mm | |
| Leakage current | <10mA/ <10mA/<1mA | <3mA |
| Polarity protection | Yes/Yes | |
| Indicator | Operation indicator(Red LED) | |
| Ambient temperature | -25~+70°C( with no icing) | |
| Ambient humidity | Operating/Storage:35~95°RH | |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC1000V max. 50~60Hz 1min Between current -carrying parts and case | AC2000V max. |
| Repeat precision | <3% | |
| Load current | <100mA | <300mA |
| Backlash | 1-20% | |
| Drop | <2.5V/<2.5V/<6V | <10V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions | |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions | |
| Degree of protection | IEC IP67 | |
| Case | PBT | |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



# Rectangular proximity sensor SF30 series

## Application and features

A wealth of models ideal for limit control,Counting control,and other applications.
Easy installation,high-speed pulse generator,high-speed rotation control and more.

## ▶ Model Explanation

| S | F | -30 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | category:<br>F:<br>Rectangular Inductive proximity sensor | size :<br>30*30*48.5 mm<br>Sensing distance :<br>10:10mm | Output configuration :<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

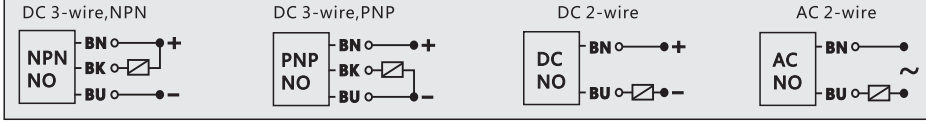
## ▶ Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SF-30NK-Z | Unshielded | 10mm | N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | K: NO<br>B: NC | Cable line/Plug |

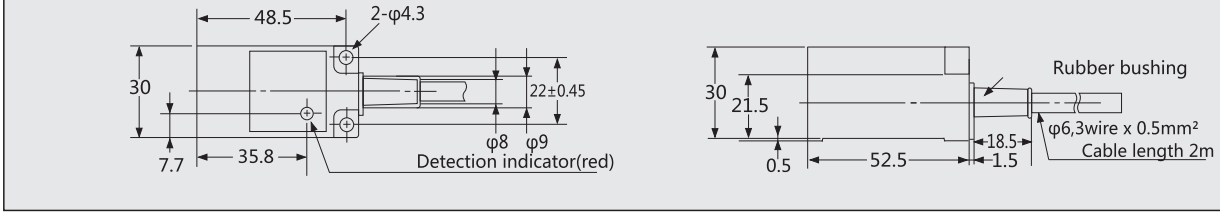
## ▶ Specification

| Type | SF-30N/P/D/A | |
|---|---|---|
| Voltage | NPN/PNP/DC:10-30VDC | AC:220VAC |
| Sensing distance | 10mm | |
| Leakage current | <10mA/ <10mA/<1mA | <3mA |
| Polarity protection | Yes/Yes | |
| Indicator | Operation indicator(Red LED) | |
| Ambient temperature | -25~+70°C( with no icing) | |
| Ambient humidity | Operating/Storage:35~95°RH | |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC1000V max. 50~60Hz 1min Between current -carrying parts and case | AC2000V max. |
| Repeat precision | <3% | |
| Load current | <200mA<200mA<100mA | <200mA |
| Backlash | 1-20% | |
| Drop | <2.5V/<2.5V/<6V | <10V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions | |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions | |
| Degree of protection | IEC IP67 | |
| Case | PBT | |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



## Application and features

A wealth of models ideal for limit control,Counting control,and other applications.
Easy installation,high-speed pulse generator,high-speed rotation control and more.

## Model Explanation

| S | F | -40 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|
| Model<br>S: Incremental encoder<br>S□ Speciall definition | category:<br>F: Rectangular Inductive proximity sensor | size : 40*40*47 mm<br>Sensing distance : 15:15mm | Output configuration :<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

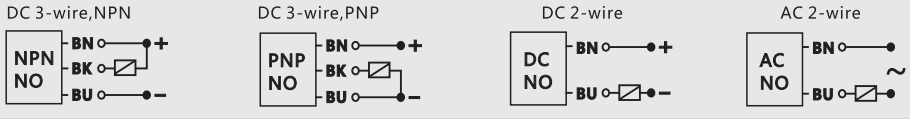
## Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SF-40NK-Z | Unshielded | 15mm | N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>D: DC 2-wire<br>A: AC 2-wire | K: NO<br>B: NC | Cable line/Plug |

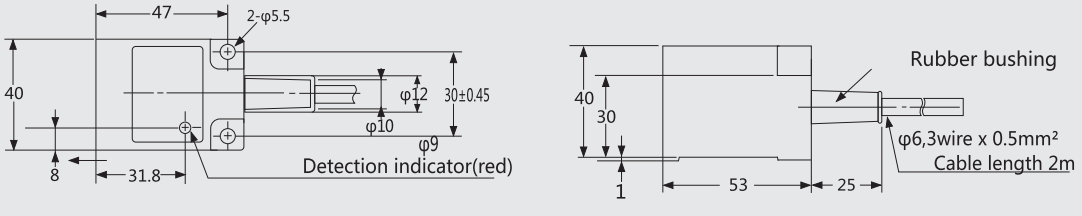
## Specification

| Type | SF-40N/P/D/A | |
|---|---|---|
| Voltage | NPN/PNP/DC:10-30VDC | AC:220VAC |
| Sensing distance | 15mm | |
| Leakage current | <10mA/ <10mA/<1mA | <3mA |
| Polarity protection | Yes/Yes | |
| Indicator | Operation indicator(Red LED) | |
| Ambient temperature | -25~+70°C(with no icing) | |
| Ambient humidity | Operating/Storage:35~95°RH | |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC1000V max. 50~60Hz 1min Between current -carrying parts and case | AC2000V max. |
| Repeat precision | <3% | |
| Load current | <200mA<200mA<100mA | <300mA |
| Backlash | 1-20% | |
| Drop | <2.5V/<2.5V/<6V | <10V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions | |
| Shock resistance | 500m/s²X , Y , Z 10 500m/s² 10 times each X , Y and Z directions | |
| Degree of protection | IEC IP67 | |
| Case | PBT | |

## Example for output circuit




## Mounting Dimensions(Unit:mm)



# Hall sensor SH08 series

## Application and features

Magnets can be detected
It can detect the N pole of the magnet, or N, S pole
It can be installed on the metal

## ▶ Model Explanation

| S | H | 08 | -10 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | H:<br>Hall proximity sensor | OD:<br>08:8mm | Sensing distance :<br>10:10mm | Output configuration :<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

## ▶ Product Category

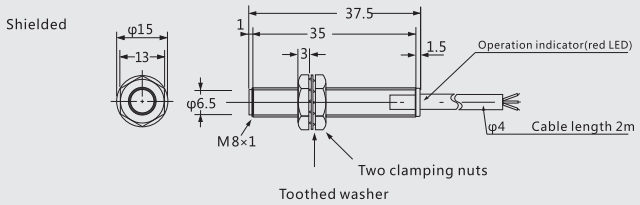
| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SH08-10NK-Z | Shielded | 10mm | N: DC 3-wire,NPN<br>P: DC 3-wire,PNP | K: NO<br>B: NC | Cable line/Plug |

## ▶ Specification

| Type | SH08-10N/P |
|---|---|
| Voltage | PN/PNP 10-30VDC |
| Sensing distance | 10mm |
| Leakage current | <10mA |
| Polarity protection | Yes |
| Indicator | Operation indicator(Red LED) |
| Ambient temperature | -25~+70°C(with no icing) |
| Ambient humidity | Operating/Storage:35~95°RH |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case |
| Dielectric strength | AC500V max. 50~60Hz 1min Between current -carrying parts and case |
| Repeat precision | <3% |
| Load current | <150mA |
| Backlash | 1-20% |
| Drop | <2.5V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions |
| Degree of protection | IEC IP67 |
| Case | Brass-nicke plated |

## ▶ Example for output circuit


## ▶ Mounting Dimensions(Unit:mm)



# Hall sensor SH12 series

## Application and features

Magnets can be detected
It can detect the N pole of the magnet, or N, S pole
It can be installed on the metal

## Model Explanation

| S | H | 12 | -10 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | H:<br>Hall proximity sensor | OD:<br>12:12mm | Sensing distance :<br>10:10mm | Output configuration :<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

## Product Category

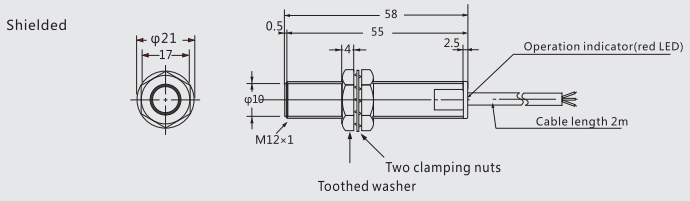
| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SH12-10NK-Z | 埋入<br>Shielded | 10mm | N:NPN输出 DC 3-wire,NPN<br>P:PNP输出 DC 3-wire,PNP | K:常开 NO<br>B:常闭 NC | 导线引出/航插<br>Cable line/Plug |

## Specification

| Type | SH12-10N/P |
|---|---|
| Voltage | NPN/PNP 10-30VDC |
| Sensing distance | 1mm |
| Leakage current | 10mA max. |
| Polarity protection | Yes |
| Indicator | Operation indicator (Red LED) |
| Ambient temperature | -25~+70°C(with no icing) |
| Ambient humidity | Operating/Storage:35~95°RH |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case |
| Dielectric strength | AC500V max. 50~60Hz 1min Between current -carrying parts and case |
| Repeat precision | <3% |
| Load current | <0.1mA |
| Backlash | 1-20% |
| Drop | <2.5V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions |
| Degree of protection | IEC IP67 |
| Case | Brass-nicke plated |

## Example for output circuit


## Mounting Dimensions(Unit:mm)



# Hall sensor SH18 series

## Application and features

Magnets can be detected
It can detect the N pole of the magnet, or N, S pole
It can be installed on the metal

## ▶ Model Explanation

| S | H | 18 | -10 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | H:<br>Hall proximity sensor | OD:<br>18:18mm | Sensing distance :<br>10:10mm | Output configuration :<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

## ▶ Product Category

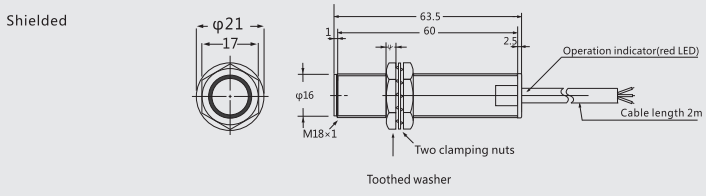
| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SH18-10NK-Z | Shielded | 10mm | N: DC 3-wire,NPN<br>P: DC 3-wire,PNP | K: NO<br>B: NC | Cable line/Plug |

## ▶ Specification

| Type | SH18-10N/P |
|---|---|
| Voltage | NPN/PNP 10-30VDC |
| Sensing distance | 10mm |
| Leakage current | <10mA |
| Polarity protection | Yes/Yes |
| Indicator | Operation indicator(Red LED) |
| Ambient temperature | -25~+70°C(with no icing) |
| Ambient humidity | Operating/Storage:35~95°RH |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case |
| Dielectric strength | AC500V max. 50~60Hz 1min Between current -carrying parts and case |
| Repeat precision | <3% |
| Load current | <150mA |
| Backlash | 1-20% |
| Drop | <2.5V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions |
| Degree of protection | IEC IP67 |
| Case | Brass-nicke plated |

## ▶ Example for output circuit


## ▶ Mounting Dimensions(Unit:mm)



## Application and features

Non-contact detection of metallic and nonmetallic objects inclubing water,oil, glass,plastic and wood.
Ideal for a variety of applications .

## Model Explanation

| S | C | 18 | -08 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S: Incremental encoder<br>S□ Speciall definition | category:<br>C: Capacitive proximity sensor | OD:<br>18:18mm | Sensing distance :<br>08:8mm | Output configuration :<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

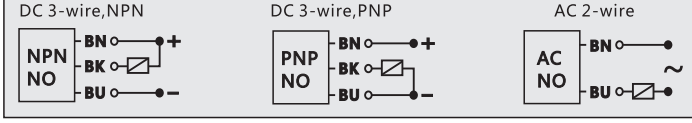
## Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SC18-08NK-Z | Unshielded | 1-8mm | N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | K:NO<br>B:NC<br>KB:NO+NC | Cable line/Plug |

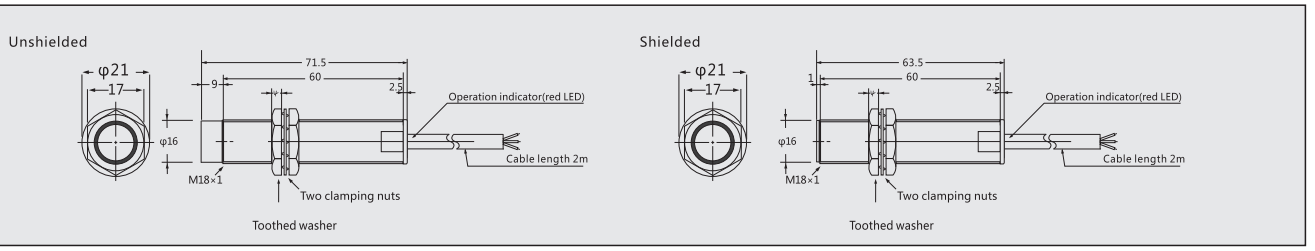
## Specification

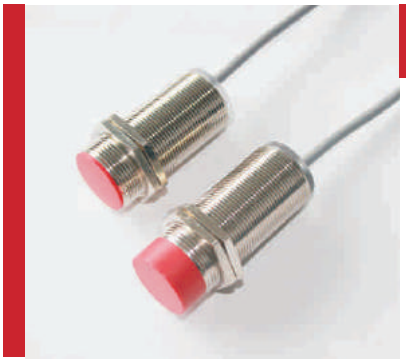
| Type | SC18-08N/P/A | |
|---|---|---|
| Voltage | NPN/PNP 10-30VDC | AC:220VAC |
| Sensing distance | 1-8mm | |
| Leakage current | Conductors and dielectrics | |
| Load current | <15mA | |
| Polarity protection | Yes | |
| Indicator | Operation indicator(Red LED) | |
| Ambient temperature | -25~+70°C( with no icing) | |
| Ambient humidity | Operating/Storage:35~95°RH | |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC1000V max. 50~60Hz 1min Between current -carrying parts and case | AC2000V max. |
| Repeat precision | <3% | |
| Load current | <200mA/<200mA/<100mA | <300mA |
| Backlash | 1-20% | |
| Drop | <2.5V/<2.5V | <10V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions | |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions | |
| Degree of protection | IEC IP67 | |
| Case | Brass-nicke plated | |

## Example for output circuit




## Mounting Dimensions(Unit:mm)





# Capacitive proximity SC30 series

## Application and features

Non-contact detection of metallic and nonmetallic objects inclubing water,oil, glass,plastic and wood.
Ideal for a variety of applications .

## ▶ Model Explanation

| S | C | 30 | -15 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | category:<br>C:<br>Capacitive proximity sensor | OD:<br>30:30mm | Sensing distance :<br>15:15mm | Output configuration :<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

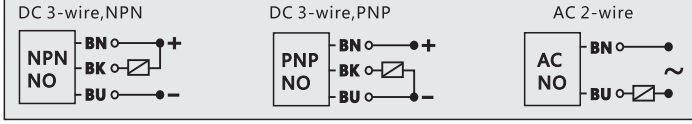
## ▶ Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SC30-15NK-Z | Unshielded | 1-15mm | N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | K: NO<br>B: NC<br>KB: NO+NC | Cable line/Plug |

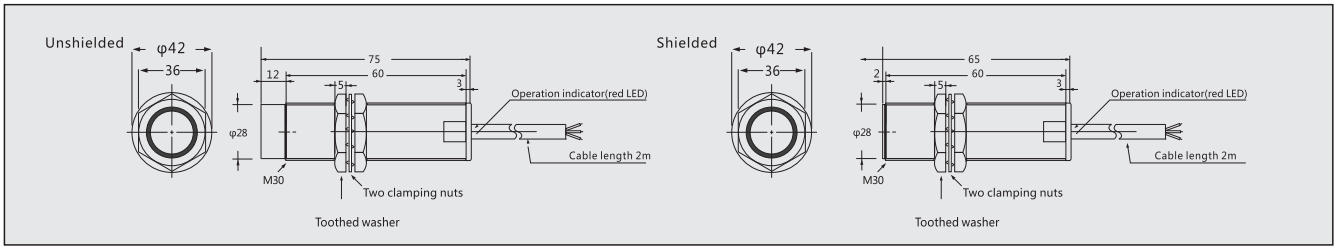
## ▶ Specification

| Type | SC30-15N/P/A | |
|---|---|---|
| Voltage | PN/PNP 10-30VDC | AC:220VAC |
| Sensing distance | 1-15mm | |
| Sensing object | Conductors and dielectrics | |
| Leakage current | <15mA | <3mA |
| Load current | 200mA max. | |
| Polarity protection | Yes | |
| Indicator | Operation indicator(Red LED) | |
| Ambient temperature | -25~+70°C(with no icing) | |
| Ambient humidity | Operating/Storage:35~95°RH | |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC1000V max. 50~60Hz 1min Between current -carrying parts and case | AC2000V max. |
| Repeat precision | <3% | |
| Load current | <200mA/<200mA/<100mA | <200mA |
| Backlash | 1-20% | |
| Drop | <2.5V/<2.5V | <10V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions | |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions | |
| Degree of protection | IEC IP66 | |
| Case | Brass-nicke plated | |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



# Analong sensor SA18 series

## Application and features

Analog output
Strong anti-interference ability

## Model Explanation

| S | A | 18 | -08 | -5V | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | A:<br>Analog proximity sensor | OD:<br>18:18mm | Sensing distance :<br>08:8mm | Output configuration :<br>5V:0-5V<br>10V:0-10V<br>0A:0-20mA<br>4A:4-20mA | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

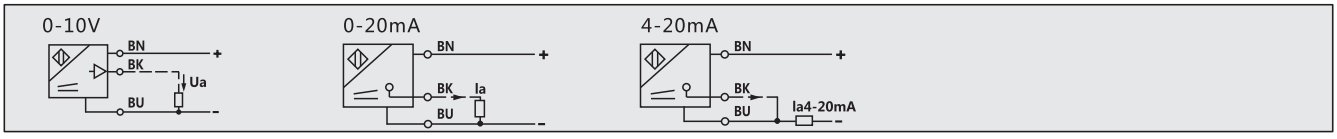
## Product Category

| Model | Appearance | Sensing distance | Output configuration | Connection mode |
|---|---|---|---|---|
| SH18-08NK-Z | Unshielded | 8mm | 5V:0-5V<br>10V:0-10V<br>0A:0-20mA<br>4A:4-20mA | Cable line/Plug |
| SH18-5NK-Z | Shielded | 5mm | | |

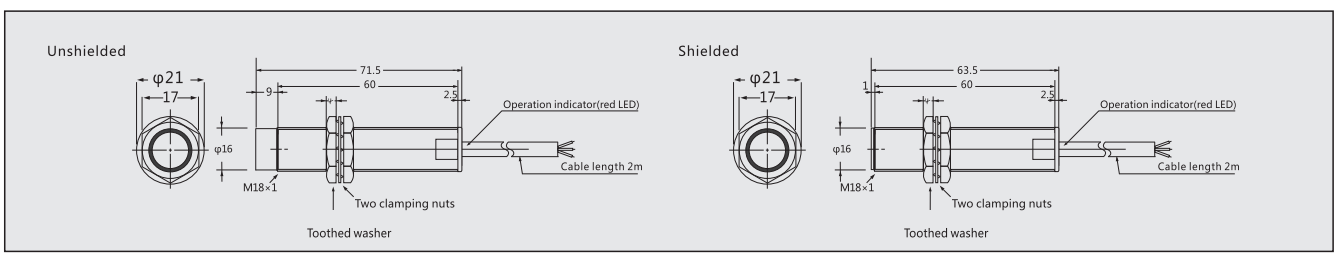
## Specification

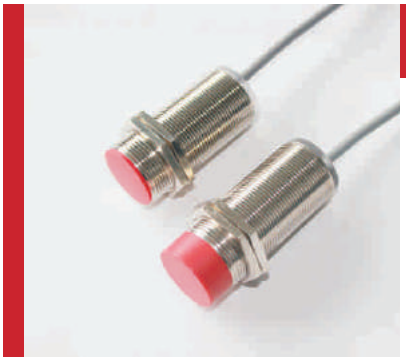
| Type | SA18-08/05-5V/0A/4A |
|---|---|
| Voltage | DC:15-30VDC |
| Sensing distance | 8mm/5mm |
| Leakage current | <±10%Sr |
| Polarity protection | <±5% |
| Indicator | RL≥4.7KΩ RL≤470Ω |
| Ambient temperature | 200Hz |
| Ambient humidity | Yes |
| Insulation resistance | Operation indicator(Red LED) |
| Dielectric strength | -25~+70°C(with no icing) |
| Repeat precision | Operating/Storage:35~95°RH |
| Load current | 50MΩ max. (DC500V) Between current -carrying parts and case |
| Backlash | AC1000V max. 50~60Hz 1min Between current -carrying parts and case |
| Drop | <5% |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions |
| Degree of protection | IEC IP67 |
| Case | Brass-nicke plated |

## Example for output circuit




## Mounting Dimensions(Unit:mm)





# Analong sensor SA30 series

## Application and features

Analog output
Strong anti-interference ability

## ▶ Model Explanation

| S | A | 30 | -15 | -5V | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | A:<br>Analog proximity sensor | OD:<br>30:30mm | Sensing distance :<br>15:15mm | Output configuration :<br>5V:0-5V<br>10V:0-10V<br>0A:0-20mA<br>4A:4-20mA | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

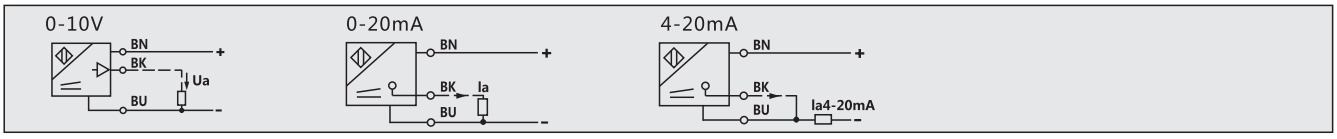
## ▶ Product Category

| Model | Appearance | Sensing distance | Output configuration | Connection mode |
|---|---|---|---|---|
| SA30-15NK-Z | Unshielded | 15mm | 5V:0-5V<br>10V:0-10V<br>0A:0-20mA<br>4A:4-20mA | Cable line/Plug |
| SA30-10NK-Z | Shielded | 10mm | | |

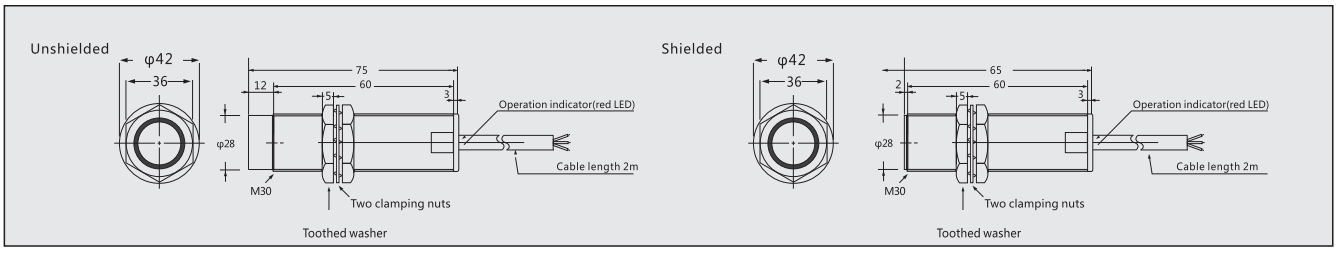
## ▶ Specification

| Type | SA30-10/15-5V/0A/4A |
|---|---|
| Voltage | DC:15-30VDC |
| Sensing distance | 15mm/10mm |
| Leakage current | <±10%Sr |
| Polarity protection | <±5% |
| Indicator | RL≥4.7KΩ, RL≤470Ω |
| Ambient temperature | 200Hz |
| Ambient humidity | Yes |
| Insulation resistance | Operation indicator(Red LED) |
| Dielectric strength | -25~+70°C(with no icing) |
| Repeat precision | Operating/Storage:35~95°RH |
| Load current | 50MΩ max. (DC500V) Between current -carrying parts and case |
| Backlash | AC1000V max. 50~60Hz 1min Between current -carrying parts and case |
| Drop | <5% |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions |
| Degree of protection | IEC IP67 |
| Case | Brass-nicke plated |

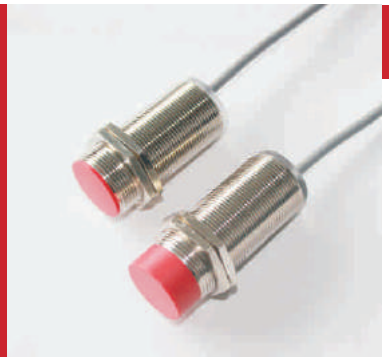
## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



# Heat resistant sensor ST30 series



## Application and features

Applied to high temperature environment
With a metal connector that can be tightened security
With an easy-to-see indicator ,deeper mounting holes,and tightening flats for wrenches.

## Model Explanation

| S | T | 30 | -10 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | T:<br>Heat resistant sensor | OD:<br>30:30mm | Sensing distance :<br>15:15mm<br>10:10mm | Output configuration :<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

## Product Category

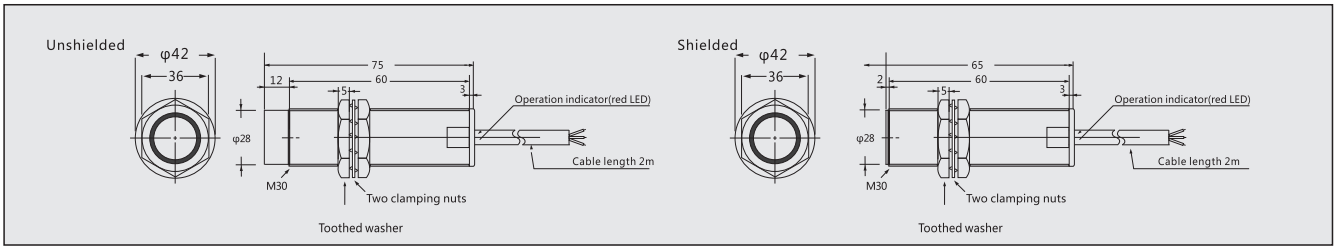
| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SI30-15NK-Z | Unshielded | 15mm | N: DC 3-wire,NPN<br>P: DC 3-wire,PNP | K: NO<br>B: NC<br>KB: NO+NC | Cable line/Plug |
| SI30-10NK-Z | Shielded | 10mm | | | |

## Specification

| Type | SI30-15/10N/P |
|---|---|
| Voltage | NPN/PNP 10-30VDC |
| Sensing distance | 15mm/10mm |
| Leakage current | <15mA |
| Load current | 200mA max. |
| Polarity protection | Yes |
| Indicator | Operation indicator(Red LED) |
| Ambient temperature | -25~+110°C( with no icing) |
| Ambient humidity | Operating/Storage:35~95°RH |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case |
| Dielectric strength | AC500V max. 50~60Hz 1min Between current -carrying parts and case |
| Repeat precision | <3% |
| Load current | <200mA |
| Backlash | 1-20% |
| Drop | <2.5V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions |
| Degree of protection | IEC IP67 |
| Case | Brass-nicke plated |

## Example for output circuit


## Mounting Dimensions(Unit:mm)



# Speed monitoring sensor SS18 series

## Application and features

Applied to speed monitoring
With a metal connector that can be tightened security
With an easy-to-see indicator ,deeper mounting holes,and tightening flats for wrenches.

## ▶ Model Explanation

| S | S | 18 | -08 | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| 基本型号Model<br>S :型号代码<br>Model code<br>S □:<br>特殊型号定义<br>Speciall definition | 传感器类别:<br>S:转速检测型<br>Speed monitoring sensor | 直径OD:<br>18:18mm | 检测距离<br>Sensing distance :<br>05:5mm<br>08:8mm | 输出方式Output configuration :<br>N:NPN输出 DC 3-wire,NPN<br>P:PNP输出DC 3-wire,PNP<br>A:交流两线输出 AC 2-wire | 输出状态<br>Operation mode:<br>K:常开 NO<br>B:常闭 NC | 产品等级<br>Product grade:<br>Z:Z级 | 线缆长度<br>Cable length<br>(标配2米<br>Standard Cable length is 2m)<br>5 : 5m | 客户定制<br>Customized informat |

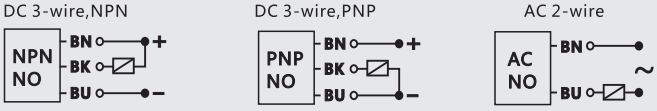
## ▶ Product Category

| 型号<br>Model | 形状<br>Appearance | 检测距离<br>Sensing distance | 输出规格<br>Output configuration | 动作状态<br>Operation mode | 连接方式<br>Connection mode |
|---|---|---|---|---|---|
| SS18-08NK-Z | 非埋入<br>Unshielded | 8mm | N:NPN输出 DC 3-wire,NPN<br>P:PNP输出 DC 3-wire,PNP<br>A:交流两线输出 AC 2-wire | K:常开 NO<br>B:常闭 NC | 导线引出/航插<br>Cable line/Plug |
| SS18-05NK-Z | 埋入<br>Shielded | 5mm | | | |

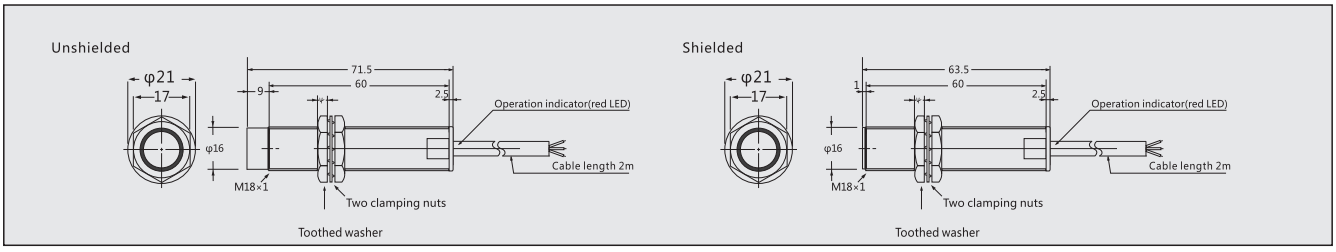
## ▶ Specification

| Type | SS18-08/05N/P/A | |
|---|---|---|
| Voltage | NPN/PNP 10-30VDC | AC:220VAC |
| Sensing distance | 8mm/5mm | |
| Leakage current | <15mA/ <15mA | <3mA |
| Load current | 200mA max. | |
| Polarity protection | Yes | |
| Monitoring pulse | 3-3000 | 3-1200 |
| Indicator | Operation indicator(Red LED) | |
| Ambient temperature | -25~+70°C(with no icing) | |
| Ambient humidity | Operating/Storage:35~95°RH | |
| Insulation resistance | 50MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC500V max. 50~60Hz 1min Between current -carrying parts and case | |
| Repeat precision | <3% | |
| Load current | <200mA/<200mA | <300mA |
| Backlash | 1-20% | |
| Drop | <2.5V/<2.5V | <10V |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z2h double amplitude for 2 hours each in X , Y and Z directions | |
| Shock resistance | 500m/s²X , Y , Z 500m/s² 10 times each X , Y and Z directions | |
| Degree of protection | IEC IP67 | |
| Case | Brass-nicke plated | |

## ▶ Example for output circuit




## ▶ Mounting Dimensions(Unit:mm)



# Photoelectric sensor series

# Introduction of photoelectric sensor

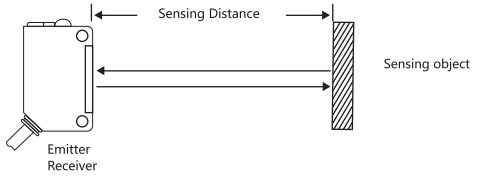
## ▶ Photoelectric sensor

Photoelectric sensor utilize the properties of visible light (red green blue)or infrared light .
Photoelectric sensor consists of two part: an emitter (the light source)and a receiver (the detector).When there is a target shielding/reflecting the light, the amount of light reaching the receiver will decrease/increase. Then the receiver will convert this change to electric signals and output it.

## ▶ Classification of photoelectric sensor

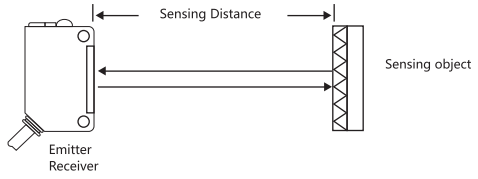
**Diffuse reflection type**

The emitter and receiver is designed in the same unit,the same side.When light send out from the emitter is reflected by objects,the amount of light received by receiver will increase.The detection is opererated based on this kind of increased light.
Features: easy to install,
The cost of application is relatively low.




**Retro reflective type**

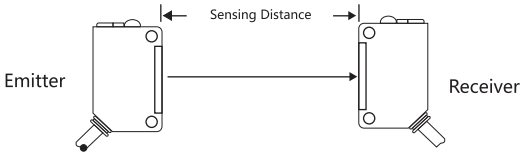
The emitter and receiver is designed on one side ,while the reflector is installed on the other side.Generally,light sent out from the emitter will project on the reflector. Then the reflected light will back to the receiver . When there is a target shielding the light ,the amount of light reaching the receiver will decrease. The detection is operated based on this kind ofdecreased light.
Features: can detect the transparency object.

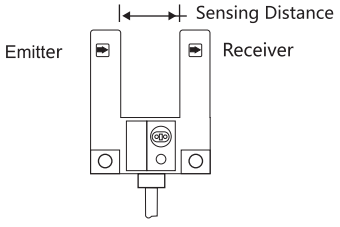



**Thru-beam type**

The emitter and receiver are installed. in parallel When there is a target shielding the light the amount of light reaching there receiver will decrease .The detection is operated based on this kind of detection light

U-shaped photoelectric sensors adopts this principle for detection, too. The difference is ,the emitter and receiver is designed in the same unit
Characters
1. ( 5-20)
1.High stability ,long sensing range to tens of meters 2.Little affection from color glossiness inclination of detected object



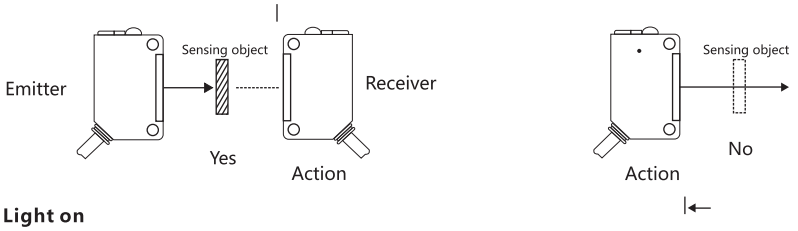




## ▶ Basic terms of photoelectric sensor

**Operation mode**

- **Dark on**

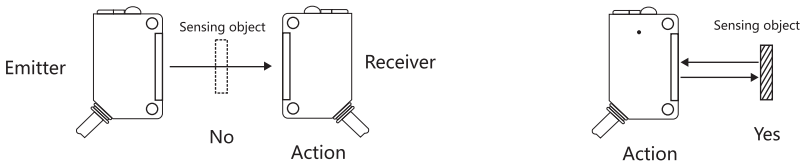
Through-beam type & Retro-reflective type　　Diffuse reflection type
Dark on: There is an output when the light amount arriving the receiver is decreased(for through beam type and retro-reflective type ). Or when the light amount arriving the receiver doesn't increase. (for diffuse reflection type)




- **Light on**

Through-beam type Retro-reflective type Diffuse reflection type

Light on :There is an output when the light amount arriving the receiver is decreased (for through beam type and retro-reflective type ).or when the light amount arriving the receiver doesn't increase . (for diffuse reflection type )




## ▶ Notice of photoelectric sensor

Warning: Do not use photo electronic sensor for dangerous machines, as it is not a kind of safety protection device .They are mostly applied for counting and positioning.

- Note

1.Pleace do not use the unit in flammable and explosive gas areas
2.Not any repair, disassembling and modification without a qualified person is allowed
3.Be sure the input is within the rated supply voltage .Or there might be damages like crack, burn-out
4.Please use the rated load over loads may cause product damage
5.Please do not let loading short-circuit, for fear that cause product damage
6.Pay attention to power supply polarity ,do not make mistake. Otherwise may cause product damage

- Installation

When installing the sensor please do not use spanner or high power ,for fear that result in function error product damage.

- Operation environment

Please do not use the sensor in water ,in the rain and outdoor.
Following area are forbidden

1,Dusty area
2,Direct sunlight area
3,Area with corrosive gas
4,Organic solvent area
5,Having vibration impaction
6,Water ,oil, medicine
7,High humidity area

- Regular maintenance and inspection

Make maintenance and inspection timely
1,Correct link&connection
2,Be sure no loose screw
3,Be sure light beam sensitivity adjustment finished
4,Target& work piece speed accord with the rated regulation
5,No dirt or stain attached on the receiver or emitter face
6,No direct sunlight to the receiver
7,Do not demolish or repair without authorization

Lens case of photoelectric proximity sensors is generally made of plastic. Please clean it with soft cloth Do not use thinner to wipe the stains

# Cylindrical diffusere-flective photoelectric sensor SP12 series

## Application and features

Ideal for a variety of applications
With a metal connector that can be tightened security
Sensitivity adjustment

## Model Explanation

| S | P | 12 | -05 | D | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | P:<br>Cylindrical photoelectric sensor | OD:<br>12:12mm | Sensing distance :<br>05:5cm<br>10:10cm | Sensing method :<br>D:<br>Diffusere-flective<br>R: Retro-Reflective with MSR function<br>T: Throughbeam | Output configuration :<br>N:DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | Operation mode:<br>K: NO<br>B: NC<br>KB:<br>NO+NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

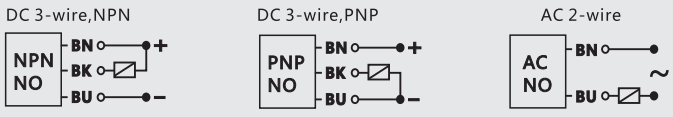
## Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SP12-05DNK-Z |  | 5cm | N:DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | K: NO<br>B: NC<br>KB:<br>NO+NC | Cable line |
| SP12-10DNK-Z | | 10cm | | | |

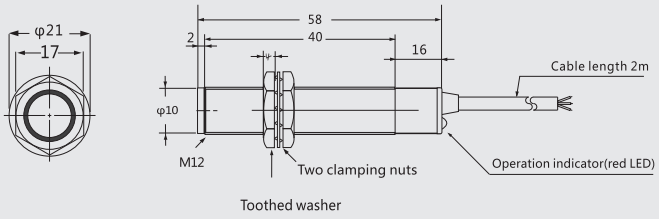
## Specification

| Type | SP12-05/10 DN/DP/DA | |
|---|---|---|
| Voltage | PNP 10-30VDC | AC:220VAC |
| Sensing distance | 5cm/10cm | |
| Light source | Infrared LED | |
| Differential travel | 10%max.of sensing distance | |
| Leakage current | 10mA max. | AC :350mA DC:100mA |
| Response time | 2ms max. | |
| Output/Power indication | Red LED | |
| Protection circuits | Power supply reverse polarity, Output short-circuit protection | |
| Ambient illumination | Sunlight:10000lx, Incandescent lamp:3000lx | |
| Ambient temperature | -25~+55°C( with no icing) | |
| Ambient humidity | Operating35~85°RH/Storage:35~95°RH( with no condensation) | |
| Insulation resistance | 20MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC1000V max. 50~60Hz 1min Between current -carrying parts and case | |
| Repeat precision | <5% | |
| Load current | <200mA | |
| Drop | <1.5V | |
| Vibration resistance | 10~55Hz 1.5mmX，Y，Z 2h double amplitude for 2 hours each in X，Y and Z directions | |
| Shock resistance | 500m/s²X，Y，Z 500m/s² 10 times each X，Y and Z directions | |
| Degree of protection | IEC IP67 | |
| Material(Case /Lens) | Brass-nicke plated /PMMA | |

## Example for output circuit




## Mounting Dimensions(Unit:mm)



## Application and features

Ideal for a variety of applications
With a metal connector that can be tightened security
Sensitivity adjustment

## Model Explanation

| S | P | 18 | -10 | D | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | P:<br>Cylindrical photoelectric sensor | OD:<br>18:18mm | Sensing distance :<br>10:10cm<br>30:30cm<br>50:50cm<br>80:80cm | Sensing method :<br>D:<br>Diffusere-flective<br>R: Retro-Reflective with MSR function<br>T: Throughbeam | Output configuration :<br>N:DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | Operation mode:<br>K: NO<br>B: NC<br>KB:<br>NO+NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

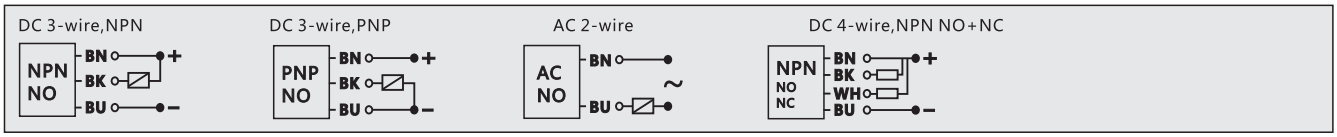
## Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SP18-10DNK-Z |  | 10cm | N:DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | K: NO<br>B: NC<br>KB:<br>NO+NC | Cable line |
| SP18-30DNK-Z | | 30cm | | | |
| SP18-50DNK-Z | | 50cm | | | |
| SP18-80DNK-Z | | 80cm | | | |

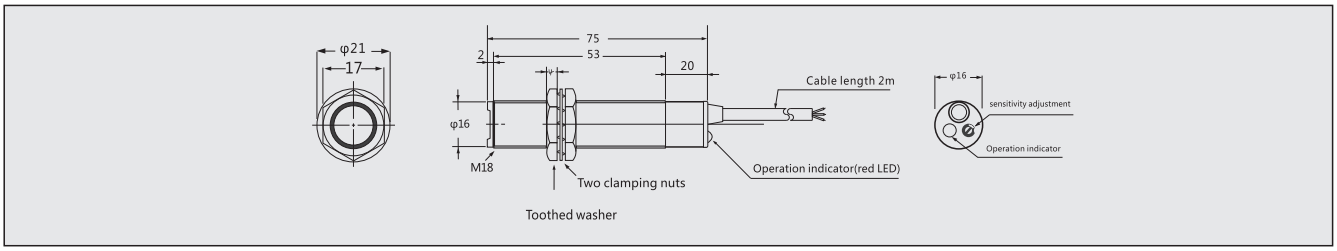
## Specification

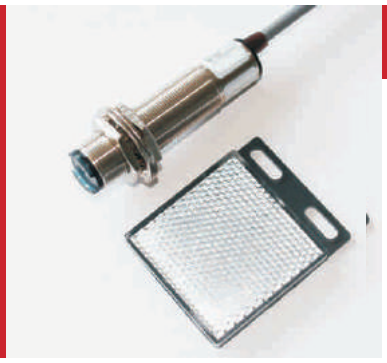
| Type | SP18-10/30/50/80DN/DP/DA | |
|---|---|---|
| Voltage | NPN/PNP/DC:10-30VDC | AC:220VAC |
| Sensing distance | 10cm/30cm/50cm/80cm | |
| Light source | Infrared LED | |
| Differential travel | 10%max.of sensing distance | |
| Leakage current | 30mA max. | AC :350mA DC:100mA |
| Response time | 2ms max. | |
| Output/Power indication | Red LED | |
| Protection circuits | Power supply reverse polarity, Output short-circuit protection | |
| Ambient illumination | Sunlight:10000lx, Incandescent lamp:3000lx | |
| Ambient temperature | -25~+55°C( with no icing) | |
| Ambient humidity | Operating35~85°RH/Storage:35~95°RH( with no condensation) | |
| Insulation resistance | 20MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC1000V max. 50~60Hz 1min Between current -carrying parts and case | |
| Repeat precision | <5% | |
| Load current | <200mA | |
| Drop | <1.5V | |
| Vibration resistance | 10~55Hz 1.5mmX，Y，Z 2h double amplitude for 2 hours each in X，Y and Z directions | |
| Shock resistance | 500m/s²X，Y，Z 500m/s² 10 times each X，Y and Z directions | |
| Degree of protection | IEC IP67 | |
| Material(Case /Lens) | Brass-nicke plated /PMMA | |

## Example for output circuit




## Mounting Dimensions(Unit:mm)





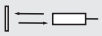
## Application and features

Ideal for a variety of applications
With a metal connector that can be tightened security
Sensitivity adjustment

## Model Explanation

| S | P | 18 | -2 | R | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | P:<br>Cylindrical photoelectric sensor | OD:<br>18:18mm | Sensing distance :<br>2:2m | Sensing method :<br>D:<br>Diffusere-flective<br>R: Retro-Reflective with MSR function<br>T: Throughbeam | Output configuration :<br>N:DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | Operation mode:<br>K: NO<br>B: NC<br>KB:<br>NO+NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

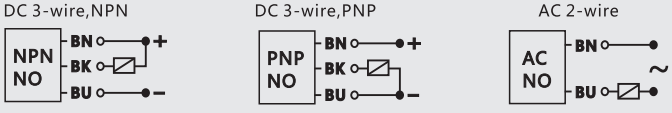
## Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SP18-2RNK-Z |  | 2m | N:DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | K: NO<br>B: NC<br>KB:<br>NO+NC | Cable line |

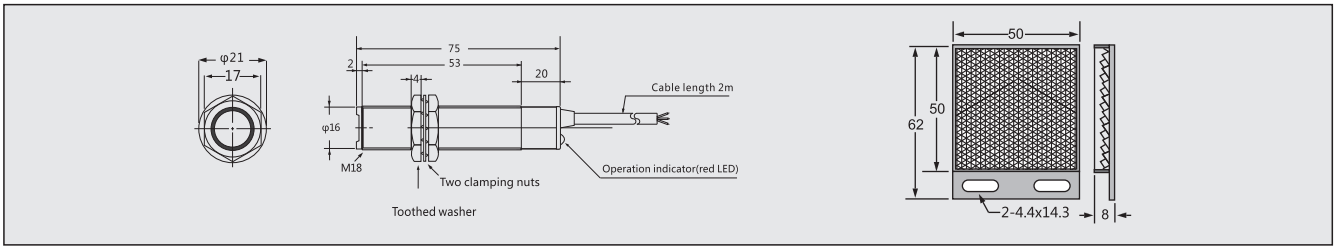
## Specification

| Type | SP18-2 RN/RP/RA | |
|---|---|---|
| Voltage | NPN/PNP/DC:10-30VDC | AC:220VAC |
| Sensing distance | 2m | |
| Light source | Infrared LED | |
| Differential travel | 10%max.of sensing distance | |
| Leakage current | 25mA max. | AC :350mA DC:100mA |
| Response time | 2ms max. | |
| Output/Power indication | Red LED | |
| Protection circuits | Power supply reverse polarity, Output short-circuit protection | |
| Ambient illumination | Sunlight:10000lx, Incandescent lamp:3000lx | |
| Ambient temperature | -25~+55°C( with no icing) | |
| Ambient humidity | Operating35~85°RH/Storage:35~95°RH( with no condensation) | |
| Insulation resistance | 20MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC1000V max. 50~60Hz 1min Between current -carrying parts and case | |
| Repeat precision | <5% | |
| Load current | <200mA | |
| Drop | <1.5V | |
| Vibration resistance | 10~55Hz 1.5mmX，Y，Z 2h double amplitude for 2 hours each in X，Y and Z directions | |
| Shock resistance | 500m/s²X，Y，Z 500m/s² 10 times each X，Y and Z directions | |
| Degree of protection | IEC IP67 | |
| Material(Case /Lens) | Brass-nicke plated /PMMA | |

## Example for output circuit




## Mounting Dimensions(Unit:mm)



## Application and features

Ideal for a variety of applications
With a metal connector that can be tightened security
Far distance detection

## Model Explanation

| S | P | 18 | -5 | T | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | P:<br>Cylindrical photoelectric sensor | OD:<br>18:18mm | Sensing distance :<br>5:5m<br>10:10m<br>20:20m | Sensing method :<br>D:<br>Diffusere-flective<br>R: Retro-Reflective with MSR function<br>T:Throughbeam | Output configuration :<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | Operation mode:<br>K: NO<br>B: NC<br>KB:<br>NO+NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

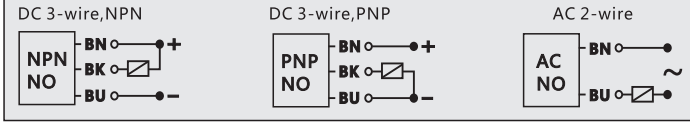
## Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SP18-5TNK-Z |  | 5m | N:DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | K: NO<br>B: NC<br>KB:<br>NO+NC | Cable line |
| SP18-10TNK-Z | | 10m | | | |
| SP18-20TNK-Z | | 20m | | | |

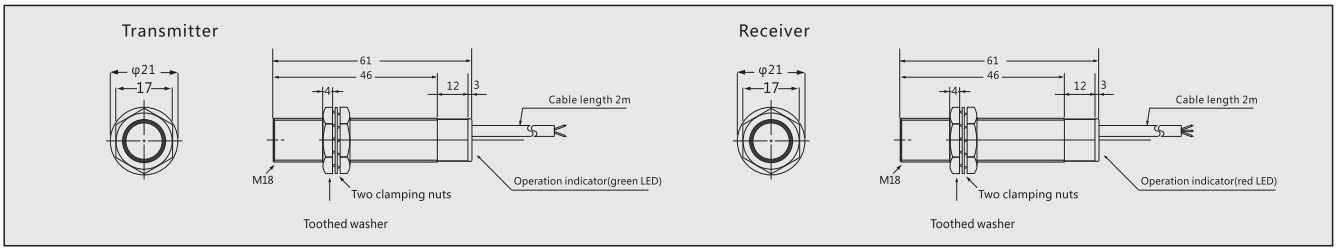
## Specification

| Type | SP18-5/10/20TN/TP/ | |
|---|---|---|
| Voltage | NPN/PNP/DC:10-30VDC | AC:220VAC |
| Sensing distance | 5m/10m/20m | |
| Light source | Infrared LED | |
| Differential travel | 10%max.of sensing distance | |
| Leakage current | 45mA max. | AC :350mA DC:100mA |
| Response time | 2ms max. | |
| Output/Power indication | Red LED | |
| Protection circuits | Power supply reverse polarity, Output short-circuit protection | |
| Ambient illumination | Sunlight:10000lx, Incandescent lamp:3000lx | |
| Ambient temperature | -25~+55°C( with no icing) | |
| Ambient humidity | Operating35~85°RH/Storage:35~95°RH( with no condensation) | |
| Insulation resistance | 20MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC1000V max. 50~60Hz 1min Between current -carrying parts and case | |
| Repeat precision | <5% | |
| Load current | <200mA | |
| Drop | <1.5V | |
| Vibration resistance | 10~55Hz 1.5mmX，Y，Z 2h double amplitude for 2 hours each in X，Y and Z directions | |
| Shock resistance | 500m/s²X，Y，Z 500m/s² 10 times each X，Y and Z directions | |
| Degree of protection | IEC IP67 | |
| Material(Case /Lens) | Brass-nicke plated /PMMA | |

## Example for output circuit




## Mounting Dimensions(Unit:mm)



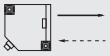
## Application and features

Ideal for a variety of applications
With a metal connector that can be tightened security
Sensitivity adjustment

## Model Explanation

| S | JK | -30 | D | M | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | JK:<br>Rectangular photoelectric sensor | Sensing distance :<br>30:30m<br>50:50m | Sensing method :<br>D:<br>Diffusere-flective<br>R: Retro-Reflective with MSR function<br>T:Throughbeam | Output configuration :<br>M:Relay<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | Operation mode:<br>K:NO<br>B:NC<br>KB:<br>NO+NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

## Product Category

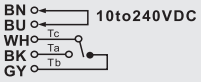
| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SJK-30DM |  | 30cm | M:Relay<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | K: NO<br>B: NC<br>KB:<br>NO+NC | Cable line |
| SJK-50DM | | 50cm | | | |

## Specification

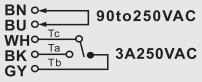
| Type | SJK-30/50DM | |
|---|---|---|
| Voltage | 12-220V | |
| Sensing distance | 30cm/50cm | |
| Light source | Infrared LED | |
| Differential travel | Light-ON | Dark-ON |
| Leakage current | DC/AC 2W max. | |
| Response time | 30ms max. | |
| Output/Power indication | Red LED | |
| Protection circuits | Power supply reverse polarity, Output short-circuit protection | |
| Ambient illumination | Incandescent lamp:3000lx | |
| Ambient temperature | -25~+55°C( with no icing) | |
| Ambient humidity | Operating35~85°RH/Storage:35~95°RH( with no condensation) | |
| Insulation resistance | 20MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC1000V max. 50~60Hz 1min Between current -carrying parts and case | |
| Repeat precision | <5% | |
| Load current | <1A | |
| Drop | <0.5V | |
| Vibration resistance | 10~55Hz 1.5mmX，Y，Z 2h double amplitude for 2 hours each in X，Y and Z directions | |
| Shock resistance | 500m/s²X，Y，Z 500m/s² 10 times each X，Y and Z directions | |
| Degree of protection | IEC IP64 | |
| Material(Case /Lens) | Brass-nicke plated /PMMA | |

## Example for output circuit

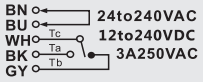
Relay DC 5-wire



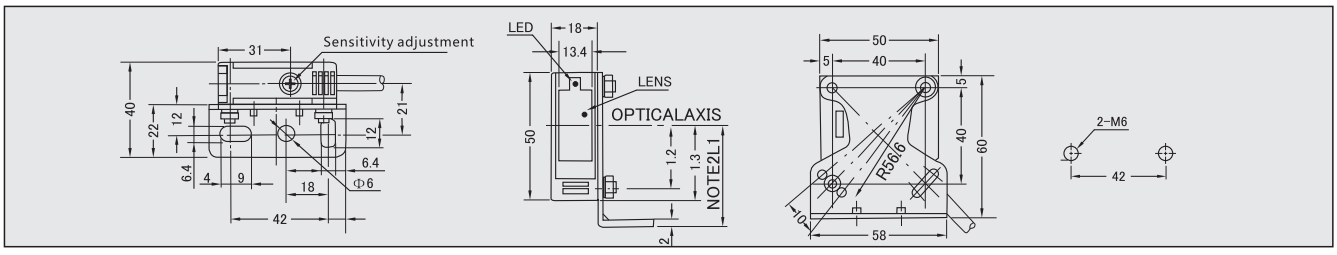

Relay AC 5-wire




Relay DC+AC 5-wire



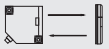

## Mounting Dimensions(Unit:mm)



## Application and features

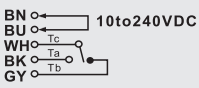
Ideal for a variety of applications
With a metal connector that can be tightened security
Sensitivity adjustment

| S | JK | -2 | R | M | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | JK:<br>Rectangular photoelectric sensor | Sensing distance :<br>2:2m<br>4:4m | Sensing method :<br>D:<br>Diffusere-flective<br>R: Retro-Reflective with MSR function<br>T: Throughbeam | Output configuration :<br>M: Relay<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | Operation mode:<br>K: NO<br>B: NC<br>KB:<br>NO+NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

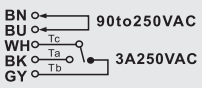
| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SJK-2RDM |  | 2m | M Relay<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | K: NO<br>B: NC<br>KB:<br>NO+NC | Cable line |
| SJK-4RDM | | 4m | | | |

| Type | SJK-2/4 RM2 | SJK-2/4 RM2 |
|---|---|---|
| Voltage | 12-240V | |
| Sensing distance | 2m/4m | |
| Light source | Infrared LED | |
| Differential travel | Light-ON | ON Dark-ON |
| Leakage current | DC/AC 2W max. | |
| Response time | 30ms max. | |
| Output/Power indication | Red LED | |
| Protection circuits | Power supply reverse polarity, Output short-circuit protection | |
| Ambient illumination | Incandescent lamp:3000lx | |
| Ambient temperature | -25~+55°C( with no icing) | |
| Ambient humidity | Operating35~85°RH/Storage:35~95°RH( with no condensation) | |
| Insulation resistance | 20MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC1000V max. 50~60Hz 1min Between current -carrying parts and case | |
| Repeat precision | <5% | |
| Load current | <1A | |
| Drop | <0.5V | |
| Vibration resistance | 10~55Hz 1.5mmX，Y，Z 2h double amplitude for 2 hours each in X，Y and Z directions | |
| Shock resistance | 500m/s²X，Y，Z 500m/s² 10 times each X，Y and Z directions | |
| Degree of protection | IEC IP64 | |
| Material(Case /Lens) | Methacrylic | |

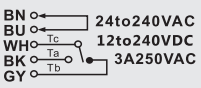
Relay DC 5-wire

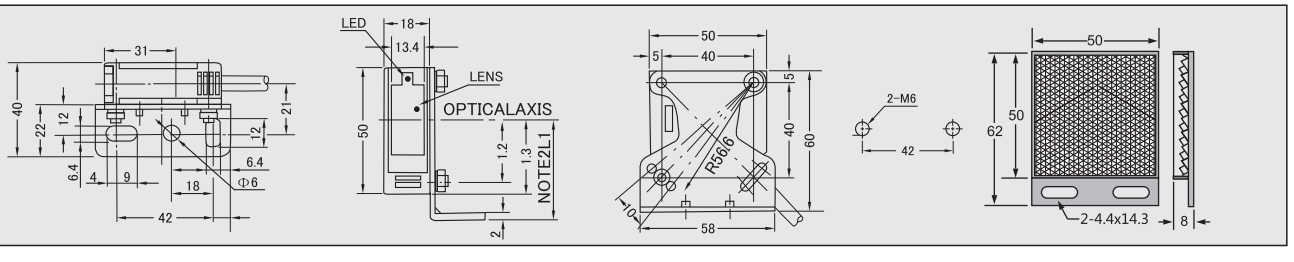



Relay AC 5-wire




Relay DC+AC 5-wire



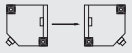
## Application and features

Ideal for a variety of applications
With a metal connector that can be tightened security
Far distance detection

## Model Explanation

| S | JK | -5 | T | M | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | JK:<br>Rectangular photoelectric sensor | Sensing distance :<br>5:5m<br>10:10m | Sensing method :<br>D:<br>Diffusere-flective<br>R: Retro-Reflective with MSR function<br>T: Throughbeam | Output configuration :<br>M: Relay | Operation mode:<br>K: NO<br>B: NC<br>KB:<br>NO+NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

## Product Category

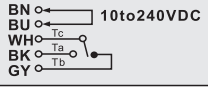
| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SJK-5TM |  | 5m | M:Relay<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>A: AC 2-wire | K:NO<br>B:NC<br>KB:<br>NO+NC | Cable line |

## Specification

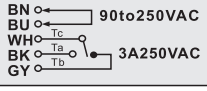
| Type | SJK-5TM | |
|---|---|---|
| Voltage | 12-240V | |
| Sensing distance | 5m | |
| Light source | Infrared LED | |
| Differential travel | Light-ON | Dark-ON |
| Leakage current | DC/AC 3W max. | |
| Response time | 30ms max. | |
| Output/Power indication | Red LED | |
| Protection circuits | Power supply reverse polarity, Output short-circuit protection | |
| Ambient illumination | Incandescent lamp:3000lx | |
| Ambient temperature | -25~+55°C( with no icing) | |
| Ambient humidity | Operating35~85°RH/Storage:35~95°RH( with no condensation) | |
| Insulation resistance | 20MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC1500V max. 50~60Hz 1min Between current -carrying parts and case | |
| Repeat precision | <5% | |
| Load current | <1A | |
| Drop | <0.5V | |
| Vibration resistance | 10~55Hz 1.5mmX，Y，Z 2h double amplitude for 2 hours each in X，Y and Z directions | |
| Shock resistance | 500m/s²X，Y，Z 500m/s² 10 times each X，Y and Z directions | |
| Degree of protection | IEC IP64 | |
| Material(Case /Lens) | Methacrylic | |

## Example for output circuit

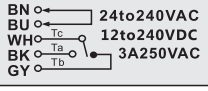
Relay DC 5-wire



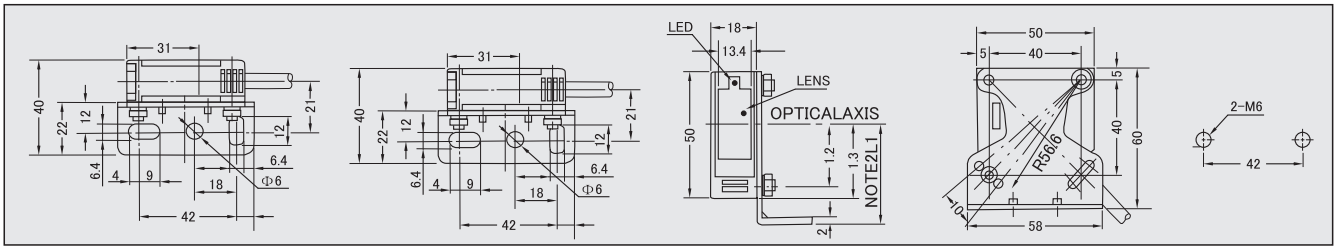

Relay AC 5-wire




Relay DC+AC 5-wire




## Mounting Dimensions(Unit:mm)



## Application and features

Small size, suitable for a variety of uses
With a metal connector that can be tightened security
Sensitivity adjustment

## Model Explanation

| S | Z | -30 | D | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | Z:<br>Compact photoelectric sensor with Built in Amplifier | Sensing distance :<br>30:30cm<br>5:5m | Sensing method :<br>D:<br>Diffusere-flective<br>R: Retro-Reflective with MSR function<br>T:Throughbeam | Output configuration :<br>N:DC 3-wire,NPN<br>P: DC 3-wire,PNP | Operation mode:<br>K:NO<br>B:NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

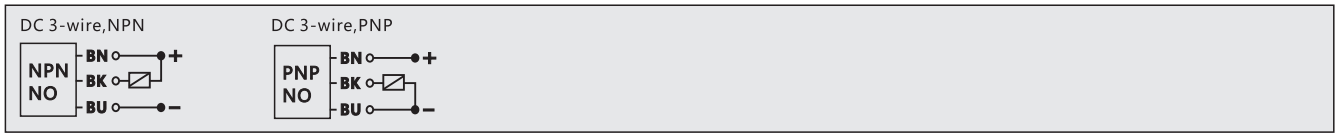
## Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SZ-30DNK |  | 30cm | N:DC 3-wire,NPN<br>P: DC 3-wire,PNP | K: NO<br>B: NC | Cable line |
| SZ-5TNK |  | 5m | | | |

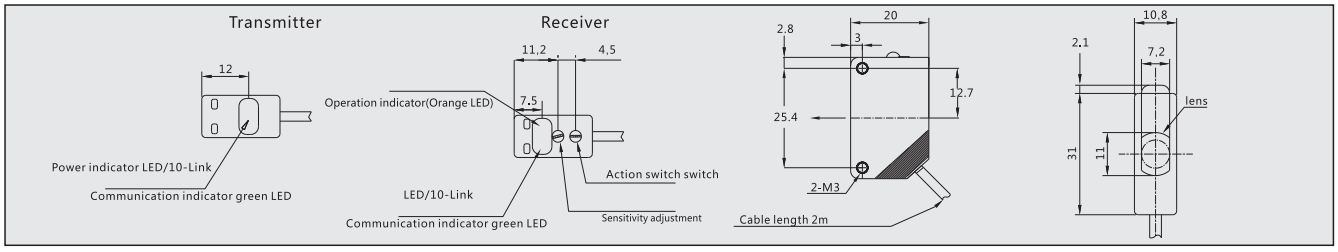
## Specification

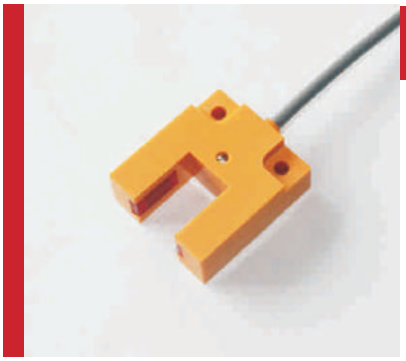
| Type | SZ-30DNK | |
|---|---|---|
| Voltage | 10-30VDC | |
| Sensing distance | 30cm | 5m |
| Light source | Infrared LED | |
| Leakage current | 30mA max. | Emitter:15mA max. Receiver:20mA max. |
| Response time | 1ms max. | |
| Output/Power indication | Red LED | |
| Protection circuits | Power supply reverse polarity, Output short-circuit protection | |
| Ambient illumination | Sunlight:10000lx,Incandescent lamp:3000lx | |
| Ambient temperature | -25~+55°C(with no icing) | |
| Ambient humidity | Operating35~85°RH/Storage:35~95°RH(with no condensation) | |
| Insulation resistance | 20MΩ max. (DC500V) Between current -carrying parts and case | |
| Dielectric strength | AC1000V max. 50~60Hz 1min Between current -carrying parts and case | |
| Repeat precision | <5% | |
| Load current | <200mA | |
| Drop | <1.5V | |
| Vibration resistance | 10~55Hz1.5mmX，Y，Z2h double amplitude for 2 hours each in X，Y and Z directions | |
| Shock resistance | 500m/s²X，Y，Z 500m/s² 10 times each X，Y and Z directions | |
| Degree of protection | IEC IP64 | |
| Case | PBT | |

## Example for output circuit




## Mounting Dimensions(Unit:mm)





# U-shape photoelectric sensor SU15 series

## Application and features

Small volume, fast reaction speed
Suitable for small object detection
Strong anti-interference

## Model Explanation

| S | U | -15 | T | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | U:<br>U-shape photoelectric sensor | Sensing distance :<br>15:15mm | Sensing method :<br>T: Throughbeam | Output configuration :<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

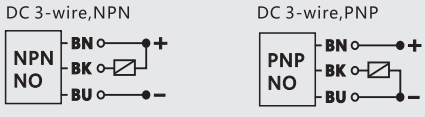
## Product Category

| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SU-15T |  | 15mm | N: DC 3-wire,NPN<br>P: DC 3-wire,PNP | K: NO<br>B: NC | Cable line |

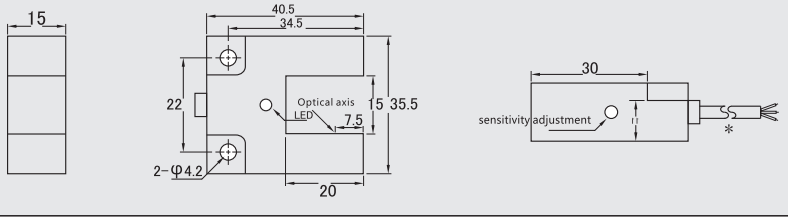
## Specification

| Type | SU-15N/P |
|---|---|
| Voltage | 10-30VDC |
| Sensing distance | 15mm |
| Light source | Infrared LED |
| Leakage current | 25mA max. |
| Response time | 1ms max. |
| Output/Power indication | Red LED |
| Protection circuits | Power supply reverse polarity, Output short-circuit protection |
| Ambient illumination | Sunlight:1000lx,Incandescent lamp:1000lx |
| Ambient temperature | Operating:-10~+55°C,Storage:-25~+70°C(with no icing) |
| Ambient humidity | Operating35~85°RH/Storage:35~95°RH(with no condensation) |
| Insulation resistance | 20MΩ max. (DC500V) Between current -carrying parts and case |
| Dielectric strength | AC500V max. 50~60Hz 1min Between current -carrying parts and case |
| Repeat precision | <5% |
| Load current | <200mA |
| Drop | <1.5V |
| Shock resistance | 500m/s²X , Y , Z500m/s² 10 times each X , Y and Z directions |
| Degree of protection | IEC IP64 |
| Case | PC |

## Example for output circuit




## Mounting Dimensions(Unit:mm)



# U-shape photoelectric sensor SU30 series

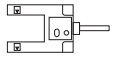
## Application and features

Built-in DC launcher
Launching and receiving, easy to install and protect
Sensitivity can be adjusted

## Model Explanation

| S | U | -30 | T | N | K | -Z | -□ | -□ |
|---|---|---|---|---|---|---|---|---|
| Model<br>S:<br>Incremental encoder<br>S□<br>Speciall definition | U:<br>U-shape photoelectric sensor | Sensing distance :<br>30:30mm | Sensing method :<br>T:Throughbeam | Output configuration :<br>N:DC 3-wire,NPN<br>P:DC 3-wire,PNP | Operation mode:<br>K: NO<br>B: NC | Product grade:<br>Z:Z | Cable length<br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

## Product Category

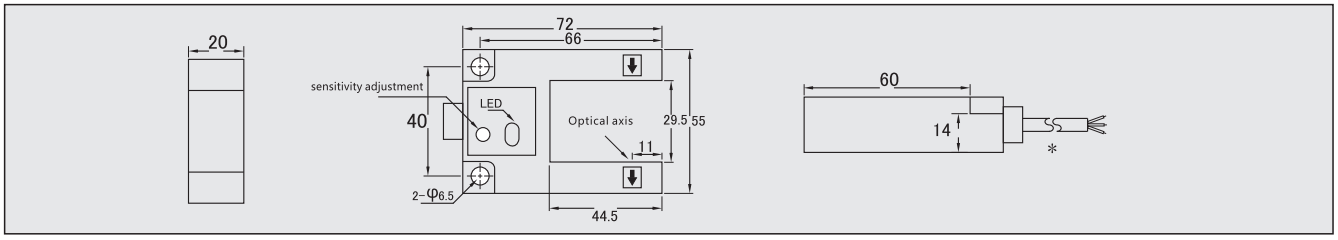
| Model | Appearance | Sensing distance | Output configuration | Operation mode | Connection mode |
|---|---|---|---|---|---|
| SU-30T |  | 30mm | N:DC 3-wire,NPN<br>P:DC 3-wire,PNP | K:NO<br>B:NC | Cable line |

## Specification

| Type | SU-30N/P |
|---|---|
| Voltage | 10-30VDC |
| Sensing distance | 30mm |
| Light source | Infrared LED |
| Leakage current | 40mA max. |
| Response time | 1ms max. |
| Output/Power indication | Red LED |
| Protection circuits | Power supply reverse polarity, Output short-circuit protection |
| Ambient illumination | Sunlight:10000lx, Incandescent lamp:3000lx |
| Ambient temperature | -25~+55°C |
| Ambient humidity | Operating35~85°RH/Storage:35~95°RH(with no condensation) |
| Insulation resistance | 20MΩ max. (DC500V) Between current -carrying parts and case |
| Dielectric strength | AC500V max. 50~60Hz 1min Between current -carrying parts and case |
| Repeat precision | <5% |
| Load current | <200mA |
| Drop | <1.5V |
| Shock resistance | 500m/s²X , Y , Z500m/s² 10 times each X , Y and Z directions |
| Degree of protection | IEC IP64 |
| Case | PC |

## Example for output circuit


## Mounting Dimensions(Unit:mm)



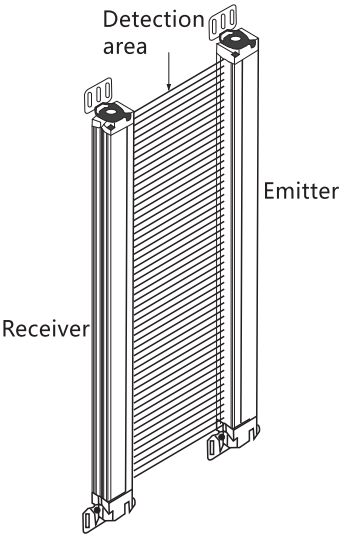
# Area Sensor series

## Presentation and principle of Area sensor

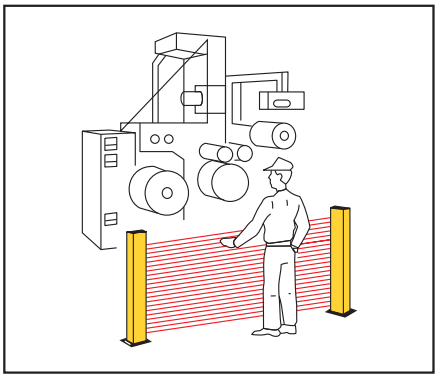
Area sensor is widely applied autocontrol product whith adopts infrared ray scan technology.Fix the emmitter on one side and the receiver on the other side.When the infrared ray scans with high speed,it will form a curtain. When there is any object or person come into this curtian area,the control system will output a signal and the load works.But when the object or person leaves curtain area the load will be off automatically.Light curtain can be uesd in highway ,machinery equipments,subway,automaitic gete.

Warning: Do not use photo electronic sensor for dangerous machines, as it is not a kind of safety protection device .They are mostly applied for counting and positioning.

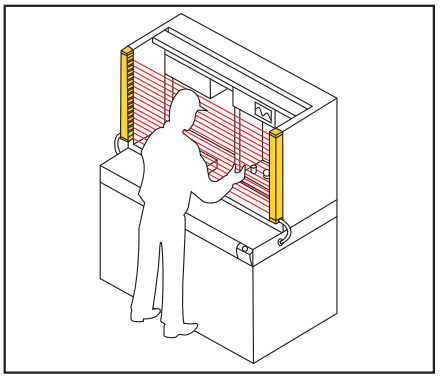
●Note
1.Pleace do not use the unit in flammable and explosive gas areas
2.Not any repair, disassembling and modification without a qualified person is allowed
3.Be sure the input is within the rated supply voltage .Or there might be damages like crack, burn-out
4.Please use the rated load over loads may cause product damage
5.Please do not let loading short-circuit, for fear that cause product damage
6.Pay attention to power supply polarity ,do not make mistake. Otherwise may cause product damage



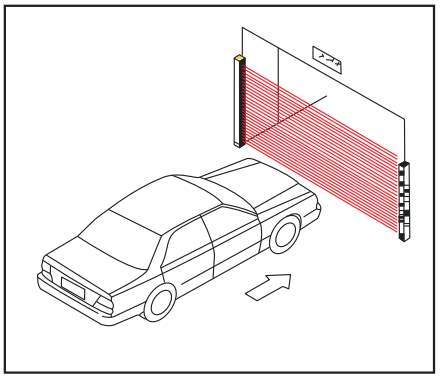

## ▶ Application



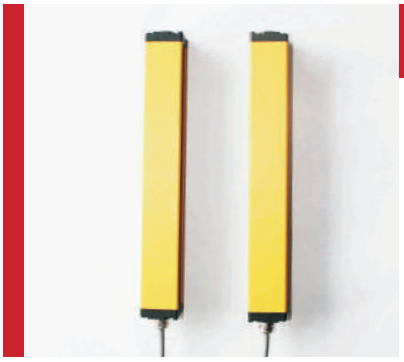
Automatic assembly line intrusion detection



Shielding of machined area



Check the car through



# Area sensor SL series

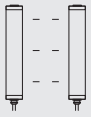
## Application and features

Anti-interference strength
Optical synchronization technology, quick installation
Customizable outdoor light resistant products

## Model Explanation

| S | L | -35 | T6 | N | -□ | -□ |
|---|---|---|---|---|---|---|
| Model<br>S :<br>Cylindrical proximity sensor<br><br>S □:<br>Speciall definition | L:<br>Area Sensor | Optical axis spacing:<br>35:35mm | Number of beams :<br>4:4<br>6:6<br>12:12<br>18:18<br>24:24 | Output configuration :<br>N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>M: Relay DC 5-wire | Cable length<br><br>(Standard Cable length is 2m)<br>5 : 5m | Customized informat |

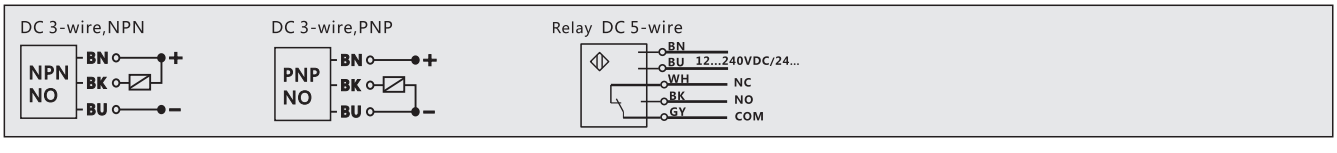
## Product Category

| Model | Appearance | Sensing distance | Output configuration | Connection mode |
|---|---|---|---|---|
| SL-35T6 |  | 3m | N: DC 3-wire,NPN<br>P: DC 3-wire,PNP<br>M: Relay DC 5-wire | Cable line/Plug |

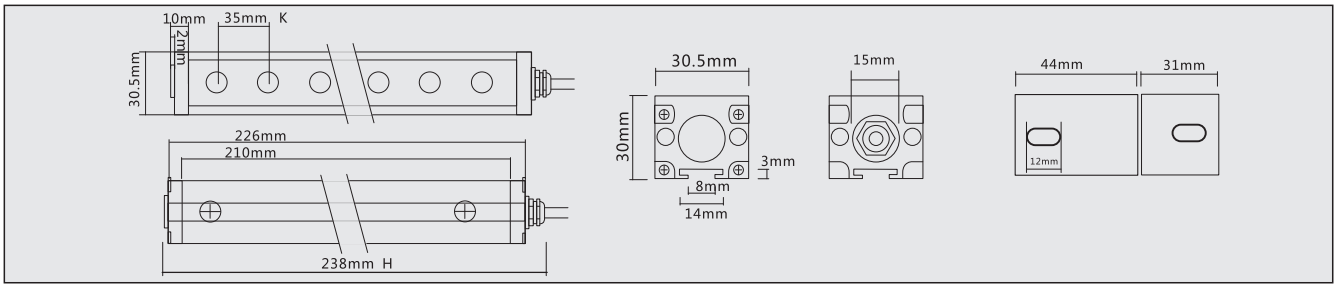
## Specification

| Type | SL-35T6N/P/M |
|---|---|
| Voltage | DC:10-30VDC/12-240V |
| Sensing distance | 3m |
| Load current | <200mA |
| Drop | <0.5V |
| Consumption of current | <100mA |
| Repetition precisionload | <5% |
| Light source | LED(880nm) |
| Output | NPN/PNP/ |
| Response time | 15ms max. |
| Output/Power indication | LED Red LED / Green LED |
| Polarity protection | Yes |
| Resist light interference | Sunlight:10000Lux |
| Ambient temperature | Operating:-10~+40°C, Storage:-25~+55°C( with no icing) |
| Ambient humidity | Operating35~85°RH/Storage:35~95°RH( with no condensation) |
| Vibration resistance | 10~55Hz 1.5mmX , Y , Z 2h double amplitude for 2 hours each in X , Y and Z directions |
| Shock resistance | 500m/s²X , Y , Z 10 500m/s² 10 times each X , Y and Z directions |
| Degree of protection | IEC IP64 |
| Case | Aluminium alloy |

## Example for output circuit




## Mounting Dimensions(Unit:mm)



HNC Sensor

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