



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Contact displacement sensor

D5SN

Compact, light, and high performance

- Ultra-small sensor only 6-mm dia. in diameter
- 0.1- μm high resolution (D5SN-S01)
- IP67 protective structure (D5SN-S01/S04).
- Insulated sensor
- Voltage/current output



Ordering Informations

| Item | Model |
|-----------|------------|
| Sensor | D5SN-S01 |
| | D5SN-S04 |
| | D5SN-S04-L |
| Amplifier | D5SN-A01 |

Note: The amplifier is the same for all sensors.

- Select from three sensors according to the measurement environment

Specifications

Sensor

| Item Model | D5SN-S01 | D5SN-S04 | D5SN-S04-L |
|--|--|------------------|-------------------------|
| Measurement range | 1 mm | 4 mm | |
| Operating range | Approx. 1.5 mm | Approx. 5 mm | |
| Resolution | 0.1 μm *1 | 0.4 μm *1 | |
| Linearity | 0.3% F.S. max. | 0.5% F.S. max *2 | |
| Measuring power | Approximately 0.7 N *3 | | Approximately 0.25 N *3 |
| Protective structure (excluding the connector) | IP67 | | IP54 |
| Mechanical life | 50 million times or more | | |
| Insulated/non-insulated | Insulated type | | |
| Ambient temperature | -10°C to 60°C (with no icing or condensation) | | |
| Ambient operating humidity | 25% to 95%RH (with no condensation) | | |
| Temperature drift | 0.03%F.S./°C *4 | | |
| Weight | Approximately 70 g (including cable and connector) | | |
| Cable length | 3-wire shielded cable, 2m | | |

Amplifier

| Item Model | D5SN-A01 | |
|--|---|---|
| Power supply voltage (permissible range) | 12 to 24 VDC (10.8 to 26.4 VDC) | |
| Current consumption | 80 mA max. | |
| Analog output | Voltage | From -5 to +5 V (load impedance of 10 kΩ or higher) * 5 |
| | Current | 4 to 20 mA (load impedance of 300 Ω or less) * 5 |
| Enable output | Output form | NPN open collector |
| | Open/close output current | 100 mA max. |
| | Residual voltage of output when ON | 1.5 V max. |
| | Collector withstand voltage when OFF | 26.4 VDC |
| | Current leakage when OFF | 0.1 mA max. |
| Protective structure | IP30 | |
| Ambient temperature | -10°C to 55°C (with no icing or condensation) | |
| Ambient operating humidity | 25% to 85%RH (with no condensation) | |
| Temperature drift | 0.010%F.S./°C *4 | |
| Weight | Approximately 200 g (including cable) | |
| Cable length | 5-wire shielded cable, 2 m | |

*1. Minimum possible scanning value when using our K3NX Series of Digital Panel Meters

*2. F.S. indicates the measurement range (1 mm or 4 mm)

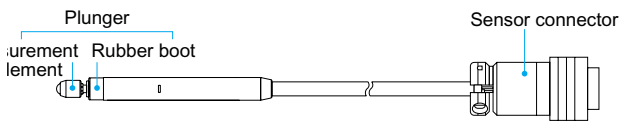
*3. Typical value at the central measurement position when the standard measurement head is attached and fixed in the downward orientation. When fixed in the horizontal or upward orientation, the measuring power will decrease. Note that if a measurement head other than the standard head is used, the measuring power will vary depending on the weight of the head.

*4. Typical value at the center of the measurement range.

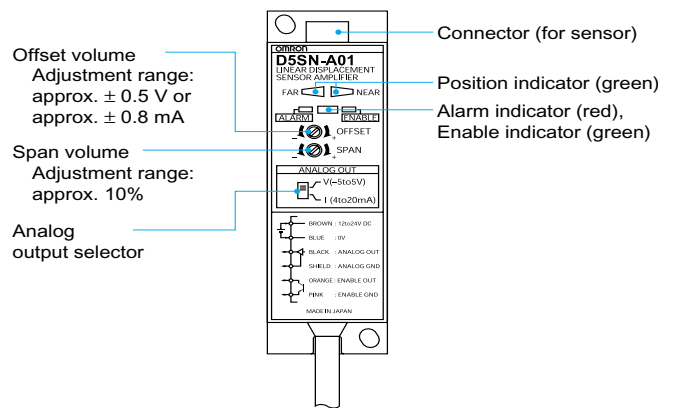
*5. Even if the object is within the measurement range, the analog output may deviate from the specification range (-5 to +5 V, or 4 to 20 mA) depending on the offset adjustment or the span adjustment.

Nomenclature:

Sensor



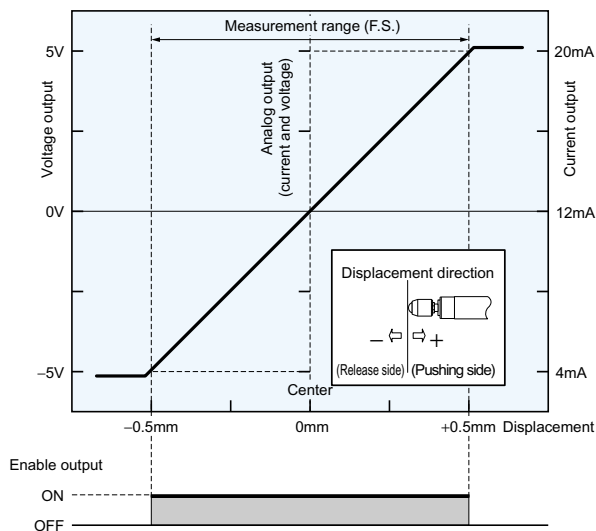
Amplifier



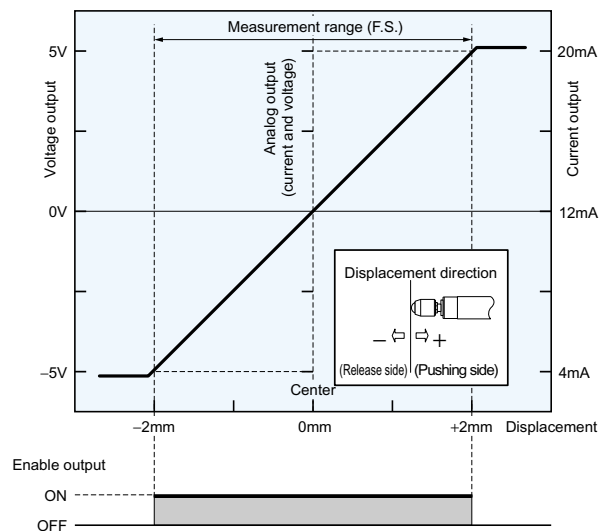
Output Characteristics

Voltage/current output

D5SN-S01



D5SN-S04/S04-L



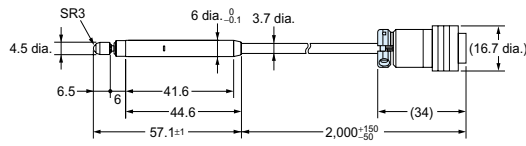
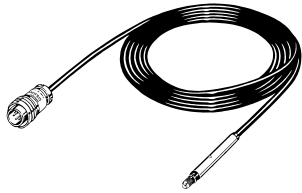
LED display and ENABLE output

| Indentation position | LED display | | ENABLE output | Remarks |
|-----------------------------------|-------------|----------------|---------------|---|
| | FAR NEAR | ALARM / ENABLE | | |
| Entire area (when problem occurs) | | | OFF | Indicates problems such as a bad connector connection or a broken wire in the sensor cable. |
| Outside measurement range | | | OFF | |
| In measurement range | | | ON | |
| | | | ON | Indicates the central vicinity of the measurement range. |
| | | | ON | |
| Outside measurement range | | | OFF | Danger of plunger damage. |

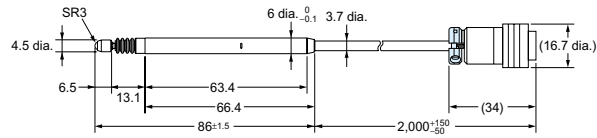
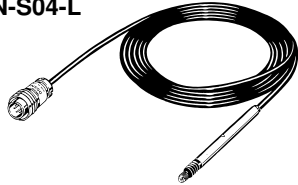
Dimensions (Unit: mm)

Sensor

D5SN-S01

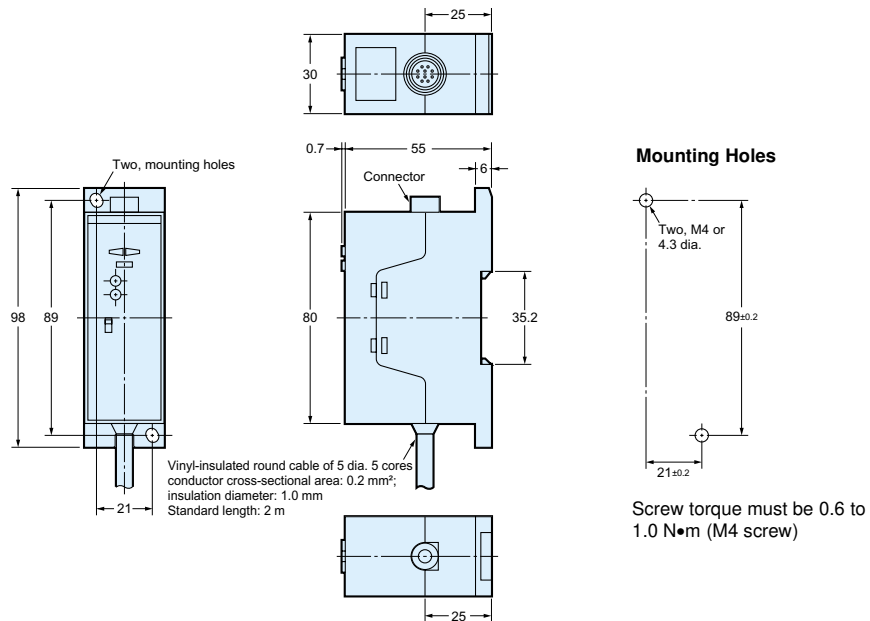
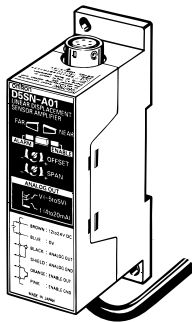


D5SN-S04 D5SN-S04-L



Amplifier

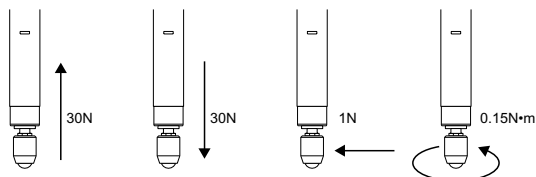
D5SN-A01



Precautions

Correct Use

- This product is a high-precision instrument. Do not drop or subject to any other kind of shock.
- Do not apply a greater force to the plunger of this product than that indicated in the diagram. Excessive force may damage the plunger.

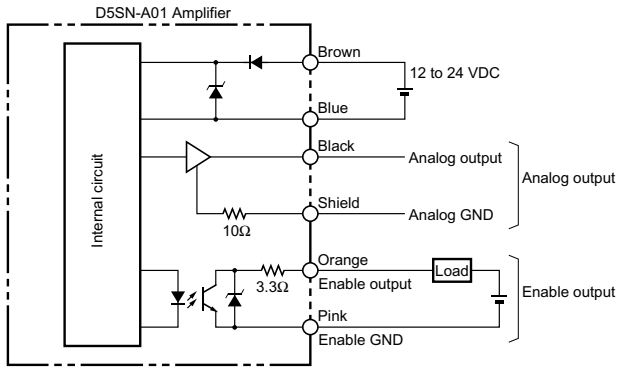


- The sensor will break if the plunger is pressed in too far. Measurement should be performed within the range that the pressure warning indicator does not illuminate.

- Do not remove the dust-protection rubber boot. Foreign matter in the sensor may cause it to fail.
- Observe the location and load requirements when mounting the sensor and amplifier. Mounting with excessive force may damage the devices.

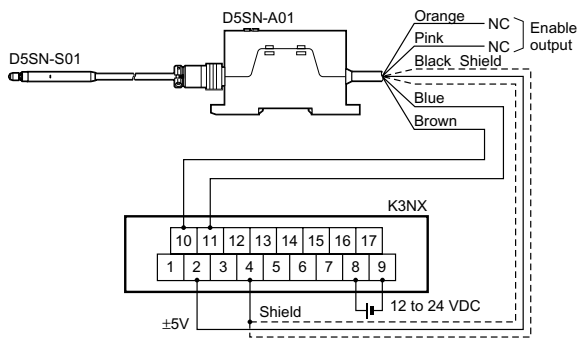
Connection

Input/output circuit schematic

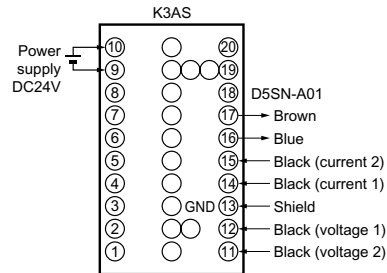


Connection schematic

Example of connection to a digital panel meter (K3NX)

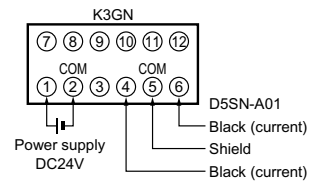


Example of connection to a digital panel meter (K3AS)



Note: Two inputs are possible on the K3AS, however, due to the output circuit of the D5SN, two current inputs are not possible.

Example of connection to a digital panel meter (K3GN)



Note: Power output (24 V DC) is not possible to the K3GN.

Note: 1. If you do not intend to use the enable outputs (orange and pink), cover the outputs with insulation tape to ensure that they do not contact any other wires.

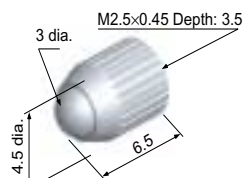
2. For the digital panel meter, use a DC voltage input type or a DC current input type.

Options (measurement heads) (Please inquire regarding delivery times and prices)

Select from a wide variety of measurement head options according to the measurement object

● Ball type (steel)

D5S-T1



* Standard attached gauge head. Can also be purchased separately.

● Ball type (special steel)

D5S-T2



● Ball type (ruby)

D5S-T3



● Conversion adapter

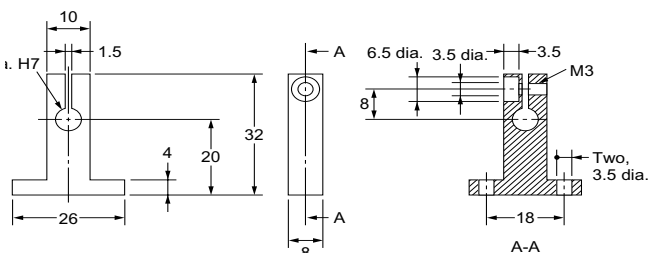
D5S-TA



* A commercially available gauge head can be installed.

Clamps

Recommended mounting jig



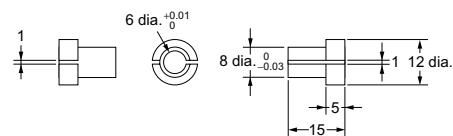
Tightening torque: 0.6 to 0.8 N•m (M3 screw)

Material : Aluminum

(Reference)

A shaft holder capable of holding this product is available from Misumi. Model: SHSTA6

Mounting jig for 8-mm dia. Stand



Material: Brass

3-point support mounting

