



# DENKI SEIGYO

## DSP40-40DP-C



### Square Inductive Proximity Sensor – 40 × 40 mm

## Category

Inductive Proximity Sensors – Square Series

**Manufacturer:** Denki Seigyo

## 1. PRODUCT OVERVIEW

The **Denki Seigyo DSP40-40DP-C** is a heavy-duty **40 × 40 mm square inductive proximity sensor** designed for long-distance, non-contact detection of metallic objects in industrial automation systems.

Featuring a **40 mm sensing distance**, rotatable sensing head, 360° LED indication, and robust engineering plastic housing, the sensor provides reliable operation even in harsh industrial environments. The compact square design with integrated **M12 connector** enables quick installation and easy maintenance.

Designed for conveyors, steel plants, logistics, packaging machinery, machine tools, material handling systems, and factory automation, the DSP40 Series delivers excellent performance with high vibration resistance and superior environmental protection. The reference datasheet highlights the rotatable sensor head, 360° LED visibility, and non-flush installation.

## 2. ORDERING INFORMATION

| Model        | Output | Sensing Distance | Connection    |
|--------------|--------|------------------|---------------|
| DSP40-40DP-C | PNP NO | 40 mm            | M12 Connector |

*(Only connector type available.)*



### 3. MODEL CODE STRUCTURE

Example:

DSP40-40DP-C

| Code | Description             |
|------|-------------------------|
| D    | Denki Seigyo            |
| SP   | Square Proximity Sensor |
| 40   | 40 × 40 mm Housing      |
| 40   | 40 mm Sensing Distance  |
| D    | DC Supply               |
| P    | PNP Output              |
| C    | M12 Connector Type      |

### 4. KEY FEATURES

- 40 × 40 mm compact square housing
- Long sensing distance of 40 mm
- Non-flush installation
- PNP DC output
- 4-wire DC output
- Rotatable sensing head
- 360° LED indication
- M12 connector
- Reverse polarity protection
- Short-circuit protection
- High switching reliability
- Excellent vibration resistance
- Quick mounting bracket
- IP68 / IP69K protection
- Heavy-duty industrial design

### 5. TECHNICAL SPECIFICATIONS

#### General Specifications

| Parameter                   | Specification              |
|-----------------------------|----------------------------|
| Sensor Type                 | Inductive Proximity Sensor |
| Housing                     | Square                     |
| Housing Size                | 40 × 40 mm                 |
| Installation                | Non-flush                  |
| Rated Sensing Distance (Sn) | 40 mm                      |
| Assured Operating Distance  | 0–32.4 mm                  |
| Actual Operating Distance   | 36–44 mm                   |
| Standard Target             | Iron (Fe)                  |



## Electrical Specifications

| Parameter                   | Specification |
|-----------------------------|---------------|
| Supply Voltage              | 10–30 VDC     |
| Output Type                 | PNP           |
| Output Configuration        | 4-Wire DC     |
| Switching Function          | Complementary |
| Switching Frequency         | 180 Hz        |
| Operating Current           | 200 mA Max    |
| No-load Current             | ≤20 mA        |
| Voltage Drop                | ≤2 V          |
| Leakage Current             | ≤0.5 mA       |
| Response Delay              | 80 ms         |
| Reverse Polarity Protection | Yes           |
| Short Circuit Protection    | Pulsing       |

## Reduction Factors

| Material        | Factor |
|-----------------|--------|
| Iron            | 1.00   |
| Stainless Steel | 0.74   |
| Brass           | 0.39   |
| Aluminum        | 0.31   |
| Copper          | 0.30   |

## Mechanical Specifications

| Parameter        | Specification          |
|------------------|------------------------|
| Housing Material | PA Engineering Plastic |
| Sensing Face     | PA                     |
| Housing Size     | 40 × 40 mm             |
| Length           | 67 mm                  |
| Connector        | M12 × 1                |
| Number of Pins   | 4                      |
| Mounting         | Quick Mount Bracket    |
| Weight           | Approx. 155 g          |



## Environmental Specifications

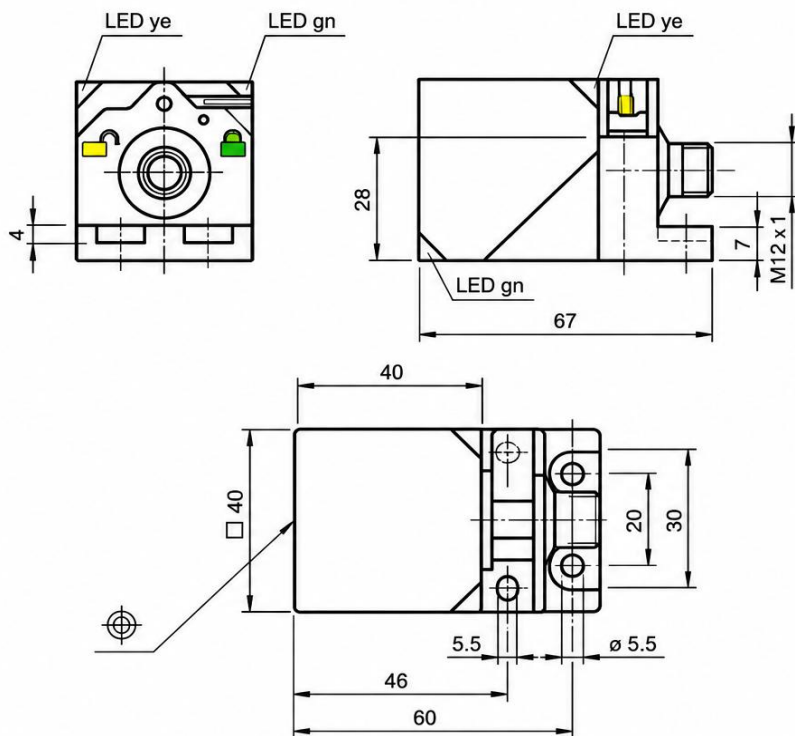
| Parameter             | Specification    |
|-----------------------|------------------|
| Operating Temperature | -25°C to +85°C   |
| Storage Temperature   | -40°C to +85°C   |
| Protection Class      | IP68 / IP69K     |
| Shock Resistance      | Industrial Grade |
| Vibration Resistance  | High             |

## 6. INDICATORS

| Indicator      | Function      |
|----------------|---------------|
| Green LED      | Power ON      |
| Yellow LED     | Output Status |
| LED Visibility | 360° (4 LEDs) |

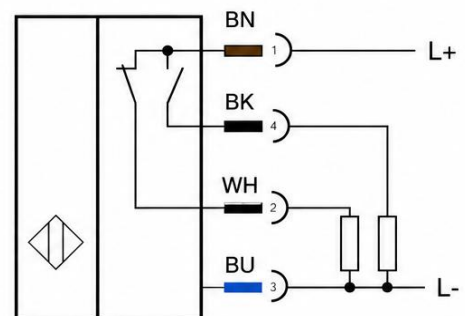
## 7. DIMENSIONS & WIRING DIAGRAM

### DIMENSIONS



All dimensions are in mm

### WIRING DIAGRAM



- BN (1) Brown - L+
- BK (4) Black - Output
- WH (2) White - Output
- BU (3) Blue - L-



## 9. APPLICATIONS

- Conveyor Systems
- Material Handling Equipment
- Steel Industry
- Automotive Manufacturing
- Packaging Machines
- Robotics
- Warehouse Automation
- Machine Tools
- Heavy Industrial Automation
- Logistics Systems

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## 10. PRODUCT SUMMARY

The **Denki Seigyo DSP40-40DP-C** Square Inductive Proximity Sensor combines a **40 mm long sensing distance**, **40 × 40 mm compact housing**, **rotatable sensing head**, and **360° LED indication** for reliable non-contact metal detection in demanding industrial environments. With an **M12 connector**, **IP68/IP69K protection**, and robust construction, it is well suited for high-performance automation, conveying, and material handling applications.