



DENKI SEIGYO

DSPS3M-RDP / DSPS3M-RDN

RETRO-REFLECTIVE PHOTOELECTRIC SENSOR



1. PRODUCT OVERVIEW

The **Denki Seigyo DSPS3M-R Series Retro-Reflective Photoelectric Sensors** are compact industrial optical sensors designed for reliable object detection using a reflector-based sensing method.

The DSPS3M-R series combines transmitter and receiver inside a single housing and detects objects by interruption of reflected light from a reflector.

With visible red LED light source, polarization filter, and stable long-distance sensing, the DSPS3M-R series is ideal for conveyors, packaging machines, material handling systems, and industrial automation applications.

- ✓ Sensing distance up to **3 meters**
- ✓ Compact rectangular housing
- ✓ PNP / NPN output models available
- ✓ High immunity against reflected surface interference

2. KEY FEATURES

- Retro-reflective sensing principle
- Polarized reflector sensing
- Long sensing distance up to 3 m
- Visible red LED light source
- PNP / NPN output options
- Light ON / Dark ON selectable
- Potentiometer sensitivity adjustment
- Reverse polarity protection
- Short-circuit protection
- IP67 protection class
- Compact ABS industrial housing



3. MODEL STRUCTURE

Example:

DPS3M-RDP

Code	Description
DS	Denki Seigyo
PS	Square Photo Sensor
3M	3 meter sensing distance
R	Retro-reflective type
D	DC type
P	PNP output
N	NPN output
C	Connector
PC	Pigtail connector

4. AVAILABLE MODELS

Model	Output Type	Functional Principle	Sensing Distance	Wiring
DSPS3M-RDP	PNP	Retro-reflective	3 m	Cable type
DSPS3M-RDN	NPN	Retro-reflective	3 m	Cable type
DSPS3M-RDN-C	NPN	Retro-reflective	3 m	Connector type
DSPS3M-RDP-C	PNP	Retro-reflective	3 m	Connector type
DSPS3M-RDP-PC	PNP	Retro-reflective	3 m	Pigtail connector type
DSPS3M-RDN-PC	NPN	Retro-reflective	3 m	Pigtail connector type

5. TECHNICAL SPECIFICATIONS

General Specifications

Parameter	Specification
Functional Principle	Retro-reflective photoelectric sensor
Sensing Range	0.05 – 3 m
Sensing Range Max.	4 m
Polarization Filter	Yes
Light Source	Red LED



Parameter	Specification
Wavelength	650 nm
Adjustment	Potentiometer

Electrical Specifications

Parameter	Specification
Supply Voltage	10 – 30V DC
Ripple	±10%
Current Consumption	≤ 30 mA
Output Current	≤ 100 mA
Response Time	< 0.6 ms
Switching Frequency	1000 Hz
Protection	Reverse polarity / Overcurrent / Short circuit

Output Specifications

Model	Output
DSPS3M-RDP	PNP
DSPS3M-RDN	NPN

Switching Modes

- Light ON
- Dark ON

Mechanical Specifications

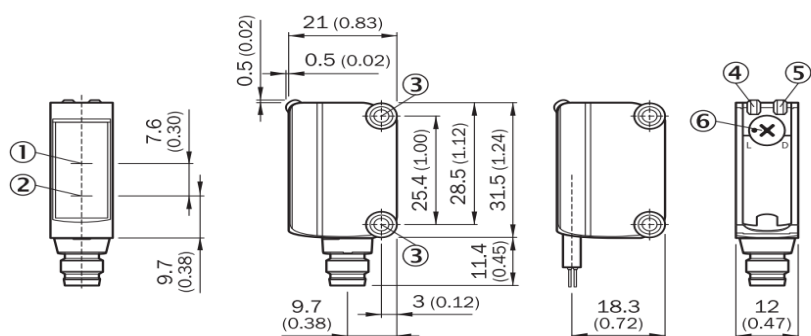
Parameter	Specification
Housing Type	Rectangular
Housing Material	ABS / PC
Front Screen	PMMA
Connection	3-wire cable, 2 m
Cable Material	PVC



Environmental Specifications

Parameter	Specification
Protection Rating	IP67
Operating Temperature	−25°C to +55°C
Storage Temperature	−40°C to +70°C
Humidity	35–85% RH

Dimensions



6. INDICATORS & ADJUSTMENT

Indicator	Function
Green LED	Power ON
Yellow LED	Output status

Adjustment Functions

- Sensitivity adjustment potentiometer
- Light/Dark switching selector

7. CONNECTION DIAGRAM

PNP Output (DSPS3M-RDP)

Wire Colour	Function
Brown	+V
Blue	0V



DSPS3M-RDP/ DSPS3M-RDN Photo Sensor

Wire Colour	Function
Black	Output

NPN Output (DSPS3M-RDN)

Wire Colour	Function
Brown	+V
Blue	0V
Black	Output

8. CHARACTERISTIC FEATURES

Light Spot Size

Distance	Spot Size
0.35 m	Ø 8 mm
1.0 m	Ø 25 mm
3.0 m	Ø 80 mm
5.0 m	Ø 130 mm

Recommended Reflector

Reflector Model	Type
DS-RF250	Standard reflector

9. APPLICATIONS

The DPS3M-R series is suitable for:

- Conveyor object detection
- Industrial automation systems
- Material handling equipment
- Robotics
- Presence detection
- Production line monitoring

10. ACCESSORIES



Accessory	Description
Reflector	Standard reflector included
Mounting Bracket	Stainless steel mounting bracket
Sensor Cable	3-wire cable

11. ORDERING INFORMATION

Model	Output	Distance	Type
DSPS3M-RDP	PNP	3 m	Retro-reflective
DSPS3M-RDN	NPN	3 m	Retro-reflective