

DPR-1040-NPN-NC

Safety Light Curtain Area Sensor — 10 Beams · 40 mm Pitch · 360 mm Protection Height



Version: 1.0 | Date: September 2023 | SKU: SH62

DAPPRA Automation — Industrial Sensor Manufacturer

DAPPRA Automation

Datasheet

DPR-1040-NPN-NC

Safety Light Curtain Area Sensor — 10 Beams · 40 mm Pitch · 360 mm Protection Height

Product Overview

The DAPPRA DPR-1040-NPN-NC is a Safety Light Curtain Area Sensor with 10 optical beams, 40 mm optical axis pitch and 360 mm protection height. It uses through-beam infrared detection with NPN normally closed (NC) output logic for industrial machine protection and automation applications.

With a 0.5 ms response speed, DC24V ±20% operating voltage and IP65 protection, the DPR-1040-NPN-NC is designed for detecting objects or people entering a defined machine protection area.

Key Specifications

Specification	Value
Optical Beam Quantity	10 Beams
Optical Axis Pitch	40 mm
Protection Height	360 mm
Total Height	448 mm
Resolution	10 mm
Response Speed	0.5 ms
Detection Distance	0.1–3 m
Operating Voltage	DC24V ±20%
Output Type	NPN
Signal Logic	NC (Normally Closed)
Protection Rating	IP65
Housing Size	29 × 30 mm

Technical Specifications

General Specifications

Parameter	Specification
Brand	DAPPRA
Product Series	DPR Series
Product Type	Safety Light Curtain Area Sensor
Detection Type	Through Beam Infrared Detection
Light Source	Infrared LED

Optical Specifications

Parameter	Specification
Optical Beam Quantity	10 Beams
Optical Axis Pitch	40 mm
Protection Height	360 mm
Total Height	448 mm
Resolution	10 mm
Detection Distance	0.1–3 m

Electrical Specifications

Parameter	Specification
Operating Voltage	DC24V
Output Type	NPN
Signal Logic	NC (Normally Closed)
Output Current	≤200 mA
Power Consumption	<5 W
Response Speed	0.5 ms

SIL 2 | CE | FCC | RoHS | IP65

DAPPRA Automation | dappra.com | DPR-1040-NPN-NC

2 / 4

DAPPRA Automation

Datasheet

Mechanical Specifications

Parameter	Specification
Housing Size	29 × 30 mm
Total Height	448 mm
Protection Height	360 mm
Emitter Connector	M12 3-Pin
Receiver Connector	M12 4-Pin
Cable Length	2 m

Environmental Specifications

Parameter	Specification
Protection Rating	IP65
Operating Temperature	–10 to 55°C
Relative Humidity	<85% RH at 20°C
Anti-Light Interference	10,000 Lux, incidence angle >5°
Dielectric Strength	AC1500V, 60s, no breakdown or flashover
Insulation Resistance	≥100 MΩ

Safety & Compliance

Parameter	Specification
Safety Standard	IEC 61508
Safety Integrity Level	SIL 2
Certifications	SIL 2, CE, FCC, RoHS

Protection Height Calculation

Protection Height = (Beam Quantity – 1) × Optical Axis Pitch

For DPR-1040-NPN-NC:

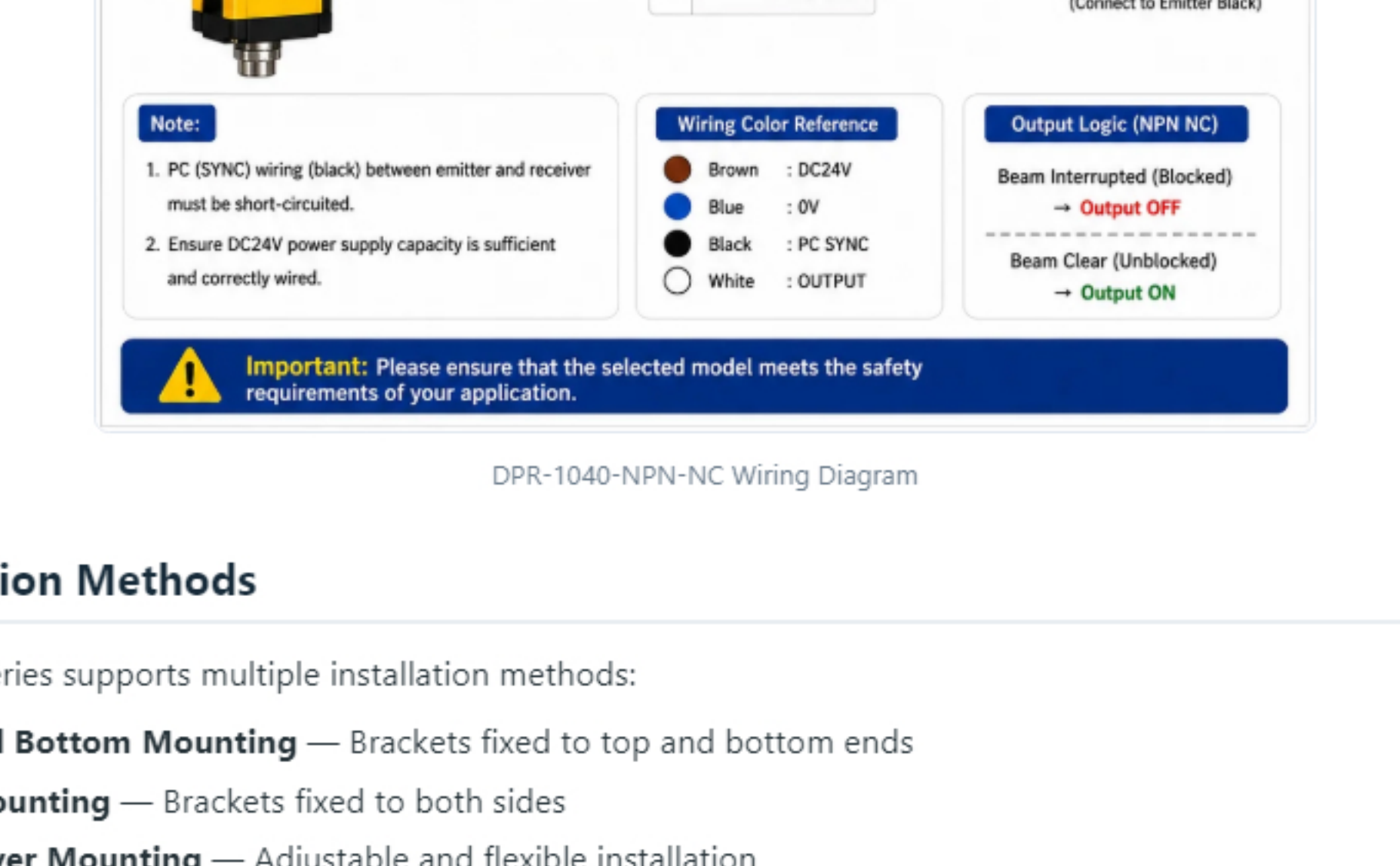
(10 – 1) × 40 mm = 360 mm

Model Number Description

DPR – 1040 – NPN – NC

- DPR** — DAPPRA DPR Series Area Sensor
- 10** — 10 optical beams
- 40** — 40 mm optical axis pitch
- NPN** — NPN output
- NC** — Normally Closed signal logic

Dimension & Optical Beam Structure



DPR-1040-NPN-NC Dimension and Optical Beam Structure

DAPPRA Automation | dappra.com | DPR-1040-NPN-NC

3 / 4

DAPPRA Automation

Datasheet

Wiring Diagram

The DPR-1040-NPN-NC uses an M12 3-pin connector for the emitter and an M12 4-pin connector for the receiver.

Emitter Wiring — M12 3-Pin

Pin	Wire Color	Function
Pin 1	Brown	DC24V
Pin 3	Blue	0V
Pin 4	Black	PC SYNC

Receiver Wiring — M12 4-Pin

Pin	Wire Color	Function
Pin 1	Brown	DC24V
Pin 2	Blue	0V
Pin 3	White	NPN NC Output Beam Interrupted → Output OFF Beam Clear → Output ON
Pin 4	Black	PC SYNC (Connect to Emitter Black)

PC SYNC Connection: Emitter Black → Receiver Black



DPR-1040-NPN-NC Wiring Diagram

Installation Methods

The DPR Series supports multiple installation methods:

- Top and Bottom Mounting** — Brackets fixed to top and bottom ends
- Side Mounting** — Brackets fixed to both sides
- Cantilever Mounting** — Adjustable and flexible installation

DPR-1040-NPN-NC Installation Methods

Safety Certifications

DPR-1040-NPN-NC Safety Certifications

DAPPRA Automation | dappra.com | DPR-1040-NPN-NC

4 / 4