

DPR-1440-NPN-NC

Safety Light Curtain Area Sensor with 520 mm Protection Height



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DAPPRA Automation — Industrial Sensor Manufacturer

DAPPRA Automation

Datasheet

DPR-1440-NPN-NC

Safety Light Curtain Area Sensor with 520 mm Protection Height

Product Description

The DAPPRA DPR-1440-NPN-NC is a Safety Light Curtain Area Sensor from the DPR Series, designed for industrial automation equipment requiring reliable multi-beam object detection and machine protection.

The DPR-1440-NPN-NC uses through-beam infrared detection technology with a separate emitter and receiver. With 14 optical beams, a 40 mm optical axis pitch, and a 520 mm protection height (606 mm total height), it provides stable detection performance for industrial applications.

Key Features

- 14 parallel infrared beams
- 40 mm optical axis pitch
- 520 mm protection height / 606 mm total height
- NPN NC output configuration
- DC24V power supply
- Detection distance up to 3 m
- IP65 protection rating
- Oil-resistant design
- Anti-vibration and anti-interference design
- SIL functional safety certification

Product Identity

Parameter	Specification
Brand	DAPPRA
Manufacturer	DAPPRA Automation
Product Series	DPR Series
Model	DPR-1440-NPN-NC
SKU	SH30
Product Category	Safety Light Curtain Area Sensor
Detection Method	Through Beam Infrared Detection
Beam Configuration	Parallel Beam
Optical Axis Quantity	14 Beams
Optical Axis Pitch	40 mm
Output Type	NPN
Signal Logic	NC (Normally Closed)

Technical Specifications

Specification	Value
Model	DPR-1440-NPN-NC
SKU	SH30
Series	DPR Series
Detection Method	Through Beam Infrared Detection
Beam Configuration	Parallel Beam
Optical Axis Quantity	14 beams
Optical Axis Pitch	40 mm
Protection Height	520 mm
Total Height (including end caps)	606 mm
Maximum Detection Distance	3 m
Power Supply	DC24V ±20%
Response Time	<5 ms
Output Type	NPN
Signal Logic	NC (Normally Closed)
Connector	M12 Cable
Output Current	≤200 mA
Power Consumption	<5 W
Cross Section Size	29 × 30 mm
Protection Rating	IP65
Housing Material	Aluminum Alloy
Operating Temperature	-10°C to 55°C
Operating Humidity	Relative Humidity <85% at 20°C
Ambient Light Resistance	10000 Lux (incident angle >5°)

SIL CE FCC RoHS IP65

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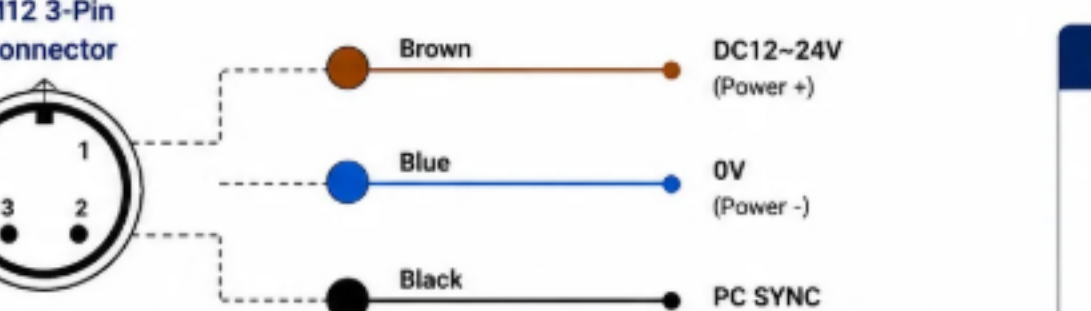
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Model Number Explanation

Code	Meaning
DPR	DAPPRA DPR Series
14	14 Optical Beams
40	40 mm Optical Axis Pitch
NPN	NPN Output Type
NC	Normally Closed Signal Logic

DPR-1440-NPN-NC represents a DPR Series Safety Light Curtain Area Sensor with 14 beams, 40 mm optical axis pitch, NPN output and Normally Closed signal logic.



DPR Series Safety Light Curtain Model Selection Table

Protection Height Calculation

For DPR Series Area Sensors, protection height is calculated as:

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

For DPR-1440-NPN-NC:

(14 - 1) × 40 mm = 520 mm

Total Height: 606 mm (including end caps)

NPN NC Signal Logic

The DPR-1440-NPN-NC uses an NPN output with NC (Normally Closed) signal logic.

Detection Condition	Output Status
Normal beam transmission (no object)	0V (low level) — Output active
Beam interrupted (object detected)	High impedance — Output inactive

NPN NC Output Configuration

- **Output Type:** NPN
- **Signal Logic:** NC (Normally Closed)
- **Power Supply:** DC24V ±20%
- **Connector:** M12 Cable

DPR-1440-NPN-NC WIRING DIAGRAM

NPN NC Output (Normally Closed)



NOTES
1. PC (SYNC) wiring (black) between emitter and receiver must be short-circuited.
2. Ensure DC12-24V power supply capacity is sufficient and correctly wired.

IMPORTANT: Please ensure that the selected model meets the safety requirements of your application.

DPR-1440-NPN-NC NPN NC Wiring Diagram

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Industrial Applications

The DPR-1440-NPN-NC Safety Light Curtain Area Sensor is designed for industrial automation applications requiring multi-beam object detection and machine protection.

Typical application areas include:

- CNC Machines
- Press and Hydraulic Machinery
- Packaging Machinery
- Conveyor Systems
- Robot Workcells

- Automated Assembly Equipment
- Shearing and Cutting Machinery
- Stamping Machinery
- Woodworking Machinery
- Welding Production Lines
- Vertical Parking Systems
- Falling Object Detection Applications

The sensor can establish a defined infrared detection area around industrial equipment where object detection or machine protection is required.

DPR-1440-NPN-NC INDUSTRIAL APPLICATION OVERVIEW

Reliable Machine Protection & Object Detection for Industrial Automation

DAPPRA DPR-1440-NPN-NC Safety Light Curtain Area Sensor provides multi-beam infrared detection, fast response, and industrial-grade protection for a wide range of automated equipment.

1. CNC MACHINES

- Machine guarding
- Operator safety protection
- Prevent access to dangerous areas

2. PRESS & HYDRAULIC MACHINES

- Press area protection
- Prevent hand or object access during operation
- Improve workplace safety

3. PACKAGING MACHINERY

- Access control
- Product flow detection
- Ensure packaging process safety

4. CONVEYOR SYSTEMS

- Object detection
- Area monitoring
- Prevent objects or personnel intrusion

5. ROBOT WORKCELLS

- Robot cell access protection
- Human-robot collaboration safety
- Reduce risk of injury

Multi-Beam Infrared Detection

Fast Response Time

High Reliability & Stability

IP65 Protection Rating

Easy Installation & Alignment

Note: Please ensure the selected model meets the safety requirements of your application. Proper installation and regular inspection are recommended to maintain optimal protection performance.

DPR-1440-NPN-NC Industrial Applications

Environmental Protection

The DPR-1440-NPN-NC is designed for industrial automation environments where equipment may experience humidity, water exposure, oil contamination, mechanical vibration and electromagnetic interference.

Feature	Description
IP65 Protection	Protection design for industrial environments requiring resistance to dust and water exposure.
Oil Resistance	Surface protection for oil-resistant performance.
Anti-Vibration Design	Designed for stable operation in industrial machinery environments.
Anti-Interference Design	Designed for resistance against electromagnetic interference.
Ambient Light Resistance	10000 Lux (incident angle >5°)
Operating Temperature	-10°C to 55°C
Operating Humidity	Relative Humidity <85% at 20°C

Safety & Compliance

The DPR-1440-NPN-NC is supported by functional safety and product compliance documentation.

SIL Functional Safety Certification

The DPR-1440-NPN-NC has obtained SIL certification through third-party testing and verification according to functional safety requirements.

Safety Parameter	Specification
Safety Level	SIL
Certification Type	Third-Party Functional Safety Certification

Product Compliance Documentation

- SIL Functional Safety Certificate
- CE Certification
- FCC Certification
- RoHS Compliance

DAPPRA DPR-1440-NPN-NC SAFETY & COMPLIANCE CERTIFICATIONS

DAPPRA DPR-1440-NPN-NC is supported by safety and compliance documentation to ensure reliable performance and global market access.

SIL SAFETY CERTIFICATION

- SIL 2 capable
- IEC 61508 compliant
- Functional safety certified

Ensures the product meets the requirements for functional safety in safety-related systems.

CE CERTIFICATION

- Complies with EU directives
- EN 61496-1/2, EN ISO 13849-1
- Ensures product safety and reliability

Indicates conformity with European health, safety, and environmental protection standards.

FCC CERTIFICATION

- Complies with FCC Part 15
- Electromagnetic compatibility
- Suitable for global markets

Ensures the product meets U.S. electromagnetic compatibility and interference requirements.

RoHS COMPLIANCE

- Restriction of Hazardous Substances
- Environmentally friendly
- Complies with RoHS Directive

Ensures the product is free from hazardous substances and meets environmental standards.

High Safety Integrity

Global Compliance

Reliable Performance & Stability

Environmentally Responsible

Built for Industries

Note: Always ensure proper installation, regular inspection, and correct use of the safety light curtain in accordance with the user manual and applicable safety standards.

DAPPRA DPR-1440-NPN-NC SIL / CE / FCC / RoHS Certificates

Standard Product Package

The DPR-1440-NPN-NC standard package includes the complete sensor system and required installation accessories for industrial installation.

Package Item	Quantity / Description
Emitter	1 unit
Receiver	1 unit
Connecting Cables	2 cables (M12)
Standard Mounting Accessories	Included

The complete package allows installation of the emitter and receiver system for through-beam infrared detection applications.

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