DAPPRA DATASHEET

DPR Series

General-Purpose Industrial Area Sensor & Safety Light Curtain

---

Multiple Parallel Beam Through-Beam Detection Technology with separate emitter and receiver units. Available in **10 / 20 / 40 mm** optical-axis pitch, with multiple beam quantities, protection heights and total heights for industrial automation, machine protection, personnel protection and area detection applications.

DOCUMENT

TITLE	DPR Series Datasheet
DOC NO.	DPR-DS-001
REVISION	Rev. 1.0
DATE	2021-01

CONTACT

EMAIL	sales@dappra.com
WHATSAPP	+62 878 5542 7784
WEB	www.dappra.com

CONTENTS

Datasheet Contents

DPR Series overview, specifications, model selection, dimensions, installation, wiring, accessories, applications and FAQ.

01 · Product Overview 03
SERIES INTRODUCTION AND POSITIONING

02 · Key Features 04
OPTICAL-AXIS PITCH, DETECTION RANGE, PROTECTION

03 · Model Code 05
MODEL NAMING RULES AND FIELD DEFINITIONS

04 · Model Selection — 10 mm 06
BEAM QUANTITY, PROTECTION HEIGHT, TOTAL HEIGHT

05 · Model Selection — 20 mm 07
BEAM QUANTITY, PROTECTION HEIGHT, TOTAL HEIGHT

06 · Model Selection — 40 mm 08
BEAM QUANTITY, PROTECTION HEIGHT, TOTAL HEIGHT

07 · Dimensions 09
HOUSING CROSS SECTION AND HEIGHT REFERENCES

08 · Installation 10
STANDARD, SIDE AND CANTILEVER MOUNTING

09 · Wiring Principle 11
NPN AND PNP OUTPUT WIRING

10 · Accessories & Brackets 12
MOUNTING BRACKETS AND BRACKET DIMENSIONS

11 · Applications 13
INDUSTRIAL APPLICATION AREAS

12 · FAQ & Contact 14
FAQ AND CONTACT INFORMATION

AT A GLANCE

10 / 20 / 40 mm	0.2-3 m	IP65
OPTICAL-AXIS PITCH	DETECTION DISTANCE	PROTECTION RATING

01 · PRODUCT OVERVIEW

DPR Series Overview

General-purpose industrial area sensor and safety light curtain for automation, detection and protection.

The DAPPRA DPR Series is a general-purpose Industrial Area Sensor and Safety Light Curtain series designed for industrial automation, machine detection, machine protection, personnel protection and area detection applications.

The DPR Series uses Multiple Parallel Beam Through-Beam Detection Technology with separate emitter and receiver units. Multiple optical-axis pitch and beam-count configurations are available for different sensing and protection-height requirements.

The series provides 10 mm, 20 mm and 40 mm optical-axis pitch configurations, with multiple beam quantities, protection heights and total heights for different industrial sensing and protection requirements.

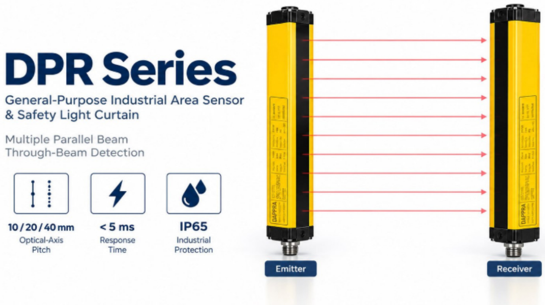

DPR Series
General-Purpose Industrial Area Sensor & Safety Light Curtain
Multiple Parallel Beam Through-Beam Detection
10 / 20 / 40 mm
Optical-Axis Pitch
< 5 ms
Response Time
IP65
Industrial Protection
Emitter
Receiver

FIGURE 1 · DPR SERIES OVERVIEW

CORE SPECIFICATIONS

Series	DAPPRA DPR Series
Product Type	Industrial Area Sensor & Safety Light Curtain
Detection Principle	Multiple Parallel Beam Through-Beam Detection
Emitter / Receiver	Separate emitter and receiver units
Optical-Axis Pitch	10 / 20 / 40 mm
Detection Distance	0.2–3 m
Protection Rating	IP65
Synchronization	Line synchronization

Output Type	NPN / PNP
Output Logic	NC / NO
Compliance	SIL 2 / IEC 61508 · CE · FCC · RoHS

02 · KEY FEATURES

DPR Series Key Features

Engineered for general-purpose industrial detection and machine protection applications.

10 MM / 20 MM / 40 MM OPTICAL-AXIS PITCH

The DPR Series provides 10 mm, 20 mm and 40 mm optical-axis pitch options for different sensing and protection requirements.

MULTIPLE BEAM CONFIGURATIONS

Different beam quantities provide different protection heights, allowing users to select the appropriate DPR model for their application.

0.2-3 M DETECTION DISTANCE

The DPR Series provides a 0.2–3 m detection distance for industrial equipment applications.

IP65 PROTECTION

The DPR Series is designed with IP65 protection for industrial environments.

LINE SYNCHRONIZATION

The emitter and receiver use line synchronization for coordinated optical-beam operation.

NPN / PNP OUTPUT OPTIONS

Output transistor type: NPN / PNP, with NC / NO output logic.

SIL 2 / IEC 61508 COMPLIANCE

Supported by SIL 2 / IEC 61508, together with CE, FCC and RoHS compliance.

03 · MODEL CODE

DPR Series Model Code

Select the appropriate DPR model according to the optical-axis pitch, beam quantity and protection height.

Model Code Structure

DPR - 08 10 - NPN - NC

FIELD	MEANING	AVAILABLE VALUES
DPR	Series prefix	DPR
08	Beam Quantity — number of optical beams	04 – 70
10	Optical-Axis Pitch — distance between adjacent optical axes	10 / 20 / 40 mm
NPN	Output Type — transistor output configuration	NPN / PNP
NC	Output Logic — signal logic state	NC / NO

FIELD LEGEND

DPR

Series prefix — DAPPRA DPR Series Industrial Area Sensor & Safety Light Curtain.

08 — BEAM QUANTITY

Number of optical beams, from 04 to 70 depending on the model.

10 — OPTICAL-AXIS PITCH

Optical-axis pitch in mm: 10 / 20 / 40.

NPN — OUTPUT TYPE

Output transistor type: NPN / PNP (relay output available on selected configurations).

NC — OUTPUT LOGIC

NC = Normally Closed; NO = Normally Open.

EXAMPLE

DPR-0810-NPN-NC = DPR Series, 8 beams, 10 mm optical-axis pitch, NPN output, Normally Closed logic.

04 · MODEL SELECTION

Optical Axis Pitch D = 10 mm

Beam quantity, protection height (H), total height (L) and corresponding model.

BEAM QUANTITY	PROTECTION HEIGHT (H) MM	TOTAL HEIGHT (L) MM	MODEL
8	70	128	DPR-0810-NPN-NC
10	90	148	DPR-1010-NPN-NC
12	110	168	DPR-1210-NPN-NC
14	130	188	DPR-1410-NPN-NC
16	150	208	DPR-1610-NPN-NC
18	170	228	DPR-1810-NPN-NC
20	190	248	DPR-2010-NPN-NC
22	210	268	DPR-2210-NPN-NC
24	230	288	DPR-2410-NPN-NC
26	250	308	DPR-2610-NPN-NC
28	270	328	DPR-2810-NPN-NC
30	290	348	DPR-3010-NPN-NC
32	310	368	DPR-3210-NPN-NC
34	330	388	DPR-3410-NPN-NC
36	350	408	DPR-3610-NPN-NC
38	370	428	DPR-3810-NPN-NC
40	390	448	DPR-4010-NPN-NC
42	410	468	DPR-4210-NPN-NC
44	430	488	DPR-4410-NPN-NC
46	450	508	DPR-4610-NPN-NC
48	470	528	DPR-4810-NPN-NC
50	490	548	DPR-5010-NPN-NC
52	510	568	DPR-5210-NPN-NC
54	530	588	DPR-5410-NPN-NC
56	550	608	DPR-5610-NPN-NC
58	570	628	DPR-5810-NPN-NC
60	590	648	DPR-6010-NPN-NC
62	610	668	DPR-6210-NPN-NC

64	630	688	DPR-6410-NPN-NC
66	650	708	DPR-6610-NPN-NC
68	670	728	DPR-6810-NPN-NC
70	690	748	DPR-7010-NPN-NC

05 · MODEL SELECTION

Optical Axis Pitch D = 20 mm

Beam quantity, protection height (H), total height (L) and corresponding model.

BEAM QUANTITY	PROTECTION HEIGHT (H) MM	TOTAL HEIGHT (L) MM	MODEL
4	60	128	DPR-0420-NPN-NC
6	100	168	DPR-0620-NPN-NC
8	140	208	DPR-0820-NPN-NC
10	180	248	DPR-1020-NPN-NC
12	220	288	DPR-1220-NPN-NC
14	260	328	DPR-1420-NPN-NC
16	300	368	DPR-1620-NPN-NC
18	340	408	DPR-1820-NPN-NC
20	380	448	DPR-2020-NPN-NC
22	420	488	DPR-2220-NPN-NC
24	460	528	DPR-2420-NPN-NC
26	500	568	DPR-2620-NPN-NC
28	540	608	DPR-2820-NPN-NC
30	580	648	DPR-3020-NPN-NC
32	620	688	DPR-3220-NPN-NC
34	660	728	DPR-3420-NPN-NC
36	700	768	DPR-3620-NPN-NC
38	740	808	DPR-3820-NPN-NC
40	780	848	DPR-4020-NPN-NC
42	820	888	DPR-4220-NPN-NC
44	860	928	DPR-4420-NPN-NC
46	900	968	DPR-4620-NPN-NC

48	940	1008	DPR-4820-NPN-NC
50	980	1048	DPR-5020-NPN-NC
52	1020	1088	DPR-5220-NPN-NC
54	1060	1128	DPR-5420-NPN-NC
56	1100	1168	DPR-5620-NPN-NC
58	1140	1208	DPR-5820-NPN-NC
60	1180	1248	DPR-6020-NPN-NC
62	1220	1288	DPR-6220-NPN-NC
64	1260	1328	DPR-6420-NPN-NC
66	1300	1368	DPR-6620-NPN-NC

06 · MODEL SELECTION

Optical Axis Pitch D = 40 mm

Beam quantity, protection height (H), total height (L) and corresponding model.

BEAM QUANTITY	PROTECTION HEIGHT (H) MM	TOTAL HEIGHT (L) MM	MODEL
4	120	208	DPR-0440-NPN-NC
6	200	288	DPR-0640-NPN-NC
8	280	368	DPR-0840-NPN-NC
10	360	448	DPR-1040-NPN-NC
12	440	528	DPR-1240-NPN-NC
14	520	608	DPR-1440-NPN-NC
16	600	688	DPR-1640-NPN-NC
18	680	768	DPR-1840-NPN-NC
20	760	848	DPR-2040-NPN-NC
22	840	928	DPR-2240-NPN-NC
24	920	1008	DPR-2440-NPN-NC
26	1000	1088	DPR-2640-NPN-NC
28	1080	1168	DPR-2840-NPN-NC
30	1160	1248	DPR-3040-NPN-NC
32	1240	1328	DPR-3240-NPN-NC
34	1320	1408	DPR-3440-NPN-NC

36	1400	1488	DPR-3640-NPN-NC
38	1480	1568	DPR-3840-NPN-NC
40	1560	1648	DPR-4040-NPN-NC
42	1640	1728	DPR-4240-NPN-NC
44	1720	1808	DPR-4440-NPN-NC
46	1800	1888	DPR-4640-NPN-NC
48	1880	1968	DPR-4840-NPN-NC
50	1960	2048	DPR-5040-NPN-NC
52	2040	2128	DPR-5240-NPN-NC
54	2120	2208	DPR-5440-NPN-NC
56	2200	2288	DPR-5640-NPN-NC
58	2280	2368	DPR-5840-NPN-NC
60	2360	2448	DPR-6040-NPN-NC
62	2440	2528	DPR-6240-NPN-NC
64	2520	2608	DPR-6440-NPN-NC
66	2600	2688	DPR-6640-NPN-NC

07 · DIMENSIONS

DPR Series Dimensions

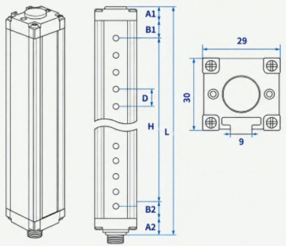
Compact industrial housing with confirmed cross section of 29 × 30 mm.

The DPR Series uses a compact industrial housing with a confirmed cross section of 29 × 30 mm.

Protection height and total height vary according to the beam quantity and optical-axis pitch of each model.

For complete mechanical dimensions, refer to the corresponding DPR model page and CAD drawing.

Housing Cross Section	29 × 30 mm
Optical-Axis Pitch	10 / 20 / 40 mm
Protection Height	Varies by beam quantity and pitch
Total Height	Varies by beam quantity and pitch
Mounting	Standard / Side / Cantilever
Reference	DPR model page and CAD drawing



Symbol	Description	Dimension (mm)
A1	Top End Cap	12
A2	Bottom End Cap	12
B1	PCB Upper Area	10
B2	PCB Lower Area	When D is 20 mm, 4 optical axes are 10 mm, other specifications are 35
D	Optical-Axis Pitch	20 / 40
H	Protection Height	(Number of optical axes - 1) × pitch
L	Total Height	Top end cap height + top blind zone + protection height

FIGURE 2 · DPR SERIES MECHANICAL DIMENSIONS

08 · INSTALLATION

DPR Series Installation

The DPR Series supports multiple installation configurations for different industrial equipment structures.

01 / 03

Standard Mounting

Standard mounting for conventional machine and automation equipment.

02 / 03

Side Mounting

Side mounting for installations where lateral mounting is required.

03 / 03

Cantilever Mounting

Cantilever mounting for applications requiring extended mounting support.

The appropriate mounting configuration should be selected according to the machine structure and available installation space.

① Top & Bottom Mounting
② Side Mounting
③ Adjustable Cantilever Mounting

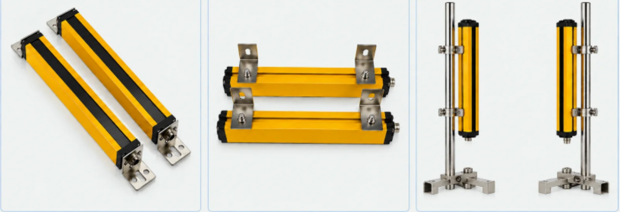


FIGURE 3 · DPR SERIES INSTALLATION METHODS

09 · WIRING PRINCIPLE

DPR Series Wiring Principle

The DPR Series supports both NPN and PNP output wiring configurations.

NPN Output Wiring

The NPN output switches the signal line to 0 V (GND) when the optical beam is interrupted. Connect the receiver output to the PLC or controller input configured for NPN (sinking) input, and connect the emitter and receiver to 24 VDC according to the wiring diagram.

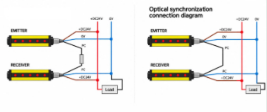


FIGURE 4 · NPN OUTPUT WIRING

PNP Output Wiring

The PNP output switches the signal line to +24 V when the optical beam is interrupted. Connect the receiver output to the PLC or controller input configured for PNP (sourcing) input, and connect the emitter and receiver to 24 VDC according to the wiring diagram.

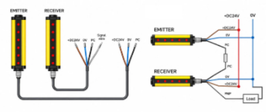


FIGURE 5 · PNP OUTPUT WIRING

The actual wiring should follow the wiring diagram provided for the selected DPR model.

10 · ACCESSORIES

Accessories & Mounting Brackets

The DPR Series includes the emitter and receiver as the main sensing components.

Standard Top & Bottom Brackets

Used for conventional vertical installation of the emitter and receiver.

Side Mounting Brackets

Used when the sensor needs to be mounted from the side of the machine structure.

Cantilever Brackets

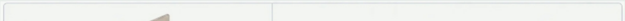
Used for installation configurations requiring extended mounting support.

The exact accessory configuration may vary according to the selected DPR model and mounting requirements.

BRACKET DIMENSIONS

The mounting bracket dimensions and mounting-hole positions should be selected according to the corresponding DPR Series mounting configuration.

For detailed bracket dimensions, refer to the DPR Series mounting drawing or the CAD drawing of the selected model.



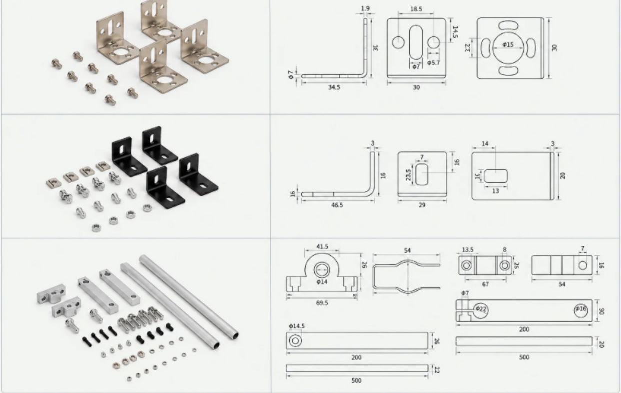


FIGURE 6 · MOUNTING BRACKET DIMENSIONS

11 · APPLICATIONS

DPR Series Industrial Applications

Suitable for industrial automation, area detection, machine protection, personnel protection and other automated machinery.

- Machine Protection
- Personnel Protection
- Machine Area Detection
- Object Detection
- Material Detection
- Conveyor Monitoring
- Automated Equipment
- Packaging Machinery
- Cutting Equipment
- Hydraulic Machinery
- Robotic Equipment

12 · FAQ & CONTACT

FAQ & Contact Information

Frequently asked questions and DAPPRA contact details.

What is the DAPPRA DPR Series?

The DAPPRA DPR Series is a general-purpose Industrial Area Sensor and Safety Light Curtain series for industrial automation, machine detection, machine protection, personnel protection and area detection applications.

What optical-axis pitches are available in the DPR Series?

The DPR Series provides 10 mm, 20 mm and 40 mm optical-axis pitch configurations.

How do I select a DPR Series model?

Select the appropriate model according to the required optical-axis pitch, beam quantity and protection height.

What is the protection rating of the DPR Series?

The DPR Series uses an IP65 protection configuration.

Does the DPR Series support NPN NC output?

Yes. DAPPRA DPR NPN NC models are available within the DPR Series.

What safety certification does the DPR Series have?

The DPR Series is supported by SIL 2 / IEC 61508, together with CE, FCC and RoHS compliance.

Contact DAPPRA

For product selection, technical support, samples or quotation, please contact us through the channels below.

EMAIL
sales@dappra.com

WEBSITE
www.dappra.com

WHATSAPP
+62 878 5542 7784

PRODUCT CATEGORY
dappra.com/product-category/sensor/sensor-area/

Notice: Specifications, dimensions and model availability in this datasheet are subject to change without prior notice. Please refer to the latest DAPPRA official documentation or contact DAPPRA for the most current information. DPR Series Datasheet · Doc No. DPR-DS-001 · Rev. 1.0 · 2021-01.