DPC Series

Side Ultra-Thin Industrial Area Sensor & Safety Light Curtain

Multiple Parallel Beam Through-Beam Detection with separate emitter and receiver units. Side ultra-thin **36.5 × 19 mm** aluminium alloy housing, available in **20 / 40 mm** optical-axis pitch with beam quantities up to **200**, **<10 ms** response time (fastest models <1 ms), **DC10–30V** working voltage and IP65 protection.

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

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AT A GLANCE

20 / 40 mm	<10 ms	0.1–3 m	IP65
OPTICAL-AXIS PITCH	RESPONSE TIME	DETECTION DISTANCE	PROTECTION RATING

01 · PRODUCT OVERVIEW

DPC Series Overview

Side ultra-thin area sensor and safety light curtain for compact machines with limited installation space.

The DAPPRA DPC Series is a side ultra-thin Industrial Area Sensor and Safety Light Curtain series designed for compact machines and automation equipment where installation space is limited.

The DPC Series uses Multiple Parallel Beam Through-Beam Detection Technology with separate emitter and receiver units. Its side ultra-thin housing has a detection surface width of only 19 mm and a cross section of 36.5 × 19 mm, saving installation space for narrow and confined areas.

The series provides 20 mm and 40 mm optical-axis pitch configurations, with beam quantities from 4 up to 200, offering multiple protection heights and total heights for different industrial sensing and protection requirements.

FIGURE 1 · DPC SERIES OVERVIEW

CORE SPECIFICATIONS

Series	DAPPRA DPC Series
Product Type	Side Ultra-Thin Industrial Area Sensor & Safety Light Curtain
Detection Principle	Multiple Parallel Beam Through-Beam Detection
Emitter / Receiver	Separate emitter and receiver units
Optical-Axis Pitch	20 / 40 mm
Beam Quantity	04 – 200
Response Time	< 10 ms (fastest models < 1 ms)
Operating Voltage	DC 10 – 30 V
Output Type	NPN / PNP
Output Logic	NC / NO
Housing Cross Section	36.5 × 19 mm
Housing Material	Aluminium alloy
Protection Rating	IP65

02 · KEY FEATURES

DPC Series Key Features

Engineered for space-constrained industrial detection and machine protection applications.

SIDE ULTRA-THIN DESIGN
The DPC Series features a side ultra-thin housing design with a detection surface width of only 19 mm for applications where installation space is limited.

20 / 40 MM OPTICAL-AXIS PITCH
The DPC Series provides 20 mm and 40 mm optical-axis pitch options for different sensing and protection requirements.

36.5 × 19 MM COMPACT HOUSING
The DPC Series uses a 36.5 × 19 mm compact aluminium alloy housing, saving installation space on compact machinery.

FAST RESPONSE TIME
Response time is <10 ms, with the fastest models reaching <1 ms for fast and reliable detection.

DC 10–30V WORKING VOLTAGE
The DPC Series operates on a DC10–30V power supply with low power consumption and protection against power overvoltage, reverse polarity and output overcurrent.

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

LINE SYNCHRONIZATION
The emitter and receiver use line synchronization for coordinated optical-beam operation, improving resistance to optical interference.

TYPE SAFETY LEVEL
Designed to meet TYPE safety level requirements with complete self-checking diagnostics and strong electromagnetic interference resistance.

03 · MODEL CODE

DPC Series Model Code

Select the appropriate DPC model according to the optical-axis pitch, beam quantity and output type.

Model Code Structure

`DPC - 04 20 - NPN - NC`

FIELD	MEANING	AVAILABLE VALUES
DPC	Series prefix	DPC
04	Beam Quantity — number of optical beams	04 – 200
20	Optical-Axis Pitch — distance between adjacent optical axes	20 / 40 mm
NPN	Output Type — transistor output configuration	NPN / PNP
NC	Output Logic — signal logic state	NC / NO

FIELD LEGEND

DPC
Series prefix — DAPPRA DPC Series Side Ultra-Thin Industrial Area Sensor & Safety Light Curtain.

04 — BEAM QUANTITY
Number of optical beams, from 04 to 200 depending on the model.

20 — OPTICAL-AXIS PITCH
Optical-axis pitch in mm: 20 / 40.

NPN — OUTPUT TYPE
Output transistor type: NPN / PNP.

NC — OUTPUT LOGIC
NC = Normally Closed; NO = Normally Open.

EXAMPLE
DPC-0420-NPN-NC = DPC Series, 4 beams, 20 mm optical-axis pitch, NPN output, Normally Closed logic.

04 · 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	108	DPC-0420-NPN-NC
6	100	169	DPC-0620-NPN-NC
8	140	209	DPC-0820-NPN-NC
10	180	249	DPC-1020-NPN-NC
12	220	289	DPC-1220-NPN-NC
14	260	329	DPC-1420-NPN-NC
16	300	369	DPC-1620-NPN-NC
18	340	409	DPC-1820-NPN-NC
20	380	449	DPC-2020-NPN-NC
22	420	489	DPC-2220-NPN-NC
24	460	529	DPC-2420-NPN-NC
26	500	569	DPC-2620-NPN-NC
28	540	609	DPC-2820-NPN-NC
30	580	649	DPC-3020-NPN-NC
32	620	689	DPC-3220-NPN-NC
34	660	729	DPC-3420-NPN-NC
36	700	769	DPC-3620-NPN-NC
38	740	809	DPC-3820-NPN-NC
40	780	849	DPC-4020-NPN-NC
42	820	889	DPC-4220-NPN-NC
44	860	929	DPC-4420-NPN-NC
46	900	969	DPC-4620-NPN-NC
48	940	1009	DPC-4820-NPN-NC
50	980	1049	DPC-5020-NPN-NC

20 mm optical-axis pitch models are available with beam quantities from 4 to 200. Intermediate beam quantities from 52 to 198 are available on request. Protection height H = (Beam Quantity − 1) × 20 mm. Total height L = Top cap + Bottom cap + Blind zones + Protection height. Maximum model: DPC-20020-NPN-NC (200 beams, H = 3980 mm, L = 4049 mm).

05 · 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	189	DPC-0440-NPN-NC
6	200	269	DPC-0640-NPN-NC
8	280	349	DPC-0840-NPN-NC
10	360	429	DPC-1040-NPN-NC
12	440	509	DPC-1240-NPN-NC
14	520	589	DPC-1440-NPN-NC
16	600	669	DPC-1640-NPN-NC
18	680	749	DPC-1840-NPN-NC
20	760	829	DPC-2040-NPN-NC
22	840	909	DPC-2240-NPN-NC
24	920	989	DPC-2440-NPN-NC
26	1000	1069	DPC-2640-NPN-NC
28	1080	1149	DPC-2840-NPN-NC
30	1160	1229	DPC-3040-NPN-NC
32	1240	1309	DPC-3240-NPN-NC
34	1320	1389	DPC-3440-NPN-NC
36	1400	1469	DPC-3640-NPN-NC
38	1480	1549	DPC-3840-NPN-NC
40	1560	1629	DPC-4040-NPN-NC
42	1640	1709	DPC-4240-NPN-NC
44	1720	1789	DPC-4440-NPN-NC
46	1800	1869	DPC-4640-NPN-NC
48	1880	1949	DPC-4840-NPN-NC
50	1960	2029	DPC-5040-NPN-NC

40 mm optical-axis pitch models are available with beam quantities from 4 to 200. Intermediate beam quantities from 52 to 198 are available on request. Protection height H = (Beam Quantity − 1) × 40 mm. Total height L = Top cap + Bottom cap + Blind zones + Protection height. Maximum model: DPC-20040-NPN-NC (200 beams, H = 7960 mm, L = 8029 mm).

06 · DIMENSIONS

DPC Series Dimensions

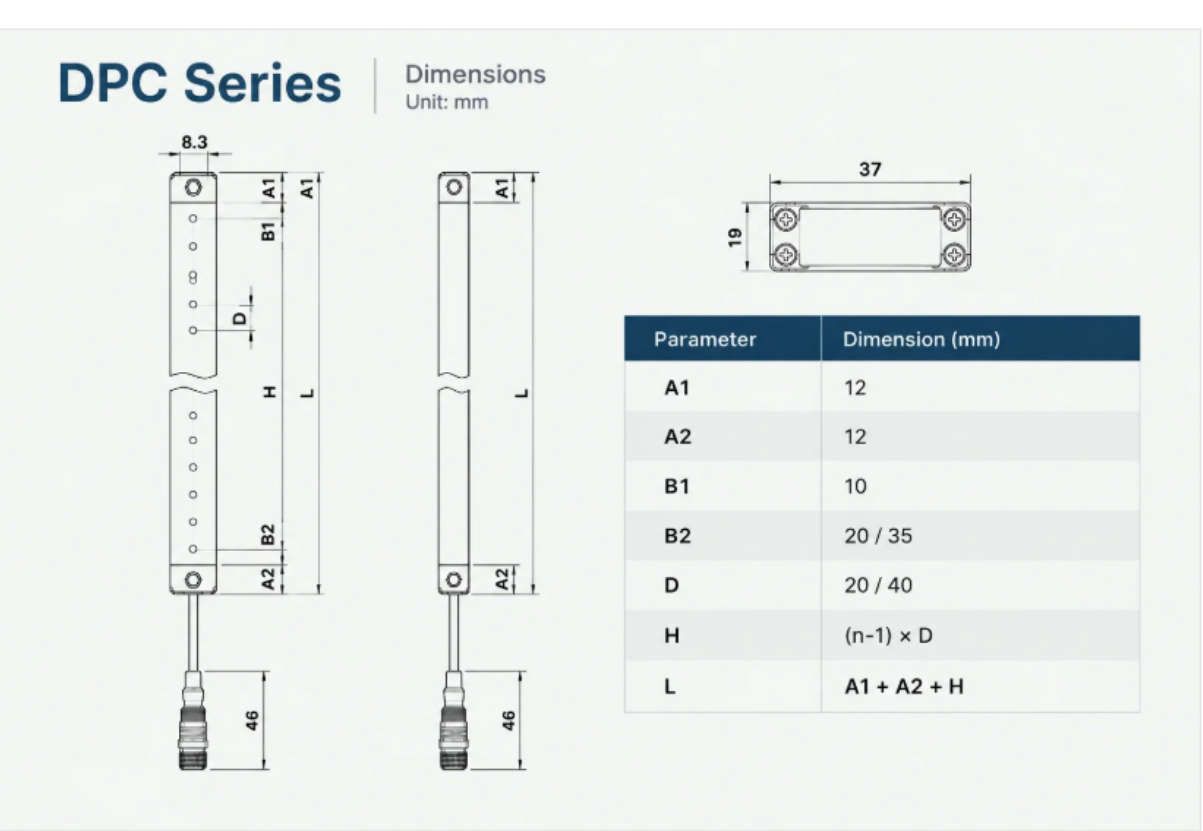
Side ultra-thin 36.5 × 19 mm aluminium alloy housing for space-constrained installations.

The DPC Series uses a side ultra-thin industrial housing with a confirmed cross section of 36.5 × 19 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 DPC model page and CAD drawing.

Housing Cross Section	36.5 × 19 mm
Top Cap (A1)	12 mm
Bottom Cap (A2)	12 mm
PCB Upper Blind Zone (B1)	10 mm
PCB Lower Blind Zone (B2)	10 mm (4 beams @ 20 mm) / 35 mm (other models)
Optical-Axis Pitch (D)	20 / 40 mm
Protection Height (H)	(Beam Quantity − 1) × Pitch
Total Height (L)	Caps + Blind Zones + Protection Height
Mounting	Side mounting



Parameter	Dimension (mm)
A1	12
A2	12
B1	10
B2	20 / 35
D	20 / 40
H	(n-1) × D
L	A1 + A2 + H

FIGURE 2 · DPC SERIES MECHANICAL DIMENSIONS

Measurement unit: mm. Data is manually measured and may contain minor deviations — please refer to the actual product for final dimensions.

07 · INSTALLATION

DPC Series Installation

The DPC Series uses a side mounting configuration with standard side mounting brackets. The emitter and receiver are fixed to the machine frame through the mounting brackets on the side of the housing.

The DPC Series uses a side mounting configuration: the emitter and receiver are secured by the side mounting brackets on the aluminium alloy housing.

Each unit is fixed with the standard bracket set — M5 long nuts and screws — so the sensor pair can be mounted directly onto compact machines and space-constrained automation equipment.

MOUNTING POSITION
Side of the emitter and receiver housing.

BRACKET SET
Standard side mounting brackets with M5 long nuts and screws.

ALIGNMENT
The emitter and receiver must be mounted parallel with the optical axes facing each other, so the beams stay aligned across the detection distance.

INSTALLATION SPACE
The 36.5 × 19 mm side ultra-thin housing allows mounting where installation space is limited.

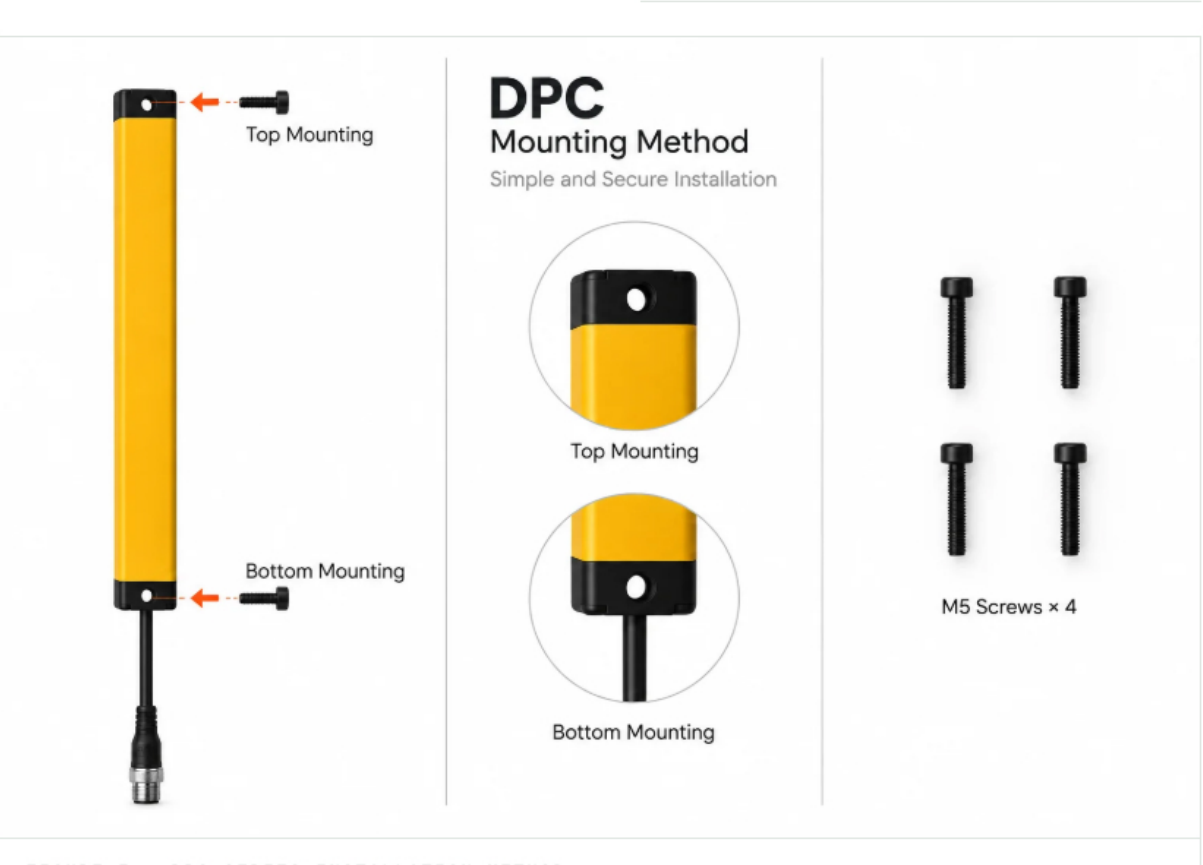


FIGURE 3 · DPC SERIES INSTALLATION METHOD

08 · WIRING PRINCIPLE

DPC Series Wiring Principle

The DPC Series supports both NPN and PNP output wiring configurations. Select the wiring method according to the output type of the selected model.

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. Connect the emitter and receiver to DC24V according to the wiring diagram.

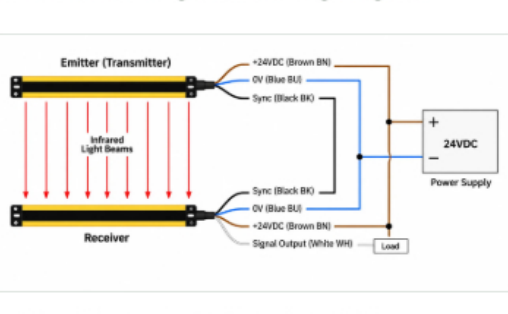


FIGURE 4 · NPN OUTPUT WIRING

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. Connect the emitter and receiver to DC24V according to the wiring diagram.

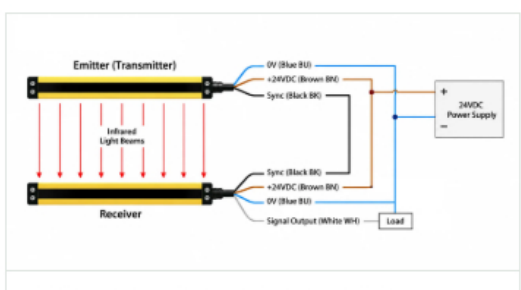


FIGURE 5 · PNP OUTPUT WIRING

The actual wiring should follow the wiring diagram provided for the selected DPC model. Verify the output type (NPN / PNP) and output logic (NC / NO) before connecting to the machine control circuit.

09 · ACCESSORIES

DPC Series Accessories & Mounting Brackets

The DPC Series includes the emitter and receiver as the main sensing components. Connection cables and mounting accessories are used for installation and system connection.

Emitter & Receiver Set

One set of emitter and receiver units is included as the main sensing components of the DPC Series.

Signal Connection Cables

Two signal connection cables, approximately 3 m each. Custom lengths are available on request.

Side Mounting Brackets

Standard side mounting brackets with M5 long nuts and screws for conventional installation.

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

FIGURE 6 · DPC SERIES ACCESSORIES & MOUNTING BRACKETS

10 · APPLICATIONS

DPC Series Industrial Applications

The DPC Series is suitable for industrial automation, machine area detection, machine protection, personnel protection, object detection, conveyor monitoring, packaging equipment 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
- Compact Machine Guarding

11 · FAQ & CONTACT

FAQ & Contact Information

Frequently asked questions and DAPPRA contact details.

What is the DAPPRA DPC Series?
The DAPPRA DPC Series is a side ultra-thin Industrial Area Sensor and Safety Light Curtain series designed for compact machines and automation equipment where installation space is limited.

What optical-axis pitches are available in the DPC Series?
The DPC Series provides 20 mm and 40 mm optical-axis pitch configurations.

What is the housing cross section of the DPC Series?
The DPC Series uses a side ultra-thin housing with a cross section of 36.5 × 19 mm, saving installation space for compact machines.

What is the response time of the DPC Series?
The DPC Series response time is <10 ms, with the fastest models reaching <1 ms.

What is the protection rating of the DPC Series?
The DPC Series uses an IP65 protection configuration with an aluminium alloy housing.

What is the maximum beam quantity of the DPC Series?
The DPC Series supports up to 200 optical beams for both 20 mm and 40 mm optical-axis pitch configurations.

Does the DPC Series support NPN NC output?
Yes. DAPPRA DPC NPN NC models are available within the DPC Series, together with PNP output options.

Contact DAPPRA

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

EMAIL
sales@dappra.com

WHATSAPP
+62 878 5542 7784

WEBSITE
www.dappra.com

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. DPC Series Datasheet · Doc No. DPC-DS-001 · Rev. 1.0 · 2021-01.