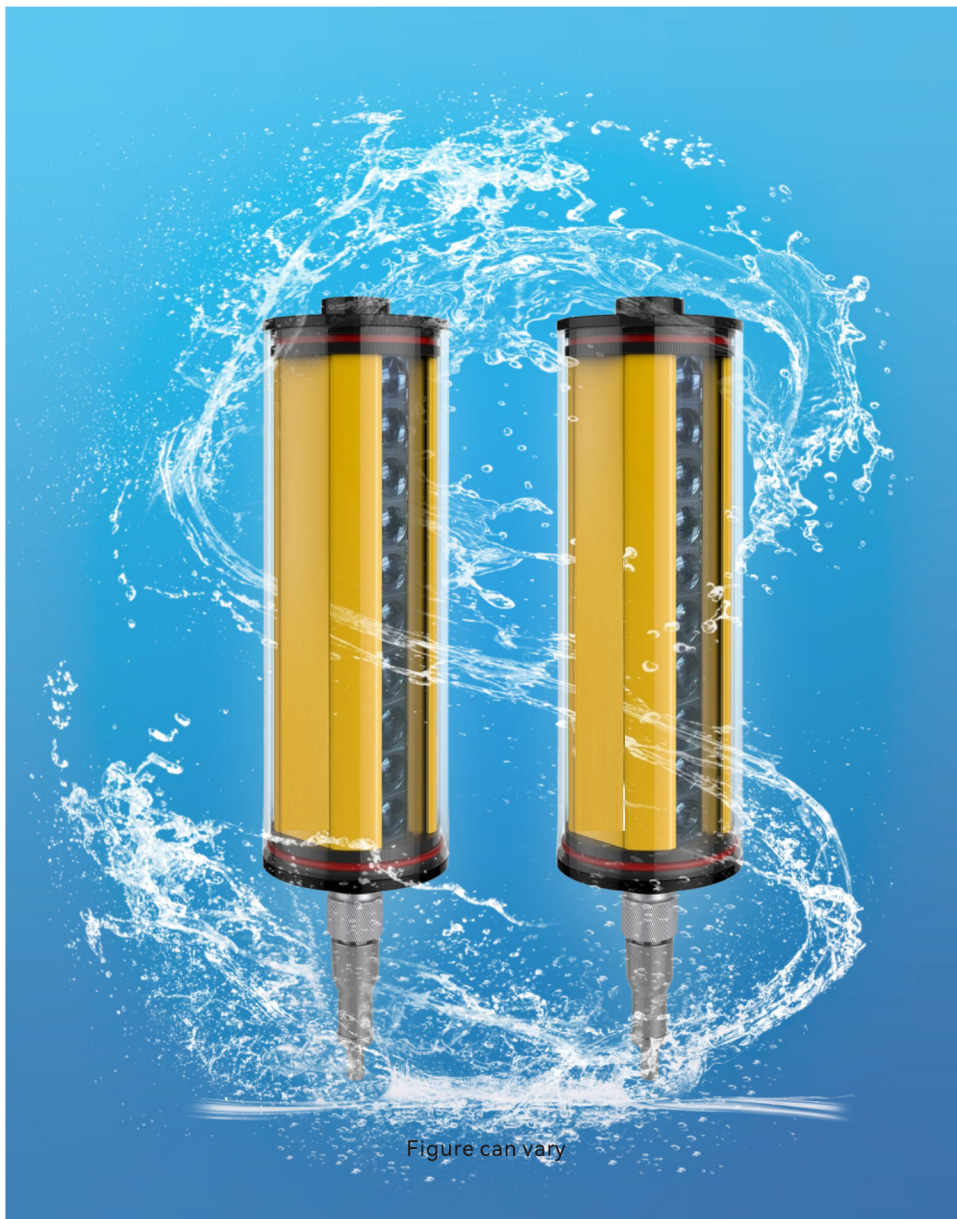


TECHNICAL DATA SHEET

SAFETY LIGHT CURTAIN SENSOR Emitter and Receiver **DQR series**



Contents

- Product application
- Resolution ratio
- Technical data
- Operation and display
- Dimensioned drawings
- Electrical connection
- Wiring diagram
- Accessories



Solutions

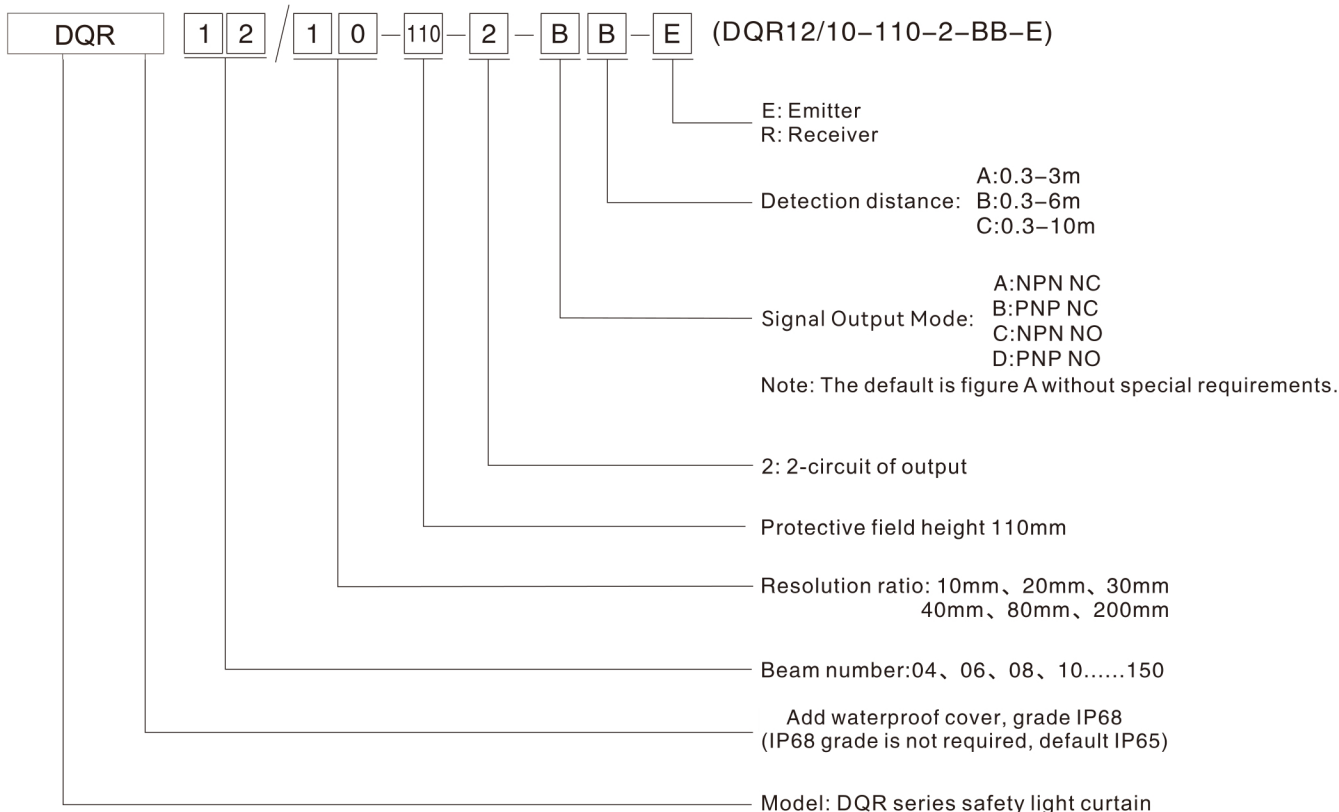


GB/T 19001-2016

Product application

- A. Light curtain can achieve full protection for the slider can be stopped at any position on the press machine.
- B. The light curtain can only achieve upper dead point protection if the slider can not be stopped at any position on the press machine.
- C. Realize the regional protection for the industry manipulator, injection molding machines, packaging equipment, automation equipment, assembly wires and other dangerous work area.
- D. Used to detect and alarm object.

The specifications of DQR type safety light curtain are as follows:



Resolution ratio

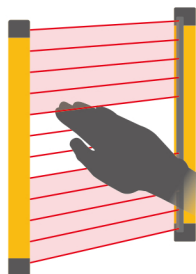
Depending on the usage environment and requirements, it is important to choose the appropriate beam spacing

Finger protection



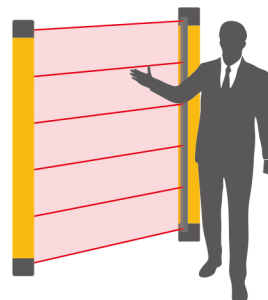
Detection capability
10/14/20mm
diameter

Hand protection



Detection capability
30/40mm
diameter

Arm/body protection



Detection capability
80/200mm
diameter

Technical data

Basic data of Receiver and Emitter

Standard packaging	
Product model	DQR series
Standard configuration	One receiver, one transmitter, two data lines, one right-angle rack, and one t-shaped screw
Light curtain form	Infrared radiation type
Application	Standard industrial environment

Features	
Resolution ratio	10mm, 20mm, 30mm, 40mm, 80mm
Check the accuracy	18mm, 28mm, 38mm, 48mm, 88mm
Number of beams	04、06、08、10.....150
Overall dimension	φ50mm*L, L is the length of emitter and receiver.
Detection distance	30-6000mm
Response time	≤15ms

Synchronization	
Consumption current	≤200mA
Output mode	2-circuit of PNP, with current of 500mA and voltage below 1.5V, polarity, short circuit and over-cutting protection
Output status	ON (receiving indicator green light)
Indicator light	Transmitter: power indicator light (red); receiver: output indicator light on (green), blackout (red)
Wavelength	850nm
Type of light	Infrared light (NIR), invisible
Function	Automatic reset

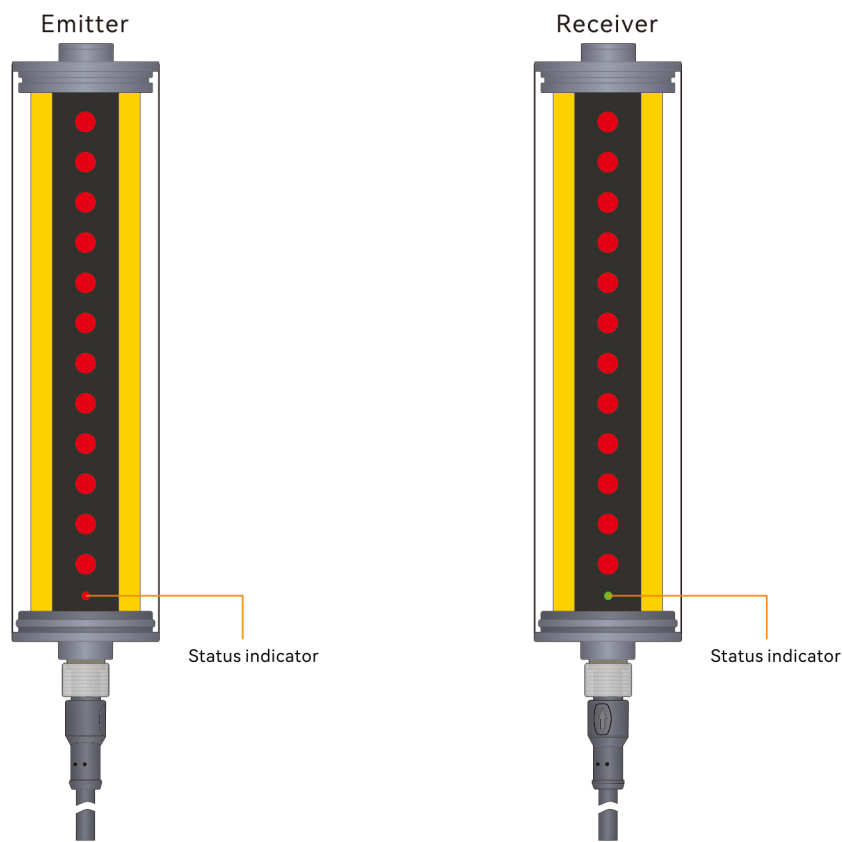
Mechanical data	
Housing material	Metal
Metal shell	Aluminium
Lens front screen material	Acrylic
Upper and lower cover materials	ABS reinforced nylon PA66+30% GF

Performance data	
Protection circuit	Short circuit protection Overvoltage protection
Supply voltage	24VDC, -20...20%
Maximum current consumption	150mA
Fuse	2A half time interval

Environmental data	
Protection grade	IP68
Resistance to ambient light	Incandescent light: illumination of light-receiving surface 3000Lx; Sunlight: illumination of light-receiving surface 10000Lx
Ambient temperature	Working temperature: - 10~+40 °C (but not frozen), storage temperature: - 25 ~+55 °C
Ambient humidity	Working time: 35~85% RH, saving time: 35~95% RH

Output	
Number of safe output circuits (OSSD)	2-circuit
Type	Safety circuit output circuit OSSD
Minimum switch voltage high	18V
Minimum switch voltage low	2.5V
Typical switching voltage	22.5V
Voltage type	DC
Maximum current load	380mA
Load inductance	two thousand
Load capacity	zero point three
Maximum residual current	0.2mA
Typical residual current	0.002MA
Voltage drop	1.5V
Safety switch output 1	Connection pin 4, WHITE OSSD1
Switching element	Transistor PNP
Safety switch output 2	Connection pin 5, GREEN OSSD2
Switching element	Transistor PNP
Certificate	
CE TÜV	No.E8A 104143 0001 Rev.00
ROHS certification	No.BSTDG180811032001CC
CE TYPE 4	No.ICR Polska/VC/HS221222
UL	No. 4790783741.1-S
ISO	No. HIC180327 GB/T 19001-2016 / ISO 9001:2015

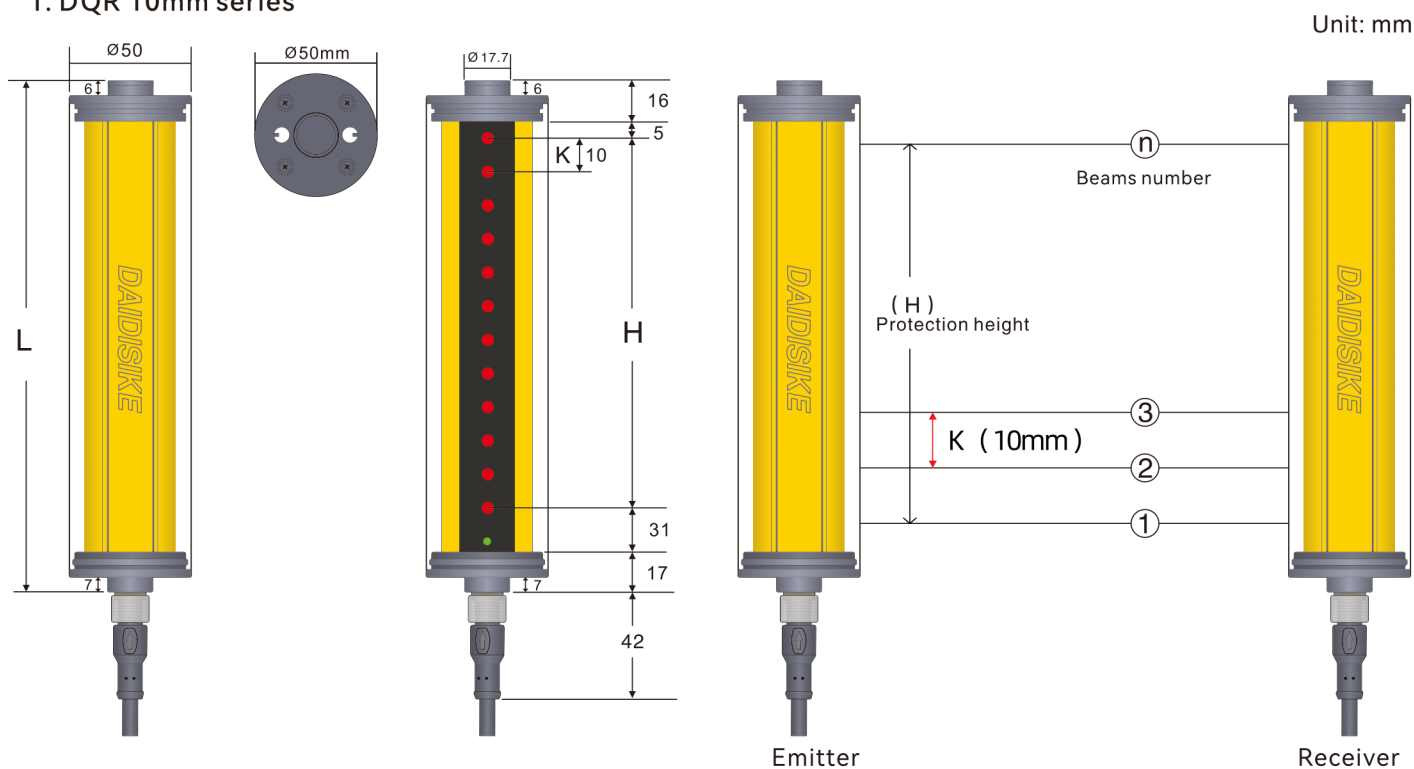
Operation and display



Normal operation of light curtain	LED Indicator status		Explain
Emitter		Red, always on	Turns on the power
		Receiver and emitter are red	Receiver and Emitter are not aligned
Receiver		Green	All light paths are connected
		Red	Light path shading
		Lights flashing	Interference or overstep detection range

Dimensioned drawings

1. DQR 10mm series



Remarks

L: Total length of light screen

H: Height of protected area

K: Resolution ratio

n: Beams number

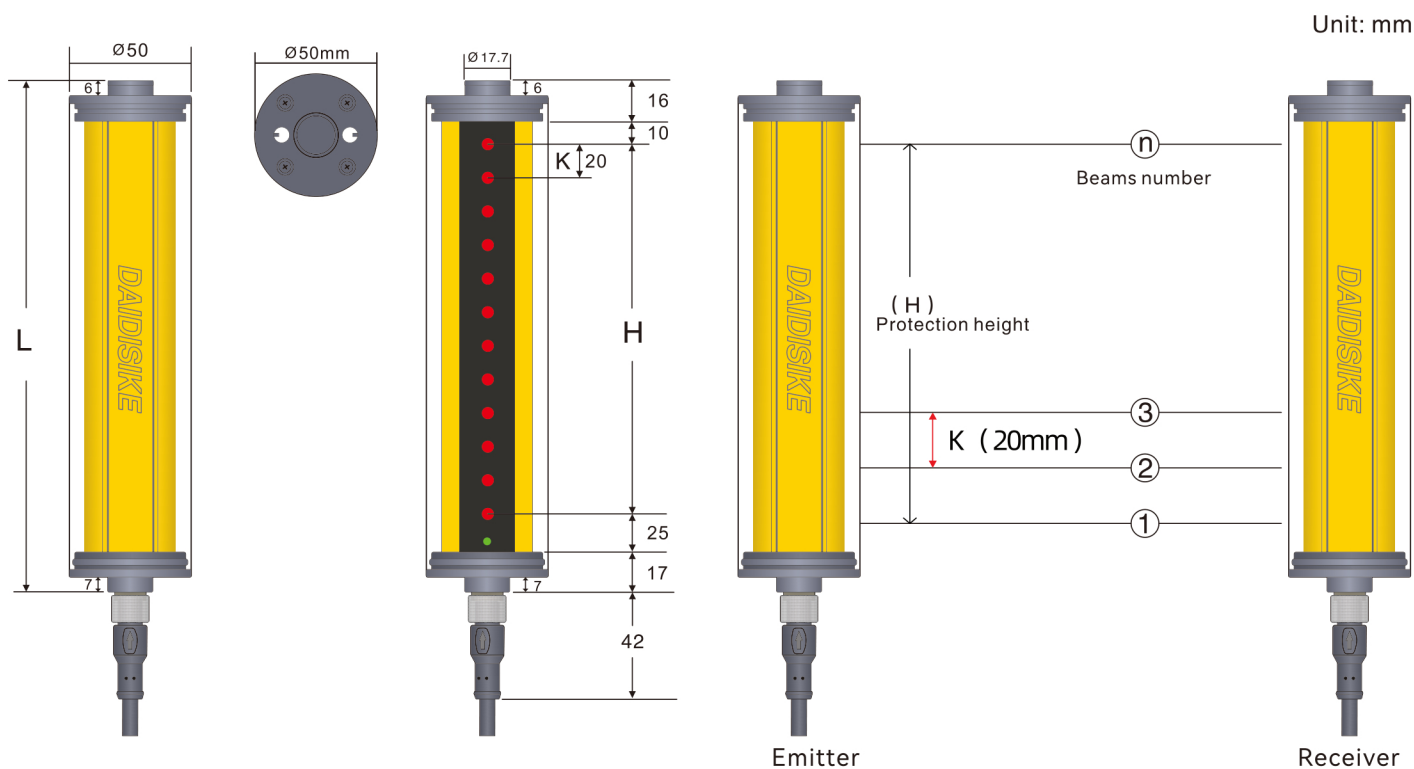
$L = 16 + 5 + H + 31 + 17$

$H = (n - 1) * 10$

DQR 10mm specification list

Resolution	Light beam	Protection height (H)	Total height (L)	Product model	Signal output mode		Detection range
					Two outputs	PNP output	
10mm (K)	6	50	119	DQR06/10-50	2	PNP	0.3-6m
	8	70	139	DQR08/10-70	2	PNP	0.3-6m
	10	90	159	DQR10/10-90	2	PNP	0.3-6m
	12	110	179	DQR12/10-110	2	PNP	0.3-6m
	14	130	199	DQR14/10-130	2	PNP	0.3-6m
	16	150	219	DQR16/10-150	2	PNP	0.3-6m
	18	170	239	DQR18/10-170	2	PNP	0.3-6m
	20	190	259	DQR20/10-190	2	PNP	0.3-6m
	22	210	279	DQR22/10-210	2	PNP	0.3-6m
	24	230	299	DQR24/10-230	2	PNP	0.3-6m
	26	250	319	DQR26/10-250	2	PNP	0.3-6m
	28	270	339	DQR28/10-270	2	PNP	0.3-6m
	30	290	359	DQR30/10-290	2	PNP	0.3-6m
	32	310	379	DQR32/10-310	2	PNP	0.3-6m
	34	330	399	DQR34/10-330	2	PNP	0.3-6m
	36	350	419	DQR36/10-350	2	PNP	0.3-6m
	38	370	439	DQR38/10-370	2	PNP	0.3-6m
	40	390	459	DQR40/10-390	2	PNP	0.3-6m
	42	410	479	DQR42/10-410	2	PNP	0.3-6m
	44	430	499	DQR44/10-430	2	PNP	0.3-6m
	46	450	519	DQR46/10-450	2	PNP	0.3-6m
	48	470	539	DQR48/10-470	2	PNP	0.3-6m
	50	490	559	DQR50/10-490	2	PNP	0.3-6m
	52	510	579	DQR52/10-510	2	PNP	0.3-6m
	...	...	...	...	2	PNP	0.3-6m
	146	1450	1519	DQR56/10-1450	2	PNP	0.3-6m
	148	1470	1539	DQR58/10-1470	2	PNP	0.3-6m
	150	1490	1559	DQR60/10-1490	2	PNP	0.3-6m

2.DQR 20mm series



Remarks

L: Total length of light screen

H: Height of protected area

K: Resolution ratio

n: Beams number

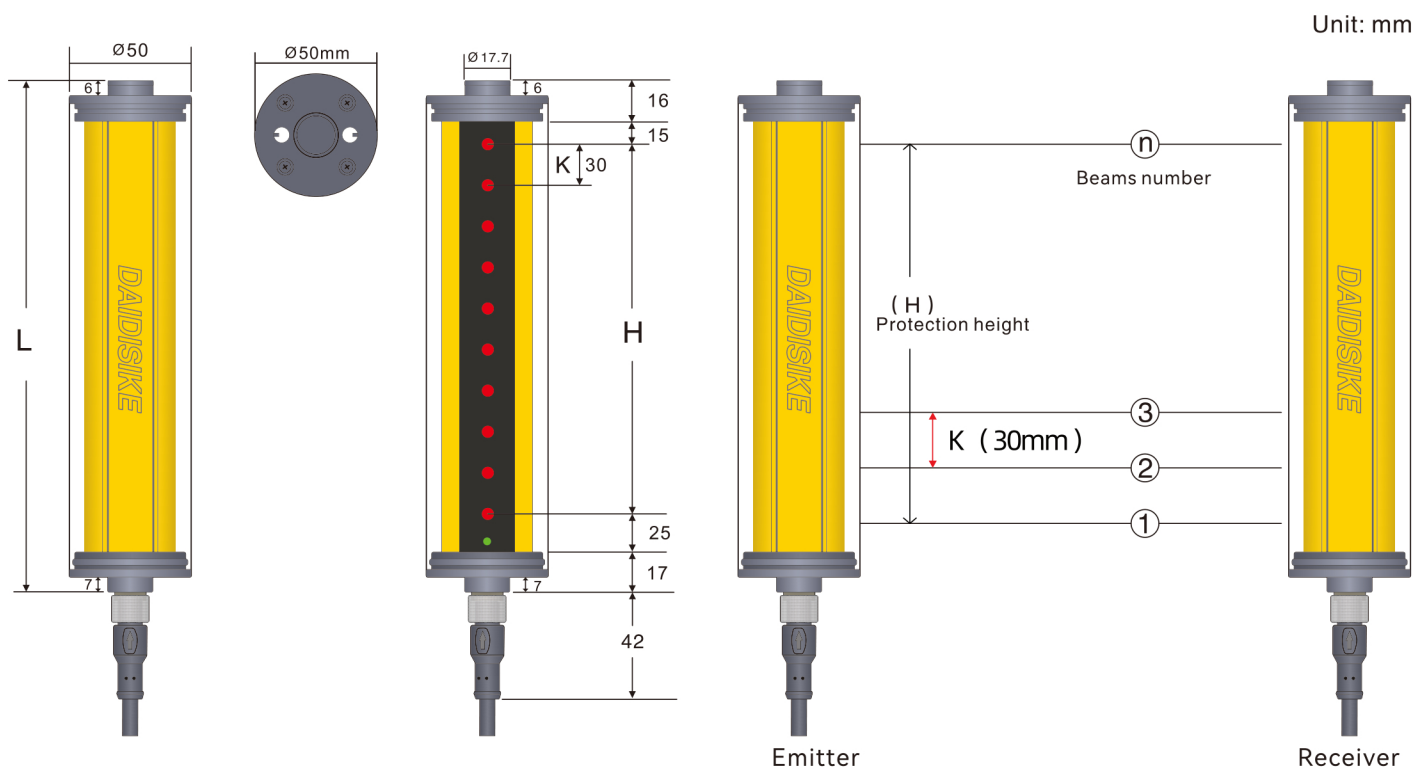
$$L = 16 + 10 + H + 25 + 17$$

$$H = (n - 1) \times 20$$

DQR 20mm specification list

Resolution	Light beam	Protection height (H)	Total height (L)	Product model	Signal output mode		Detection range
					Two outputs	PNP output	
20mm (K)	4	60	128	DQR04/20-60	2	PNP	0.3-6m
	6	100	168	DQR06/20-100	2	PNP	0.3-6m
	8	140	208	DQR08/20-140	2	PNP	0.3-6m
	10	180	248	DQR10/20-180	2	PNP	0.3-6m
	12	220	288	DQR12/20-220	2	PNP	0.3-6m
	14	260	328	DQR14/20-260	2	PNP	0.3-6m
	16	300	368	DQR16/20-300	2	PNP	0.3-6m
	18	340	408	DQR18/20-340	2	PNP	0.3-6m
	20	380	448	DQR20/20-380	2	PNP	0.3-6m
	22	420	488	DQR22/20-420	2	PNP	0.3-6m
	24	460	528	DQR24/20-460	2	PNP	0.3-6m
	26	500	568	DQR26/20-500	2	PNP	0.3-6m
	28	540	608	DQR28/20-540	2	PNP	0.3-6m
	30	580	648	DQR30/20-580	2	PNP	0.3-6m
	32	620	688	DQR32/20-620	2	PNP	0.3-6m
	34	660	728	DQR34/20-660	2	PNP	0.3-6m
	36	700	768	DQR36/20-700	2	PNP	0.3-6m
	38	740	808	DQR38/20-740	2	PNP	0.3-6m
	40	780	848	DQR40/20-780	2	PNP	0.3-6m
	42	820	888	DQR42/20-820	2	PNP	0.3-6m
	44	860	928	DQR44/20-860	2	PNP	0.3-6m
	46	900	968	DQR46/20-900	2	PNP	0.3-6m
	48	940	1008	DQR48/20-940	2	PNP	0.3-6m
	50	980	1048	DQR50/20-980	2	PNP	0.3-6m
	...	...	...	...	2	PNP	0.3-6m
	68	1340	1408	DQR68/20-1340	2	PNP	0.3-6m
	70	1380	1448	DQR70/20-1380	2	PNP	0.3-6m
	72	1420	1488	DQR72/20-1420	2	PNP	0.3-6m

3. DQR 30mm series



Remarks

L: Total length of light screen

H: Height of protected area

K: Resolution ratio

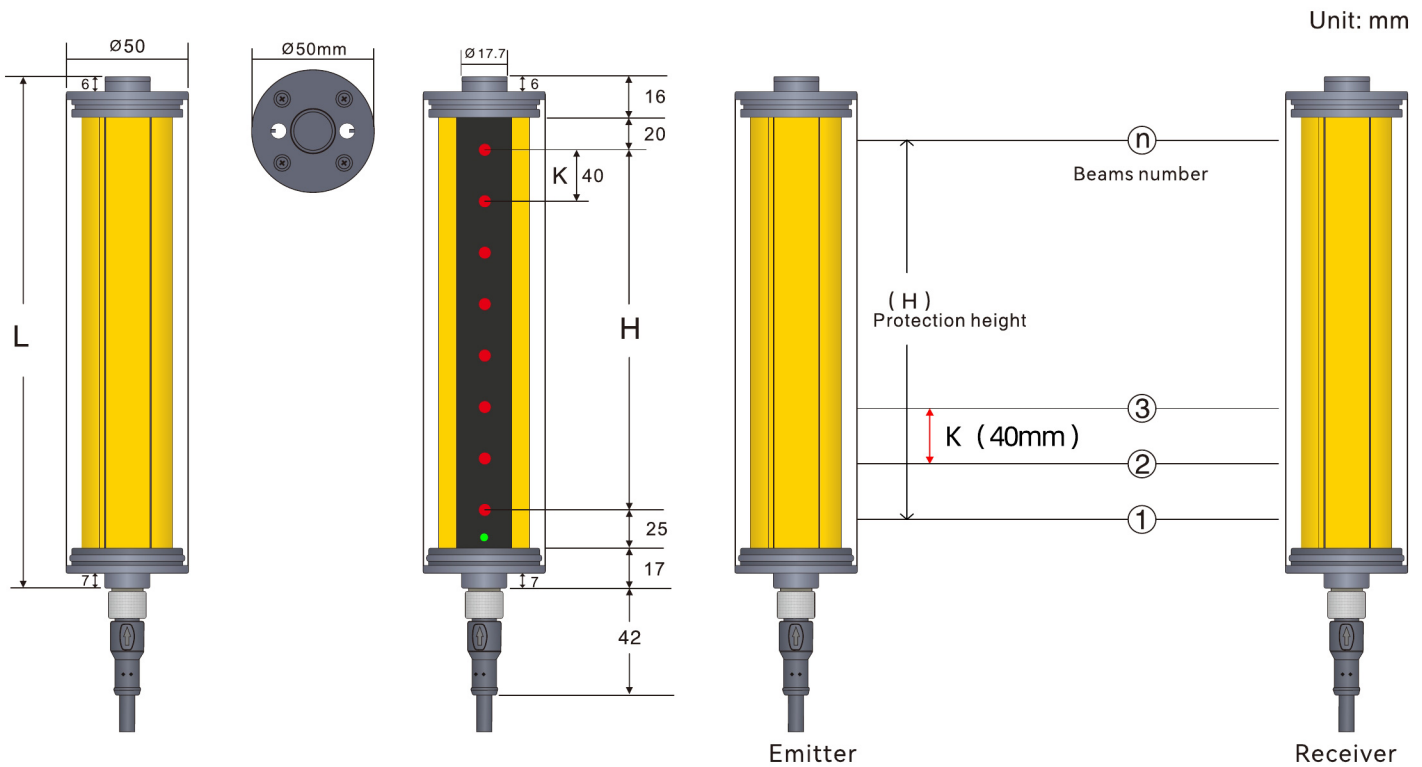
n: Beams number

 $L = 16 + 15 + H + 25 + 17$ $H = (n - 1) \times 30$

DQR 30mm specification list

Resolution	Light beam	Protection height (H)	Total height (L)	Product model	Signal output mode		Detection range
					Two outputs	PNP output	
30mm (K)	4	90	163	DQR04/30-90	2	PNP	0.3-6m
	6	150	223	DQR06/30-150	2	PNP	0.3-6m
	8	210	283	DQR08/30-210	2	PNP	0.3-6m
	10	270	343	DQR10/30-270	2	PNP	0.3-6m
	12	330	403	DQR12/30-330	2	PNP	0.3-6m
	14	390	463	DQR14/30-390	2	PNP	0.3-6m
	16	450	523	DQR16/30-450	2	PNP	0.3-6m
	18	510	583	DQR18/30-510	2	PNP	0.3-6m
	20	570	643	DQR20/30-570	2	PNP	0.3-6m
	22	630	703	DQR22/30-630	2	PNP	0.3-6m
	24	690	763	DQR24/30-690	2	PNP	0.3-6m
	26	750	823	DQR26/30-750	2	PNP	0.3-6m
	28	810	883	DQR28/30-810	2	PNP	0.3-6m
	30	870	943	DQR30/30-870	2	PNP	0.3-6m
	32	930	1003	DQR32/30-930	2	PNP	0.3-6m

4. DQR40mm series



Remarks

L: Total length of light screen

H: Height of protected area

K: Resolution ratio

n: Beams number

$$L = 16 + 20 + H + 25 + 17$$

$$H = (n - 1) \times 40$$

DQR 40mm specification list

Resolution	Light beam	Protection height (H)	Total height (L)	Product model	Signal output mode		Detection range
					Two outputs	PNP output	
40mm (K)	4	120	198	DQR 04/40-120	2	PNP	0.3-6m
	6	200	278	DQR 06/40-200	2	PNP	0.3-6m
	8	280	358	DQR 08/40-280	2	PNP	0.3-6m
	10	360	438	DQR 10/40-360	2	PNP	0.3-6m
	12	440	518	DQR 12/40-440	2	PNP	0.3-6m
	14	520	598	DQR 14/40-520	2	PNP	0.3-6m
	16	600	678	DQR 16/40-600	2	PNP	0.3-6m
	18	680	758	DQR 18/40-680	2	PNP	0.3-6m
	20	760	838	DQR 20/40-760	2	PNP	0.3-6m
	22	840	918	DQR 22/40-840	2	PNP	0.3-6m
	24	920	998	DQR 24/40-920	2	PNP	0.3-6m
	26	1000	1078	DQR 26/40-1000	2	PNP	0.3-6m
	28	1080	1158	DQR 28/40-1080	2	PNP	0.3-6m
	30	1160	1238	DQR 30/40-1160	2	PNP	0.3-6m
	32	1240	1318	DQR 32/40-1240	2	PNP	0.3-6m
	34	1320	1398	DQR 34/40-1320	2	PNP	0.3-6m
	36	1400	1478	DQR 36/40-1400	2	PNP	0.3-6m
	38	1480	1558	DQR 38/40-1480	2	PNP	0.3-6m
	40	1560	1638	DQR 40/40-1560	2	PNP	0.3-6m
	42	1640	1718	DQR 42/40-1640	2	PNP	0.3-6m
	44	1720	1798	DQR 44/40-1720	2	PNP	0.3-6m
	46	1800	1878	DQR 46/40-1800	2	PNP	0.3-6m
	48	1880	1958	DQR 48/40-1880	2	PNP	0.3-6m
	50	1960	2038	DQR 50/40-1960	2	PNP	0.3-6m
	...	...	...	...	2	PNP	0.3-6m
	68	2680	2758	DQR 28/40-2680	2	PNP	0.3-6m
	70	2760	2838	DQR 30/40-2760	2	PNP	0.3-6m
	72	2840	2918	DQR 32/40-2840	2	PNP	0.3-6m

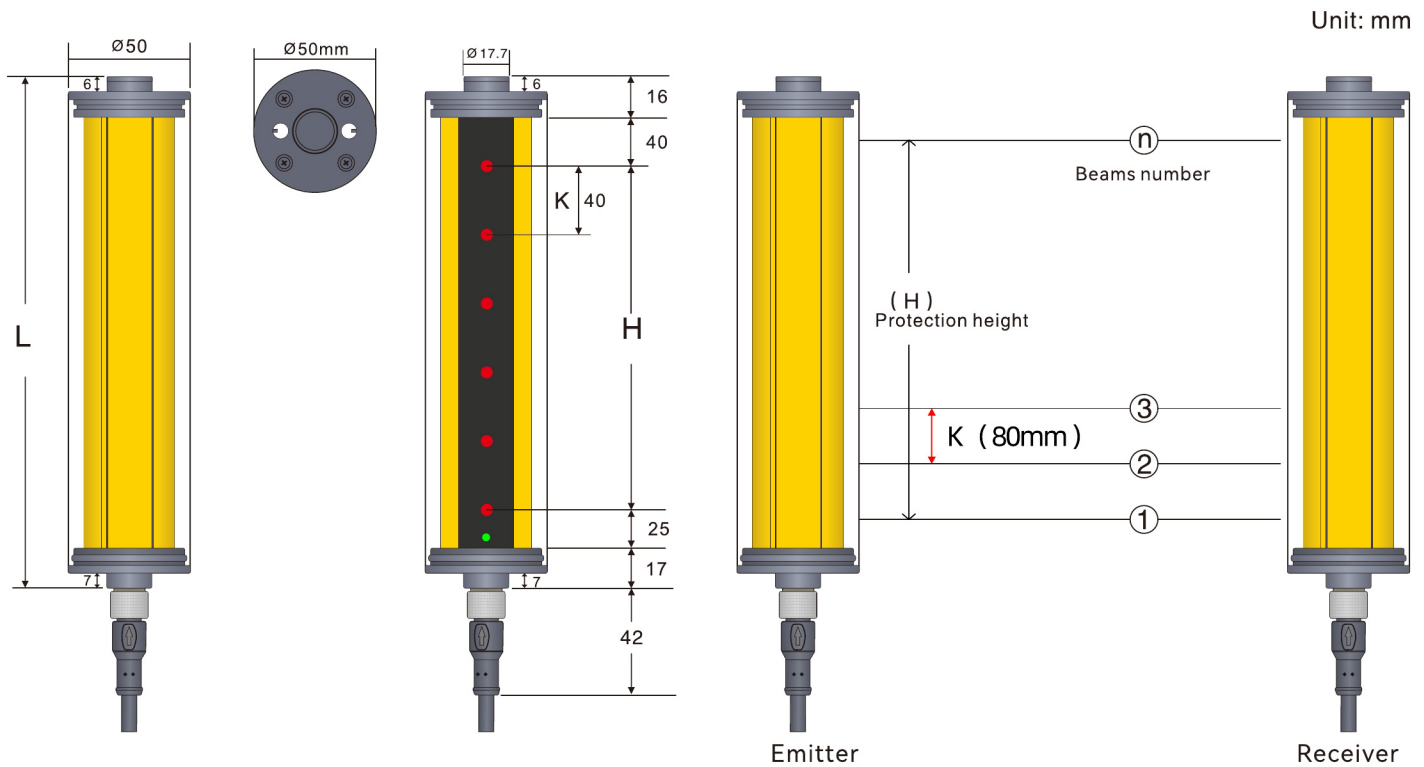
Foshan Daidisike Photoelectric Technology Co., Ltd.

Address : Workshop 1002, Gate A, Building 5, Jicheng Kechuang Park, Beijiao Town, Shunde District, Foshan, Guangdong, China Contact: Julie

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5. DQR80mm series



Remarks

L: Total length of light screen

H: Height of protected area

K: Resolution ratio

n: Beams number

$L = 16 + 40 + H + 25 + 17$

$H = (n - 1) \times 80$

DQR 80mm specification list

Resolution	Light beam	Protection height (H)	Total height (L)	Product model	Signal output mode		Detection range
					Two outputs	PNP output	
80mm (K)	4	240	338	DQR04/80-240	2	PNP	0.3-6m
	6	400	498	DQR06/80-400	2	PNP	0.3-6m
	8	560	658	DQR08/80-560	2	PNP	0.3-6m
	10	720	818	DQR10/80-720	2	PNP	0.3-6m
	12	880	978	DQR12/80-880	2	PNP	0.3-6m
	14	1040	1138	DQR14/80-1040	2	PNP	0.3-6m
	16	1200	1298	DQR16/80-1200	2	PNP	0.3-6m
	18	1360	1458	DQR18/80-1360	2	PNP	0.3-6m
	20	1520	1618	DQR20/80-1520	2	PNP	0.3-6m
	22	1680	1778	DQR22/80-1680	2	PNP	0.3-6m
	24	1840	1938	DQR24/80-1840	2	PNP	0.3-6m
	26	2000	2098	DQR26/80-2000	2	PNP	0.3-6m
	28	2160	2258	DQR28/80-2160	2	PNP	0.3-6m
	30	2320	2418	DQR30/80-2320	2	PNP	0.3-6m
	32	2480	2578	DQR32/80-2480	2	PNP	0.3-6m

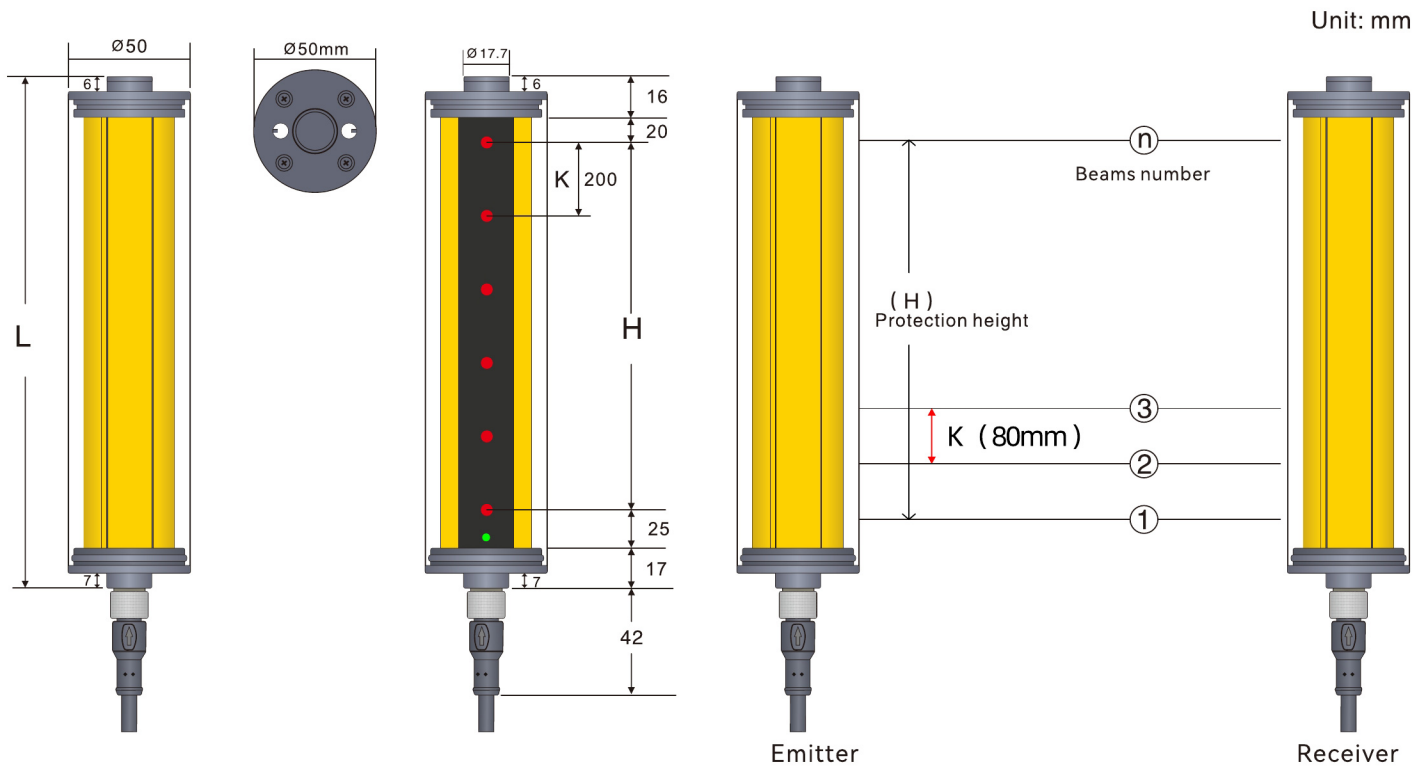
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6. DQR200mm series



Remarks

L: Total length of light screen

H: Height of protected area

K: Resolution ratio

n: Beams number

$L = 16 + 20 + H + 25 + 17$

$H = (n - 1) * 80$

DQR200mm specification list

Resolution	Light beam	Protection height (H)	Total height (L)	Product model	Signal output mode		Detection range
					Two outputs	PNP output	
200mm (K)	4	600	678	DQR 04/200-600	2	PNP	0.3-6m
	6	1000	1078	DQR 06/200-1000	2	PNP	0.3-6m
	8	1400	1478	DQR 08/200-1400	2	PNP	0.3-6m
	10	1800	1878	DQR 10/200-1800	2	PNP	0.3-6m
	12	2200	2278	DQR 12/200-2200	2	PNP	0.3-6m
	14	2600	2678	DQR 14/200-2600	2	PNP	0.3-6m
	16	3000	3078	DQR 16/200-3000	2	PNP	0.3-6m
	18	3400	3478	DQR 18/200-3400	2	PNP	0.3-6m

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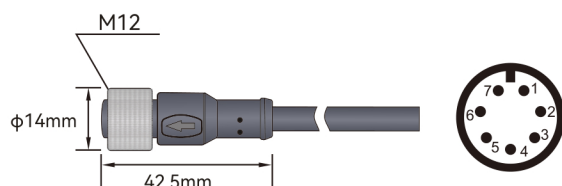
TEL : :86 15218909599

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Electrical connection

Electrical interface	
Number of interfaces	2 (receiver and transmitter)
Type	M12 connector, 7-pin
Interface metal	Copper nickel plating
Plug material	GY384 gray 30P
Allowable typical conductor section	0.25mm ²
Maximum link cable	100m
Maximum allowable cable load	4.9A
Cable material	PVC

Cable description:



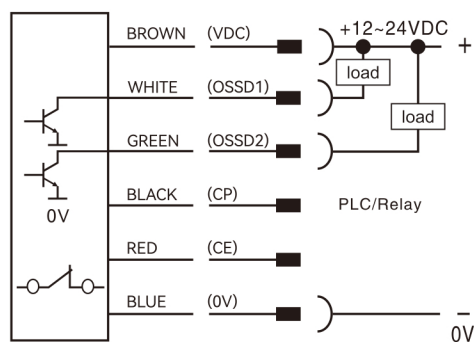
7-pin M12 cable connector straight
3m waterproof cable

Emitter Wiring diagram		
Pin number	Line color	Name
1	BROWN	24V DC
2	BLUE	0V
3	BLACK	CP
4	WHITE	NC
5	GREEN	NC
6	RED	CE
7	YELLOW	Ground wire

Receiver Wiring diagram		
Pin number	Line color	Name
1	BROWN	24V DC
2	BLUE	0V
3	BLACK	CP
4	WHITE	OSSD1
5	GREEN	OSSD2
6	RED	CE
7	YELLOW	Ground wire

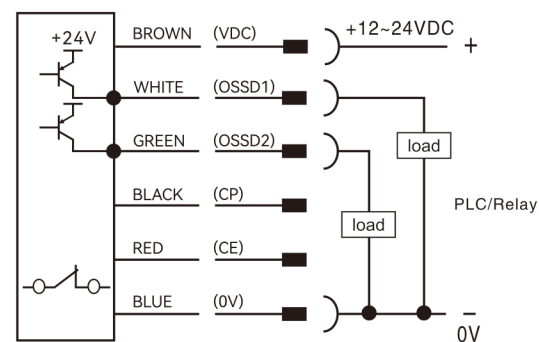
1. DQR signal output selection (actual output of transistor working normally)

NPN NC



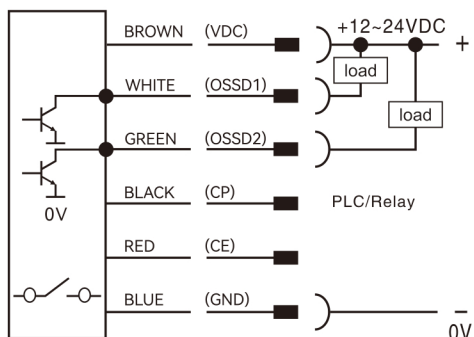
A

PNP NC



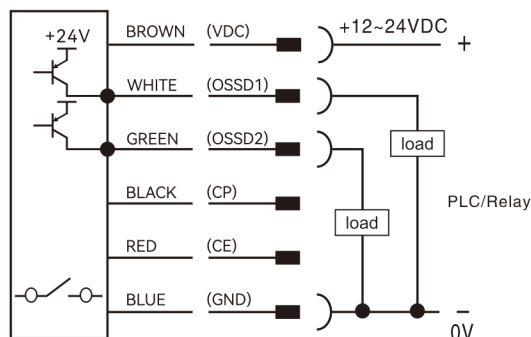
B

NPN NO



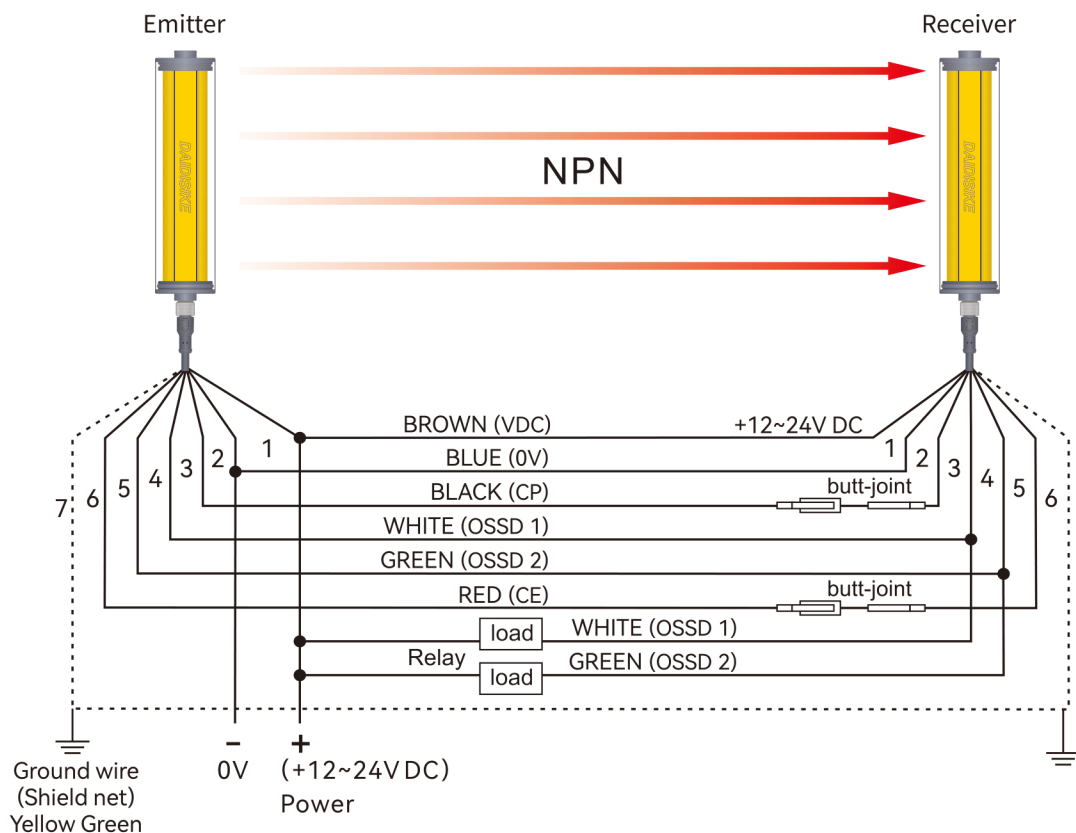
C

PNP NO



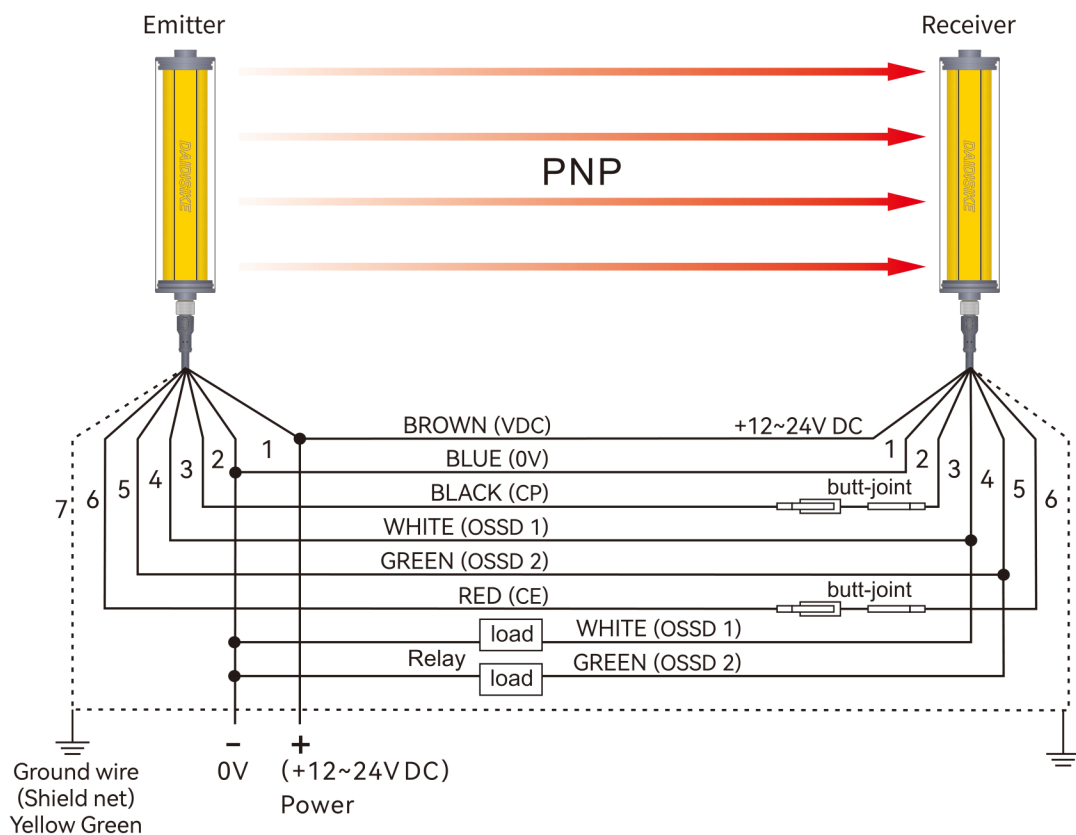
D

2. NPN output wiring diagram



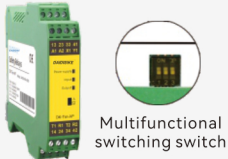
This figure is an example of NPN double output 7-pin wiring.

3. PNP output wiring diagram

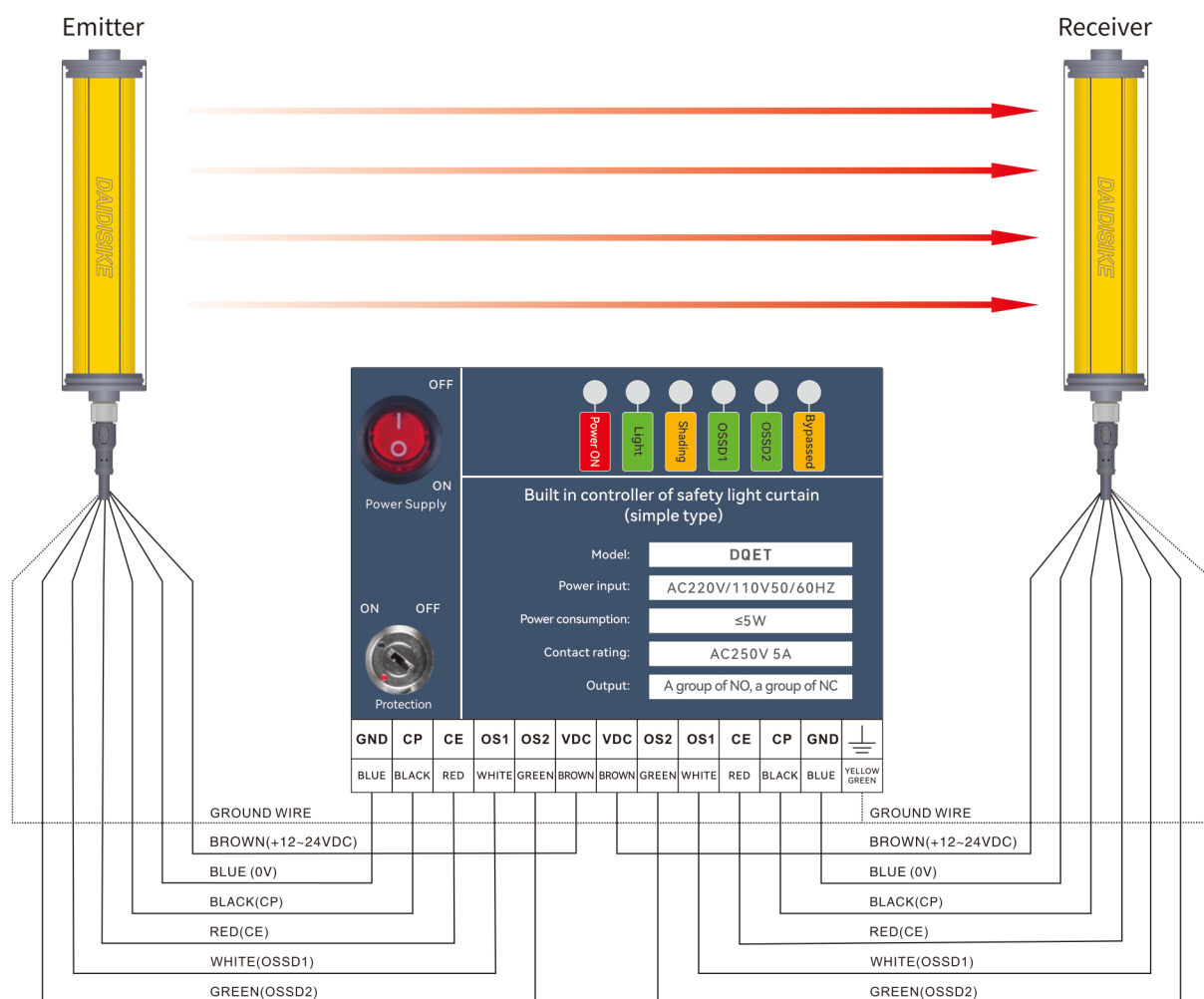


This figure is an example of PNP double output 7-pin wiring.

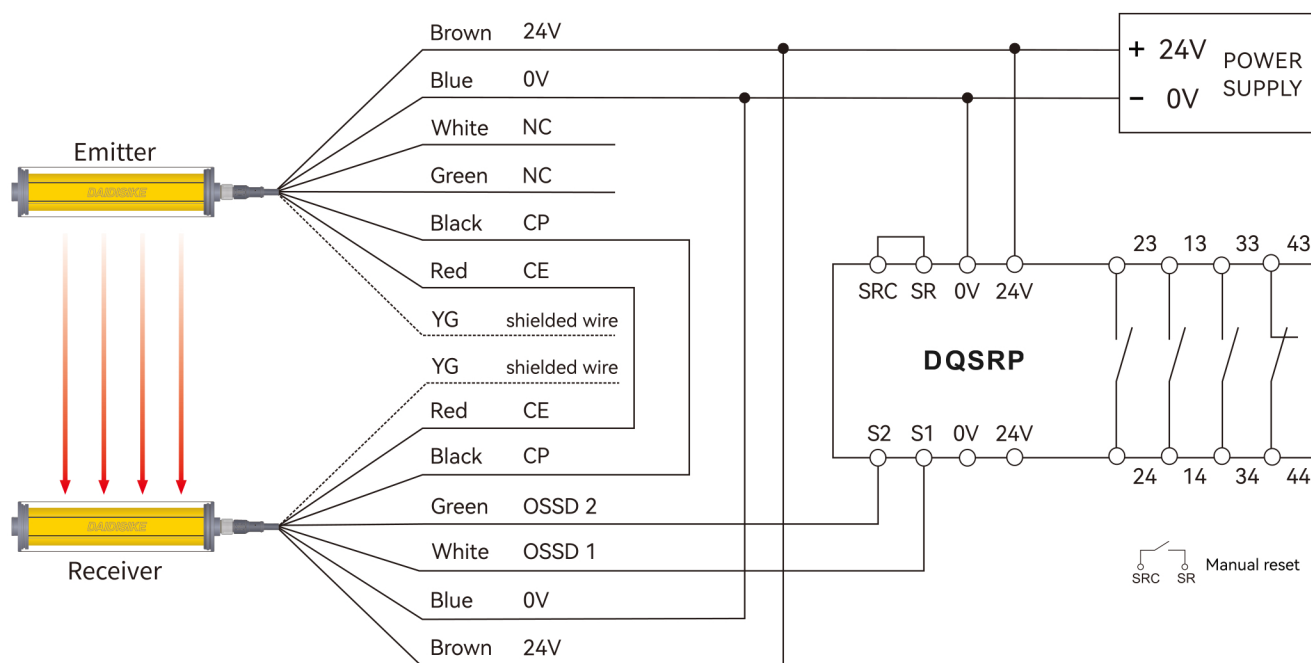
4. Selection of safety light curtain controller

Name	Order separately	Model	Descriptions
Built-in controller		DQET	Used to monitor the signal processing of DQR series light curtain, and output one group of NO and one group of NC.
Safety relay		DQSRP	DQSRP safety relays have three groups of NO and one group of NC, with strong control capabilities. They are suitable for various signal monitoring in industrial places with high safety requirements, including emergency stop signals, safety door opening and closing signals, safety light curtain signals, and two-handed button signals.
Safety relay		DA31P	Equipped with a mode switch, it can be used for most safety components, such as light curtains, safety switches, carpet contacts, two handed switches, etc. Automatic/manual reset paddles for quick configuration. Dual channel monitoring circuit, safe and reliable.
Light curtain relay		DQET-1	Output conversion between NC and NO for DQR series light curtain.

4.1 Wiring diagram of DQET built-in controller

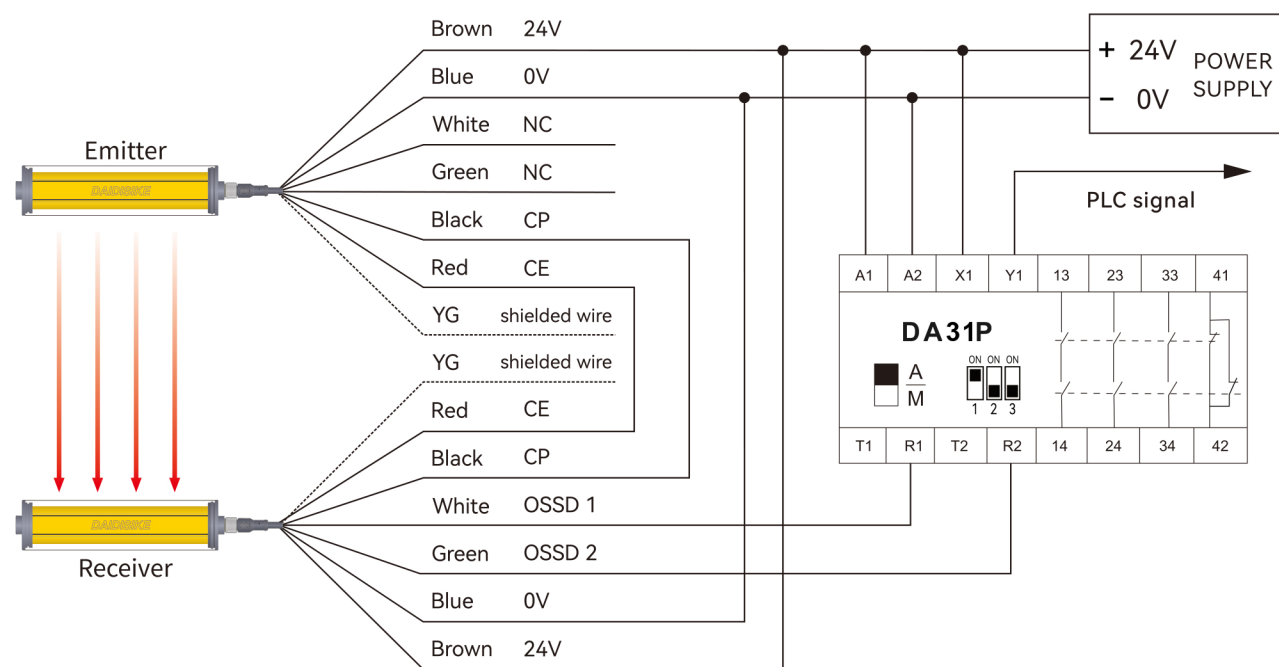


4.2 Wiring diagram of DQSRP safety relay

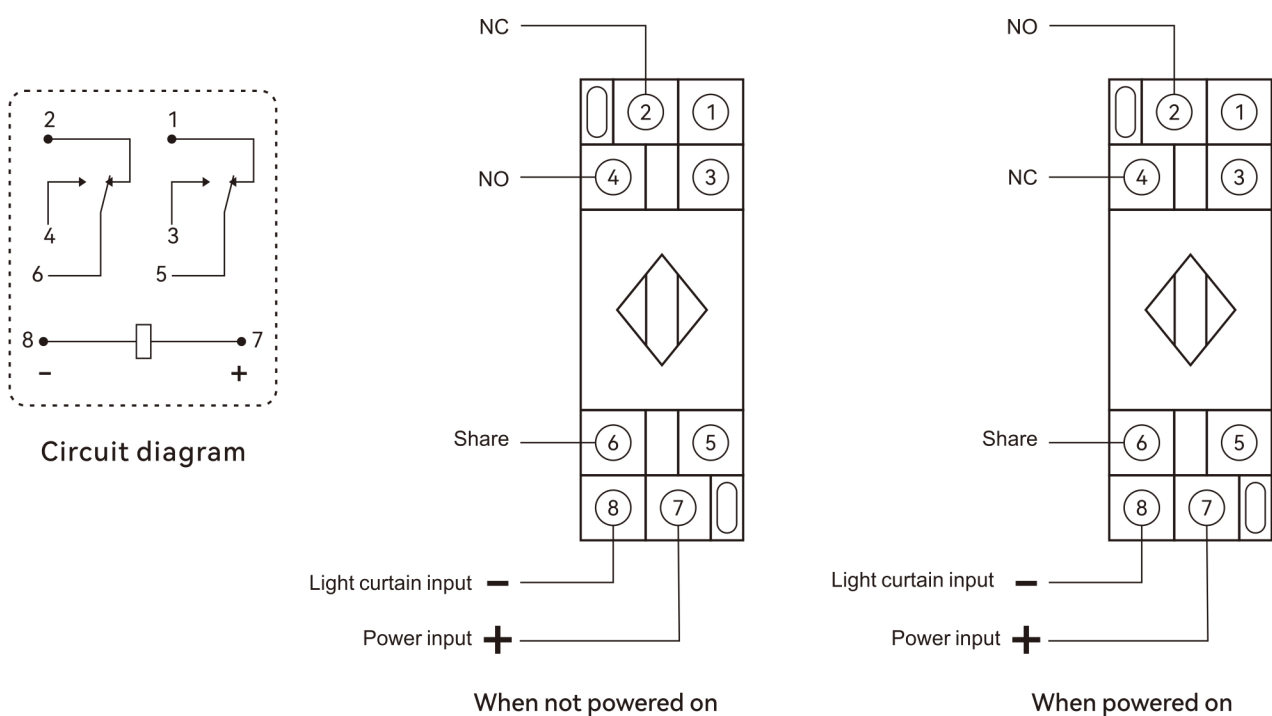


4.3 Wiring diagram of DA31P safety relay

Dual channel light curtain PNP switch safety input, with automatic reset and PLC signal output.

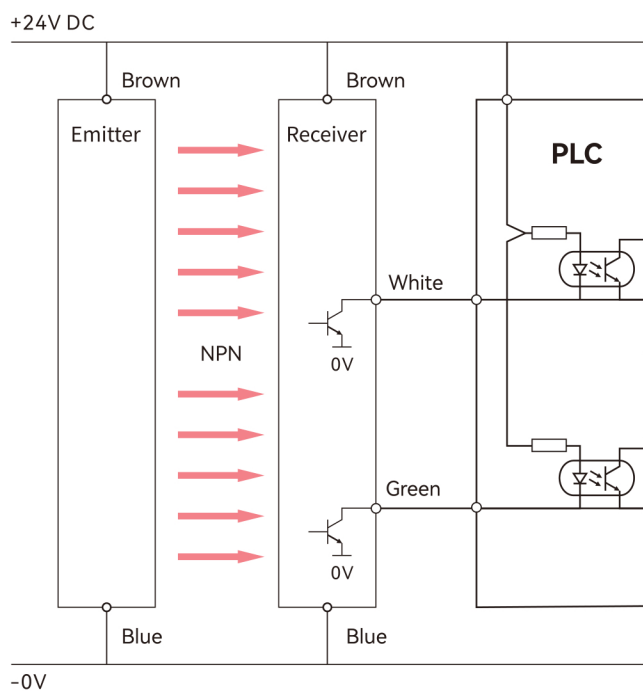


4.4 Wiring diagram of DQET-1 light curtain relay

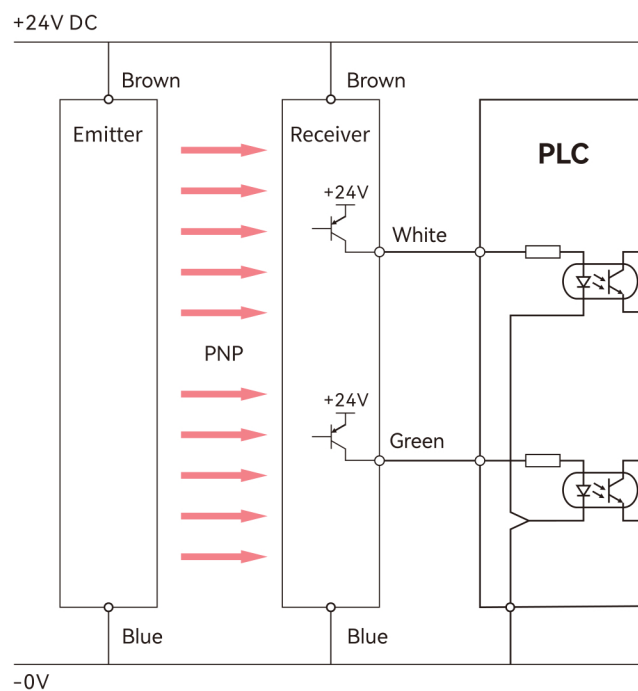


4.5 Wiring between light curtain and PLC and one-chip computer system

NPN wiring:



PNP wiring:



Accessories

Metal angled fixing bracket installation method
(Original accessories)

