

TECHNICAL DATA SHEET

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

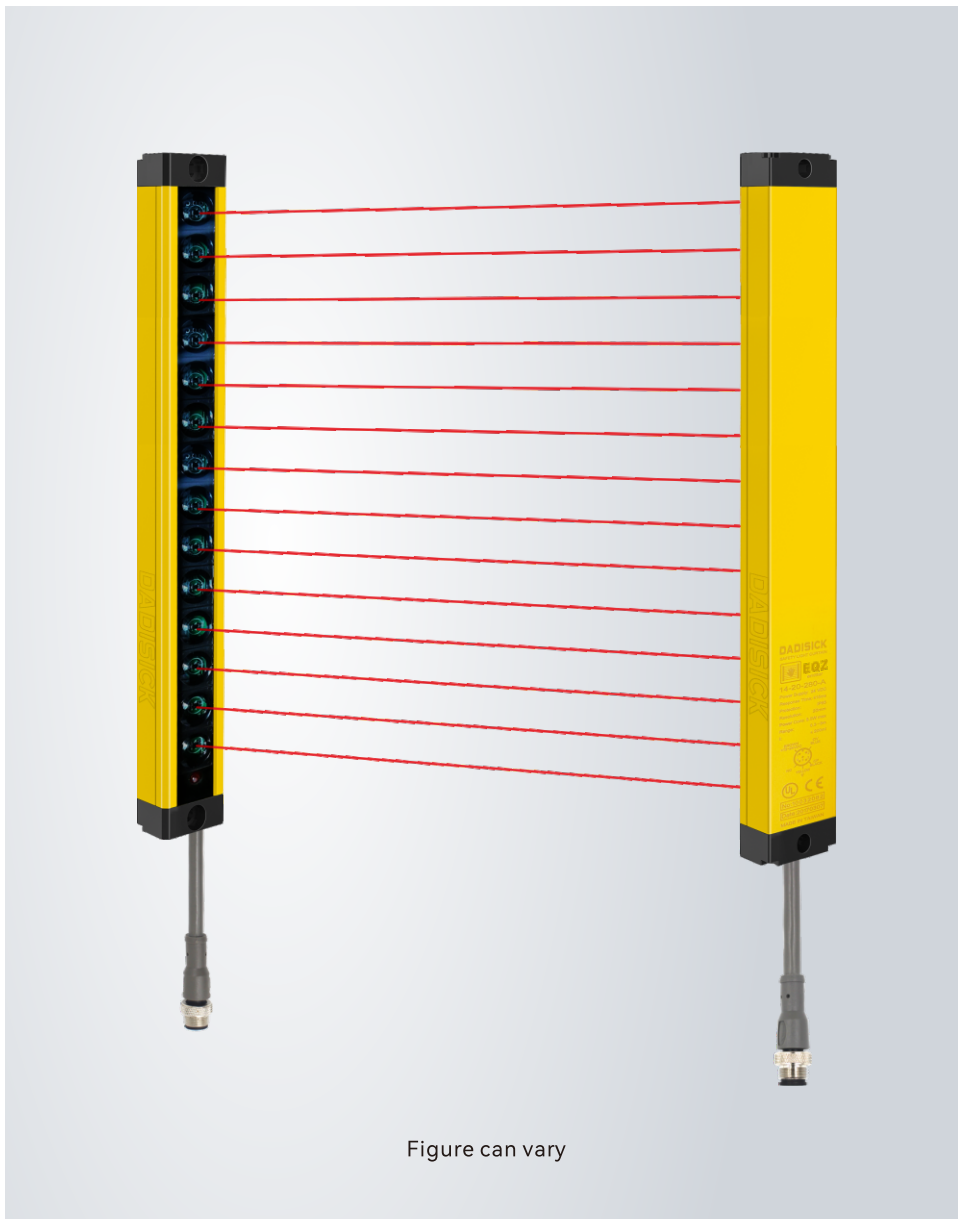


Figure can vary

Contents

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



Solutions

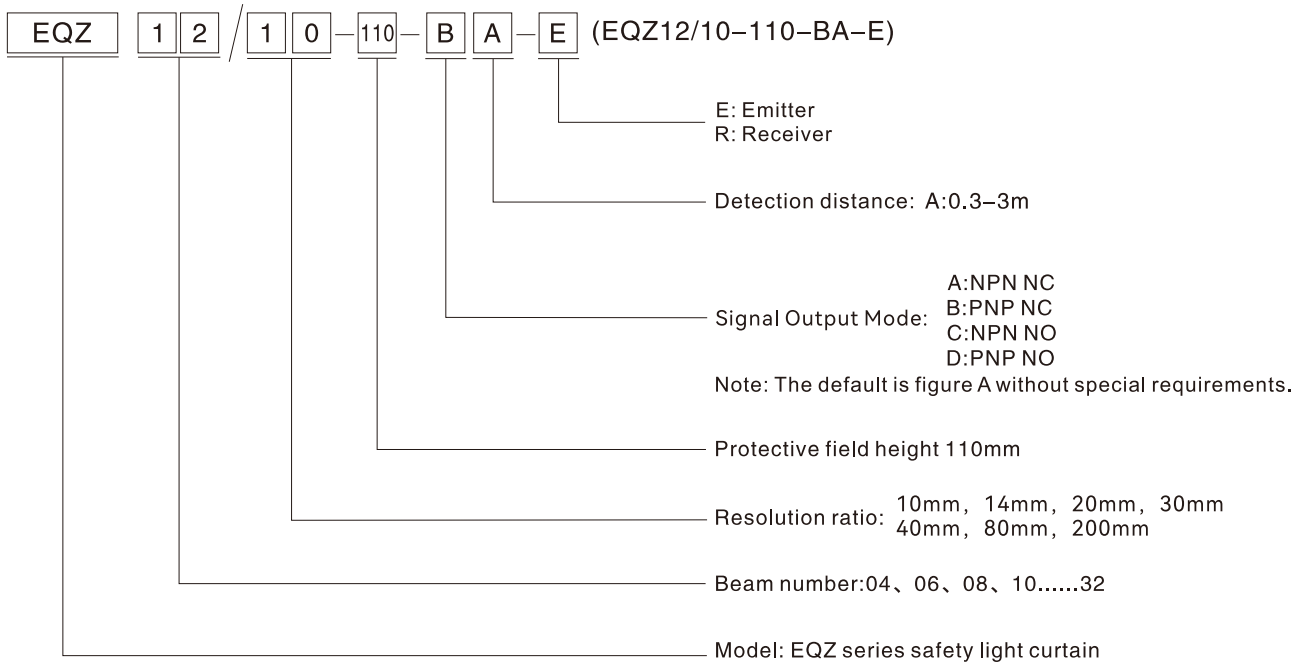


GB/T 19001-2016

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.

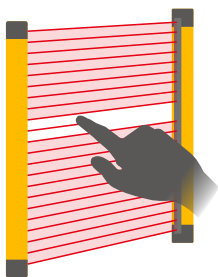
The specifications of EQZ type safety light curtain are as follows:



Resolution ratio

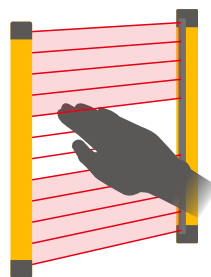
Depending on the usage environment and requirements, it is important to choose the appropriate beam spacing

Finger protection



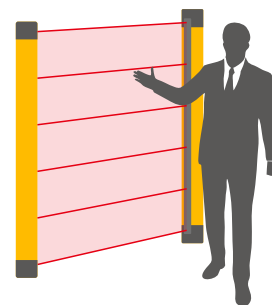
Detection capability
10/14/20mm
diameter

Hand protection



Detection capability
30/40mm
diameter

Arm/body protection



Detection capability
80/200mm
diameter

Technical data

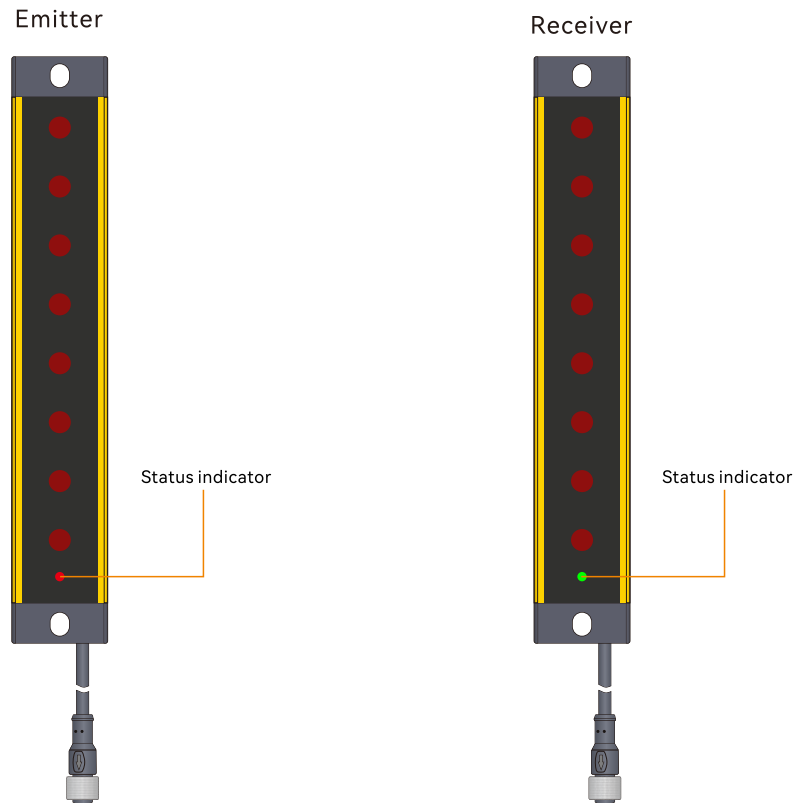
Basic data of Receiver and Emitter






Standard packaging	
Product model	EQZ series
Standard configuration	One receiver, one emitter, 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, 14mm, 20mm, 30mm, 40mm, 80mm, 200mm
Check the accuracy	18mm, 22mm, 28mm, 38mm, 48mm, 88mm, 200mm
Number of beams	04、06、08、10.....32
Overall dimension	17.2mm*30mm*L, L is the length of emitter and receiver.
Detection distance	30-3000mm
Response time	≤15ms
Synchronization	
Consumption current	≤200mA
Output mode	1-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	IP65
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)	1-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	Connection pin 4, WHITE OSSD
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

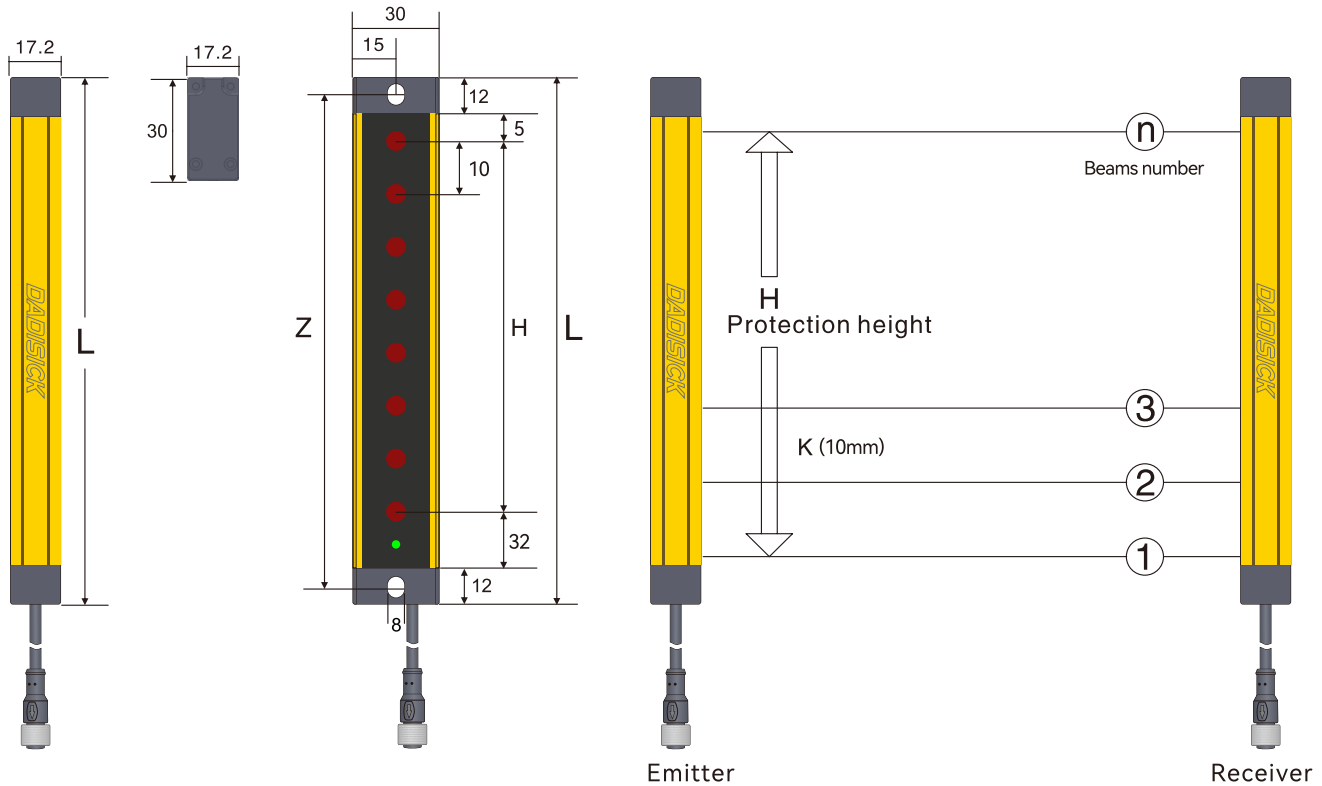


Normal operation of light curtain	LED Indicator status	Explain
Emitter	 Red, always on	Turns on the power
	 Receiver and emitter are red	Receiver and Emitter are not aligned
Receiver	 Green	All light paths are connected
	 Red	Light path shading
	 Lights flashing	Interference or overstep detection range

Dimensioned drawings

1. EQZ 10mm series

Unit: mm



Remarks

L: Total length of light screen
 $L = 12 + 5 + H + 32 + 12$

H: Height of protected area
 $H = (n - 1) * 10$

K: Resolution ratio
 $Z = L - 11\text{mm}$

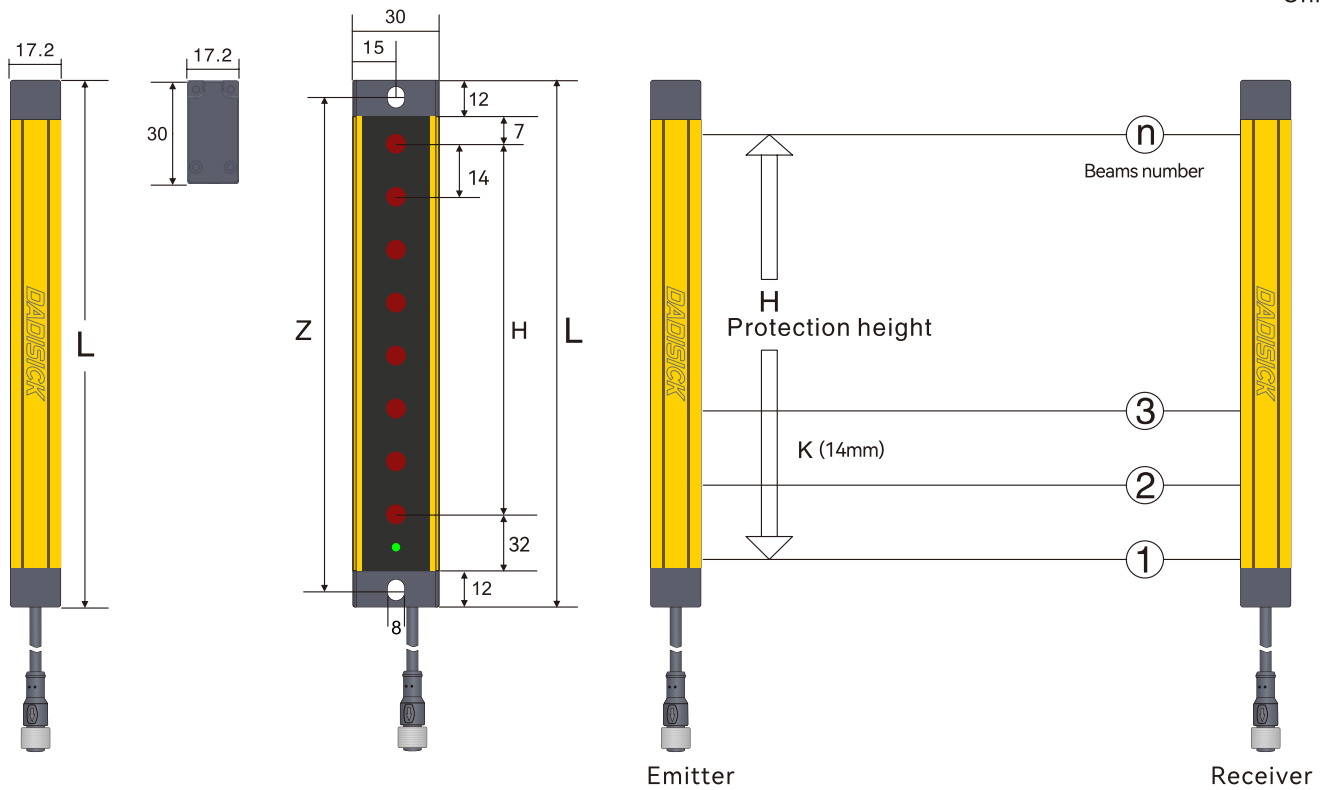
Z: Fixed hole center distance
 n: Beams number

EQZ 10mm specification list

Resolution	Light beam	Protection height (H)	Total height (L)	Product model	Signal output mode		Detection range
					Outputs	PNP output	
10mm (K)	6	50	111	EQZ06/10-50	1	PNP	0.3-3m
	8	70	131	EQZ08/10-70	1	PNP	0.3-3m
	10	90	151	EQZ10/10-90	1	PNP	0.3-3m
	12	110	171	EQZ12/10-110	1	PNP	0.3-3m
	14	130	191	EQZ14/10-130	1	PNP	0.3-3m
	16	150	211	EQZ16/10-150	1	PNP	0.3-3m
	18	170	231	EQZ18/10-170	1	PNP	0.3-3m
	20	190	251	EQZ20/10-190	1	PNP	0.3-3m
	22	210	271	EQZ22/10-210	1	PNP	0.3-3m
	24	230	291	EQZ24/10-230	1	PNP	0.3-3m
	26	250	311	EQZ26/10-250	1	PNP	0.3-3m
	28	270	331	EQZ28/10-270	1	PNP	0.3-3m
	30	290	351	EQZ30/10-290	1	PNP	0.3-3m
	32	310	371	EQZ32/10-310	1	PNP	0.3-3m

2. EQZ 14mm series

Unit: mm



Remarks

L: Total length of light screen
 $L = 12 + 7 + H + 32 + 12$

H: Height of protected area
 $H = (n - 1) * 14$

K: Resolution ratio
 $Z = L - 11 \text{ mm}$

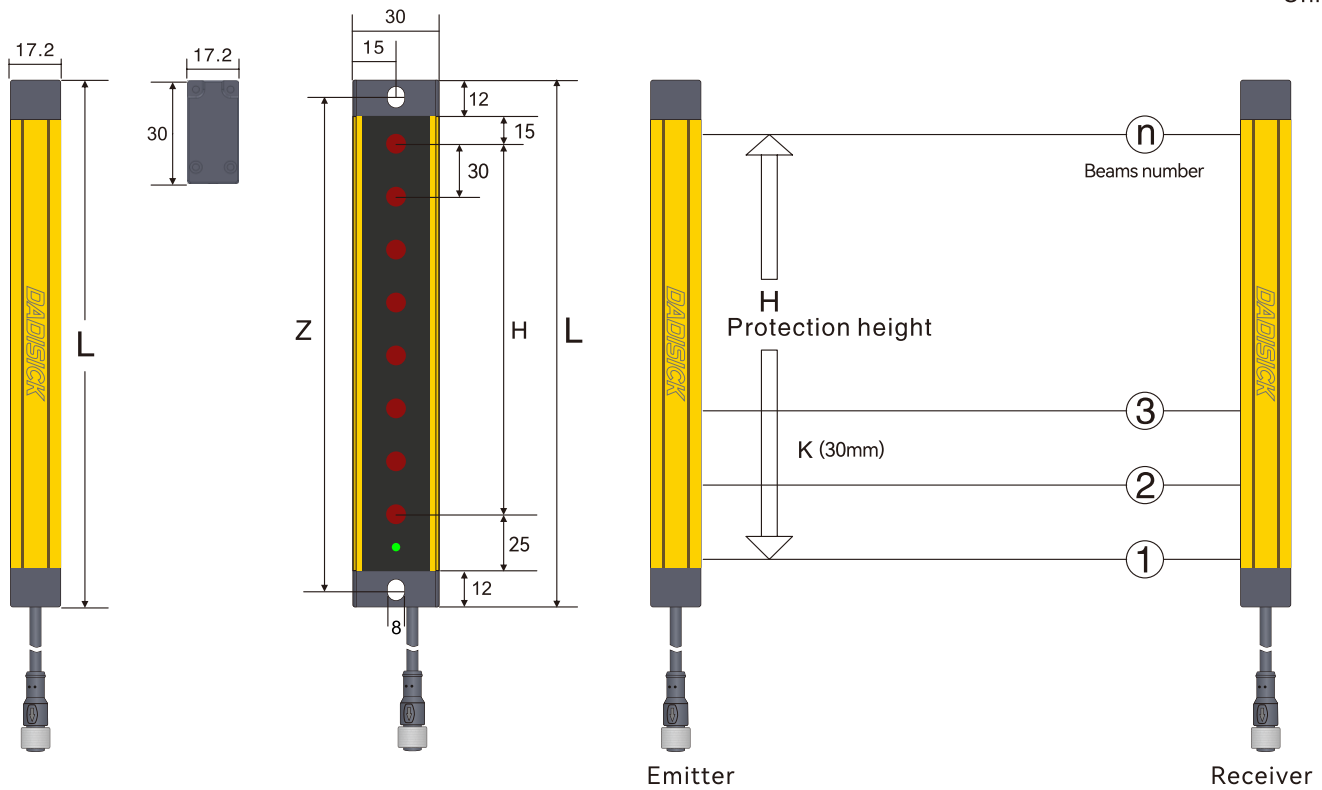
Z: Fixed hole center distance
 n: Beams number

EQZ 14mm specification list

Resolution	Light beam	Protection height (H)	Total height (L)	Product model	Signal output mode		Detection range
					Outputs	PNP output	
14mm (K)	6	70	133	EQZ06/14-70	1	PNP	0.3-3m
	8	98	161	EQZ08/14-98	1	PNP	0.3-3m
	10	126	189	EQZ10/14-126	1	PNP	0.3-3m
	12	154	217	EQZ12/14-154	1	PNP	0.3-3m
	14	182	245	EQZ14/14-182	1	PNP	0.3-3m
	16	210	273	EQZ16/14-210	1	PNP	0.3-3m
	18	238	301	EQZ18/14-238	1	PNP	0.3-3m
	20	266	329	EQZ20/14-266	1	PNP	0.3-3m
	22	294	357	EQZ22/14-294	1	PNP	0.3-3m
	24	322	385	EQZ24/14-322	1	PNP	0.3-3m
	26	350	413	EQZ26/14-350	1	PNP	0.3-3m
	28	378	441	EQZ28/14-378	1	PNP	0.3-3m
	30	406	469	EQZ30/14-406	1	PNP	0.3-3m
32	434	497	EQZ32/14-434	1	PNP	0.3-3m	

4. EQZ 30mm series

Unit: mm



Remarks

L: Total length of light screen
 $L = 12 + 15 + H + 25 + 12$

H: Height of protected area
 $H = (n - 1) * 30$

K: Resolution ratio
 $Z = L - 11 \text{ mm}$

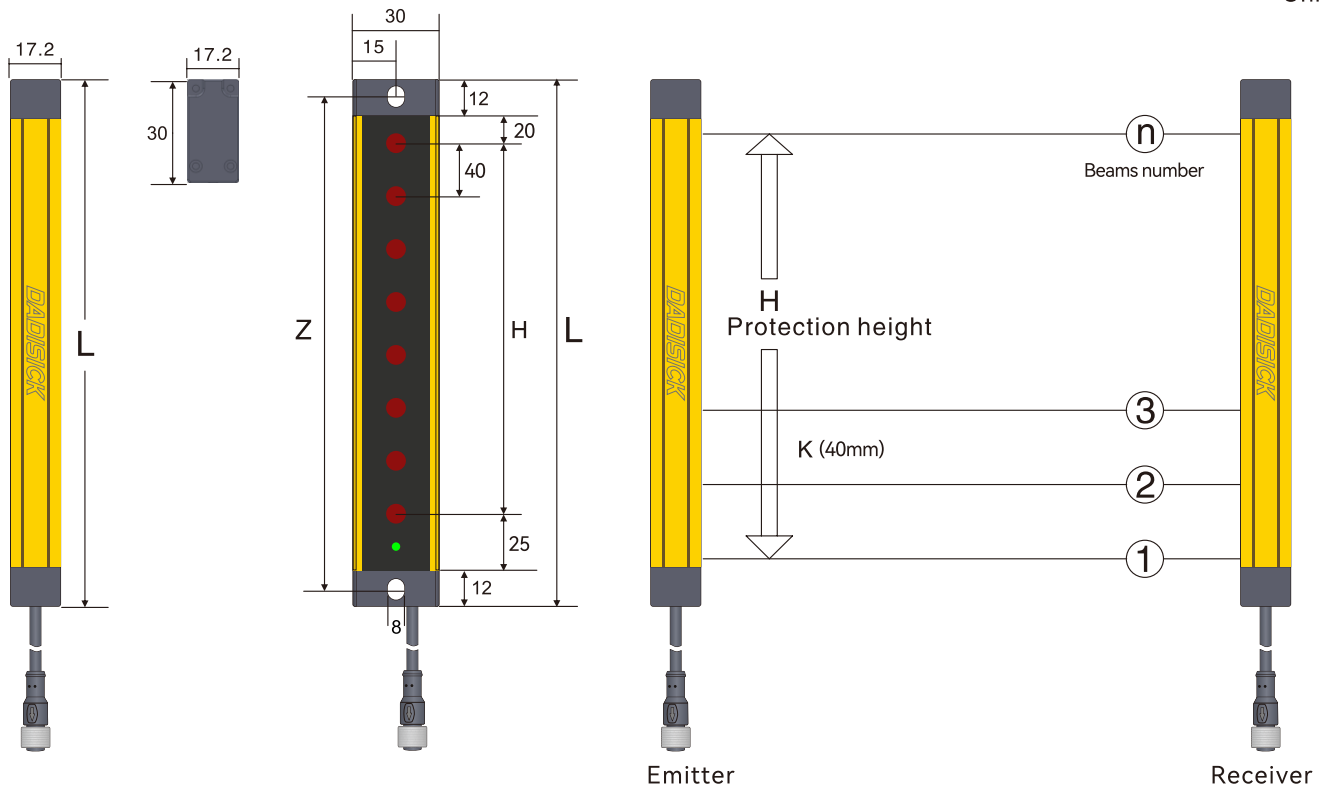
Z: Fixed hole center distance
 n: Beams number

EQZ 30mm specification list

Resolution	Light beam	Protection height (H)	Total height (L)	Product model	Signal output mode		Detection range
					Outputs	PNP output	
30mm (K)	4	90	154	EQZ04/30-90	1	PNP	0.3-3m
	6	150	214	EQZ06/30-150	1	PNP	0.3-3m
	8	210	274	EQZ08/30-210	1	PNP	0.3-3m
	10	270	334	EQZ10/30-270	1	PNP	0.3-3m
	12	330	394	EQZ12/30-330	1	PNP	0.3-3m
	14	390	454	EQZ14/30-390	1	PNP	0.3-3m
	16	450	514	EQZ16/30-450	1	PNP	0.3-3m
	18	510	574	EQZ18/30-510	1	PNP	0.3-3m
	20	570	634	EQZ20/30-570	1	PNP	0.3-3m
	22	630	694	EQZ22/30-630	1	PNP	0.3-3m
	24	690	754	EQZ24/30-690	1	PNP	0.3-3m
	26	750	814	EQZ26/30-750	1	PNP	0.3-3m
	28	810	874	EQZ28/30-810	1	PNP	0.3-3m
	30	870	934	EQZ30/30-870	1	PNP	0.3-3m
32	930	994	EQZ32/30-930	1	PNP	0.3-3m	

5. EQZ 40mm series

Unit: mm



Remarks

L: Total length of light screen
 $L = 12 + 20 + H + 25 + 12$

H: Height of protected area
 $H = (n - 1) * 40$

K: Resolution ratio
 $Z = L - 11\text{mm}$

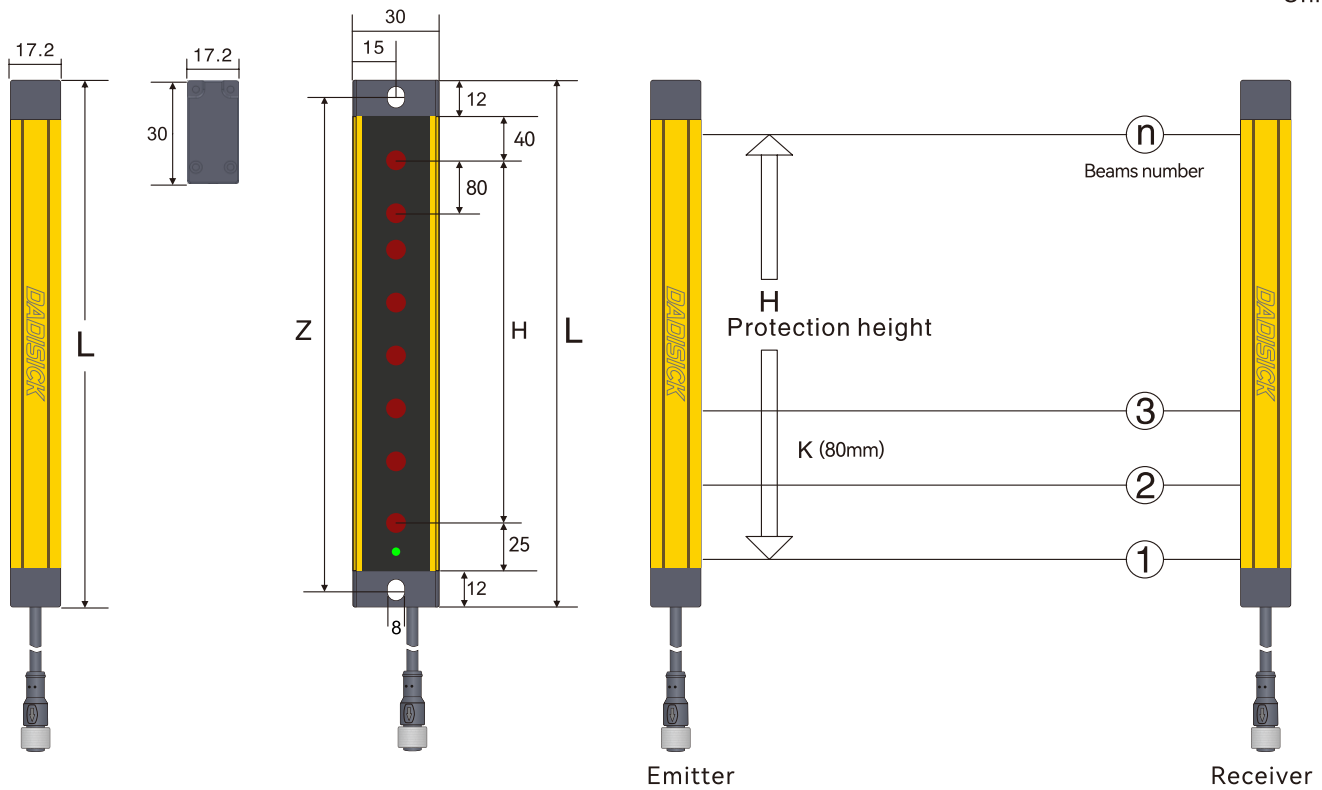
Z: Fixed hole center distance
 n: Beams number

EQZ 40mm specification list

Resolution	Light beam	Protection height (H)	Total height (L)	Product model	Signal output mode		Detection range
					Outputs	PNP output	
40mm (K)	4	120	189	EQZ04/40-120	1	PNP	0.3-3m
	6	200	269	EQZ06/40-200	1	PNP	0.3-3m
	8	280	349	EQZ08/40-280	1	PNP	0.3-3m
	10	360	429	EQZ10/40-360	1	PNP	0.3-3m
	12	440	509	EQZ12/40-440	1	PNP	0.3-3m
	14	520	589	EQZ14/40-520	1	PNP	0.3-3m
	16	600	669	EQZ16/40-600	1	PNP	0.3-3m
	18	680	749	EQZ18/40-680	1	PNP	0.3-3m
	20	760	829	EQZ20/40-760	1	PNP	0.3-3m
	22	840	909	EQZ22/40-840	1	PNP	0.3-3m
	24	920	989	EQZ24/40-920	1	PNP	0.3-3m
	26	1000	1069	EQZ26/40-1000	1	PNP	0.3-3m
	28	1080	1149	EQZ28/40-1080	1	PNP	0.3-3m
	30	1160	1229	EQZ30/40-1160	1	PNP	0.3-3m
32	1240	1309	EQZ32/40-1240	1	PNP	0.3-3m	

6. EQZ 80mm series

Unit: mm



Remarks

L: Total length of light screen
 $L = 12 + 40 + H + 25 + 12$

H: Height of protected area
 $H = (n - 1) * 80$

K: Resolution ratio
 $Z = L - 11\text{mm}$

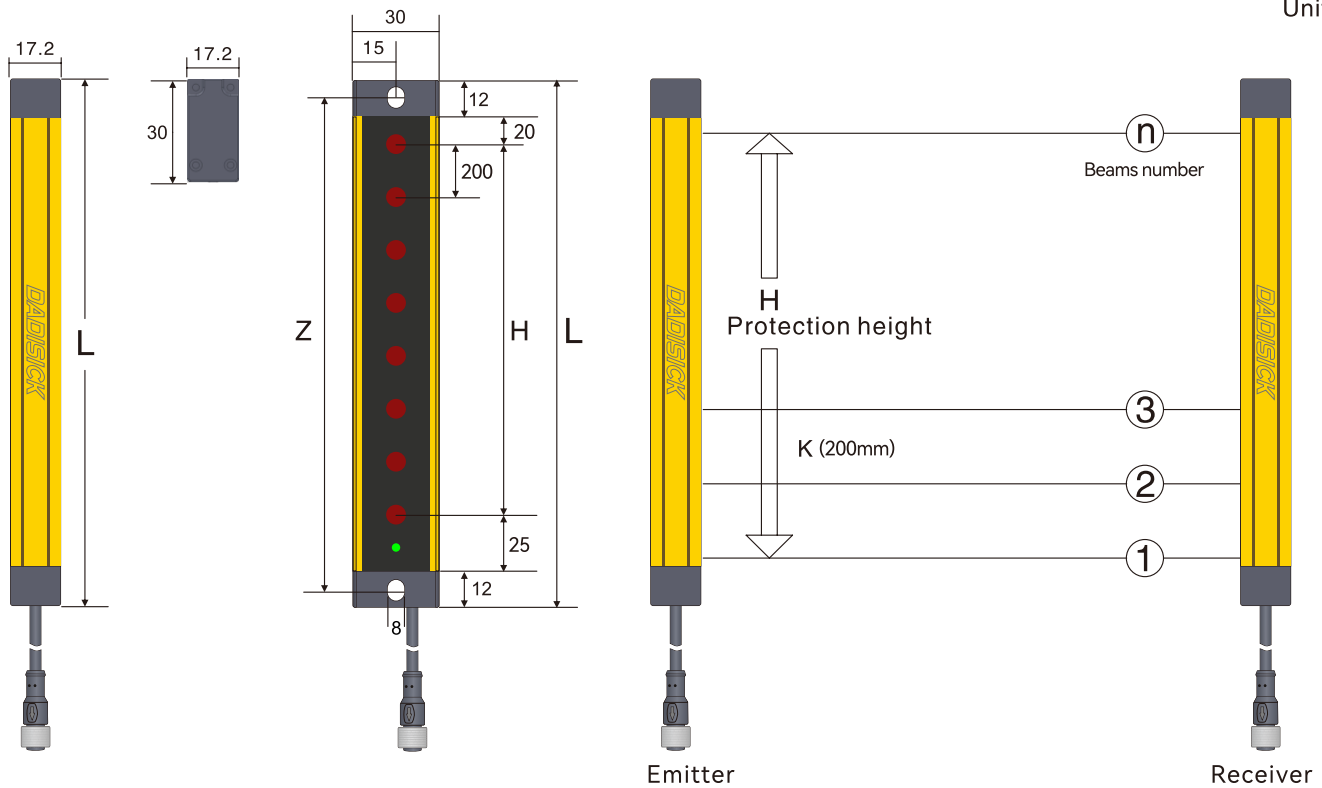
Z: Fixed hole center distance
 n: Beams number

EQZ 80mm specification list

Resolution	Light beam	Protection height (H)	Total height (L)	Product model	Signal output mode		Detection range
					Outputs	PNP output	
80mm (K)	4	240	329	EQZ04/80-240	1	PNP	0.3-3m
	6	400	489	EQZ06/80-400	1	PNP	0.3-3m
	8	560	649	EQZ08/80-560	1	PNP	0.3-3m
	10	720	809	EQZ10/80-720	1	PNP	0.3-3m
	12	880	969	EQZ12/80-880	1	PNP	0.3-3m
	14	1040	1129	EQZ14/80-1040	1	PNP	0.3-3m
	16	1200	1289	EQZ16/80-1200	1	PNP	0.3-3m
	18	1360	1449	EQZ18/80-1360	1	PNP	0.3-3m
	20	1520	1609	EQZ20/80-1520	1	PNP	0.3-3m
	22	1680	1769	EQZ22/80-1680	1	PNP	0.3-3m
	24	1840	1929	EQZ24/80-1840	1	PNP	0.3-3m
	26	2000	2089	EQZ26/80-2000	1	PNP	0.3-3m
	28	2160	2249	EQZ28/80-2160	1	PNP	0.3-3m
	30	2320	2409	EQZ30/80-2320	1	PNP	0.3-3m
32	2480	2569	EQZ32/80-2480	1	PNP	0.3-3m	

7. EQZ 200mm series

Unit: mm



Remarks

L: Total length of light screen
 $L = 12 + 20 + H + 25 + 12$

H: Height of protected area
 $H = (n - 1) * 200$

K: Resolution ratio
 $Z = L - 11\text{mm}$

Z: Fixed hole center distance
 n: Beams number

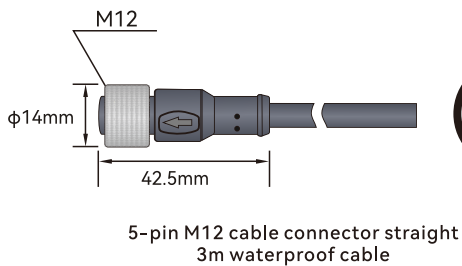
EQZ 200mm specification list

Resolution	Light beam	Protection height (H)	Total height (L)	Product model	Signal output mode		Detection distance
					Outputs	PNP output	
200mm (K)	4	600	669	EQZ04/200-600	1	PNP	0.3-3m
	6	1000	1069	EQZ06/200-1000	1	PNP	0.3-3m
	8	1400	1469	EQZ08/200-1400	1	PNP	0.3-3m
	10	1800	1869	EQZ10/200-1800	1	PNP	0.3-3m
	12	2200	2269	EQZ12/200-2200	1	PNP	0.3-3m
	14	2600	2669	EQZ14/200-2600	1	PNP	0.3-3m
	16	3000	3069	EQZ16/200-3000	1	PNP	0.3-3m
	18	3400	3469	EQZ18/200-3400	1	PNP	0.3-3m

Electrical connection

Electrical interface	
Number of interfaces	2 (receiver and transmitter)
Type	M12 connector, 5-pin
Interface metal	Copper nickel plating
Plug material	GY384 gray 30P
Allowable typical conductor section	0.25m ²
Maximum link cable	100m
Maximum allowable cable load	4.9A
Cable material	PVC

Cable description:

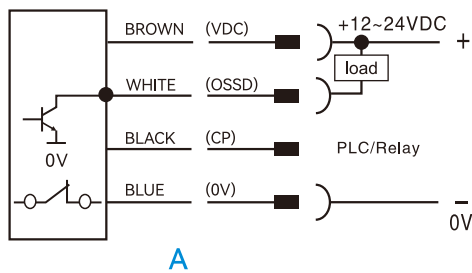


Emitter Wiring diagram		
Pin number	Line color	Name
1	BROWN	24V DC
2	BLUE	0V
3	BLACK	CP
4	WHITE	NC
5	YELLOW	Ground wire

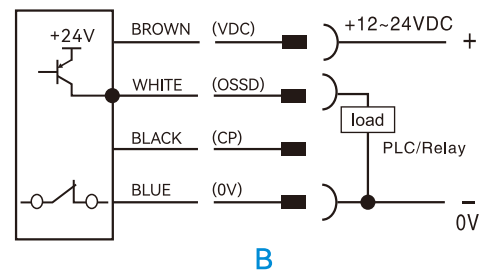
Receiver Wiring diagram		
Pin number	Line color	Name
1	BROWN	24V DC
2	BLUE	0V
3	BLACK	CP
4	WHITE	OSSD
5	YELLOW	Ground wire

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

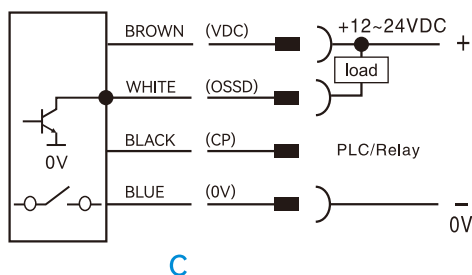
NPN NC



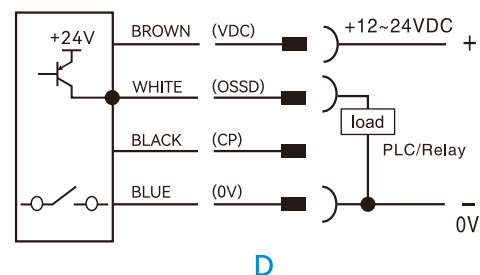
PNP NC



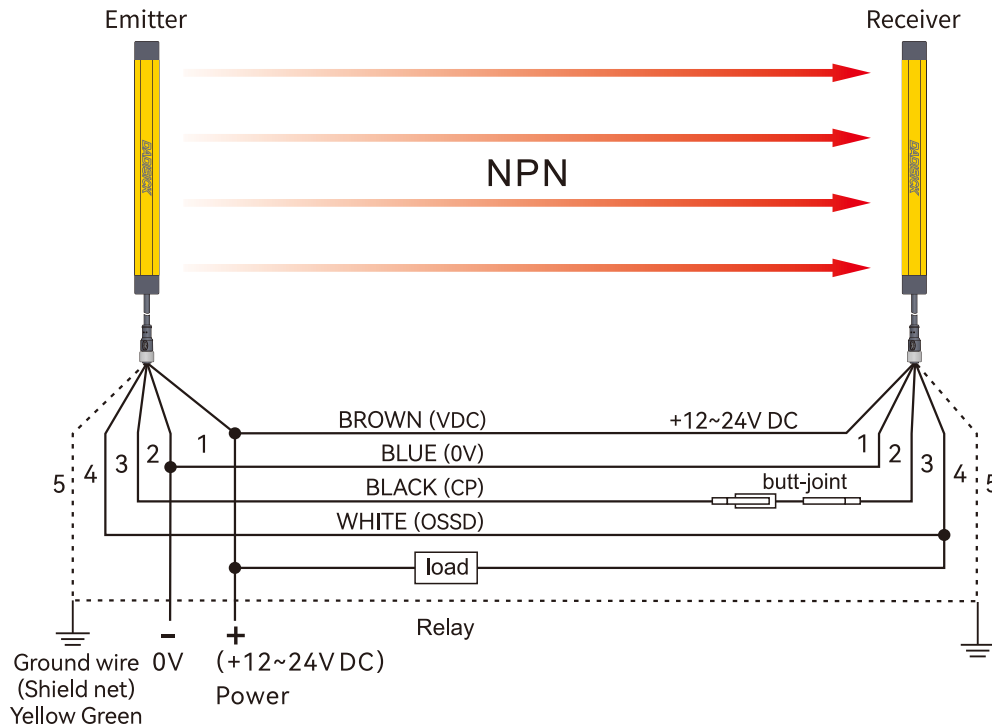
NPN NO



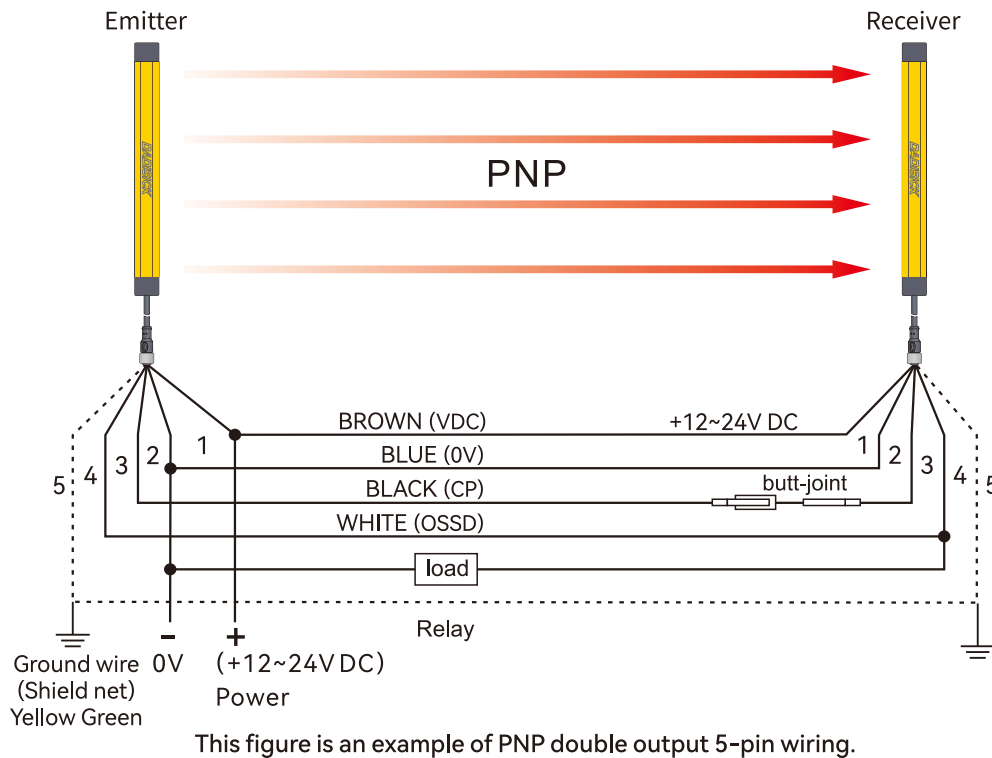
PNP NO





2. NPN output wiring diagram



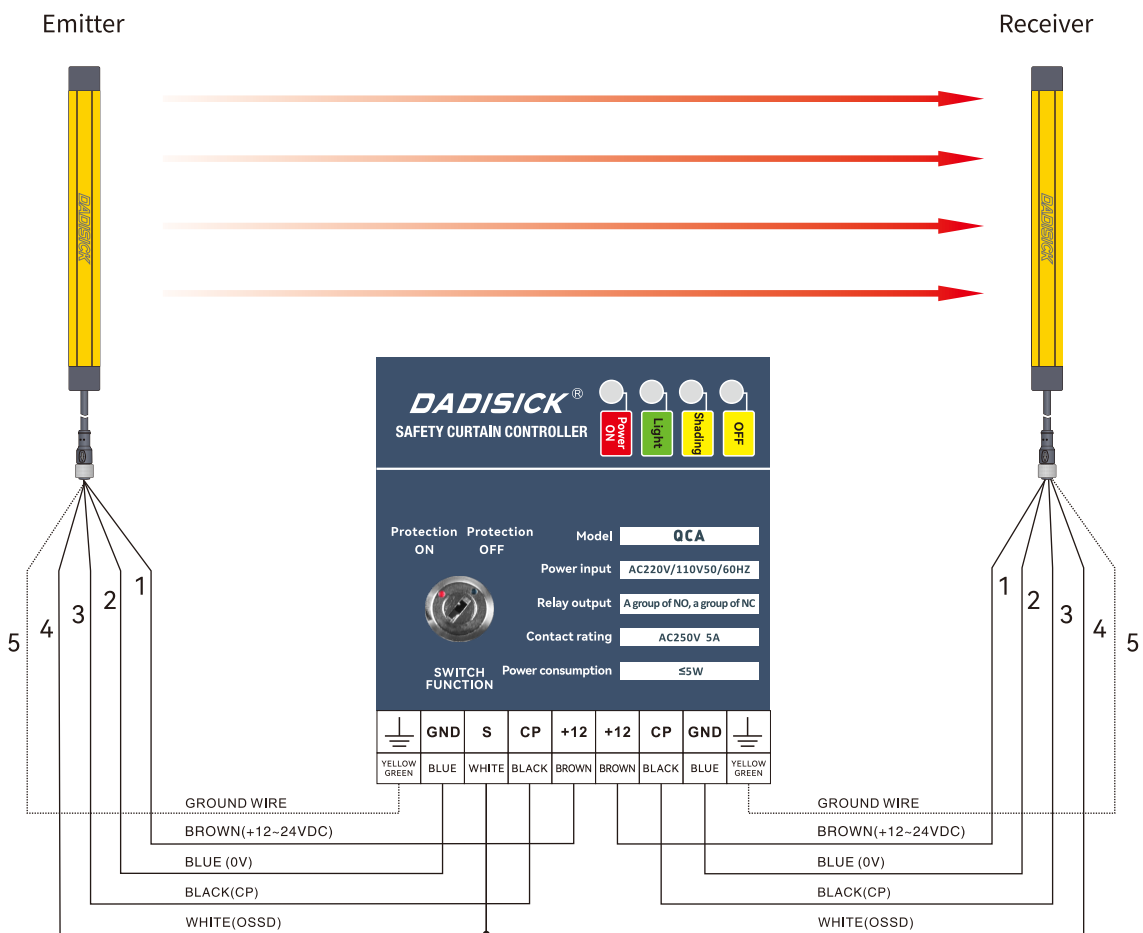
3. PNP output wiring diagram



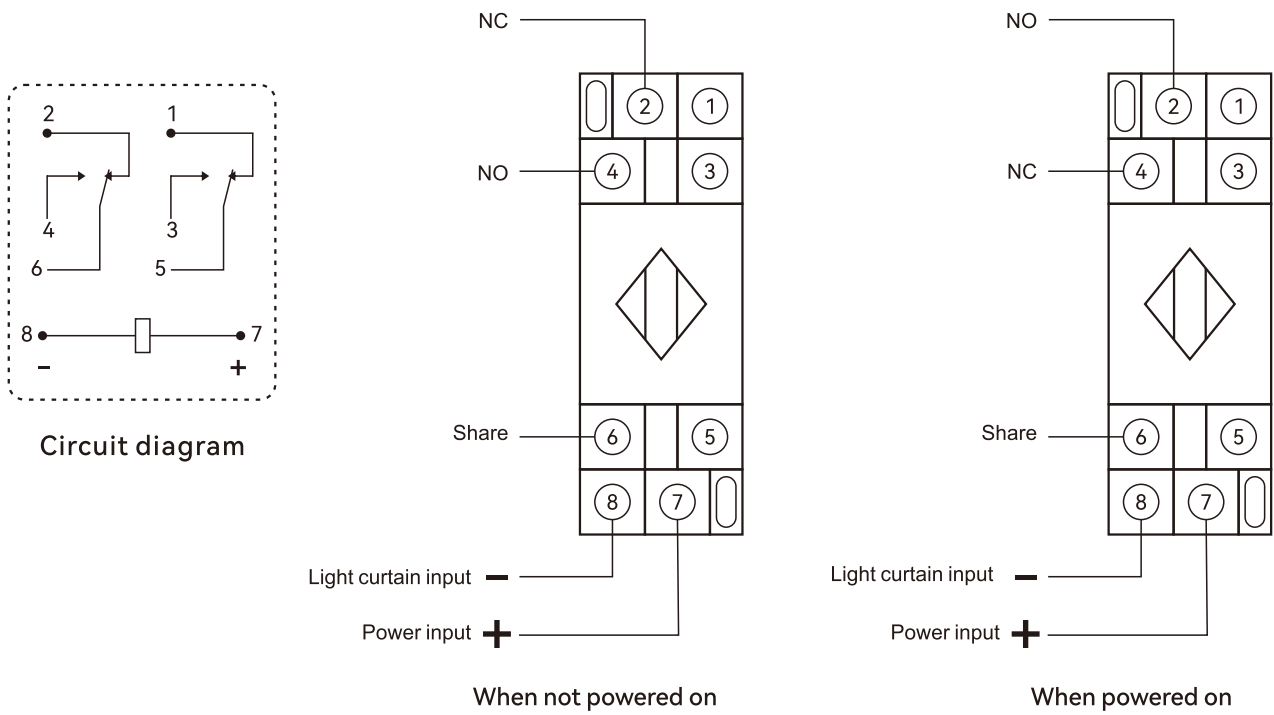
4. Selection of safety light curtain controller

Name	Order separately	Model	Descriptions
Built-in controller		QCA	Used to monitor the signal processing of EQZ series light curtain, and output one group of NO and one group of NC.
Light curtain relay		QET-1	Output conversion between NC and NO for EQZ series light curtain.

4.1 Wiring diagram of QCA built-in controller

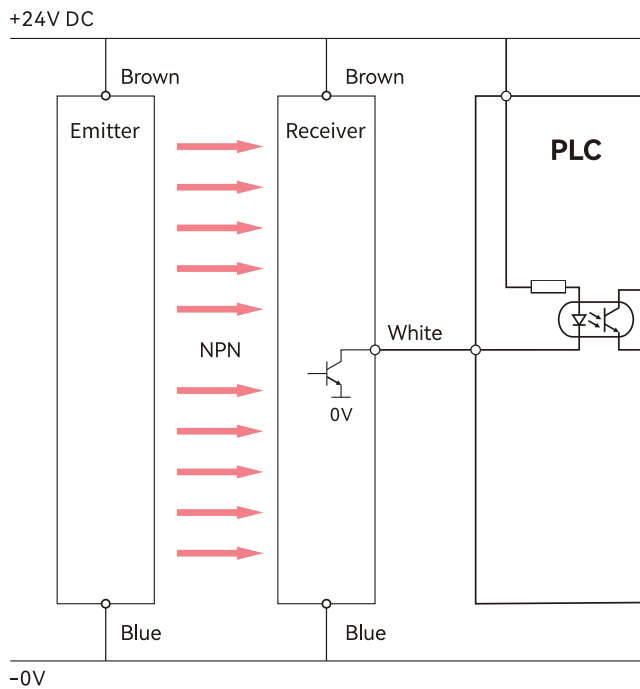


4.2 Wiring diagram of QET-1 light curtain relay

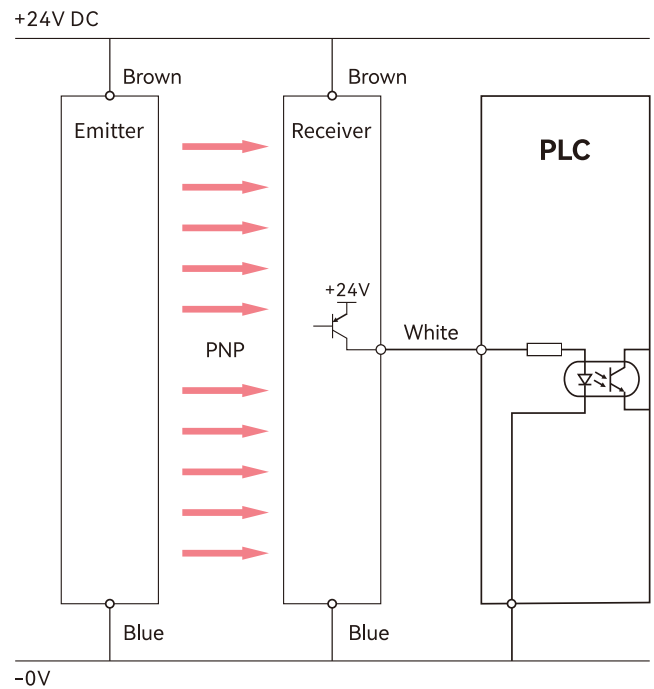


4.3 Wiring between light curtain and PLC and one-chip computer system

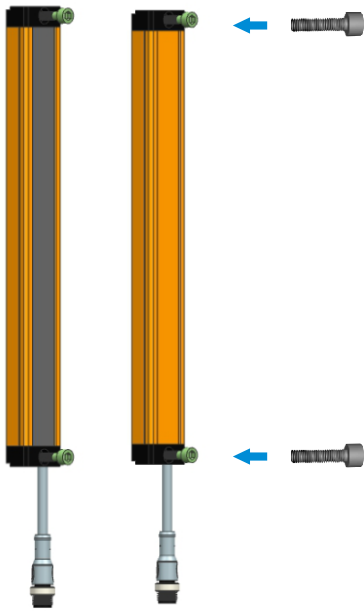
NPN wiring:



PNP wiring:



Accessories



Installation method for fixing hole screws
(Original accessories)

Circular screw	Model: QBZ-01
Unit: mm	