























2. Photoelectric sensors

Thru-beam type

In this selection guide, an illustration of a representative model type is shown for each series of the general use sensors.

Model No.	Sensing range (m ft)	Appearance (mm in)	Specifications										Functions					Remarks	Page
			Depth	Width	Height	Structure	Power supply	Output	Emission color	Case material	Protection	Sensitivity adjuster	Self-diagnosis	Test input (emission halt)	Interference prevention	Light intensity monitor	Timer		
RX-M50	50 164.042		43 1.693	14 0.551	35 1.378	△	DC	N	●	Z	67	●	●	●	▲	●	—		P.276
NX5-M30A	30 98.425		35 1.378	18 0.709	62 2.441	□	DC	□	●	PC	66	—	—	—	—	●	—	● Aside from A type→Light-ON, B type→Dark-ON also available	P.358
CY-21	12 39.370		56 2.205	M18		△	DC 10 to 30	N P	●	P	67	—	—	●	—	●	—		P.302
CY-11A	12 39.370		71 2.795	M18		□	AC	A	●	P	67	—	—	—	—	●	—	● Aside from A type→Light-ON, B type→Dark-ON also available	P.302
NX5-M10RA	10 32.808		35 1.378	18 0.709	62 2.441	□	DC	□	R	PC	66	●	—	—	●	●	—	● Aside from A type→Light-ON, B type→Dark-ON also available	P.358
VF-M10T	10 32.808		75 2.953	26 1.024	55 2.165	□	DC	□	●	P	66	—	—	—	—	●	④	● Also available without a timer	P.368
RX-M10	10 32.808		35 1.378	14 0.551	35 1.378	△	DC	N	●	Z	67	●	●	●	▲	●	—	● 2-wire type RX2-M5 (5 m 16.404 ft) and IP67g (oil-resistant) RX4-M5 (5 m 16.404 ft) available	P.276
CX-411	10 32.808		20 0.787	11 0.433	31 1.220	△	DC	N P	R	P	67	●	—	—	●	●	—		P.192
SH-61R	2.5 8.202		21 0.827	φ10 φ0.394		⊙	DC	N P	R	F	67	●	●	—	●	●	③	● Applicable amplifier: SU-7 ● Chemical-resistant type	P.386
EX-23	2 6.562		10.5 0.413	8.2 0.323	19 0.748	△	DC	N P	R	PT	67	●	—	—	—	●	—		P.218
RX-M2R	2 6.562		35 1.378	14 0.551	35 1.378	△	DC	N	R	Z	67	●	●	●	▲	●	—		P.276
SH-33R	2 6.562		12.5 0.492	6.4 0.252	12.5 0.492	⊙	DC	N P	R	A	66	●	●	—	●	●	③	● Applicable amplifier: SU-7	P.386
EX-21A	1 3.281		4.5 0.177	16 0.630	18 0.709	△	DC	N P	R	PT	67	—	—	—	—	●	—	● Aside from A type→Light-ON, B type→Dark-ON also available	P.218
EX-19A	1 3.281		3.5 0.138	10 0.394	14.5 0.571	△	DC	N P	R	PT	67	—	—	—	—	●	—	● Aside from A type→Light-ON, B type→Dark-ON also available	P.232
RX-500G	0.5 1.640		35 1.378	14 0.551	35 1.378	△	DC	N	G	Z	67	●	●	●	▲	—	—		P.276
EX-13A	0.5 1.640		3.5 0.138	10 0.394	14.5 0.571	△	DC	N	R	PT	67	—	—	—	—	●	—	● Aside from A type→Light-ON, B type→Dark-ON also available ● Side-ON EX-13EA/13EB and operation mode switch on the bifurcation types available	P.232
EX-31A	0.5 1.640		14 0.551	15.6 0.614	14 0.551	△	DC	N P	R	Z	67	—	—	—	—	●	—	● Aside from A type→Light-ON, B type→Dark-ON also available ● M4 screw mounting	P.210
SH-21	0.3 0.984		3 0.118	8 0.315	12 0.472	⊙	DC	N P	●	PC	62	●	●	—	●	●	③	● Side-ON SH-21E available ● Applicable amplifier: SU-7	P.386
EX-11A	0.15 0.492		3.5 0.138	10 0.394	14.5 0.571	△	DC	N	R	PT	67	—	—	—	—	●	—	● Aside from A type→Light-ON, B type→Dark-ON also available ● Side-ON EX-11EA/11EB and operation mode switch on the bifurcation types available	P.232
SH-31G	0.1 0.328		12.5 0.492	6.4 0.252	12.5 0.492	⊙	DC	N P	G	A	66	●	●	—	●	—	③	● Applicable amplifier: SU-7	P.386
RT-610-50	0.05 0.164 (fixed)		85 3.346	22 0.866	75 2.953	△	DC	N	●	A	66	—	—	—	—	—	—	● Mark detection type also available	P.328
PM-K54	0.005 0.016 (fixed)		7 0.276	25.4 1.000	22.2 0.874	△	DC	N P	●	P	—	—	—	—	—	—	—	● 16 other types varying in appearance available	P.338

Retroreflective type

In this selection guide, an illustration of a representative model type is shown for each series of the general use sensors.

Model No.	Sensing range (m ft)	Appearance (mm in)	Specifications										Functions					Remarks	Page								
			Depth	Width	Height	Structure	Power supply	Output	Emission color	Case material	Protection	Sensitivity adjuster	Self-diagnosis	Test input (emission halt)	Interference prevention	Light intensity monitor	Timer										
NX5-RM7A	0.1 to 7 0.328 to 22.966		35 1.378	18 0.709	62 2.441	P	☒	☐	●	PC	66	●	—	—	●	—	—	●	—	—	●	Aside from A type→Light-ON, B type→Dark-ON also available	P.358				
NX5-PRVM5A	0.1 to 5 0.328 to 16.404		35 1.378	18 0.709	62 2.441	P	☒	☐	●	PC	66	●	—	—	●	—	—	●	—	—	●	●	Aside from A type→Light-ON, B type→Dark-ON also available	P.358			
VF-RM5T	0.1 to 5 0.328 to 16.404		75 2.953	26 1.024	55 2.165	P	☒	☐	●	P	66	—	—	—	—	—	—	—	—	④	●	●	Also available without a timer ●VF-PRM3 with polarizing filter also available	P.368			
RX-RVM5	0.1 to 5 0.328 to 16.404		39 1.535	14 0.551	35 1.378	△	☒	☐	●	N	67	●	●	●	●	—	—	—	—	—	—	—	—	P.276			
RX-PRVM3	0.1 to 3 0.328 to 9.843		39 1.535	14 0.551	35 1.378	△	☒	☐	●	N	67	●	●	●	●	—	—	—	—	—	—	—	●	●	2-wire type RX2-PRVM2 (2 m 6.562 ft), RX-PRV500 for transparent object detection also available	P.276	
CX-491	0.1 to 3 0.328 to 9.843		20 0.787	11 0.433	31 1.220	△	☒	☐	●	N P	67	●	—	—	●	—	—	—	—	—	—	—	—	—	P.192		
CY-27	3 9.843		56 2.205	M18		△	☒	☐	●	N P	67	—	—	—	—	—	—	—	—	—	—	—	—	—	P.302		
CY-17A	3 9.843		71 2.795	M18		P	☒	☐	●	A	67	—	—	—	—	—	—	—	—	—	—	—	—	●	Aside from A type→Light-ON, B type→Dark-ON also available	P.302	
CY-29	1.5 4.921		57.5 2.264	M18		△	☒	☐	●	N P	67	—	—	—	—	—	—	—	—	—	—	—	—	—	P.302		
CY-19A	1.5 4.921		72.5 2.854	M18		P	☒	☐	●	A	67	—	—	—	—	—	—	—	—	—	—	—	—	—	●	Aside from A type→Light-ON, B type→Dark-ON also available	P.302
CX-28IR	0.05 to 1 0.164 to 3.281		20 0.787	12 0.472	31 1.220	△	☒	☐	●	N P	67	●	—	—	—	—	—	—	—	—	—	—	—	—	(Note) With self-diagnosis output type also available ●For transparent object detection ●Optimal for detecting water, alcohol and other transparent liquids inside plastic bottles	P.1080	
CX-28	0.05 to 0.5 0.164 to 1.640		20 0.787	12 0.472	31 1.220	△	☒	☐	●	N P	67	●	—	—	—	—	—	—	—	—	—	—	—	—	(Note) With self-diagnosis output type also available ●For transparent object detection	P.1080	
EX-29A	0.03 to 0.2 0.098 to 0.656		12.3 0.484	8.2 0.323	22 0.866	△	☒	☐	●	N P	67	●	—	—	—	—	—	—	—	—	—	—	—	—	●	Aside from A type→Light-ON, B type→Dark-ON also available	P.218

Remarks marked with '★' represent retroreflective types with polarized filters that enable even specular object detection.






















How to read the table

Appearance	Specifications	Functions
<p>Depth: from the detection surface to the back surface (mm in) Width: width of the detection surface (mm in) Height: from the bottom surface to the top surface (mm in)</p>	<p>Structure</p> <ul style="list-style-type: none"> △ Amplifier built-in P Power supply built-in ⊙ Amplifier-separated <p>Power supply</p> <ul style="list-style-type: none"> ☒ DC 12 to 24 V ☒ AC/DC ☒ AC 24 to 240 V <p>Output</p> <ul style="list-style-type: none"> N NPN output P PNP output also available ☐ Relay contact output A AC non-contact output <p>Emission color</p> <ul style="list-style-type: none"> ● Infrared light ● Red light ● Green light <p>Case material</p> <ul style="list-style-type: none"> ⓪ Die-cast zinc alloy Ⓐ Die-cast aluminum P PBT resin PC Polycarbonate resin A ABS resin PT Polyethylene terephthalate resin PA Polyallylate resin F Fluorine resin <p>Protection</p> <p>The number inside the '○' mark represents the '○' value in the IEC established protection IP○.</p> <p>Sensitivity adjuster</p> <ul style="list-style-type: none"> ● With adjuster ● Multi-turn adjuster — None 	<p>Self-diagnosis</p> <p>Equipped with a function that lets the user know when sensing conditions are unstable such as when the incident light intensity decreases.</p> <p>Test input (emission halt)</p> <p>This function, which allows the light emission to be halted from the exterior of the sensor, can be used for the automation of start-up inspections as well as interference prevention.</p> <p>Interference prevention</p> <p>This function prevents mutual interference of light even when installing two sensors next to each other.</p> <ul style="list-style-type: none"> ● Equipped with interference prevention circuit ● Optional filter available ▲ May be applicable for halting emissions <p>Light intensity monitor</p> <p>The incident light intensity level can be verified by a digital display or by an optional sensor checker CHX-SC2 level indicator.</p> <p>Timer</p> <ul style="list-style-type: none"> ① Equipped with OFF-delay timer (variable) ③ Equipped with variable timer with selectable ON-delay / OFF-delay / non-delay features ④ Equipped with variable timer with selectable ON-delay / OFF-delay / ONE SHOT non-delay features

2. Photoelectric sensors

Reflective type

In this selection guide, an illustration of a representative model type is shown for each series of the general use sensors.

Type	Model No.	Sensing range (mm in)	Appearance (mm in)			Specifications							Functions					Remarks	Page		
			Depth	Width	Height	Structure	Power supply	Output	Emission color	Case material	Protection	Sensitivity adjuster	Self-diagnosis	Test input (emission halt)	Interference prevention	Light intensity monitor	Timer				
Diffuse reflective type	VF-D1000T	1,000 39.37		75 2.953	26 1.024	55 1.165	P	Free	□	●	P	66	●	—	—	—	—	④	●Also available without a timer ●500 mm 19.685 in sensing range type also available	P.368	
	CX-422	800 31.496		20 0.787	11 0.433	31 1.220	△	DC	□	●	PC	67	●	—	—	●	—	—	—	P.192	
	RX-D700	700 27.559		35 1.378	14 0.551	35 1.378	△	DC	□	●	Z	67	●	●	●	●	●	—	—	●2-wire type RX2-D300 (300 mm 11.811 in), 300 mm 11.811 in sensing range wide-view type also available	P.276
	NX5-D700A	700 27.559		35 1.378	18 0.709	62 2.441	P	Free	□	●	PC	66	●	—	—	●	—	—	—	●Aside from A type→Light-ON, B type→Dark-ON also available	P.358
	CX-421	300 11.811		20 0.787	11 0.433	31 1.220	△	DC	□	●	P	67	●	—	—	●	—	—	—	—	P.192
	EX-22A	5 to 160 0.197 to 6.299		12.3 0.484	8.2 0.323	22 0.866	△	DC	□	●	P	67	●	—	—	—	—	—	—	●Aside from A type→Light-ON, B type→Dark-ON also available	P.218
	CY-22	120 4.724		56 2.205	M18		△	DC	□	●	P	67	—	—	—	—	—	—	—	—	P.302
	CY-12A	120 4.724		71 2.795	M18		P	AC	□	●	P	67	—	—	—	—	—	—	—	●Aside from A type→Light-ON, B type→Dark-ON also available	P.302
	EX-32A	50 1.969		18 0.709	15.6 0.614	14 0.551	△	DC	□	●	Z	67	●	—	—	—	—	—	—	●Aside from A type→Light-ON, B type→Dark-ON also available ●M6 screw mountable	P.210
SH-22	50 1.969		3 0.118	12 0.472	12 0.472	⊙	DC	□	●	PC	62	●	●	—	●	●	③	—	●Applicable amplifier: SU-7	P.386	
Narrow-view reflective type	CX-423	70 to 200 2.756 to 7.874		25 0.984	11 0.433	31 1.220	△	DC	□	●	P	67	●	—	—	●	—	—	—	P.192	
	RX-D200R	200 7.874		35 1.378	14 0.551	35 1.378	△	DC	□	●	Z	67	●	●	●	●	—	—	—	P.276	
	EX-28A	45 to 115 1.772 to 4.528		12.3 0.484	8.2 0.323	22 0.866	△	DC	□	●	P	67	●	—	—	—	—	—	—	●Aside from A type→Light-ON, B type→Dark-ON also available	P.218
	SH-32R	100 3.937		12.5 0.492	6.4 0.252	16.5 0.650	⊙	DC	□	●	P	66	●	●	—	●	●	③	—	●Applicable amplifier: SU-7	P.386
Convergent reflective type	EX-44	10 to 70 0.394 to 2.756 (Conv. point: 40 1.575)		18 0.709	10 0.394	30 1.181	△	DC	□	●	PA	67	●	—	—	—	—	—	—	P.266	
	EX-43T	20 to 35 0.987 to 1.378 (Conv. point: 30 1.181)		18 0.709	10 0.394	30 1.181	△	DC	□	●	PA	67	—	—	—	—	—	⊙	(Note) EX-43 without no timer also available (models without timer is equipped with sensitivity adjuster)	P.266	
	EX-42	5 to 38 0.197 to 1.496 (Conv. point: 20 0.787)		18 0.709	10 0.394	30 1.181	△	DC	□	●	PA	67	—	—	—	—	—	—	—	P.266	
	EX-14A	2 to 25 0.079 to 0.984 (Conv. point: 10 0.394)		3.5 0.138	13 0.512	14.5 0.571	△	DC	□	●	P	67	—	—	—	—	—	—	—	●Aside from A type→Light-ON, B type→Dark-ON also available	P.232
	EX-24A	2 to 25 0.079 to 0.984 (Conv. point: 10 0.394)		4.5 0.177	16 0.630	18 0.709	△	DC	□	●	P	67	—	—	—	—	—	—	—	●Aside from A type→Light-ON, B type→Dark-ON also available	P.218
	EX-26A	6 to 14 0.236 to 0.551 (Conv. point: 10 0.394)		12.3 0.484	8.2 0.323	22 0.866	△	DC	□	●	P	67	●	—	—	—	—	—	—	●Aside from A type→Light-ON, B type→Dark-ON also available	P.218
PM2-LH10	2.5 to 8 0.098 to 0.315 (Conv. point: 10 0.394)		25 0.984	8.4 0.331	26 1.024	△	DC	□	●	PC	—	—	—	—	—	—	—	—	●5 other types varying in appearance available	P.350	

Type	Model No.	Sensing range (mm in)	Appearance (mm in)			Specifications							Functions				Remarks	Page		
						Structure	Power supply	Output	Emission color	Case material	Protection	Sensitivity adjuster	Self-diagnosis	Test input (emission halt)	Interference prevention	Light intensity monitor			Timer	
Adjustable range and fixed-focus type	EQ-501T	0.2 to 2,500 0.008 to 98.425		Depth: 68 2.677	Width: 26 1.024	Height: 68 2.677	P	Free	□	●	A	67	●	—	—	●	—	③	● Also available without a timer	P.378
	EQ-34	100 to 2,000 3.937 to 78.74		40 1.575	20 0.787	68 2.677	△	DC	N P	●	PA	67	●	—	—	●	—	—	● Two-output type also available	P.256
	RX-LS200	50 to 200 1.969 to 7.874		35 1.378	14 0.551	35 1.378	△	DC	N P	●	Z	67	●	—	—	—	—	—		P.296
	EQ-24	200 7.874		20 0.787	12 0.472	31 1.220	△	DC	N P	R	P	67	●	●	—	●	—	—		P.246
	EQ-23	100 3.937		20 0.787	12 0.472	31 1.220	△	DC	N P	R	P	67	●	●	—	●	—	—		P.246
	EQ-22	40 1.575		20 0.787	12 0.472	31 1.220	△	DC	N P	R	P	67	●	●	—	●	—	—		P.246

Detection steps data for the convergent reflective and adjustable range • fixed-focus type sensors is available on [P.12](#).

How to read the table

Appearance	Specifications	Functions
<p>Depth: from the detection surface to the back surface (mm in) Width: width of the detection surface (mm in) Height: from the bottom surface to the top surface (mm in)</p>	<p>Structure</p> <ul style="list-style-type: none"> △ Amplifier built-in P Power supply built-in Ⓢ Amplifier-separated <p>Power supply</p> <ul style="list-style-type: none"> DC DC 12 to 24 V AC/DC AC AC 24 to 240 V <p>Output</p> <ul style="list-style-type: none"> N NPN output P PNP output also available □ Relay contact output △ AC non-contact output <p>Emission color</p> <ul style="list-style-type: none"> ● Infrared light R Red light G Green light <p>Case material</p> <ul style="list-style-type: none"> Z Die-cast zinc alloy △ Die-cast aluminum P PBT resin PC Polycarbonate resin A ABS resin PT Polyethylene terephthalate resin PA Polyarylate resin F Fluorine resin <p>Protection</p> <p>The number inside the ○ mark represents the '○' value in the IEC established protection IPO.</p> <p>Sensitivity adjuster</p> <ul style="list-style-type: none"> ● With adjuster ● Multi-turn adjuster — None 	<p>Self-diagnosis</p> <p>Equipped with a function that lets the user know when sensing conditions are unstable such as when the incident light intensity decreases.</p> <p>Test input (emission halt)</p> <p>This function, which allows the light emission to be halted from the exterior of the sensor, can be used for the automation of start-up inspections as well as interference prevention.</p> <p>Interference prevention</p> <p>This function prevents mutual interference of light even when installing two sensors next to each other.</p> <ul style="list-style-type: none"> ● Equipped with interference prevention circuit ● Optional filter available ▲ May be applicable for halting emissions <p>Light intensity monitor</p> <p>The incident light intensity level can be verified by a digital display or by an optional sensor checker CHX-SC2 level indicator.</p> <p>Timer</p> <ul style="list-style-type: none"> ① Equipped with OFF-delay timer (variable) ③ Equipped with variable timer with selectable ON-delay / OFF-delay / non-delay features ④ Equipped with variable timer with selectable ON-delay / OFF-delay / ONE SHOT non-delay features