

BRQ Series

Cylindrical Type Photoelectric Sensor

■ Features

[Common]

- Excellent noise immunity and minimal influence from ambient light
- Power/Output reverse polarity protection circuit, output short over current protection circuit
- Mutual interference prevention function (except through-beam type)
- Sensitivity adjuster
- Light ON, Dark ON switchable by control wire

[BRQT, BRQM, BRQP Series (front sensing type)]

- Various materials: Plastic, Metal (Ni-plated Brass), Stainless steel 316L
- Long sensing distance: 30m (through-beam type)
- Body size - BRQT, BRQM: Standard
BRQP: Standard, Short body
- Protection structure - BRQT: IP67 (IEC standard), IP69K (DIN standard)
BRQM, BRQP: IP67 (IEC standard)

[BRQPS Series (side sensing type)]

- Protection structure: IP67 (IEC standard)

⚠ Please read "Safety Considerations" in the instruction manual before using.



[BRQT, BRQM, BRQP Series (front sensing type)]



BRQT-A
SUS316L Standard



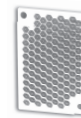
BRQM-A
Ni-plate Brass Standard



BRQT-A
Plastic Standard



BRQM-B
Plastic Short-body

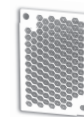


Reflector
(MS-2A)



Reflective tape
(MST series)

[BRQPS Series (side sensing type)]



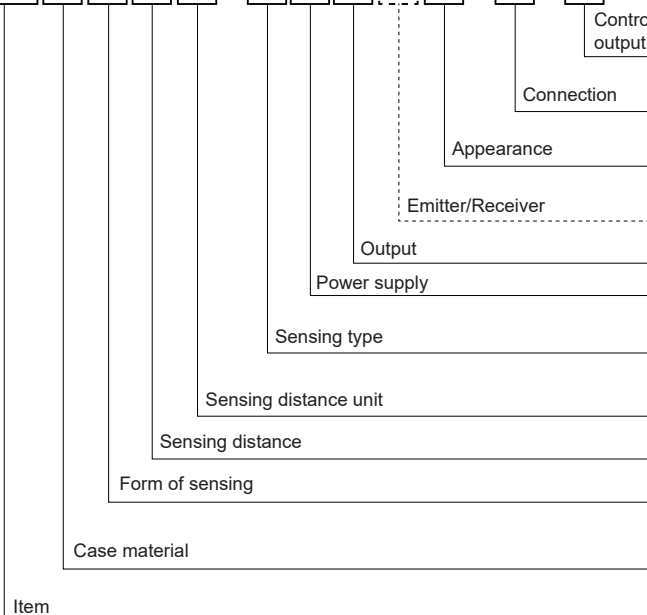
Reflector
(MS-2S)



Reflective tape
(MST series)

■ Ordering Information

BRQ T 5 M - T D T A - C - P



	Front sensing type	Side sensing type
No mark	NPN open collector output	
P	PNP open collector output	
No mark	Cable type	
C	Connector type	
A	Standard	Standard
B	Short body ^{※1}	—
1	Emitter	
2	Receiver	
T	Transistor output	
D	DC power	
T	Through-beam type	
P	Retroreflective type (built-in polarizing filter)	
D	Diffuse reflective type	
No mark	mm	
M	m	
Number	Sensing distance	
No mark	Front sensing type	—
S	—	Side sensing type
T	Stainless steel 316L	—
M	Brass, Ni-plate	—
P	Plastic	Plastic
BRQ	Cylindrical type photoelectric sensor	

※1: This is only for BRQP Series.

※: This information is intended for product management of through-beam type. (no need to refer when selecting model)

Cylindrical Type Photoelectric Sensor (Front Sensing Type)

Cylindrical Type Photoelectric Sensor (front sensing type)

■ Specifications

Model	NPN open collector output	BRQ□5M-TDT□□□	BRQ□20M-TDT□□□	BRQ□30M-TDT□□□	BRQ□3M-PDT□□□	BRQ□100-DDT□□□	BRQ□400-DDT□□□	BRQ□1M-DDT□□□
	PNP open collector output	BRQ□5M-TDT□□□-P	BRQ□20M-TDT□□□-P	BRQ□30M-TDT□□□-P	BRQ□3M-PDT□□□-P	BRQ□100-DDT□□□-P	BRQ□400-DDT□□□-P	BRQ□1M-DDT□□□-P
Sensing type		Through-beam type			Retroreflective type (built-in polarizing filter)	Diffuse reflective type		
Sensing distance		5m	20m	30m	3m ^{※1}	100mm ^{※2}	400mm ^{※2}	1m ^{※3}
Sensing target		Opaque materials of min. Ø7mm			Opaque materials of min. Ø75mm	Opaque, translucent materials		
Hysteresis		—				Max. 20% at rated sensing distance		
Response time		Max. 1ms						
Power supply		10-30VDC≒ ±10% (ripple P-P: max.10%)						
Current consumption		Emitter/Receiver: max. 20mA			Max. 30mA			
Light source		Red LED (660nm)				Infrared LED (850nm)	Red LED (660nm)	
Sensitivity adjustment		Sensitivity adjuster						
Operation mode		Selectable Light ON or Dark ON by control wire (white)						
Control output		NPN or PNP open collector output ・ Load voltage: max. 30VDC≒ ・ Load current: max. 100mA ・ Residual voltage: max. 2VDC≒						
Protection circuit		Power/Output reverse polarity protection circuit, output short over current protection circuit, interference prevention function (except through-beam type)						
Indicator		Operation indicator: yellow LED, stability indicator: green LED (emitter power indicator of through-beam type: red LED)						
Connection		Cable type, connector type						
Insulation resistance		Over 20MΩ (at 500VDC megger)						
Noise immunity		±240V the square wave noise (pulse width:1μs) by the noise simulator						
Dielectric strength		1,000VAC 50/60Hz for 1 minute						
Vibration		1.5mm amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 2 hours						
Shock		500m/s ² (approx. 50G) in X, Y, Z direction for 3 times						
Environment	Ambient illu.	Sunlight: max. 11,000lx, Incandescent lamp: max. 3,000lx (receiver illumination)						
	Ambient temp.	-25 to 60°C, storage: -30 to 70°C						
	Ambient humi.	35 to 85%RH, storage: 35 to 85%RH						
Protection structure		・ BRQT Series: IP67 (IEC standard), IP69K (DIN standard) ・ BRQM, BRQP Series: IP67 (IEC standard)						
Material		・ Case: BRQT Series - stainless steel 316L / BRQM Series - brass, Ni-plate / BRQP Series - polycarbonate ・ Lens, Lens cover: polymethyl methacrylate acrylic						
Cable ^{※4}	Cable type	Ø4mm, 4-wire, 2m (emitter of through-beam type: Ø4mm, 2-wire, 2m) (AWG26, core diameter: 0.52mm, number of cores: 20, insulator out diameter: Ø1mm)						
Accessory	Individual	—			Reflector (MS-2A)	—		
	Common	M18 fixing nut: 4, adjustment screwdriver				M18 fixing nut: 2, adjustment screwdriver		
Approval		CE,  us						
Weight ^{※5}	Cable type	BRQT-A/BRQM-A: approx. 220g (approx. 140g) BRQP-A: approx. 160g (approx. 110g) BRQP-B: approx. 150g (approx. 100g)			BRQT-A/BRQM-A: approx. 150g (approx. 70g) BRQP-A: approx. 120g (approx. 60g) BRQP-B: approx. 120g (approx. 50g)			
		BRQT-A/BRQM-A: approx. 160g (approx. 50g) BRQP-A: approx. 110g (approx. 25g) BRQP-B: approx. 100g (approx. 20g)			BRQT-A/BRQM-A: approx. 140g (approx. 30g) BRQP-A: approx. 110g (approx. 15g) BRQP-B: approx. 100g (approx. 10g)			
	Connector type							

※1: The sensing distance is specified with using the MS-2A reflector. The distance between the sensor and the reflector should be set over 0.1m. When using reflective tapes, the reflectivity will vary by the size of the tape. Please refer to the '■ Reflectivity by Reflective Tape Model' table before using the tape.

※2: Non-glossy white paper 100×100mm.

※3: Non-glossy white paper 300×300mm.

※4: M12 connector cable is sold separately.

※5: The weight includes packaging. The weight in parenthesis is for unit only.

※The temperature or humidity mentioned in Environment indicates a non freezing or condensation.

SENSORS

CONTROLLERS

MOTION DEVICES

SOFTWARE

(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) LIDAR

(D) Door/Area Sensors

(E) Vision Sensors

(F) Proximity Sensors

(G) Pressure Sensors

(H) Rotary Encoders

(I) Connectors/ Connector Cables/ Sensor Distribution Boxes/ Sockets

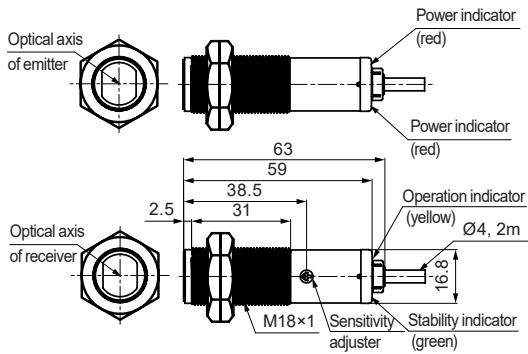
BRQ Series

(unit: mm)

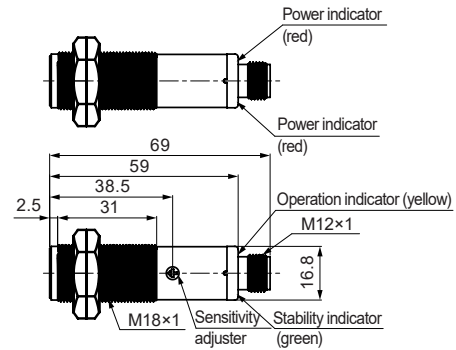
■ Dimensions

⊙ Through-beam type

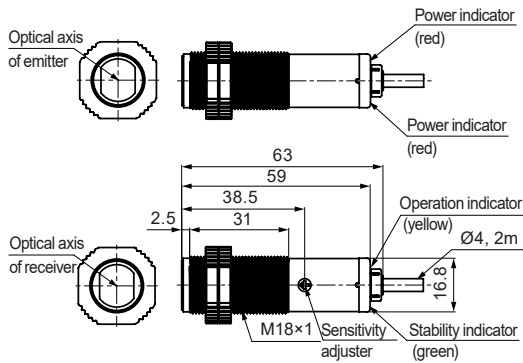
- BRQT□-TDTA(-P)
- BRQM□-TDTA(-P)



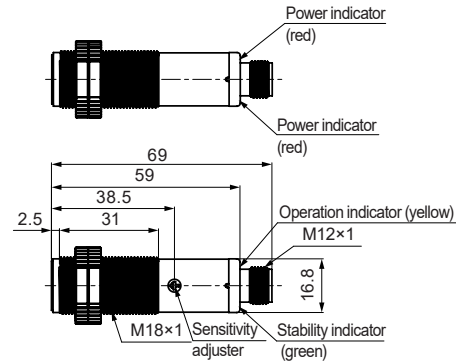
- BRQT□-TDTA-C(-P)
- BRQM□-TDTA-C(-P)



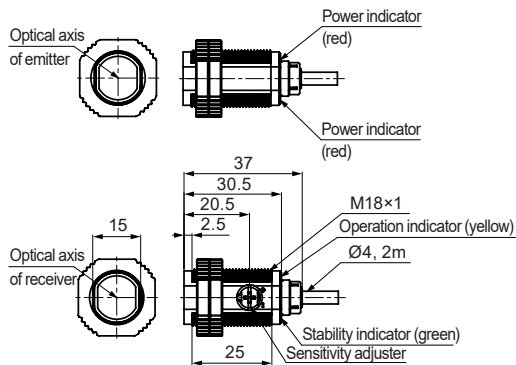
- BRQP□-TDTA(-P)



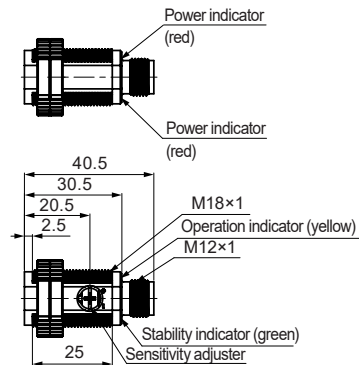
- BRQP□-TDTA-C(-P)



- BRQP□-TDTB(-P)



- BRQP□-TDTB-C(-P)

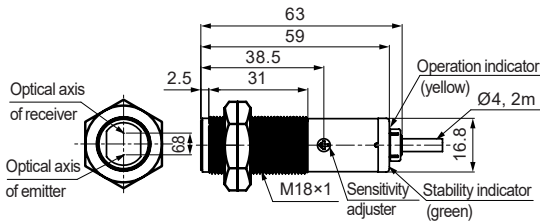


Cylindrical Type Photoelectric Sensor (Front Sensing Type)

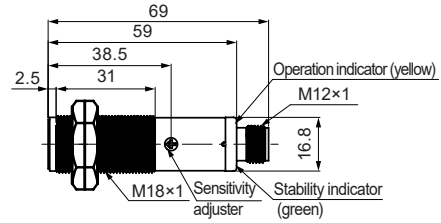
◎ Retroreflective/Diffuse reflective type

(unit: mm)

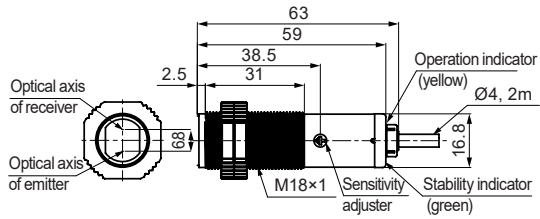
- BRQT3M-PDTA(-P)/BRQM3M-PDTA(-P)
- BRQT□-DDTA(-P)/BRQM□-DDTA(-P)



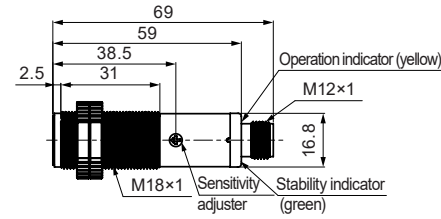
- BRQT3M-PDTA-C(-P)/BRQM3M-PDTA-C(-P)
- BRQT□-DDTA-C(-P)/BRQM□-DDTA-C(-P)



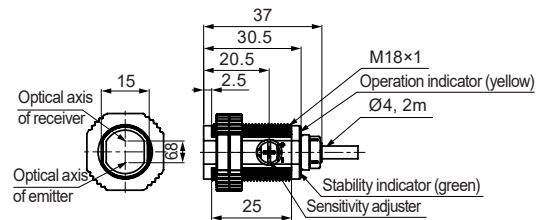
- BRQP3M-PDTA(-P)
- BRQP□-DDTA(-P)



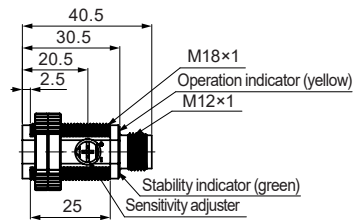
- BRQP3M-PDTA-C(-P)
- BRQP□-DDTA-C(-P)



- BRQP3M-PDTB(-P)
- BRQP□-DDTB(-P)



- BRQP3M-PDTB-C(-P)
- BRQP□-DDTB-C(-P)



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