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Contact Ramco Innovations

Universal voltage type that allows selection of connection types

- Longest in class** Sensing distance: 70 m
- Uses a red LED for the light source. Easy adjustment of light axis even over long distances
- Universal voltage types are available as terminal block types and cable types
- DC power types are also available as connector types

Related products

Small/Cable type
V2
● P.246



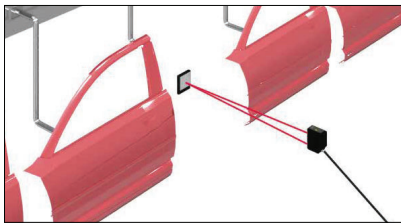
BGS
BGS-2V
● P.384



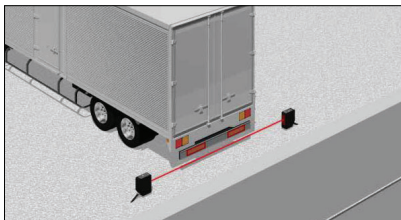
Protrusion detection in automated warehouses



Automobile door detection



Vehicle stop position detection



Selection table

Type	Shape	Sensing distance	Connection type	Model
Universal voltage	Through-beam	70 m	Terminal block type	V4T-7000
			Cable type	V3T-7000
	Retro-reflective	0.01 to 12 m	Terminal block type	V4R-1200
			Cable type	V3R-1200
	Diffuse-reflective	0.01 to 2 m	Terminal block type	V4D-200
			Cable type	V3D-200

Type	Shape	Sensing distance	Connection type	Model	
				NPN type	PNP type
DC power	Through-beam	70 m	Terminal block type	V4T-7000N	V4T-7000P
			Cable type	V3T-7000N	V3T-7000P
			Connector type	V3T-7000CN	V3T-7000CP
	Retro-reflective	0.01 to 12 m	Terminal block type	V4R-1200N	V4R-1200P
			Cable type	V3R-1200N	V3R-1200P
			Connector type	V3R-1200CN	V3R-1200CP
	Diffuse-reflective	0.01 to 2 m	Terminal block type	V4D-200N	V4D-200P
			Cable type	V3D-200N	V3D-200P
			Connector type	V3D-200CN	V3D-200CP

● For the connector type, please purchase an optional DOL-1204-G02M connector cable.

Options/Accessories

Reflector Standard (included)

V-61

Sensing distance: 0.01 to 12 m
60.9 × 50.9 mm



Small type

V-42

Sensing distance: 0.01 to 4.8 m
42 × 35 mm



Connector cable Straight



DOL-1204-G02M

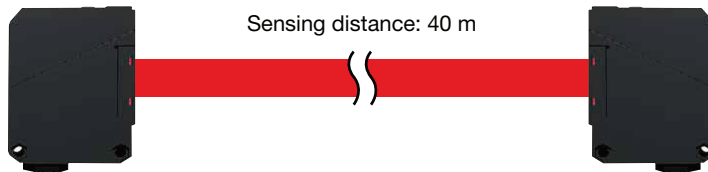
M12, 4-pin connector cable Cable length: 2 m
*5 m and 10 m cables are separately available.

Features

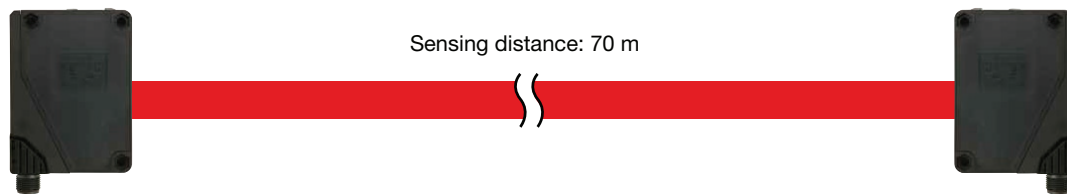
Longest in class **Sensing distance: 70 m**

Achieves 70 m sensing distance as a through-beam type. Expanded long range detection applications.

Conventional models



V3T-7000□, V4T-7000□



Easy adjustment of light axis

Employs red LED for light source (all models)

Uses a red LED for the light source for which light axis adjustments are possible even over long distances. Makes it possible to save time on installation. Also possible to see the detection point in the case of short distances.



Terminal block type / Cable type / Connector type (DC power types only)

Possible to select from three connection types

Three types are available: A terminal block type which allows the connection of various cables, a cable type which doesn't require the separate preparation of cables, and a connector type which doesn't require rewiring when changing sensors. Select the most suitable model. (Connector type is for DC power types only)

Terminal
block type



Internal terminal
block

Cable type



Connector type
(DC power type only)



Rotation
type

Specifications

Type		Universal voltage type		
		Through-beam type	Retro-reflective type	Diffuse-reflective type
Model	Terminal block type	V4T-7000	V4R-1200	V4D-200
	Cable type	V3T-7000	V3R-1200	V3D-200
Sensing distance		70 m	0.01 to 12 m ¹	0.01 to 2 m ²
Light source		Red LED		
Response time		15 ms or less		
Hysteresis		—		20% or less
Distance adjustment		1-turn potentiometer		
Indicators		Output indicator: orange LED, Stability indicator: green LED		
Control output		Relay × 1C ³ 240 VAC / 30 VDC, 3 A or less (load resistance)		
Output mode		Fixed to Light ON		
Connection type		Terminal block type: Applicable cable outer diameter: ø4 to 8, Cable type: Cable length: 2 m, ø6.3		
Rating	Supply voltage	24 to 240 VDC ±10%, 24 to 240 VAC ±10% 50/60 Hz		
	Power consumption	4 VA or less	2.5 VA or less	
Applicable regulations		EMC directive (2004/108/EC), Low voltage directive (2006/95/EC)		
Applicable standards		EN 60947-5-2		
Company standards		Noise resistance: Feilen Level 3 cleared		
Environmental resistance	Ambient temperature/humidity	-25 to +55°C (no freezing) / 35 to 85% RH (no condensation)		
	Ambient illuminance	Sunlight: 10,000 lx or less, Incandescent lamp: 3,000 lx or less		
	Vibration resistance	10 to 55 Hz; double amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions		
	Shock resistance	Approx. 50 G (500 m/s ²); 3 times in each of the X, Y, and Z directions		
	Degree of protection	IP67		
Material		Housing: ABS (glass fiber filled, fire resistant), Front cover: Polycarbonate (retro-reflective type is PMMA)		
Weight without cable		Through-beam type emitter: Approx. 70 g Other: Approx. 85 g		
Included accessories		Mounting bracket	Mounting bracket Reflector: V-61	Mounting bracket

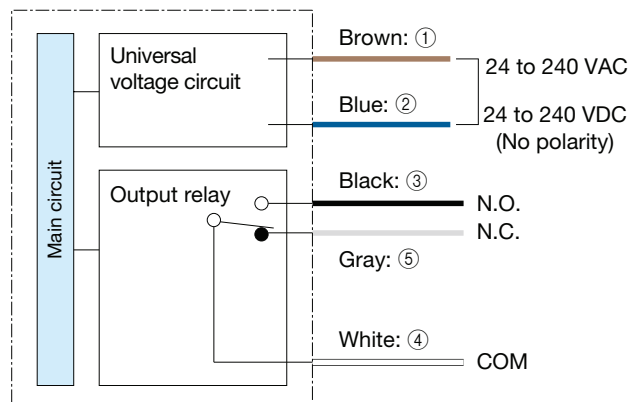
*1. With the V-61 reflector *2. Using a 200 × 200 mm white sheet of paper.

*3. When driving the inductive load (with an induction valve, electromagnetic contactor, etc.) through the relay connection point, please use a noise absorption device (surge absorber).

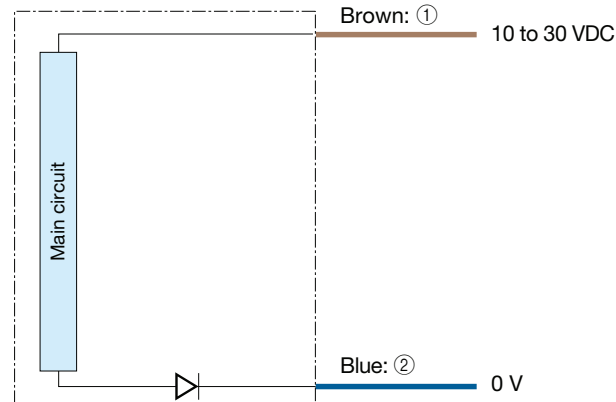
- Specifications are subject to change without prior notice for product improvement purposes.
- Products certified for the Chinese CCC compulsory certification system also available. Contact us for details.

Output circuit diagram

■ Universal voltage type



■ Through-beam type emitter



*For the universal voltage type, add 24 to 240 VAC / VDC to the brown wire and blue wire. (No polarity)

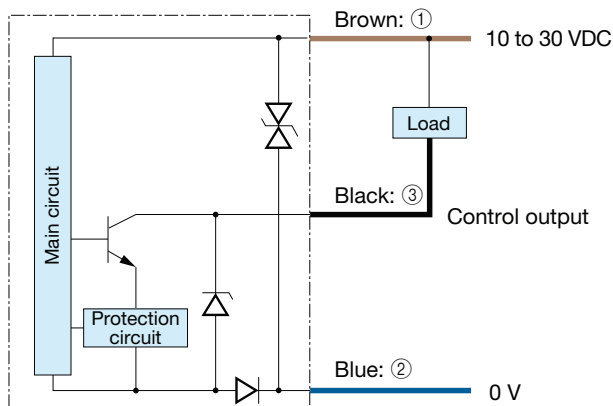
Type			DC power type		
			Through-beam type	Retro-reflective type	Diffuse-reflective type
Model	NPN	Terminal block type	V4T-7000N	V4R-1200N	V4D-200N
		Cable type	V3T-7000N	V3R-1200N	V3D-200N
		Connector type	V3T-7000CN	V3R-1200CN	V3D-200CN
	PNP	Terminal block type	V4T-7000P	V4R-1200P	V4D-200P
		Cable type	V3T-7000P	V3R-1200P	V3D-200P
		Connector type	V3T-7000CP	V3R-1200CP	V3D-200CP
Sensing distance		70 m	0.01 to 12 m ⁻¹	0.01 to 2 m ⁻²	
Light source		Red LED			
Response time		0.5 ms or less			
Hysteresis		—		20% or less	
Distance adjustment		1-turn potentiometer			
Indicators		Output indicator: orange LED, Stability indicator: green LED			
Control output		NPN/PNP type Open collector Max. 100 mA/30 VDC			
Output mode		Light ON / Dark ON selection switch			
Connection type		Terminal block type: Applicable cable outer diameter: ø4 to 8, Cable type: Cable length: 2 m, ø3.8, Connector type: M12, 4-pin			
Rating	Supply voltage		10 to 30 VDC, including 10% ripple (p-p)		
	Power consumption		35 mA or less		
Applicable regulations		EMC directive (2004/108/EC)			
Applicable standards		EN 60947-5-2			
Company standards		Noise resistance: Feilen Level 3 cleared			
Environmental resistance	Ambient temperature/humidity		-25 to +55°C (no freezing) / 35 to 85% RH (no condensation)		
	Ambient illuminance		Sunlight: 10,000 lx or less, Incandescent lamp: 3,000 lx or less		
	Vibration resistance		10 to 55 Hz; double amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions		
	Shock resistance		Approx. 50 G (500 m/s ²); 3 times in each of the X, Y, and Z directions		
	Degree of protection		IP67		
Material		Housing: ABS (glass fiber filled, fire resistant), Front cover: Polycarbonate (retro-reflective type is PMMA)			
Weight without cable		Through-beam type emitter: Approx. 70 g Other: Approx. 85 g			
Included accessories		Mounting bracket	Mounting bracket Reflector: V-61	Mounting bracket	

*1. With the V-61 reflector *2. Using a 200 × 200 mm white sheet of paper.

● Specifications are subject to change without prior notice for product improvement purposes.

Output circuit diagram

■ NPN output type



■ Connector type

(Pin configuration) Sensor side Connector cable side



- ① 10 to 30 VDC
- ② 0V
- ③ Control output
- ④ —

Connecting

■ ① to ④ are connector pin No.

Notes

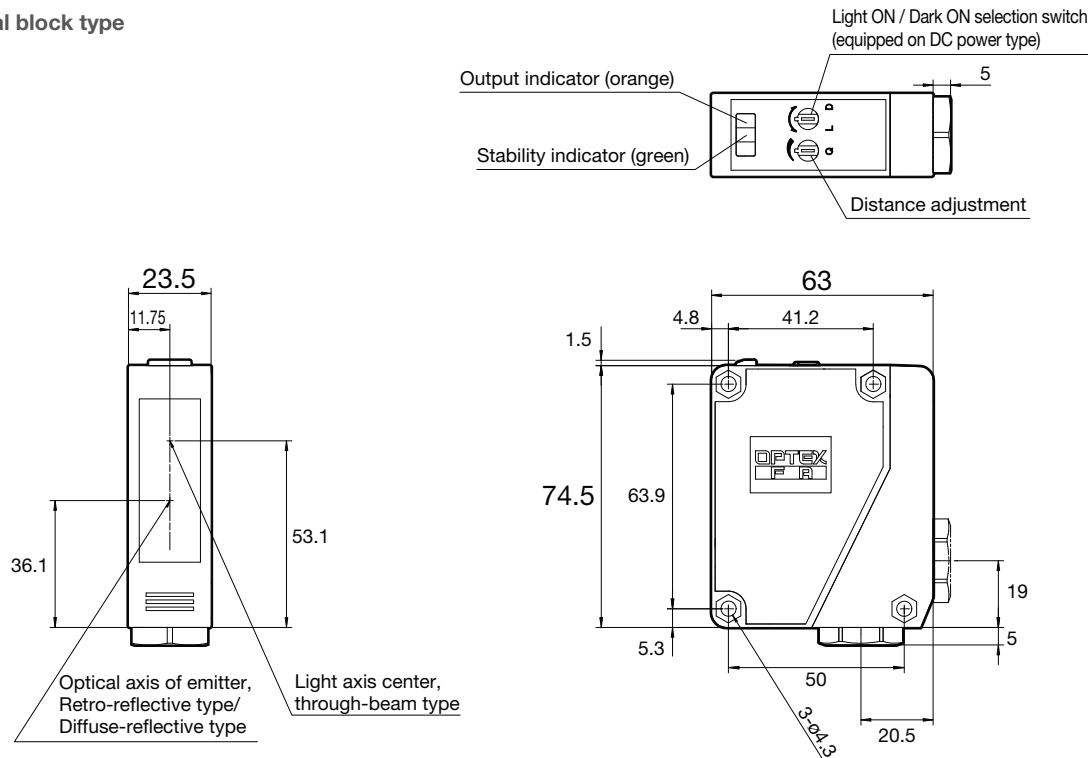
- When using a switching regulator for the power supply, be sure to ground the frame ground terminal.
- Avoid wiring in parallel with or in the same piping as high-voltage wires or power lines. Doing so may lead to malfunctions caused by noise. Also, shorten the power supply and signal wires as much as possible.
- Avoid using the transient state while the power is on (approx. 100 ms).

Dimensions

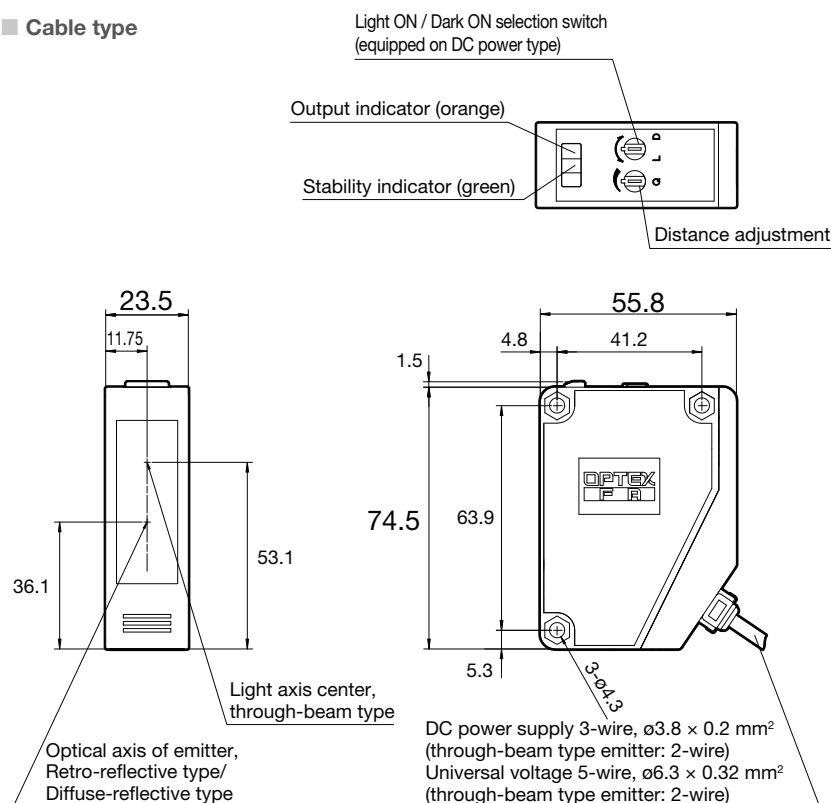
Sensor

(Unit: mm)

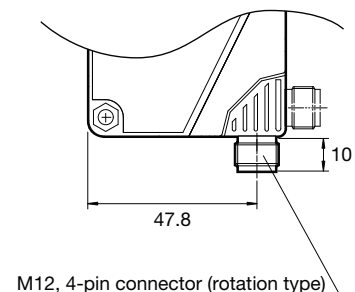
■ Terminal block type



■ Cable type



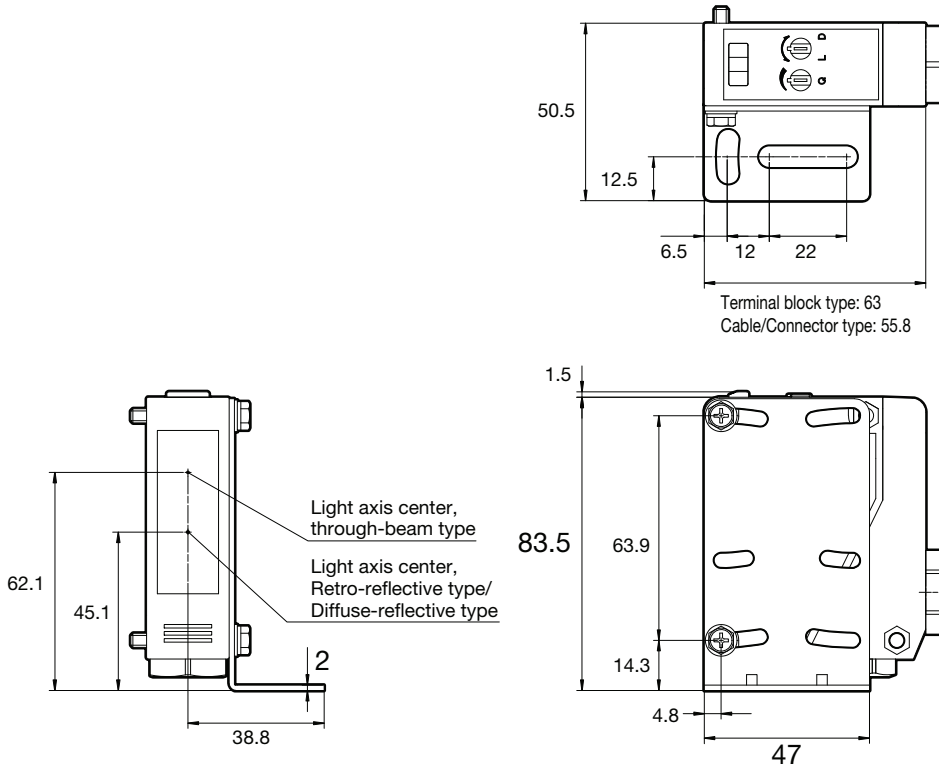
■ Connector type



Mounting bracket

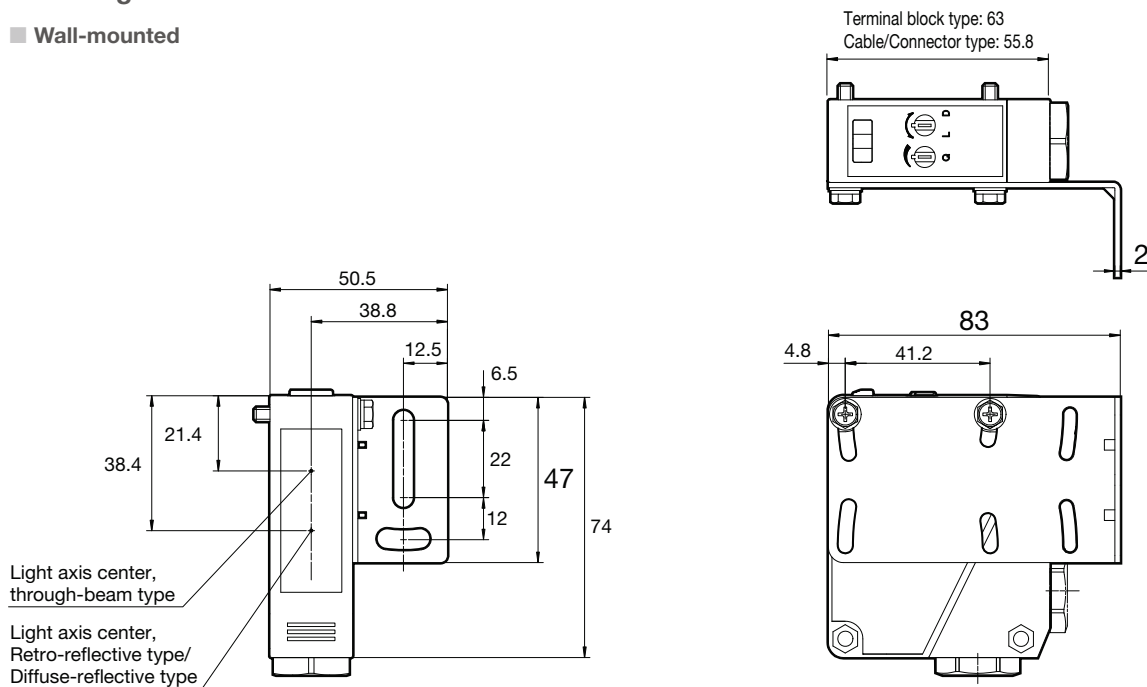
(Unit: mm)

■ Floor-mounted



Mounting bracket

■ Wall-mounted

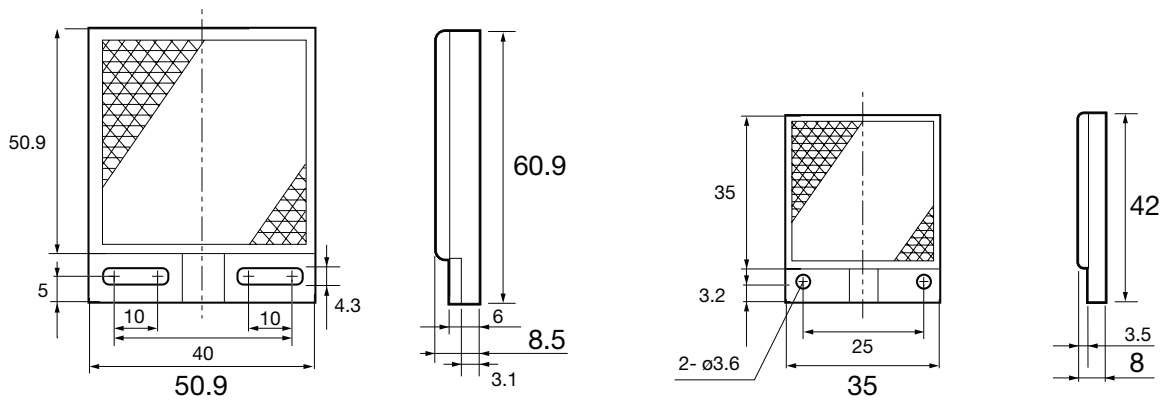


Dimensions

Reflector

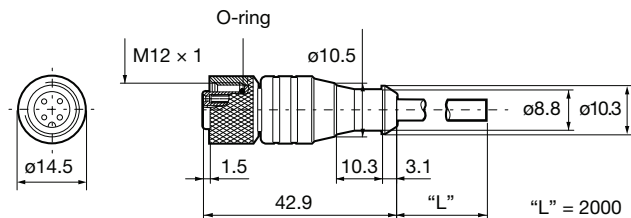
(Unit:mm)

■ **V-61**: Standard type reflector (included with retro-reflective type) ■ **V-42**: Small reflector (optional)



Connector cable (optional)

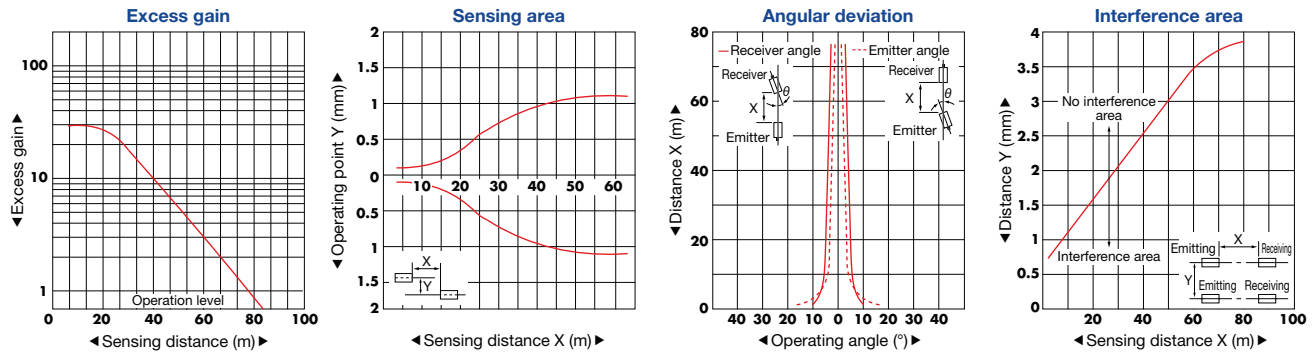
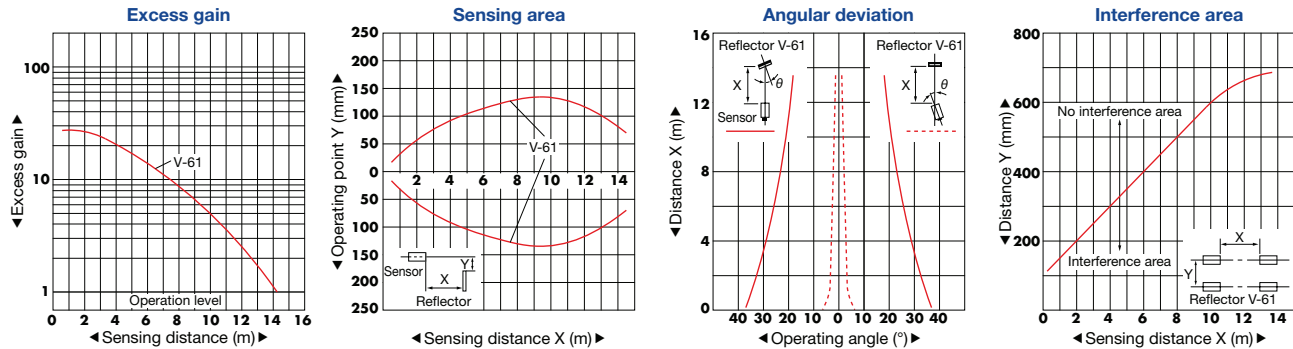
■ **DOL-1204-G02M**



Cable section material: PVC, Conductor cross-section: 4-wire \times 0.25 mm²

Typical characteristic data

*Contact us for any other characteristic data that may be required.

V3T-7000□/V4T-7000□**V3R-1200□/V4R-1200□****V3D-200□/V4D-200□**