

NAL-M10R

Long-distance polarization reflector type
Embedded amplifier photo sensors



CE



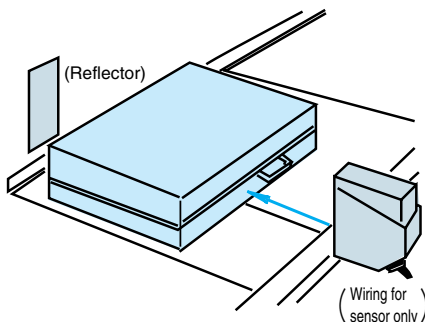
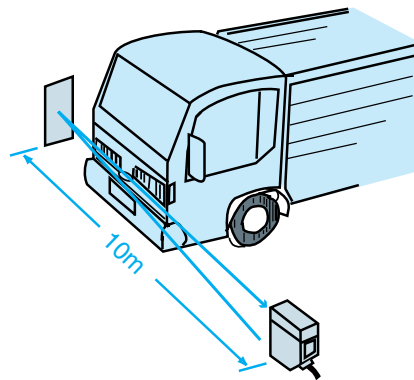
- Long distance detection up to 10 m achieved with reflector type
- Capable of reliably detecting mirror surface objects
- NPN/PNP output
- Stable operation checked in one view with stability indicator

Embedded Amplifier Photo Sensors

Type

Detection method	Detecting distance	Model	Operation mode	Output mode	Power supply
 Polarization reflector type	 0.5~10m	NAL-M10RTC	Light-ON/ Dark-ON selectable (with switch)	NPN/PNP open collector output	DC12-24V

- Long detecting distance of 10 m ideal for detection of large objects and use on large conveyors
- Reflector type only requiring wiring for one unit contributing to cost reduction



- Polarization reflector capable of reliably detecting glossy objects
- Detecting condition checked at a glance with stability indicator

NAL-M10R

Rating/Performance/Specification

Model		NAL-M10RTC	
Rating/performance	Detection method	Polarization reflector type	
	Detecting distance	0.5~10m *1	
	Detection object	Mirror-like objects, opaque objects	
	Power supply	12-24V DC $\pm 10\%$ / Ripple 10% max.	
	Current consumption	30mA max.	
	Output mode	NPN/ PNP open collector (2 outputs) Rating; 100 mA (30 VDC) max. (NPN: sink current PNP: source current)	
	Operation mode	Light-ON/Dark-ON selectable	
	Response time	0.5ms max.	
	Operating angle	30° (at reflector)	
	Light source	Red LED (670 nm)	
Specification	Indicator	Operation indicator (orange LED) Stability indicator (green LED)	
	Switch	Light-ON/Dark-ON selector switch	
	Short circuit protection	Provided	
	Material	Case	Polycarbonate
		Lens	Acrylic
		Terminal cover	Polycarbonate
		Mounting bracket	Stainless steel (SUS 304)
	Connection	Terminal block (with M3.5 screws)	
	Mass	200 g max. (including mounting bracket)	

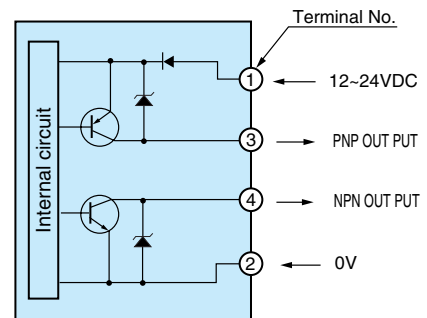
*With reflector model K-77 (accessory)

Environmental Specification

Environment specification	Ambient light	Sunlight: illumination on light receiving surface 10,000 max. Incandescent lamp: illumination on light receiving surface 3,000 max.
	Ambient temperature	-25 - +55°C (non-freezing)
	Ambient humidity	35-85%RH (non-condensing)
	Protective structure	IP 67
	Vibration	10-55 Hz / 1.5 mm amplitude / 2 hours each in 3 direction
	Shock	500 m/s ² / 3 times each in 3 directions
	Dielectric withstanding	1,000 VAC for 1 minute
	Insulation resistance	500 VDC, 20 MΩ or higher

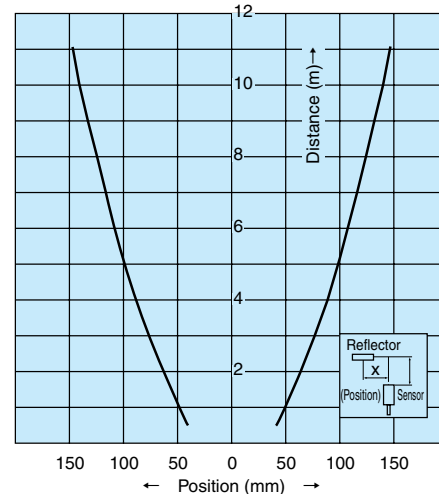
Input/Output Circuit and Connection

- Open collector output



The output transistor turns off when load short circuit or overload occurs. Check the load and turn the power back on.

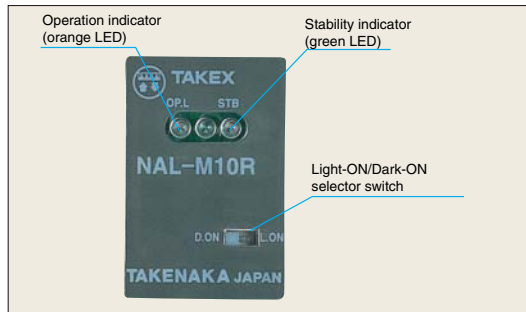
Directional characteristics (Typical example)



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For Correct Use

Operation panel



◆ Operation indicator(O.P)

Orange LED illuminated when output is activated

◆ Stability indicator(STB)

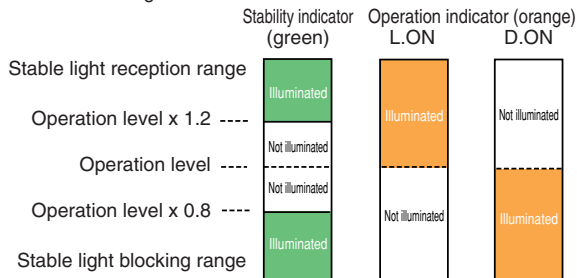
Green LED illuminated when the received light level is within the range allowing stable activation (120% or more of the operation level) or stable deactivation (80% or less of the operation level).

◆ D.ON/L.ON selector switch

D.ON: output activated when light is blocked
L.ON: (output activated when light is received)

Indicators

- The operation indicator (orange LED) and stability indicator (green LED) respectively show different received light intensity levels as described in the figure below.



- Repeat activation and deactivation to make sure that the sensitivity is in the stable activation/deactivation range.
- Setting within the stable range increases the reliability against variation of environment after setting.

Detecting distances for different reflectors

The detecting distance depends on the reflector used.

Reflector model	K-77	K-7	K-71	S-510G
Detecting distance	0.5~10m	0.5~7.5m	0.5~4m	0.5~6m
Remarks	Accessory	Optional	Optional	Optional

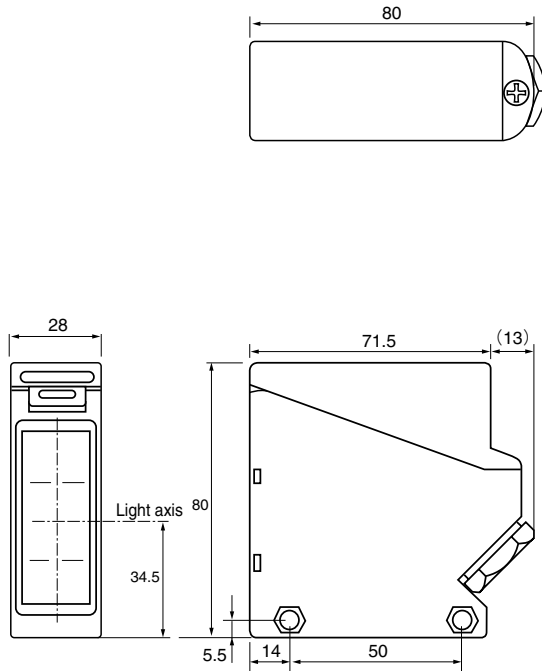


- Do not use the product for the protection of human body.
- When using the product for safety purposes, ensure safety with the control system as a whole as well as the detection.
- This product is not explosion proof.

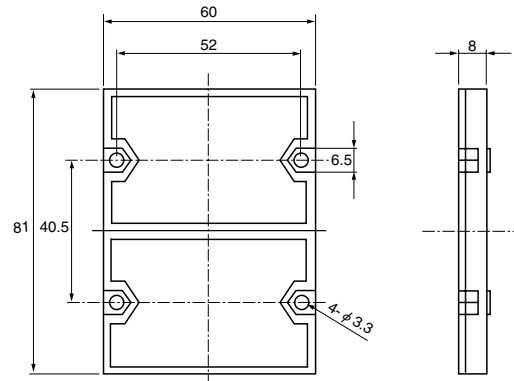
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■ Dimensions (in mm)

Body



Reflector (Accessory)
K-77



With mounting bracket (accessory) attached

