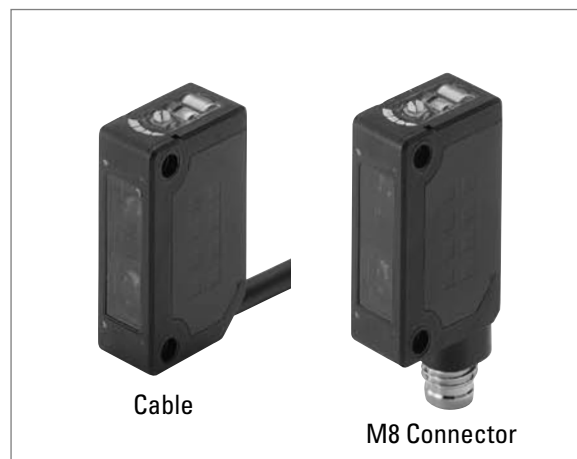




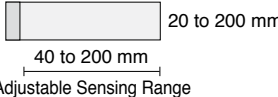
Background Suppression Sensor - SA1E

Features

- Background suppression (BGS) detects targeted objects only
- Sensing range can be setup to ignore the background
- Maximum sensing range for target object is 20 to 200 mm
- Two connection styles: 2 meter cable or M8 connector
- NPN output, PNP output, light ON, and dark ON are available
- Red LED is used for easy optical adjustment
- UL/c-UL Listed (File No. E222927)
- CE marked



Part Numbers

Sensing Method	Sensing Range	Connection	Cable Length	Operation Mode	Part Number	
					NPN Output	PNP Output
Background Suppression Red LED w/Sensing Range Adjustment		Cable	2m*	Light ON	SA1E-BN1-2M	SA1E-BP1-2M
				Dark ON	SA1E-BN2-2M	SA1E-BP2-2M
		M8 Connector	2m or 5m (purchase separately)	Light ON	SA1E-BN1C	SA1E-BP1C
				Dark ON	SA1E-BN2C	SA1E-BP2C

*Other cable lengths available. Contact IDEC for more information.

Specifications

Power Voltage		12 to 24V DC (operating range: 10 to 30V DC) (with reverse-polarity protection)
Power Consumption		30 mA
Sensing Range		20 mm to the selected distance (200 mm maximum) (using 200 x 200 mm white mat paper)
Detectable Object		Opaque
Hysteresis		20% maximum
Response Time		1 ms maximum
Sensing Range Adjustment		6-turn control knob
Light Source Element		Red LED
Operation Mode		Light ON/Dark ON
Control Output		NPN open collector or PNP open collector, 30V DC, 100 mA maximum Voltage drop: 1.2V maximum, With short-circuit protection
LED Indicator		Operation LED: Yellow (stable LED is not provided)
Interference Prevention		Two units can be mounted in close proximity.
Degree of Protection		IP67 (IEC60529)
Extraneous Light Immunity		Sunlight: 10,000 lux maximum, Incandescent lamp: 3,000 lux maximum (at receiver)
Operating Temperature		−25 to +55°C (no freezing)
Operating Humidity		35 to 85% RH (no condensation)
Storage Temperature		−40 to +70°C (no freezing)
Insulation Resistance		Between live part and mounting bracket: 20 MΩ maximum (500V DC megger)
Dielectric Strength		Between live part and mounting bracket: 1000V AC, 50/60 Hz, 1 minute
Vibration Resistance		Damage limits: 10 to 55 Hz, Amplitude 0.75 mm, 20 cycles in each of 3 axes
Shock Resistance		Damage limits: 500 m/s ² (50G), 10 shocks in each of 3 axes
Material		Housing: PC/PBT, Lens: PC, Indicator cover: PC
Weight (approx.)	Cable Type	55g (cable length 2m)
	Connector Type	20g
Connection Method	Cable Type	ø3.5 mm, 3-core, 0.2 mm ² , vinyl cabtyre cable
	Connector Type	M8 connector (4-pin)

Accessories (Optional)

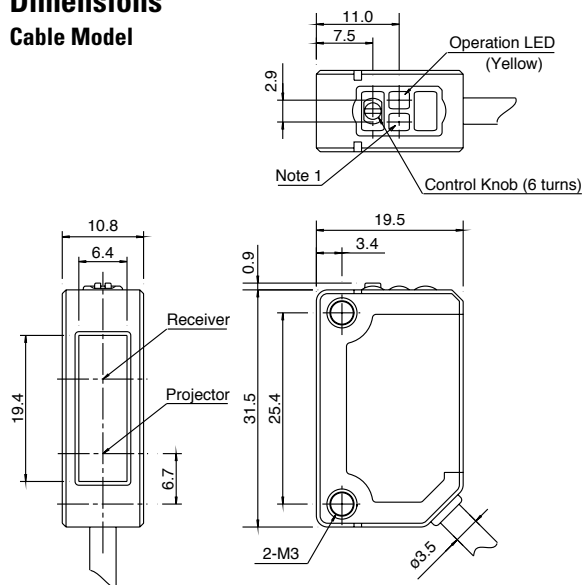
Mounting Brackets			
Item		Part Number	Package Quantity
Mounting Bracket	Vertical Mounting	SA9Z-K01	1
	Horizontal Mounting	SA9Z-K02	

- Two mounting screws (M3 x 12 mm sems screw) are attached to the SA9Z-K01 and SA9Z-K02.
- The SA9Z-K02 cannot be used with the connector type.

Connector Cable (for M8 connector type)			
Number of Core Wires	Type & Length	Part Number	Package Quantity
4	Straight, 2m	SA9Z-CM8K-4S2	1
	Straight, 5m	SA9Z-CM8K-4S5	
	Right angle, 2m	SA9Z-CM8K-4L2*	
	Right angle, 5m	SA9Z-CM8K-4L5*	

Dimensions

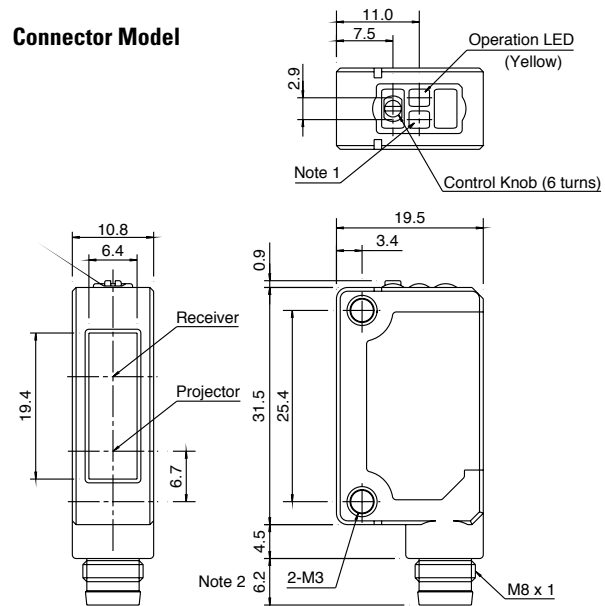
Cable Model



Note 1: Stable LED is not provided on the background suppression type.

Note 2: The connector length is 18 mm when a right-angle connector cable (SA9Z-CM8K-4L*) is attached.

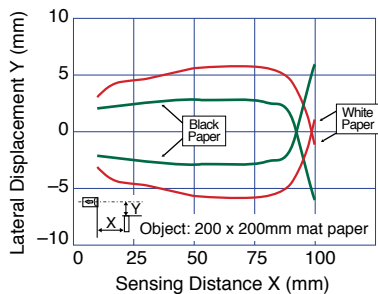
Connector Model



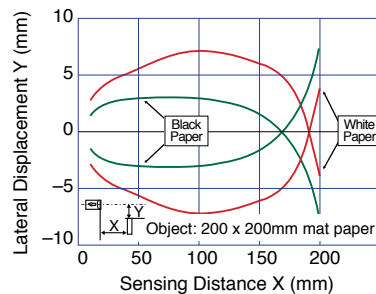
All dimensions in mm.

Characteristics (Typical)

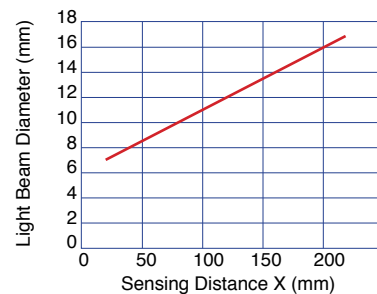
• Lateral Displacement (Preset 100 mm)



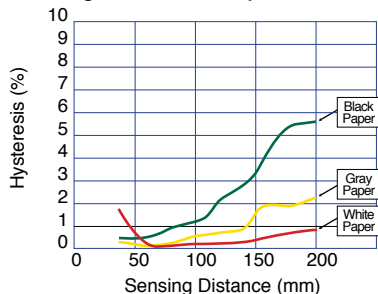
• Lateral Displacement (Preset 200 mm)



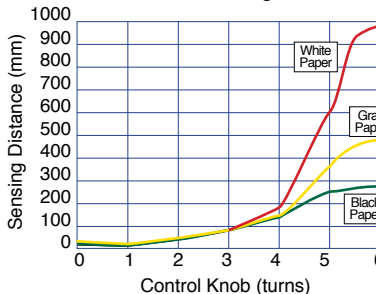
• Light Beam Diameter



• Sensing Distance vs. Hysteresis



• Control Knob vs. Sensing Distance



• Color Mat Paper and Other Materials

