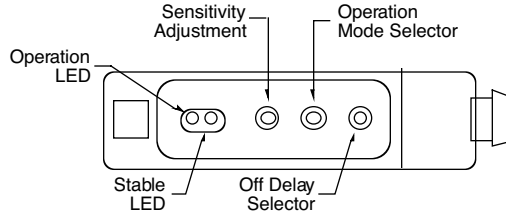
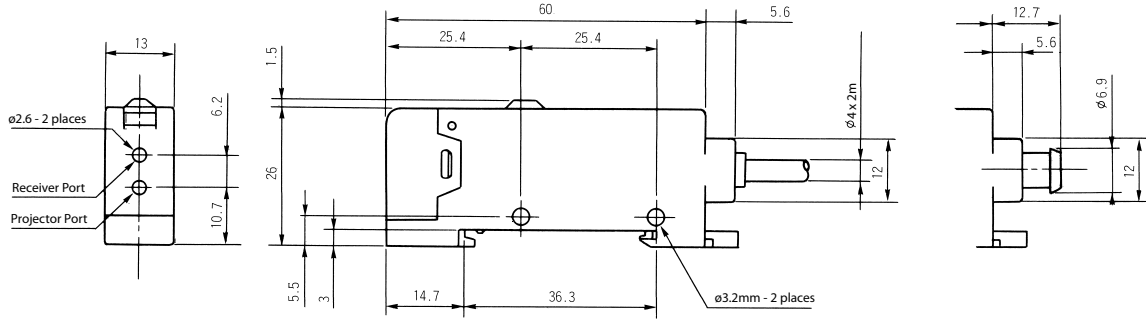


Specifications

		SA1C-FN, -FD (Standard Speed)	SA1C-F1N, -F1D (High-speed)	
General Specifications	Power Voltage	12V to 24V DC	√	
	Operating Voltage	10V to 30V DC, ripple 10% (maximum)	√	
	Current Draw	30mA (maximum)	√	—
		40mA (maximum)	—	√
	Operating Temperature	Amplifier only: -25° to +55°C Fiber optic cords (except heat-resistant types): -40° to +70°C Heat-resistant fiber optic cords: -40°C to +350°C (avoid ice coating)	√	√
	Operating Humidity	35 to 85% RH (avoid condensation)	√	√
	Extraneous Light Immunity	Sunlight: 10,000 lux (maximum); Incandescent light: 3,000 lux (maximum) on receiver surface— defined as incident or unwanted light received by a sensor, unrelated to the presence or absence of the intended object	√	√
	Material	Amplifier only: PBT resin (housing) with polycarbonate lens Fiber optic cords (except heat-resistant types): Nickel-plated brass (sensing head), polyethylene-covered PMMA (cord), and SUS304 stainless (sleeve) Heat-resistant fiber optic cords: SUS 304 stainless (sensing head) and SUS spiral tube around glass fiber cord	√	√
	Degree of Protection	IP66 — IEC Pub 529, sensors rated IP66 are dust-tight, water-resistant, and perform best when not subjected to heavy particle or water blasts	√	√
	Connection	Cable type: 0.2mm ² ; Vinyl cabtyre cable #24 AWG, 6'–6-3/4' (2m) long Connector type: Ø 0.31" (8mm) 3- or 4-pin connector (cable ordered separately for quick connect sensors)	√	√
	Light Source	Red or green LED (pulse-modulated)	√	√
	Output	NPN transistor: 30V DC (1.2V residual), 100mA (maximum) PNP transistor: 30V DC (2.0V residual), 200mA (maximum) Self-diagnostic: 30V DC (1.2V residual), 50mA (maximum)	√	√
	Response	0.5ms (maximum)	√	—
		50µs (maximum)	—	√
Off Delay	0 to 100 ms (adjustable)	√	√	
Sensitivity	4-turn adjustment	√	√	
Minimum Bending Radius	Fiber optic cord (except SA9F-TT, -DT, -TL, and -DL): 1"R (25mm); Sleeve: 0.39"R (10mm) SA9F-TT and -DT: 0.59"R (15mm); Sleeve: 0.39"R (10mm) SA9F-TL and DL: 0.59"R (15mm); Sleeve: Unbendable	√	√	
Function Specifications	Operation Mode	Light on or dark on (selectable by switch on amplifier)	√	
	Indicator	Operation indicator: Red LED (out)	√	
		Stable level indicator: Green LED (stable)	√	
	Noise Resistance	Normal Mode	500V	√
			300V	—
		Common Mode	300V	√
	150V		—	
	Pulse Width	50ns –1µs, 100Hz (using a noise simulator)	√	
	Storage Temperature	-30 to +70°C (avoid freezing)	√	
	Insulation Resistance	20M minimum with 500V DC megger (between live & dead parts)	√	
	Dielectric Strength	1000V, 1 minute (between live & dead parts)	√	
Vibration Resistance	Damage limits: 10 – 55Hz Amplitude: 1.5mm p-p, 20 cycles in each of 3 axes crossed (one cycle = 5 minutes)	√		
Shock Resistance	Damage limits: 500m/s ² (approximately 49G), 10 shocks in each of 3 axes	√		
Weight	Cable type: Approximately 75g Quick-connect type: Approximately 30g	√		



Dimensions (mm)



Detecting Color Marks

Color of Mark	Background Color										
	White	Yellow	Chartreuse	Orange	Red	Magenta	Turquoise	Blue	Violet	Green	Black
White	-	❖	◆	❖	❖	◆	◆	◆	◆	◆	◆
Yellow	❖	-	◆	❖	❖	❖	◆	◆	◆	◆	◆
Chartreuse	◆	◆	-	□	□	❖	□	◆	❖	◆	◆
Orange	❖	❖	□	-	-	❖	□	◆	◆	◆	◆
Red	❖	❖	□	-	-	□	□	◆	◆	◆	◆
Magenta	◆	❖	❖	❖	□	-	□	□	-	□	◆
Turquoise	◆	◆	□	□	□	□	-	□	◆	❖	◆
Blue	◆	◆	◆	◆	◆	□	□	-	□	□	□
Violet	◆	◆	❖	◆	◆	-	◆	□	-	□	□
Green	◆	◆	◆	◆	◆	□	❖	□	□	-	□
Black	◆	◆	◆	◆	◆	◆	◆	□	□	□	-

- = Use Red LED
- ❖ = Use Green LED
- ◆ = Use Red or Green LED
- = Not Detectable

OT Touchscreens

PLCs

Automation Software

Power Supplies

Sensors

Communication

Barriers