

SA1J-F

FULL COLOR SENSORS



Proven color sensing technology available in a Fiber optic version.

IDEC introduces the SA1J-F family of Full Color Fiber Optic Sensors. This new line of full color sensors offers IDEC's proven color sensing technology in a Fiber optic version.

The SA1J-F is ideal for color sorting and quality control applications where space is limited. The SA1J-F utilizes a wide assortment of fiber optic heads to fit in the smallest of mounting areas. This new product line offers both 1 and 3-color programmable sensors for multiple color sorting applications. With the touch of a button, the SA1J-F is programmed and ready to work. The SA1J-F also has a remote lead for programming by a remote PLC or switch.

Features

Wide assortment of Fiber optic heads fit in tight mounting areas

LED light sources (red, green, and blue) for extended lamp life

High speed response time (0.3msec)

Simple one touch button and remote color teach functions

1 and 3-color programmable sensors for multiple color sorting applications

IP67 rating for use in harsh wet environments

Types

Amplifier

Type No.	Type	Output Type
SA1J-F1N1	1-Color	NPN open collector
SA1J-F1N3	3-Color	30V DC, 100mA
SA1J-F1P1	1-Color	PNP open collector
SA1J-F1P3	3-Color	30V DC, 100mA

Diffuse-Reflected Light Fiber Optic Unit

Type No.	Inspection Spot	Sensing Range
SA9F-DA11	∅ 2.5 mm	10 mm
SA9F-DA12	∅ 5 mm	20 mm
SA9F-DA13	∅ 8 mm	30 mm

Lens Attachments

Type No.	Description	Used With	Sensing Range
SA9Z-F11	For long-range detection of opaque objects	SA9F-TS21	300 mm
		SA9F-TC21	200 mm
		SA9F-TM21	150 mm
SA9Z-F12	Sideview attachment	SA9F-TS21	25 mm
		SA9F-TC21	20 mm
		SA9F-TM21	20 mm

Accessories

Item	Type No.
Fiber Cutter	SA9Z-F01

TREICHL-ATM Electronic Auf der Bült 10 - 12 D 41189 Mönchengladbach

Tel. 02166 958545 Fax 02166 958547 eMail: atm@treichl.de internet: www.lichtschranke.de

(Types contd.)

Fiber optic units for the SA1C-F photoelectric switches listed below can also be used.

Through-Beam Fiber Optic Units

Type No.	Type	Sensing Range
SA9F-TS21	M4 : Straight No Sleeve	30 mm
SA9F-TS22	M4 : Straight 90 mm Sleeve	30 mm
SA9F-TS23	M4 : Straight 45 mm Sleeve	30 mm
SA9F-TC21	M6 : Coiled No Sleeve	25 mm
SA9F-TC22	M6 : Coiled 90 mm Sleeve	25 mm
SA9F-TC23	M6 : Coiled 45 mm Sleeve	25 mm
SA9F-TM21	M4 : Multicore	25 mm
SA9F-TM22	M4 : Multicore 90 mm Sleeve	25 mm
SA9F-TM23	M4 : Multicore 45 mm Sleeve	25 mm
SA9F-TM74	Multicore 16 Fibers in 1 row	25 mm

Diffuse-Reflected Light Fiber Optic Units

Type No.	Type	Sensing Range
SA9F-DS31	M6 : Straight No Sleeve	6 mm
SA9F-DS32	M6 : Straight 90 mm Sleeve	6 mm
SA9F-DS33	M6 : Straight 45 mm Sleeve	6 mm
SA9F-DD31	M6 : Coaxial	5 mm
SA9F-DM74	1 row = 32 Fibers Multicore	2 mm
SA9F-DM75	2 rows = 16 each Multicore	5 mm

Specifications

General Specifications

Power Voltage	12 to 24V DC (ripple 10% maximum) Operating voltage: 10 to 30V DC
Current Draw	150mA maximum
Dielectric Strength	1,000 V AC, 1 minute (between live and dead parts)
Insulation Resistance	20 M Ω minimum (500V DC megger)
Operating Temperature	-10°C to +50°C (no freezing)
Operating Humidity	35 to 85% RH (no condensation)
Storage Temperature	-30 \pm 2°C to +70 \pm 2°C
Vibration Resistance	10 to 55Hz, Single amplitude: 0.75mm 2 hours each in 3 axes
Shock Resistance	500 m/sec ² (approx. 50G) 5 shocks each in 3 axes

Extraneous Light Immunity	Sunlight: 10,000 lux max., Incandescent Lamp: 3,000 lux max.
Material	Housing: Aluminum (Front: PBT), Cover: PAR
Degree of Protection	IP65 (When inserting the fiber unit and tightening the cover)
Connection	1-Color .02mm ² \varnothing 5.4 mm 5-core vinyl cable, 2m long
	3-Color .02mm ² \varnothing 5.4 mm 7-core vinyl cable, 2m long
Weight	Approximately 190g
Dimensions	47H x 25W x 82.4D mm
Attachments	Mounting Bracket x1, Adjusting Screwdriver x1

Function Specifications (Amplifier)

Type No.	SA1J-F1N1	SA1J-F1N3	SA1J-F1P1	SA1J-F1P3
Reference Color Set	Teaching system, 1-color	Teaching system, 3-colors	Teaching system, 1-color	Teaching system, 3-colors
Inspection Tolerance	5-step digital setting			
Inspection Mode	Color (C) / Color + Intensity (C+I)			
Operation Mode	Normal Run Mode (1 to 5)	Normal Run Mode (1 to 5) / Select Run Mode	Normal Run Mode (1 to 5)	Normal Run Mode (1 to 5) / Select Run Mode
Synchronous Mode	Internal Synchronous Mode (INT) / External Synchronous Mode (EXT)			
Response Mode	Fast (F) / Normal (N) / Slow (S)			
OFF-delay Timer	Timer On (T-ON) / Timer Off (T-OFF)			
Control Output	NPN open collector 30V DC, 100mA maximum Voltage Drop 1.5V maximum Protected against short circuit		PNP open collector 30V DC, 100mA maximum Voltage Drop 1.5V maximum Protected against short circuit	
	30V DC maximum / 3.6mA (when connected to 0V)		30V DC maximum / 3.0 mA (when connected to 24V)	
External Synchronous Input	Typical Operating Voltage: (0V) + 4V maximum		Typical Operating Voltage: (+V) -4V minimum	
Operation Indicator	Yellow LED	Yellow LED (3-color Individual Display)	Yellow LED	Yellow LED (3-color Individual Display)
Timer	OFF-delay timer 40 msec			
Output Operation	Equivalent Output			
Response Time	FAST (0.3 msec),	FAST (0.8 msec),	FAST (0.3 msec),	FAST (0.8 msec),
	NORMAL (1 msec),	NORMAL (1.5 msec),	NORMAL (1 msec),	NORMAL (1.5 msec)
	SLOW (5 msec) selectable	SLOW (6 msec) selectable	SLOW (5 msec) selectable	SLOW (6 msec) selectable
Light Source	Three LED's (Red, Green, Blue)			

(Fiber Optic Unit)

	SA9F-DA11	SA9F-DA12	SA9F-DA13
Type	Spot-detection	Standard	Long-range
Sensing	Diffuse reBex		
Amplifier Unit	SA1J-F1N1, -F1N3, -F1P1, -F1P3		
Sensing Range	10 mm	20 mm	30 mm
Spot Diameter	\varnothing 2.5 mm	\varnothing 5 mm	\varnothing 8 mm
Material	Sensing Head	Body: PA66, Front Core: PC	
	Fiber Optic	Surface: PE, Core: PMMA	
Fiber Optic Length	2 m		
Degree of Protection	IP65		
Operating Temperature	-10°C to +55°C (no freezing)		
Operating Humidity	35 to 85%RH (no condensation)		
Allowable Bending Radius	R40mm minimum		

TREICHL-ATM Electronic Auf der Bült 10 - 12 D 41189 Mönchengladbach

Tel. 02166 958545 Fax 02166 958547 eMail: atm@treichl.de internet: www.lichtschranke.de