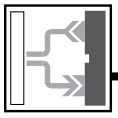
SU17 Series
Fiber Optic Sensors

- Built-in auto-tuning
- Digital display
- Mutual interference protection
- DIN rail mountable
- Light on/dark on selectable
- Pigtail quick disconnect or cable versions



Fiber Optic Diffuse and Thru-Beam Mode

See page 750

Sensing Range: Determined by fiber optic cable

Output: NPN, PNP

See page 751-754 for SU17 Series specifications, wiring and dimensions.

Fiber Optic Diffuse and Thru-Beam Mode

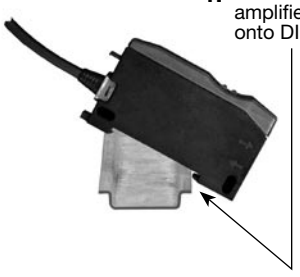
Specifications		Auto-Tuning	
SENSING RANGE		Determined by cable*	Determined by cable*
SENSITIVITY ADJUSTMENT		Yes	Yes
MODEL NUMBER(S)		SU17-K/102/115 ϟ	SU17-K/102/115b
		SU17-K/103/115 ϟ	SU17-K/103/115b
OUTPUT: Transistor, Open Collector	/102	1 NPN	1 NPN
	/103	1 PNP	1 PNP
SUPPLY VOLTAGE		10-30 VDC	10-30 VDC
ELECTRICAL CONNECTION		 2-meter cable, PVC covered 3-conductor	 152 mm pigtail, PVC covered, quick disconnect type V1
ADDITIONAL DATA		*See pages 751-754*	

ϟ Stocked item
● Typical delivery 4 weeks or less
Consult factory for all other models

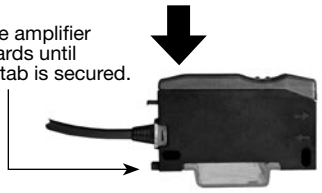
Mounting Instructions

The 35 mm DIN mounting track provides an easy method for mounting the SU17 Series. The track is available in 1-meter sections.

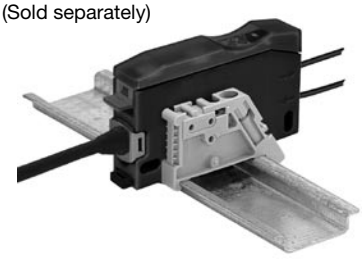
1. Latch the amplifier unit onto DIN rail.



2. Push the amplifier downwards until locking tab is secured.



3. For extra mounting support, optional EW35 end brackets should be installed. (Sold separately)



**See pages 761-796 for fiber optic lengths and specifications.*

Series Specifications

SU17 Series Specifications

LOAD CURRENT		100 mA max.
VOLTAGE DROP		≤ 1.0 VDC
SHORT CIRCUIT AND OVERLOAD PROTECTION		Yes
REVERSE POLARITY PROTECTION		Yes
VOLTAGE RIPPLE		10%
LED(s)		Yes (2)*
CURRENT CONSUMPTION		≤ 50 mA
OPTIONAL OFF-DELAY TIMING		40 ± 10 ms
OPERATING MODE		Light on/dark on
HYSTERESIS		Adjustable
RESPONSE TIME		≤ 500 µs
SWITCHING FREQUENCY		1kHz
PROTECTION (IEC)		IP40
LIGHT SOURCE		Visible red LED
TEMPERATURE RANGE	*WORKING*	-4 °F to +131 °F
	STORAGE	-40 °F to +158 °F
HOUSING MATERIAL		Polycarbonate
STANDARDS		EN 60947-5-2
APPROVALS		CE

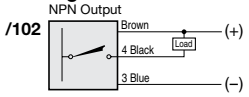
*See dimensional drawings for LED functions.

Wiring Diagrams

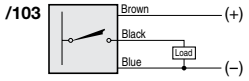
DC

Cable Connection

Light On/Dark On
NPN Output
/102



Light On/Dark On
PNP Output
/103

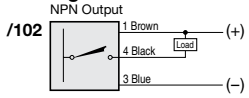


Quick Disconnect

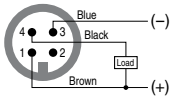
Note: Wiring diagrams show quick disconnect pin numbers.

V1 Type

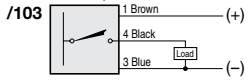
Light On/Dark On
NPN Output
/102

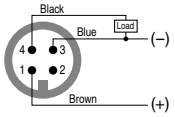


Male Receptacle End View

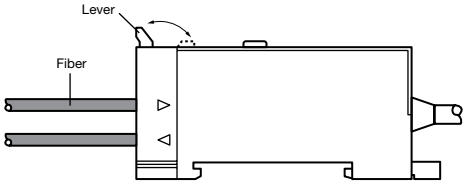


Light On/Dark On
PNP Output
/103



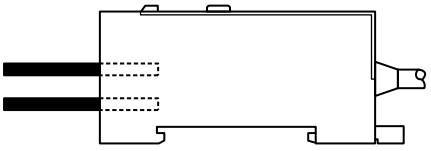


Attaching Fiber Optic Cables to SU17 Series

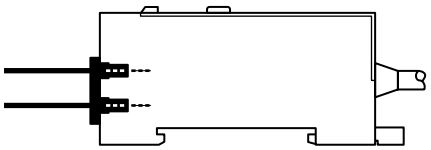


1. Unlock the lever on the top of the amplifier. The lever will spring open.
2. Insert a standard 2.2 mm diameter fiber optic cable into the housing until the cable goes no farther. For 1 mm diameter cables, insert fiber ends into the adapter and then slide the adapter into the sensor until it stops.
3. Turn the lever so that it locks. If the lever is not locked, the spring will push it open.

Standard Fiber (ø2.2 mm diameter)



Slim Fiber (ø1 mm diameter)



SU17 Series Programming

Sensitivity Adjustment

The SU17 Series offers automatic sensitivity/hysteresis adjustment for the following three distict applications:

- **Contrast Sensing:** for distinguishing 2 targets of different material, color, or distance (2 teachings required)
- **Position Sensing:** for sensing the leading edge of a target
- **Max. Sensitivity:** for maximizing the thru scan sensitivity and scanning distance

Contrast

Step	Target position	Operation	Indicator status			Alarms for teaching errors					
			Digital	Red LED	Green LED	Insufficient light			Insufficient contrast		
						Digital	Red LED	Green LED	Digital	Red LED	Green LED
1		Switch the operation mode selector to "SET"	"1" will be indicated for step 1	OFF	OFF						
2	Place the first target "A" to the position	Push the tuning button once (first teaching)	"2" will be indicated for step 2	OFF	FLASH		FLASH	FLASH	—	—	—
3	Place the second target "B" to the position	Push the tuning button once (second teaching)	Margin level in scale of 1-9 will show	OFF	ON	"E" for error will flash	FLASH	OFF	"E" for error will be ON	ON	OFF
4 tuning completed		Switch the operation mode selector to "RUN"	Level of light reception will show in scale of 0-9	Depends on LO/DO setting	Should be ON for stable operation	"E" will continue to flash. Output is locked	FLASH	OFF	"E" will continue to be "ON" Output is locked	ON	OFF

Positioning

Step	Target position	Operation	Indicator status			Alarms		
			Digital	Red LED	Green LED	Insufficient light		
						Digital	Red LED	Green LED
1	—	Switch the operation mode selector to "SET"	"1" will be indicated for step 1	OFF	OFF			
2	Position the target	Push the tuning button once	"2" will show but do not push the tuning button again	OFF	FLASH		FLASH	FLASH
3 tuning completed	—	Switch the operation mode selector back to "RUN"	Level of light reception will show in scale of 0-9	Depends on LO/DO setting	Should be ON for stable operation	"E" for error will flash	FLASH	OFF

Maximum Sensitivity

Step	Operation	Indicator status		
		Digital	Red LED	Green LED
1	Switch the operation mode selector to "SET"	"1" will be indicated for step 1	OFF	OFF
2	Push the tuning button for a minimum of 3 seconds	"H" will show	ON	ON
3	Switch the operation mode selector back to "RUN"	Level of light reception will show	Depends on LO/DO setting	Should be ON for stable operation

Note 1
The SU17 sensor is preset in the «RUN», Light Operate «LO» and «Maximum Sensitivity» before delivery.

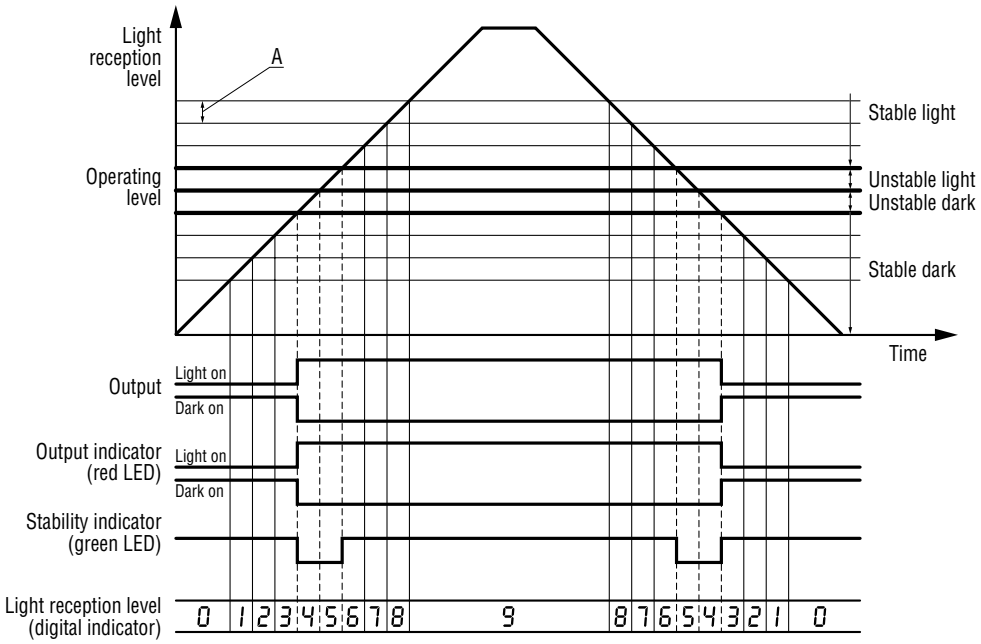
Note 2
The alarm is locked on (output locked off) until the sensor is re-taught. The «E» display indicates that the fiber optic/target is not positioned correctly. Please confirm that the standoff distance and angle of the fiber optic is in accordance with the fiber optic specification, then re-teach the SU17.

Off-Delay Timer

The 40 ms Off-Delay timer can be activated or de-activated by simply pushing the tuning button for at least 10 seconds while in the «RUN» mode. A small dot on the digital display will show when the timer is activated. See figure at right.

Digital Display

Light reception level definition and the operation chart of output/LED indicators



The point of operation is always set between 4 and 5 of light reception level.
A is equal to twice the hysteresis automatically set during sensitivity adjustment.

Margin Display

The digital display typically indicates the amount of light received. However, it can also show the contrast margin if either of the following apply:

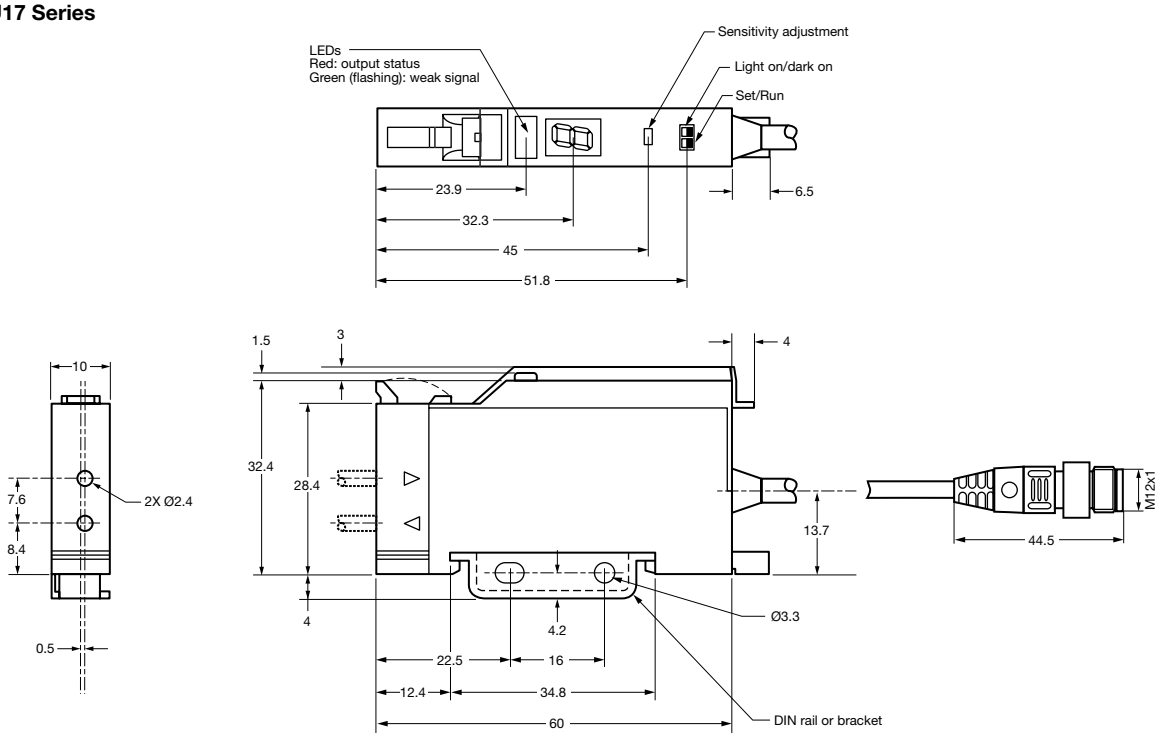
- The sensor is programmed for the distinction/contrast setting as shown on page 752.
- Press the “tuning” button while the switch is in the run mode. If the sensor is programmed for positioning, the display will show “-“. If the sensor is programmed for maximum sensitivity, the display will show “H“.

Margin level indication	1	2	3	4	5	6	7	8	9
Secured margin level	≥x1	≥x1.2	≥x1.5	≥x2	≥x3	≥x4	≥x5	≥x6	≥x7

The contrast margin shows the difference of light received between the two targets. The higher the number, the better the security. In the example of above, the top row (margin level indication) shows the number in the display, while the bottom row indicates the actual security margin expressed as a multiple of the automatically adjusted hysteresis.

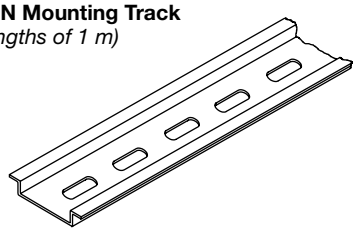
Dimensions (mm)

SU17 Series

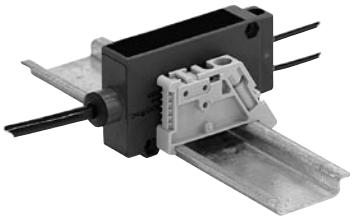


Accessories

35 mm DIN Mounting Track
(sold in lengths of 1 m)



DIN Track End Bracket Model EW35



See pages 761-796 for fiber optic lengths and specifications.

See pages 803-854 for cordsets

See pages 855-896 for additional accessories