

## SPECIAL PURPOSE SENSORS

### Hostile Environment S17/L17/P17 Series ENVIRO-SKAN®

#### Features:

- Thrubeam and reflective models available
- Replaceable fiber optic cables
- High temperature cables up to 200°C available
- Color detection models available
- Shock and vibration resistant
- Two mounting styles

#### Description:

The ENVIRO-SKAN® Series includes fiber optic thrubeams and scanners for use in severe temperatures, shock and vibration environments, restrictive locations, and where electrical interference or dangerous conditions may exist. The skanner body with light source and photodetector can remain in a safe area while fiber optic cables transmit light to and from the target. The same skanner body will accommodate either reflective or thrubeam cables and will operate with standard Skan-A-Matic controls. Set screws and a wrench are provided to secure the cable tips and permit easy disassembly.

#### Typical Applications:

- Sensing in places normally inaccessible to other skanners or thrubeams
- Sensing in high temperature environments

#### Specifications: (at 25°C)

##### LIGHT SOURCE—LAMP

Input 5.0 VDC, 115 mA

##### LIGHT SOURCE—LED

Input 100 mA max. with resultant voltage drop of 1.1 to 1.7 VDC; derate at 1 mA per degree above 25°C ambient

Modulated Input 1 A max., 10% duty cycle at 1 kHz min.

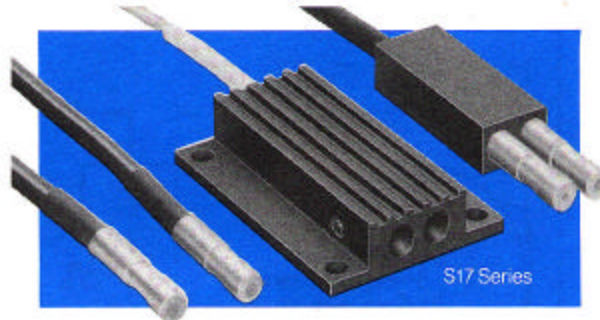
Reverse Voltage 2 V max.

Spectral Emission 940 nm peak

##### FIBER OPTIC CABLES

**MATERIAL** Standard: Glass fibers with PVC jacket and stainless steel tips  
High Temp. Glass fibers with stainless steel flex armor sheath and stainless steel tips

**TEMPERATURE** Operating & Storage: Standard -40°C to 100°C  
High Temp -40° to 200°C



Fiber optic cables are available in standard or high temperature versions and in reflective or thrubeam types, with a choice of 3 lengths and 2 sensing tips. The reflective cable has two fiber bundles, a single sensing tip and twin ferrules to fit into the skanner body. A red dot identifies the ferrule which mates with the sensor aperture. Two single bundle cables must be used for thrubeam applications; a lens is available to fit the threaded tip.

- Sensing in areas of high electrical noise
- Registration mark detection

##### PHOTODETECTOR (except in Color Mark Skanners)

Operating Voltage 20 VDC max.

Response Time See Response Time Chart under *Technical Information*

Spectral Response 910 nm peak; filtered to respond to less than 5% at 750 nm and less than 0.1% at 700 nm

##### PHOTODETECTOR (in Color Mark Skanners)

Operating Voltage 15 VDC max

Response Time See Response Time Chart under *Technical Information*

Spectral Response 570 nm peak; See Spectral Response Chart under Colors in *Technical Information*

##### BODY

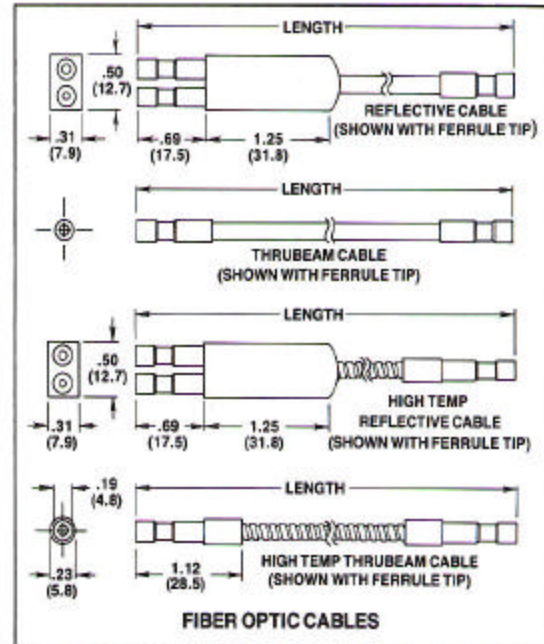
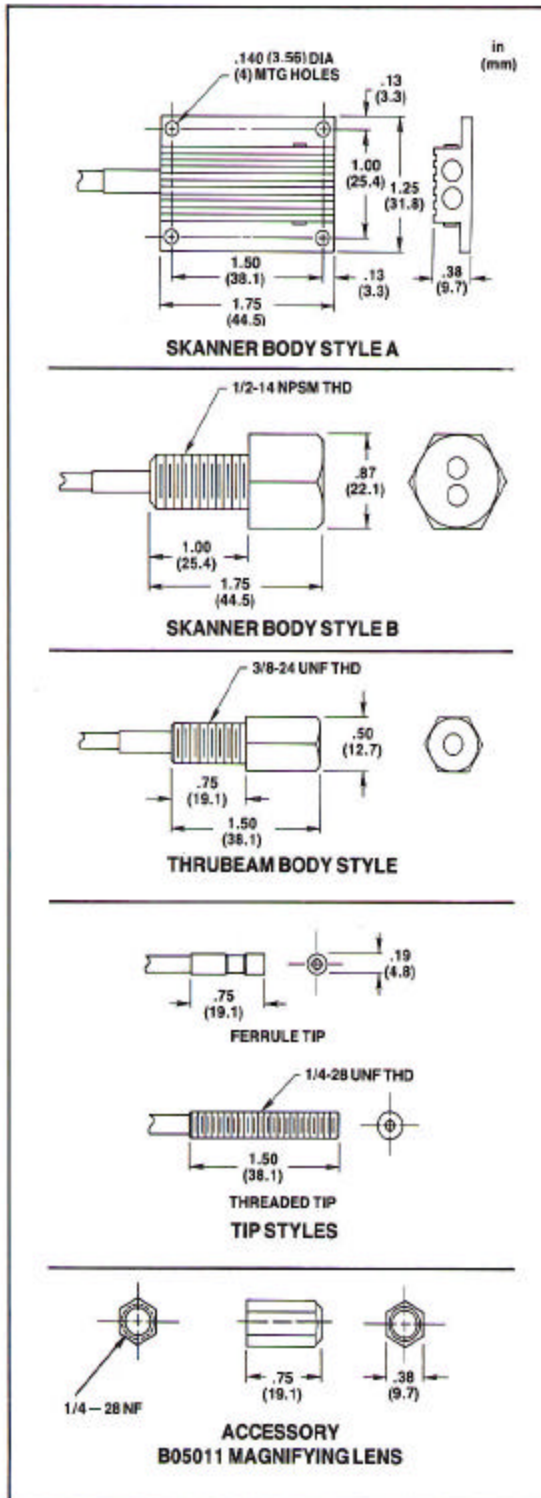
TEMPERATURE Anodized aluminum, black  
Operating: 0° to 50°C  
Storage: -40° to 50°C

##### LEADS

S17 Series: 4 cond. 26 AWG. teflon covered cable with shielded photodetector leads and overall shield, 6 ft. long, Type J (Shielded Quad)  
L17101: 2 cond. 26 AWG. teflon covered cable with shield, 6 ft. long, Type A  
L17104: 2 cond. 24 AWG., teflon covered cable, 6 ft. long, Type B

## S17/L17/P17 Series

### Dimensions:



Caution: Fiber optic cables have a 1" bending radius but should NOT be twisted about their longitudinal axes.

### Performance Data:

#### REFLECTIVE FIBER OPTIC CABLE

Smallest Detectable Object: .025 in.  
Optimum Distance to Target: .040 in.  
Field of View: .070 in.

When used with	Maximum Usable Distance will be
S17103 or S17403	.50 in.
S17104 or S17404	.30 in.
S17105 or S17405	.10 in.

#### THRUBEAM FIBER OPTIC CABLE

Beam Diameter: .080 in.  
Smallest Detectable Object: .026 in.

When used with	Rated Separation will be
S17103 or S17403	2.0 in.
S17104 or S17404	1.2 in.
S17105 or S17405	0.5 in.
L17101/P17103	2.0 in.
L17104/P17103	1.2 in.

### Compatibility With Controls:

The S17/L17/P17 Series are compatible with all Skan-A-Matic controls except modulating controls which are used with LED skanners and light sources only. For high speed operation use the T41300 High Speed Amplifier.

The LED versions of this series utilize a 100 mA Light Emitting Diode. A 39 ohm, 1 W current limiting resistor is supplied and must be used with Skan-A-Matic controls furnishing 5 VDC for light source power. With modulating controls such as our R42/T42 and R43/T43, no current limiting resistor is used.

## S17/L17/P17 Series

### Model Selection Guide:

SKANNER BODY (Fiber Optic Cables also required)

Part#	Description	Body Style
S17103	Incandescent Skanner	A
S17104	LED Skanner	A
S17105	Color Mark Skanner	A
S17403	Bulkhead Style Incandescent Skanner	B
S17404	Bulkhead Style LED Skanner	B
S17405	Bulkhead Style Color Mark Skanner	B

THRUBEAM BODY (Fiber Optic Cables also required)

Part #	Description
L17101	Incandescent Light Source
L17104	LED Light Source
P17103	Photodetector with IR Filter

#### FIBER OPTIC CABLES

(Thrubeam Pair or Skanner Body also required)

Length	Reflective For use with Skanner Body only (1 required)		Thrubeam For use with All Body Styles (2 required)	
	Ferrule Tip	Threaded Tip	Ferrule Tip	Threaded Tip
<b>Standard</b>				
12"	F17302	F17312	F17202	F17212
24"	F17304	F17314	F17204	F17214
36"	F17306	F17316	F17206	F17216
<b>High Temperature</b>				
12"	F17352	F17362	F17252	F17262
24"	F17354	F17364	F17254	F17264
36"	F17356	F17366	F17256	F17266

#### Variations:

##### LEADS

Extra lead lengths available. See pg. 129.

For S17 Series skanners use Type J.

For L17101 and L17104 use Type A.

For P17103 use Type B.

##### Options:

##### PROTECTIVE SHEATH

Can be factory installed on the S17 Series skanners and L17/P17 thrubeams. Order by adding the suffix as follows:

- M For square locked galvanized steel with black PVC jacket, 9/32" O.D. Example: S17103-M
- S For square locked stainless steel armor, 3/16" O.D. Example: S17103-S

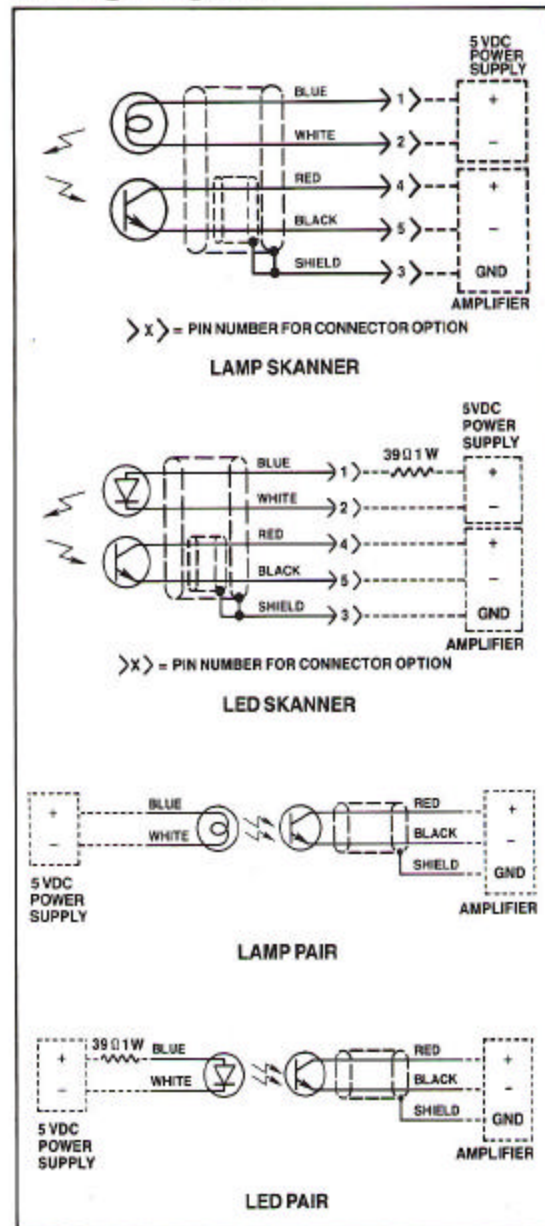
##### CONNECTOR

The S17 Series skanners are available with connector installed. The mating half is furnished for field connection. Order by adding a suffix as follows:

- P For connector pair with in-line receptacle. Example: S17103-P
- F For connector pair with flanged, panel-mount receptacle. Example: S17103-F.

See Options for a more detailed description.

### Wiring Diagram:



### Accessories:

#### MAGNIFYING LENS #B05011

Increases Rated Separation of thrubeam cables approximately 2 times. Install on light source cables with threaded tips only.