CLAROSTAT
SENSORS AND CONTROLS GROUP

SKAN-A-MATIC®

SPECIAL PURPOSE SENSORS

Color Detection Skanner S35 Series

Features:

- Smallest Detectable Object: .03 in.
- Optimum Distance to Target: .10 in.
- Field of View: .10 in.
- Maximum Usable Distance: .25 in.
- Color mark detection
- Coaxial optical system
- Three models for different color sensitivity

Description:

The S35 Series Color Detection Skanner is designed to detect a wide range of colored marks including blue, green, yellow, orange and red. The units contain an incandescent lamp, a photodetector, a combination of optical filters, and feature the fiber optic construction of the S30 Series SKAN-COAX. Because there is usually a low optical contrast between a colored mark and its background, a simple, one stage current amplifier boosts the photodetector current.

Light from the backbody is transmitted coaxially through the outer ring of glass fibers to the colored mark. Light then reflects from the target surface, through the filters, to the photodetector located in the tip of the threaded barrel.

Typical Applications:

- Detection of "eye marks" on packaging material
- Orientation of toothpaste tubes for sealing
- Detection of marks that are transparent at infrared wavelengths

Specifications: (at 25°C)

LIGHT SOURCE—LAMP

Input	5.0 VDC, 115 mA

PHOTODETECTOR

Operating Voltage	15 VDC max.
Response Time	See Response Time Chart under *Technical Information*
Spectral Response	See Spectral Response Chart under Colors in *Technical Information*
BODY	Red anodized aluminum: S35201 Blue anodized aluminum: S35202 Black anodized aluminum S35203
TEMPERATURE	Operating: 0° to 50°C Storage: −40° to 50°C
LEADS	4 cond. 26 AWG., teflon covered cable with shielded photodetector leads and overall shield, 6 ft. long, Type J (Shielded Quad)

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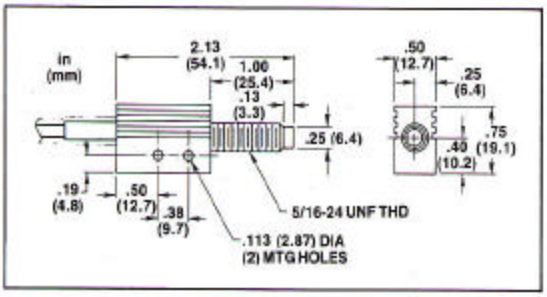
S35 Series

Dimensions:



Color Selection Chart:

BACK-GROUND COLOR	MARK COLOR						
	Black	Red	Orange	Yellow	Green	Blue	White
Black	*	V^2B^2	V^2B^2	V^2B^2	V^2R^2	V^2R^2	$V^2B^2R^2$
Red	V^1B^1	*	*	*	B^1R^2	B^1R^2	V^2R^2
Orange	V^1B^1	*	*	*	B^1R^2	B^1R^2	V^2R^2
Yellow	V^1B^1	*	*	*	B^1R^2	B^1R^2	V^2R^2
Green	V^1R^1	B^2R^1	B^2R^1	B^2R^1	*	*	V^2B^2
Blue	V^1R^1	B^2R^1	B^2R^1	B^2R^1	*	*	V^2B^2
White	$V^1B^1R^1$	V^1R^1	V^1R^1	V^1R^1	V^1B^1	V^1B^1	*

R — Red color skanner, S35201
B — Blue color skanner, S35202
V — Visible color skanner, S35203
1 — Mark will appear to skanner as darker than background
2 — Mark will appear to skanner as lighter than background
* — With **extreme** contrast between mark and background, it is possible, but quite difficult, to detect some combinations of these colors.

Note: This color selection chart should be used with the understanding that it is only a guide and not a guarantee that all color combinations can be detected. Colored inks can vary significantly as can the reflectivity of various printing surfaces.

The only way to make certain a particular color combination can be detected is to actually test the skanners on the combination. Skan-A-Matic field representatives are equipped with demonstration units and can perform this test. The Applications Engineering Lab is also available to perform this test. There is no charge or obligation for either method of testing.

Compatibility With Controls:

The S35 Series is compatible with all Skan-A-Matic controls except modulating controls which are used with LED skanners only. For high speed operation use the T41300 High Speed Amplifier.

Model Selection Guide:

Part #	Description	Color Detection Capability
S35201	Red Color Skanner	Red, orange, yellow, or black marks on a white background as well as some other color backgrounds.
S35202	Blue Color Skanner	Blue, green, or black marks on a white background as well as some other color backgrounds.
S35203	Visible Color Skanner	The widest variety of marks regardless of background color as long as the contrast between mark and background is high. If contrast is low, use either red or blue color skanner as specified by the color selection chart.

For further information consult Color Selection Chart.

Variations:

LEADS

Extra lead lengths available. Use Type J — *see pg. 129.*

Options:

COIL CORD

Four conductor, 28 gauge, coil cord with shield available in 10 ft. (fully extended) or 20 ft. (fully extended) lengths — *see pg. 129.*

PROTECTIVE SHEATH

Can be factory installed over standard Type J lead (Shielded Quad). Order by adding the suffix as follows:

-M For square locked galvanized steel with black PVC jacket, 9/32" O.D. Example: S35201-M

-S For square locked stainless steel armor 3/16" O.D. Example: S35201-S

CONNECTOR

The S35 Series skanner is 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: S35201-P

-F For connector pair with flanged, panel-mount receptacle. Example: S35201-F

See *Options* for a more detailed description.

Wiring Diagram: