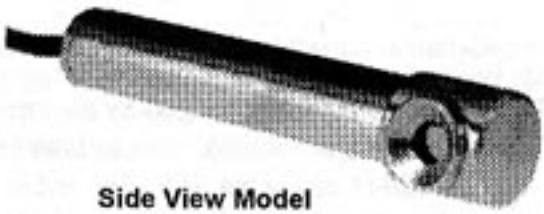


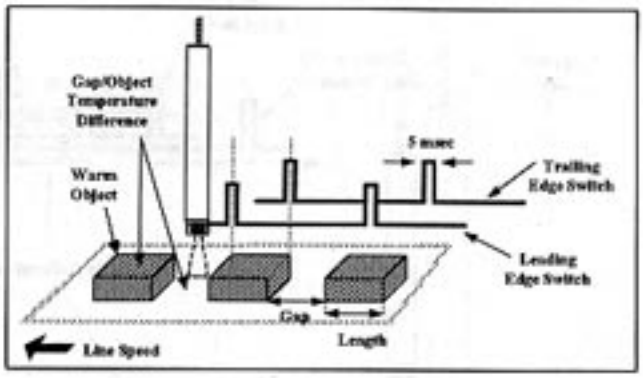
SnakeEye™

Non-contact Sensors for Infrared Thermal Switching

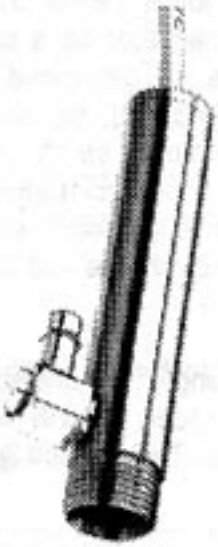
(Use them like photocells and prox sensors)



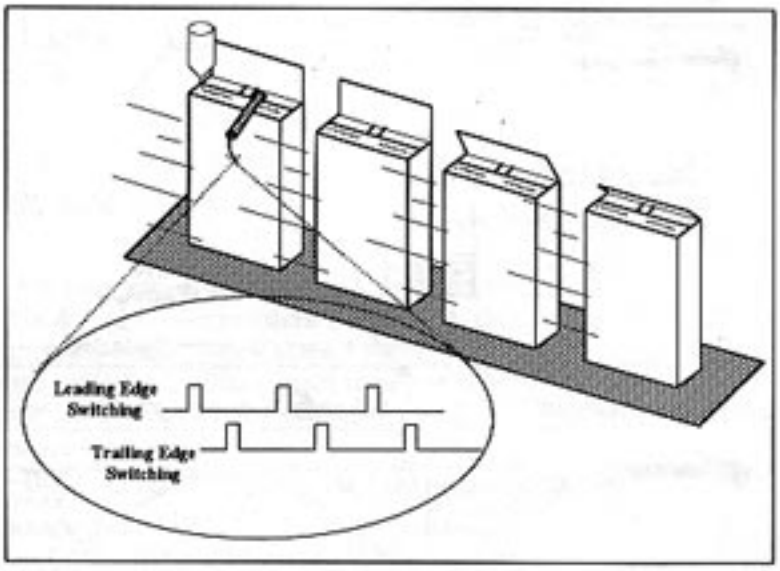
Side View Model



Hot Object Inspection



Straight View Model



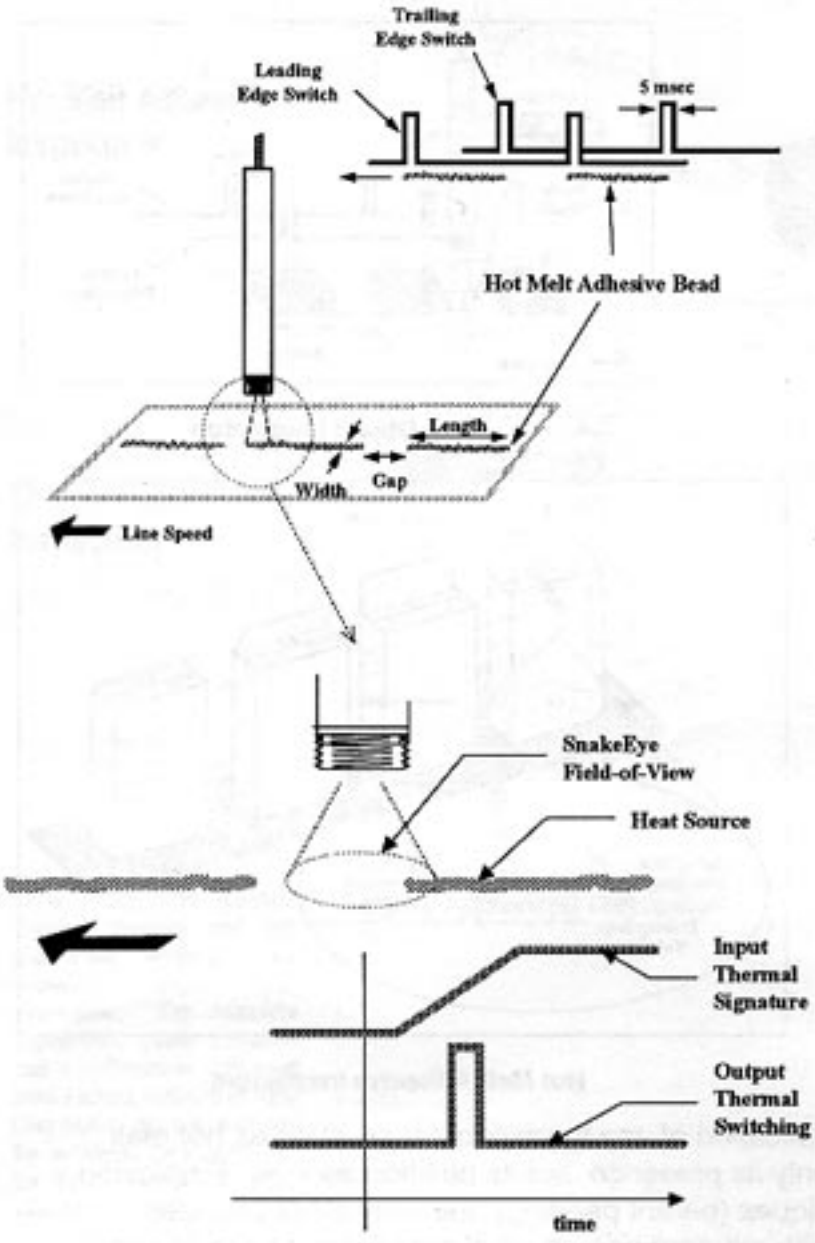
Hot Melt Adhesive Inspection

Now you can 100% inspect the application of any thermal process, such as hot melt adhesive, to your product .... not only its presence, but its position as well. Employing new state-of-the-art infrared techniques (patent pending), the SnakeEye provides photocell simplicity of operation, with extraordinary thermal sensitivity, to provide you with the ability to thermally "see" each and every product in real time to be sure it is produced correctly.

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How the SnakeEye™ Works

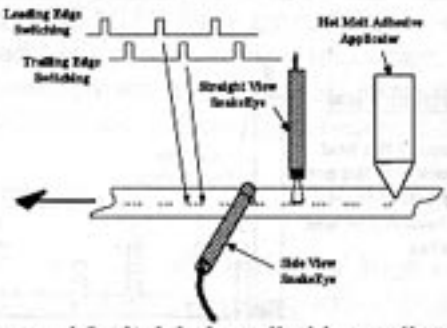


The heat signature created by the hot melt adhesive (or other source) enters the field-of-view of the SnakeEye and is detected by the sensing system. If the positive (cold-to-hot) rate of change is of sufficient magnitude for a sufficient length of time (as determined by the sensitivity adjustment), the SnakeEye causes the output to switch. For the trailing edge (hot-to-cold), a second output switch is activated when the negative rate of change and time are sufficient.

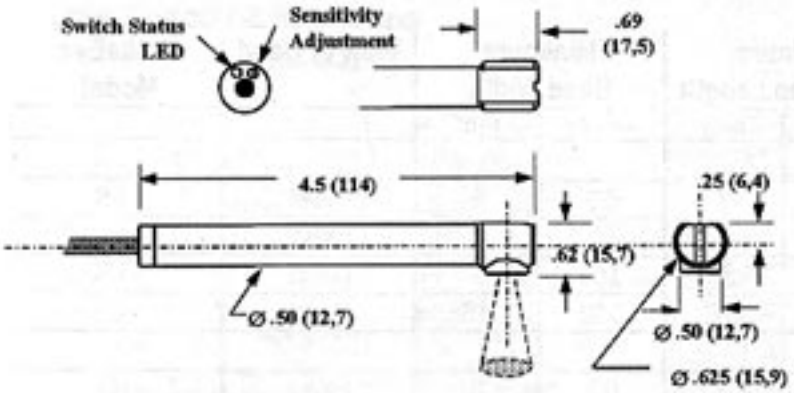
Two speed ranges are available: -LS model for low speed; and -HS model for high speed (see Tables 1 and 2).



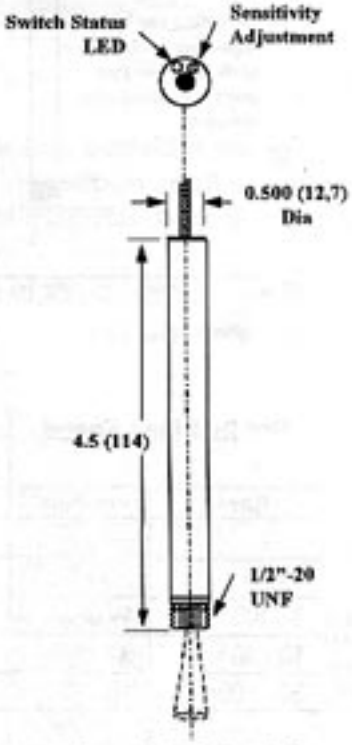
SnakeEye™ Specifications



The *SnakeEye Thermal Switch* is installed immediately downstream of the heat source, and provides 2 on/off photocell type of switches as it sees the thermal presence of the leading and trailing edges of the source. Sensitivity level is adjustable.



Side View Model: SnakeEye.3SV-LTE



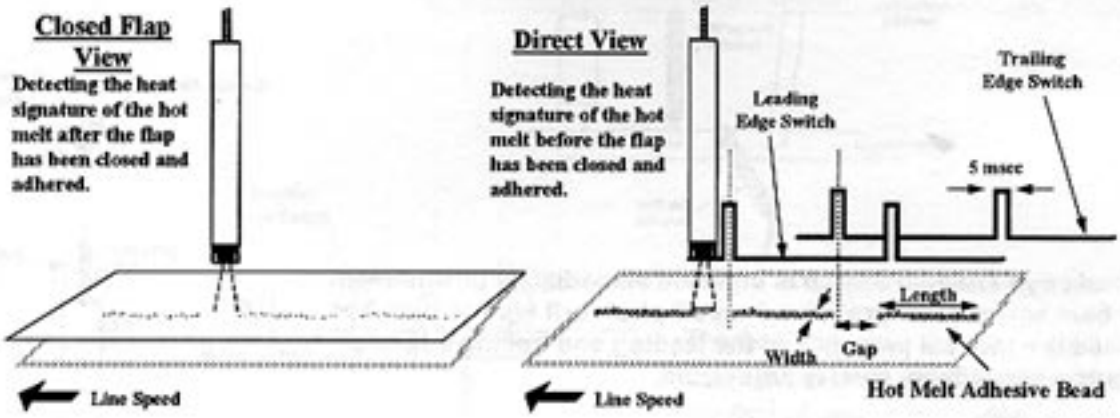
Straight Model: SnakeEye.3-LTE

Sensing Range	0.01" (.25 mm) hot melt adhesive bead minimum size, unlimited maximum size; or 4°F (2°C) temperature differences. Can sense adhesive through closed flap. See Tables 1 and 2.
Sensing Speed	5 msec response, 1500 ft/min (500 m/min) max line speed, 1 ft/min (0.3 m/min) minimum line speed. See Tables 1 and 2.
Field-of-View	20° (3:1) approximately
Signal Output	Two solid state switches, N/O, triggering from hot leading edge (H), cold trailing edge (C) independently.
Output Cable	4-wire: +V, GND, SWH, SWC; 10 ft (3 m) length.
Dimensions	4.5"x .500" Dia. (114 x 12.7 mm)
Weight	5 oz (140 g) with cable
Housing	Stainless steel, hermetically sealed, meets or exceeds all applicable NEMA ratings, air purge built-in
Models Available	Straight View Low Speed: **SnakeEye.3-LTE-LS** Straight View High Speed: **SnakeEye.3-LTE-HS** Side View Low Speed: **SnakeEye.3SV-LTE-LS** Side View High Speed: **SnakeEye.3SV-LTE-HS**

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SnakeEye Selection Table 1
Hot Melt Adhesive



Product Line Speed		Minimum Bead/Gap Length		Minimum Bead Width		View of Bead	SnakeEye Model
ft/min	m/min	inches	mm	inches	mm		
1 - 3	0.3 - 1	0.1	3	0.3	8	Direct	- LS
3 - 10	1 - 3	0.2	5	0.1	3	Direct	- LS
10 - 30	3 - 10	0.8	20	0.03	1	Direct	- LS
30 - 100	10 - 30	2.5	100	0.02	0.5	Direct	- LS
10 - 30	3 - 10	0.1	3	0.3	8	Direct	- HS
30 - 100	10 - 30	0.2	5	0.1	3	Direct	- HS
100 - 300	30 - 100	0.8	20	0.03	1	Direct	- HS
300 - 1000	100 - 300	2.5	100	0.02	0.5	Direct	- HS
1 - 3	0.3 - 1	0.1	3	3	75	Closed Flap*	- LS
3 - 10	1 - 3	0.2	5	1	25	Closed Flap*	- LS
10 - 30	3 - 10	0.8	20	0.3	8	Closed Flap*	- LS
30 - 100	10 - 30	2.5	100	0.2	5	Closed Flap*	- LS
10 - 30	3 - 10	0.1	3	3	75	Closed Flap*	- HS
30 - 100	10 - 30	0.2	5	1	25	Closed Flap*	- HS
100 - 300	30 - 100	0.8	20	0.3	8	Closed Flap*	- HS
300 - 1000	100 - 300	2.5	100	0.2	5	Closed Flap*	- HS

*Viewing through a closed flap involves unknown variables including material thickness, material thermal diffusivity, location of measurement, etc. The values presented are approximate ranges only.

Examples:

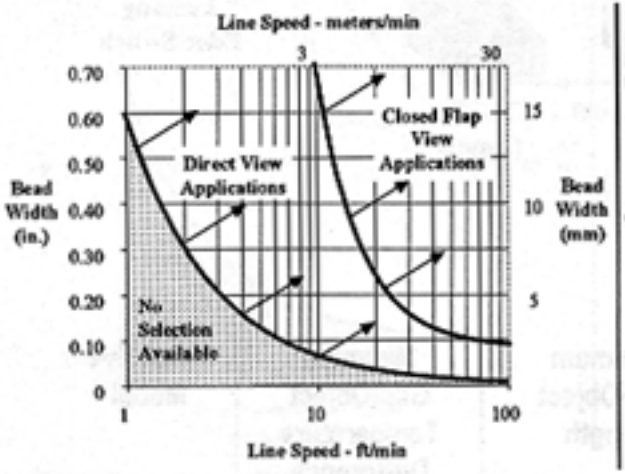
1. Disposable diaper line operating at 500 ft/min (150 m/min), bead length 10 in. (250 mm), bead width 0.05 in. (1.2 mm), direct view. From Table 1, the selection is the high speed "-HS" model suffix designation.
2. Beer carton line operating at 120 ft/min (40 m/min), bead length 1 in. (25 mm), bead width 0.35 in. (9 mm), closed flap view. From Table 1, the selection is the high speed "-HS" model suffix designation. However, the line speed varies considerably, and will operate as slow as 20 ft/min (6 m/min) for some periods of time. Refering to Table 1, the -LS model is required for the slower speed operation.

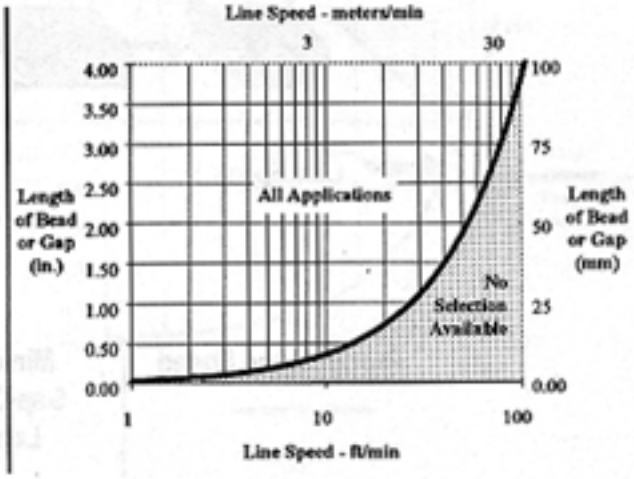
Recommendation

For all applications in which the -HS high speed model is required, consider using both the -HS and -LS models together for the most complete inspection at all speeds. This is especially useful during line start-up, when most waste material is produced.

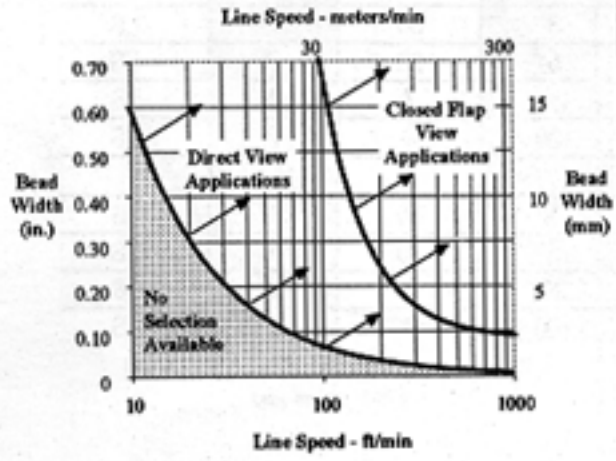
The charts below provide more detailed data on the performance of the SnakeEye for hot melt adhesive inspection.

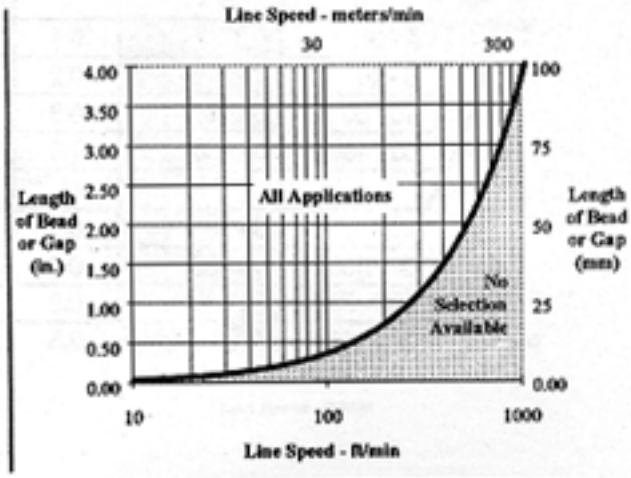
Low Speed (-LS) Models



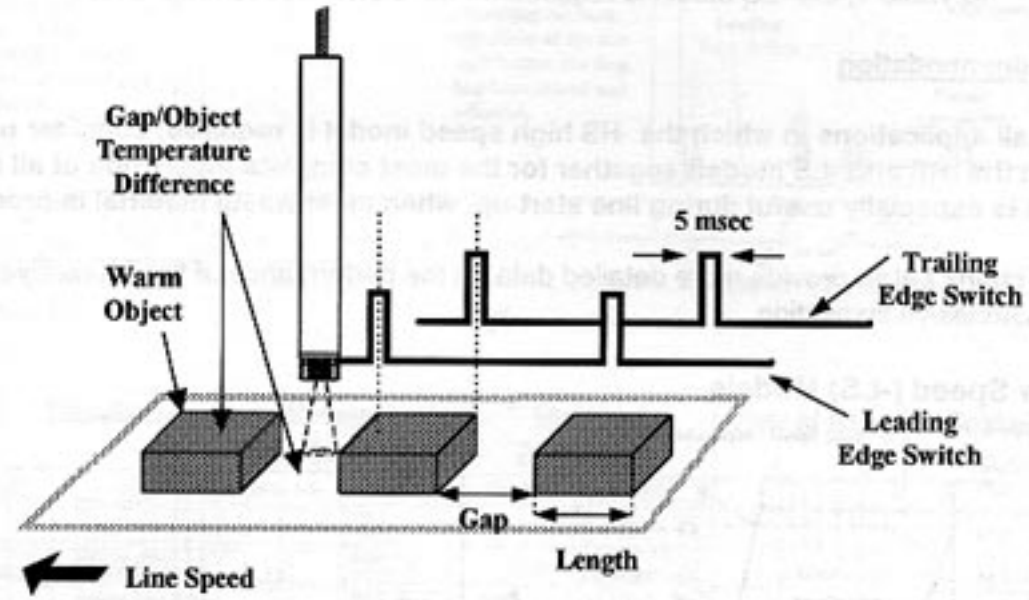


High Speed (-HS) Models





SnakeEye Selection Table 2
Thermal Switching



Product Line Speed		Minimum Gap/Object Length		Minimum Gap/Object Temperature Diffference		SnakeEye Model
ft/min	m/min	inches	mm	°F	°C	
1 - 3	0.3 - 1	0.1	3	60	30	- LS
3 - 10	1 - 3	0.2	5	20	10	- LS
10 - 30	3 - 10	0.8	20	7	4	- LS
30 - 100	10 - 30	2.5	100	4	2	- LS
10 - 30	3 - 10	0.1	3	60	30	- HS
30 - 100	10 - 30	0.2	5	20	10	- HS
100 - 300	30 - 100	0.8	20	7	4	- HS
300 - 1000	100 - 300	2.5	100	4	2	- HS

Examples:

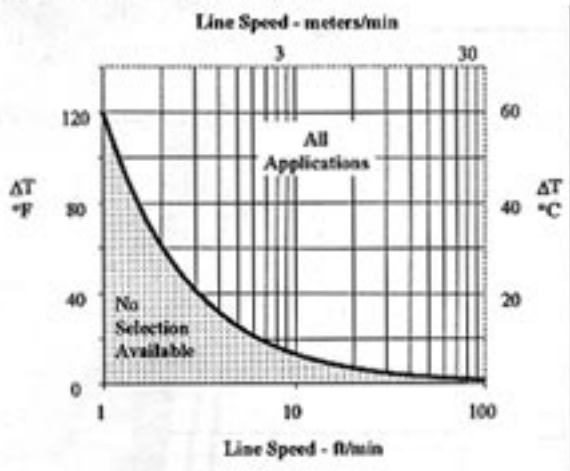
1. Induction heated safety seal line for aspirin bottles operating at 100 ft/min (30 m/min), cap length 1 in. (25 mm), temperature difference ~10°F (5°C) checked with D-Series. From Table 2, the selection is the high speed "-HS" model.
2. Heat embossing line operating at 60 ft/min (20 m/min), embossed length 3 in. (75 mm), temperature difference ~15°F (8°C) checked with D-Series. From Table 2, the selection is the low speed "-LS" model suffix designation.

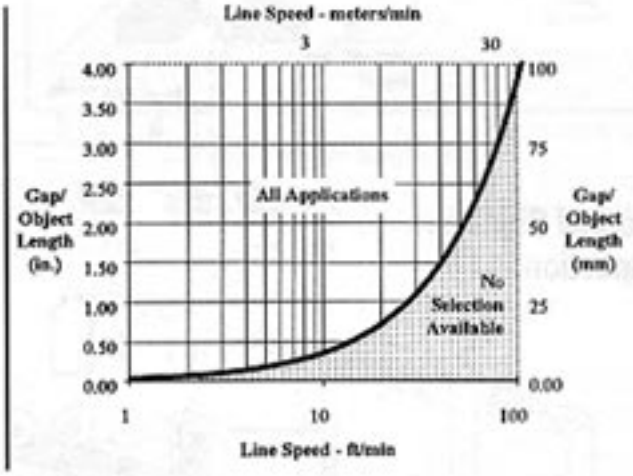
Recommendation

For all applications in which the -HS high speed model is required, consider using both the -HS and -LS models together for the most complete inspection at all speeds. This is especially useful during line start-up, when most waste material is produced.

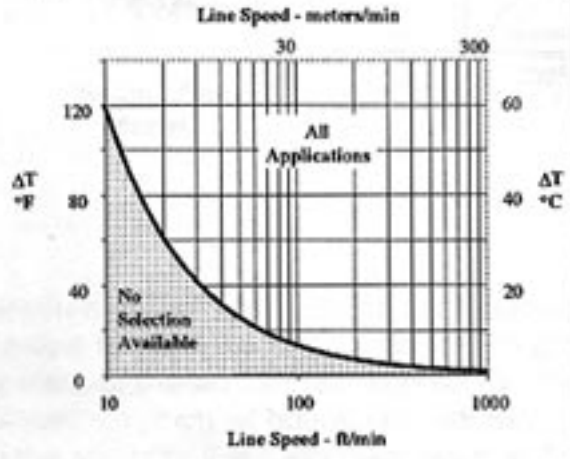
The charts below provide more detailed data on the performance of the SnakeEye for general Thermal Switching applications.

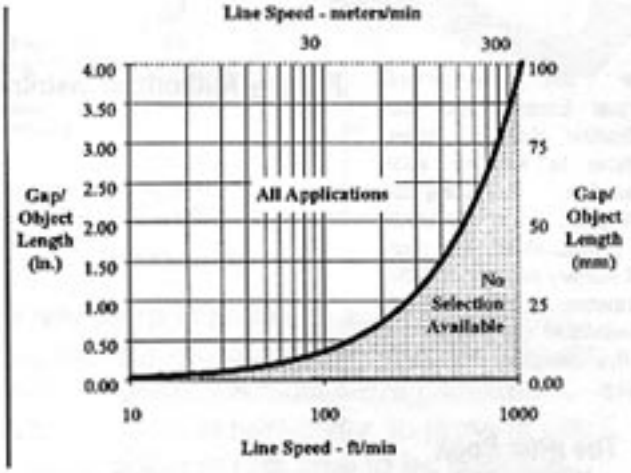
Low Speed (-LS) Models





High Speed (-HS) Models



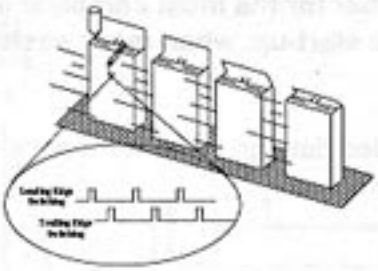


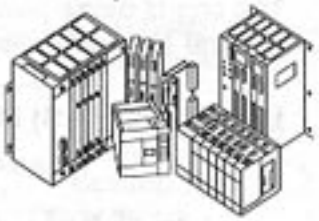
SnakeEye™ Non-Contact Thermal Switches in Factory Automation

(Use them like photocells and prox sensors)

Application ⋯→ **Sensor** ⋯→ **Control System**

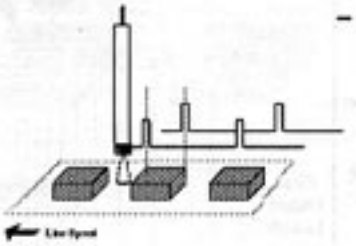
Hot Melt Adhesive Inspection

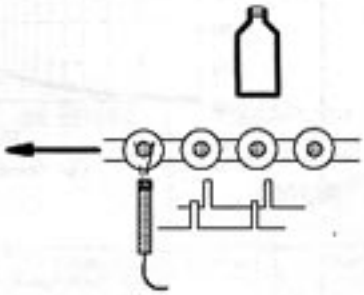




Directly to digital input of PLC

Thermal Signature Inspection





*Over 300 Non-Contact Thermal Sensors and 100 application technical notes available to improve your automation. For complete application, model selection and specifications, ask your local Factory Authorized IRt/c Distributor, or call Exergen for individual data sheets, or for the complete 130 page catalog:

The IRt/c Book
Handbook of Non-Contact Temperature Sensors

Factory Authorized Distributor:

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