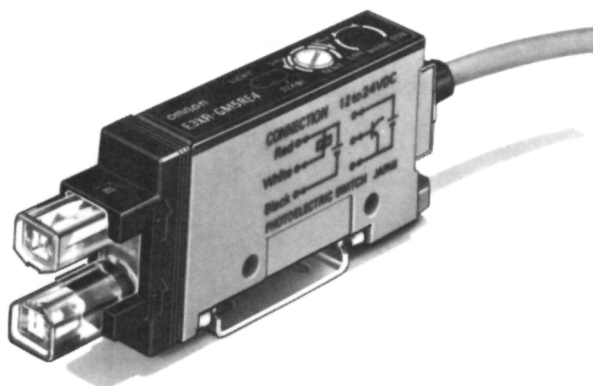


Registration Sensor -Slotted

E3XR-GM

Grooved Head Sensor Ideal for Register Mark Detection in Printing and Packaging Equipment

- Green or red light source according to color mark
- Fast response time, less than 1 ms
- Sensitivity adjuster and stability indicator allow fine tuning
- Switch selectable Light-ON/Dark-ON operation
- Pre-leaded with 2 m (6.6 ft) cable



Ordering Information

■ SENSORS

Light source color		Red LED	Green LED
Part number	NPN output	E3XR-GM5RE4	E3XR-GM5GE4
	PNP output	E3XR-GM5RB4	E3XR-GM5GB4

■ ACCESSORIES

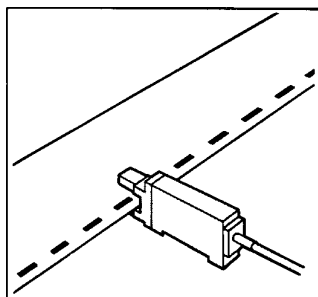
Description		Part number
Mounting track	DIN rail, 50 cm (1.64 ft) length	PFP-50N
	DIN rail, 1 m (3.28 ft) length	PFP-100N
	End plate	PFP-M
	Spacer	PFP-S

■ REPLACEMENT PARTS

Description	Part number
Mounting bracket (supplied with each sensor)	E39-L48

■ TYPICAL APPLICATION

Detecting marks on transparent film

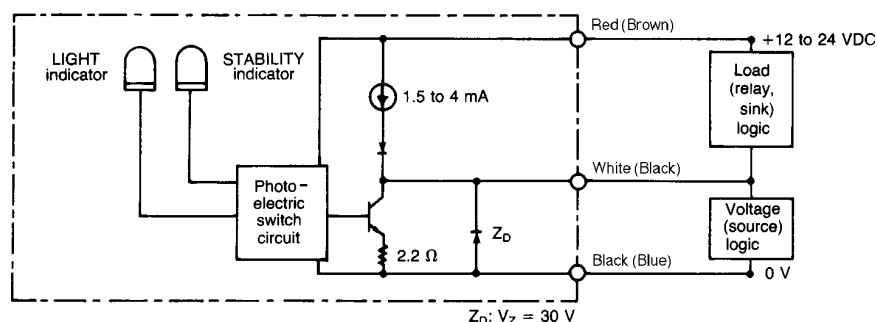


Specifications

Part number			E3XR-GM5R□4		E3XR-GM5G□4	
Supply voltage			12 to 24 VDC ± 10% with 10% max. permissible ripple peak-to-peak			
Method of detection			Through beam type mounted in a grooved head			
Current consumption			40 mA max.			
Sensing distance			5 mm (0.197 in) groove width			
Light source			Red LED, pulse modulated		Green LED, pulse modulated	
Detectable object type			Marks of 2 x 3 mm (0.079 x 0.118 in) min. on transparent film			
Operation mode			Light-ON/Dark-ON, switch selectable			
Sensitivity			Adjustable, four-turn potentiometer			
Mutual interference protection			Provided			
Control output	DC solid state	Type	NPN with current source (E3XR-GM5□E4) PNP (E3XR-GM5□B4)			
		Max. load	NPN: Load (sink) logic: 80 mA max. Voltage (source) logic: 1.5 to 4 mA max. PNP: Load (source) logic: 100 mA max.			
		Max. on-state voltage drop	1 VDC at 80 mA			
Response time		ON	0.5 ms max.		1 ms max.	
		OFF	0.5 ms max.		1 ms max.	
Circuit protection			Short-circuit and reverse polarity protection			
Indicators			Light Incident (red LED), Output Stability (green LED)			
Materials		Lens	Plastic			
		Case	Plastic			
		Cable sheath	Vinyl			
Mounting			Two 3.2 mm dia. side through holes, DIN rail track mount or E39-L48 mounting bracket included			
Connections		Prewired	3-conductor cable, 2 m (6.56 ft) length			
Weight			Approx. 80 g (3 oz.)			
Enclosure ratings		IEC 144	IP65			
Standards conformance			IEC 947-5-2			
Ambient temperature		Operating	-25° to 55° C (-13° to 131°F)			
		Storage	-25° to 70° C (-13° to 158°F)			

■ OUTPUT CIRCUIT DIAGRAMS

NPN output E3XR-GM5□E4



Note: IEC colors are shown in parentheses.

Red (Brown) +12 to 24 VDC

White (Black)

Black (Blue) 0 V

2.2 Ω

Z_D

Photo - electric switch circuit

LIGHT indicator

STABILITY indicator

Load (relay, source) logic

100 mA max.

$Z_D: V_Z = 30 \text{ V}$

Timing diagram showing the sequence of events:

- Light**: Incident (high) and Interrupted (low).
- LIGHT indicator**: ON (high) when Light is Incident; OFF (low) when Light is Interrupted.
- Output transistor**: ON (high) when LIGHT indicator is ON; OFF (low) when LIGHT indicator is OFF.
- Load (relay, source)**: ON (high) when Output transistor is ON; OFF (low) when Output transistor is OFF.





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