Photologic® Reflective Object Sensor

OPB715Z, OPB716Z, OPB717Z, OPB718Z



Features:

- Focused for maximum sensitivity
- .5” (12.700 mm) sensing distance
- Panel mount
- Choice of output configurations
- 18” (457.200 mm) minimum wire length

Description:

The **OPB715Z** series reflective assembly consists of a GaALAs LED and a Photologic® sensor enclosed in an IR transmissive housing. The sensor is characterized to detect paper at 0.5” (12.7 mm). The sensor has a wide operating distance range and is capable of detecting reflective objects at other distances. The reflective distance depends on the reflectance materials.

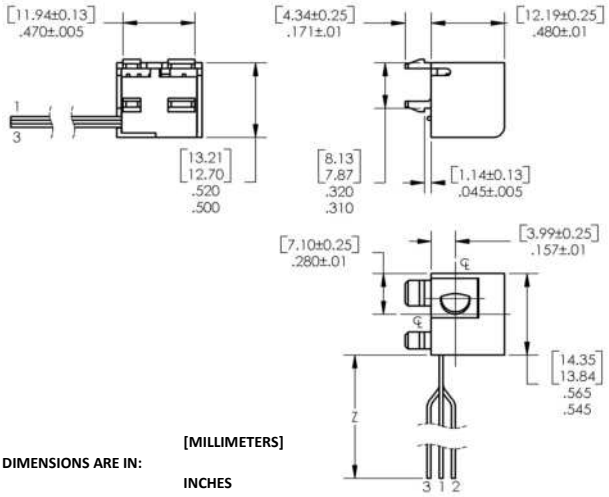
These devices are designed to replace conventional mechanical limit switches where long life and reliability are critical. The switches are designed to easily snap mount into a 0.036 inch (0.914 mm) 20 gage thick material with a rectangular opening of 0.315” x 0.472 “ (8.0 mm x 12.0 mm).

The sensor’s panel-mount plastic housing shields stray light and is terminated with 18” (457 mm) UL approved 26 AWG wire leads. The LED is current limited internally for design convenience. Its output can be specified as either TTL Totem-Pole or TLL Open-Collector. Inverted output options are available for either output configuration.

Part Number	LED Peak Wavelength	Sensor Photologic®	Reflection Distance Inch (mm)	Lead Length / Spacing
OPB715Z	890 nm	Totem-Pole	0.50"	18" / 26 AWG Wire
OPB716Z		Open-Collector		
OPB717Z		Inv-Totem-Pole		
OPB718Z		Inv-Open-Collector		

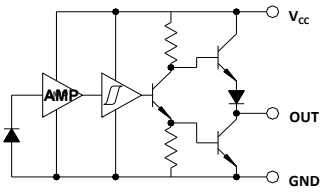
Applications:

- Focused for maximum sensitivity
- 0.5” (12.700 mm) sensing distance
- Panel mount
- Choice of output configurations
- 18” (457.200 mm) minimum wire length

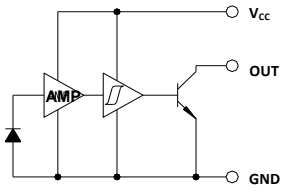


DIMENSIONS ARE IN: [MILLIMETERS] INCHES

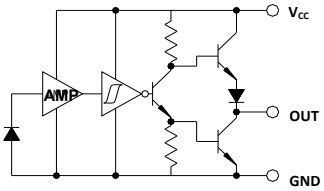
OPB715 Buffered Totem-Pole



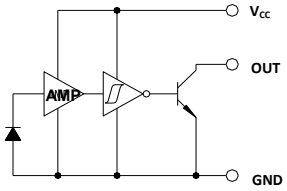
OPB716 Buffered Open Collector



OPB717 Inverted Totem-Pole



OPB718 Inverted Open-Collector



Color-Pin #	Description
Orange	V_{CC}
White	Output
Violet	Ground

RoHS

General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics’ own data and is considered accurate at time of going to print.

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Electrical Specifications

Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)	
Storage & Operating Temperature Range	-40° C to +85° C
Supply Voltage, V_{CC} (not to exceed 2 seconds)	10 V
Power Dissipation(1)	300 mW
Output Voltage (Open-Collector only)	35 V

Electrical Characteristics (T_A = 25° C unless otherwise noted, see OPL560 series for additional electrical information)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
V_{CC}	Operating Supply Voltage	4.75	-	5.25	V	-
I_{CCL}	Low-Level Supply Current:	-	-	30	mA	V_{CC} = 5.0 V, output open
I_{CCH}	High-Level Supply Current	-	-	50	mA	V_{CC} = 5.0 V, output open
I_{OH}	High Level Output Current OPB716 OPB718	- -	- -	100 100	µA µA	V_{OH} = 30 V, E_E = 1 mW/cm^2 V_{OH} = 30 V, E_E = 0
I_{OS}	Short Circuit Output Current OPB715 OPB717	- -	- -	100 100	µA µA	V_{CC} = 5.0 V, V_{CH} = 5 V
V_{OH}	High Level Output Voltage OPB715, OPB717 OPB716, OPB718	V_{CC} - 2.1 V_{CC} - 2.1	- -	- -	V V	I_{OH} = -1 µA, E_E = 1 mW/cm^2 I_{OH} = -1 µA, E_E = 0
V_{OL}	Low Level Output Voltage OPB715, OPB717 OPB716, OPB718	- -	- -	.4 .4	V V	I_{OL} = 16 mA, E_E = 0 I_{OL} = 16 mA, E_E = 1 mW/cm^2

Notes:

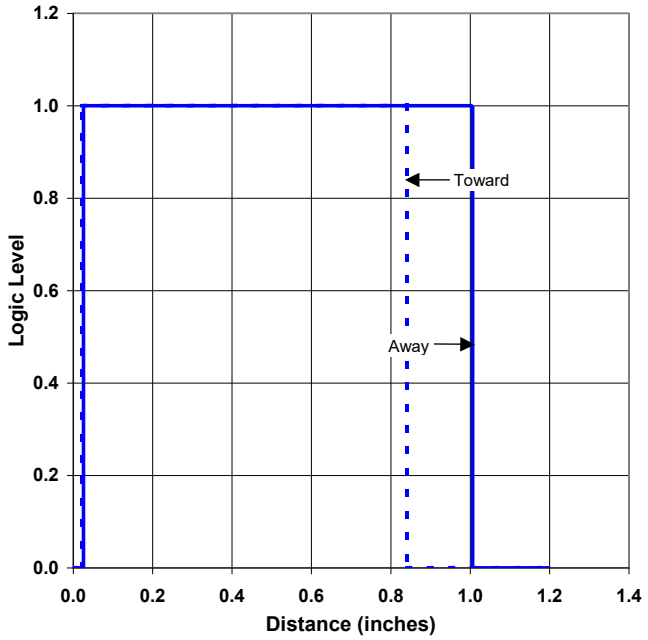
(1) Derate linearly at 5.0 mW / °C above 25° C.
(2) Terminating wire is 7 strand, 26 AWG, UL 1429.
(3) Tested at d = 0.55" (12.7 mm) from a 90% diffuse, white test surface. Reference: Eastman Kodak Catalog #E 152 7795.
(4) No reflective surface.

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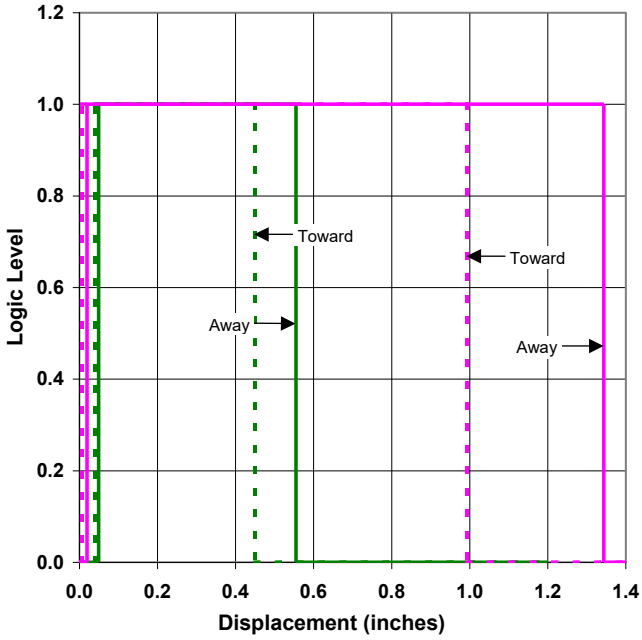
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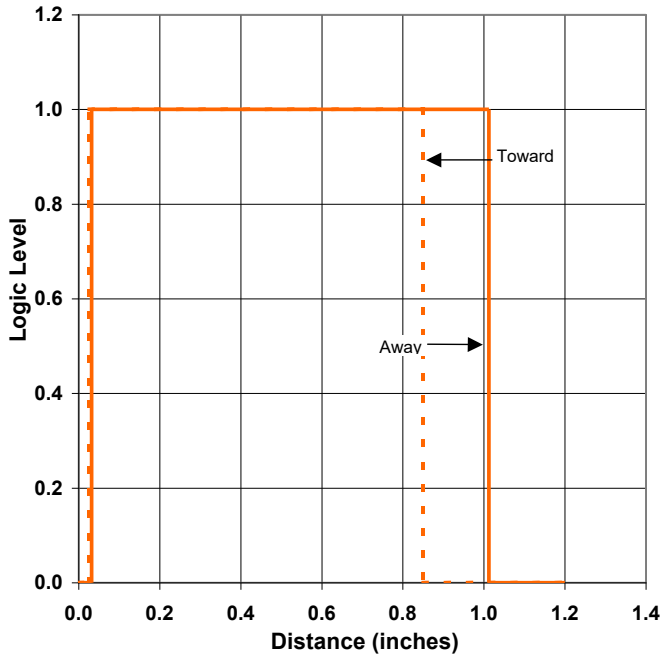
Typical - Voltage vs Displacement
Kodak 90%



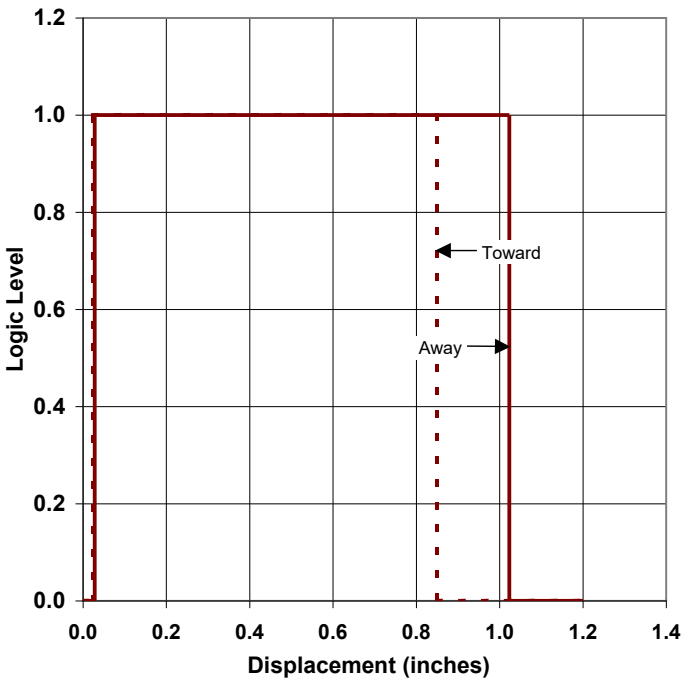
Typical - Voltage vs Displacement
Kodak 19% & Retroreflective



Typical - Voltage vs Displacement
Copy Paper



Typical - Voltage vs Displacement
Avery Label 5160

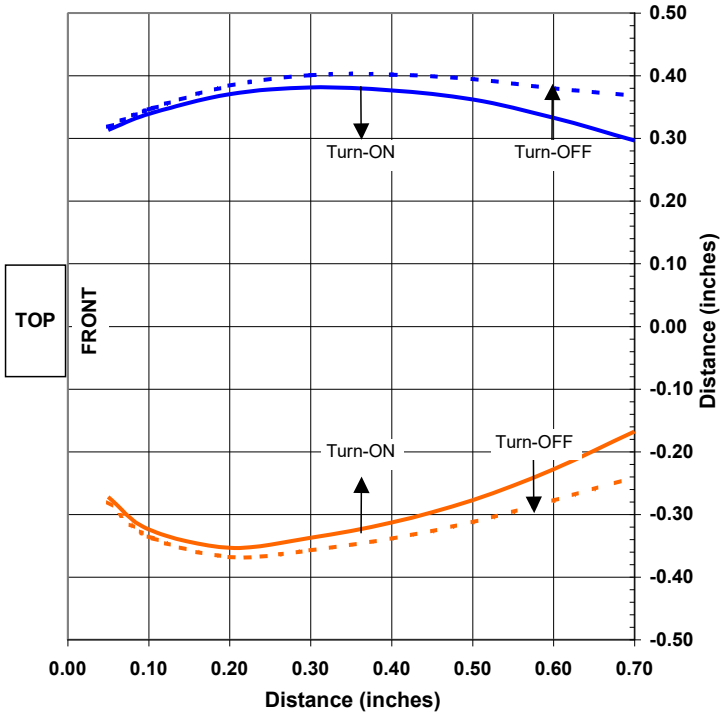


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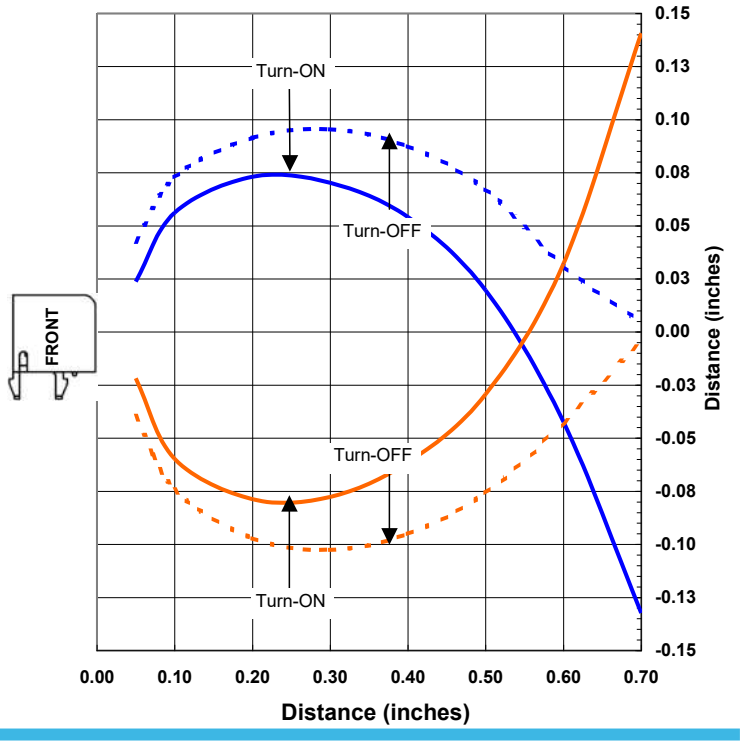
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Typical - Trigger Points vs Displacement From Both Sides



Typical - Trigger Points vs Displacement From Top & Bottom



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