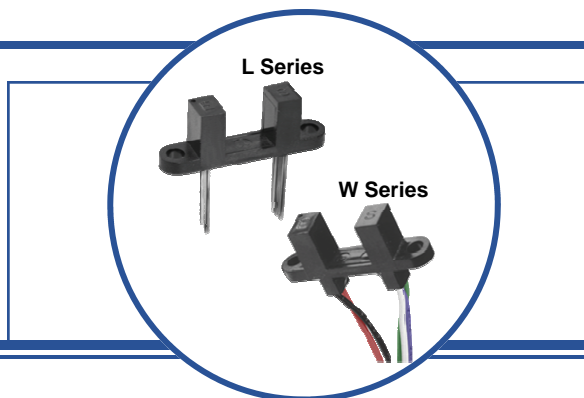


Photologic® Slotted Optical Switch “Wide Gap” Series OPB900 through OPB913 Series (L, W__Z)



Features:

- 0.375" (9.5 mm) wide gap
- Choice of logical output configurations
- Choice of opaque or IR transmissive housing material
- Choice of PCBoard or 26 AWG, UL rated wire
- Data rates to 250 kBaud



Description:

The **OPB900 - OPB913** series of Photologic® Integrated Circuit Switches provide optimum flexibility for the design engineer. Building from a standard housing with a 0.375" (9.5mm) wide slot, a user can specify the type and polarity of the TTL output and the type of shell material.

Electrical output can be specified as either TTL Totem Pole (buffered) or TTL Open Collector, either of which can be supplied with an inverted output polarity.

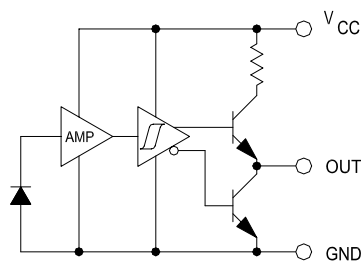
All versions have the added stability of hysteresis built into the amplification circuitry.

Applications:

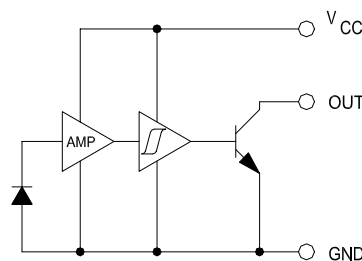
- Mechanical switch replacement
- Speed indication (tachometer)
- Mechanical limit indication
- Edge sensing
- Object sensing

Part Number Guide — OPB900 Series (L, W)	
OPB9 _____	
0 = Dust protection with apertures 1 = Open apertured	_____ L55 = Solder lead termination (PCBoard mount)
0 = Totem Pole 1 = Open Collector 2 = Inverted Totem Pole 3 = Inverted Open Collector	_____ W5_Z= 26 AWG wire termination (24" [61cm] long)
	Aperture sizes: 1 = 0.010" (0.25 mm) 5 = 0.050" (1.52 mm)

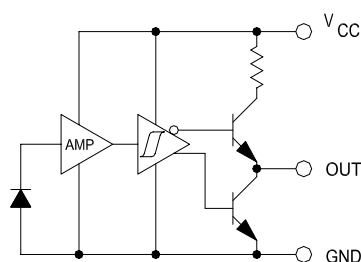
Totem-Pole-Output



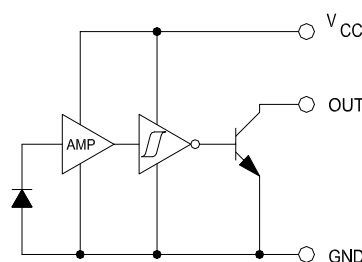
Open-Collector-Output



Inverted Totem-Pole



Inverted Open Collector



RoHS

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

Photologic® Slotted Optical Switch
“Wide Gap” Series
OPB900 through OPB913 Series (L, W __ Z)



Electrical Characteristics ($T_A = -40^\circ\text{C}$ to $+70^\circ\text{C}$ Unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
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Input Diode (See OPB240 for more information — for reference only)

V_F	Forward Voltage	-	-	1.7	V	$I_F = 20\text{ mA}$, $T_A = 25^\circ\text{C}$
I_R	Reverse Current	-	-	100	μA	$V_R = 2\text{ V}$, $T_A = 25^\circ\text{C}$

Output Photologic® Sensor (See OPB560 for more information — for reference only)

V_{CC}	Operating D.C. Supply Voltage	4.75	-	5.25	V	
I_{CCL}	Low Level Supply Current: Buffered Totem-Pole Output Buffered Open-Collector Output	-	-	15	mA	$V_{CC} = 5.25\text{ V}$, $I_F = 0\text{ mA}^{(1)}$
	Inverted Totem-Pole Output Inverted Open-Collector Output	-	-	15	mA	$V_{CC} = 5.25\text{ V}$, $I_F = 20\text{ mA}^{(1)}$
I_{CCH}	High Level Supply Current: Buffered Totem-Pole Output Buffered Open-Collector Output	-	-	15	mA	$V_{CC} = 5.25\text{ V}$, $I_F = 20\text{ mA}^{(1)}$
	Inverted Totem-Pole Output Inverted Open-Collector Output	-	-	15	mA	$V_{CC} = 5.25\text{ V}$, $I_F = 0\text{ mA}^{(1)}$
V_{OL}	Low Level Output Voltage: Buffered Totem-Pole Output Buffered Open-Collector Output	-	-	0.4	V	$V_{CC} = 4.75\text{ V}$, $I_{OL} = 12.8\text{ mA}$, $I_F = 0\text{ mA}^{(1)}$
	Inverted Totem-Pole Output Inverted Open-Collector Output	-	-	0.4	V	$V_{CC} = 4.75\text{ V}$, $I_{OL} = 12.8\text{ mA}$, $I_F = 20\text{ mA}^{(1)}$
V_{OH}	High Level Output Voltage: Buffered Totem-Pole Output	2.4	-	-	V	$V_{CC} = 4.75\text{ V}$, $I_{OH} = -800\text{ }\mu\text{A}$, $I_F = 20\text{ mA}^{(1)}$
	Inverted Totem-Pole Output	2.4	-	-	V	$V_{CC} = 4.75\text{ V}$, $I_{OH} = -800\text{ }\mu\text{A}$, $I_F = 0\text{ mA}^{(1)}$
I_{OH}	High Level Output Current: Buffered Open-Collector Output	-	-	100	μA	$V_{CC} = 4.75\text{ V}$, $V_{OH} = 30\text{ V}$, $T_A = 25^\circ\text{C}$
	Inverted Open-Collector Output	-	-	100	μA	$V_{CC} = 4.75\text{ V}$, $V_{OH} = 30\text{ V}$, $T_A = 25^\circ\text{C}$
$I_F(+)$	LED Positive-Going Threshold Current	-	-	20	mA	$V_{CC} = 5\text{ V}$, $T_A = 25^\circ\text{C}$
$I_F(+)/I_F(-)$	Hysteresis	-	2	-	-	$V_{CC} = 5\text{ V}$
I_{OS}	Short Circuit Output Current: Buffered Totem-Pole Output	-30	-	-100	mA	$V_{CC} = 5.25\text{ V}$, $I_F = 20\text{ mA}$ Output = GND
	Inverted Totem-Pole Output	-30	-	-100	mA	$V_{CC} = 5.25\text{ V}$, $I_F = 0\text{ mA}$ Output = GND
t_r, t_f	Output Rise Time, Output Fall Time	-	70	-	ns	$V_{CC} = 5\text{ V}$, $T_A = 25^\circ\text{C}$ $I_F = 0$ or 20 mA
t_{PLH}, t_{PHL}	Propagation Delay Low-High and High-Low	-	5	-	μs	$R_L = 8\text{ TTL Loads (Totem-Pole)}$ $R_L = 360\text{ }\Omega$ (Open-Collector)

Notes:

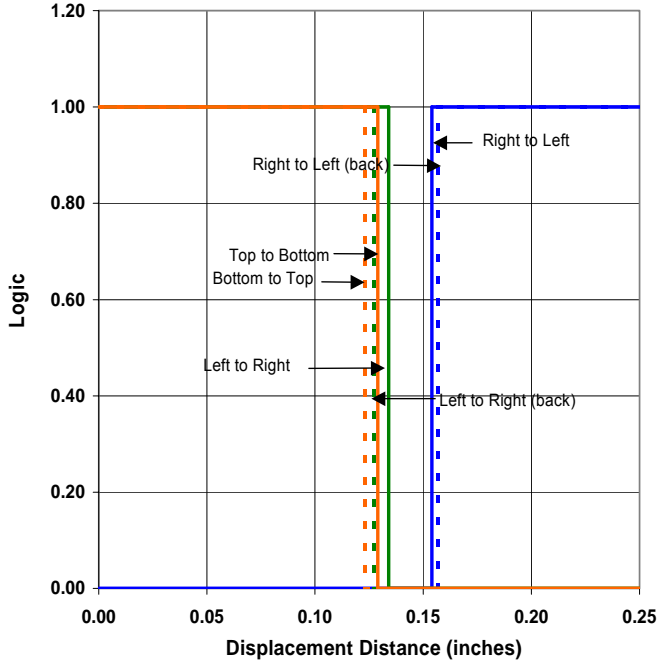
(1) Normal application would be with light source blocked, simulated by $I_F = 0\text{ mA}$.

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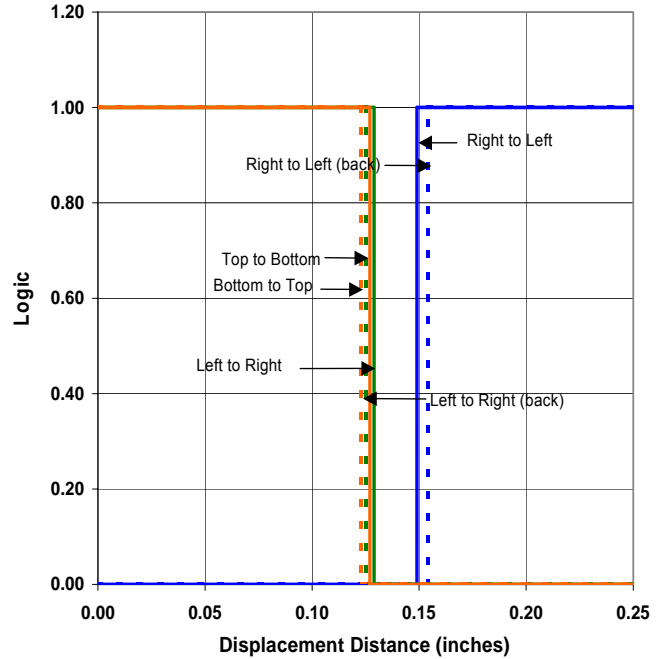
Photologic[®] Slotted Optical Switch
“Wide Gap” Series
OPB900 through OPB913 Series (L, W_Z)



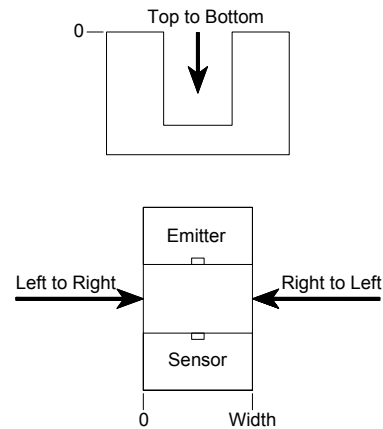
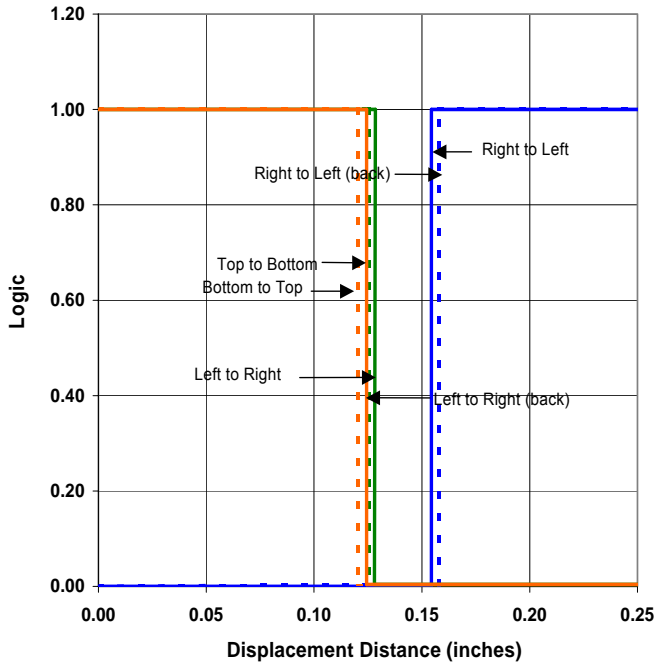
OPB900 - Flag Next to Emitter



OPB900 - Flag Next to Sensor



OPB900 - Flag in Middle of Slot



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