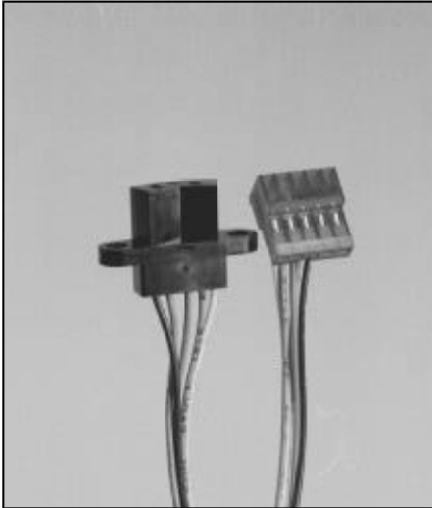


# Photologic® Reflective Object Sensors

## Types OPB770T, OPB771T, OPB772T, OPB773T



### Features

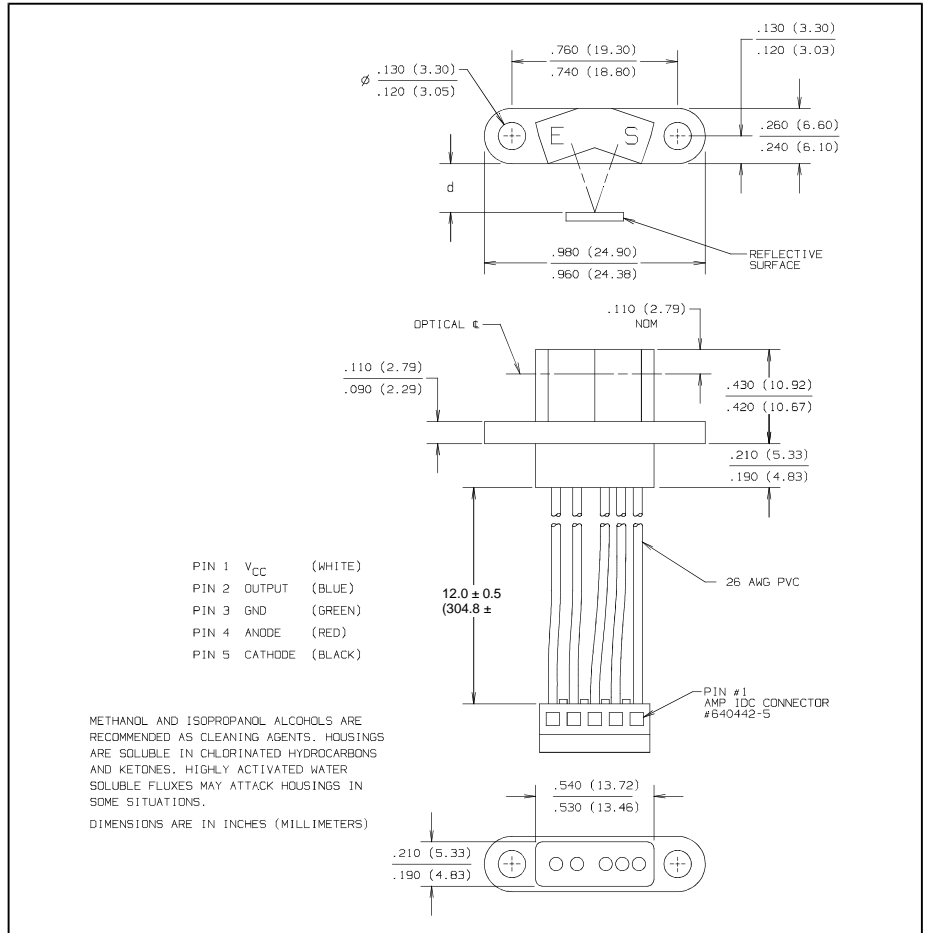
- Choice of mounting configurations
- Choice of output configurations

### Description

The OPB770T series of reflective assemblies feature Photologic® output. This electrical output can be specified as either TTL Totem Pole or TTL Open Collector. Either may be supplied with inverter or buffer output polarity. All have the added stability of a built-in hysteresis amplifier.

### Mounting Options

OPB760N series PC board mount, without mounting tabs  
 OPB760T series PC board mount, with two mounting tabs  
 OPB770N series wire leads with connector, without mounting tabs  
 OPB770T series wire leads with connector, with two mounting tabs



### Absolute Maximum Ratings (T<sub>A</sub> = 25° C unless otherwise noted)

Supply Voltage, V <sub>CC</sub> (Not to exceed 3 sec.)	10 V
Storage Temperature Range	-40° C to +85° C
Operating Temperature Range	-40° C to +70° C
Input Diode Power Dissipation	100 mW <sup>(1)</sup>
Output Photologic® Power Dissipation	200 mW <sup>(2)</sup>
Total Device Power Dissipation	300 mW <sup>(3)</sup>
Voltage at Output Lead (Open Collector Output)	35 V
Diode Forward D.C. Current	40 mA
Diode Reverse D.C. Voltage	3 V

### Notes:

- (1) Derate linearly 2.22 mW/° C above 25° C.
- (2) Derate linearly 4.44 mW/° C above 25° C.
- (3) Derate linearly 6.66 mW/° C above 25° C.
- (4) The OPB770T thru OPB773T series are terminated with 12 inches of 7 strand 26 AWG, UL1429 insulated wire on each terminal. A standard AMP No. 640442-5 connector has been attached to the lead wires to ease connection to wire harnesses.
- (5) Normal application would be with light source blocked, simulated by I<sub>F</sub> = 0 mA.
- (6) Tested at d = 0.080" from a 90% diffuse white test surface.
- (7) Tested at d = 0.080", 0.150" and 0.220" from a 90% diffuse white test surface. Reference: Eastman Kodak, Catalog #1257795.
- (8) Tested at d = 0.080", 0.150" and 0.220" from a 5% diffuse black test surface.
- (9) All parameters tested using pulse technique.

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
<b>Input Diode</b>						
$V_F$	Forward Voltage			1.8	V	$I_F = 40\text{ mA}$ , $T_A = 25^\circ\text{C}$
$I_R$	Reverse Current			100	$\mu\text{A}$	$V_R = 2\text{ V}$ , $T_A = 25^\circ\text{C}$
<b>Output Photologic<sup>®</sup> Sensor</b>						
$V_{CC}$	Operating D.C. Supply Voltage	4.75		5.25	V	
$I_{CCL}$	Low Level Supply Current: Buffered Totem-Pole Output Buffered Open-Collector Output			10	mA	$V_{CC} = 5.25\text{ V}$ , $I_F = 0\text{ mA}$ <sup>(5)(6)</sup> Output Open
	Inverted Totem-Pole Output Inverted Open-Collector Output			10	mA	$V_{CC} = 5.25\text{ V}$ , $I_F = 25\text{ mA}$ <sup>(6)</sup> Output Open
$I_{CCH}$	High Level Supply Current: Buffered Totem-Pole Output Buffered Open-Collector Output			10	mA	$V_{CC} = 5.25\text{ V}$ , $I_F = 25\text{ mA}$ <sup>(6)</sup> Output Open
	Inverted Totem-Pole Output Inverted Open-Collector Output			10	mA	$V_{CC} = 5.25\text{ V}$ , $I_F = 0\text{ mA}$ <sup>(5)(6)</sup> Output Open
$I_{OH}$	High Level Output Voltage: Buffered Open-Collector Output			100	$\mu\text{A}$	$V_{CC} = 4.75\text{ V}$ , $V_{OH} = 30\text{ V}$ $I_F = 25\text{ mA}$ , $T_A = 25^\circ\text{C}$
	Inverted Open-Collector Output			100	$\mu\text{A}$	$V_{CC} = 4.75\text{ V}$ , $V_{OH} = 30\text{ V}$ , $I_F = 0\text{ mA}$ , $T_A = 25^\circ\text{C}$
$I_F(+)$	LED Positive-Going Threshold Current			25	mA	$V_{CC} = 5\text{ V}$ , $T_A = 25^\circ\text{C}$ <sup>(7)</sup>
$I_F(+)/I_F(-)$	Hysteresis					$V_{CC} = 5\text{ V}$ <sup>(7)</sup>
$I_{OS}$	Short Circuit Output Current: Buffered Totem-Pole Output	-15		-100	mA	$V_{CC} = 5.25\text{ V}$ , $I_F = 25\text{ mA}$ <sup>(6)</sup> Output = GND
	Inverted Totem-Pole	-15		-100	mA	$V_{CC} = 5.25\text{ V}$ , $I_F = 0\text{ mA}$ <sup>(6)</sup> Output = GND
$V_{OL}$	Low Level Output Voltage: Buffered Totem-Pole Output Buffered Open-Collector Output			0.4	V	$V_{CC} = 4.75\text{ V}$ , $I_{OL} = 12.8\text{ mA}$ $I_F = 0\text{ mA}$ <sup>(5)(6)</sup>
	Inverted Totem-Pole Output Inverted Open-Collector Output			0.4	V	$V_{CC} = 4.75\text{ V}$ , $I_{OL} = 12.8\text{ mA}$ $I_F = 25\text{ mA}$ <sup>(5)(6)</sup>
$V_{OL}$	Low Level Output Voltage: Buffered Totem-Pole Output Buffered Open-Collector Output			0.4	V	$V_{CC} = 4.75\text{ V}$ , $I_{OL} = 12.8\text{ mA}$ $I_F = 30\text{ mA}$ <sup>(8)</sup>
$V_{OH}$	High Level Output Voltage: Buffered Totem-Pole Output	2.4			V	$V_{CC} = 4.75\text{ V}$ , $I_{OH} = -800\text{ }\mu\text{A}$ $I_F = 25\text{ mA}$ <sup>(6)</sup>
	Inverted Totem-Pole Output	2.4			V	$V_{CC} = 4.75\text{ V}$ , $I_{OH} = -800\text{ }\mu\text{A}$ $I_F = 0\text{ mA}$ <sup>(5)(6)</sup>
$V_{OH}$	High Level Output Voltage: Inverted Totem-Pole Output Inverted Open-Collector	2.4			V	$V_{CC} = 4.75\text{ V}$ , $I_{OH} = -800\text{ }\mu\text{A}$ $I_F = 30\text{ mA}$ <sup>(8)</sup>

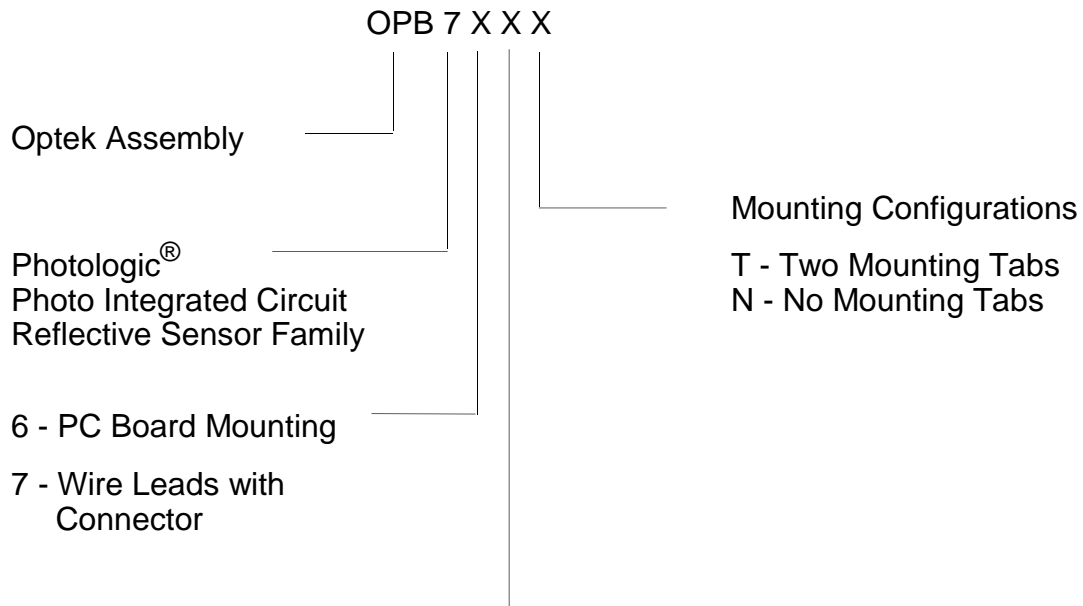
Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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# Types OPB760, OPB770 Series

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## PART NUMBER GUIDE



### Electrical Specification Variations

- 0 - Buffered Totem-Pole Output
- 1 - Buffered Open-Collector Output
- 2 - Inverted Totem-Pole Output
- 3 - Inverted Open-Collector Output