

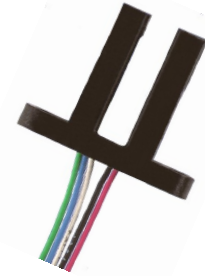
Photologic® Slotted Optical Switch



OPB917 Series

Features:

- Low power consumption
- Data rates to 250 kbaud
- Choice of two logic states and two electrical outputs
- 24" (610 mm) minimum 26 AWG UL listed wires
- Slot width 0.20" (5.08 mm)
- Slot Depth 0.86" (21.84 mm)



Description:

The **OPB917** series of Photologic® photo integrated circuit switches provide optimum flexibility. Each switch consists of an infrared Light Emitting Diode (LED) and a Photologic® photo integrated circuit, mounted in an opaque housing with clear windows for dust protection. The deep slot allows for a longer reach of the optical path from the 0.650" (16.5 mm) mounting plane. Internal apertures are 0.010" x 0.060" (.25 mm x 1.52 mm) for the Photologic's "S" side and 0.05" x 0.06" (1.27 mm x 1.52 mm) for the LED "E" side.

Devices in this series exhibit stable performance over supply voltages ranging from 4.5 V to 16.0 V, and may be specified as buffered or inverted with an internal 10 kΩ pull-up resistor or open collector output. Devices are TTL/LSTTL compatible and can drive up to 10 TTL loads.

Custom electrical, wire or cabling are available. Contact your local representative or OPTEK for more information.

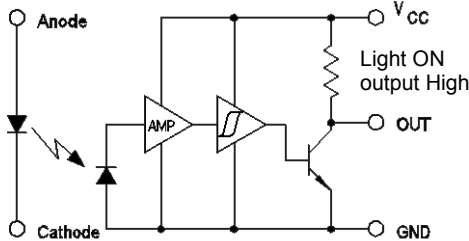
Applications:

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

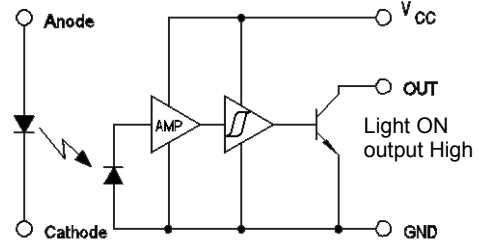
| Ordering Information | | | | | |
|----------------------|---------------------|--------------------|------------------|-------------------------|--------------------|
| Part Number | LED Peak Wavelength | Sensor Photologic® | Slot Width/Depth | Aperture Emitter/Sensor | Lead Length / Wire |
| OPB917BZ | 880 nm | 10K Pull-Up | 0.200" / 0.635" | 0.05" / 0.01" | 24" / 26 AWG Wire |
| OPB917IZ | | Inv-10K Pull-Up | | | |
| OPB917BOCZ | | Open-Collector | | | |
| OPB917IOCZ | | Inv-Open-Collector | | | |

| Color | Description |
|-------|-------------|
| Red | Anode |
| Black | Cathode |
| White | Vcc |
| Blue | Output |
| Green | Ground |

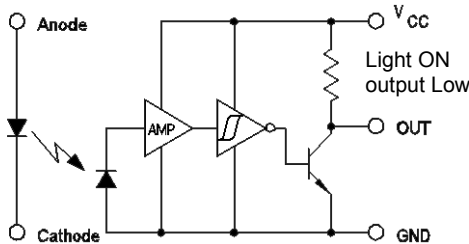
OPB917BZ 10K Pull-Up



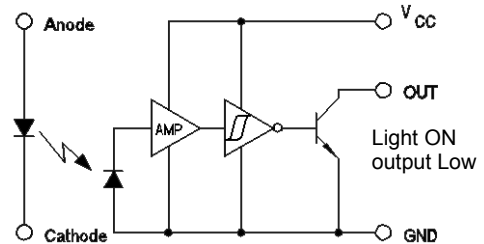
OPB917BOCZ Open-Collector



OPB917IZ Inverted 10K Pull-Up



OPB917IOCZ Inverted Open-Collector

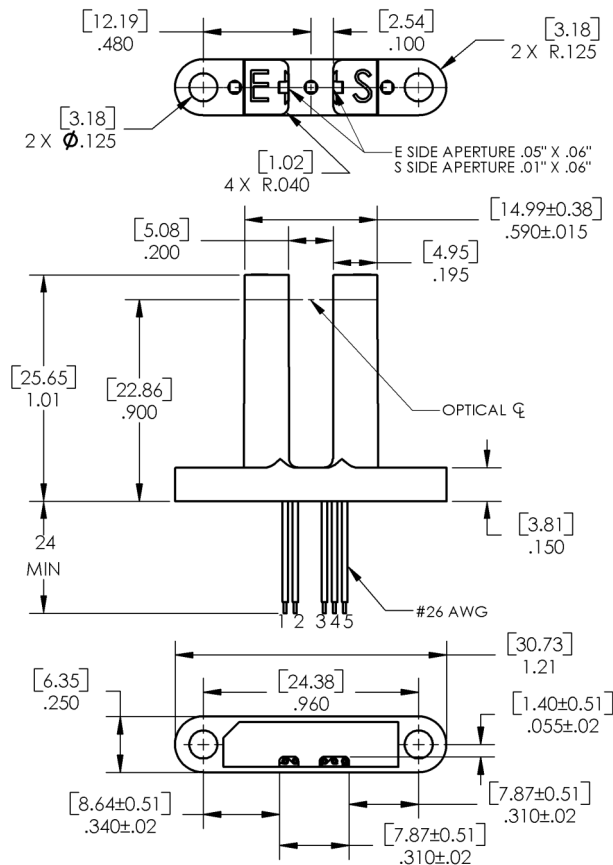


General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

OPTEK Technology, Inc.
1645 Wallace Drive, Carrollton, TX 75006 | Ph: +1 972 323 2200
www.optekinc.com | www.ttelectronics.com

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| Color | Description |
|-------|-----------------|
| Red | Anode |
| Black | Cathode |
| Green | Ground |
| Blue | Output |
| White | V _{CC} |

DIMENSIONS ARE IN: [MILLIMETERS]
INCHES

| Absolute Maximum Ratings (T _A = 25° C unless otherwise noted) | |
|--|----------------|
| Storage & Operating Temperature Range | -40°C to +80°C |
| Lead Soldering Temperature [1/16 inch (1.6mm) from the case for 5 sec. with soldering iron] ⁽¹⁾ | 260°C |
| Input Infrared LED | |
| Supply Voltage, V _{CC} (not to exceed 3 seconds) | 18 V |
| Input Diode Power Dissipation ⁽²⁾ | 100 mW |
| Forward DC Current | 50 mA |
| Output Photologic® | |
| Voltage at Output Lead (Open Collector Output) | 35 V |
| Diode Reverse DC Voltage | 2 V |
| Output Photologic® Power Dissipation ⁽³⁾ | 90 mW |

Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (2) Derate linearly 1.33 mW/°C above 25°.
- (3) Derate linearly 2.50 mW/°C above 25°.
- (4) Normal application would be with light source blocked, simulated by I_F = 0 mA.
- (5) All parameters tested using pulse technique.

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| Electrical Characteristics (T _A = 25° C unless otherwise noted) | | | | | | |
|--|--|------------------------|--------------------------|-----|-------|---|
| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
| Input Diode | | | | | | |
| V _F | Forward Voltage | - | 1.3 | 1.8 | V | I _F = 20 mA |
| I _R | Reverse Current | - | - | 100 | μA | V _R = 2 V, T _A = 25° C |
| Output Photologic® Sensor | | | | | | |
| V _{CC} | Operating DC Supply Voltage | 4.5 | - | 16 | V | - |
| I _{CCL} | Low Level Supply Current: Buffered with 10k pull-up ⁽¹⁾ Buffered Open-Collector Output ⁽¹⁾ | - | - | 7 | mA | V _{CC} = 16 V, I _F = 0 mA, No Output Load |
| | Inverted with 10k pull-up: Inverted Open-Collector Output | - | - | 7 | mA | V _{CC} = 16 V, I _F = 10 mA, No Output Load |
| I _{CCH} | High Level Supply Current: Buffered with 10k pull-up Buffered Open-Collector Output | - | - | 6 | mA | V _{CC} = 16 V, I _F = 10 mA, No Output Load |
| | Inverted with 10k pull-up: Inverted Open-Collector Output ⁽¹⁾ | - | - | 6 | mA | V _{CC} = 16 V, I _F = 0 mA, No Output Load |
| V _{OL} | Low Level Output Voltage: Buffered with 10k pull-up Buffered Open-Collector Output | - | - | 0.4 | V | V _{CC} = 4.5 V, I _{OL} = 0 mA, I _F = 0 mA V _{CC} = 4.5 V, I _{OL} = 16 mA, I _F = 0 mA |
| | Inverted with 10k pull-up: Inverted Open-Collector Output | - | - | 0.4 | V | V _{CC} = 4.5 V, I _{OL} = 0 mA, I _F = 10 mA V _{CC} = 4.5 V, I _{OL} = 16 mA, I _F = 10 mA |
| V _{OH} | High Level Output Voltage: Buffered with 10k pull-up Buffered Open-Collector Output | V _{CC} 2.4 | V _{CC} - 1.5 | - | V | V _{CC} = 4.5 V to 16 V, I _F = 10 mA, No Output Load |
| | Inverted with 10k pull-up: Inverted Open-Collector Output ⁽¹⁾ | V _{CC} 2.4 | V _{CC} - 1.5 | - | V | V _{CC} = 4.5 V to 16 V, I _F = 0 mA, No Output Load |
| I _{OH} | High Level Output Voltage: Buffered with 10k pull-up Buffered Open-Collector Output | - | 1.0 | 14 | μA | V _{CC} = 4.5 V, I _F = 10 mA, V _{OH} = 30 V |
| | Inverted with 10k pull-up: Inverted Open-Collector Output ⁽¹⁾ | - | 1.0 | 14 | μA | V _{CC} = 4.5 V, I _F = 0 mA, V _{OH} = 30 V |
| I _{F(+)} | LED Positive-Going Threshold Current Buffered with 10k pull-up Buffered Open-Collector Output | - | 5 | 10 | mA | V _{CC} = 5 V, I _{OL} = 0 mA |
| | Inverted with 10k pull-up: Inverted Open-Collector Output ⁽¹⁾ | - | 5 | 10 | mA | V _{CC} = 4.5 V, I _{OL} = 16 mA |

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| Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | | |
|---|----------------------|-----|-----|-----|---------------|---|
| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
| $I_{F(+)} / I_{F(-)}$ | Hysteresis | - | 1.5 | - | - | $V_{CC} = 5\text{ V}$ |
| t_r, t_f | Rise Time, Fall Time | - | 50 | - | ns | $V_{CC} = 5\text{ V}$, $I_F = 0$ or 10 mA , $R_L = 300\ \Omega$ to 5 V , $C_L = 50\text{ pF}$ |
| t_{PLH}, t_{PHL} | Propagation Delay | - | 3 | - | μs | $V_{CC} = 5\text{ V}$, $I_F = 0$ or 10 mA , $R_L = 300\ \Omega$ to 5 V , $C_L = 50\text{ pF}$ |

Notes:

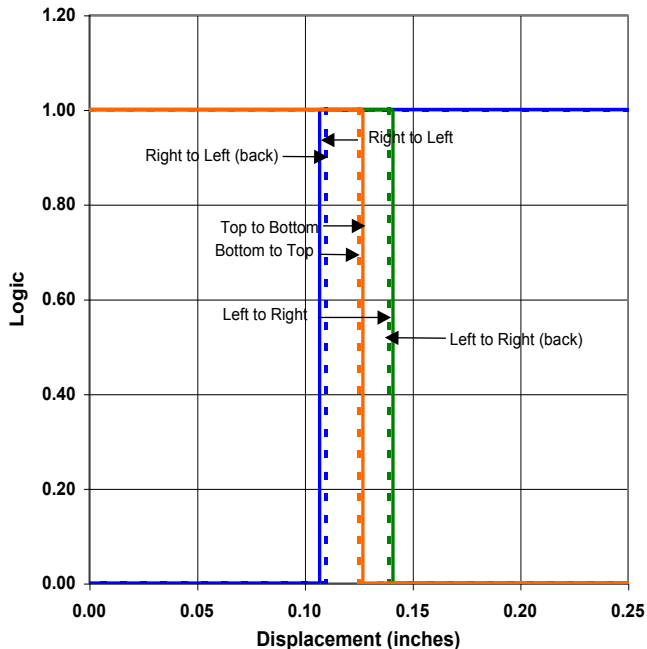
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- (2) All parameters tested using pulse technique.

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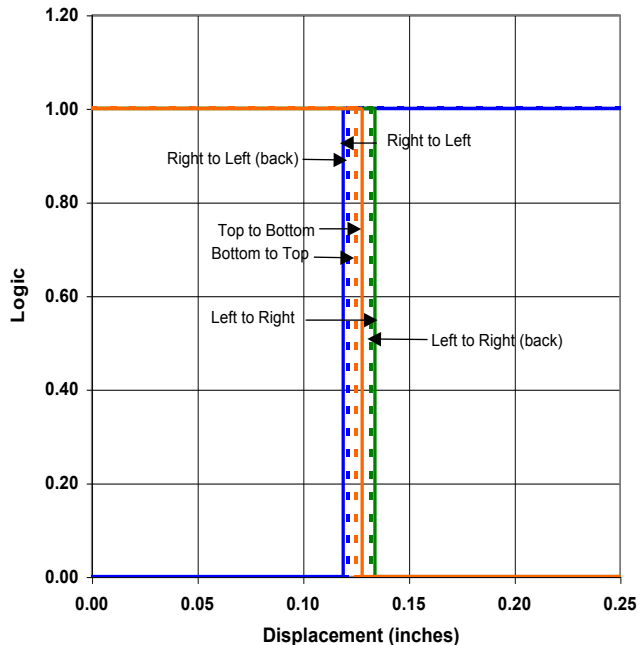
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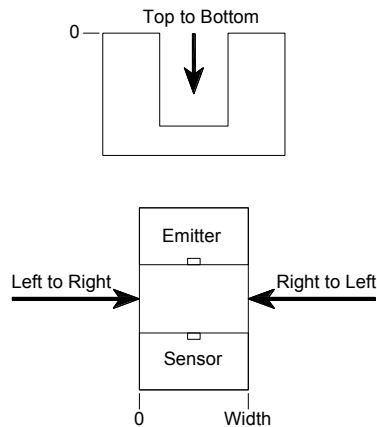
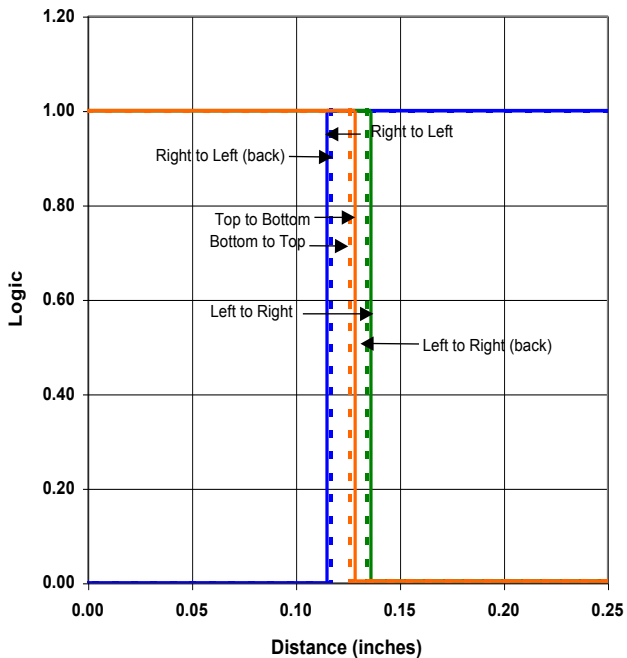
OPB917—Flag Next to Emitter



OPB917—Flag Next to Sensor



OPB917—Flag Middle of Slot



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- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
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