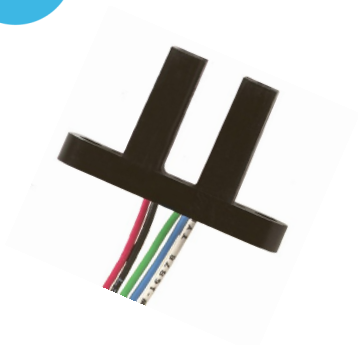
Photologic® Slotted Optical Switch

OPB916 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 0.635” (16.13 mm)

Description:

The **OPB916** 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 .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:

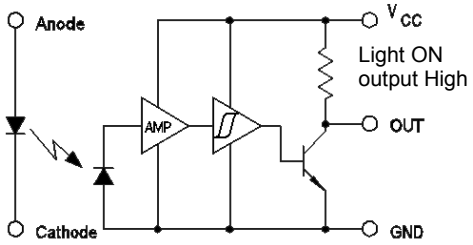
- Mechanical switch replacement
- Speed indication (tachometer)
- Mechanical limit indication
- Edge sensing

Ordering Information

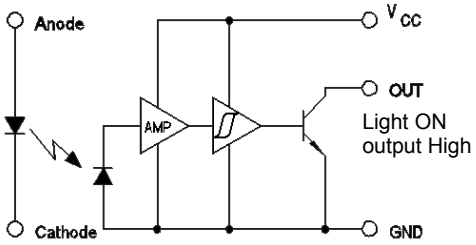
Part Number	LED Peak Wavelength	Sensor Photologic®	Slot Width / Depth	Aperture Emitter / Sensor	Lead Length / Wire
OPB916BZ	880 nm	10K Pull-Up	0.200” / 0.635”	0.05" / 0.01"	24" / 26 AWG Wire
OPB916IZ		Inv-10K Pull-Up			
OPB916BOCZ		Open-Collector			

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

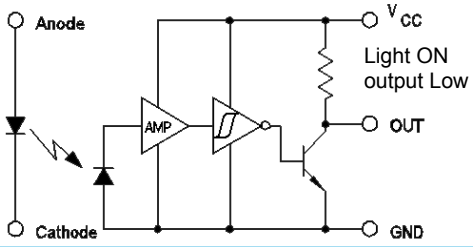
OPB916B 10K Pull-Up



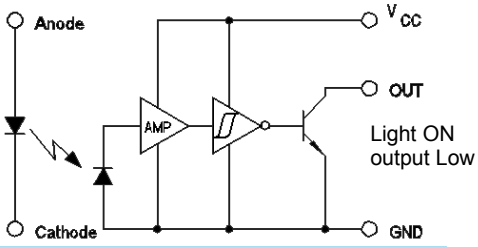
OPB916BOC Open-Collector



OPB916I Inverted 10K Pull-Up



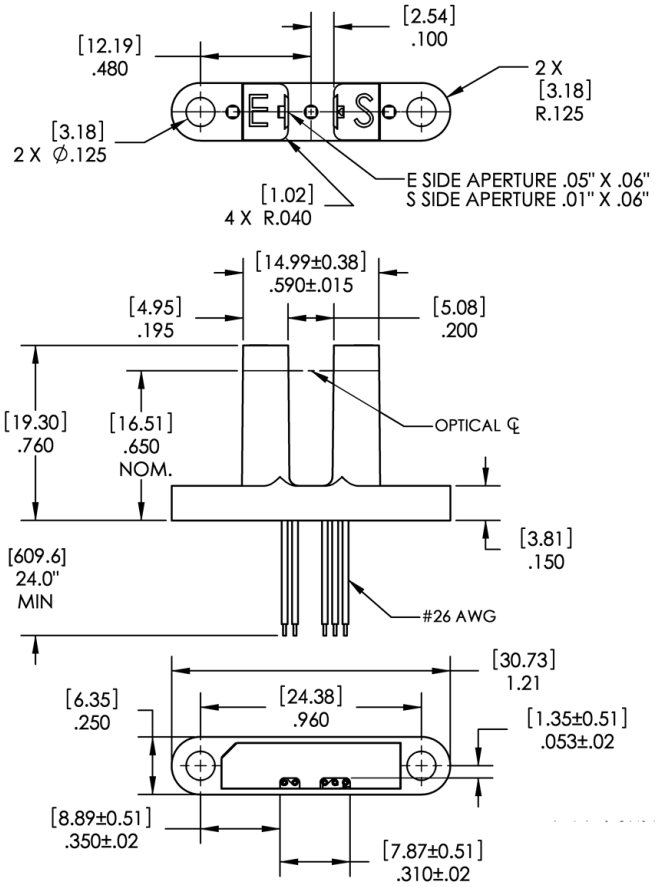
OPB916IOC Inverted Open-Collector



RoHS

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

Photologic® Slotted Optical Switch



Color-Pin #	Description
Red	Anode
Black	Cathode
Green	Ground
Blue	Output
White	V_{CC}

Tolerence ±0.010 [0.254]

DIMENSIONS ARE IN: [MILLIMETERS] INCHES

Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)	
Storage & Operating Temperature Range	-40°C to +80°C
Input Infrared LED	
Diode Reverse DC Voltage	2 V
Input Diode Power Dissipation(2)	75 mW
Forward DC Current	50 mA
Output Photologic®	
Supply Voltage, V_{CC} (not to exceed 3 seconds)	18 V
Voltage at Output Lead (Open Collector Output)	30 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 1.67 mW/°C above 25°.
(3) Derate linearly 2.67 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.

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

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} = 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} = 16 mA, I_F = 10 mA
V_{OH}	High Level Output Voltage: Buffered with 10k pull-up	V_{CC}-2.0	-	-	V	. V_{CC} = 4.5 V to 16 V, I_F = 10 mA, I_{OH} = 100 µA
	Inverted with 10k pull-up:	V_{CC}-2.0	-	-	V	V_{CC} = 4.5 V to 16 V, I_F = 0 mA,
I_{OH}	High Level Output Current: Buffered with 10k pull-up Buffered Open-Collector Output	-	1.0	10	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	10	µA	V_{CC} = 4.5 V, I_F = 0 mA, V_{OH} = 30 V

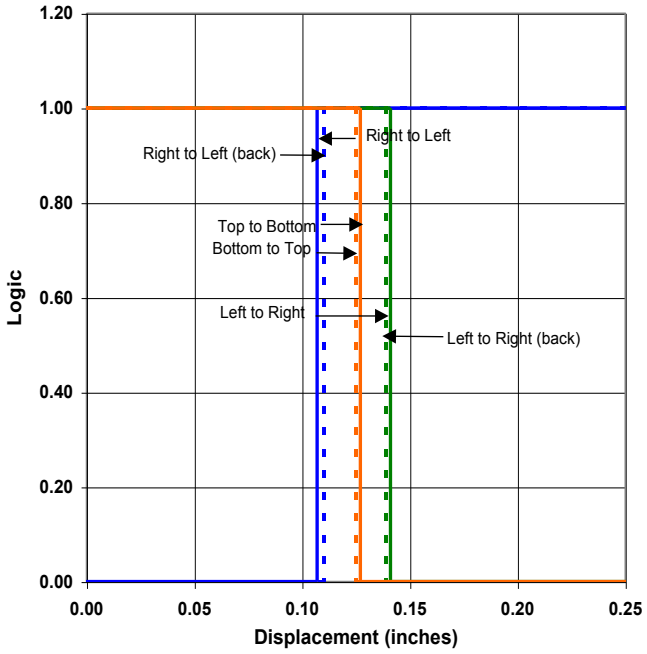
OPTEK Technology, Inc.
1645 Wallace Drive, Carrollton, TX 75006 | Ph: +1 972 323 2200
www.optekinc.com | www.ttelectronics.com

Electrical Characteristics (T_A = 25° C unless otherwise noted)						
SYMBOL	**PARAMETER**	**MIN**	**TYP**	**MAX**	**UNITS**	**TEST CONDITIONS**
Output Photologic® Sensor						
$I_{F(+)}$	LED Positive-Going Threshold Current Buffered with 10k pull-up Inverted with 10k pull-up	-	5	10	mA	V_{CC} = 5 V, No Output Load
	Buffered Open-Collector Output Inverted Open-Collector Output(1)	-	5	10	mA	V_{CC} = 4.5 V, I_{OL} = 16 mA
$I_{F(+)}/I_{F(-)}$	Hysteresis	-	1.5	-	-	V_{CC} = 5 V
$t_r t_f$	Rise Time, Fall Time	-	50	-	ns	V_{CC} = 5 V, I_F = 0 or 10 mA, R_L = 300 Ω to 5 V, C_L = 50 pF
$t_{PLH} t_{PHL}$	Propagation Delay	-	3	-	µs	

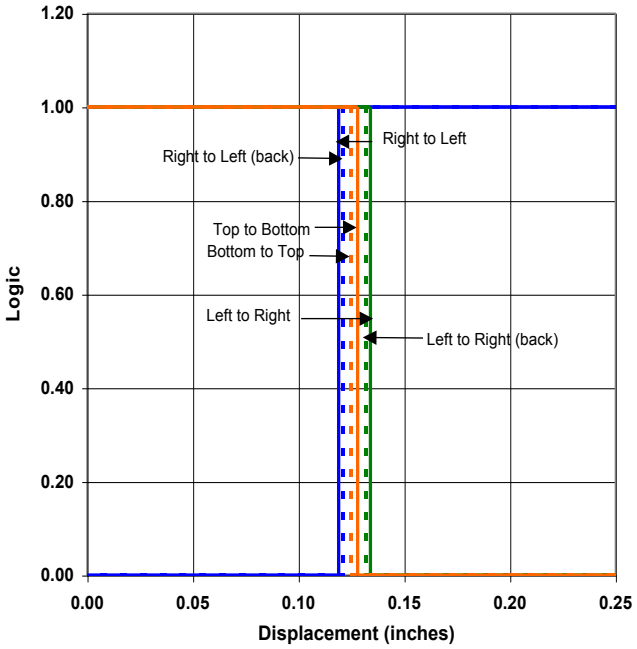
Notes:
(1) Normal application would be with light source blocked, simulated by I_F = 0 mA.
(2) All parameters tested using pulse technique.

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

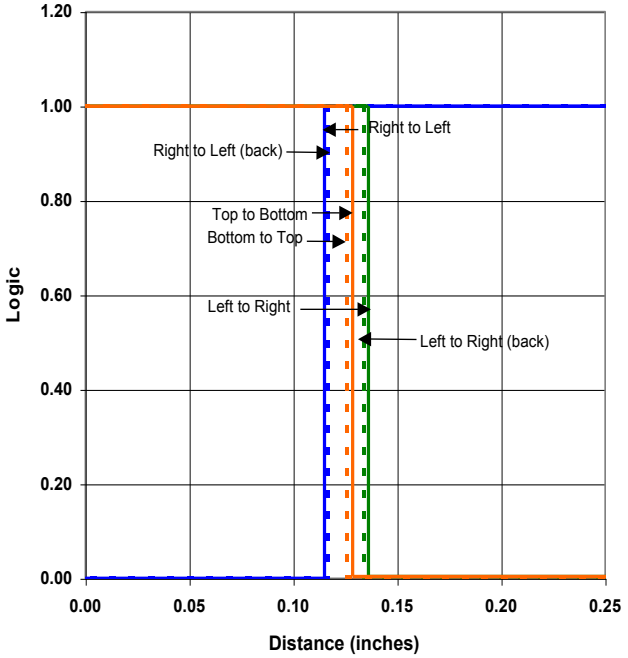
OPB916B - Flag Next to Emitter

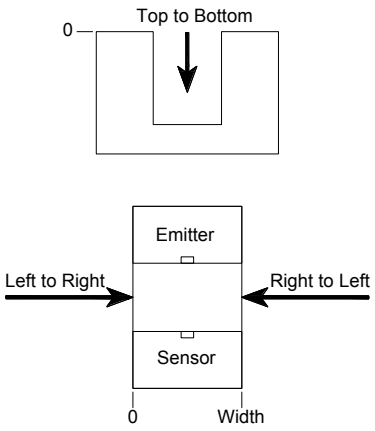


OPB916B - Flag Next to Sensor



OPB916B - Flag in Middle of Slot





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

Issue	Change Description	Approval	Date
A	Initial Release, new format	Steve Coble	12/13/06
A.1	Fixed Ordering Table page 1	Bob Procsal	1/25/08
A.2	Fixed nomenclature on schematics page 1	Mark Miller	8/04/08
A.3	Changed mechanical drawing, Absolute Max Ratings and some Electrical Characteristics	Mark Miller	08/07/08
B	Transferred to the new TT Electronics template	L. Timpa	10/6/16

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

LifeElectronics
Живое партнерство

ООО «ЛайфЭлектроникс» **“LifeElectronics” LLC**

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- *Конкурентоспособные цены и скидки постоянным клиентам.*
- *Специальные условия для постоянных клиентов.*
- *Подбор аналогов.*
- *Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.*

- *Приемлемые сроки поставки, возможна ускоренная поставка.*
- *Доставку товара в любую точку России и стран СНГ.*
- *Комплексную поставку.*
- *Работу по проектам и поставку образцов.*
- *Формирование склада под заказчика.*

- *Сертификаты соответствия на поставляемую продукцию (по желанию клиента).*
- *Тестирование поставляемой продукции.*
- *Поставку компонентов, требующих военную и космическую приемку.*
- *Входной контроль качества.*
- *Наличие сертификата ISO.*

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- *Регистрацию проекта у производителя компонентов.*
- *Техническую поддержку проекта.*
- *Защиту от снятия компонента с производства.*
- *Оценку стоимости проекта по компонентам.*
- *Изготовление тестовой платы монтаж и пусконаладочные работы.*

Тел: +7 (812) 336 43 04 (многоканальный)
Email: org@lifeelectronics.ru

www.lifeelectronics.ru