

Photologic[®] Reflective Object Sensor

Types OPB715, OPB716, OPB717, OPB718



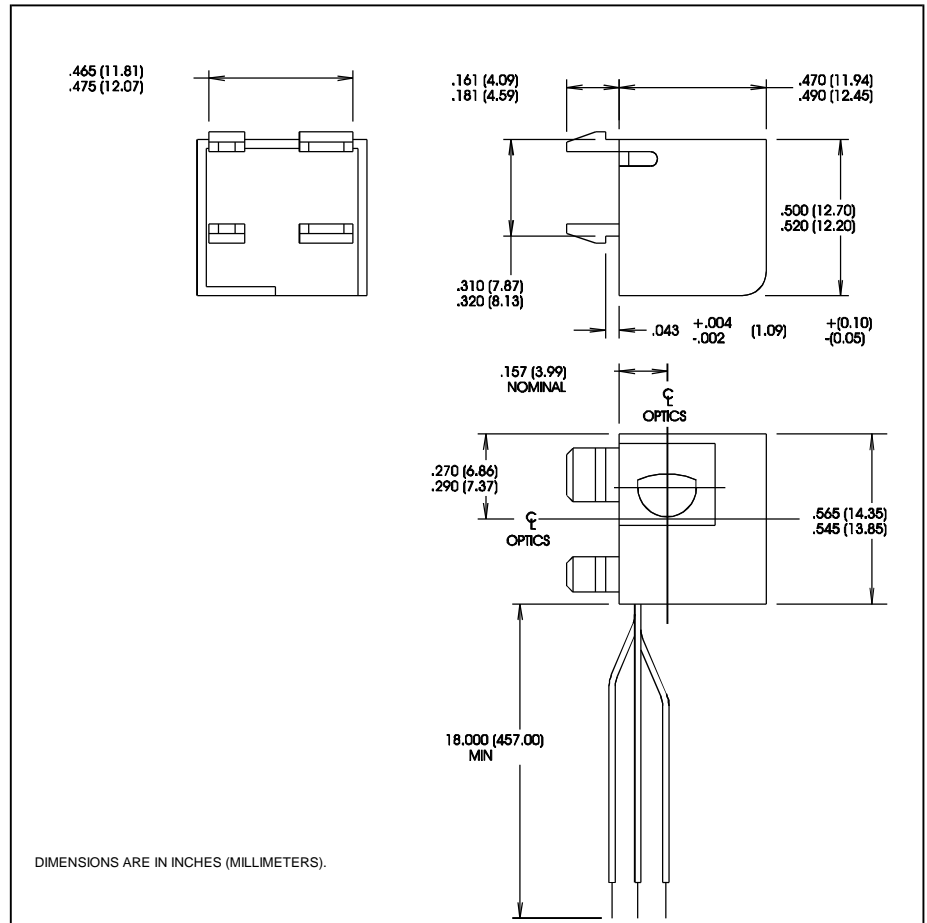
Features

- Focused for maximum sensitivity
- 0.5" (12.7mm) sensing distance
- Panel mount
- Choice of output configurations
- 18" minimum wire length

Description

The OPB715 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). However, the OPB715 has a wide operating distance range and is capable of detecting reflective objects at longer distances. Even low reflectance materials can be detected at shorter distances.

The sensor's panel-mount plastic housing shields stray light and is terminated with 18" wire leads. The output can be specified as either TTL totem-pole or TLL open-collector in buffer or inverter polarity. The LED is current limited internally for design convenience.



Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

| | |
|--|-----------------------|
| Supply Voltage, V _{CC} (not to exceed 2 sec.) | 10 V |
| Storage Temperature Range | -40° C to +85° C |
| Operating Temperature Range | -40° C to +85° C |
| Power Dissipation | 300 mW ⁽¹⁾ |
| Output Voltage (Open-Collector only) | 35 V |

Notes:

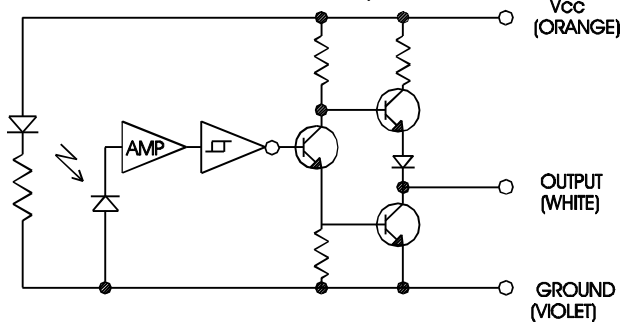
- (1) Derate linearly at 5.00 mW/°C above 25° C.
- (2) Terminating wire is 7 strand, 26 AWG, UL 1429.
- (3) Tested at d = 0.5" (12.7 mm) from a 90% diffuse, white test surface.
Reference: Eastman Kodak Catalog #1257795.
- (4) No reflective surface.

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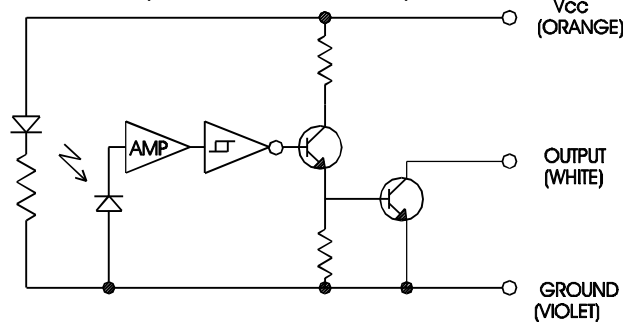
Electrical Characteristics ($T_A = -40^\circ\text{C}$ to $+85^\circ\text{C}$ unless otherwise specified)

| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|-----------|---|------|-----|------|---------------|---|
| V_{CC} | Operating D.C. Supply Voltage | 4.75 | | 5.25 | V | |
| I_{CCL} | Low Level Supply Current: OPB715: Buffered Totem-Pole Output OPB716: Buffered Open-Collector Output | | | 50 | mA | $V_{CC} = 5.25\text{ V}$, Output Open |
| | OPB717: Inverted Totem-Pole Output OPB718: Inverted Open-Collector Output | | | 50 | mA | $V_{CC} = 5.25\text{ V}$, Output Open |
| I_{CCH} | High Level Supply Current: OPB715: Buffered Totem-Pole Output OPB716: Buffered Open-Collector Output | | | 50 | mA | $V_{CC} = 5.25\text{ V}$, Output Open |
| | OPB717: Inverted Totem-Pole Output OPB718: Inverted Open-Collector Output | | | 50 | mA | $V_{CC} = 5.25\text{ V}$, Output Open |
| I_{OH} | High Level Output Current: OPB716: Buffered Open-Collector Output | | | 100 | μA | $V_{CC} = 5\text{ V}$, $V_{OH} = 5\text{ V}^{(3)}$ |
| | OPB718: Inverted Open-Collector Output | | | 100 | μA | $V_{CC} = 5\text{ V}$, $V_{OH} = 5\text{ V}^{(4)}$ |
| I_{OS} | Short Circuit Output Current: OPB715: Buffered Totem-Pole Output OPB717: Inverted Totem-Pole Output | | | | | |
| | | | | | | |
| V_{OL} | Low Level Output Voltage: OPB715: Buffered Totem-Pole Output OPB716: Buffered Open-Collector Output | | | 0.4 | V | $V_{CC} = 5\text{ V}$, $I_{OL} = 12.8\text{ mA}^{(4)}$ |
| | OPB717: Inverted Totem-Pole Output OPB718: Inverted Open-Collector Output | | | 0.4 | V | $V_{CC} = 5\text{ V}$, $I_{OL} = 12.8\text{ mA}^{(3)}$ |

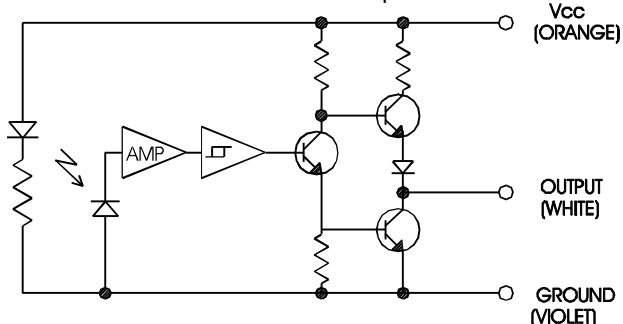
OPB715: Totem-Pole Buffer Output



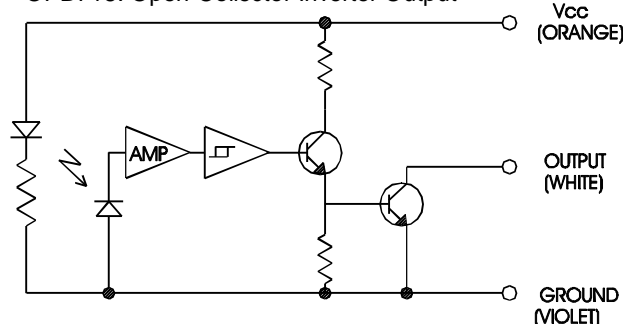
OPB716: Open-Collector Buffer Output



OPB717: Totem-Pole Inverter Output



OPB718: Open-Collector Inverter Output



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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