

Reflective Optical Sensor

OPB9001 Series



Features:

- Wide operating supply voltage range up to 3.3 V - 30 V
- Ability to drive the output up to 30 V
- Integrated drive circuitry
- Increased ESD up to 8 kV
- EMI immunity capability to EMC Directive 2014/30-EU
- UL & CE approved
- Detecting distance 2.5 mm to 50 mm
- Ambient light rejection 25 klx+
- Programmable output configuration and sensitivity level
- Integrated 4-pin connector for plug and play capability
- -40 °C to +85 °C operating temperature range
- Small footprint dimensions L 18 mm X W 12 mm X H 5 mm



Description:

The OPB9001 PCB module takes the versatile and programmable OPB9000 reflective sensor and enhances its capabilities by integrating multiple features into a robust, small form factor for ease of use. The OPB9001 accepts a wide range of supply voltages from 3.3V to 30 V and comes with built-in voltage protection for maximum flexibility and protection. An integrated, industry standard 4-pin Molex connector provides ease of connection while the onboard LED indicators provide overall status during power-on, output and calibration.

The OPB9001 is designed for portability in a variety of position and presence detect applications, with a small form factor (188 mm x 12 mm x 5 mm) to fit in even the smallest application spaces.

The full-featured OPB9001AC includes a robust Transient Voltage Suppressor (TVS) diode to protect against harmful voltage spikes and is CE and UL certified for maximum reliability under any environmental condition. It is also capable of withstanding up to 8 kV of contact discharge HBM.

Factory calibrated for a 12 mm distance and a white reflective surface the OPB9001 can be re-calibrated in a matter of milliseconds with a single command for specific application requirements. An interface cable can be purchased separately to calibrate the OPB9001 Series using the OPB9000-KIT.

The product has been assessed to meet high safety, health, and environmental protection requirements as determined by CE and EMC directives, providing for increased ESD and EMI immunity.

Note 1: For additional information on how to program OPB9000, see the datasheet: <https://www.ttelectronics.com/TTElectronics/media/ProductFiles/Optoelectronics/Datasheets/OPB9000.pdf>

Applications:

- Non-contact position presence applications
- Industrial printing and high-speed paper detection
- Manufacturing and Factory automation
- Automated sewing machines
- Automated banking machines
- Medical equipment
- Automatic dispensing
- Material handling and asset tracking

Additional Features:

- 6ms response time
- Wide operating supply voltage range
 - 4.5 V to 30 V (OPB9001A/AC)
 - 4.5 V to 24 V (OPB9001B)
 - 3.3 V to 5.5 V (OPB9001C)
- Reverse voltage protection
- Single-command calibration with on-chip EPROM
- Temperature-compensated LED drive
- Eliminate the need for external drive circuitry

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.

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OPB9001AC, OPB9001A, OPB9001B,
OPB9001C



Part Number Guide — OPB9001

OP9001 Reflective Assembly	<u>OPB9001 X</u>		VDD Voltage Range A - 4.5 V to 30 V B - 4.5 V to 24 V C - 3.3 V to 5.5 V AC - 4.5 V to 30 V CE / UL

Ordering Part Number	Voltage Output Configuration	VCC Range	Features
OPB9001AC	N.O. NPN	4.5 V to 30 V	OPB9000 with indicators, voltage regulator + NPN Transistor 30 V +ESD TVS diodes and CE and UL Certifications and connector
OPB9001A	N.O. NPN	4.5 V to 30 V	OPB9000 with indicators, voltage regulator + NPN Transistor 30 V and connector
OPB9001B	N.O. NPN	4.5 V to 24 V	OPB9000 with indicators, voltage regulator + NPN Transistor 24 V and connector
OPB9001C	TTL CMOS	3.3 V to 5.5 V	OPB9000 with indicators and connector
OPB90014CB	N/A	N/A	1m interface cable with connector
OPB9000-KIT	N/A	N/A	OPB9000 reflective sensor evaluation kit for testing and auto-calibration (requires OPB90014CB interface cable)

