

# OPAX-1000

## OPACITY SENSOR

Verify opacity of containers with on-line, high-speed, accurate and reliable measurements. The OPAX-1000™ combines proven sensor technology with innovative hardware to provide an easy-to-use system to measure light transmission in a wide variety of applications including packaging containers used in pharmaceutical, food and personal care. Many products require packaging designed to protect the contents from the damaging effects of light. Establishing pass/fail criteria for minimum opacity of these containers and providing on-line measurement of every container eliminates defects and allows real-time control of these processes.

Container materials include HDPE, LDPE and other opaque materials such as paper and composite films. The metal alloy case and glass lens provide robust construction expected in an industrial environment.

The OPAX features a 2-digit display that provides an indication of signal strength making set-up and integration quick and easy. The sensor includes both a discrete PNP/NPN output and an analog output. The analog output signal may be used to assess the relative opacity of samples.

# OPAX



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## Applications

- Pharmaceutical containers
- Food packaging
- Personal care products
- HDPE containers
- LDPE containers
- Composite films
- Blow molded products
- Paper products

## Design & Features

- Small spot size
- High sensitivity and high resolution
- Fast response
- Display range 00-99
- Adjustable gain
- Analog output
- PNP/NPN discrete output

## Ordering Information



OPAX 1000  
Opacity Sensor



OPAX-1000T  
Transmitter

## Accessories



OPAX-1000B  
Mounting bracket



LMX-300  
Laser position sensor



VVX-300C  
Cable 5P, 5M, M12, F

**NOT INTENDED FOR USE IN  
PERSONAL SAFETY APPLICATIONS.**

## Functions

**NORMAL OPERATING MODE**  
**CALIBRATION**  
**THRESHOLD**  
**LED INTENSITY**  
**HYSTERESIS LEVEL**  
**DISCRETE OUTPUT**  
**OUTPUT PULSE STRETCH**  
**SECURITY**  
**TEACH MODE**

Displays relative reflection intensity  
 User sensitivity adjustment  
 Set detection level  
 Set LED, LO, MED, HI  
 Set undetect level 1-9 steps below threshold  
 Set normally open or normally closed  
 Set minimum output period 10...90mS  
 Lock/unlock pushbutton controls  
 Auto-set detection threshold

## Specifications

**Light source**  
**Light source intensity**  
**Sensing distance**  
**Response time**  
**Switching frequency**  
**Relative intensity display range**  
**Sensitivity**  
**Signal level**  
**Detection threshold**  
**Digital output**  
**Output function**  
**Analog output**  
**Power indicator**  
**Detect indicator**  
**Programming indicator**  
**Data retention**  
**OPAX 1000R (receiver)**  
**Dimensions**

LED, min. 100,000 hrs.  
 3 levels  
 up to 300mm  
 <150uS  
 6kHz  
 00 to 99  
 Adjustable  
 Two 7 segment digits  
 Two 7 segment digits  
 Auto-Detect PNP / NPN  
 NO/NC selectable  
 0...5V  
 Green LED  
 Red LED  
 Yellow LED  
 EEPROM non—volatile memory

### Indicators

**7-Segment display**  
**Green LED**  
**Red LED**  
**Yellow LED**

LED  
 Power  
 Detect  
 Program

### Connector M12

**Pin 1**  
**Pin 2**  
**Pin 3**  
**Pin 4**  
**Pin 5**

Power to 24VDC  
 Discrete output  
 PNP/NPN NO/NC  
 Ground  
 Analog output 0 to  
 5V DC  
 Remote LOCK/  
 UNLOCK input

**Weight**  
**OPAX 1000T (transmitter)**  
**Dimensions**

51mm x 61mm x 25mm  
 (2.0" x 2.4" x 1.0")  
 95 g (0.21 lbs.)

**Weight**  
**Transmitter aperture set**  
**Supply voltage**  
**Operating current**

8mm x 38mm  
 (0.312" x 1.5")  
 20g (0.7oz.)  
 0.38mm (0.015"), 0.75mm (0.030"), 2.5mm (0.100")  
 24 VDC  
 60 mA

**Short circuit protection**  
**Overload / reverse polarity protection**  
**Operating temperature**  
**Storage temperature**  
**Housing**

Discrete output  
 Supply voltage  
 -20°C...55°C  
 -20°C...70°C  
 Metal alloy

**WARRANTY** EMX INC. the product described herein for a period of 2 years under normal use and service from the date of manufacture. The product will be free from defects in material and workmanship. This warranty does not cover ordinary wear and tear, abuse, misuse, overloading, altered products, or damage caused by the purchaser from incorrect connections, or lightning damage. There is no warranty of merchantability. There are no warranties expressed, implied or any affirmation of fact or representation which extend beyond the description set forth herein. EMX Inc. sole responsibility and liability, and purchaser's exclusive remedy shall be limited to the repair or replacement at EMX's option of a part or parts not so conforming to the warranty. In no event shall EMX Inc. be liable for damages of any nature, including incidental or consequential damages, including but, not limited to any damages resulting from non-conformity defect in material or workmanship.