SEE THE INVISIBLE!

Better performance for one-tenth the cost of vision systems

DATA SHEET

UVX-300
Luminescence Sensor

WINNER BEST OF sensors expo DETROIT 2004

Confirm manufacturing processes more reliably than vision systems that cost ten times more. The patented technology in the UVX-300 luminescence sensor effectively detects UV luminescent materials and markers. The UV light source in the UVX-300 is directed towards a target and the visible light is reflected from the target back to the UVX-300. Because the UV luminescent materials and inks are invisible under a normal light spectrum, it is possible to mark products and parts without affecting their appearance. Some materials such as wood, grease and glue may contain UV luminescent materials naturally and in other cases the UV pigment may be added to the marking process.

The UVX-300 was designed to meet several requirements. First, the UVX-300 had to have a long range and be easy to program. Second, it had to have a quantative display so the user can see what the sensor is registering. Third, the UVX-300 had to have exceptional resolution so it can effectively suppress the background on large targets and limit the detection to a contained area on small targets. Last, it had to provide all the output function variations in the same model to limit the number of models that have to be carried in stock.

Our design team achieved those requirements.

- Unique numerical display lets you see the intensity of each reading. Now it's easy to refine processes and hysteresis.
- 3 to 6 times the range of any competing sensor. Won't get bumped or dirtied by target in the process.
- Only UV sensor with both auto-teach and manual calibration. Easy for low-skill operators, but able to be finely tuned.
- Adjustable UV light projection and high resolution allow pin-head size detection.
- Fast and convenient integration. In one sensor you get both analog and discrete output, auto-detect for PNP/NPN.
- Smallest and fastest on the market.

Applications

The UVX-300 is used in many industrial applications to sense the following:

Grease	Oil	Glue
Labels	Epoxies	UV ink
Varnish	Wood	Textiles
UV Crayons	Paper	
Adhesive	Paint	

Although some applications may be similar to color or contrast sensing, the UVX-300 offers unmatched detection of UV fluorescent materials. There are also applications where the lack of luminescence is detected—for example, a break in a seal.

UVX-300 Design and Features

- Long range sensing capability
- Auto-Teach and Manual functions
- Receiver gain and detection threshold display
- High resolution
- Programmable discrete and analog outputs
- Fast response time

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For quotes and questions, contact Applications Support:
1-800-426-9912
salessupport@emxinc.com

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UVX-300
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Functions

OPERATING MODE	The UVX-300 is in operating mode in detect or undetect state.
REFLECTED UV LEVEL	Displays the relative reflection intensity.
THRESHOLD	Displays the preset detection level.
MANUAL PROGRAM MODE	Switches the UVX-300 to PROGRAM MODE.
SET THRESHOLD	Sets the detect level.
SET UV LED INTENSITY	Sets the UV LED intensity to LO, MED, HI.
SET HYSTERESIS LEVEL	Sets the un-detect level 1–9 steps below the detect level.
SET OUTPUT NO/NC	Sets the discrete output to NO or NC.
SET DETECTION EXTEND TIME	Extends the detect output by selected time.
SET LOCK/UNLOCK	Locks and un-locks the UVX-300 pushbutton controls.
TEACH MODE	Switches the UVX-300 to TEACH MODE.
TEACH DETECT	Sets the level of reflection at which the UVX-300 will detect the target.
TEACH UNDETECT	Sets the level of reflection so UVX-300 will not detect the target.
PNP/NPN	The micro controller detects and selects the required output configuration.

Specifications

Supply Voltage	10–24 V DC
Operational Current	<60 mA
Detection Range	350mm
Hysteresis	10 settings
On/Off Delay	<150 µs
Switching Frequency	6 kHz
Output Pulse Stretch	0–90 ms (10 steps)
Discrete Output	Auto-Detect PNP/NPN
Analog Output	0–5 V
Output Function	NO/NC selectable
Short Circuit Protection	Yes (outputs)
Overload/Reverse Polarity Protection	Yes (supply voltage)
Remote Input	LOCK/UNLOCK
Signal Strength Display	Two 7 segment digits
Detection Threshold	Two 7 segment digits
Power Indicator	7 segment display LED
Detect Indicator	Red LED
Programming Indicator	Green LED
Data Retention	EEPROM non-volatile memory
UV Source	370 nm UV LED life 100,000 hours
Receiver Spectral Response	350 to 1000 nm
Operating Temperature	–20 to 55°C
Storage Temperature	–20 to 70 C
Housing	Metal alloy
Mechanical Protection	IP67
Connector	M12 5 pin
Size	2.5″ x 2″ x 0.75″

Values Stored in Non Volatile Memory

THRESHOLD, NO/NC, UV LED INTENSITY, Local LOCK/UNLOCK, DETECTION EXTEND TIME, HYSTERESIS LEVEL, TEACH DETECT, TEACH UNDETECT.

Indicators

7 Segment Display LED	Power ON
Red LED	Detect
Green LED	Program

Connector M12

Pin 1	Power 10 to 30 V DC
Pin 2	Discrete output PNP/NPN NO/NC
Pin 3	Ground
Pin 4	Analog output 0 to 5 V DC
Pin 5	Remote LOCK/UNLOCK input

Certifications

CE

INTERTEK ETL LISTED c US

NOT INTENDED FOR USE IN PERSONAL SAFETY APPLICATIONS.

Ordering Information

UVX-300
Luminescence Sensor

Accessories

UVX-300L50
50 mm focal lens

UVX-300B
Bracket

UVX-300C
5-meter cable with M12 5 pin connector

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