E3S-DB Sensor for transparent objects

Heinrich Hoh – PM Photoelectric Sensors

Product overview

Quick & Reliable adjustment
- SmartTeach saves setting time and optimizes threshold

Easy monitoring
- 360 visible LED

Suitable for wash-down
- ECOLAB proved
- IP67/69K

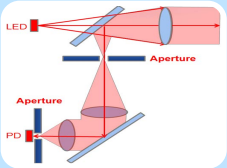
Unique coaxial optics
- 0 to 4.5m sensing distance
- Low hysteresis
- Super small spot

Long holes
- Easy integration into existing designs

High robustness
- Metal insert for high mounting torque

Movable connector (M12)
- Provides you more flexibility
- Reliable size for water proof

Key features



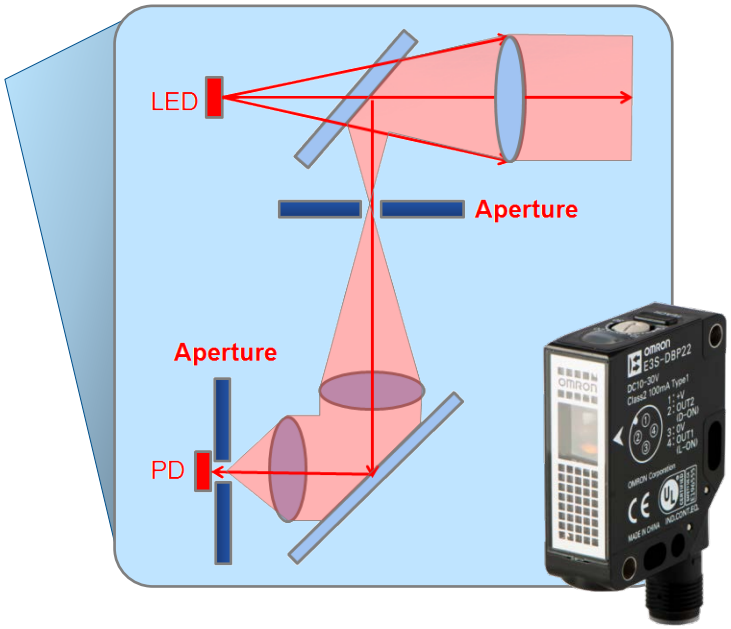
G-No1 Sensing performance

SmartTeach

Narrow beam

G-No1 Sensing performance

- Superior optical system to reduce stray light
- Low hysteresis & high dynamic range detecting 3% light attenuation from 0-4m
- P-opaquing ("**p**olarization-opaquing") for enhanced PET detection
- AC^3 (**A**uto-**C**ompensation **C**ontrol for **C**ontamination)



Benefits for the customer:

- ✓ Avoiding machine breakdowns due to sensor malfunctions
- ✓ One sensor for all transparent applications
- ✓ Stabile operation over long time
- ✓ Avoiding expensive solutions like Ultrasonic sensor

SmartTeach – fast and optimum setting

How-to Smart Teach:

1. Select threshold

- Pre-select best threshold/attenuation level for given application

2. Teach

- Push teach button >1 sec. (without object) for ideal setting of light emission & threshold enabling high dynamic range for both short and long sensing distance

Benefits for the customer:

- ✓ Fast sensor adjustment
- ✓ Optimized threshold
- ✓ Clear information about sensor status
- ✓ Easy copying of settings from one
- ✓ Easy replacement of sensors
- ✓ Easy to understand for end-user

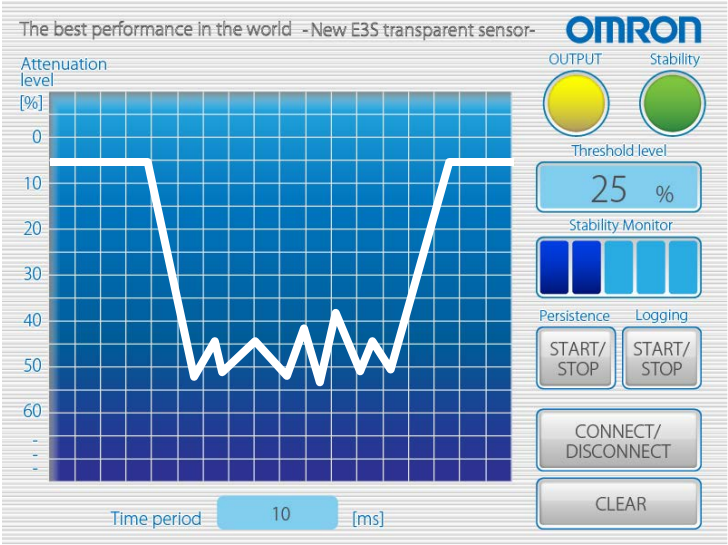
PC-tool / Stability monitor

- Using PC-Interface, you can monitor the incident light level of the sensor

  - for testing => evaluate new object, new reflector in lab

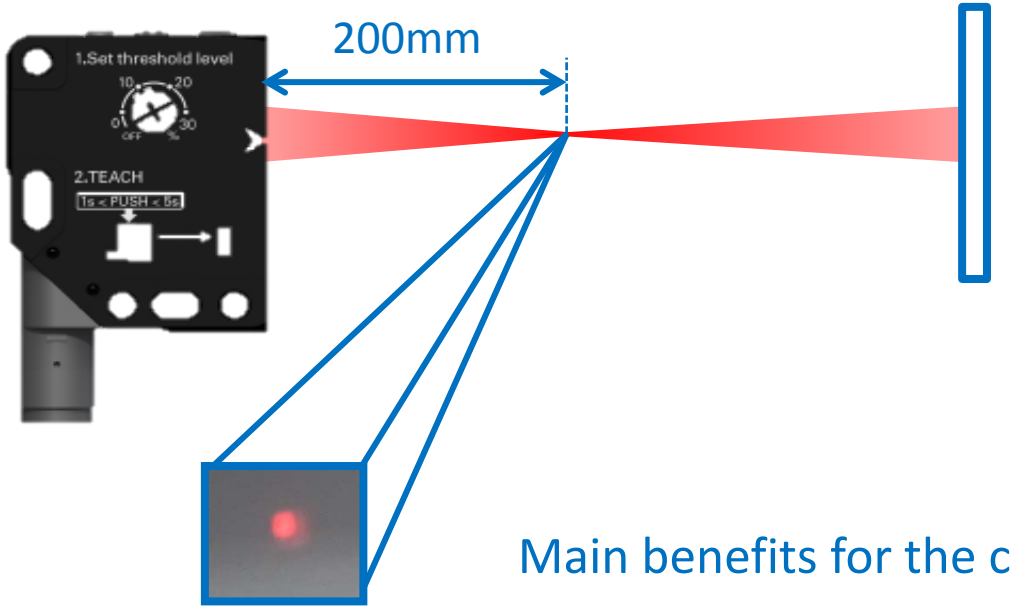
  - for setting => identify best threshold

  - for maintenance/service

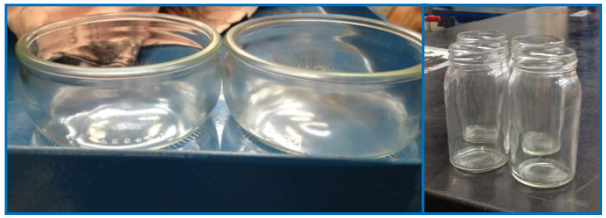


Narrow beam

- Narrow beam models provide convergent beam with 2mm min. spot at 200mm



Φ = min. 2mm

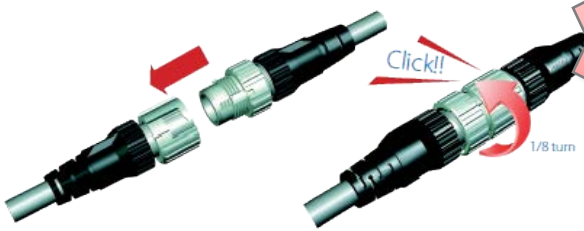


Main benefits for the customer:

- ✓ Detects gaps down to 3mm
- ✓ Reliable counting of single objects
- ✓ Avoiding expensive Laser solutions

Line-up

Sensor type	Sensitivity adjustment	Sensing distance	Connection	Order code	
				NPN	PNP
Retro-reflective with M.S.R.	SmartTeach	4.5m With E39-R8	Pre-wired	E3S-DBN11 2M	E3S-DBP11 2M
			Connector(M12)	E3S-DBN21	E3S-DBP21
			Pigtail (Smartclic/M12)	E3S-DBN31	E3S-DBP31
		0.7m With E39-R21	Pre-wired	E3S-DBN12 2M	E3S-DBP12 2M
			Connector(M12)	E3S-DBN22	E3S-DBP22
			Pigtail (Smartclic/M12)	E3S-DBN32	E3S-DBP32
	Trimmer (11-turn)	4.5m With E39-R8	Pre-wired	E3S-DBN11T 2M	E3S-DBP11T 2M
			Connector(M12)	E3S-DBN21T	E3S-DBP21T
			Pigtail (Smartclic/M12)	E3S-DBN31T	E3S-DBP31T
		0.7m With E39-R21	Pre-wired	E3S-DBN12T 2M	E3S-DBP12T 2M
			Connector(M12)	E3S-DBN22T	E3S-DBP22T
			Pigtail (Smartclic/M12)	E3S-DBN32T	E3S-DBP32T



Cable and SmartClick in Oct.

Main specifications

Detectable objects	All transparent objects (glass, PET, transparent film)
Sensing distance	4.5m / 0.7m (narrow beam models)
Light source	Red LED
Operation (tbc)	11-turn trimmer / Smart-tune (teach+trimmer)
Output	4-pin / 2 antivalent outputs (PNP/NPN models)
Response time	0.5ms
Temperature range	-25 / +60°C
Connection	2m cable / M12 connector / M12 Smart Click Pig-tail
Housing material	Plastic
Protection	IP67 / IP69K
Certificates	CE, UL, Ecolab
Functions (SmartTeach models)	Lock function, AC^3 (Auto Compensation Control for Contamination), signal monitoring via PC-Tool