Displacement Sensor OD

SICK
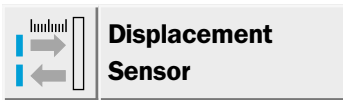
Scanner and measuring system at the same time

The displacement sensors of the OD series are scanners and measuring systems at the same time. Thanks to intelligent microcontroller technology, we have been able to combine all functions in a compact device for the first time: precise measuring and reliable presence control, this sensor can do both.

The calibration of the analog output and the setting of the scanning range of the control output is easy with Teach-in.

There are components in almost all manufacturing sectors that must fulfill the highest demands for precision and optics. The displacement sensors of the OD series detect the smallest deviations, depressions or lack of flatness immediately even in the μm range.

Type with metal housing and a class 2 laser is suited for applications that require the smallest spot dimensions for precise measuring. The plastic model OD 25 with red LED light source is suited for large-area recording of raw surfaces.

Temperature ranges between −10 and +40 °C as well as humid or dusty environments are no longer a problem.

▼ **The all-in-one sensor with proven PSD technology:** The proven triangulation measurement is the physical basis of the displacement sensor in the OD series. Optics, switches and signal processing are designed for the highest resolutions with simultaneously high linearity.

Laser diode

Collimator

Test object

PSD

Reception Lens

A

B
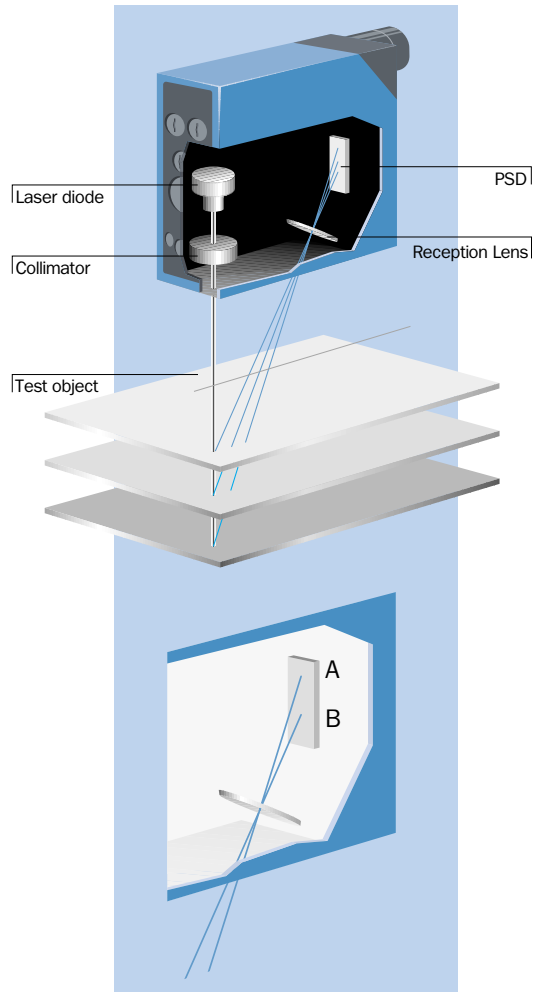
▲ **Triangulation measurement:** The site of the light spot on the PSD detector is dependent on the distance of the detected object. The signals A and B change depending on the position of the light spot. The calculation of the signals in the microcontroller then gives a linear output signal depending on the distance of the object.
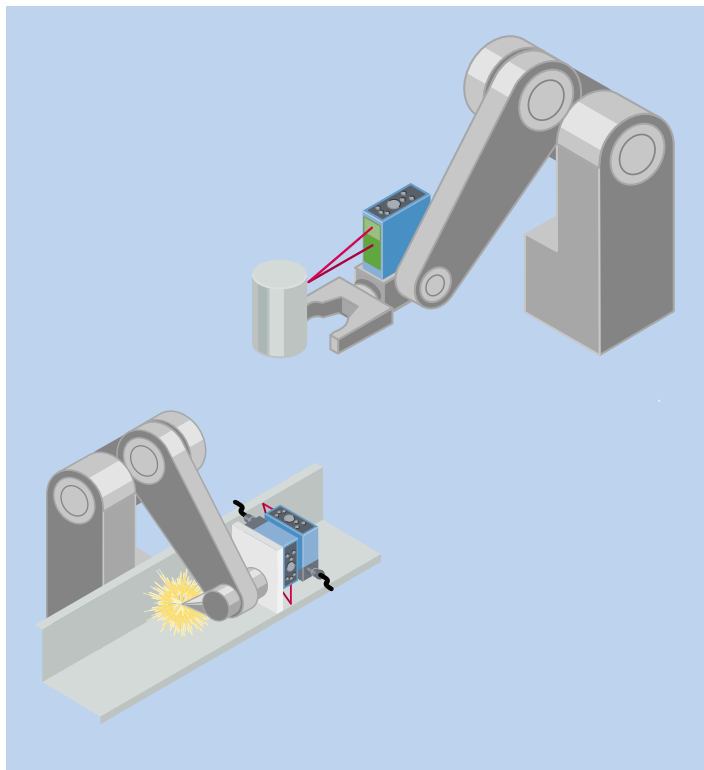
▼ **Automobile industry:** Measuring raw and low-reflection engine and gear components with an OD displacement sensor. Localization and checking of welds and bodywork parts in passenger car mass production. Multicolored surfaces are detected reliably.
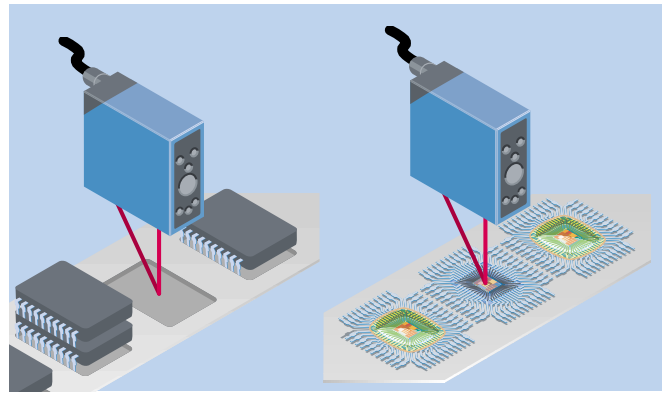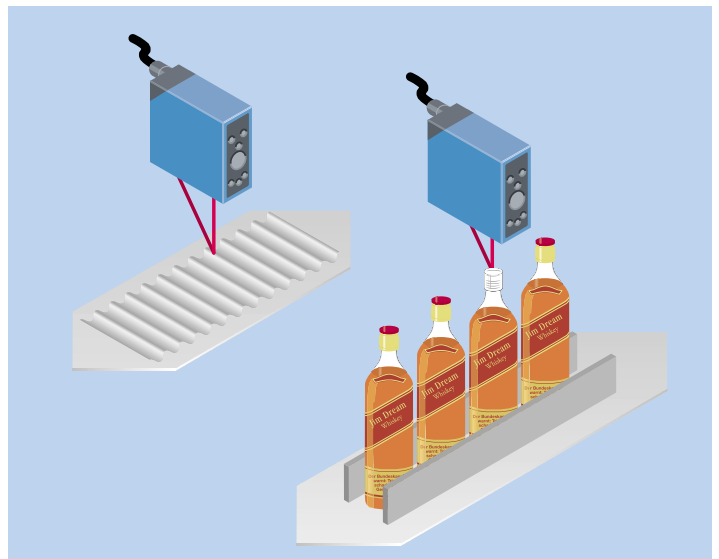
◄ **Semiconductor industry:** Measuring the epoxy resin deposit in IC manufacturing with the OD displacement sensor. Detection of missing ICs in the packaging of blister tapes. The OD is also designed for low-reflecting, light-absorbing surfaces.
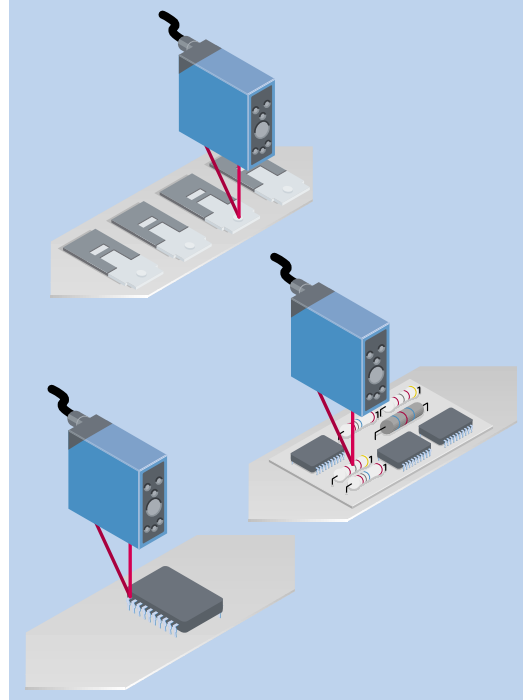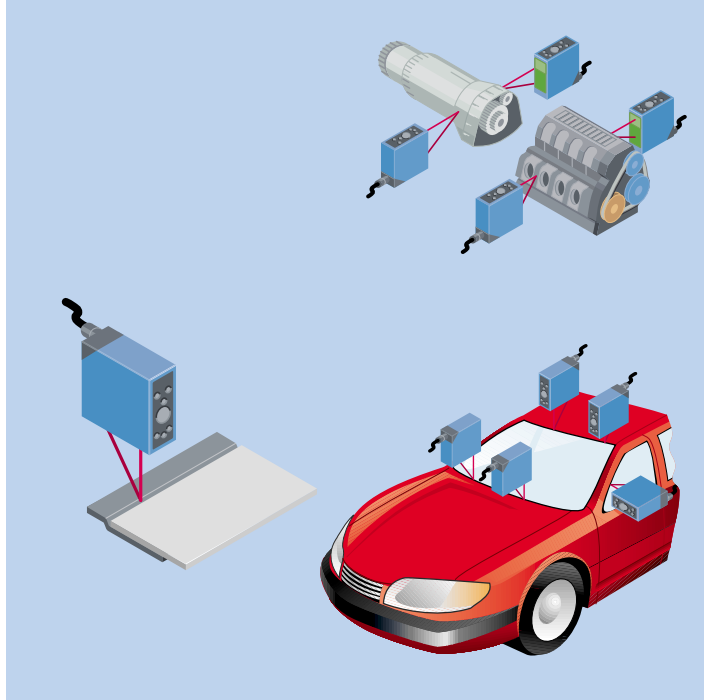
◄ **Electronics industry:** Checking the switching behavior of relay contacts and mechanical switches with an OD displacement sensor. Checking the IC contacts before assembling boards. Making sure whether electrical components are present.

▲ **Paper and packaging industry:** Checking wave shapes and heights in cardboard production in cardboard packaging. The large light spot of the LED model enables measuring raw surfaces. Presence checks and checks of the curves of bottles and beaker caps. Multicolored surfaces do not affect the measuring behavior.

▲ **Robotics:** Alignment and targeted control of robot arms and control of welding robots in special purpose engineering or in mass production with an OD displacement sensor.
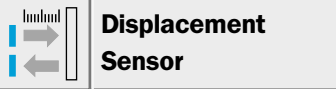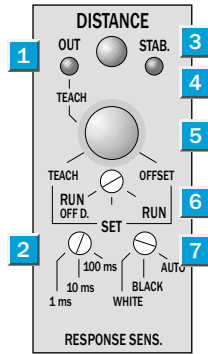
Displacement Sensor

- Setting and calibration with Teach-in
- Laser and LED models
- Blanking input for synchronization for demanding measurement jobs

Description of the operating panel

Setting options

OD 25-05P132	OD 50-10P142
OD 25-05P830	OD 50-10P840
OD 25-05N132	OD 50-10N142
OD 25-05N830	OD 50-10N840

Setting options

OD 30-04P142	OD 130-50P142
OD 30-04P840	OD 130-50P840
OD 30-04N142	OD 130-50N142
OD 30-04N840	OD 130-50N840
OD 100-35P142	OD 250-150P142
OD 100-35P840	OD 250-150P840
OD 100-35N142	OD 250-150N142
OD 100-35N840	OD 250-150N840
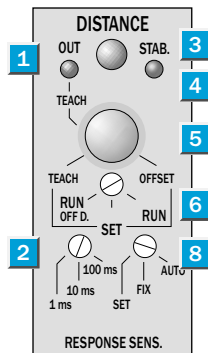
1 Output indicator/Teach-in indicator
In the RUN mode, the LED display shows the "open collector" status: orange = output ON; off or does not light = output OFF.

2 Response time with 3 positions
The positions 100 ms, 10 ms, and 1 ms are selected depending on the desired response time and resolution. The longer the response time, the better the resolution.

3 Distance indicator (DISTANCE)
Display for the distance from the sensor front to the object. In the scanning range: LED display lights red (closer than middle), orange (middle), or green (farther than middle). This distance indicator blinks red-green when the object is out of the measurement range.

4 Stable indicator (STAB.)
The LED display lights green when there is light reception with reserve. It does not light when there is sufficient reception, and it lights red if reflectance is too weak or strong.

5 Teach-in button – Set mode (during Teach-in)
a) Setting the scanning distance: The LED lights green 1x when the first distance is set and 2x when the second distance is set. It lights red 1x if there is an operating error.
b) Setting the offset: The LED lights green 3x when the offset is set. It lights red 1x if there is an operating error.
c) Resetting the offset: The LED lights green 3x when the offset is reset.

6 Mode selector with 3 positions
The positions SET, RUN, and RUN with OFF DELAY are required for Teach-in.

7 OD 25/OD 50:
Sensitivity selector with 3 positions
WHITE (white object), BLACK (black object), and AUTO (gray and/or multicolored object). WHITE or BLACK is selected dependent on the reflection when the selector is set to AUTO.

8 OD 30/OD 100/OD 130/OD 250:
AUTO: Automatic amplifier control (gain) depending on reflectance.
SET/FIX: Switch setting SET: Reflectance is taught be Teach-in. Switch setting FIX: Amplification is set after Teach-in with the switching function FIX.

Description of the blanking input (SH)

- When the blanking input is active, the control and the analog output retain their previous status (PNP type: active – level is HIGH; NPN type: active – level is LOW.)
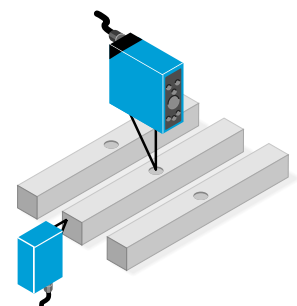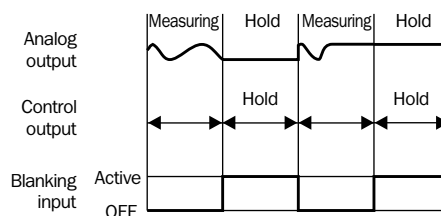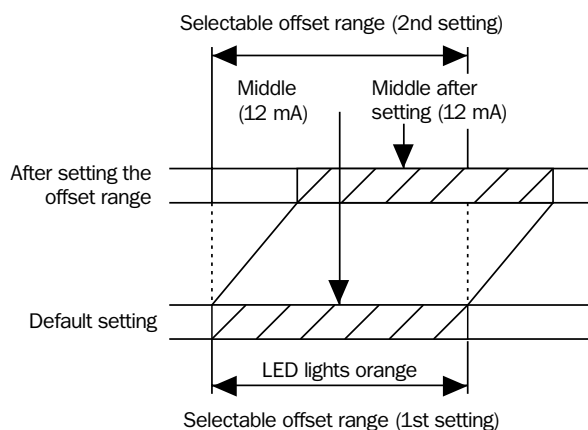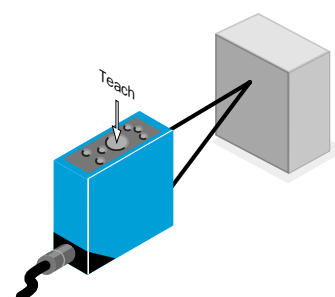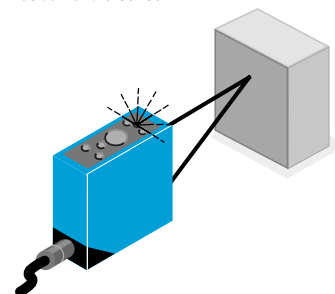
Two steps for calibrating the analog output

1. Position the object at the average scanning distance. The LED distance indicator lights orange.

2. Switch the Mode selector to SET. Press the Teach-in button for 2 to 5 seconds or trigger it via the connecting cable. The Teach-in display lights green 3x. Switch the Mode selector to RUN or RUN with OFF DELAY: the calibration is adopted.

The Teach-in input is independent of the position of the Mode selector.
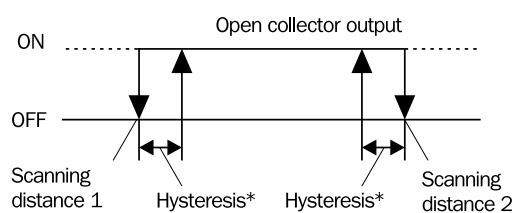
Two steps for resetting the offset

1. Switch the Mode selector to SET.

2. Press the Teach-in button longer than 5 seconds or trigger it via the connecting cable.

Selectable offset range (2nd setting)

Middle (12 mA)
Middle after setting (12 mA)

After setting the offset range

Default setting

LED lights orange

Selectable offset range (1st setting)

▼ 1. Position of the sensor

Teach

▲ 2. Teach-in calibration of the analog output

## Three steps for setting the control output

1. Switch the Mode selector to SET. Position the object at the scanning distance 1. Press the Teach-in button for fewer than 2 seconds or trigger it via the connecting cable.

2. Position the object at the scanning distance 2. Press the Teach-in button for fewer than 2 seconds or trigger it via the connecting cable.

3. Switch the Mode selector to RUN or RUN with OFF DELAY.

The Teach-in input is independent of the position of the Mode selector.

* The hysteresis depends on the response time: the longer the response time, the smaller the hysteresis. The basic principle applies: the higher the reflectance, the smaller the hysteresis.

ON
OFF
Open collector output
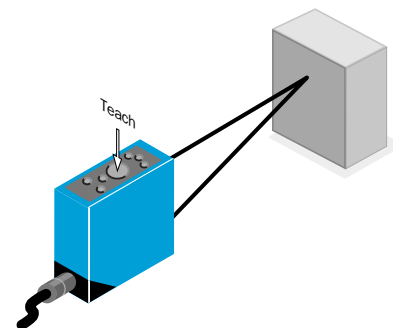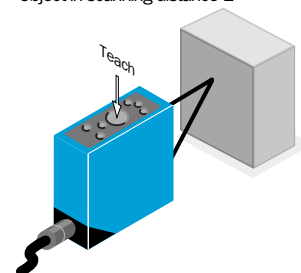
Scanning distance 1
Hysteresis*
Hysteresis*
Scanning distance 2

▼ Object in scanning distance 1

Teach

Teach

▲ Object in scanning distance 2

**Measuring range
25 ± 5/50 ± 10 mm**

Displacement Sensor

Dimension illustration

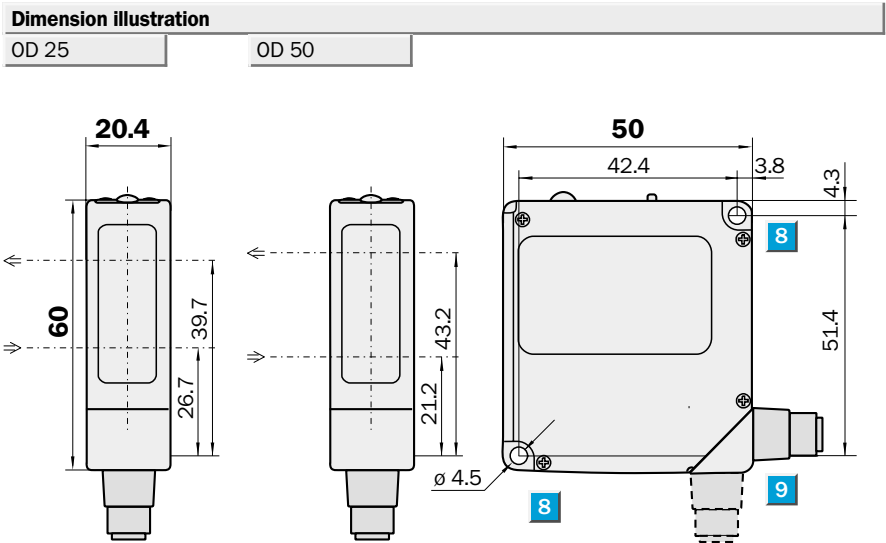| OD 25 | | OD 50 | |

20.4

60

39.7

26.7

43.2

21.2

ø 4.5

50

42.4

3.8

4.3

51.4

[8]

[8]

[9]

CE UL

Setting options

OD 25-05P132	OD 50-10P142
OD 25-05P830	OD 50-10P840
OD 25-05N132	OD 50-10N142
OD 25-05N830	OD 50-10N840

DISTANCE

[1] OUT STAB. [3]

[4]

TEACH

[5]

TEACH   OFFSET

RUN
OFF D.   RUN   [6]

SET

[2]   100 ms   AUTO [7]

10 ms   BLACK
1 ms   WHITE

RESPONSE SENS.

[1] Teach-in indicator/output indicator
[2] Response time selector
[3] Distance indicator
[4] Stable indicator
[5] Teach-in button
[6] Mode selector
[7] Sensitivity selector
[8] Mounting hole, ø 4.5 mm
[9] Connecting cable 2 m (optional 5 m)
    or M 12 plug; 90° rotatable

Accessories
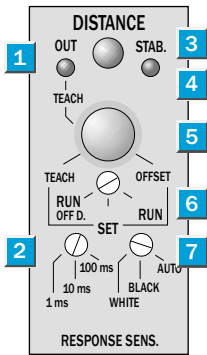
| ODC evaluation unit |
| Cable receptacle with cable |

Connection type

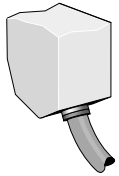| OD 25-05P132 | OD 50-10P142 | | OD 25-05P830 | OD 50-10P840 |
| OD 25-05N132 | OD 50-10N142 | | OD 25-05N830 | OD 50-10N840 |

6 x 0.2 mm²

brn	12–24 V DC/L+
gra	SH
wht	Q_A
blk	Q
pnk	TI
blu	0 V/M

(shield)

8-pin, M 12

brn	1	12–24 V DC/L+
wht	2	Q_A
blu	3	0 V/M
blk	4	Q
gra	5	SH
pnk	6	TI
vio	7	N.C.
ora	8	N.C.

(shield)
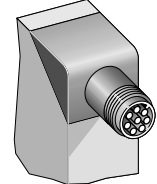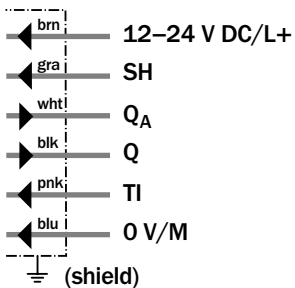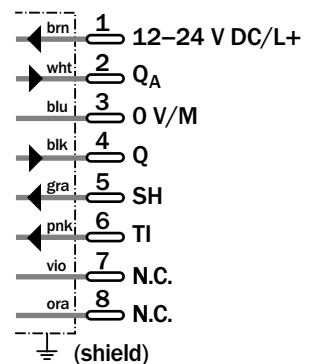
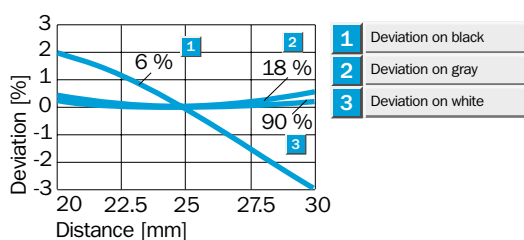| Technical data	OD	25-05 P132	25-05 P830	25-05 N132	25-05 N830	50-10 P142	50-10 P840	50-10 N142	50-10 N840		
Measuring range	25 ± 5 mm	■	■	■	■						
	50 ± 10 mm					■	■	■	■		
Light source	LED, red light	■	■	■	■						
	Laser class 2 IEC 60825: 1998					■	■	■	■		
Analog output	4–20 mA , 0–300 Ω	■	■	■	■	■	■	■	■		
Control output [1]	PNP; 30 V/100 mA Open collector	■	■			■	■				
	NPN; 30 V/100 mA Open collector			■	■			■	■		
Accuracy	±1 % FS [2]/18 % – 90 %, ±4 % FS [2]/6 %	■	■	■	■	■	■	■	■		
Linearity	±1 % FS [2]/18 % – 90 %, ±3 % FS [2]/6 %	■	■	■	■	■	■	■	■		
Drift	± 0.05 %/°C FS [2]	■	■	■	■						
	± 0.02 %/°C FS [2]					■	■	■	■		
Resolution of analog output [3]	3/10/30 μm, 100/10/1 ms	■	■	■	■	■	■	■	■		
Hysteresis of control output	10/30/100 μm (90 % remission)	■	■	■	■	■	■	■	■		
	30/120/500 μm (6 % remission)	■	■	■	■	■	■	■	■		
Analog output freq. response – 3 dB	100 ms – 6.7/s, 10 ms – 54/s, 1 ms – 770/s	■	■	■	■	■	■	■	■		
Teach-in input (TI)	NPN LOW = active, PNP HIGH = active	■	■	■	■	■	■	■	■		
Hold input (SH)	NPN LOW = active, PNP HIGH = active	■	■	■	■	■	■	■	■		
Timer	40 ms off delay	■	■	■	■	■	■	■	■		
VDE protection class	III	■	■	■	■	■	■	■	■		
Sensitivity to ambient light	10000 lx (sun), 3000 lx (artificial light)	■	■	■	■	■	■	■	■		
Supply voltage V_S	12–24 V DC , –5 %/+10 %	■	■	■	■	■	■	■	■		
Power consumption [4]	120 mA (at 24 V)	■	■	■	■	■	■	■	■		
Warmup time [5]	15 min maximum	■	■	■	■	■	■	■	■		
EMC	EN 50081-2, EN 50082-2	■	■	■	■	■	■	■	■		
Enclosure rating	IP 67	■	■	■	■	■	■	■	■		
Circuit protection [6]	A, B, D	■	■	■	■	■	■	■	■		
Ambient temperature T_A [7]	Operation: –10 ... +40 °C	■	■	■	■	■	■	■	■		
	Storage: –20 ... +60 °C	■	■	■	■	■	■	■	■		
Connection	Cable 2 m [8]	■		■		■		■			
	Plug [9]		■		■		■		■		
Housing	PBT (housing), Glass (window)	■	■	■	■						
	Zinc (housing), Glass (window)					■	■	■	■		

[1] Minimum teachable distance window is 4 ... 10 times resolution of analog output
[2] FS = Full Scale = 10 mm/OD25, 20 mm/OD50
[3] 90 % remission
[4] Without load
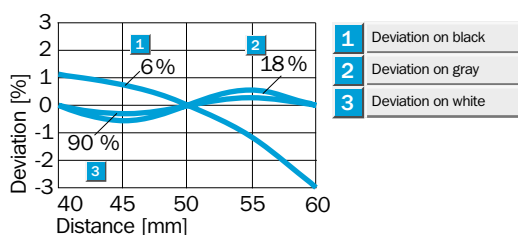[5] For applications with the highest resolution and preciseness
[6] A = inputs and outputs reverse-polarity protected
B = outputs protected against short-circuits
D = pulse interference suppression
[7] Do not bend cable at temperatures lower than 0 °C
[8] Types with 5 m cables are available on request
[9] 2 m pre-fabricated cable, Order no. 6 020 663
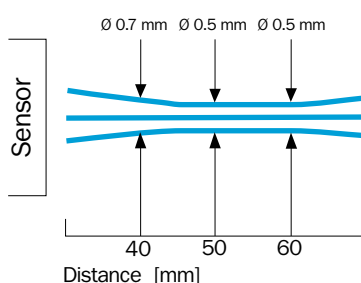
Deviation OD 25-05 (LED)

6 % 18 % 90 %

1	Deviation on black
2	Deviation on gray
3	Deviation on white

Deviation OD 50-10 (Laser)

6 % 18 % 90 %

1	Deviation on black
2	Deviation on gray
3	Deviation on white

Ordering information

Type	Order no.
OD 25-05P132	6 020 643
OD 25-05P830	6 020 647
OD 25-05N132	6 020 642
OD 25-05N830	6 020 646
OD 50-10P142	6 020 637
OD 50-10P840	6 020 641
OD 50-10N142	6 020 636
OD 50-10N840	6 020 640

Light spot diameter OD 25-05 (LED)

Ø 1.5 mm   Ø 1.5 mm   Ø 1.8 mm
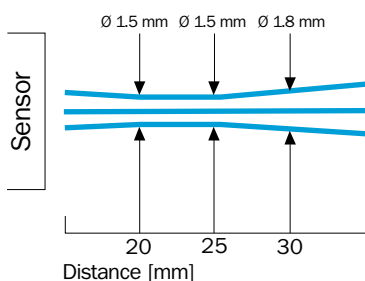
Light spot diameter OD 50-10 (Laser)

Ø 0.7 mm   Ø 0.5 mm   Ø 0.5 mm

Measuring ranges 30±4
100±35/130±50
250 ± 150 mm

Displacement Sensor
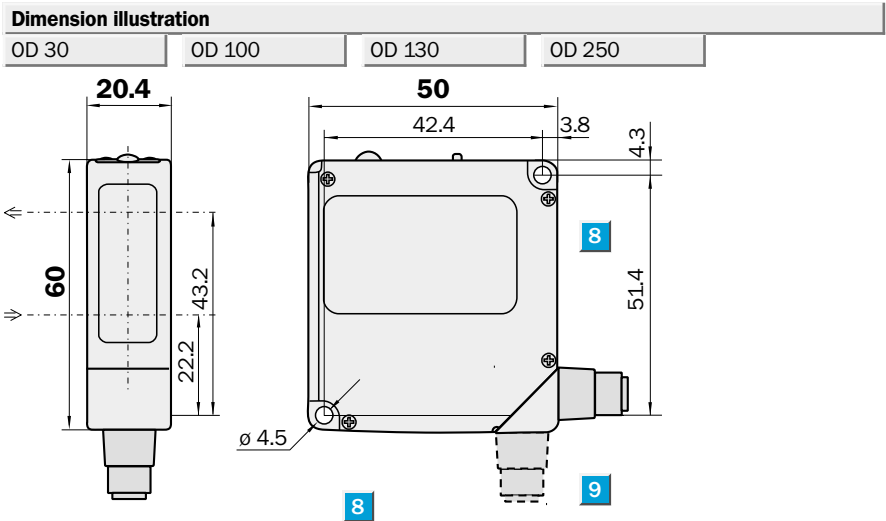
Dimension illustration

OD 30	OD 100	OD 130	OD 250

20.4

50

42.4

3.8

4.3

60

43.2

22.2

51.4

8

ø 4.5

8

9

Setting options

OD 30-04P142	OD 130-50P142
OD 30-04P840	OD 130-50P840
OD 30-04N142	OD 130-50N142
OD 30-04N840	OD 130-50N840
OD 100-35P142	OD 250-150P142
OD 100-35P840	OD 250-150P840
OD 100-35N142	OD 250-150N142
OD 100-35N840	OD 250-150N840

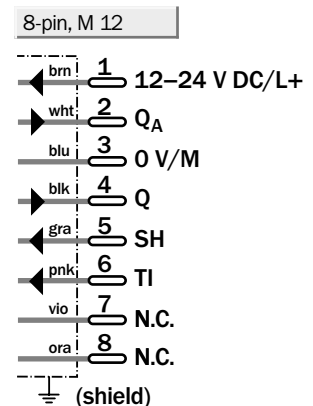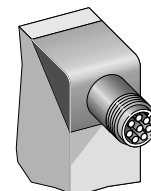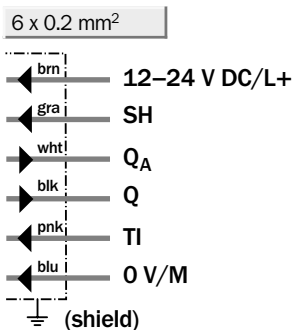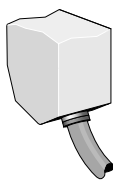| 1	Teach-in indicator/output indicator
2	Response time selector
3	Distance indicator
4	Stable indicator
5	Teach-in button
6	Mode selector
7	Sensitivity selector
8	Mounting hole, ø 4.5 mm
9	Connecting cable 2 m (optional 5 m)
	or M 12 plug; 90° rotatable

DISTANCE

OUT   STAB.

1   3

4

TEACH

5

TEACH   OFFSET

RUN
OFF D.   RUN

6

2   SET   7

100 ms

10 ms   FIX
1 ms   SET   AUTO

RESPONSE SENS.
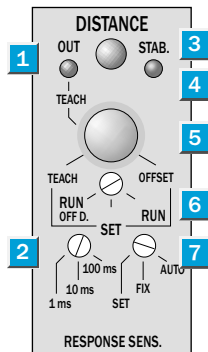
Connection type

OD 30-04P142	OD 130-50P142		OD 30-04P840	OD 130-50P840
OD 30-04N142	OD 130-50N142		OD 30-04N840	OD 130-50N840
OD 100-35P142	OD 250-150P142		OD 100-35P840	OD 250-150P840
OD 100-35N142	OD 250-150N142		OD 100-35N840	OD 250-150N840

6 x 0.2 mm²

brn	12–24 V DC/L+
gra	SH
wht	Q_A
blk	Q
pnk	TI
blu	0 V/M

(shield)

8-pin, M 12

brn	1	12–24 V DC/L+
wht	2	Q_A
blu	3	0 V/M
blk	4	Q
gra	5	SH
pnk	6	TI
vio	7	N.C.
ora	8	N.C.

(shield)

Accessories

ODC evaluation unit
Cable receptacle with cable

CE UL

Technical data — OD

|	30-04 P142[1] P840[2]	30-04 N142[1] N840[2]	100-35 P142[1] P840[2]	100-35 N142[1] N840[2]	130-50 P142[1] P840[2]	130-50 N142[1] N840[2]	250-150 P142[1] P840[2]	250-150 N142[1] N840[2]
Measuring range — 30 mm ± 4 mm	■	■						
100 mm ± 35 mm			■	■				
130 mm ± 50 mm					■	■		
250 mm ± 150 mm							■	■
Light source — Laser Klasse 2 IEC 60825: 1998	■	■	■	■	■	■	■	■
Analog output — 4–20 mA , 0–300 Ω	■	■	■	■	■	■	■	■
Control output[3] — PNP; 30 V/100 mA Open collector	■		■		■		■	
NPN; 30 V/100 mA Open collector		■		■		■		■
Accuracy — ±2 % FS[4]/90 % – 6 %	■	■	■	■	■	■		
±3 % FS[4]/90 % – 18 %							■	■
Linearity — ±0,5 % FS[4]/90 % – 6 %	■	■						
±1,5 % FS[4]/90 % – 6 %			■	■	■	■		
±3 % FS[4]/90 % – 18 %							■	■
Drift — ±0,02 %/°C FS[4]	■	■	■	■	■	■	■	■
Resolution of analog output[5] — 10/3/1 µm, 1/10/100 ms	■	■						
150/50/15 µm, 1/10/100 ms			■	■				
200/70/20 µm, 1/10/100 ms					■	■		
1500/500/150 µm, 1/10/100 ms							■	■
Analog output freq. response – 3 dB — 100 ms – 5/s, 10 ms – 42/s, 1 ms – 720/s	■	■	■	■	■	■	■	■
Teach-in input (TI) — NPN LOW = active, PNP HIGH = active	■	■	■	■	■	■	■	■
Hold input (SH) — NPN LOW = active, PNP HIGH = active	■	■	■	■	■	■	■	■
Timer — 40 ms off delay	■	■	■	■	■	■	■	■
VDE protection class — III	■	■	■	■	■	■	■	■
Sensitivity to ambient light — 10000 lx (sun), 3000 lx (artificial light)	■	■	■	■	■	■	■	■
Supply voltage V_S — 12–24 V DC, –5 %/+10 %	■	■	■	■	■	■	■	■
Power consumption[6] — 75 mA (at 24 V)	■	■	■	■	■	■	■	■
Warmup time[7] — 10 min. maximum	■	■	■	■	■	■	■	■
EMC — EN 50081-2, EN 50082-2	■	■	■	■	■	■	■	■
Enclosure rating — IP 67	■	■	■	■	■	■	■	■
Circuit protection[8] — A, B, D	■	■	■	■	■	■	■	■
Ambient temperature T_A[9] — Operation: –10 ... +40 °C	■	■	■	■	■	■	■	■
Storage: –20 ... +60 °C	■	■	■	■	■	■	■	■
Housing — PBT (housing), Glass (window)	■	■	■	■	■	■	■	■

[1] Connection: cable 2 m
[2] Connection: Plug 2 m pre-fabricated cable, Order no. 6 020 663,
[3] Minimum teachable distance window is 4 ... 10 times resolution of analog output
[4] FS = Full Scale = 8 mm/OD 30, 80 mm/OD 100, 100 mm/OD 130, 300 mm/OD 250
[5] 90 % remission
[6] Without load
[7] For applications with the highest resolution and preciseness
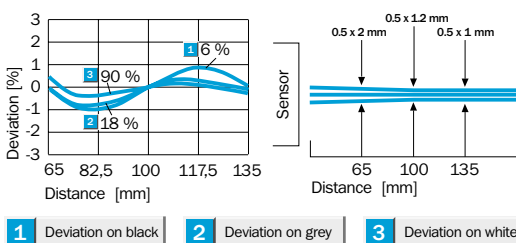[8] A = inputs and outputs reverse-polarity protected
   B = outputs protected against short-circuits
   D = pulse interference suppression
[9] Do not bend cable at temperatures lower than 0 °C
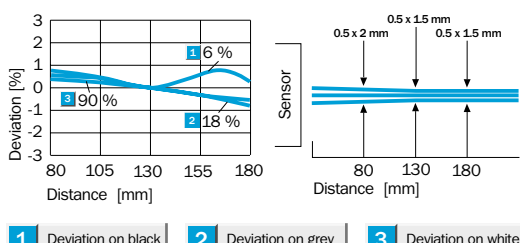
OD 30-04: Deviation/lightspot diameter
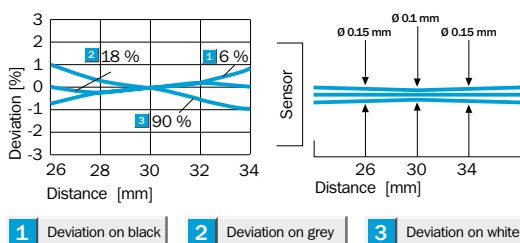
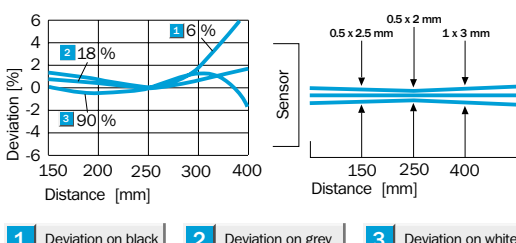| 1 Deviation on black | 2 Deviation on grey | 3 Deviation on white |

OD 100-35: Deviation/lightspot diameter

| 1 Deviation on black | 2 Deviation on grey | 3 Deviation on white |

OD 130-50: Deviation/lightspot diameter

| 1 Deviation on black | 2 Deviation on grey | 3 Deviation on white |

OD 250-150: Deviation/lightspot diameter

| 1 Deviation on black | 2 Deviation on grey | 3 Deviation on white |

Ordering information

Type	Order no.
OD 30-04P142	6 021 839
OD 30-04P840	6 021 841
OD 30-04N142	6 021 840
OD 30-04N840	6 021 842
OD 100-35P142	6 022 476
OD 100-35P840	6 022 478
OD 100-35N142	6 022 477
OD 100-35N840	6 022 479
OD 130-50P142	6 021 847
OD 130-50P840	6 021 849
OD 130-50N142	6 021 848
OD 130-50N840	6 021 850
OD 250-150P142	6 021 851
OD 250-150P840	6 021 853
OD 250-150N142	6 021 852
OD 250-150N840	6 021 854

Displacement Sensor
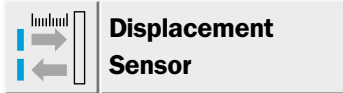
Industrial application possibilities for decentral automation

The ODC evaluation unit expands the functions of the displacement sensors in the OD series: Decentral automation with additional computing and processing functions.

An integrated Profibus-DP interface enables the simplest connection to superordinate controls.

Thickness can be determined directly with a combination of two OD displacement sensors and an ODC evaluation unit.

"Peak-(Bottom-)Hold", "Peak-to-Peak", "Sample-and-Hold", and "Automatic peak and bottom value holds" and additional filter functions are features that are available when the displacement sensors of the OD series are supplemented with the ODC evaluation unit.

The selection of the respective functions is done easily using a keyboard on the clearly structured display.

Supplemented with the mounting socket ODC-SOC (available as accessory), installation is fast and provides additional advantages: Replacement of the ODC evaluation unit without loosening the connections to terminals; possibility to fit the ODC evaluation unit at a later date to avoid damages during the installation phase.
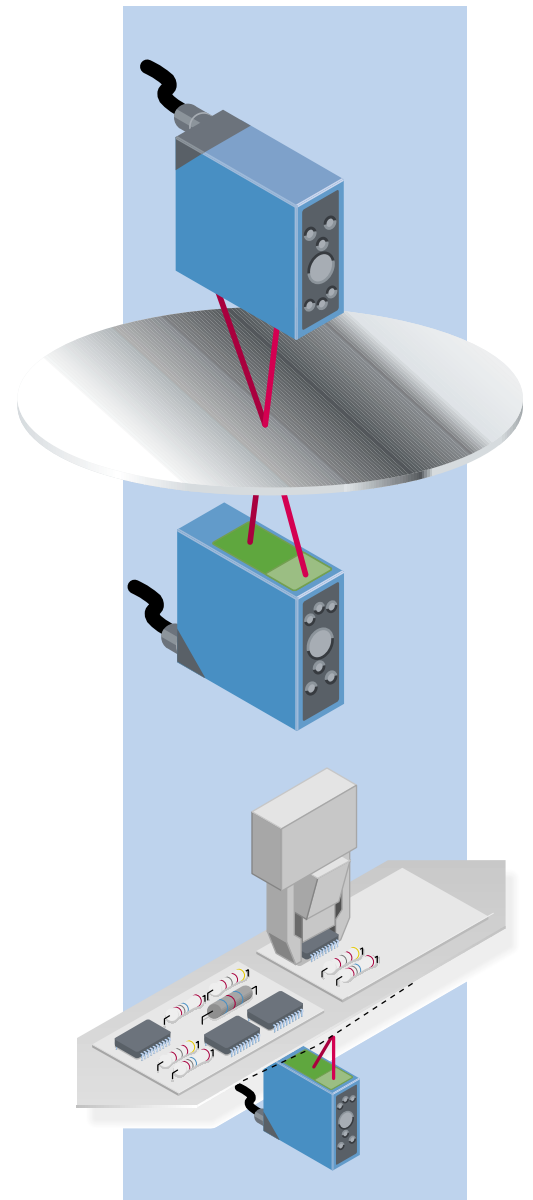
▲ **Semiconductor industry:** Thickness check and determination of wafers and ceramic substrates. The highly precise measurement is not influenced by reflecting scattered light. During assembly of boards, precise positioning is a must.

▶ **Automobile industry:** Tolerance checks of cams and crankshaft bearings with two or more OD displacement sensors and the ODC control equipment in an engine factory. The measured dimensions are even shown reliably in the μm range as absolute values on the ODC and transmitted per Profibus to the control. Determination of board strengths of almost all normally used materials and control of coating facilities are typical applications.
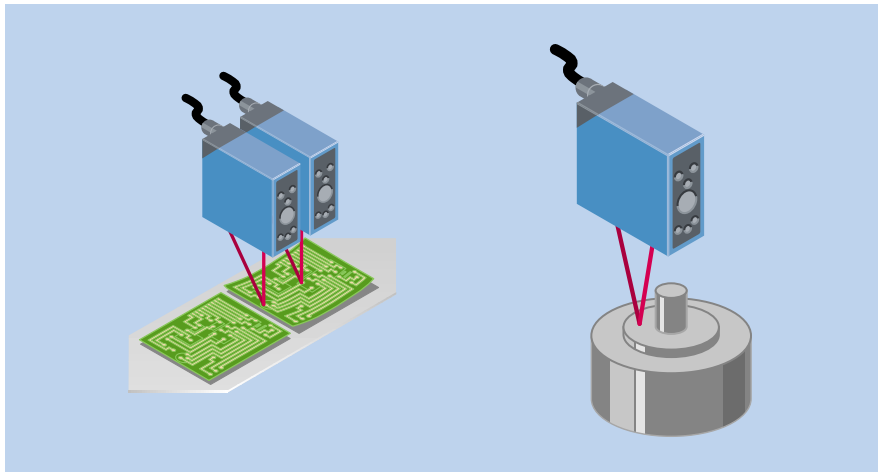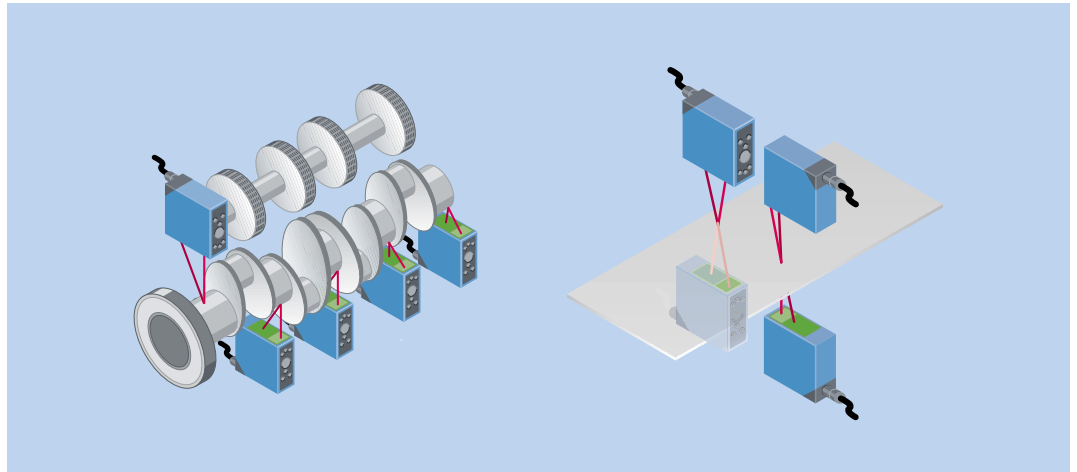
◀ **Electronics industry:** Checking the sagging of boards with a measurement arrangement consisting of two displacement sensors with an ODC control device in a motherboard design or assembly.
Checking micrometer components in tape recorders, walkmans, CD players or memory drives. Low-reflection surfaces do not affect reliable measuring.
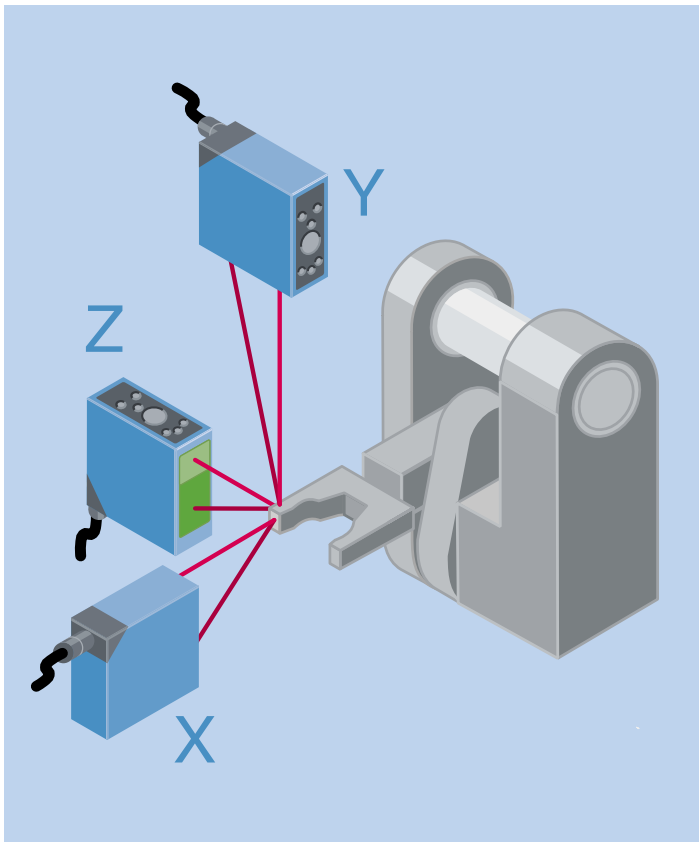
▲ **Robotics:** Zero point calibration and positioning control of robot arms in production lines with the OD displacement sensor and the ODC control unit. A closed loop control of the robot can be created via Profibus.
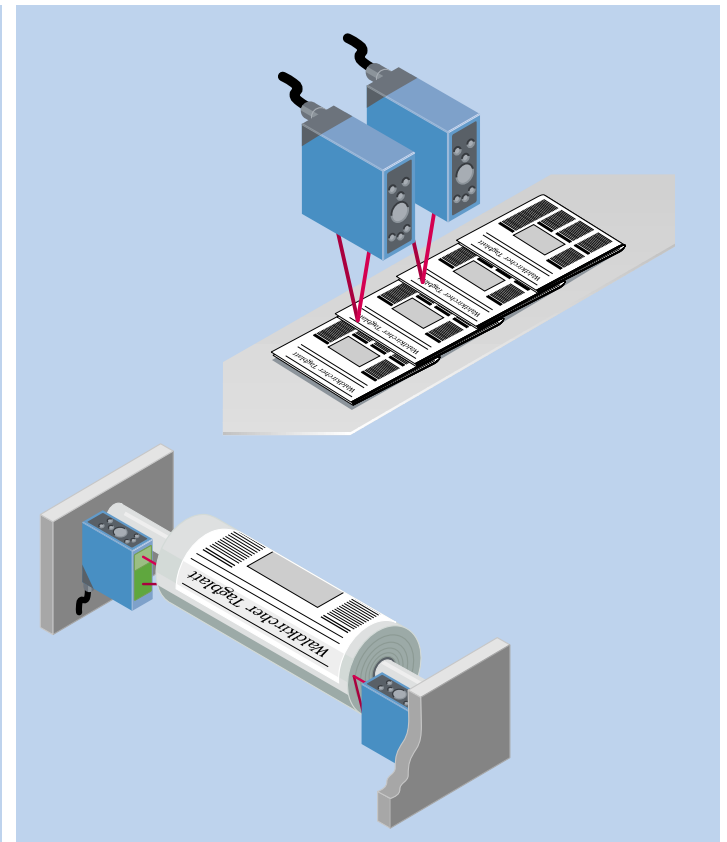
▲ **Paper and packaging industry:** Checking and counting newspaper or (thin) brochures after the folding process.
Checking centering of paper-guiding axles and rollers in a printing plant.

ODC evaluation unit for OD Displacement Sensors

Displacement Sensor
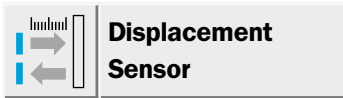
- Advanced digital signal processing
- Measuring value processing for difficult applications
- RS 232 and Profibus

CE

Dimension illustration
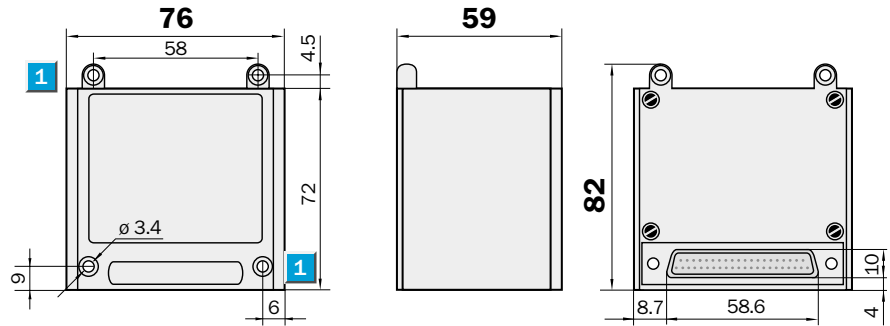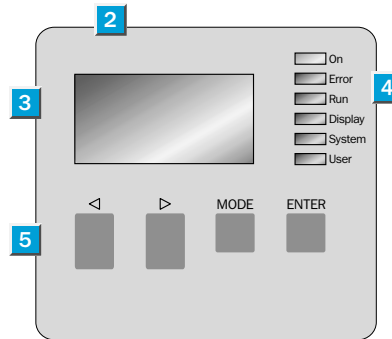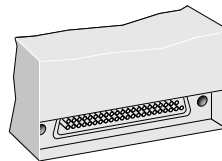

Setting options

ODC 100-P120

1	Mounting hole, ø 3,4 mm
2	Electronics module
3	LC Display
4	Status LEDs
5	Film keyboard

On
Error
Run
Display
System
User

◁ ▷ MODE ENTER

Connection type 37-pin, Sub D connector

Accessories

Mounting socket ODC-SOC

Extension cable ODC ⇔ ODC-SOC, 37-pin,
Sub D female and male connector
ODC-IM-021 (1 m) 6 021 803
ODC-IM-022 (2 m) 6 021 804
ODC-IM-023 (3 m) 6 021 805

1	+24 V/L+	13	RTS	25	Q 1
2	PE	14	TxD	26	Sync
3	In-Sig. 2 – (GND)	15	+24 V/L+	27	Teach sen. 1 (TI)
4	In-Sig. 2 + (Q_A)	16	PE	28	Hold sen. 1 (SH)
5	Shield 2	17	PE	29	HH
6	Q 2	18	+5 V	30	LL
7	Autozero	19	PB +	31	Go
8	Teach sen. 2 (TI)	20	GND/M	32	CTS
9	Hold sen. 2 (SH)	21	PE	33	RxD
10	H	22	In-Sig. 1 – (GND)	34	GND/M
11	L	23	In-Sig. 1 + (Q_A)	35	PE
12	Error	24	Shield 1	36	GND/M
				37	PB –

Technical data

| Technical data	ODC 100	-P120									
Analog inputs	Two inputs, 0 … 20 mA	▢									
	(can be selected according to device type)										
Accuracy	± 0.05 % (Full Scale)	▢									
Scanning frequency	2 kHz max.	▢									
Measuring value calculation	Linearization, Offset, Autozero	▢									
	Scaling	▢									
	A, B, A + B, A − B, K − (A + B) [1]	▢									
Measurement function	Peak/Bottom/Hold, Peak-to-Peak-Hold,	▢									
	Sample/Hold, Autom. Peak Hold	▢									
Filter functions	HIGH-pass, LOW-pass, Averaging	▢									
Interfaces	RS 232	▢									
	Profibus DP	▢									
Control outputs [2]	PNP; 30 V/100 mA Open collector	▢									
Outputs	HH, H, Go, L, LL and PNP	▢									
	(can be selected according to device type)										
	Error	▢									
Inputs	Sync, Autozero	▢									
Off delay	60 ms fixed for the outputs	▢									
Supply voltage V_S	24 V DC ± 10 %	▢									
EMC	EN 50081-1, EN 50082-2	▢									
VDE protection class	III	▢									
Enclosure rating	IP 20	▢									
Ambient temperature	Operation: 0 … +40 °C	▢									
	Storage: −30 … +60 °C	▢									
Housing material	Zinc	▢									

[1] A = Sensor 1
B = Sensor 2

[2] Total current of all outputs < 500 mA

Technical features

■ High-pass filter

Function: Elimination of the low-frequency components of the analog input signal.
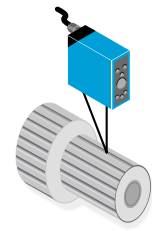Effect: Gradual signal changes are ignored, i.e., only fast changes are recorded.

Ordering information

Type	Order no.
ODC 100-P120	6 022 480
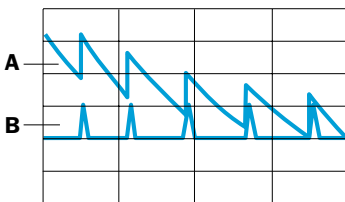
A Non-filtered data: Height difference and height are displayed.
B Filtered data: Only the height difference is displayed.
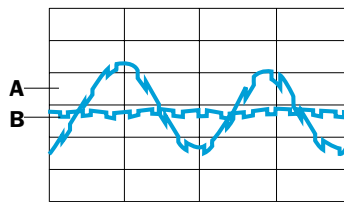
A Non-filtered data: Number of grooves and the eccentricity are displayed.
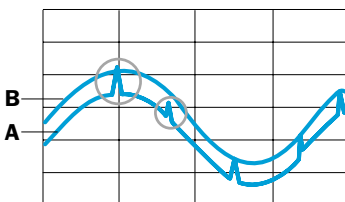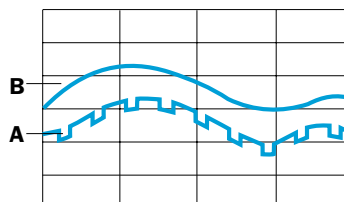B Filtered data: Only the number is displayed.

Measuring the groove depth or numbers of grooves

■ Low-pass filter

Function: Elimination of the high-frequency components of the analog input signal.
Effect: Fast signal changes are ignored, i.e., only gradual changes are recorded.

A Non-filtered data: Interferences are displayed.
B Filtered data: Measurement curve is displayed without interferences.

A Non-filtered data: Grooves and eccentricity are displayed.
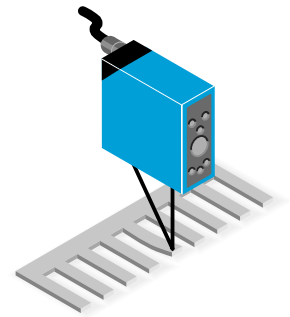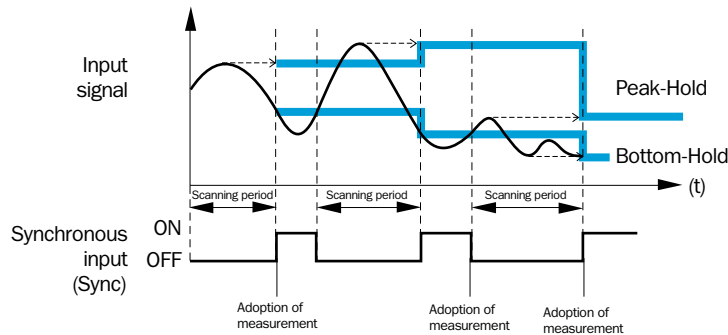B Filtered data: Only the eccentricity is displayed.
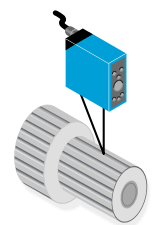
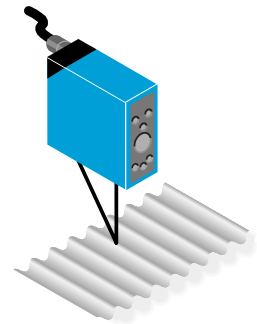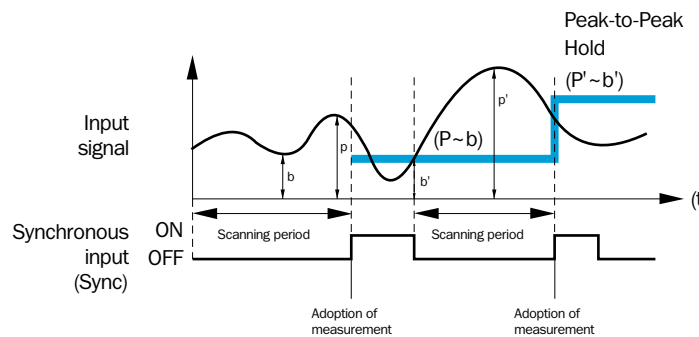Measurement whether the collector runs round

Time behavior graphs

Peak-Bottom-Hold

The "Peak-(Bottom-)Hold" function is used for measuring the highest (lowest) value during a specific time period.

Input signal

Peak-Hold

Bottom-Hold

(t)

Scanning period   Scanning period   Scanning period

Synchronous input (Sync)

ON
OFF

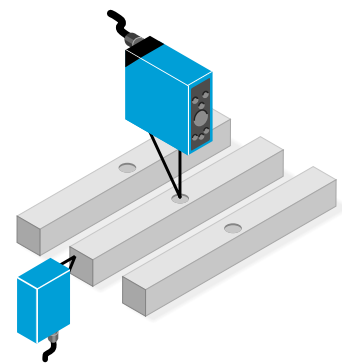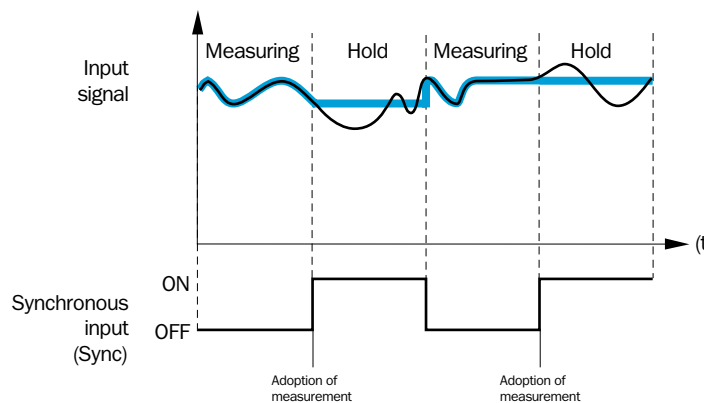Adoption of measurement   Adoption of measurement   Adoption of measurement

Peak-to-Peak-Hold

The "Peak-to-Peak" function is used for measuring the difference between the highest and lowest values during the preset time period.
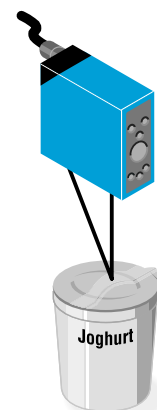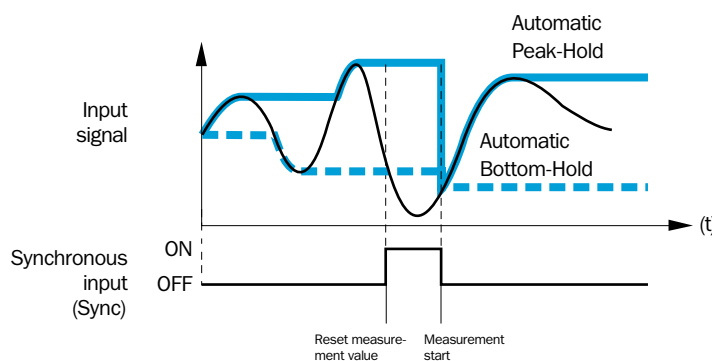
Input signal

Peak-to-Peak Hold

(P'~b')

(P~b)

p
b
b'

(t)

Synchronous input (Sync)

ON
OFF

Scanning period   Scanning period

Adoption of measurement   Adoption of measurement

Sample/Hold

The "Sample-and-Hold" function is used for measuring the value during a specific time period.

Input signal

Measuring   Hold   Measuring   Hold

(t)

Synchronous input (Sync)

ON
OFF

Adoption of measurement   Adoption of measurement

Automatic Peak-Bottom-Hold

The "Automatic Peak- and Bottom-Hold" function is used for measuring the highest (lowest) value from the beginning of the measurement.
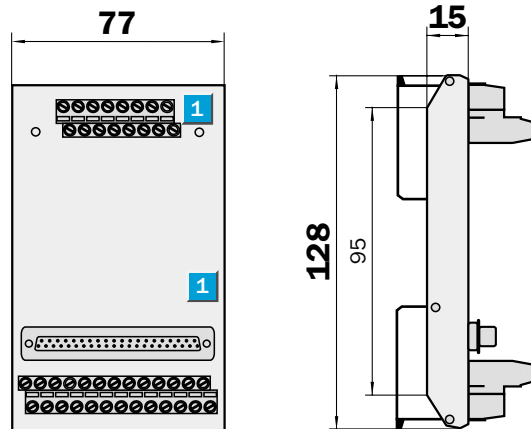
Input signal

Automatic Peak-Hold

Automatic Bottom-Hold

(t)

Synchronous input (Sync)

ON
OFF

Reset measurement value   Measurement start

Mounting socket ODC-SOC

- **ODC-SOC:**
  Mounting socket for tophat profile rail mounting

Dimension illustration mounting socket ODC-SOC
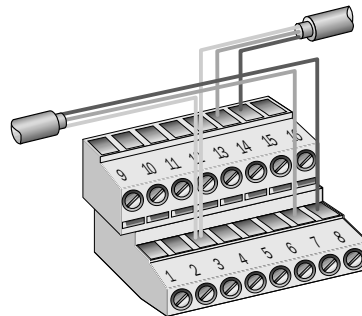
77   15   128   95

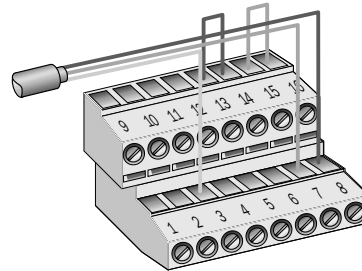**Connection option**   **1** Taphole for screwing the ODC evaluation unit, M 3

Terminal assignment X1

X1, Module not connected to the end of the field bus cable

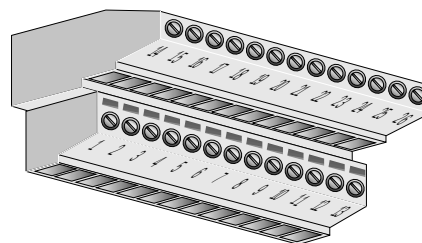X1, Module connected to the end of the field bus cable

1	GND/M
2	GND/M
3	PE
4	GND
5	TxD
6	RxD
7	PB +
8	PB –
9	+24 V/L+
10	+24 V/L+
11	RTS
12	CTS
13	+5 V
14	PB +
15	PB –
16	GND/M

Ordering information

Type	Order no.
ODC-SOC	6 020 985

Terminal assignment X2

1	+24 V/L+	14	+24 V/L+
2	GND/M (0 V)	15	GND/M (0 V)
3	In-Sig. 1– (GND)	16	In-Sig. 2– (GND)
4	In-Sig. 1+ (Q_A)	17	In-Sig. 2+ (Q_A)
5	Shield 1	18	Shield 2
6	Q 1	19	Q 2
7	Sync	20	Autozero
8	Teach sen. 1 (TI)	21	Teach sen. 2 (TI)
9	Hold sen. 1 (SH)	22	Hold sen. 2 (SH)
10	HH	23	H
11	LL	24	L
12	Go	25	Error
13	GND/M	26	+24 V/L+