SENSORS INCORPORATED
507 Kelsey Street ● Delano, MN 55328
Phone 763-972-1040 Fax 763-972-1041
Toll Free 888-920-0939
Sensorsincorporated.com

WF*next* - it's next for high-speed applications

Product description

The WF*next* line is ideal for high-speed, accurate label detection. It includes more than 40 fork sensors with a large selection of fork widths and depths to fit any application, such as detecting labels, holes or double sheets. Since the sender and receiver are in one housing, adjustment is not necessary. This easy-to-use sensor line includes fork widths between 2 mm and 120 mm with fork depths of 40 mm, 60 mm and 95 mm. Its fast response time and fine resolution make it possible to detect small and flat objects moving at high speeds. On multiple installations, WF*next* sensors can be installed adjacent to one another with no cross talk.

At a glance

- Infrared light source
- Simple and accurate adjustment via teach-in or manually via "+"/"–" buttons
- Fast response time (max. 100 µs)
- PNP and NPN switching output
- Light/dark switching function
- 21 different models with different fork widths and depths
- Rugged, IP 65 aluminum housing

Your benefits

- Fast response time and fine resolution ensure reliable detection even at high speeds
- Infrared light source provides excellent ambient light immunity
- User friendly setting via teach-in or "+"/"–" button
- A wide range of different fork sizes enables flexible installation
- The aluminum housing meets all requirements for use in harsh industrial conditions

CE III c UL us LISTED

Additional information

→ **www.mysick.com/en/WFnext**

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

Detailed technical data

Features

Functional principle	Optical detection principle
Label detection	✔
Light source	LED, infrared
Switching function	Light/dark switching, selectable via button

Mechanics/electronics

Supply voltage V_s [1]	DC 10 V ... 30 V
Ripple [2]	< 10 %
Power consumption [3]	40 mA
Switching frequency [4]	10 kHz
Response time [5]	100 µs
Stability of response time	± 20 µs
Switching output voltage	PNP: HIGH = V_S– ≤ 2 V / LOW approx. 0 V NPN: HIGH = approx. V_S / LOW ≤ 2 V
Output current $I_{max.}$	100 mA
Initialization time	100 ms
Connection type	Connector M8, 4-pin
Ambient light safety	Sunlight: 10,000 lx
Protection class [6]	III
Circuit protection	V_s connections reverse-polarity protected Output Q short-circuit protected Interference suppression
Enclosure rating	IP 65
Weight [7]	Approx. 36 g ... 160 g
Housing material	Aluminum

[1] Limit values, reverse-polarity protected. Operation in short-circuit protected network max. 8 A.
[2] May not exceed or fall short of V_s tolerances.
[3] Without load.
[4] With light/dark ratio 1:1.
[5] Signal transit time with resistive load.
[6] Reference voltage 50 V DC.
[7] Depending on fork width.

Ambient data

Ambient temperature [1]	Operation: –20 °C ... +60 °C Storage: –30 °C ... +80 °C
Shock load	According to IEC 60068

[1] Do not bend below 0 °C.

Specific data

Fork width	Model name	Ordering information
2 mm	WF2	14
5 mm	WF5	14
15 mm	WF15	14
30 mm	WF30	14
50 mm	WF50	15
80 mm	WF80	15
120 mm	WF120	15

Ordering information

WF2

- **Fork width:** 2 mm

MDO [1]	Switching output	Adjustment	Fork depth	Model name	Part no.
0.2 mm	PNP/NPN	Manual ("+"/"−" button)	42 mm	WF2-40B410	6028428
			59 mm	WF2-60B410	6028436
			95 mm	WF2-95B410	6028443
		Teach-in	42 mm	WF2-40B416	6028450
			59 mm	WF2-60B416	6028457
			95 mm	WF2-95B416	6028464

[1] Minimum detectable object.

WF5

- **Fork width:** 5 mm

MDO [1]	Switching output	Adjustment	Fork depth	Model name	Part no.
0.2 mm	PNP/NPN	Manual ("+"/"−" button)	42 mm	WF5-40B410	6028429
			59 mm	WF5-60B410	6028437
			95 mm	WF5-95B410	6028444
		Teach-in	42 mm	WF5-40B416	6028451
			59 mm	WF5-60B416	6028458
			95 mm	WF5-95B416	6028465

[1] Minimum detectable object.

WF15

- **Fork width:** 15 mm

MDO [1]	Switching output	Adjustment	Fork depth	Model name	Part no.
0.2 mm	PNP/NPN	Manual ("+"/"−" button)	42 mm	WF15-40B410	6028430
			59 mm	WF15-60B410	6028438
			95 mm	WF15-95B410	6028445
		Teach-in	42 mm	WF15-40B416	6028452
			59 mm	WF15-60B416	6028459
			95 mm	WF15-95B416	6028466

[1] Minimum detectable object.

WF30

- **Fork width:** 30 mm

MDO [1]	Switching output	Adjustment	Fork depth	Model name	Part no.
0.2 mm	PNP/NPN	Manual ("+"/"−" button)	42 mm	WF30-40B410	6028431
			59 mm	WF30-60B410	6028439
			95 mm	WF30-95B410	6028446
		Teach-in	42 mm	WF30-40B416	6028453
			59 mm	WF30-60B416	6028460
			95 mm	WF30-95B416	6028467

[1] Minimum detectable object.

WF50

- **Fork width:** 50 mm

MDO [1]	Switching output	Adjustment	Fork depth	Model name	Part no.
0.2 mm	PNP/NPN	Manual ("+"/"–" button)	42 mm	WF50-40B410	6028432
			59 mm	WF50-60B410	6028440
			95 mm	WF50-95B410	6028447
		Teach-in	42 mm	WF50-40B416	6028454
			59 mm	WF50-60B416	6028461
			95 mm	WF50-95B416	6028468

[1] Minimum detectable object.

WF80

- **Fork width:** 80 mm

MDO [1]	Switching output	Adjustment	Fork depth	Model name	Part no.
0.2 mm	PNP/NPN	Manual ("+"/"–" button)	42 mm	WF80-40B410	6028433
			59 mm	WF80-60B410	6028441
			95 mm	WF80-95B410	6028448
		Teach-in	42 mm	WF80-40B416	6028455
			59 mm	WF80-60B416	6028462
			95 mm	WF80-95B416	6028469

[1] Minimum detectable object.

WF120

- **Fork width:** 120 mm

MDO [1]	Switching output	Adjustment	Fork depth	Model name	Part no.
0.2 mm	PNP/NPN	Manual ("+"/"–" button)	42 mm	WF120-40B410	6028435
			59 mm	WF120-60B410	6028442
			95 mm	WF120-95B410	6028449
		Teach-in	42 mm	WF120-40B416	6028456
			59 mm	WF120-60B416	6028463
			95 mm	WF120-95B416	6028470

[1] Minimum detectable object.

Dimensional drawing
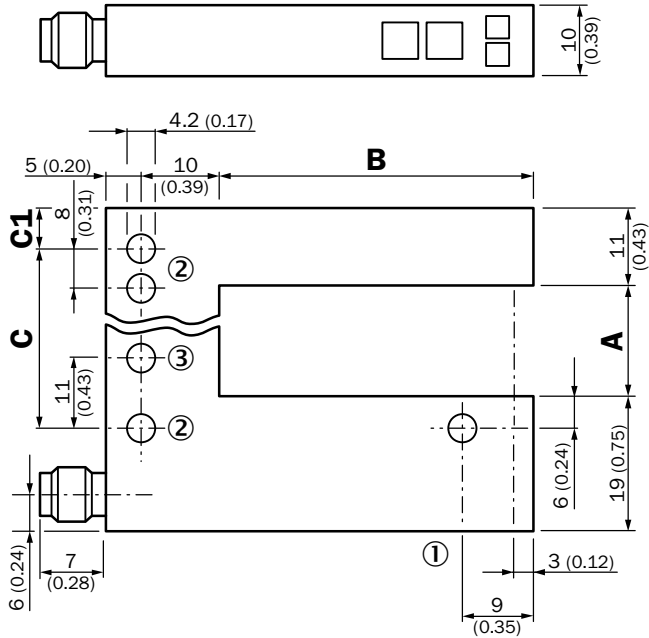
All dimensions in mm (inch)

Dimensions in mm (inch)

	A Fork width	B Fork depth	C	C1
WF2	2 (0.08)	42/59/95 (1.65/2.32/3.74)	14 (0.55)	5 (0.20)
WF5	5 (0.20)	42/59/95 (1.65/2.32/3.74)	14 (0.55)	6.5 (0.20)
WF15	15 (0.59)	42/59/95 (1.65/2.32/3.74)	27 (1.06)	5 (0.20)
WF30	30 (1.18)	42/59/95 (1.65/2.32/3.74)	42 (1.65)	5 (0.20)
WF50	50 (1.97)	42/59/95 (1.65/2.32/3.74)	51 (2.01)	16 (0.63)
WF80	80 (3.15)	42/59/95 (1.65/2.32/3.74)	81 (3.19)	16 (0.63)
WF120	120 (4.72)	42/59/95 (1.65/2.32/3.74)	121 (4.76)	16 (0.63)

Adjustments

WF*next*
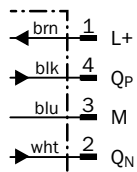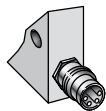**Adjustment:** "+"/"−" button
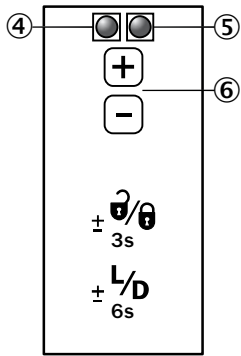
WF*next*
Adjustment: Teach-in
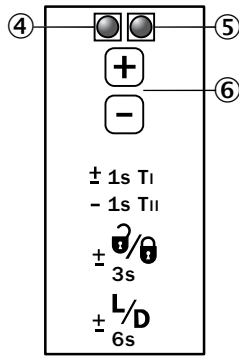
① Optical axis
② Mounting hole, Ø 4.2 mm
③ WF50/80/120 only
④ Function signal indicator (yellow), switching output
⑤ Function indicator (red)
⑥ "+"/"−" buttons and function button

Connection type and diagram

Connector
M8, 4-pin

brn	1	L+
blk	4	Q_P
blu	3	M
wht	2	Q_N

Recommended accessories

Plug connectors and cables

Connector M8, 4-pin

Connector type	Enclosure rating	Flying leads	Sheath material	Cable length	Model name	Part no.
Female connector	IP 67	Straight	PVC	2 m	DOL-0804-G02M	6009870
				5 m	DOL-0804-G05M	6009872
				10 m	DOL-0804-G10M	6010754
		Angled	PVC	2 m	DOL-0804-W02M	6009871
				5 m	DOL-0804-W05M	6009873
				10 m	DOL-0804-W10M	6010755
		Straight	–	–	DOS-0804-G	6009974
		Angled	–	–	DOS-0804-W	6009975

For dimensional drawings, please see page 39.

For additional accessories, please see www.mysick.com/en/WFnext

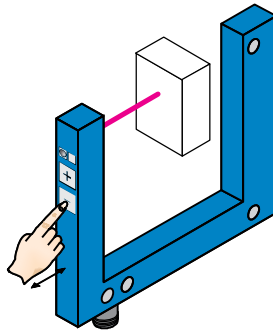## Setting the switching threshold via "+"/"−" buttons (WFxx-B410)

1. No object in the beam path

2. Object in the beam path
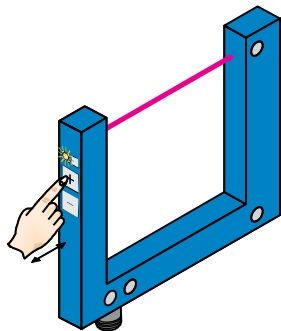
The yellow function indicator illuminates when the light received is at its optimum level. If necessary, increase sensitivity using the "+" button.
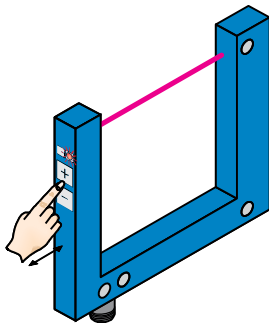
Yellow function indicator goes out.
If necessary, reduce sensitivity using the "−" button.

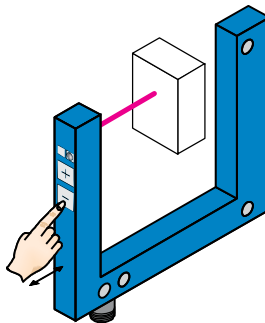## Setting the switching threshold via teach-in (WFxx-B416)

The switching threshold is set automatically. Fine adjustment is possible using the "+"/"−" buttons.

1. No object or substrate in the beam path

2. Object or label in the beam path

Press the "+" and "−" buttons together and hold for 1 second. The red function indicator flashes slowly.

Press the "−" button for 1 second.
Red function indicator goes out.

Notes

Material speed = 0 (machine at a standstill).

| + |
| − |

Once teach-in process is complete, the switching threshold can be adjusted at any time using the "+" or "−" button. To make minor adjustments, press the "+" or "−" button once.
To configure settings quickly, keep the "+" or "−" button pressed for longer.

± 3s Press both the "+" and "−" buttons together (3 seconds) to lock the device and prevent unintentional actuation.

± L/D 6s Press both the "+" and "−" buttons together (6 seconds) to define the switching function (light/dark switching). Standard setting: $\bar{Q}$ = light switching.