ONLINE DATA SHEET
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Fork sensors
WFS

WFS3-40N415

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Model Name > WFS3-40N415
Part No. > 6043920

At a glance

- Optimized housing with slim fork shape
- Dynamic teach-in IO Link or control panel and manual fine adjustment with “+”/“-” buttons
- Light/dark switching function
- Fast response time of 35 µs
- PNP or NPN
- IP 65 plastic housing
- Switching output also during teach-in active
- IO-Link version 1.1

Your benefits

- Slim design allows flexible mounting close to the dispenser of the label which ensures higher accuracy in the process
- Compact housing ensures space-saving installation
- User friendly adjustment allows easy and quick start-up
- IO Link or external teach-in allows automatic threshold adjustment via the PLC during the process which ensures reliable detection all the time
- Short and fast response times enables precise detection - even at high web speeds
- IO-Link provides easy data access from the PLC
- Quick and easy integration using function blocks
- Flexible sensor settings, monitoring, advanced diagnostics, and visualization thanks to IO-Link

Features

Functional principle:	Optical detection principle
Fork width:	3 mm
Fork depth:	42 mm
Label detection:	✓
Light source:	LED
Type of light:	Infrared light
Adjustment:	Manual ("+"/"-" button) Dynamic teach-in Static teach-in
Output function:	Light/darkswitching, selectable via button
Housing design (light emission):	Fork shaped
IO-Link:	-
Minimum detectable object (MDO):	Size of labels: 2 mm, Gap between labels: 2 mm [1)]

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[1] Depends on the label thickness

Mechanics/electronics

Residual ripple [1]:	< 10 %
Power consumption [2]:	20 mA
Switching frequency [3]:	20 kHz
Response time [4]:	50 µs
Stability of response time:	± 20 µs
Output type:	NPN: HIGH = approx. VS / LOW ≤ 2 V
Switching mode:	NPN
Output current Imax.:	100 mA
Input, teach-in (ET):	NPN: Run: U > (U_V - 5 V) Teach: U < (U_V - 6 V)
Initialization time:	20 ms
Electrical connection:	Connector M8, 4-pin
Protection class:	III
Circuit protection:	VS connections reverse-polarity protected Output Q short-circuit protected Interference suppression
Enclosure rating:	IP 65
Weight:	≥ ca. 36 g
Housing material:	Plastic, PA (glass-fiber reinforced)
Supply voltage:	10 V DC ... 30 V DC [5]
Ambient light immunity:	≤ 10,000 lx
Fieldbus interface:	-

[1] May not exceed or fall short of V_S tolerances [2] Without load [3] With light/dark ratio 1:1 [4] Signal transit time with resistive load [5] Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A

Ambient data

Shock load:	According to EN 60068-2-27
Ambient temperature operation:	-20 °C ... +60 °C [1]
Ambient storage temperature:	-30 °C ... +80 °C

[1] Do not bend below 0 °C

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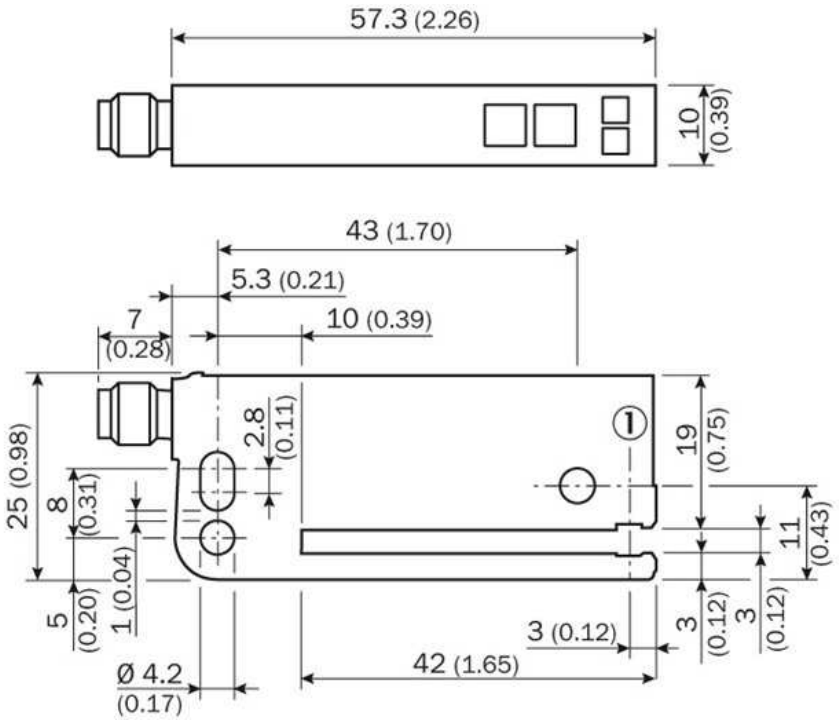
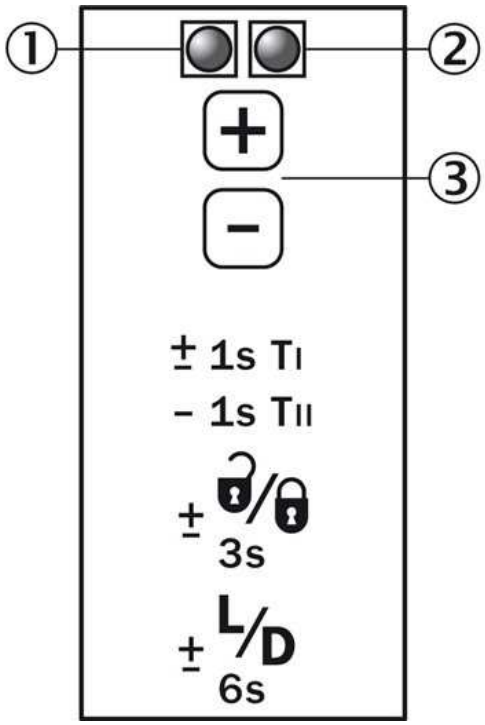
Dimensional drawing



|1| Optical axis

Adjustments



|1| Function signal indicator (yellow), switching output
|2| Function indicator (red)
|3| "+"/"-" buttons and function button

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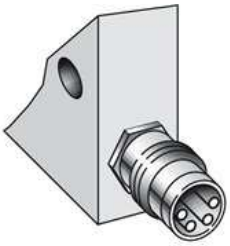
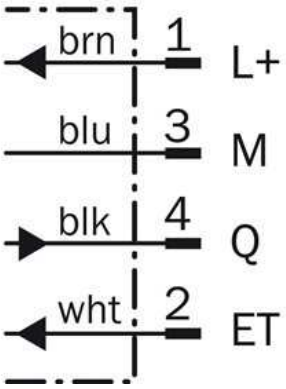
Anschlussart und -schema





Bedienhinweis

1. Position label or substrate in the active area of the fork sensor

Press both the "+" and "–" buttons together, hold > 1 s and than release the teach-in buttons. The red LED flashes.

2. Move multiple labels through the fork sensor

Press "–" button, teach-in process is finished.

Notes

Switching threshold adaptation:
Only, the first teach-in procedure after switching on is permanently stored. Teach-in can be repeated cyclically. Switching output also during teach-in active.

[+] [–] 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.

± 6s Press both the "+" and "–" buttons together (6 seconds) to define the switching function (light/dark switching). Standard setting: Q = light switching.

Teach-in (static): Setting the switching threshold without movements of label, cf. operating instruction.

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