



Fork sensors WFS

WFS3-40N415



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



At a glance

- Optimized housing with slim fork shape
- Dynamic teach-in via teach or control panel and manual fine adjustment with "+" / "-" buttons
- Light/dark switching function
- Fast response time of 50 µs
- PNP or NPN
- IP 65 plastic housing
- Switching output also during teach-in active

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
- 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



Features

Functional principle:	Optical detection principle
Fork width:	3 mm
Fork depth:	42 mm
MDO ¹⁾ ; ²⁾ :	Size of labels: 2 mm Gap between labels: 2 mm
Label detection:	✓
Light source:	LED, infrared
Adjustment:	Manual ("+" / "-" button) Dynamic teach-in Static teach-in
Output function:	Light/darkswitching, selectable via button

¹⁾ Minimum detectable object ²⁾ Depends on the label thickness

Mechanics/electronics

Supply voltage Vs ¹⁾ :	DC 10 V ... 30 V
Ripple ²⁾ :	< 10 %
Power consumption ³⁾ :	20 mA

Switching frequency ⁴⁾ :	10 kHz
Response time ⁵⁾ :	50 µs
Stability of response time:	± 20 µs
Output type:	NPN: HIGH = approx. VS / LOW ≤ 2 V
Switching mode:	NPN
Output current I _{max.} :	100 mA
Input, teach-in (ET):	NPN: Run: $U > (U_V - 5 \text{ V})$ Teach: $U < (U_V - 6 \text{ V})$
Initialization time:	20 ms
Connection type:	Connector M8, 4-pin
Ambient light safety:	≤ 10,000 lx
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:	PA (glass-fiber reinforced)

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⁾

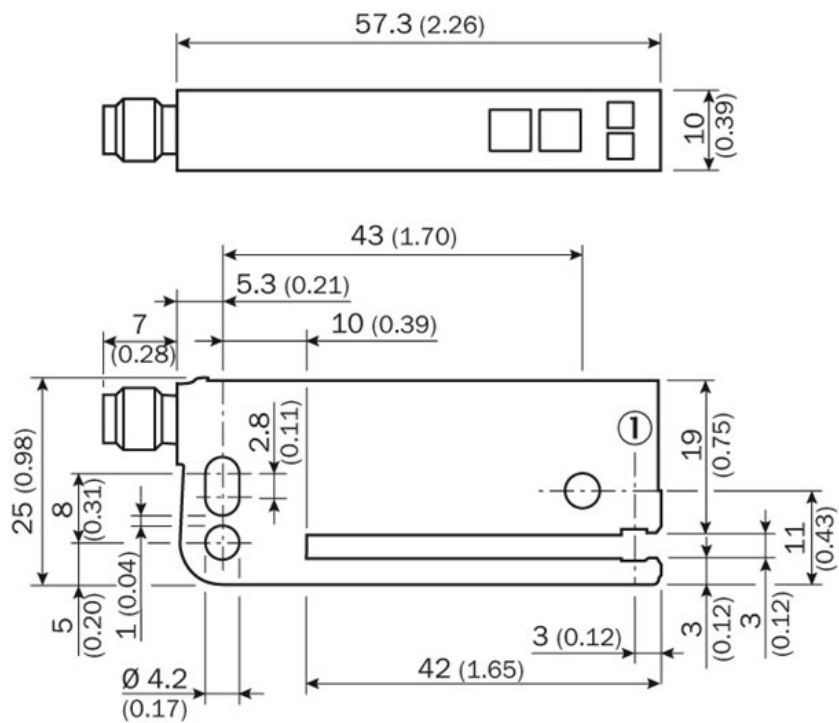
With light/dark ratio 1:1 ⁵⁾ Signal transit time with resistive load

Ambient data

Ambient temperature ¹⁾ :	Operation: -20 ... 60 °C Storage: -30 ... 80 °C
Shock load:	According to EN 60068-2-27

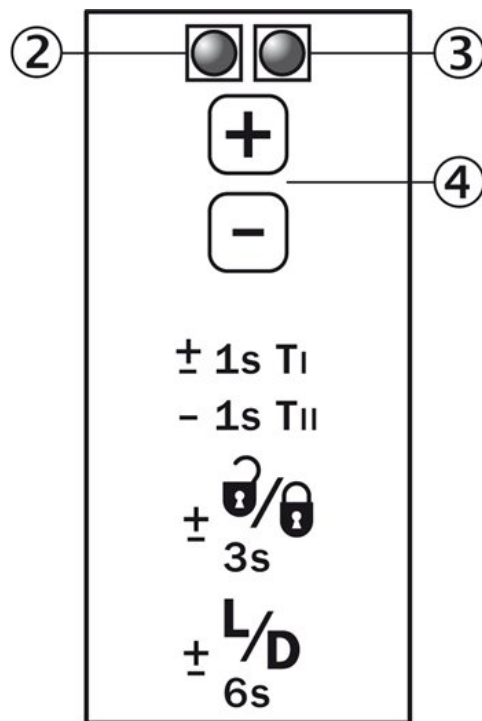
¹⁾ Do not bend below 0 °C

Dimensional drawing



|1| Optical axis

Adjustments

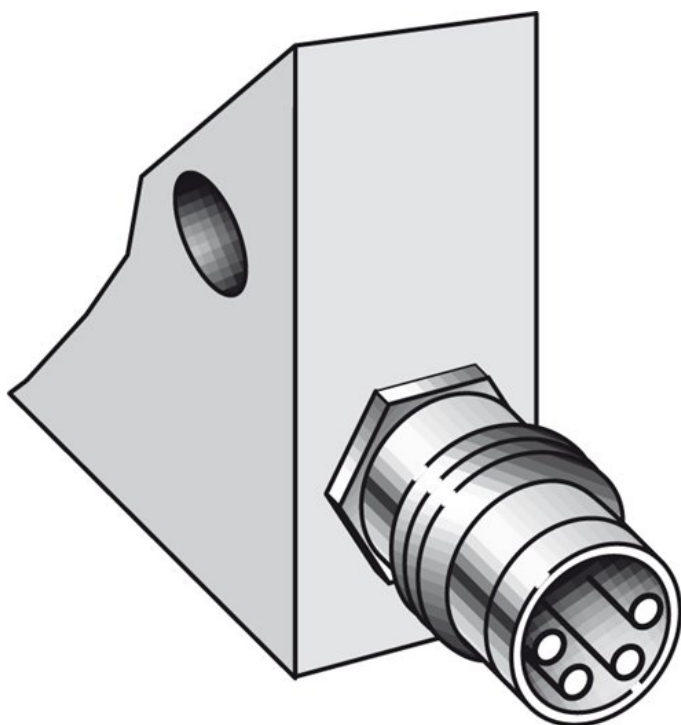


|2| Function signal indicator (yellow), switching output

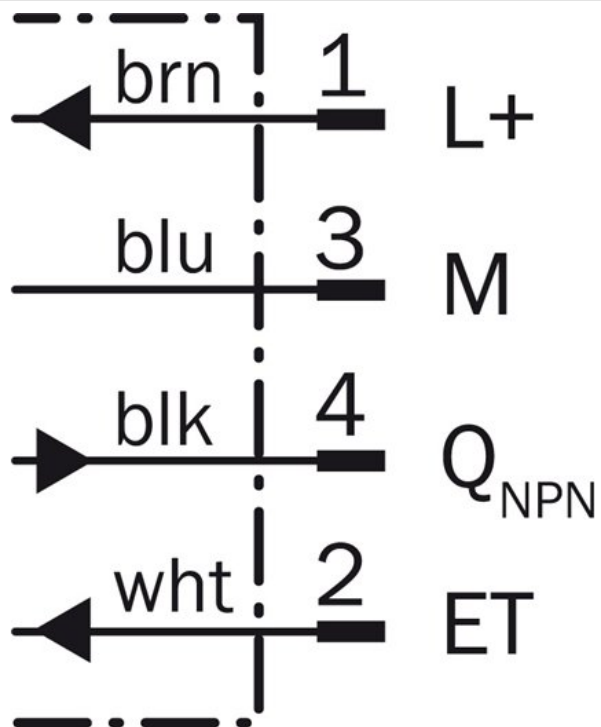
[3] Function indicator (red)

|4| "+" / "-" buttons and function button

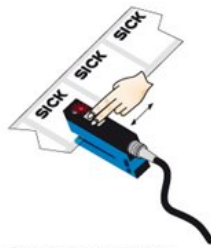
Connection type



Connection diagram



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



Press both the "+" and "-" buttons together, hold > 1 s and then 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.

$\pm \frac{Q}{3s}$ Press both the "+" and "-" buttons together (3 seconds) to lock the device and prevent unintentional actuation.

$\pm \frac{L/D}{6s}$ 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.

Australia

Phone +61 3 9457 0600
1800 334 802 – tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg

Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil

Phone +55 11 3215-4900
E-Mail sac@sick.com.br

Canada

Phone +1 905 771 14 44
E-Mail information@sick.com

Ceská Republika

Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China

Phone +86 4000 121 000
E-Mail info.china@sick.net.cn
Phone +852-2153 6300
E-Mail ghk@sick.com.hk

Danmark

Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland

Phone +49 211 5301-301
E-Mail kundenservice@sick.de

España

Phone +34 93 480 31 00
E-Mail info@sick.es

France

Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain

Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India

Phone +91-22-4033 8333
E-Mail info@sick-india.com

Israel

Phone +972-4-6801000
E-Mail info@sick-sensors.com

Italia

Phone +39 02 27 43 41
E-Mail info@sick.it

Japan

Phone +81 (0)3 3358 1341
E-Mail support@sick.jp

Magyarország

Phone +36 1 371 2680
E-Mail office@sick.hu

Nederlands

Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge

Phone +47 67 81 50 00
E-Mail austefjord@sick.no

Österreich

Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska

Phone +48 22 837 40 50
E-Mail info@sick.pl

România

Phone +40 356 171 120
E-Mail office@sick.ro

Russia

Phone +7-495-775-05-30
E-Mail info@sick.ru

Schweiz

Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore

Phone +65 6744 3732
E-Mail admin@sicksgp.com.sg

Slovenija

Phone +386 (0)1-47 69 990
E-Mail office@sick.si

South Africa

Phone +27 11 472 3733
E-Mail info@sickautomation.co.za

South Korea

Phone +82 2 786 6321/4
E-Mail info@sickkorea.net

Suomi

Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige

Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan

Phone +886-2-2375-6288
E-Mail sales@sick.com.tw

Türkiye

Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr

United Arab Emirates

Phone +971 (0) 4 8865 878
E-Mail info@sick.ae

USA/México

Phone +1(952) 941-6780
1 800-325-7425 – tollfree
E-Mail info@sickusa.com

More representatives and agencies
at www.sick.com