

V18V

Photoelectric Sensors for Food & Beverage

Sensors have to be this robust and multifaceted.

Thanks to its consistent design and selection of optimized materials, the photoelectric sensor series V18V for Food & Beverage is suitable for substantial industrial loads, for example,

- Chemical cleaning processes,
- High ambient operating temperatures,
- High water pressure and high humidity,
- Corrosive media.

Certificates from independent institutes confirm:

- ECOLAB,
- JohnsonDiversey,
- Enclosure rating IP 69K according to DIN 40050.

The High-Light V18V:

Sensitivity adjustment via Touch-Teach-in. The teach-in method permits the sensor to be adapted to each application without mechanical controls (patent pending). This means that all mechanical components (seals, potentiometer, etc.) are no longer needed. A sensor housing made of 100 % stainless steel 316L is all that remains.

The V18V stainless steel photoelectric sensors and their ranges in overview:

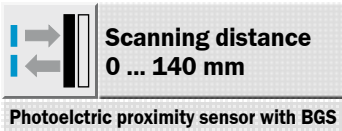
- VS/VE18V through-beam photoelectric sensors: Scanning range 25 m,
- VL18V photoelectric reflex sensor: Scanning range 5 m (PL80A),
- VL18V photoelectric reflex sensor for detecting transparent objects: Scanning range 4.5 m (PL80A),
- VT18V photoelectric proximity sensor, energetic: Scanning ranges 100 mm, 400 mm, 800 mm (90 % reflectance),
- VTB18V photoelectric proximity sensor, with background suppression and adjustable scanning distance: scanning distances 140 mm (standard) and 100 mm (small light spot), 90 % remission.

The V18V Food & Beverage can be used universally. Applications in the areas of foodstuffs production, beverage production, pharmaceuticals and corresponding packaging lines are special focal points.



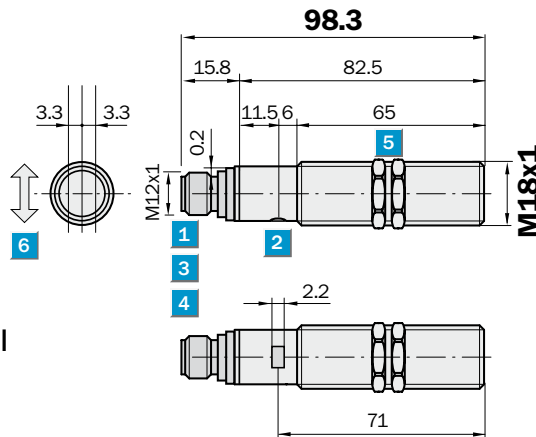
Features

- Wash-down design: resistant against detergents, humidity and temperature
- Hygienic design: Stainless steel housing & suitable, FDA certified synthetic materials



- Precise background suppression
- Touch-Teach-in: Sensitivity adjustment on equipment, but without mechanical operation elements (patent pending)
- Transition zone between scanning distance/background suppression very small and largely independent of materials
- High switching frequency up to 1,000 Hz
- Visible emitted light red LED with small light spot

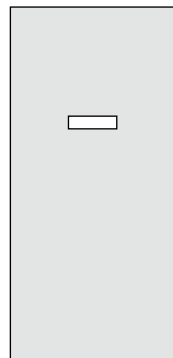
Dimensional drawing



Adjustments possible

VTB18-4P1240V

VTB18-4N1240V



- 1 Plug M12, 4-pin
- 2 Scanning distance adjuster Touch-Teach-in
- 3 Green LED indicator: signaling Touch-Teach-in
- 4 Yellow LED indicator: light received
 - lights continuously: reception signal > reserve factor 2
 - blinks: reception signal < reserve factor 2, but > switching threshold 1
- 5 Mounting nuts (2x); SW 24, stainless steel 316L (included with delivery)
- 6 Standard direction of material being scanned



ECOLAB®
JohnsonDiversey



IP 69K according to DIN 40050

Stainless Steel



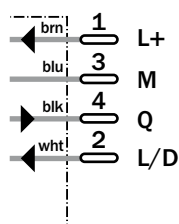
Connection type

VTB18-4P1240V

VTB18-4N1240V

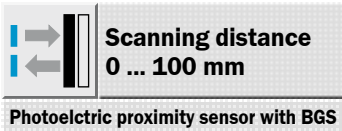


M12, 4-pin



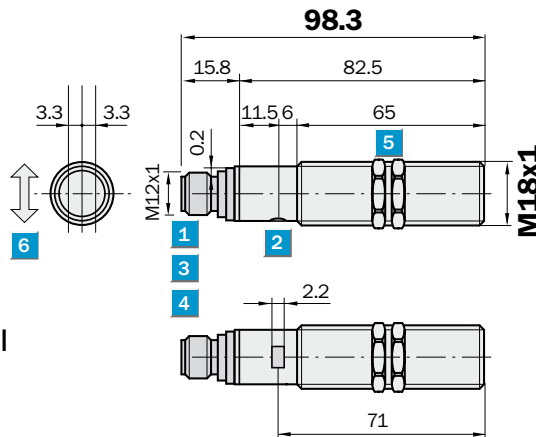
Accessories

Cables and connectors
Mounting systems



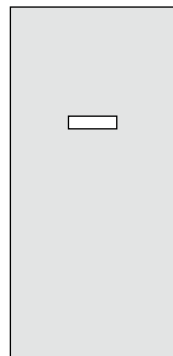
- Precise background suppression
- Touch-Teach-in: Sensitivity adjustment on equipment, but without mechanical operation elements (patent pending)
- Transition zone between scanning distance/background suppression very small and largely independent of materials
- For detecting small parts
- Visible emitted light red LED with smallest light spot

Dimensional drawing



Adjustments possible

VTB18-4P1240VS01
VTB18-4N1240VS01



- 1 Plug M12, 4-pin
- 2 Scanning distance adjuster Touch-Teach-in
- 3 Green LED indicator: signaling Touch-Teach-in
- 4 Yellow LED indicator: light received
 - lights continuously: reception signal > reserve factor 2
 - blinks: reception signal < reserve factor 2, but > switching threshold 1
- 5 Mounting nuts (2x); SW 24, stainless steel 316L (included with delivery)
- 6 Standard direction of material being scanned



ECOLAB®
JohnsonDiversey

IP 69K according to DIN 40050

Stainless Steel



Accessories

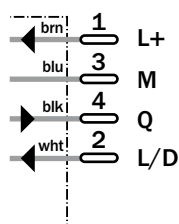
Cables and connectors
Mounting systems

Connection type

VTB18-4P1240VS01
VTB18-4N1240VS01



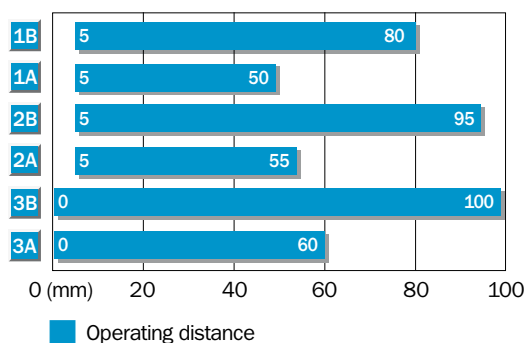
M12, 4-pin



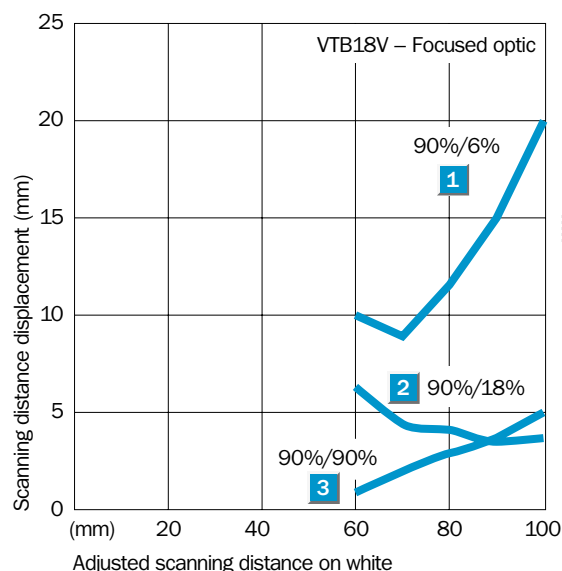
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|---|--|--|--|
| 1) Object to be detected with 90 % remission (relating to standard white in acc. with DIN 5033); 100 x 100 mm | 5) May not exceed or fall short of V_S tolerances | NPN: light-switching L.ON
PNP: dark-switching D.ON | 13) A = V_S connections reverse-polarity protected
B = Inputs and output reverse-polarity protected |
| 2) Average service life 100,000 h at $T_A = +25^\circ\text{C}$ | 6) Without load, at V_S 30 V DC | 8) Signal transit time with resistive load | C = Interference pulse suppression |
| 3) patent pending | 7) L/D-switching type control line
L/D = + V_S : light-switching L.ON
L/D = 0 V: dark-switching D.ON | 9) With light/dark ratio 1:1
10) Pins gold plated | D = Outputs overload and short-circuit protected |
| 4) Limit values | Control line open | 11) With correct mounted IP 69K connector
12) Refer to the corresponding certificates for details | 14) PPS with FDA certificate |

Scanning distance
0.5 m
1.0 m
1.5 m
2.0 m
2.5 m
3.0 m
3.5 m
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4.5 m
5.0 m
5.5 m
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99.5 m
100.0 m



- | | |
|----------|--|
| 1 | Scanning distance on black, 6 % remission |
| 2 | Scanning distance on grey, 18 % remission |
| 3 | Scanning distance on white, 90 % remission |
| A | Scanning distance adjuster on MIN |
| B | Scanning distance adjuster on MAX |

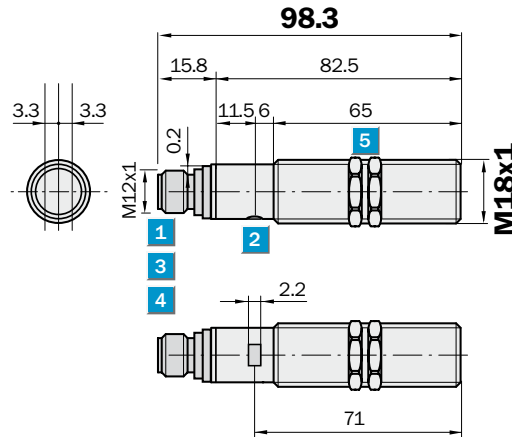


Order information	
Type	Order no.
VTB18-4P1240VS01	6037754
VTB18-4N1240VS01	6037755

	Scanning distance
	0 ... 800/0 ... 400/ 0 ... 100 mm
	Photoelectric proximity sensor

- **Touch-Teach-in:** scanning distance setting on equipment, but without mechanical operating elements (patent pending)
- **Wash-down design:** resistant against detergents, humidity and temperature

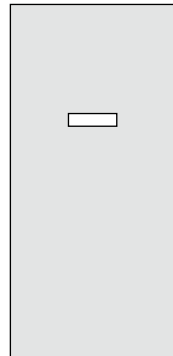
Dimensional drawing



Adjustments possible

VTF18-4P1240V	VTF18-4N1240V
VTE18-4P4240V	VTE18-4N4240V
VTE18-4P8240V	VTE18-4N8240V

- 1 Plug M12, 4-pin
- 2 Scanning distance adjuster Touch-Teach-in
- 3 Green LED indicator: signaling Touch-Teach-in
- 4 Yellow LED indicator: light received
 - lights continuously
reception signal > reserve factor 2
 - blinks: reception signal < reserve factor 2,
but > switching threshold 1
- 5 Mounting nuts (2x); SW 24, stainless steel 316L
(included with delivery)

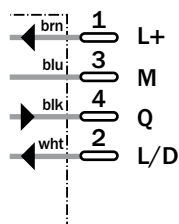


Connection type

VTF18-4P1240V	VTF18-4N1240V
VTE18-4P4240V	VTE18-4N4240V
VTE18-4P8240V	VTE18-4N8240V



M12, 4-pin



IP 69K according to DIN 40050

Stainless Steel



Accessories

Cables and connectors
Mounting systems

Technical data		VTF18-/VTE18-	4P8240V	4N8240V	4P4240V	4N4240V	4P1240V	4N1240V						
Scanning distance , typ. max. ¹⁾	0 ... 900 mm													
	0 ... 450 mm													
	0 ... 110 mm													
Operating distance ¹⁾	5 ... 800 mm													
	5 ... 400 mm													
	5 ... 100 mm													
Light spot diameter	Approx. 100 mm at 800 mm													
	Approx. 60 mm at 400 mm													
	Approx. 15 mm at 100 mm													
Angle of dispersion sender	Approx. 4.5°													
Light source ²⁾ , light type	LED, red, 660 nm													
	LED, infrared light, 880 nm													
Scanning distance setting	Manual, via Touch-Teach-in ³⁾													
Visualizing Touch-Teach-in	LED green													
Light reception indicator	LED yellow													
	Lights continuously: reserve factor >2													
	Blinks: reserve factor >1.0 ... <2.0													
Supply voltage V_s	10 ... 30 V DC ⁴⁾													
Residual ripple ⁵⁾	≤ 10 %													
Current consumption ⁶⁾	≤ 35 mA													
Switching outputs	Q: PNP, open collector													
	Q: NPN, open collector													
Signal voltage PNP	Approx. V_s -2.0 V/approx. 0 V													
	NPN	Approx. V_s /≤ 2.0 V												
Switching mode	Light-/dark-switching, selectable ⁷⁾													
Output current I_A max.	≤ 100 mA													
Response time ⁸⁾	≤ 1 ms													
Max. switching frequency ⁸⁾	500/s													
Connection type	Plug M12, 4-pin ¹⁰⁾													
VDE protection class	II													
Enclosure rating	IP 67, IP 68, IP 69K ¹¹⁾													
Certificates ¹²⁾	ECOLAB, JohnsonDiversey													
Circuit protection ¹³⁾	A, B, C, D													
Ambient temperature	Operation	-25 °C ... +80 °C (continuous operating)												
	Operation	-25 °C ... +100 °C (max. 15 min)												
	Storage	-40 °C ... +80 °C												
Weight		Approx. 120 g												
Housing		M18												
Housing material	Housing:	Stainless steel AISI 316L/1.4404												
	Device plug:	M12, PPS (Grilamid) FDA 14)												
	Optic:	Plan, PPS (Grilamid) FDA 14)												

¹⁾ Object to be detected with 90 % remission (relating to standard white in acc. with DIN 5033); 100 x 100 mm

²⁾ Average service life 100,000 h at $T_A = +25$ °C

³⁾ Patent pending

⁴⁾ Limit values

⁵⁾ May not exceed or fall short of V_s tolerances

⁶⁾ Without load, at V_s 30 V DC

⁷⁾ L/D-switching type control line
L/D = + V_s : light-switching L.ON
L/D = 0 V: dark-switching D.ON

Control line open
NPN: light-switching L.ON
PNP: dark-switching D.ON

⁸⁾ Signal transit time with resistive load
⁹⁾ With light/dark ratio 1:1

¹⁰⁾ Pins gold plated

¹¹⁾ With correct mounted IP 69K connector

¹²⁾ Refer to the corresponding certificates for details

¹³⁾ A = V_s connections reverse-polarity protected

B = Inputs and output reverse-polarity protected

C = Interference pulse suppression

D = Outputs overload and short-circuit protected

¹⁴⁾ PPS with FDA certificate

Order information

Type	Order no.
VTF18-4P1240V	6035487
VTF18-4N1240V	6035488
VTE18-4P4240V	6035489
VTE18-4N4240V	6035490
VTE18-4P8240V	6035491
VTE18-4N8240V	6035492

Sensitivity adjustable/scanning distance setting per Touch-Teach-in for photoelectric sensors V18V in stainless steel housing

Simple & Smart:

Sensitivity adjustment per Touch-Teach-in for photoelectric sensors VTF18V, VTE18V & VL18V glass. Scanning distance adjustment via Touch Teach-in for VTB18V photoelectric sensors.

n Manual sensitivity adjustment

- Per Touch-Teach-in
- Simplest handling

n Activate Touch-Teach-in 1x:

- Sensitivity setting completed
- Feedback: Yellow LED indicator
- Permanent storage of the "taught-in switching threshold and hysteresis," even if power is interrupted for longer times.

Scanning distance/sensitivity adjustment, handling:

n VTB18V photoelectric proximity sensor with background suppression and adjustable scanning distance:

- Always position scanned objects resp. background in nominal position,
- Align sensor directly at the target object.

n VTF18V and VTE18V photoelectric proximity sensors, energetic:

- Always position object at target position,
- Align sensor directly at the target object (max. light received).

n VL18V photoelectric reflex sensor:

- Always remove object,
- Align VL18V directly on the reflector (max. light reception).

Tamper protection: Touch Teach-in function can be disabled

Simple and Smart: locking/unlocking Touch Teach-in function

n Handling locking Teach-in:

- Activate „Teach-in“
- VTE18V & VL18V: >11 sec
- VTB-Standard: >12 sec
- VTB18V focussed: >8 sec
- Confirmation: LED green permanently OFF

n Handling release Teach-in:

- Activate „Teach-in“
- VTE18V & VL18V: >6 sec
- VTB18V: >7 sec
- Confirmation: LED green permanently ON.

Optimum sensitivity adjustment thanks to 2 easy-to-operate Touch-Teach-in options.

1 Short-Teach

1.1 Manual for VTF18V, VTE18V, VL18V glass detection variant

Sensitivity adjustment for large operating reserve (Standard setting)

1.1.1 Applications:

- For all standard applications
- High operating reserve, factor >2 above switching threshold

1.2 Manual for VTB18V

- Scanning distance adjustment directly at the target object. Observe max. adjustable scanning distance, see diagram "adjusted scanning distance/ scanning distance displacement".

1.2.1 Applications:

- Scanned object is detected up to the adjusted scanning distance; background objects immediately behind it are suppressed.

1.3 Handling Short-Teach-in:

- Short Touch; activate „Teach-in“ >2 sec ... <6 sec
- Signalizing LED green: 1x OFF/ON
- Adjustment completed; check application.

1.4 Indication after adjustment

- Green LED indicator: lights continuously
- Yellow LED indicator: lights continuously

2. Long-Teach

2.1 Manual for VTF18V, VTE18V, VL18V glass detection variant Sensitivity adjustment for the precise switching point

2.1.1 Applications:

- For slight differences between scanning object and background and for simple contrast detection (VTF18V, VTE18V)
- For positioning tasks
- For detecting transparent objects (VL18V glass)
- "Reduced" operating reserve, factor >1<2 above switching threshold, reduced, optimized hysteresis

2.2 Manual for VTB18V (only available for VTB18V Standard!)

- Scanning distance adjustment directly on the background object - our recommended standard setting. Observe max. adjustable scanning distance, see diagram "adjusted scanning distance/scanning distance displacement".

2.2.1 Applications:

- Taught-in background object is suppressed and objects in the scanning range before it are detected.

2.3 Handling Long-Teach-in:

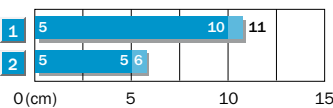
- Long Touch; activate „Teach-in“ >8 sec ... <12 sec
- Signalizing LED green: 1x OFF/ON, blinks fast
- Adjustment completed; check application.

2.4 Signalizing:

- Green LED indicator: lights continuously
- Yellow LED indicator: blinks

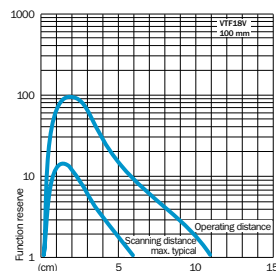
Scanning distance VTF18V & VTE18V

100 mm scanning distance VTF18V

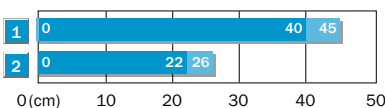


■ Operating distance ■ Scanning distance, max. typical

- 1 Scanning range on white, 90 % remission
- 2 Scanning range on grey, 18 % remission

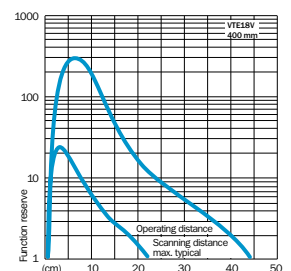


400 mm scanning distance VTE18V

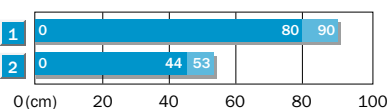


■ Operating distance ■ Scanning distance, max. typical

- 1 Scanning range on white, 90 % remission
- 2 Scanning range on grey, 18 % remission

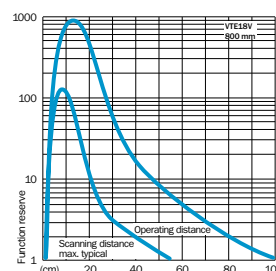


800 mm scanning distance VTE18V



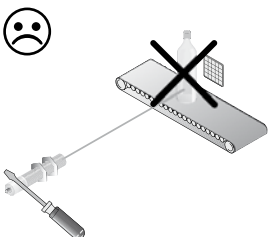
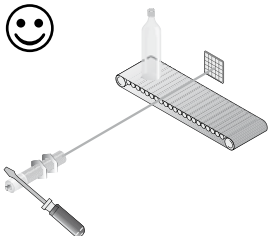
■ Operating distance ■ Scanning distance, max. typical

- 1 Scanning range on white, 90 % remission
- 2 Scanning range on grey, 18 % remission

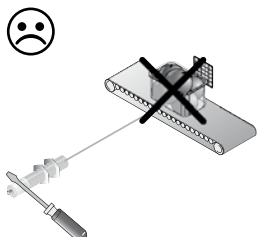
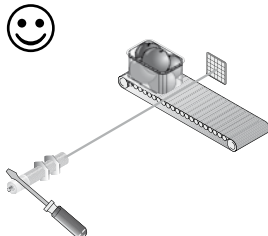


Touch-Teach-in: Sensitivity adjustable/scanning distance setting photoelectric reflex sensor V18V in stainless steel housing
Application VL18V Glass photoelectric reflex sensor

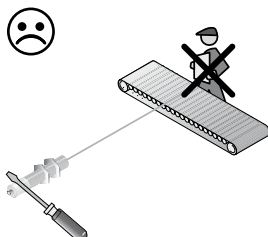
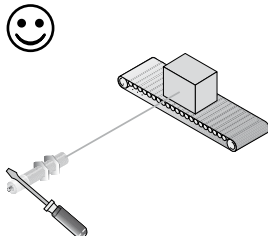
- n Substantial operating reserve**
short "Teach-in time"
 $> 2 \text{ s} \dots < 6 \text{ s}$



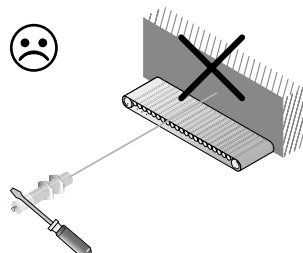
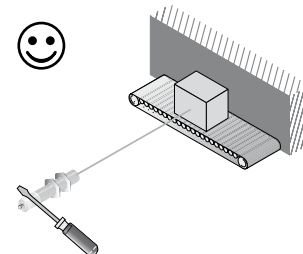
- n Precise switching point**
long "Teach-in time"
 $> 8 \text{ s} \dots < 12 \text{ s}$


Application VTF18V & VTE18V photoelectric proximity sensor, energetic

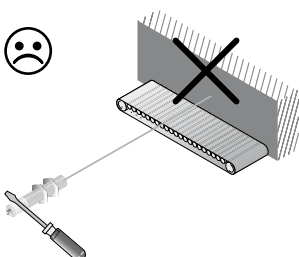
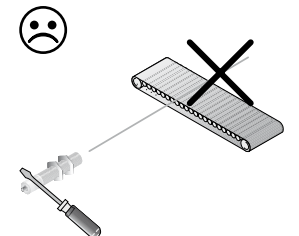
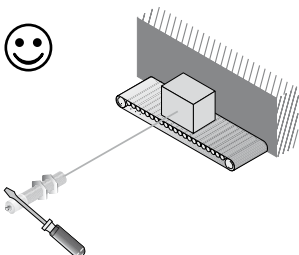
- n Substantial operating reserve**
short "Teach-in time"
 $> 2 \text{ s} \dots < 6 \text{ s}$



- n Precise switching point**
long "Teach-in time"
 $> 8 \text{ s} \dots < 12 \text{ s}$

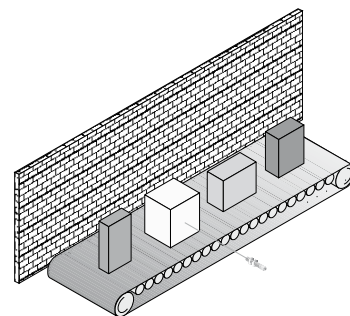
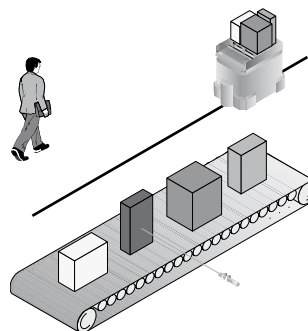
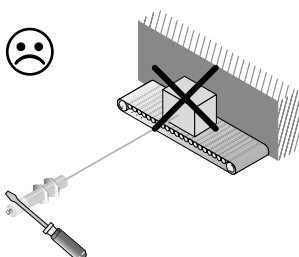
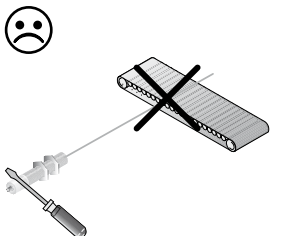
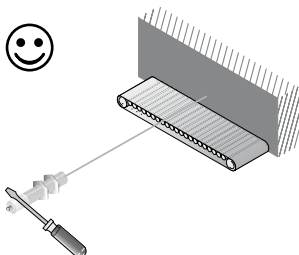

Application VTB18V Photoelectric proximity sensor with BGS

- n Teach-in on object**
short "Teach-in time"
 $> 2 \text{ s} \dots < 7 \text{ s}$



- n Teach-in on background**
long "Teach-in time"
 $> 8 \text{ s} \dots < 12 \text{ s}$

Function not possible with
VTB18V focused optics.

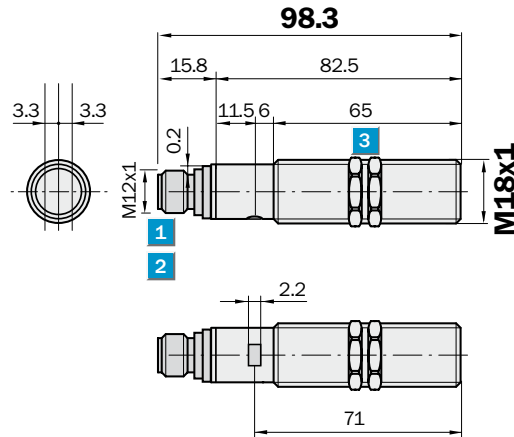


Scanning range
0.1 ... 5 m (PL80A)

Photoelectric reflex sensors

- Wash-down design: resistant against detergents, humidity and temperature
- Hygienic design: Stainless steel housing & suitable, FDA certified synthetic materials

Dimensional drawing



- 1 Plug M12, 4-pin
- 2 Yellow LED indicator: light received
 - lights continuously: reception signal > reserve factor 2
 - blinks: reception signal < reserve factor 2, but > switching threshold 1
- 3 Mounting nuts (2x); SW 24, stainless steel 316L (included with delivery)

ECOLAB®
JohnsonDiversey

IP 69K according to DIN 40050

Stainless Steel



Accessories

Cables and connectors
Mounting systems
Reflectors

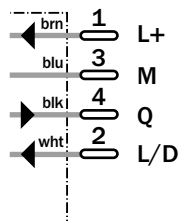
Connection type

VL18-4P3140V

VL18-4N3140V



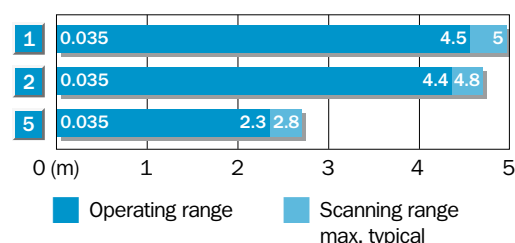
M12, 4-pin



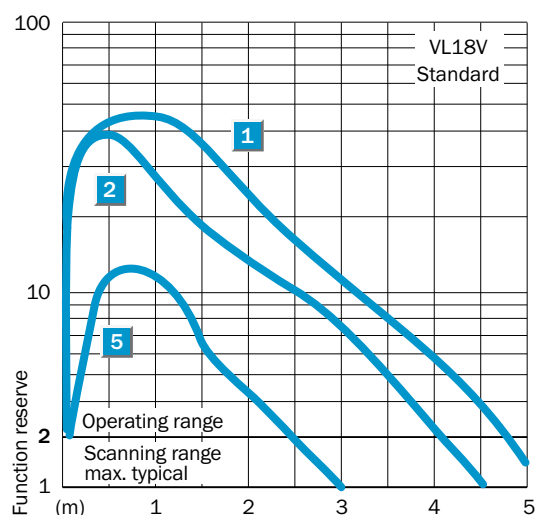
Technical data		VL18-	4P3140V	4N3140V
Scanning range SR , typ. max./Reflector		0.1 ... 5.0 m/PL80A		
Operating range		0.1 ... 4.5 m/PL80A		
Light spot diameter		Approx. 200 mm at 4.5 m		
Angle of dispersion sender		Approx. 2.5°		
Light source¹⁾, light type		LED, red 660 nm, with polarising filter		
Light reception indicator		LED yellow		
		Lights continuously: reserve factor >2		
		Blinks: reserve factor >1.0 ... <2.0		
Supply voltage V_s		10 ... 30 V DC ²⁾		
Residual ripple ³⁾		≤ 10 %		
Current consumption ⁴⁾		≤ 35 mA		
Switching outputs		Q: PNP, open collector		
		Q: NPN, open collector		
Signal voltage	PNP	Approx. V _s -2.0 V/approx. 0 V		
	NPN	Approx. V _s / ≤ 2.0 V		
Switching mode		Light-/dark-switching, selectable ⁵⁾		
Output current I_A max.		≤ 100 mA		
Response time ⁶⁾		≤ 1 ms		
Max. switching frequency ⁷⁾		500/s		
Connection types		Plug M12, 4-pin ⁸⁾		
VDE protection class		III		
Enclosure rating		IP 67, IP 68, IP 69K ⁹⁾		
Certificates¹⁰⁾		ECOLAB, JohnsonDiversey		
Circuit protection¹¹⁾		A, B, C, D		
Ambiet temperature	Operation	-25 °C ... +80 °C (continuous operating)		
	Storage	-40 °C ... +80 °C		
Weight		Approx. 120 g		
Housing		M18		
Housing material		Housing: Stainless steel AISI 316L		
		Device plug: M12, PPS (Grilamid) FDA ¹²⁾		
		Optic: Plan, PMMA Surface hardened and tempered (FDA ¹²⁾)		

- | | | | |
|---|---|--|---|
| 1) Average service life 100,000 h at
$T_A = +25^\circ\text{C}$ | 5) L/D-switching type control line
$L/D = +V_S$: light-switching L.ON
$L/D = 0\text{ V}$: dark-switching D.ON
Control line open
NPN: light-switching L.ON
PNP: dark-switching D.ON | 7) With light/dark ratio 1:1 | B = Inputs and output reverse-polarity
protected |
| 2) Limit values | | 8) Pins gold plated | C = Interference pulse suppression |
| 3) May not exceed or fall short of
V_S tolerances | | 9) With correct mounted IP 69K connector | D = Outputs overload and short-circuit
protected |
| 4) Without load | 6) Signal transit time with resistive load | 10) Refer to the corresponding certificates
for details | |
| | | 11) $A = V_S$ connections reverse-polarity
protected | 12) PMMA with FDA certificate |

Scanning range and function reserve



	Reflector-Type	Operating range
1	PL80A	0.035 ... 4.5 m
2	C110A	0.035 ... 4.4 m
3	PL50A/PL40A PL30A/PL31A	0.035 ... 3.5 m
4	P250	0.035 ... 3.3 m
5	P250CHEM	0.035 ... 2.3 m
6	PL20CHEM	0.035 ... 1.0 m



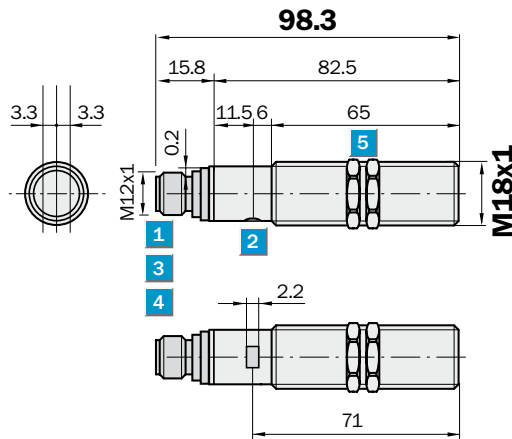
Order information

Type	Order no.
VL18-4P3140V	6035495
VL18-4N3140V	6035496

	Scanning range
	0.03 ... 4.5 m (PL80A)
Photoelectric reflex sensors	

- **Touch-Teach-in:** Sensitivity adjustment on equipment, but without mechanical operation elements (patent pending)
- **Wash-down design:** resistant against detergents, humidity and temperature
- **Ideal for detecting glass and transparent foils**

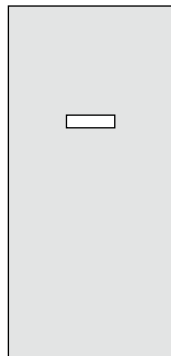
Dimensional drawing



Adjustments possible

VL18-4P2240V

VL18-4N2240V



- 1 Plug M12, 4-pin
- 2 Sensitivity adjustment Touch-Teach-in
- 3 Green LED indicator: signaling Touch-Teach-in
- 4 Yellow LED indicator: light received
 - lights continuously: reception signal > reserve factor 2
 - blinks: reception signal < reserve factor 2, but > switching threshold 1
- 5 Mounting nuts (2x); SW 24, stainless steel 316L (included with delivery)

Connection type

VL18-4P2240V

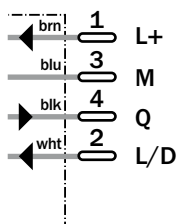
VL18-4P2740V

VL18-4N2240V

VL18-4N2740V



M12, 4-pin



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IP 69K according to DIN 40050

Stainless Steel



Accessories

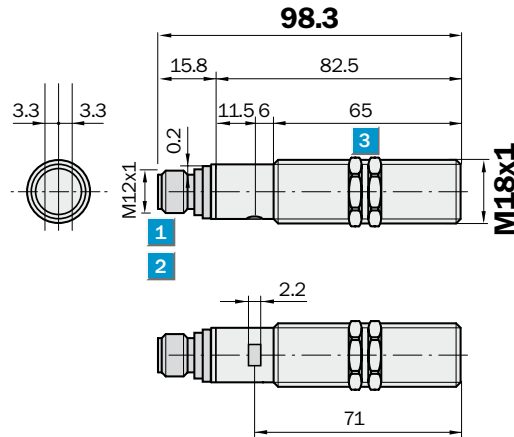
Cables and connectors
Mounting systems
Reflectors

 **Scanning range**
0 ... 20 m

Through-beam photoelectric sensors

- **Wash-down design:** resistant against detergents, humidity and temperature
- **Hygienic design:** Stainless steel housing & suitable, FDA certified synthetic materials
- For $T_A +80\text{ }^{\circ}\text{C}$ (15 min: $100\text{ }^{\circ}\text{C}$)

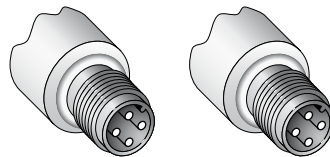
Dimensional drawing



- 1 Plug M12, 4-pin
- 2 Yellow LED indicator, (only receiver VE18V)
 - lights continuously: reception signal > reserve factor 2
 - blinks: reception signal < reserve factor 2, but > switching threshold 1
- 3 Yellow LED indicator, (only sender VS18V)
 - lights continuously : sender active
 - does not light: sender off
- Mounting nuts (2x); SW 24, stainless steel 316L (included with delivery)

Connection types

VS/VE18-4P3140V VS/VE18-4N3140V



ECOLAB
JohnsonDiversey 

IP 69K according to DIN 40050

Stainless Steel



Accessories

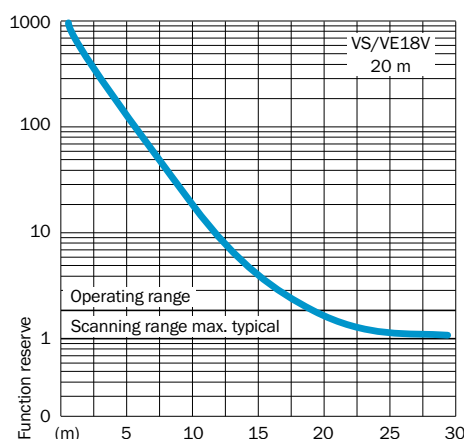
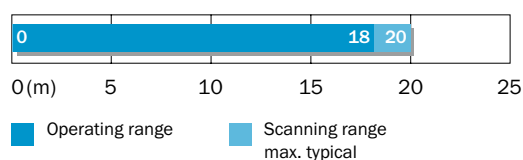
Cables and connectors
Mounting systems

Sender		Receiver	
M12, 4-pin		M12, 4-pin	
1	L+	1	L+
3	M	3	M
4	NC	4	Q
2	TE	2	L/D

Technical data		VS/VE18-	4P3140V	4N3140V
Scanning range SR , typ. max.		0 ... 20 m		
Operating range		0 ... 18 m		
Light spot diameter		Approx. 600 mm at 15 m		
Angle of dispersion sender		Approx. 2.5 °		
Angle of reception receiver		Approx. 8 ° (SR = max.)		
Light source¹⁾, light type		LED, infrared, 880 nm		
Status indicators		LED yellow (only VS18V): Sender ON		
Light reception indicator		LED yellow (only VE18V):		
		Lights continuously: reserve factor >2		
		Blinks: reserve factor >1.0 ... <2.0		
Supply voltage V_s		10 ... 30 V DC ²⁾		
Residual ripple ³⁾		≤ 10 %		
Current consumption⁴⁾		Sender ≤ 35 mA		
		Receiver ≤ 40 mA		
Switching outputs		Q: PNP, open collector		
		Q: NPN, open collector		
Signal voltage PNP		Approx. V _s -2.0 V/approx. 0 V		
Signal voltage NPN		Approx. V _s /≤ 2.0 V		
Switching mode		Light-/dark-switching, selectable ⁵⁾		
Output current I_A max.		≤ 100 mA		
Response time ⁶⁾		≤ 2 ms		
Max. switching frequency ⁷⁾		250/s		
Test input TE		0 V = Sender inactive		
Connection types		Plug M12, 4-pin ⁸⁾		
VDE protection class		ⓘ		
Enclosure rating		IP 67, IP 68, IP 69K ⁹⁾		
Certificates¹⁰⁾		ECOLAB, JohnsonDiversey		
Circuit protection¹¹⁾		A, B, C, D		
Ambiet temperature	Operation	-25 °C ... +80 °C (continuous operating)		
	Operation	-25 °C ... +100 °C (max. 15 min)		
	Storage	-40 °C ... +80 °C		
Weight		Sender and receiver each approx. 120 g		
Housing		M18		
Housing material		Housing: Stainless steel AISI 316L/1.4404		
		Device plug: M12, PPS (Grilamid) FDA ¹²⁾		
		Optic: Plan, PPS (Grilamid) FDA ¹²⁾		

- | | | | |
|---|---|--|--|
| 1) Average service life 100,000 h at
T _A = +25 °C | 5) L/D-switching type control line
L/D = + V _S : light-switching L.ON
L/D = 0 V: dark-switching D.ON
Control line open
NPN: light-switching L.ON
PNP: dark-switching D.ON | 6) Signal transit time with resistive load | 11) A = V _S connections reverse-polarity
protected
B = Inputs and output reverse-polarity
protected
C = Interference pulse suppression
D = Outputs overload and short-circuit
protected |
| 2) Limit values | | 7) With light/dark ratio 1:1 | |
| 3) May not exceed or fall short of
V _S tolerances | | 8) Pins gold plated | |
| 4) Without load | | 9) With correct mounted IP 69K connector | |
| | | 10) Refer to the corresponding certificates
for details | 12) PPS with FDA certificate |

Scanning range and function reserve



Order information

Type	Order no.
VS/VE18-4P3140V	6035499
VS/VE18-4N3140V	6035500

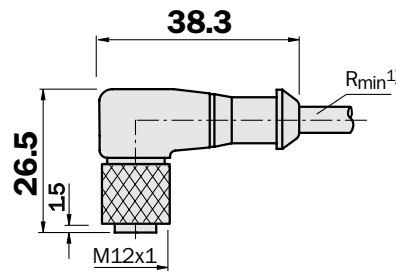
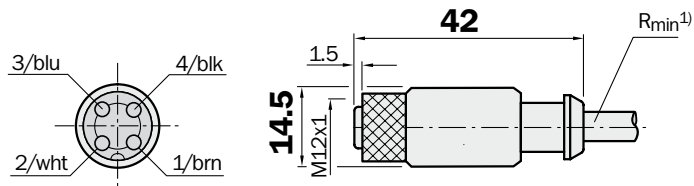
Connecting cables “Food & Beverage”

Round connectors

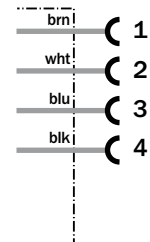
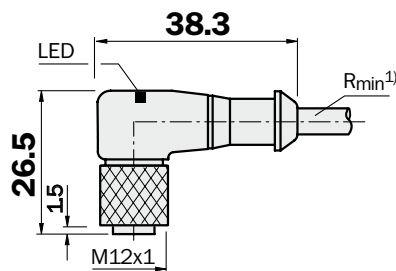
- Especially suitable for use in the “Food & Beverage” branch
- Gold plated pins
- Improved resistance to chemicals, acids and cleaning agent
- Enclosure rating IP 69K (only in fully locked position with its plugs)
- Stainless steel locking nut (V4A)

Dimensional drawings

DOL-12...



DOL-1204-L...



Contacts	Wire colour
1	brown
2	white
3	blue
4	black

1) Minimum bend radius in dynamic use
 $R_{min} = 20 \times \text{cable diameter}$



Technical data

Nominal voltage U_b	250 V AC/300 V DC (M12, 4-pin, connector)
	10 ... 30 V DC (M12, LED indicator)
Contact resistance	$\leq 5 \text{ m}\Omega$
Nominal power	4 A (CSA = 3 A)
Test voltage	2.0 kV eff./60 s. (4-pin)
Insulation group	C acc. VDE 0110
Insulation resistance	$> 10^9 \Omega$
Temperature range	In fixed position $-25^\circ\text{C} \dots +90^\circ\text{C}$
	In flexible position $+5^\circ\text{C} \dots +90^\circ\text{C}$
Bending radius	$> 10 \times$ diameter of cable
Contact	CuZn, $0.3 \mu\text{m}$ gold plated
Locking nut	Stainless steel V4A
Cable	PVC, colour orange
Conductor diameter	$4 \times 0.25 \text{ mm}^2$
Connector	PVC, colour orange
Enclosure rating	IP 69K (only when in fully screwed-in position with corresponding counterparts. Breakaway torque 0.7 Nm)

Order information

Round connectors M12 connecting cable "Food & Beverage"

Type	Order no.	Description	Contacts	Cable length [m]
DOL-1204-G02MN	6028128	Female connector straight	4	2
DOL-1204-G05MN	6028130	Female connector straight	4	5
DOL-1204-G10MN	6028132	Female connector straight	4	10
DOL-1204-G25MN	6028134	Female connector straight	4	25
DOL-1204-W02MN	6028129	Female connector angled	4	2
DOL-1204-W05MN	6028131	Female connector angled	4	5
DOL-1204-W10MN	6028133	Female connector angled	4	10
DOL-1204-W25MN	6028135	Female connector angled	4	25
DOL-1204-L02MN	6028136	Female connector angled LED (PNP)	4	2
DOL-1204-L05MN	6028137	Female connector angled LED (PNP)	4	5
DOL-1204-L10MN	6028138	Female connector angled LED (PNP)	4	10
DOL-1204-L25MN	6028139	Female connector angled LED (PNP)	4	25

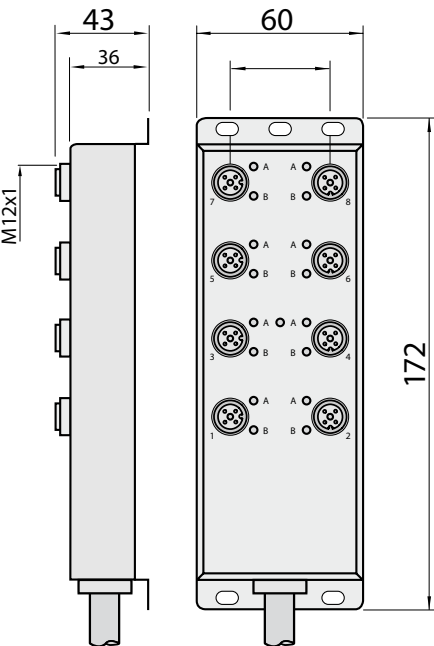
**“Food & Beverage”
IP 69K, V4A**

Sensor splitter-box

- Enclosure rating IP 69K (only in fully locked position with its plugs or dust covers)
- Housing & thread material: stainless steel V4A
- Especially suitable for use in the “Food & Beverage” branch
- Improved resistance to chemicals, acids and cleaning agent

Dimensional drawing

SNL-08...



M12-Contacts	Wire colour	Signal/outlet
1	brown	+
3	blue	-
2	grey/pink	1
	red/blue	2
	white/green	3
	brown/green	4
	white/yellow	5
	yellow/brown	6
	white/grey	7
	grey/brown	8
4	white	1
	green	2
	yellow	3
	grey	4
	pink	5
	red	6
	black	7
	violett	8
5	green/yellow	PE



Technical data

Temperature range	0 °C ... +60 °C
Materials	
Housing	V4A stainless steel
Moulded body	PVC
Contact	CuZn, pre-nickel and 0.8 µm gold plated
Threaded sleeve	V4A stainless steel
O-Ring	EPDM
Mechanical data	
Enclosure rating	IP 69K (only in fully locked position with its plugs, breakaway torque 0.5 Nm)
Electrical data	
Contact resistance	≤ 5 mΩ
Nominal power	4 A via outlet/ 11 A max. total at 30 °C (refer to correction factors EN 60204-1)
Nominal voltage U _b	10 ... 30 V DC
Reference voltage	32 V ~ eff.
Insulation resistance	> 10 ⁹ Ω
Pollution grade	2 acc. VDE 0110
Cable	PVC, colour black, 3 x 1.0 mm ² /16 x 0.5 mm ² (appropriate for drag cable use)
Accessories	4 dust covers for unused sockets

Order information**Sensor splitter-box "Food & Beverage", IP 69K, V4A (1.4404/316 L), M12 x 1 mm (5-pin), 8 female connector, connection types cable**

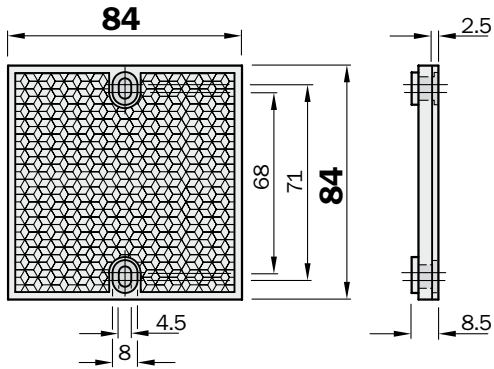
		Connecting cable		
Type	Order no.	Length [m]	Lead [mm ²]	Cable
SNL-08D12-KA05	6027586	5	3 x 1.0/16 x 0.5	PVC black
SNL-08D12-KA10	6027587	10	3 x 1.0/16 x 0.5	PVC black
SNL-08D12-KA15	6027588	15	3 x 1.0/16 x 0.5	PVC black

Dimensional drawings and order information

Reflectors for VL18V plastic design, angular for temperatures up to 65 °C

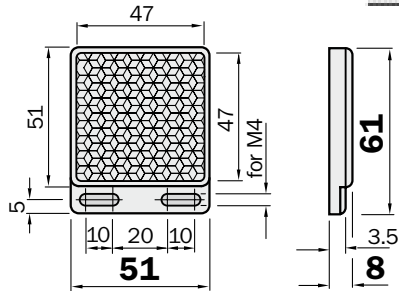
Reflector 80 x 80 mm

Type	Order no.
PL80A	1003865



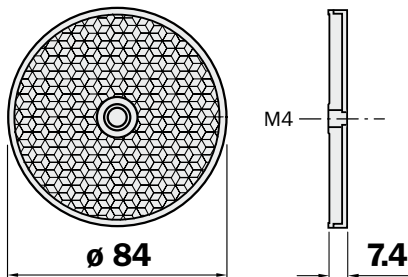
Reflector 47 x 47 mm

Type	Order no.	Applications
P250	5304812	Standard
P250H	5315124	Heat-resistant to +110 °C
P250CHEM	5321097	Increased chemical durability, -20 °C ... +80 °C



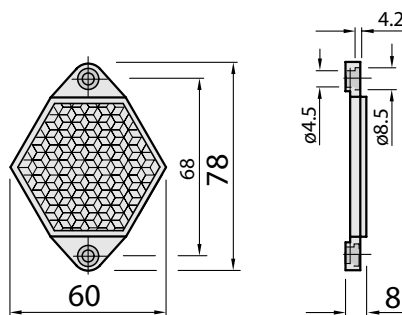
Reflector, Ø 83 mm, centre hole mounting

Type	Order no.
C110A	5304549



Reflector, 6-sided, width across flats 48 mm

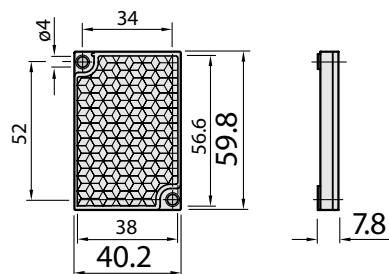
Type	Order no.
PL50A	1000132



Also available in heatable model:
Continuous heating: PL50HK,
Order no. 1001545
Regulated heating: PL50HS,
Order no. 1009871

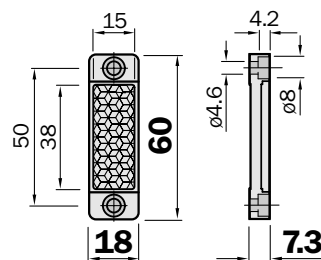
Reflector 38 x 56 mm

Type	Order no.
PL40A	1012720



Reflector 20 x 40 mm

Type	Order no.	Applications
PL20A	1012719	Standard
PL20CHEM	5321089	Increased chemical durability, -20 °C ... +80 °C



Dimensional drawings and order information

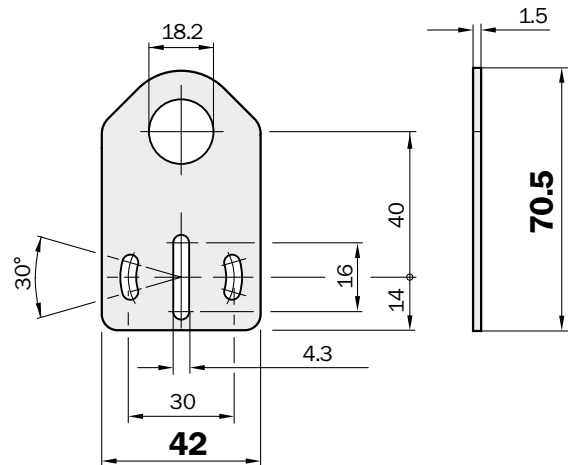
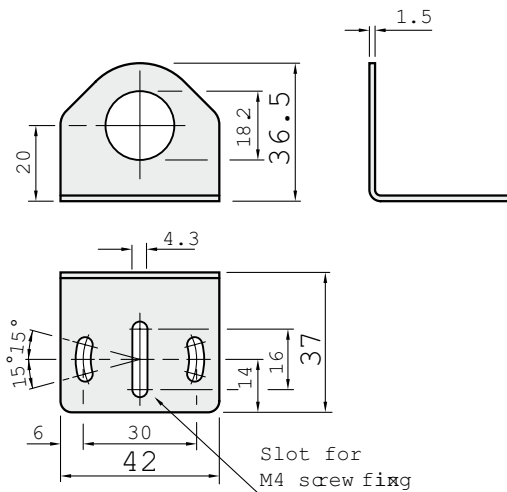
Mounting systems

Mounting bracket, material stainless steel 1.4404

Type	Order no.
BEF-WN-M18N	5320947

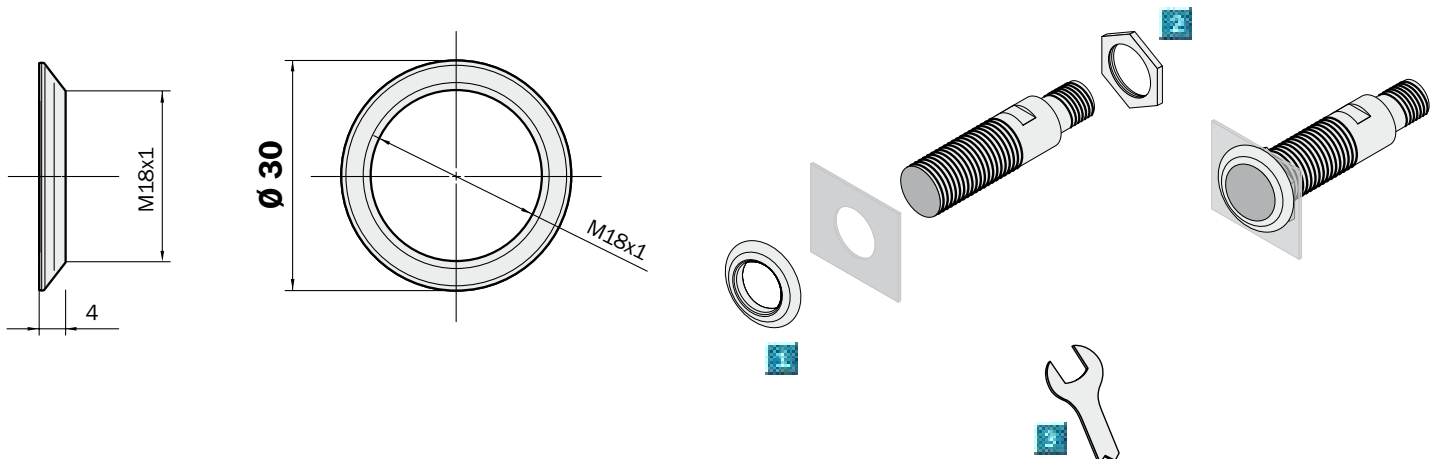
Mounting bracket, material stainless steel 1.4404

Type	Order no.
BEF-WG-M18N	5320948



Mounting ring for V18V, material stainless steel 1.4404

Type	Order no.
BEF-WN-MH15-2V	4053358



- 1 Mounting ring BEF-WN-MH15-2V (4053358) for flush mounting
- 2 2 x M18x1/V4A (4053361) nuts provided with the V18V scope of supply
- 3 Max. breakaway torque 15 Nm

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