



# MultiPulse, MultiV, MultiLine

TREASURE TROVE

MultiTask photoelectric sensors

**SICK**  
Sensor Intelligence.

# SOUGHT AND FOUND

Specific challenges call for specific solutions, and the search for such solutions is often an arduous one. Fortunately, SICK has already solved the problem for you. Like a treasure-hunter, you might say. This is how real treasures come to light.



## 2 MultiV

### Efficiency sought and found

Thanks to its tilted, V-shaped light beam, the MultiV ensures that more reflected light is directed into the receiver than with standard optics. This means much greater efficiency in object detection.

Congratulations: difficulties in detecting reflective transparent, flat or jet-black object surfaces are now a thing of the past.



### All the most important things together in one package

#### Based on the miniature photoelectric sensor W4-3

With its best-in-class functions, the miniature photoelectric sensor W4-3 forms the ideal basis for the MultiTask photoelectric sensors. High performance PinPoint technology, optimal ambient light suppression and background suppression, and reliable object detection – all packed into one compact housing.



STARTING POINT

## 1 MultiPulse

### Switch to autopilot

The MultiPulse features a unique self-monitoring function, the Watchdog function, which uses an oscillating, pulsed emitted light.

Stage victory: in every kind of application for which a verified and confirmed sensor signal is required and reliable functioning is essential.





3

### MultiLine

#### Twice the reason to celebrate

Two photoelectric proximity sensors in one housing mean two parallel light beams and thus twice the reliability.

Congratulations: you have found the solution for detecting objects with a variety of holes, punch-outs and contours.

DESTINATION



### All good things come in threes

So three treasures see the light of day, showing that solutions are often closer than one might think. Based on the successful miniature photoelectric sensor W4-3 with its extraordinary range of features, these MultiTask photoelectric sensors emerge as true gems of automation technology. Specially developed for specific applications, their outstanding performance sets them apart.

And through this solution-oriented approach, SICK proves once again that:



**We simply detect any object.**

## COMMON BASIS

Its extraordinary range of features make the W4-3 product family the best in its class.



**Optimal suppression of critical backgrounds**  
based on second sender LED

**Highly visible light spot**  
with PinPoint LED

**High ambient light suppression**  
due to ASIC technology and specially coated lenses

**Reliable detection of jet-black objects with less than 3% remission**  
Heat conducting pad enables a large amount of power to be supplied to the sender LED

**Precise settings**  
thanks to 5-gear potentiometer

**IO-Link**  
with ASIC technology

## OPTICS BRING DIFFERENCES TO LIGHT



### MultiPulse

- Highly concentrated light spot
- 2 Hz / 10 Hz technology
- Watchdog function
- Sensing range 30 mm ... 150 mm
- Light spot size  $\varnothing$  7 mm



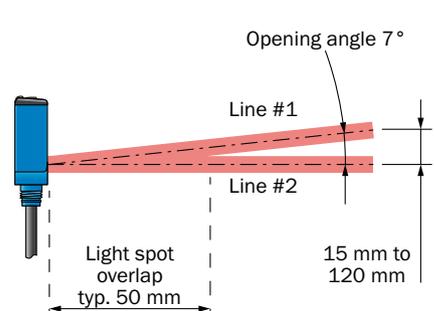
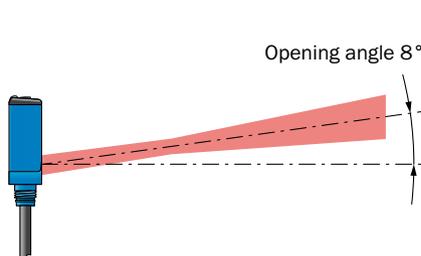
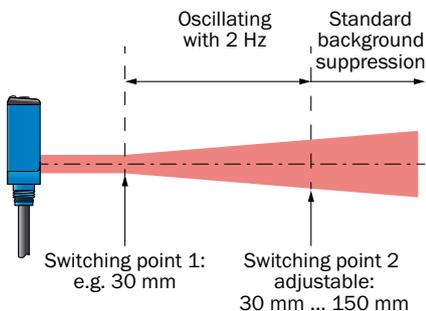
### MultiV

- Laser-like, line-shaped light spot
- V-optics
- Sensing range 5 mm ... 50 mm
- Light spot size 3 mm x 20 mm



### MultiLine

- Two line-shaped light spots
- Sensing range 15 mm ... 120 mm
- Light spot size (depending on type)  
3 mm x 25 mm (40 mm) or  
5 mm x 22 mm (40 mm)



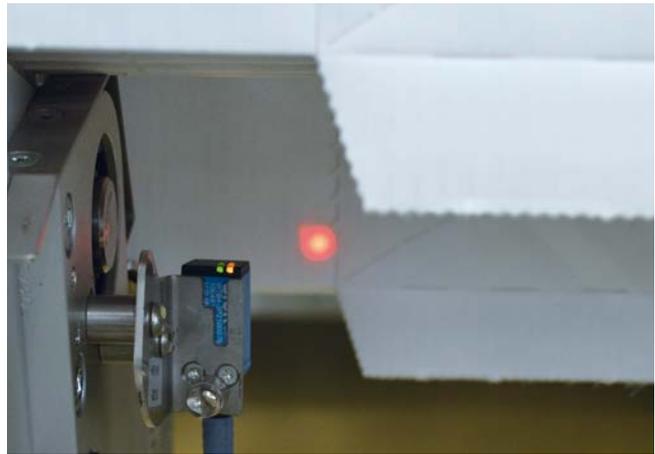
## TYPICAL APPLICATIONS

Special optics variants offer targeted solutions.

### MultiPulse

#### Highly reliable detection of all types of objects

With its integrated Watchdog function, MultiPulse ensures, when monitoring a machine opening, that the opening is definitely covered by an object (e.g. unfolded cardboard packaging, plastic tub, sheet metal, etc.) The oscillation is generated using 2 Hz / 10 Hz technology. A feedback loop only occurs when an object is present in the detection range.



### MultiV

#### Detection of films, transparent and irregular objects

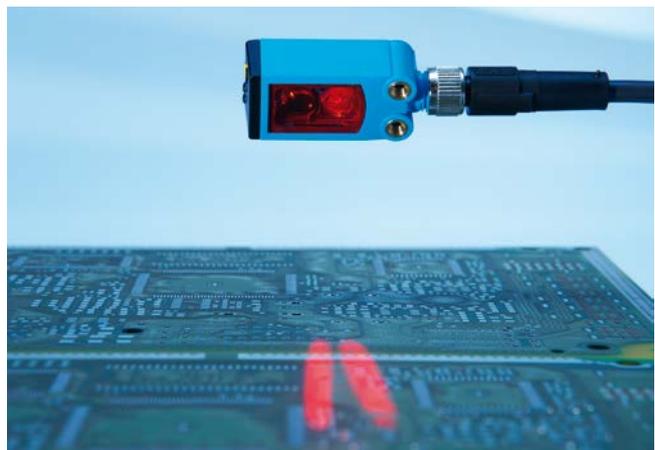
Using its V-optics, MultiV is able to detect objects such as films, jars, glass edges and electronic cards. It reliably detects even highly light-absorbent and poorly remitting surfaces such as solar cells. The V-optics reflect the light diffusely from the object in all directions (including the sender LED). In this way, a lot more reflected energy reaches the receiver.



### MultiLine

#### Detection of shiny objects and objects with notches

MultiLine, with its two parallel light beams, is ideal for detecting objects with holes and notches (e.g. electronic cards). And its double detection system reliably detects even very flat and shiny objects on conveyor belts (e.g. blister packaging, shiny bags etc.) This is because when the signal from one beam is interrupted due to the passage of an object, the output remains set. Only when both beams no longer recognize an object does MultiLine switch off.



# SWITCH TO AUTOPILOT












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## Product description

In addition to the presence signal itself, the MultiPulse sensor also delivers freedom from errors as well as the status of the application. As a result, the control is informed that the sensor has definitely detected the object and that there are no defects such as wire breakage or a sensor malfunction. A second switching

point means that sensor manipulation is virtually impossible. This is achieved thanks to a simple resonant circuit that is established by the object, optics, and sensor electronics. The control monitors the resonant circuit, which oscillates at 2 Hz or 10 Hz. The sensor only has one connecting wire.

## At a glance

- Object detection and sensor monitoring
- Verification that the object is present and the sensor has not experienced a malfunction
- The space-saving miniature housing allows the sensor to be integrated in the tightest machine environments
- Precise background suppression ensures that all types of objects are reliably detected regardless of their surface and properties
- Operating range from 3 to 150 mm
- A range of variants with and without settings, line-shaped light spot, and window function (30 mm ... 150 mm) are available

## Your benefits

- Increase in productivity through sensor monitoring. The machine controller monitors the status of the sensor including wire breakage and short-circuits.
- Reduction in costs: object detection and sensor monitoring takes place via a single output
- High operational safety and reliability thanks to SIRIC® chip technology from SICK
- Quick and easy commissioning due to bright and highly visible PinPoint light spots

→ [www.mysick.com/en/Multipulse](http://www.mysick.com/en/Multipulse)

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

<b>Sensor principle</b>	Photoelectric proximity sensor
<b>Detection principle</b>	Background suppression
<b>Dimensions (W x H x D)</b>	16 mm x 39.5 mm x 12 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	4 mm ... 165 mm <sup>1)</sup> (depending on type)
<b>Sensing range</b>	15 mm ... 150 mm <sup>1)</sup> (depending on type)
<b>Type of light</b>	Visible red light
<b>Light source <sup>2)</sup></b>	PinPoint LED
<b>Light spot size (distance)</b>	5 mm x 28 mm (50 mm) Ø 7 mm (50 mm) (depending on type)
<b>Wave length</b>	650 nm
<b>Adjustment</b>	Potentiometer, 5 turns Fix (depending on type)
<b>Special feature</b>	Line-shaped light spot

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033)

<sup>2)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C.

## Mechanics/electronics

<b>Supply voltage <sup>1)</sup></b>	10 V DC ... 30 V DC
<b>Ripple <sup>2)</sup></b>	< 5 V <sub>pp</sub>
<b>Power consumption <sup>3)</sup></b>	≤ 20 mA
<b>Output type</b>	PNP
<b>Switching mode</b>	Light switching (pulsed)
<b>Output current I<sub>max.</sub></b>	≤ 100 mA
<b>Response time</b>	< 0.5 s <sup>4)</sup> < 0.1 s <sup>4)</sup> (depending on type)
<b>Switching frequency</b>	2 Hz <sup>5)</sup> 10 Hz (depending on type)
<b>Connection type</b>	Cable with connector, 300 mm <sup>6)</sup> Male connector (depending on type)
<b>Circuit protection</b>	A <sup>7)</sup> C <sup>8)</sup> D <sup>9)</sup>
<b>Protection class</b>	III
<b>Weight</b>	30 g
<b>Housing material</b>	ABS
<b>Optics material</b>	PMMA
<b>Enclosure rating</b>	IP 67, IP 66

<b>Ambient operating temperature</b>	-40 °C ... +60 °C
<b>Ambient storage temperature</b>	-40 °C ... +75 °C

<sup>1)</sup> Limit values.

<sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> Do not bend below 0 °C.

<sup>7)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

## Ordering information

Other models → [www.mysick.com/en/Multipulse](http://www.mysick.com/en/Multipulse)

### WTB4-3 MultiPulse

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression
- **Light spot size (distance):** Ø 7 mm (50 mm)
- **Output type:** PNP
- **Switching mode:** Light switching
- **Type of light:** Visible red light

Response time	Sensing range max. <sup>1)</sup>	Switching frequency	Adjustment	Connection	Model name	Part no.
< 0,5 s	4 mm ... 150 mm	2 Hz	Potentiometer, 5 turns	Cable with connector M8, 3-pin, 300 mm, PVC	WTB4-3P3061S20	1029881
	28 mm ... 165 mm	2 Hz	Fix	Connector M8, 3-pin	WTB4-3P2100S79	1064914
< 0,1 s	4 mm ... 165 mm	10 Hz	Fix	Connector M8, 3-pin	WTB4-3P2100S81	1067527

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033)

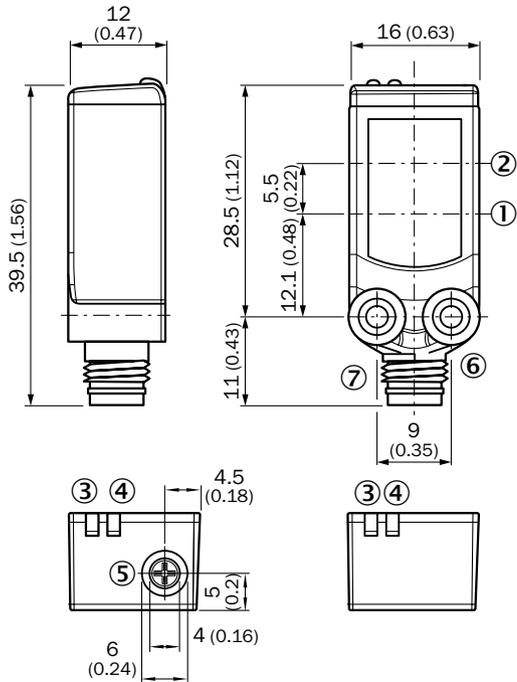
### WTB4-3 MultiPulse, line-shaped light spot

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression
- **Light spot size (distance):** 5 mm x 28 mm (50 mm)
- **Output type:** PNP
- **Switching mode:** Light switching
- **Type of light:** Visible red light

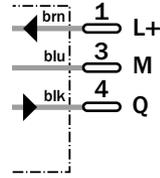
Response time	Sensing range max. <sup>1)</sup>	Switching frequency	Adjustment	Connection	Model name	Part no.
< 0,5 s	4 mm ... 150 mm	2 Hz	Potentiometer, 5 turns	Cable with connector M8, 3-pin, 300 mm, PVC	WTB4-3P3171S65	1054788

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033)

**Dimensional drawings** (Dimensions in mm (inch))



**Connection diagram**

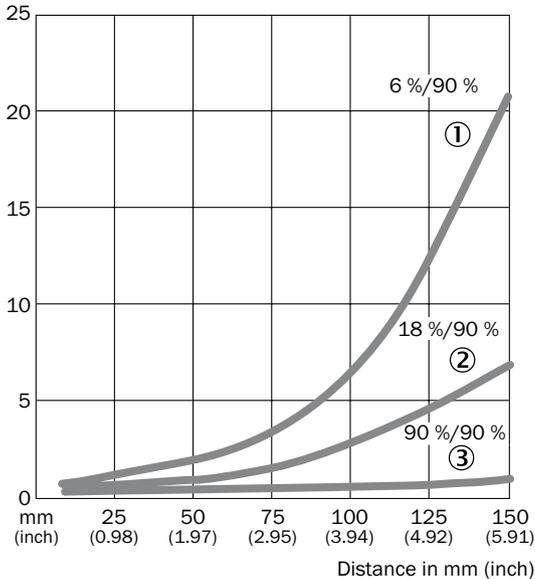


- ① Optical axis sender
- ② Optical axis receiver
- ③ Status indicator LED, yellow: Status of received light beam
- ④ Status indicator LED green: supply voltage on
- ⑤ Potentiometer
- ⑥ Threaded mounting hole M3
- ⑦ Connection

**Operating reserve**

WTB4-3P3171S65, WTB4-3P3061S20

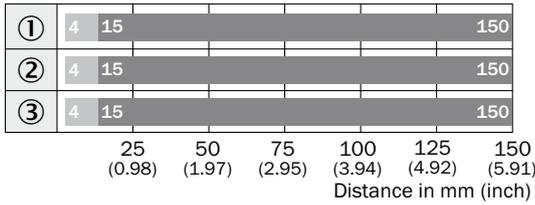
% of sensing distance



- ① Sensing range on black, 6 % remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90 % remission

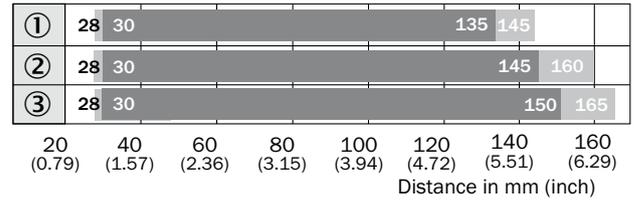
### Sensing range

WTB4-3P3171S65, WTB4-3P3061S20



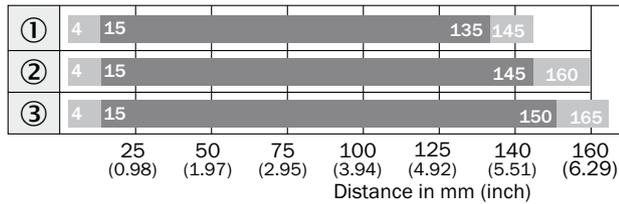
- Sensing range max.   
  Sensing range
- ① Sensing range on black, 6 % remission
  - ② Sensing range on gray, 18 % remission
  - ③ Sensing range on white, 90 % remission

WTB4-3P2100S79



- Sensing range max.   
  Sensing range
- ① Sensing range on black, 6 % remission
  - ② Sensing range on gray, 18 % remission
  - ③ Sensing range on white, 90 % remission

WTB4-3P2100S81



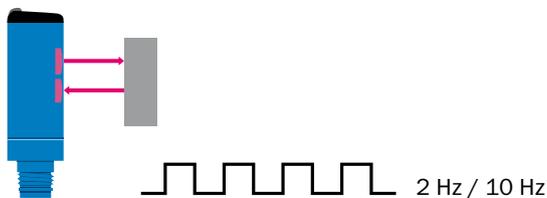
- Sensing range max.   
  Sensing range
- ① Sensing range on black, 6 % remission
  - ② Sensing range on gray, 18 % remission
  - ③ Sensing range on white, 90 % remission

### Functional principle

No object



Object present





## EFFICIENCY SOUGHT AND FOUND



### Product description

Precise object detection thanks to technology fusion: SICK background suppression plus PinPoint LED technology with clearly defined line-shaped light spot and V-optics. No object will be able to escape precise and reliable detection any longer. No matter what tricks the

object may play – whether it is highly transparent, reflective, or dark black – the MultiV can detect anything. What's more, the MultiV can be integrated in a space-saving manner as a miniature sensor without reflector or for use in a through-beam system.

### At a glance

- Reliable detection of flat, transparent, and reflective objects such as displays, glasses, and a whole host of metal parts
- Gaps and holes in the objects do not cause the sensor to shut down
- Detection of flat objects on conveyor belts
- The space-saving miniature housing allows the sensor to be integrated in the tightest machine environments
- Precise, reliable background suppression ensures that all types of objects are reliably detected regardless of their surface and properties
- Precise switching points with repeat accuracy < 1 mm
- Optimal operating range from 15 mm to 30 mm

### Your benefits

- Simple and cost-effective application, as complex detection tasks can be reliably completed using a BGS sensor
- User-friendly and high-precision adjustment of the sensing range thanks to a 5-turn potentiometer
- Rapid and precise alignment thanks to a shiny bright and line-shaped light spot with PinPoint technology



### Additional information

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→ [www.mysick.com/en/MultiV](http://www.mysick.com/en/MultiV)

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

<b>Sensor principle</b>	Photoelectric proximity sensor
<b>Detection principle</b>	Background suppression
<b>Dimensions (W x H x D)</b>	16 mm x 39.5 mm x 12 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max. <sup>1)</sup></b>	3 mm ... 50 mm
<b>Sensing range <sup>1)</sup></b>	5 mm ... 50 mm
<b>Type of light</b>	Visible red light
<b>Light source <sup>2)</sup></b>	PinPoint LED
<b>Light spot size (distance)</b>	3 mm x 20 mm (40 mm)
<b>Wave length</b>	650 nm
<b>Adjustment</b>	Potentiometer, 5 turns
<b>Special feature</b>	V-optics, line-shaped light spot

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033)

<sup>2)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C.

## Mechanics/electronics

<b>Supply voltage <sup>1)</sup></b>	10 V DC ... 30 V DC
<b>Ripple <sup>2)</sup></b>	< 5 V <sub>pp</sub>
<b>Power consumption <sup>3)</sup></b>	≤ 20 mA
<b>Output type</b>	PNP / NPN (depending on type)
<b>Output function</b>	Complementary
<b>Switching mode</b>	Light switching
<b>Output current I<sub>max.</sub></b>	≤ 100 mA
<b>Response time <sup>4)</sup></b>	< 0.5 ms
<b>Switching frequency <sup>5)</sup></b>	1,000 Hz
<b>Connection type</b>	Cable with connector, 100 mm Male connector Cable, 2 m <sup>6)</sup> (depending on type)
<b>Circuit protection</b>	A <sup>7)</sup> C <sup>8)</sup> D <sup>9)</sup>
<b>Protection class</b>	III
<b>Weight</b>	30 g
<b>Housing material</b>	ABS
<b>Optics material</b>	PMMA
<b>Enclosure rating</b>	IP 67, IP 66
<b>Ambient operating temperature</b>	-40 °C ... +60 °C
<b>Ambient storage temperature</b>	-40 °C ... +75 °C

<sup>1)</sup> Limit values.

<sup>2)</sup> May not exceed or fall short of V<sub>S</sub> tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> Do not bend below 0 °C.

<sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

Ordering information

Other models → [www.mysick.com/en/MultiV](http://www.mysick.com/en/MultiV)

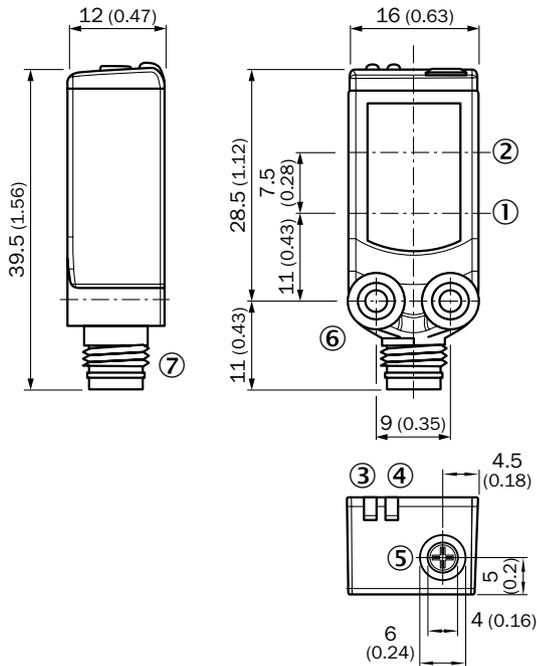
WTV4-3 MultiV, V-optics, line-shaped light spot

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression
- **Light spot size (distance):** 3 mm x 20 mm (40 mm)
- **Switching mode:** Light switching
- **Adjustment:** potentiometer, 5 turns

Type of light	Sensing range max. <sup>1)</sup>	Output type	Connection	Connection diagram	Model name	Part no.
Visible red light	3 mm ... 50 mm	PNP	Cable with connector M8, 3-pin, 100 mm	Cd-045	WTV4-3P3171	1063336
			Connector M8, 4-pin	Cd-083	WTV4-3P2271	1046644
		NPN	Cable, 4-wire, 2 m, PVC	Cd-083	WTV4-3N1171	1046898

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033)

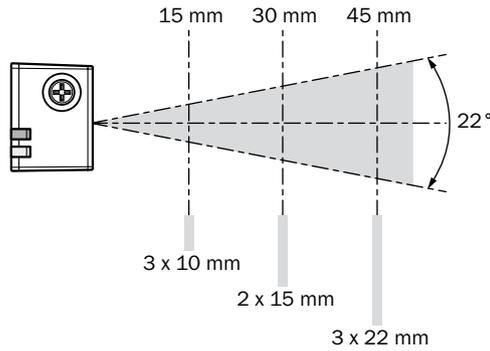
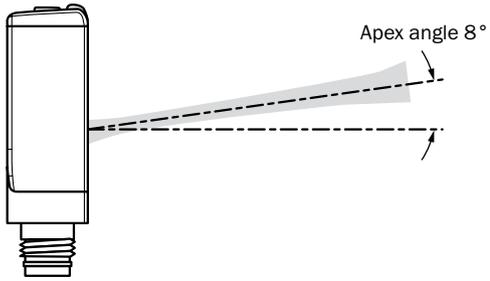
Dimensional drawings (Dimensions in mm (inch))



- ① Optical axis sender
- ② Optical axis receiver
- ③ Status indicator LED, yellow: Status of received light beam
- ④ Status indicator LED green: supply voltage on
- ⑤ Potentiometer
- ⑥ Threaded mounting hole M3
- ⑦ Connection

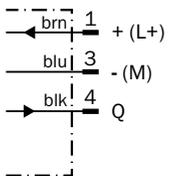
### Light spot diameter

WTV4-3, V-optics, line-shaped light spot

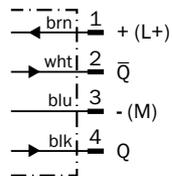


### Connection diagram

Cd-045

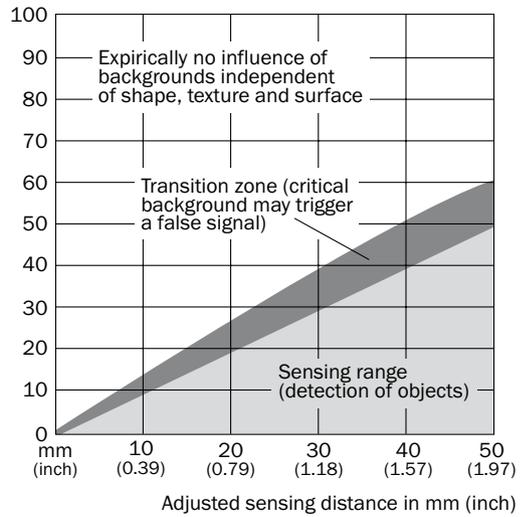


Cd-083



### Field of application

WTV4-3, V-optics, line-shaped light spot



## TWO IS BETTER THAN ONE



### Product description

The MultiLine sensor: two sensors in one housing with an intelligent logical linking. The MultiLine sensor proves itself in challenging situations as a

rugged detector of flat and structured objects with an availability not achieved until now.

### At a glance

- Two logical and intelligently linked sensors with background suppression in one miniature housing offer the highest ruggedness for object detection
- Consistent, reliable detection of structures and perforated objects such as e-cards
- Consistent, reliable detection of reflective and irregular objects such as blister packs and soup sachets on conveyor belts
- Maximum sensing range 120 mm
- Simple adjustment via teach-in button

### Your benefits

- The MultiLine sensor facilitates faster production sequences since the distances between objects can be reduced
- The sensor position no longer needs to be modified for format changes since the sensor is able to detect objects independently of their position. This saves time and money
- The reliable signal of the sensor from the arriving to the departing edge places less demands on the control software since it no longer needs to be debounced or evaluated
- The MultiLine sensor offers high process reliability because all objects are detected independently of their structure, geometry and surface properties
- And placing the sensor into operation is as easy as pressing a button. A fast and reliable commissioning without complicated operating algorithms is thus given



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→ [www.mysick.com/en/MultiLine](http://www.mysick.com/en/MultiLine)

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

<b>Sensor principle</b>	Photoelectric proximity sensor
<b>Detection principle</b>	Multi-background suppression
<b>Dimensions (W x H x D)</b>	16 mm x 39.5 mm x 12 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	5 mm ... 120 mm
<b>Sensing range</b>	40 mm ... 120 mm
<b>Type of light</b>	Visible red light
<b>Light source <sup>1)</sup></b>	PinPoint LED
<b>Light spot size (distance)</b>	3 mm x 25 mm (40 mm) 5 mm x 22 mm (40 mm) (depending on type)
<b>Wave length</b>	650 nm
<b>Adjustment</b>	Single teach-in button
<b>Special feature</b>	Detection of transparent objects, line-shaped light spot

<sup>1)</sup> Average service life of 100,000 h at  $T_A = +25 \text{ }^\circ\text{C}$ .

## Mechanics/electronics

<b>Supply voltage <sup>1)</sup></b>	10 V DC ... 30 V DC
<b>Ripple <sup>2)</sup></b>	< 5 V <sub>pp</sub>
<b>Power consumption <sup>3)</sup></b>	≤ 30 mA
<b>Output type</b>	NPN / PNP (depending on type)
<b>Output function</b>	Complementary
<b>Switching mode</b>	Light/dark switching / Light switching (depending on type)
<b>Output current I<sub>max.</sub></b>	≤ 100 mA
<b>Response time <sup>4)</sup></b>	< 1.2 ms
<b>Switching frequency <sup>5)</sup></b>	400 Hz
<b>Connection type</b>	Cable, 2 m <sup>6)</sup> Male connector <sup>6)</sup> Cable with connector, 100 mm <sup>6)</sup> (depending on type)
<b>Circuit protection</b>	A <sup>7)</sup> C <sup>8)</sup> D <sup>9)</sup>
<b>Protection class</b>	III
<b>Weight</b>	30 g
<b>Housing material</b>	ABS
<b>Optics material</b>	PMMA
<b>Enclosure rating</b>	IP 67, IP 66
<b>Ambient operating temperature</b>	-40 °C ... +60 °C
<b>Ambient storage temperature</b>	-40 °C ... +75 °C

<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A.

<sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> Do not bend below 0 °C.

<sup>7)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

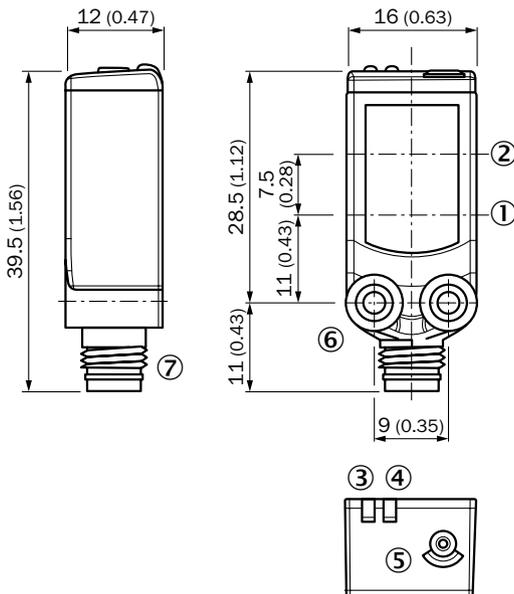
Ordering information

Other models → [www.mysick.com/en/MultiLine\\_Sensor](http://www.mysick.com/en/MultiLine_Sensor)

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** multi-background suppression
- **Adjustment:** Single teach-in button
- **Sensing range max.:** 5 mm ... 120 mm

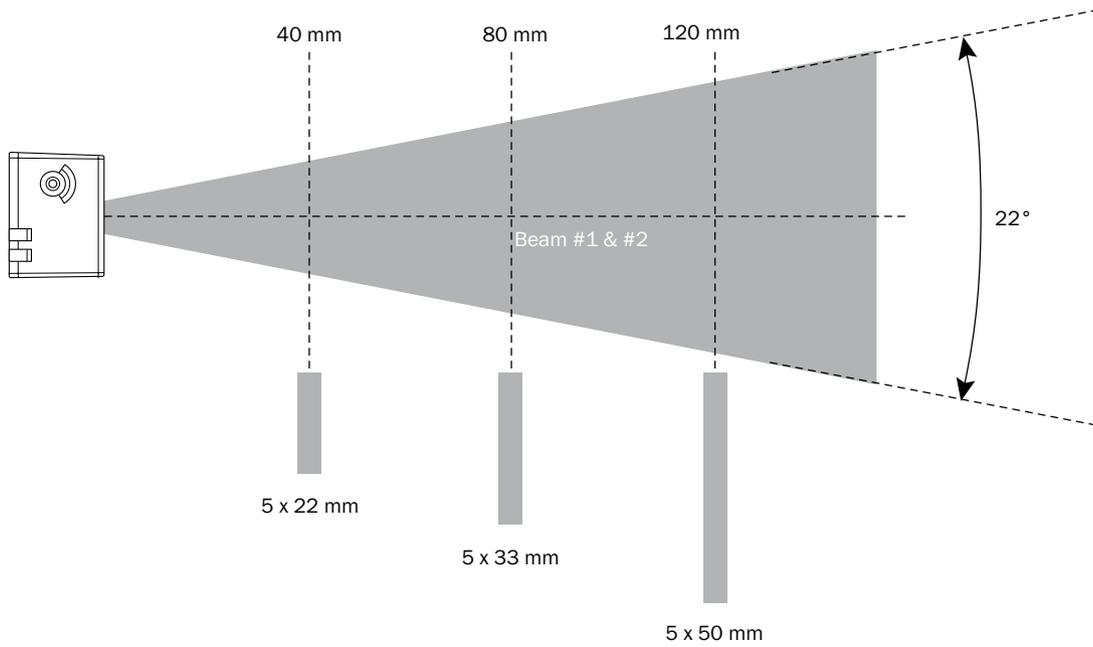
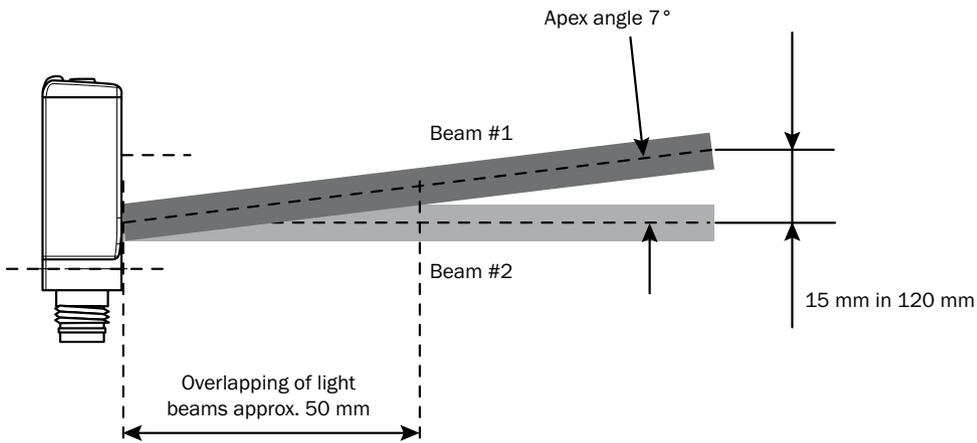
Light spot size (distance)	Output type	Switching mode	Connection	Connection diagram	Model name	Part no.
3 mm x 25 mm (40 mm)	NPN	Light/dark switching	Cable, 4-wire, 2 m	Cd-094	WTB4-3N1192	1059272
5 mm x 22 mm (40 mm)	PNP	Light switching	Connector M8, 3-pin	Cd-043	WTB4-3P2192	1058268
		Light/dark switching	Connector M8, 4-pin	Cd-084	WTB4-3P2292	1062850
		Light switching	Cable with connector M8, 3-pin, 100 mm	Cd-043	WTB4-3P3192	1067833

Dimensional drawings (Dimensions in mm (inch))



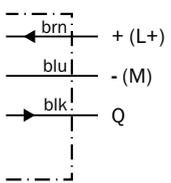
- ① Optical axis sender
- ② Optical axis receiver
- ③ Status indicator LED, yellow: Status of received light beam
- ④ Status indicator LED green: supply voltage on
- ⑤ Teach-in button
- ⑥ Threaded mounting hole M3
- ⑦ Connection

Light spot diameter

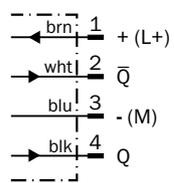


Connection diagram

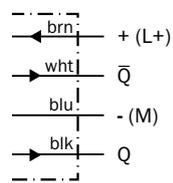
Cd-043



Cd-084



Cd-094



## Mounting brackets and mounting plates

### Mounting brackets

Figure	Material	Description	Model name	Part no.	MultiPulse	MultiV	MultiLine
	Stainless steel 1.4571	Mounting bracket for wall mounting	BEF-W4-A	2051628	-	-	●
		Mounting bracket for floor mounting	BEF-W4-B	2051630	-	-	●

## Plug connectors and cables

Connecting cables with female connector M8, 3-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Enclosure rating	Model name	Part no.	MultiPulse	MultiV	MultiLine
	Female connector, M8, 3-pin, straight	Cable, open conductor heads	2 m, 3-wire	IP 67 IP 69K	DOL-0803-G02M	6010785	-	-	●
			5 m, 3-wire	IP 67 IP 69K	DOL-0803-G05M	6022009	-	-	●
			10 m, 3-wire	IP 67 IP 69K	DOL-0803-G10M	6022011	-	-	●
			15 m, 3-wire	IP 67	DOL-0803-G15M	6036472	-	-	●
	Female connector, M8, 3-pin, angled	Cable, open conductor heads	2 m, 3-wire	IP 67 IP 69K	DOL-0803-W02M	6008489	-	-	●
			5 m, 3-wire	IP 67 IP 69K	DOL-0803-W05M	6022010	-	-	●
			10 m, 3-wire	IP 67 IP 69K	DOL-0803-W10M	6022012	-	-	●
			15 m, 3-wire	IP 67	DOL-0803-W15M	6036473	-	-	●

Connecting cables with female connector M8, 4-pin, PP, hygienic systems

- **Cable material:** PP
- **Connector material:** PP
- **Enclosure rating:** IP 67, IP 69K

Figure	Connection type head A	Connection type head B	Connecting cable	Model name	Part no.	MultiPulse	MultiV	MultiLine
	Female connector, M8, 4-pin, straight	Cable, open conductor heads	2 m, 4-wire	DOL-0804-G02MN	6033670	-	●	-
			5 m, 4-wire	DOL-0804-G05MN	6033671	-	●	-
			10 m, 4-wire	DOL-0804-G10MN	6033672	-	●	-
			25 m, 4-wire	DOL-0804-G25MN	6034514	-	●	-
	Female connector, M8, 4-pin, angled	Cable, open conductor heads	2 m, 4-wire	DOL-0804-W02MN	6033673	-	●	-
			5 m, 4-wire	DOL-0804-W05MN	6033674	-	●	-
			10 m, 4-wire	DOL-0804-W10MN	6033675	-	●	-
			25 m, 4-wire	DOL-0804-W25MN	6034515	-	●	-

Connecting cables with female connector M8, 4-pin, PUR, halogen-free, Oil / grease resistant

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Enclosure rating	Model name	Part no.	MultiPulse	MultiV	MultiLine
	Female connector, M8, 4-pin, straight	Cable, open conductor heads	2 m, 4-wire	IP 65 IP 67 IP 68	DOL-0804-G02MC	6025894	-	●	-
			5 m, 4-wire	IP 67	DOL-0804-G05MAC	6050809	-	●	-
				IP 65 IP 67 IP 68	DOL-0804-G05MC	6025895	-	●	-
			10 m, 4-wire	IP 67	DOL-0804-G10MAC	6050808	-	●	-
				IP 65 IP 67 IP 68	DOL-0804-G10MC	6025896	-	●	-
				IP 65 IP 68	DOL-0804-G20MC	6051148	-	●	-
	Female connector, M8, 4-pin, angled	Cable, open conductor heads	2 m, 4-wire	IP 65 IP 67 IP 68	DOL-0804-W02MC	6025897	-	●	-
			5 m, 4-wire	IP 65 IP 67 IP 68	DOL-0804-W05MC	6025898	-	●	-
			10 m, 4-wire	IP 65 IP 67 IP 68	DOL-0804-W10MC	6025899	-	●	-

Connecting cables with female connector M8, 4-pin, PVC, chemical resistant

- **Cable material:** PVC

Figure	Connection type head A	Connection type head B	Connecting cable	Connector material	Enclosure rating	Model name	Part no.	MultiPulse	MultiV	MultiLine
	Female connector, M8, 4-pin, straight	Cable, open conductor heads	2 m, 4-wire	TPU	IP 67 IP 69K	DOL-0804-G02M	6009870	-	●	●
			3 m, 4-wire	PVC	IP 67	DOL-0804-G03M	6049342	-	●	●
			5 m, 4-wire	TPU	IP 67 IP 69K	DOL-0804-G05M	6009872	-	●	●
			10 m, 4-wire	TPU	IP 67 IP 69K	DOL-0804-G10M	6010754	-	●	●
			1.5 m, 4-wire	PVC	IP 67	DOL-0804-G1M5	6049343	-	●	●
			2.5 m, 4-wire	PVC	IP 67 IP 69K	DOL-0804-G2M5	6049344	-	●	●
	Female connector, M8, 4-pin, angled	Cable, open conductor heads	2 m, 4-wire	PVC	IP 67 IP 69K	DOL-0804-W02M	6009871	-	●	●
			5 m, 4-wire	PVC	IP 67 IP 69K	DOL-0804-W05M	6009873	-	●	●
			10 m, 4-wire	PVC	IP 67 IP 69K	DOL-0804-W10M	6010755	-	●	●

Female connectors (ready to assemble) M8, 3-pin

- **Enclosure rating:** IP 67

Figure	Connection type head A	Connection type head B	Connector material	Model name	Part no.	MultiPulse	MultiV	MultiLine
	Female connector, M8, 3-pin, straight	Screw-type terminals	PBT/PA	DOS-0803-G	7902077	-	-	●
	Female connector, M8, 3-pin, angled	Solder connection	PA/Zinc diecast	DOS-0803-W	7902078	-	-	●

Female connectors (ready to assemble) M8, 4-pin

- **Enclosure rating:** IP 67

Figure	Connection type head A	Connection type head B	Connector material	Model name	Part no.	MultiPulse	MultiV	MultiLine
	Female connector, M8, 4-pin, straight	Screw-type terminals	PBT/PA	DOS-0804-G	6009974	-	●	●
	Female connector, M8, 4-pin, angled	Solder connection	PA/Zinc diecast	DOS-0804-W	6009975	-	●	●

Male connectors (ready to assemble) M8, 3-pin

Figure	Connection type head A	Connection type head B	Connector material	Enclosure rating	Model name	Part no.	MultiPulse	MultiV	MultiLine
	Male connector, M8, 3-pin, straight	Screw-type terminals	PBT/PA	IP 67	STE-0803-G	6037322	-	-	●

Male connectors (ready to assemble) M8, 4-pin

Figure	Connection type head A	Connection type head B	Connector material	Enclosure rating	Model name	Part no.	MultiPulse	MultiV	MultiLine
	Male connector, M8, 4-pin, straight	Screw-type terminals	PBT/PA	IP 67	STE-0804-G	6037323	-	●	●

Universal bar clamp systems

Figure	Material	Description	Model name	Part no.	MultiPulse	MultiV	MultiLine
	Zinc plated steel (sheet), Diecast zinc (clamp)	Plate N05 for universal clamp bracket, M12	BEF-KHS-N05	2051611	-	-	●
	Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)	Plate N05N for universal clamp bracket, M12	BEF-KHS-N05N	2051621	-	-	●

Figure	Material	Description	Model name	Part no.	MultiPulse	MultiV	MultiLine
	Zinc plated steel (sheet), Diecast zinc (clamp)	Plate N08 for universal clamp bracket	BEF-KHS-N08	2051607	-	-	●
	Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)	Plate N08N for universal clamp bracket	BEF-KHS-N08N	2051616	-	-	●
	Steel, zinc coated	Mounting bar, straight, 200 mm, steel	BEF-MS12G-A	4056054	-	-	●
		Mounting bar, straight, 300 mm, steel	BEF-MS12G-B	4056055	-	-	●
	Stainless steel (1.4571)	Mounting bar, straight, 200 mm, stainless steel	BEF-MS12G-NA	4058914	-	-	●
		Mounting bar, straight, 300 mm, stainless steel	BEF-MS12G-NB	4058915	-	-	●
	Steel, zinc coated	Mounting bar, L-shaped, 150 mm x 150 mm, steel	BEF-MS12L-A	4056052	-	-	●
		Mounting bar, L-shaped, 250 x 250 mm, steel	BEF-MS12L-B	4056053	-	-	●
	Stainless steel (1.4571)	Mounting bar, L-shaped, 150 mm x 150 mm, stainless steel	BEF-MS12L-NA	4058912	-	-	●

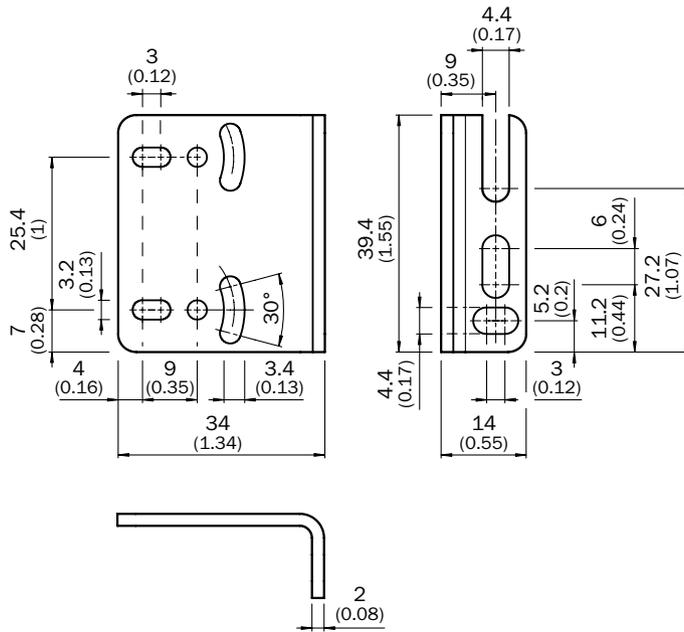
## Terminal and alignment brackets

### Alignment brackets

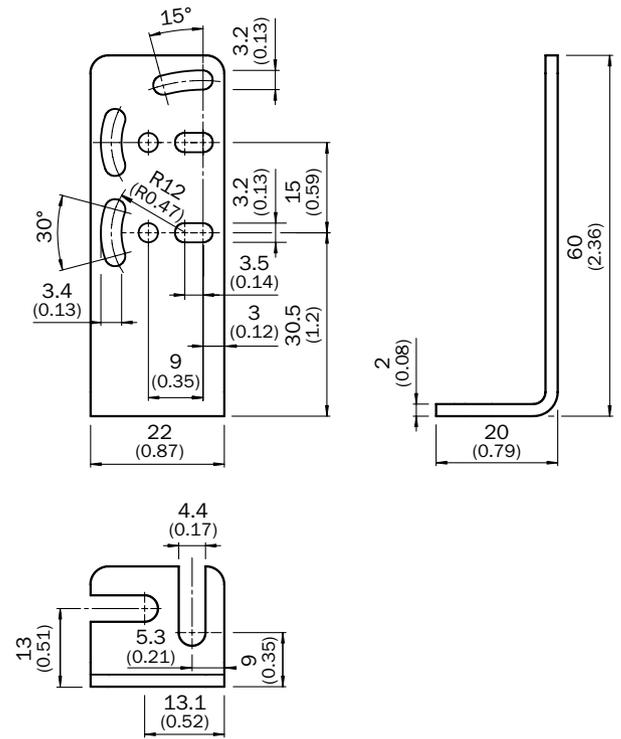
Figure	Material	Description	Model name	Part no.	MultiPulse	MultiV	MultiLine
	Plastic	Ball clamp bracket	BEF-GH-MINI01	2023160	-	-	●

Dimensional drawings Mounting brackets and mounting plates

BEF-W4-A

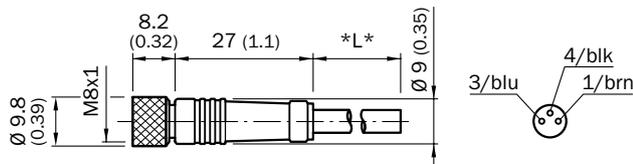


BEF-W4-B

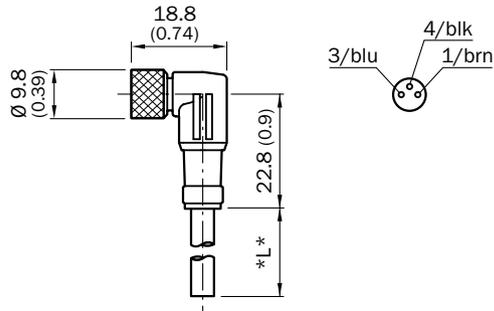


Dimensional drawings Plug connectors and cables

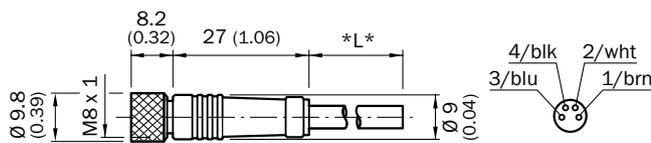
DOL-0803-GxxM



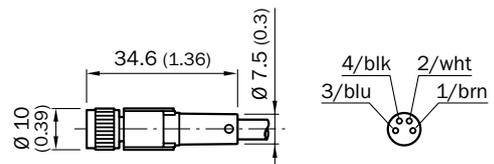
DOL-0803-WxxM



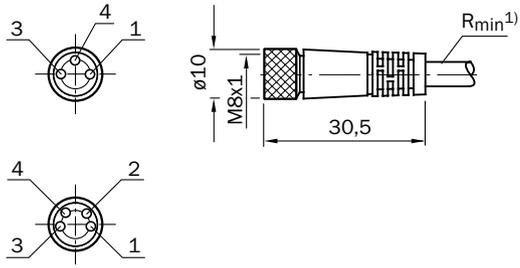
DOL-0804-GxxM, DOL-0804-GxxM5



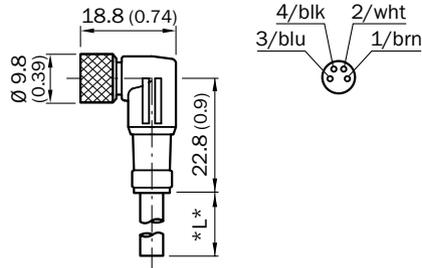
DOL-0804-GxxMC, DOL-0804-GxxMAC



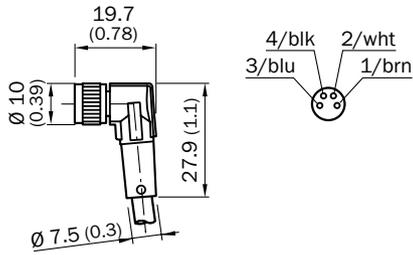
DOL-0804-GxxMN



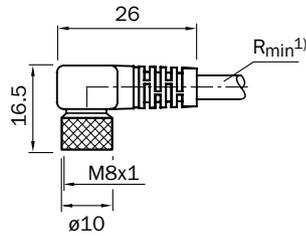
DOL-0804-WxxM



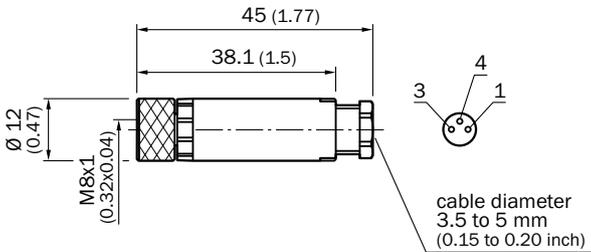
DOL-0804-WxxMC



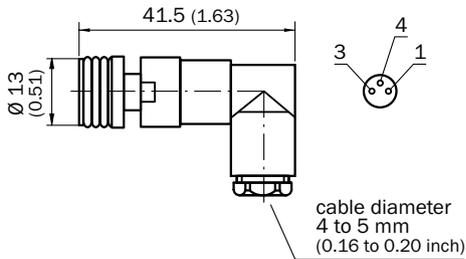
DOL-0804-WxxMN



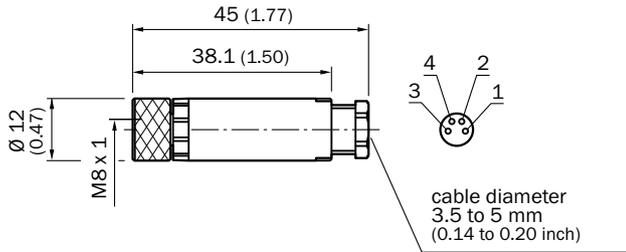
DOS-0803-G



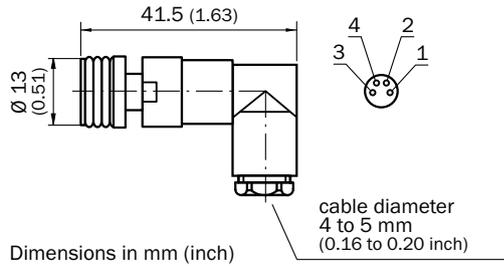
DOS-0803-W



DOS-0804-G

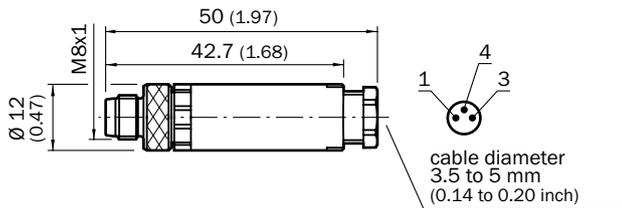


DOS-0804-W

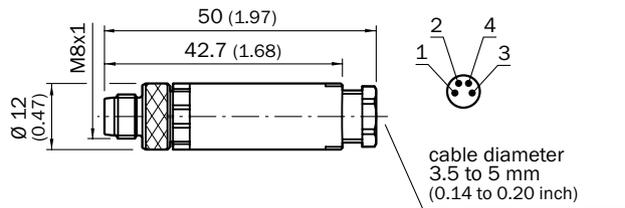


Dimensions in mm (inch)

STE-0803-G

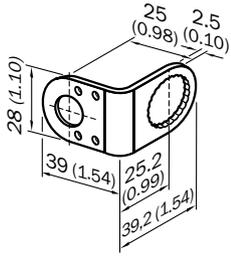


STE-0804-G

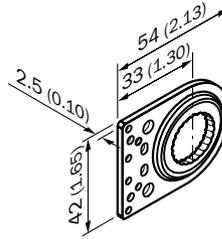


Dimensional drawings Universal bar clamp systems

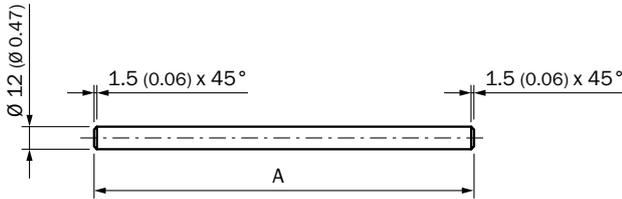
BEF-KHS-N05(N)



BEF-KHS-N08(N)

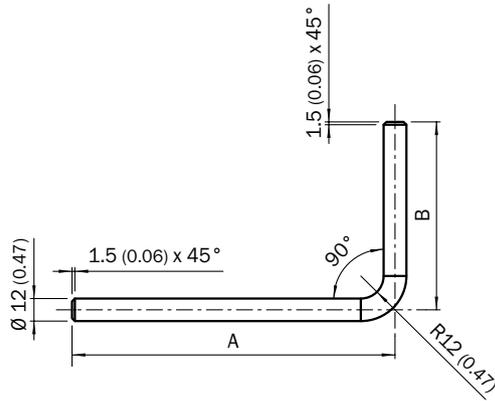


BEF-MS12G-(N)A, BEF-MS12G-(N)B



BEF-MS12G-(N)A: A = 200 mm  
BEF-MS12G-(N)B: A = 300 mm

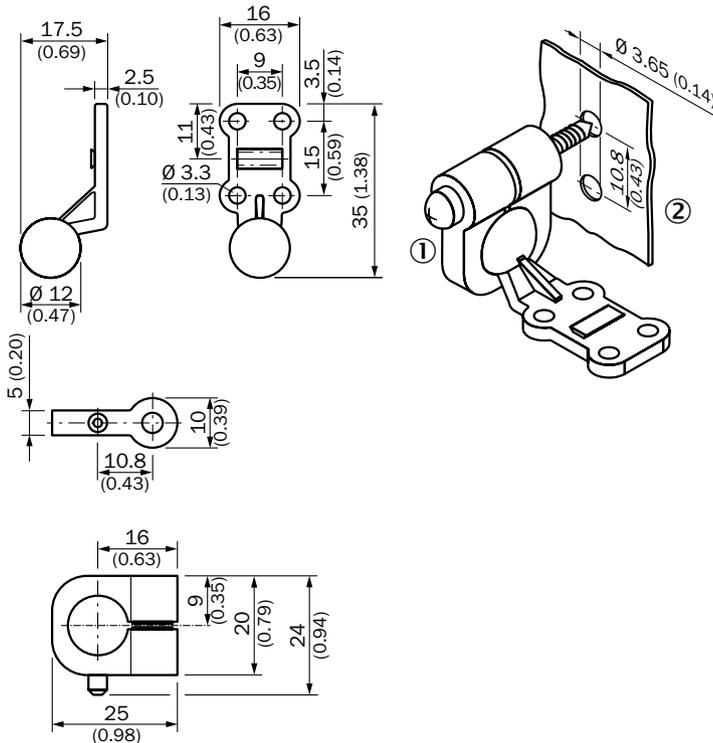
BEF-MS12L-(N)A, BEF-MS12L-B



BEF-MS12L-(N)A: A = 200 mm, B = 150 mm  
BEF-MS12L-B: A = 250 mm, B = 250 mm

Dimensional drawings Terminal and alignment brackets

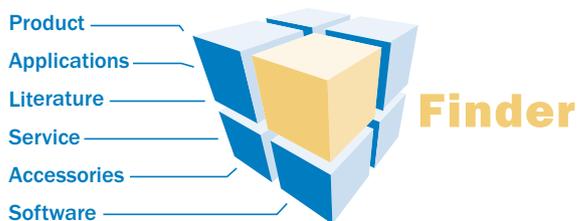
BEF-GH-MINI01



- ① Self-tapping screw Ø 4mm
- ② System or machine part

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