

FT 25-W and FT 25-RGB


White-light and multi-colour contrast sensor



FT 25 – Contrast sensor

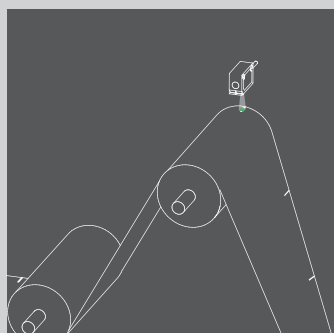
Miniature housing, maximum performance



 made in Germany




Rod mounting MBD F 25ST allows user-friendly and precise sensor alignment (see accessories).



Areas of application:

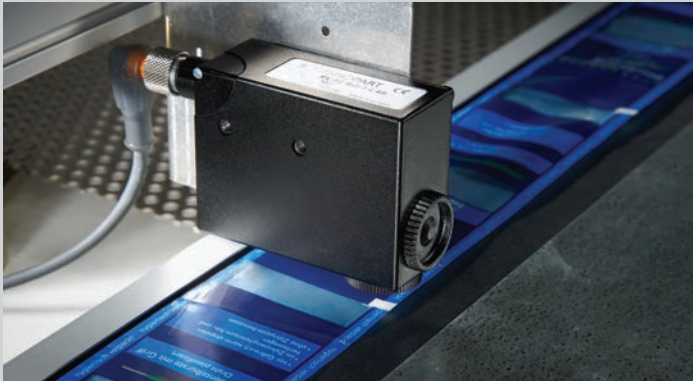
- Printing machines
- Labelling machines
- Horizontal packaging machines
- Vertical packaging machines
- Bottling plants

TYPICAL FT 25 W/-RGB

- Precise detection of any printed marks
- High positioning accuracy thanks to minimum response time
- High switching frequency of 25 kHz with miniature housing
- Small, precise light spot with sharp contour for easy sensor alignment and detection of even the smallest of printed marks
- Feedback via light spot (simple, comprehensible, clearly defined)
- Dynamic, static or external teach-in
- White-light LED or RGB diode  options available
- High depth of field

Screw on – connect - go.

Simple change from standard housing to miniature housing.



Out with the old, in with the new: The contrast sensors from the F 25 series are assembly and connection compatible with the conventional standard housing (image on the left). The fastening bores are aligned in the same distance from each other. The integrated cable with a M12-connector fits to the corresponding mating connector.

The new FT 25-W/-RGB series is significantly smaller than the conventional standard housing and simultaneously offers the best performance data. With the help of the MZ F 25 bracket, a simple change from the large standard housing to the compact miniature housing is possible – without additional assembly. The most efficient solution for your application.

Smaller

The FT 25-RGB is a fast contrast sensor with multi-colour-analysis in a compact miniature housing (34 × 20 × 12 mm³). Depending on the object colour, the sensor selects the ideal transmission colour (red, green or blue) and thereby reliably recognizes even the smallest of differences in contrast.

Faster

With a minimal response of 20 µs, a minimal jitter of 10 µs and a switching frequency of up to 25 kHz,

it allows for high positioning accuracy and secure detection even in very fast processes.

More precise

Due to the bright light spot with an oblong, sharp contour (1 × 4 mm²) and a high depth of field of +/- 3 mm, even very small printed marks and vibrating and shimming objects (e.g. paper webs or foils) are reliably recognized.

More communicative

After the teach-in, the „speaking light spot“ provides the user feedback about the quality of the calibrated contrast.

- Light spot blinks green: Good contrast
- Light spot blinks blue: Weak contrast
- Light spot blinks red: Inadequate contrast



Compatible light exit and focal positions:

The sensor mounted on the MZ F 25 bracket, compared to the conventional standard housing, has an identical focal position at 9 mm and 18 mm. Dependent upon on which of the four possible positions the sensor is mounted, this applies both for horizontal and vertical light emission.

FT 25-WV

White-light contrast sensor



PRODUCT HIGHLIGHTS

- Precise detection of the slightest contrast differences
- Very robust operation despite fluttering and glossy objects
- Simple alignment through very precise and easily visible light spot
- Housings that are many times smaller than standard housings – and offer better performance
- Very high positioning accuracy with 10 μs scanning

Optical data		Functions	
Scanning distance	12 mm	Indicator LED, green	Operating voltage indicator
Depth of field	± 2.5 mm	Indicator LED, yellow	Switching output indicator
Type of light	White LED, 400 ... 780 nm	Sensitivity adjustment	Via teach-in button and control line
		Teach-in modes	Mode 1: with running process
		Adjustment possibilities	Mode 2: with standing process
			LO / DO via Teach-in button and control line
			Button lock via control input
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC ¹	Dimensions	34 × 20 × 12 mm ³
No-load current, I ₀	≤ 25 mA	Enclosure rating	IP 69K & IP 67 ³
Output current, I _e	≤ 100 mA	Material, housing	ABS
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q)	Material, front screen	PMMA
Protection Class	2	Type of connection	(See Selection Table)
Standby time	< 300 ms	Ambient temperature: operation	-20 ... +55 °C ⁴
Switching output, Q	Push-pull	Ambient temperature: storage	-20 ... +80 °C
Output function	LO / DO	Weight (plug device)	10 g
Switching frequency, f (ti/tp 1:1) ²	(See Selection Table)	Weight (integrated cable)	20 g
Response time	(See Selection Table)	Vibration and impact resistance	EN 60947-5-2
Jitter (electrical)	(See Selection Table)		

¹ Max. 10 % ripple, within U_B ~ 50 Hz / 100 Hz

² $f = 1 / (T \times N_{yq} \times 2)$

³ With connected IP 67 / IP 69K plug

⁴ UL: -20 ... +50 °C

Switching frequency, f (ti/tp 1:1) ²	Response time	Jitter (electrical)	Type of connection	Part number	Article number
≤ 25000 Hz	≤ 20 μs	10 μs	Metal plug, M8x1, 4-pin	FT 25-W1-GS-M4M	607-21013
≤ 25000 Hz	≤ 20 μs	10 μs	Integrated cable: 150 mm with plug M12x1, 4-pin	FT 25-W1-GS-KL4	607-21012
≤ 10000 Hz	≤ 50 μs	25 μs	Plug, M8x1, 4-pin	FT 25-W2-GS-M4	607-21014
≤ 10000 Hz	≤ 50 μs	25 μs	Integrated cable: 150 mm with plug M12x1, 4-pin	FT 25-W2-GS-KL4	607-21015

Plug connection	Integrated cable
<p style="text-align: right;">153-00995</p>	<p style="text-align: right;">153-00996</p>

Connection, 4-pin	Signal process
<p style="text-align: right;">154-00320</p>	<p style="text-align: right;">155-01647</p>

Accessories	
Connection cables	See accessories
Brackets	See accessories

FT 25-RGB

Multi-colour contrast sensor



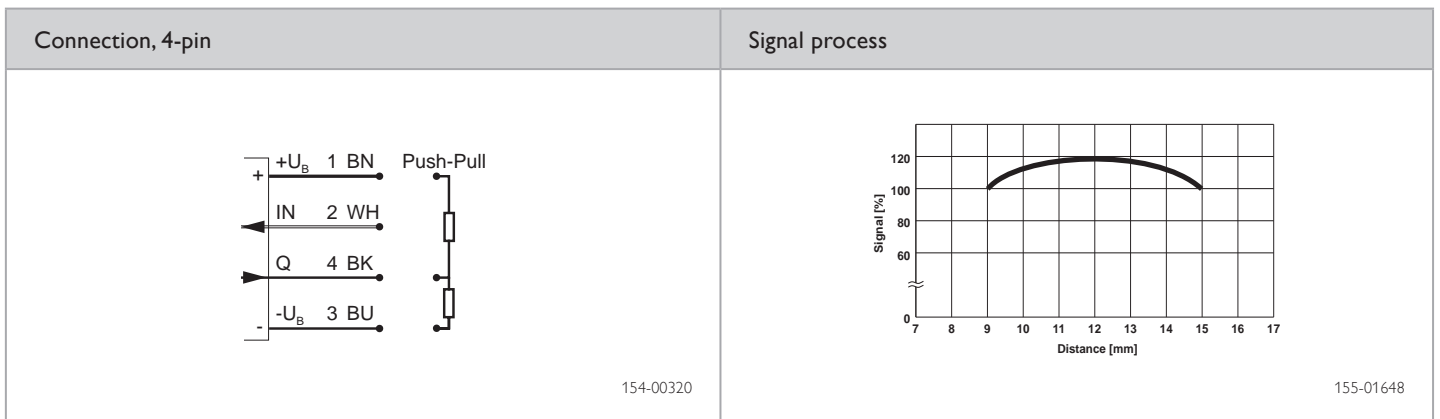
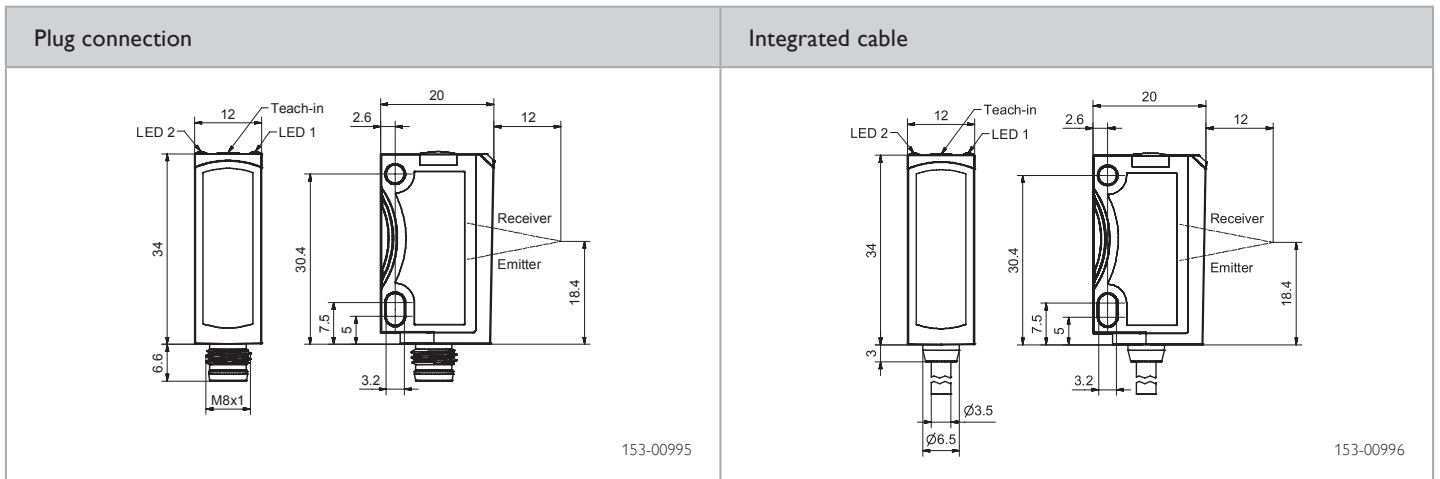
PRODUCT HIGHLIGHTS

- Precise detection of the slightest of contrast differences through multi-colour RGB evaluation
- Very robust operation despite fluttering and glossy objects
- Simple alignment thanks to very precise and easily visible light spot
- Communication via 3-colour light spot (simple, comprehensible, clearly defined)
- Very accurate positioning due to rapid scanning rate of 10 μ s

Optical data		Functions	
Scanning distance	12 mm	Indicator LED, green	Operating voltage indicator
Depth of field	\pm 3 mm	Indicator LED, yellow	Switching output indicator
Type of light	Red LED, 633 nm Green LED, 525 nm Blue LED, 460 nm	Sensitivity adjustment	Via teach-in button and control line
		Teach-in modes	Mode 1: with running process Mode 2: with standing process
		Adjustment possibilities	LO / DO via Teach-in button and control line Button lock via control input
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC ¹	Dimensions	34 x 20 x 12 mm ³
No-load current, I ₀	\leq 25 mA	Enclosure rating	IP 69K & IP 67 ³
Output current, I _e	\leq 100 mA	Material, housing	ABS
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q)	Material, front screen	PMMA
Protection Class	2	Type of connection	(See Selection Table)
Standby time	< 300 ms	Ambient temperature: operation	-20 ... +55 °C ⁴
Switching output, Q	PNP / NPN, push-pull	Ambient temperature: storage	-20 ... +80 °C
Output function	LO / DO	Weight (plug device)	10 g
Switching frequency, f (ti/tp 1:1) ²	(See Selection Table)	Weight (integrated cable)	20 g
Response time	(See Selection Table)	Vibration and impact resistance	EN 60947-5-2
Jitter (electrical)	(See Selection Table)		

¹ Max. 10 % ripple, within U_B, ~ 50 Hz / 100 Hz ² f = 1 / (T x Nyq x 2) ³ With connected IP 67 / IP 69K plug ⁴ UL: -20 ... +50 °C


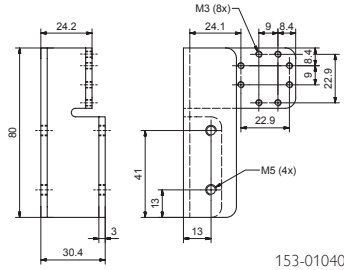

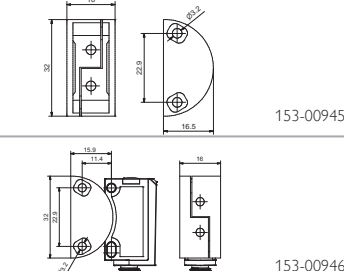
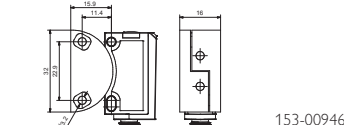

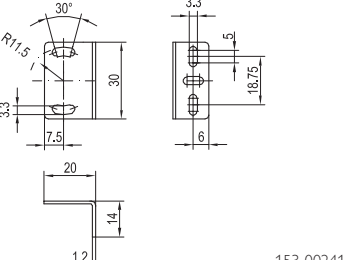
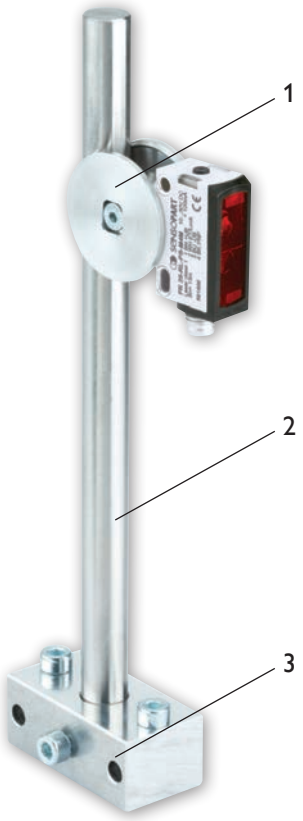
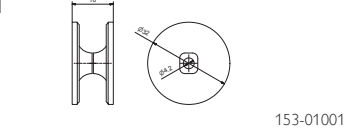
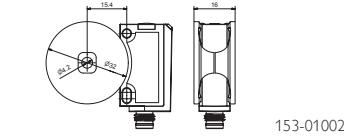
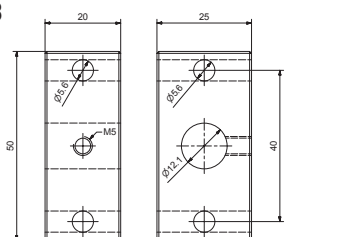
Switching frequency, f (ti/tp 1:1) ²	Response time	Jitter (electrical)	Type of connection	Part number	Article number
\leq 25000 Hz	\leq 20 μ s	10 μ s	Metal plug, M8x1, 4-pin	FT 25-RGB1-GS-M4M	607-21011
\leq 25000 Hz	\leq 20 μ s	10 μ s	Integrated cable: 150 mm with plug M12x1, 4-pin	FT 25-RGB1-GS-KL4	607-21010
\leq 10000 Hz	\leq 50 μ s	25 μ s	Plug, M8x1, 4-pin	FT 25-RGB2-GS-M4	607-21017
\leq 10000 Hz	\leq 50 μ s	25 μ s	Integrated cable: 150 mm with plug M12x1, 4-pin	FT 25-RGB2-GS-KL4	607-21018


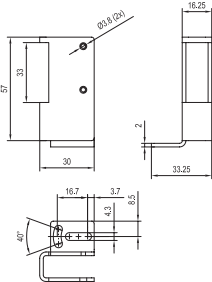

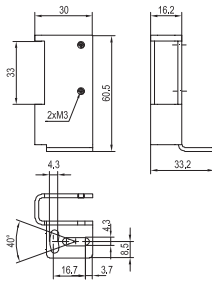

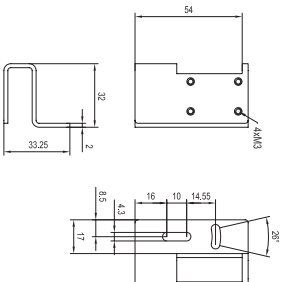

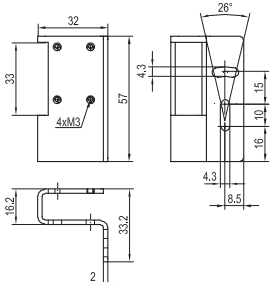

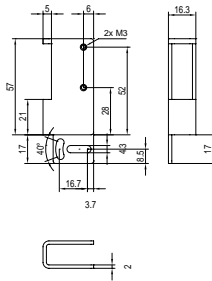

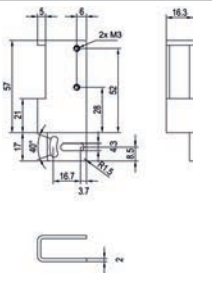


Accessories	
Connection cables	See accessories
Brackets	See accessories

Accessories


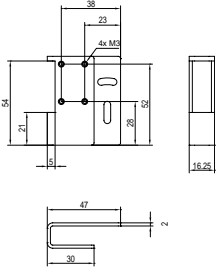

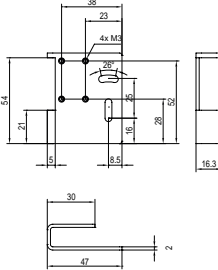
Brackets

Brackets for F 25									
	 <p>153-01040</p>	<p>Part number / Article number</p> <p>Description</p> <p>Suitable for</p>	<p>MZ F 25 / 661-01003</p> <p>Mounting adapter for FT 25 contrast sensors with horizontal or vertical light exit options, with screws</p> <p>Material: stainless steel V2A</p> <p>FT 25-W...-KL4</p> <p>FT 25-W...-KL4</p>						
	 <p>153-00945</p>  <p>153-00946</p>	<p>Part number / Article number</p> <p>Description</p> <p>Suitable for</p>	<p>MBD F 25 / 661-01000</p> <p>Dovetail clamp mounting, adjustable $\pm 15^\circ$, with screws</p> <p>Material: anodised aluminium</p> <p>F 25</p>						
	 <p>153-00241</p>	<p>Part number / Article number</p> <p>Description</p> <p>Suitable for</p>	<p>MS F 20 / 558-41000</p> <p>Mounting bracket with screws</p> <p>Material: nickel-plated steel</p> <p>F 20</p> <p>F 25</p> <p>UT 20</p> <p>FL 20</p>						
	<p>1</p>  <p>153-01001</p>  <p>153-01002</p> <p>2</p> <table border="1" data-bbox="550 1523 774 1635"> <tr> <td>x = 200</td> <td>MST 45-20</td> </tr> <tr> <td>x = 300</td> <td>MST 45-30</td> </tr> <tr> <td>x = 400</td> <td>MST 45-40</td> </tr> </table> <p>153-00545</p> <p>3</p>  <p>153-01000</p>	x = 200	MST 45-20	x = 300	MST 45-30	x = 400	MST 45-40	<p>Part number / Article number</p> <p>Description</p> <p>Suitable for</p> <p>Part number / Article number</p> <p>Description</p> <p>Suitable for</p>	<p>MBD F 25ST / 661-01001</p> <p>Bracket for dovetail on M12 rod, with clamping screw</p> <p>Material: aluminium</p> <p>F 25</p> <p>MST 45-20 / 543-11005</p> <p>MST 45-30 / 543-11006</p> <p>MST 45-40 / 543-11007</p> <p>Mounting rod with M6 internal thread</p> <p>Material: aluminium</p> <p>MB ST1 MP 45</p> <p>MBD F 25ST MZ 45</p> <p>MS F88-2 MG 45</p> <p>MS F88-3</p> <p>MB ST1 / 661-01002</p> <p>Bracket for M12 rods, with clamping screw</p> <p>Material: aluminium</p> <p>MST 45-20</p> <p>MST 45-30</p> <p>MST 45-40</p>
x = 200	MST 45-20								
x = 300	MST 45-30								
x = 400	MST 45-40								

Brackets for F 25			
	 <p style="text-align: right;">153-01017</p>	<p>Part number / Article number</p> <p>Description</p> <p>Suitable for</p>	<p>MSP F 20-11 / 558-41006</p> <p>Protective sensor angle bracket with screws, very robust Material: stainless steel V2A</p> <p>F 20 UT 20-150 F 25 UT 20-S150 FL 20 UT 20-240</p>
	 <p style="text-align: right;">153-00296</p>	<p>Part number / Article number</p> <p>Description</p> <p>Suitable for</p>	<p>MSP F 20-1 / 558-41004</p> <p>Protective sensor angle bracket with screws, very robust Material: stainless steel V2A</p> <p>F 20 F 25 UT 20 FL 20</p>
	 <p style="text-align: right;">153-00908</p>	<p>Part number / Article number</p> <p>Description</p> <p>Suitable for</p>	<p>MSP F 20-23 / 558-41011</p> <p>Protective sensor angle bracket with screws, very robust Material: stainless steel V2A</p> <p>F 20 UT 20-150 F 25 UT 20-S150 FL 20 UT 20-240</p>
	 <p style="text-align: right;">153-00297</p>	<p>Part number / Article number</p> <p>Description</p> <p>Suitable for</p>	<p>MSP F 20-2 / 558-41005</p> <p>Protective sensor angle bracket with screws, very robust Material: stainless steel V2A</p> <p>F 20 UT 20-150 F 25 UT 20-S150 FL 20 UT 20-240</p>
	 <p style="text-align: right;">153-00973</p>	<p>Part number / Article number</p> <p>Description</p> <p>Suitable for</p>	<p>MSP F 20-13 / 558-41008</p> <p>Protective sensor angle bracket with screws, very robust Material: stainless steel V2A</p> <p>F 20 UT 20-150 F 25 UT 20-S150 FL 20 UT 20-240</p>
	 <p style="text-align: right;">153-00972</p>	<p>Part number / Article number</p> <p>Description</p> <p>Suitable for</p>	<p>MSP F 20-12 / 558-41007</p> <p>Protective sensor angle bracket with screws, very robust Material: stainless steel V2A</p> <p>F 20 UT 20-150 F 25 UT 20-S150 FL 20 UT 20-240</p>

Accessories

Brackets

Brackets for F 25			
	 <p style="text-align: right;">153-00974</p>	<p>Part number / Article number</p> <hr/> <p>Description</p> <hr/> <p>Suitable for</p> <hr/>	<p>MSP F 20-21 / 558-41009</p> <p>Protective sensor angle bracket with screws, very robust Material: stainless steel V2A</p> <hr/> <p>F 20 UT 20-150 F 25 UT 20-S150 FL 20 UT 20-240</p> <hr/>
	 <p style="text-align: right;">153-00975</p>	<p>Part number / Article number</p> <hr/> <p>Description</p> <hr/> <p>Suitable for</p> <hr/>	<p>MSP F 20-22 / 558-41010</p> <p>Protective sensor angle bracket with screws, very robust Material: stainless steel V2A</p> <hr/> <p>F 20 UT 20-150 F 25 UT 20-S150 FL 20 UT 20-240</p> <hr/>

Accessories

Cables

Part number	Article number	Description
M8, 4-pin		
K4-2m-G-PUR	902-50801	2 m, straight, PUR
K4-5m-G-PUR	902-51617	5 m, straight, PUR
K4-10m-G-PUR	902-51610	10 m, straight, PUR
K4-2m-W-PUR	902-50803	2 m, 90°, PUR
K4-5m-W-PUR	902-51618	5 m, 90°, PUR
K4-10m-W-PUR	902-51629	10 m, 90°, PUR
K4-2m-W-PL-PUR	902-51642	2 m, 90°, PUR, with indicator LED
K4-5m-W-PL-PUR	902-51643	5 m, 90°, PUR, with indicator LED
CM4 FG-E-5m-PVC	902-50221	5 m, straight, PVC, with hex nut SW 9 stainless steel (IP 69K)
CM4 FW-E-5m-PVC	902-50222	5 m, 90°, PVC, with hex nut SW 9 stainless steel (IP 69K)
M12, 4-pin		
L4-2m-G-PUR	902-50805	2 m, straight, PUR
L4-5m-G-PUR	902-51612	5 m, straight, PUR
L4-10m-G-PUR	902-51628	10 m, straight, PUR
L4-2m-W-PUR	902-50807	2 m, 90°, PUR
L4-5m-W-PUR	902-51602	5 m, 90°, PUR
L4-2m-W-PL-PUR	902-50808	2 m, 90°, PUR, with indicator LED
L4-5m-W-PL-PUR	902-51603	5 m, 90°, PUR, with indicator LED
L4-10m-W-PL-PUR	902-51604	10 m, 90°, PUR, with indicator LED
L4S-2m-G-PVC	902-51632	2 m, straight, PVC, shielded
L4S-5m-G-PVC	902-51634	5 m, straight, PVC, shielded
L4S-2m-W-PVC	902-51633	2 m, 90°, PVC, shielded
L4S-5m-W-PVC	902-51635	5 m, 90°, PVC, shielded
CL4 FG-E-5m-PVC	902-50219	5 m, straight, PVC, with hex nut SW 14 stainless steel (IP 69K)
CL4 FW-E-5m-PVC	902-50220	5 m, 90°, PVC, with hex nut SW 14 stainless steel (IP 69K)
L4F/L4M-0,48 PUR	902-51670	Extension cable, M12 (90°) to M12 (straight), 0,48 m, PUR

We look ahead.

Yesterday, today and in the future.



“We gauge ourselves not by what is possible today, but by our vision of what can be achieved” – this has been our motto since the foundation of SensoPart in 1994. Our goal is to always be a step ahead and to be able to offer our customers the most innovative sensor for industrial automation.

With our easy to integrate VISOR® Vision sensors and our compact laser sensors with an amazing background suppression made in Germany, we stick up to this motto.

Get ready – we still have a lot of ideas for the future.

SENSOR TECHNOLOGY

- Light barriers
- Proximity switches
- Laser sensors
- Miniature sensors
- Distance sensors
- Colour sensors
- Contrast sensors
- Anti-collision sensors
- Slot sensors
- Fibre-optic amplifiers
- Inductive sensors
- Capacitive sensors
- Ultrasonic sensors

VISION

- Vision sensors
- Smart cameras
- Vision systems
- Object detection
- Object measurement
- Colour detection
- Code reading
- Lighting
- Lenses

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