



Micro Detectors



Italian Sensors Technology



Catalogue
short form

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The Company

M.D. Micro Detectors S.p.A.

M.D. Micro Detectors certified quality system

Our products certification

M.D. Micro Detectors S.p.A.

Since 1971 **M.D. Micro Detectors S.p.A.** develops and produces a wide range of industrial sensors.

M.D. Micro Detectors S.p.A. is a company rich in terms of human, professional and material tradition and heritage, which is nowadays a worldwide synonymous of technology, quality, reliability, continuity, service and innovation.

It will be enough, just to reinforce the strong and innovative idea managing the whole Company spirit, to think that it has been the first industrial reality to produce the photoelectric sensor M18, today considered an international standard, and also one of the first companies to realize different types of area sensors

Since ever quality and reliability of the products, based also on the customer satisfaction requirements, are the main drivers of the company strategy.

The products portfolio is composed of 6 segments:

- Photoelectric Sensors
- Proximity Sensors
- Ultrasonic Sensors
- Area Sensors
- Safety Devices
- Accessories

M.D. Micro Detectors S.p.A. is able, moreover, to propose and realize versions and customizations of the products already listed in the catalogue, basing them on specific customers requirements, and it is also in measure to develop innovative solutions for industrial applications using its own technology.

The production and development processes, based on **Lean Manufacturing** principles, are subject to continuous controls and all products are always double checked.

Therefore, the extreme **M.D. Micro Detectors S.p.A.** quality has been proven by all certifications the company has got in very short time: the whole System is **ISO 9001:2008** norms complying, and a huge amount of products is **CE, ATEX, cULus, Diversey, TÜV and Ecolab certified**.





The M.D Micro Detectors Quality System



The M.D Micro Detectors Quality System complies with ISO 9001:2008 norms regarding the development, production and marketing of electronic devices for measurement, analysis and detection in both industrial and consumer applications.

Our products' certifications



1971



1984



1986



2000



2001



2012

















Photoelectric Sensors

- Cylindrical
- M18 short housing
- IP69K
- M30
- Cubic
- With remote amplifier
- Amplifiers for optical fibers
- Forks



Photoelectric Cylindrical

		H8	HE	DG	DM
dimensions		M8	M8	ø 10 mm	M12
background suppression		—	—	—	—
diffuse short distance		—	—	—	100 mm / 200 mm
diffuse long distance		—	—	—	300 mm
retroreflective		—	—	—	—
polarized		—	—	—	2.5 m
retroreflective for transparents		—	—	—	—
through beam		80 mm	0...1 m (10 kHz) 0...2 m (1 kHz)	2 m	4 m
switching frequency		50 kHz	1 kHz - 10 kHz	40 Hz	400 Hz - 250 Hz
LED emission		IR	IR	IR	IR / red (pol)
LASER emission		—	—	—	—
axial optic		●	●	●	●
90° optic		—	—	—	—
power supply	Vdc	●	●	●	●
	Vac	—	—	—	—
output type	NPN - NO	—	●	●	—
	NPN - NC	—	●	●	—
	PNP - NO	●	●	●	—
	PNP - NC	—	●	●	—
	NPN - NO / NC	—	—	—	●
	PNP - NO / NC	—	—	—	●
	NPN - NO + NC	—	—	—	—
	PNP - NO + NC	—	—	—	—
	DECOUT®	—	—	—	—
	relay	—	—	—	—
SCR	—	—	—	—	
temperature range		-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
protection degree		IP67	IP67	IP67	IP67
housing material		stainless steel	stainless steel	plastic	nickel plated brass
active head material		PMMA	PMMA	PC	PMMA
output	cable	●	●	●	●
	plug	—	—	—	●
	pig-tail	—	—	—	—
ATEX		—	—	—	II3GD
other certifications		CE	CE	CE	UL US LISTED CE

FA	FA	FAL	FAL	SS/SP
				
M18 axial	M18 90°	M18 axial	M18 90°	M18
30...130 mm	—	30...100 30...150 (cl.2)	25...130 (cl.2)	50 mm / 100 mm
100 mm	100 mm	400 mm	300 mm	100 mm
400 mm / 1 m	400 mm / 800 mm	—	—	400 mm / 800 mm
5 m	4 m	—	—	5 m
4 m	2.5 m	30 m (RL201)	30 m (RL201)	4 m
100...1,500 mm	100...1,500 mm	—	—	—
20 m	15 m	50 m	50 m	14 m
250 Hz - 1 kHz	250 Hz	800 Hz - 1 kHz - 1.5 kHz (BGS)	800 Hz - 1 kHz - 1.5 kHz (BGS)	800 Hz - 1 kHz 250 Hz
red / IR	red / IR	red laser (cl. 1/2)	red laser (cl. 1/2)	red / IR
—	—	●	●	—
●	—	●	—	●
—	●	—	●	●
●	●	●	●	●
—	—	—	—	—
—	—	—	—	●
—	—	—	—	●
—	—	—	—	●
—	—	—	—	●
—	—	●	—	●
—	—	●	—	●
●	●	●	●	—
●	●	●	●	—
—	—	—	—	—
—	—	—	—	—
—	—	—	—	—
-25°C...+70°C	-25°C...+70°C	-15°C...+55°C	-15°C...+55°C	-25°C...+70°C
IP67	IP67	IP67	IP67	IP67
plastic / metallic	plastic / metallic	plastic / metallic	plastic / metallic	plastic / metallic
PC / PMMA	PC / PMMA	glass / PMMA	glass / PMMA	PMMA
●	●	●	●	●
●	●	●	●	●
—	—	—	—	—
II3GD	II3GD	II3GD	II3GD	II3GD
				



Photoelectric

Cylindrical

MS/MP

SA

MV/MQ
















		MS/MP	SA	MV/MQ
dimensions		M18	M18	M18
background suppression		50 mm / 100 mm	—	50 mm / 100 mm
diffuse short distance		100 mm / 200 mm	150 mm	100 mm / 200 mm
diffuse long distance		400 mm	400 mm	400 mm / 800 mm
retroreflective		4.5 m	6 m	4.5 m
polarized		3.5 m	3.5 m	3.5 m
retroreflective for transparents		—	—	—
through beam		16 m / 32 m	—	16 m / 32 m
switching frequency		1 kHz - 80 - 30 Hz	1 kHz	25 Hz
LED emission		red / IR	red / IR	red / IR
LASER emission		—	—	—
axial optic		●	●	●
90° optic		●	—	●
power supply	Vdc	●	●	—
	Vac	—	—	●
output type	NPN - NO	—	—	—
	NPN - NC	—	—	—
	PNP - NO	—	—	—
	PNP - NC	—	—	—
	NPN - NO / NC	—	●	—
	PNP - NO / NC	—	●	—
	NPN - NO + NC	—	—	—
	PNP - NO + NC	—	—	—
	DECOUT	●	—	—
	relay	—	—	—
SCR	—	—	●	
temperature range		-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
protection degree		IP67	IP65	IP67
housing material		plastic / metallic	plastic / metallic	plastic
active head material		PMMA	PMMA	PMMA
output	cable	●	●	●
	plug	●	●	●
	pig-tail	—	—	—
ATEX		II3GD	—	—
other certifications				

M18 short housing		IP69K	M30
FQ	FF	FT	
			
M18	M18	M30	
—	30...130 mm	150...1,000 mm	
100 mm	100 mm	—	
0.4 / 1.2 m (1m - 90°)	400 mm / 800 mm	—	
6 m	—	—	
4.5 m	4.5 m	—	
100...1,500 mm	100...1,500 mm	—	
20 m (16 m - 90°)	20 m	—	
250 Hz	1 kHz - 500 Hz - 400 Hz - 250 Hz	50 Hz	
—	—	IR	
red / IR	red / IR	—	
•	•	•	
•	—	—	
•	•	•	
—	—	—	
—	—	—	
—	—	—	
—	—	•	
—	•	—	
—	•	—	
•	•	•	
•	•	•	
—	—	—	
—	—	—	
—	—	—	
-25°C...+70°C	-25°C...+80°C	-25°C...+70°C	
IP67	IP68/IP69K	IP67	
plastic / metallic	stainless steel AISI 316L	plastic / metallic	
PMMA/PC	PMMA/PC	PMMA/PC	
•	—	—	
•	•	•	
—	—	—	
—	II3GD	—	
CE	Diversey ECOLAB cUL US LISTED CE	CE	



Photoelectric Cubic

	QM	FE	QX	PS
	 <p>New model QMRS</p> <p>New design</p>			
dimensions	21x12.8x31.2 mm	11x20x31 mm	15x23x40 mm	15x26x49 mm
background suppression	30...200 mm 30...400 mm	15...500 mm	—	—
diffuse short distance	100 mm	—	—	100 mm / 200 mm
diffuse long distance	400 mm / 1,000 mm / 1,500 mm	800 mm	300 mm	—
retroreflective	7 m	—	5 m	2 m
polarized	5 m	4 m	3- m	—
retroreflective for transparents	0.4... 4 m 0.05... 1.5 m	—	—	—
through beam	20 m / 30 m	12 m	8 m	4 m
switching frequency	1 kHz / 2kHz	1 kHz	500 Hz / 750 Hz	25 Hz / 100 Hz
LED emission	red/IR	red	red / IR	IR
LASER emission	—	—	—	—
axial optic	—	—	●	—
90° optic	●	●	●	●
power supply	Vdc	●	●	●
	Vac	—	—	—
output type	NPN - NO	—	—	●
	NPN - NC	—	—	●
	PNP - NO	—	—	●
	PNP - NC	—	—	●
	NPN - NO / NC	●	●	—
	PNP - NO / NC	●	●	—
	NPN - NO + NC	—	—	—
	PNP - NO + NC	—	—	—
	DECOUT®	—	—	—
	relay	—	—	—
SCR	—	—	—	
temperature range	-25°C...+70°C	-25°C...+55°C	-25°C...+70°C	-25°C...+70°C
protection degree	IP67	IP67	IP65	IP65
housing material	plastic	plastic	ABS	plastic
active head material	PMMA	PC	acrilic	PMMA
output	cable	●	●	●
	M8 plug	M8 and M8 pig-tail	●	●
	M12 pig-tail	(pig-tail)	—	●
ATEX	—	—	—	—
other certifications				

	BS	BV	Q50 New product	FG Improved model	RX
					
	15x37x70 mm	15x37x70 mm	17x50x50 mm	20x43x65 mm	26x50x80 mm
	—	—	120...500 mm	90...310 mm 110...600 mm	50...300 mm 250...1,000 mm
	100 mm / 200 mm	100 mm / 200 mm	—	—	—
	400 mm / 1,600 mm	400 mm / 1,600 mm	1,000 / 2,000 mm	—	1,000 mm / 2,000 mm
	8 m	8 m	—	—	12 m
	—	—	6 m	12 m	6 m
	—	—	—	—	—
	—	—	20 m	50 m	16 m / 32 m
	80 Hz	25 Hz	20 Hz - 500 Hz	33 Hz - 250 Hz - 1 kHz	25 Hz -500 Hz
	IR	IR	IR / rossa	red	IR / red
	—	—	—	—	—
	—	—	•	•	•
	•	•	•	•	—
	•	—	•	•	•
	—	•	•	•	•
	—	—	—	—	—
	—	—	—	—	—
	—	—	—	—	—
	—	—	—	—	—
	—	—	—	•	—
	—	—	—	•	—
	—	—	•	—	—
	—	—	•	—	—
	•	—	—	—	•
	—	—	—	•	•
	—	•	•	—	—
	-20°C...+70°C	-25°C...+70°C	-20°C...+60°C	-25°C...+55°C	-25°C...+70°C
	IP65	IP65	IP67	IP67	IP65
	ABS	ABS	PC/ABS	plastic	PC
	acrilic	acrilic	PMMA	PMMA	PMMA
	•	•	•	•	—
	—	—	—	—	—
	•	•	•	•	•
	—	—	—	—	—
	CE	CE	UL CE	UL US CE	CE



Photoelectric

With remote amplifier

Fiber optic

UR






DG

SSF



		UR	DG	SSF
dimensions		32x67x90 mm	ø 10 mm / M12	M18
relay output amplifier		•	—	—
plastic fibers amplifier		—	—	•
glass fibers amplifier		—	—	•
DIN rail amplifier		—	—	—
timer functions		•	—	—
Teach-in		—	—	•
frequency		10 Hz	—	800 Hz
emission		—	IR	red
sensing distance		—	up to 75 m	depending on the used fiber
power supply	Vdc	•	—	•
	Vda	•	—	—
output type	relay	•	—	—
	PNP - NO / NC	—	—	•
	NPN - NO / NC	—	—	•
temperature range		-10°C...+50°C	-20°C...+60°C	-25°C...+70°C
protection degree		IP20	IP67	IP67
housing material		plastic	plastic / metallic	plastic / metallic
optic material		—	PC - glass	plastic fibers, glass fibers
output	cable	—	•	•
	M12 plug	—	—	•
	M8 plug	—	—	—
ATEX		—	—	—
other certifications		CE	CE	CE

amplifiers

FS1	FX3	FX4	F1/F2	F6
				
15x26x66 mm	10x31x60 mm	10x31x60 mm	10x32x70 mm	10x32x70 mm
—	—	—	—	—
•	•	•	•	•
•	•	•	•	•
—	•	•	•	•
—	—	•	—	•
—	—	•	—	•
1 kHz	1.5 kHz	1.5 kHz	2 kHz / 20 kHz	1 kHz
red	red	red	red	red
depending on the used fiber	depending on the used fiber	depending on the used fiber	depending on the used fiber	depending on the used fiber
•	•	•	•	•
—	—	—	—	—
—	—	—	—	—
•	•	•	•	•
•	•	•	•	•
-25°C...+70°C	-25°C...+55°C	-25°C...+55°C	-25°C...+55°C	-25°C...+55°C
IP65	IP64	IP64	IP50	IP50
PA	PBT	PBT	PBT / PC	PBT / PC
plastic fibers, glass fibers	plastic fibers, glass fibers	plastic fibers, glass fibers	plastic fibers, glass fibers	plastic fibers, glass fibers
•	•	•	•	•
•	—	—	—	—
—	•	•	—	—
—	—	—	—	—
CE	CE	CE	CE	CE



Photoelectric

Forks



		FC5	FC6I	FC6L	FC7
dimensions		—	—	—	—
contrast scanner		—	—	—	—
luminiscent scanner		—	—	—	—
sensing distance S _n		50, 80, 120 mm	30, 50, 80, 120 mm	30, 50, 80, 120 mm	3 mm
slot sensor for control edge detection		—	—	—	—
slot sensor for object detection		●	●	●	—
slot sensor for labels detection		—	—	—	●
sensing distance		—	—	—	—
depth detection slot		60, 124 mm	42, 59 mm	42, 59 mm	42 mm
minimum object dimension		0.8 mm	0.2 mm	0.05 mm	—
emission		red	IR	laser (class 1)	IR
switching frequency		4 kHz	10 kHz	10 kHz	10 kHz
supply voltage	V _{dc}	●	●	●	●
	V _{ac}	—	—	—	—
output type	NPN - NO	●	—	—	—
	NPN - NC	●	—	—	—
	PNP - NO	●	—	—	—
	PNP - NC	●	—	—	—
	NPN - NO / NC	—	—	—	●
	PNP - NO / NC	—	—	—	●
	NPN/PNP - NO/NC	—	●	●	●
	SCR	—	—	—	—
temperature range		-10°C...+60°C	-20°C...+60°C	-20°C...+50°C	-20°C...+60°C
protection degree		IP67	IP65	IP65	IP65
housing material		painted aluminium	painted aluminium	painted aluminium	termoplastic (PA12)
head material		—	—	—	—
output	cable	—	—	—	—
	plug	M8 3 pin	M8 4 pin	M8 4 pin	M8 4 pin
ATEX		—	—	—	—
other certifications					

FC8



—

—

—

3 mm

—

—

●

—

69 mm

—

ultrasonic

1,5 kHz

●

—

—

—

—

—

—

●

●

●

—

-5°C...+55°C

IP65

—

—

—

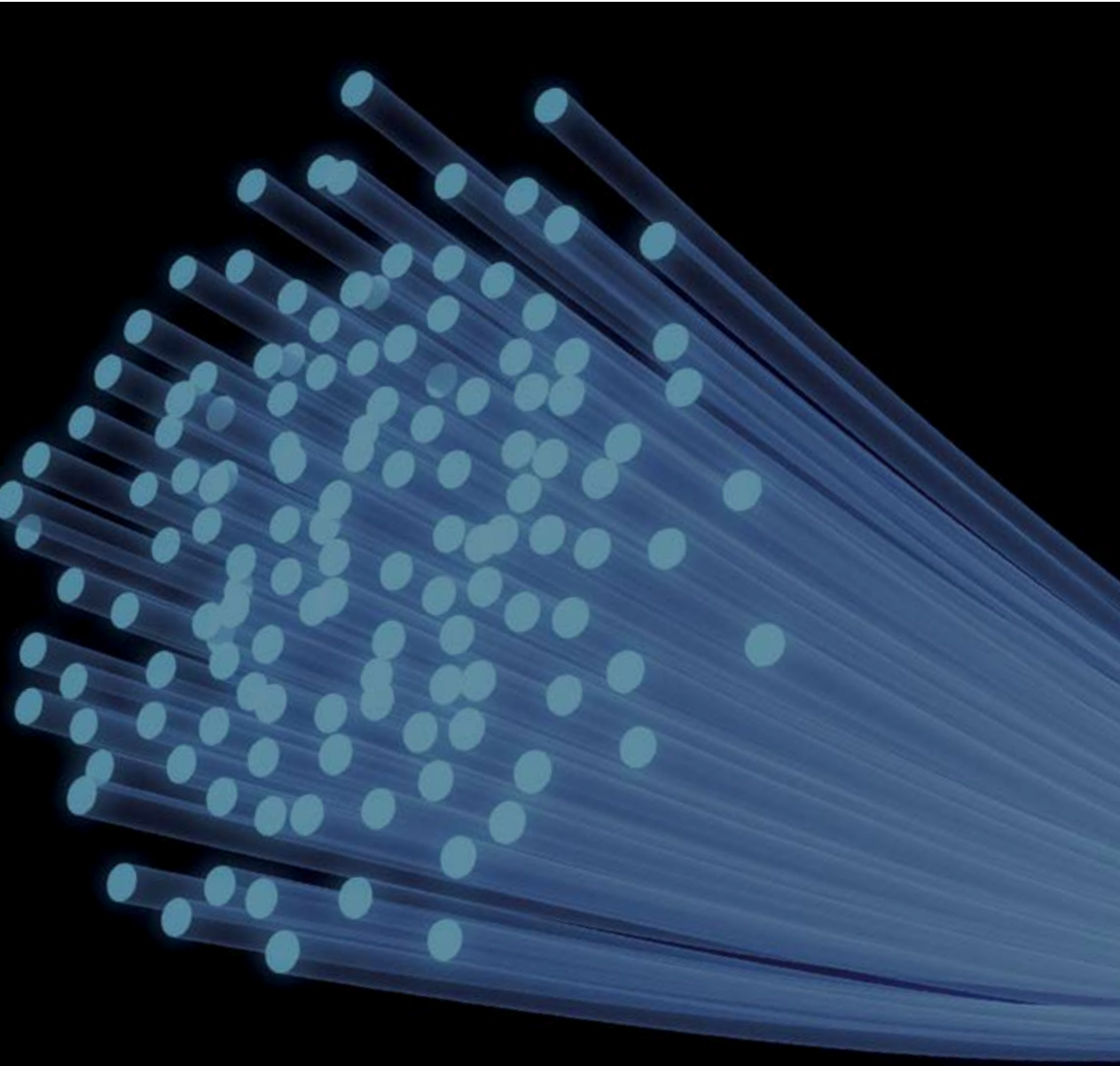
—

M8 4 pin

—

—







Fiber optics

- CF plastic fiber optics
- AF modular fiber optics
- CV glass fiber optics up to 200°C
- Accessories for fiber optics CF
- CV glass fiber optics up to 250°C
- Accessories for fiber optics CV



CF plastic fiber optics

model (1)	type	SSF (EX.G.=1)	FS1 (EX.G.=1)	FX3 (EX.G.=1)	FX4 (EX.G.=1)	ø optical fiber core	cuttable	length (2)	head shape	lenses
CF / CA1 - 20	scanner	60 mm	60 mm	140 mm	140 mm	0.5	yes	2 m	M5	yes
CF / CA2 - **	scanner	15 mm	15 mm	70 mm	110 mm	0.5	no	0,5 - 1 m	M4	no
CF / CA4 - **	scanner	15 mm	15 mm	60 mm	80 mm	0.5	no	0,5 - 1 m	M4+sleeve	no
CF / RA4 - **	P/R	30 mm	30 mm	150 mm	250 mm	0.5	no	0,5 - 1 m	M4+sleeve	no
CF / RA7 - **	P/R	30 mm	30 mm	150 mm	250 mm	0.5	no	0,5 - 1 m	M3	no
CF / CB1 - **	scanner	50 mm	50 mm	200 mm	300 mm	1	yes	1 - 2 m	M6	no
CF / CB3 - **	scanner	50 mm	50 mm	200 mm	300 mm	1	yes	1 - 2 m	M6	no
CF / CB3 - **	scanner	50 mm	50 mm	200 mm	300 mm	1	yes	1 - 2 m	M6+sleeve	no
CF / RB3 - 20	P/R	120 mm	120 mm	700 mm	700 mm	1	yes	2 m	M4	no
CF / RB4 - **	P/R	120 mm	120 mm	600 mm	900 mm	1	yes	1 - 2 m	M4+sleeve	no
CF / RB6 - **	P/R	120 mm	120 mm	600 mm	900 mm	1	yes	1 - 2 m	M4	no
CF / RB9 - **	P/R	1,200 mm	1,200 mm	8,000 mm	10,000 mm	1	yes	1 - 2 m	ø 6 mm	no
CF / RBA - **	P/R	1,200 mm	1,200 mm	8,000 mm	10,000 mm	1	yes	1 - 2 m	M7	no
CF / CC1 - 20	scanner	15 mm	15 mm	70 mm	100 mm	1	no	2 m	M6	yes
CF / CRC6 - 20	P/R	100 mm	100 mm	500 mm	500 mm	1	no	2 m	M4	no
CF / CRC9 - 20	P/R	1,000 mm	1,000 mm	6,000 mm	8,000 mm	1	no	2 m	ø 6 mm	yes
CF / RCA - 20	P/R	1,000 mm	1,000 mm	6,000 mm	8,000 mm	1	no	2 m	M7	yes

(1) = the last two bits of the code show the fiber length (in dm) (2) = standard length. Special lengths available on request.

model	F1		F2		F6	
	ON 90%	OFF 90%	ON 90%	OFF 90%	ON 90%	OFF 90%
CF - CA1	0	0	0	0	0	0
CF - CA2	40 mm	47 mm	15 mm	18 mm	100 mm	115 mm
CF - CA4	40 mm	47 mm	15 mm	18 mm	100 mm	115 mm
CF - RA4	100 mm	130 mm	60 mm	68 mm	300 mm	350 mm
CF - RA7	100 mm	130 mm	60 mm	68 mm	300 mm	350 mm
CF - CB1	150 mm	180 mm	70 mm	90 mm	300 mm	345 mm
CF - CB3	150 mm	180 mm	70 mm	90 mm	300 mm	345 mm
CF - RB3	410 mm	500 mm	200 mm	240 mm	800 mm	925 mm
CF - RB4	410 mm	500 mm	200 mm	240 mm	800 mm	925 mm
CF - RB6	410 mm	500 mm	200 mm	240 mm	800 mm	925 mm
CF - RB9	> 4,000 mm	> 4,000 mm	2,400 mm	2,800 mm	> 4,000 mm EX.G.=12	> 4,000 mm EX.G.=12
CF - RBA	> 4,000 mm	> 4,000 mm	2,400 mm	2,800 mm	> 4,000 mm EX.G.=12	> 4,000 mm EX.G.=12
CF - CC1	50 mm	58 mm	20 mm	25 mm	90 mm	115 mm
CF - RC6	350 mm	400 mm	190 mm	220 mm	600 mm	690 mm
CF - RC9	2,200 mm	2,600 mm	1,600 mm	1,900 mm	> 4,000 mm EX.G.=3	> 4,000 mm EX.G.=3
CF - RCA	2,200 mm	2,600 mm	1,600 mm	1,900 mm	> 4,000 mm EX.G.=3	> 4,000 mm EX.G.=3

AF modular fiber optics

model	type	accessory type	SSF (EX.G.=1)	FS1 (EX.G.=1)	FX3 (EX.G.=1)	FX4 (EX.G.=1)	∅ optical fiber core	fiber model	head shape	lenses
AF/C	—	cutter	—	—	—	—	1	—	—	—
AF/1S	—	cuttable fibers	—	—	—	—	1	—	—	—
AF/ER4	P/R	collimated lenses	600 mm	600 mm	2,000 mm	3,000 mm	1	AF/15	—	yes
AF/ER5	P/R	collimated lenses	1,000 mm	1,000 mm	3,000 mm	5,000 mm	1	AF/15	—	yes
AF/ER6	P/R	collimated lenses	3,500 mm	3,500 mm	6,000 mm	8,000 mm	1	AF/15	—	yes
AF/ER7	P/R	collimated lenses	1,000 mm	1,000 mm	6,000 mm	8,000 mm	1	AF/15	—	yes

model	F1		F2		F6
	Sn		Sn		Sn
AF/ER4	1,500 mm		700 mm		3,000 mm
AF/ER5	2,200 mm		1,000 mm		4,500 mm
AF/ER6	4,500 mm		2,000 mm		6,000 mm
AF/ER7	4,500 mm		2,000 mm		6,000 mm

CV glass fiber optics 200°C

model (1)	type	SSF (EX.G.=1)	FS1 (EX.G.=1)	FX3 (EX.G.=1)	FX4 (EX.G.=1)	∅ optical fiber core	cuttable	length (2)	head shape	lenses
CV/CB1- **	scanner	50 mm	50 mm	150 mm	150 mm	1	no	1 - 2 m	M4	no
CV/CB3- **	scanner	50 mm	50 mm	150 mm	150 mm	1	no	1 - 2 m	M4+slave	no
CV/RB4- **	P/R	90 mm	90 mm	600 mm	900 mm	1	no	1 - 2 m	M4+slave	no
CV/RB6- **	P/R	90 mm	90 mm	600 mm	900 mm	1	no	1 - 2 m	M4	no

(1) = the last two bits of the code show the fiber length (in dm) (2) = standard length. Special lengths available on request

model	F1		F2		F6	
	ON 90%	OFF 90%	ON 90%	OFF 90%	ON 90%	OFF 90%
CV/CB1	**	**	70 mm	90 mm	**	**
CV/CB3	**	**	70 mm	90 mm	**	**
CV/RB4	410 mm	500 mm	200 mm	240 mm	800 mm	925 mm
CV/RB6	410 mm	500 mm	200 mm	240 mm	800 mm	925 mm



Accessories for fiber optics CF

model	F1	F1	F1	fiber model
	Sn	Sn	Sn	Sn
AF / ER9	400 mm	200 mm	800 mm	CF - RB3 - 20
ST28	1,500 mm	1,000 mm	3,000 mm	CF - RBA-**. CF - RCA - 20

CV glass fiber optics up to 250°C

model (1)	type	SSF (EX.G.=1)	FS1 (EX.G.=1)	FX3 (EX.G.=1)	FX4 (EX.G.=1)	∅ optical fiber core	cuttable	length (2)	head shape	lenses
CV / CB1- **ME	scanner	50 mm	50 mm	150 mm	150 mm	1	no	1-2 m	M4	no
CV / CB3- **ME	scanner	50 mm	50 mm	150 mm	150 mm	1	no	1-2 m	M4+sleeve	no
CV / RB4- **ME	P/R	90 mm	90 mm	600 mm	900 mm	1	no	1-2 m	M4+sleeve	no
CV / RB6- **ME	P/R	90 mm	90 mm	600 mm	900 mm	1	no	1-2 m	M4	no

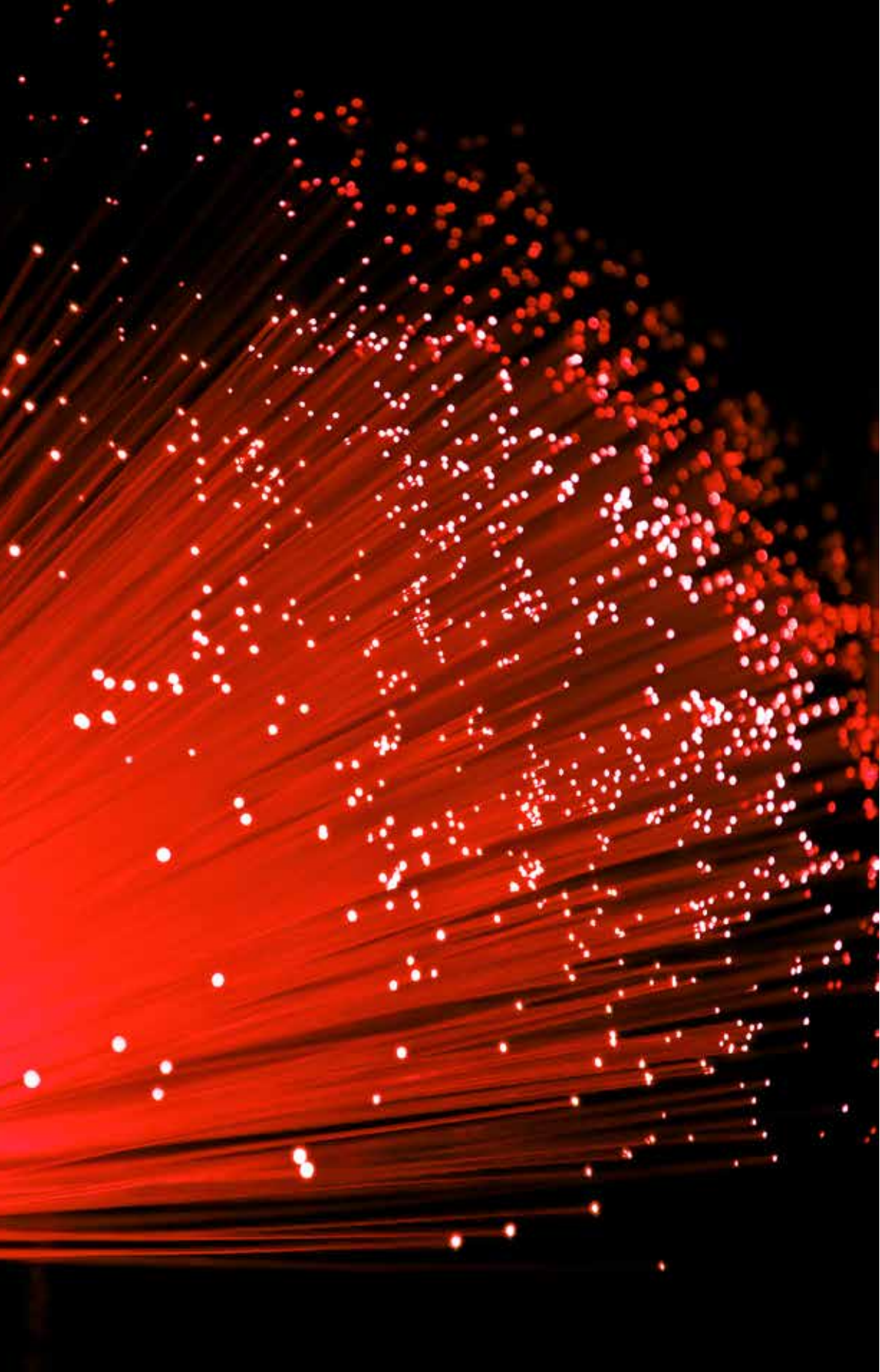
(1) = the last two bits of the code show the fiber length (in dm)

(2) = standard length. Special lengths available on request.

Accessories for fiber optics CV

model(1)	type	accessory type	SSF (EX.G.=1)	FS1 (EX.G.=1)	FX3 (EX.G.=1)	FX4 (EX.G.=1)	∅ optical fiber core	fiber model	head shape	lenses
AF/FC1	scanner	focusing device	25 mm	25 mm	30 mm	30 mm	1	CV/CB1-**	∅ 6.5 mm	yes
AF/FC2	scanner	focusing device	45 mm	45 mm	50 mm	50 mm	1	CV/CB1-**	∅ 6.5 mm	yes
AF/ER1	P/R	additional lense	1,000 mm	1,000 mm	4,000 mm	4,000 mm	1	CV/RB6-**	∅ 5 mm	yes
AF/ER2	P/R	additional lense	3,000 mm	3,000 mm	8,000 mm	10,000 mm	1	CV/RB6-**	∅ 8.5 mm	yes
AF/ER3	P/R	additional lense	3,000 mm	3,000 mm	14,000 mm	16,000 mm	1	CV/RB6-**	13x13 mm	yes

model	F1	F2	F6
	Sn	Sn	Sn
AF / FC1	**	20 mm	**
AF / FC2	**	30 mm	**
AF / ER1	3,000 mm	2,000 mm	6,000 mm
AF / ER2	4,000 mm	3,000 mm	8,000 mm
AF / ER3	10,000 mm	8,000 mm	14,000 mm







Ultrasonic Sensors

— M18 with Teach-in button

— M18 with Teach-in button and 90° emission

— M18 short housing

— M30

— Cubic

— Forks









Ultrasonic

M18 with Teach-in button

	UK1A <small>New retro-reflective models</small>	UK1C <small>New retro-reflective models</small>	UK1D <small>New retro-reflective models</small>	UK1F	
dimensions	M18	M18	M18	M18	
direct diffuse	50...400 mm	100...900 mm	150...1,600 mm <small>(200...1500 mm stainless steel)</small>	200...2,200 mm	
retroreflective	100...400 mm	150...900 mm	250...1,600 mm	300...2,200 mm	
through beam	—	—	—	—	
power supply	Vdc	●	●	●	
	Vac	—	—	—	
output type	PNP - NO e NC	—	—	—	
	NPN - NO e NC	—	—	—	
	2 x PNP with hysteresys function	Teach-in button	Teach-in button	Teach-in button	Teach-in button
	2 x NPN with hysteresys function	Teach-in button	Teach-in button	Teach-in button	Teach-in button
	PNP - NO / NC	Teach-in button	Teach-in button	Teach-in button	Teach-in button
	NPN - NO / NC	Teach-in button	Teach-in button	Teach-in button	Teach-in button
	0...10 V	Teach-in button	Teach-in button	Teach-in button	Teach-in button
	4...20 mA	Teach-in button	Teach-in button	Teach-in button	Teach-in button
	2 x PNP - NO / NC 2 x NPN - NO / NC	Teach-in button	Teach-in button	Teach-in button	Teach-in button
1 x PNP - NO / NC + 1x 0...10 V 1 x NPN - NO / NC + 1x 0...10 V	Teach-in button	Teach-in button	Teach-in button	Teach-in button	
1 x PNP - NO / NC + 4...20 mA 1 x NPN - NO / NC + 4...20 mA	Teach-in button	Teach-in button	Teach-in button	Teach-in button	
temperature range	-20°C...+60°C	-20°C...+60°C	-20°C...+70°C <small>(-20°C...+60°C cULus models)</small>	-20°C...+70°C <small>(-20°C...+60°C cULus models)</small>	
protection degree	IP67	IP67	IP67	IP67	
housing material	PBT/AISI 316L	PBT/AISI 316L	PBT/AISI 316L	PBT	
front-end material	epoxy glass resin	epoxy glass resin	epoxy glass resin	epoxy glass resin	
output	cable	●	●	●	
	M12 plug	●	●	●	
	M12 pig-tail	—	—	—	
ATEX	I13GD <small>(only PNP with plug exit)</small>	I13GD <small>(only PNP with plug exit)</small>	I13GD <small>(only PNP with plug exit)</small>	I13GD <small>(only PNP with plug exit)</small>	
other certifications					

M18 with Teach-in button and 90° emission

UK1A	UK1D	UK1F
		
M18 - 90°	M18 - 90°	M18 - 90°
50...400 mm	150...1,600 mm	200...2,200 mm
—	—	—
—	—	—
●	●	●
—	—	—
—	—	—
—	—	—
Teach-in button	Teach-in button	Teach-in button
Teach-in button	Teach-in button	Teach-in button
—	—	—
—	—	—
—	—	—
Teach-in button	Teach-in button	Teach-in button
Teach-in button	Teach-in button	Teach-in button
-20°C...+60°C	-20°C...+70°C	-20°C...+70°C
IP67	IP67	IP67
PBT	PBT	PBT
epoxy glass resin	epoxy glass resin	epoxy glass resin
—	—	—
●	●	●
—	—	—
—	—	—
		



Ultrasonic M18 short housing

UK6A

New retro-reflective models

New reduced blind zone


UK6C

New retro-reflective models


UK6D

New models



dimensions		M18 - short housing	M18 - short housing	M18 - short housing
direct diffuse		40...300 mm	60...800 mm	80...1,200 mm
retroreflective		—	—	—
through beam		—	—	—
power supply	Vdc	●	●	●
	Vac	—	—	—
output type	PNP - NO and NC	—	—	—
	NPN - NO and NC	—	—	—
	2 x PNP with hysteresis function	—	—	—
	2 x NPN with hysteresis function	—	—	—
	PNP - NO / NC	Teach-in cable	Teach-in cable	Teach-in cable
	NPN - NO / NC	Teach-in cable	Teach-in cable	Teach-in cable
	0...10 V	Teach-in cable	Teach-in cable	Teach-in cable
	4...20 mA	Teach-in cable	Teach-in cable	Teach-in cable
	2 x PNP - NO / NC	—	—	—
	2 x NPN - NO / NC	—	—	—
1 x PNP - NO / NC + 1x 0...10 V	—	—	—	
1 x NPN - NO / NC + 1x 0...10 V	—	—	—	
1 x PNP - NO / NC + 4...20 mA	—	—	—	
1 x NPN - NO / NC + 4...20 mA	—	—	—	
temperature range		-20°C...+60°C	-20°C...+60°C	-20°C...+70°C
protection degree		IP67	IP67	IP67
housing material		PBT/AISI 316L	PBT/AISI 316L	PBT/AISI 316L
front-end material		epoxy glass resin	epoxy glass resin	epoxy glass resin
output	cable	●	●	●
	M12 plug	●	●	●
	M12 pig-tail	—	—	—
ATEX		II3GD	II3GD	—
other certifications				

M30		Cubic		
UT1B	UT2	UHZ	UHS	QU6
				
M30	M30	30x20x15 mm	24x50x15 mm	80x67x50 mm
250...3,500 mm (350...3,500 mm AISI 316L)	350...6,000 mm	—	—	600...6,000 mm
250...3,500 mm	350...6,000 mm	—	—	—
—	—	0...300 mm	0...1.100 mm	—
●	●	●	●	●
—	—	—	—	—
—	—	no reg.	no reg.	—
—	—	no reg.	no reg.	—
Teach-in button	Teach-in button	no reg.	no reg.	—
Teach-in button	—	—	—	—
Teach-in button	—	—	—	Teach-in cable
Teach-in button	—	—	—	Teach-in cable
—	—	—	—	—
Teach-in button	Teach-in button	—	—	—
Teach-in button	Teach-in button	—	—	—
-20°C...+70°C	-20°C...+70°C	-15°C...+60°C	-15°C...+60°C	-20°C...+70°C
IP67	IP67	IP67	IP67	IP65
PBT/AISI 316L	PBT	PBT	PBT	PBT
epoxy glass resin	epoxy glass resin	ceramic	ceramic	ceramic
●	●	●	●	—
●	●	—	—	●
—	—	—	—	—
—	—	—	—	—
				



Ultrasonic

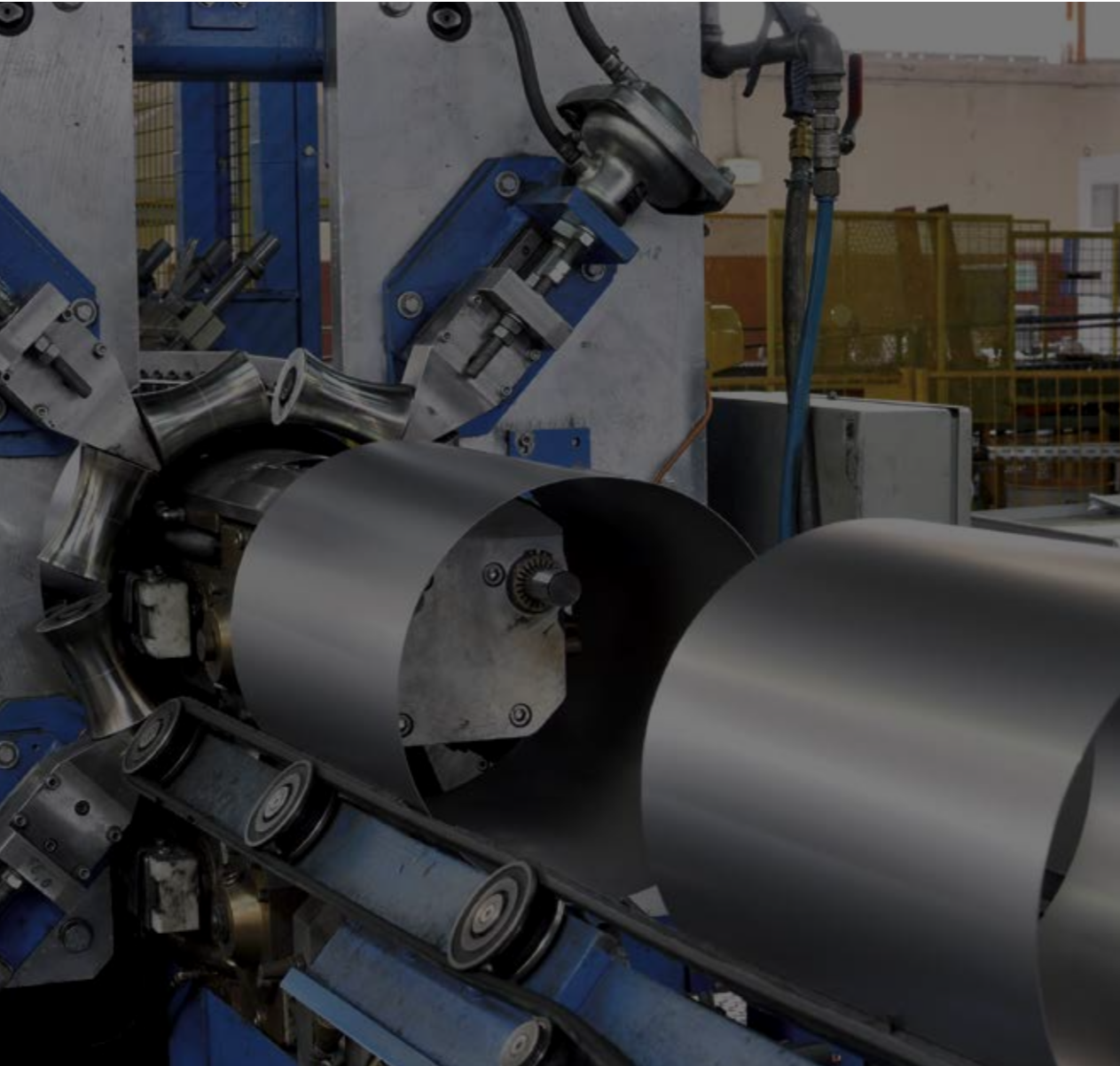
Fork

FC8



nominal sensing distance Sn		3 mm
depth detection slot		69 mm
minimum object dimension		—
emission		ultrasonic
LASER		—
ultrasonic		●
switching frequency		1,500 Hz
supply voltage	Vdc	●
	Vac	—
output type	NPN - NO	—
	NPN - NC	—
	PNP - NO	—
	PNP - NC	—
	NPN - NO / NC	●
	PNP - NO / NC	●
	NPN/PNP - NO/NC	●
temperature range		- 5°C...+55°C
protection degree		IP65
housing material		painted aluminium
output	M8 3 pins plug	—
	M8 4 pins plug	●
ATEX		—
other certifications		







Proximity Sensors

Inductive Sensors

- Miniaturized
- Standard
- DECOUT® NPN/PNP - NO/NC
- IP68
- AC
- IP69K
- Cubic
- Analogue
- Extended temperature range

Capacitive Sensors

- Cylindrical
- Cubic



inductive

Miniaturized

AA1

New series



AB1

New series



AC1

Improved performances









AD1

Improved performances



dimensions		ø 3 mm	M4	ø 4 mm	M5
standard shielded		0.6 mm	0.6 mm	0.8 mm	0.8 mm
standard unshielded		—	—	—	—
long distance shielded		1 mm	1 mm	1.5 mm	1.5 mm
long distance unshielded		—	—	—	—
standard housing		—	—	—	—
short housing		—	—	—	—
miniaturized housing		●	●	●	●
power supply	Vdc	●	●	●	●
	Vac	—	—	—	—
output type	NPN - NO	●	●	●	●
	NPN - NC	●	●	●	●
	PNP - NO	●	●	●	●
	PNP - NC	●	●	●	●
	PNP - NO + NC	—	—	—	—
	NPN - NO + NC	—	—	—	—
	DECOUT®	—	—	—	—
	SCR	—	—	—	—
	0...10 V	—	—	—	—
4...20 mA	—	—	—	—	
temperature range		-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
protection degree		IP67	IP67	IP67	IP67
housing material		stainless steel	stainless steel	stainless steel	stainless steel
active head material		PBT	PBT	PBT	PBT
output	cable	●	●	●	●
	M8 plug	—	—	●	●
	M12 plug	—	—	—	—
ATEX		—	—	—	—
other certifications		CE	CE	UL US LISTED CE	UL US LISTED CE

AHS		AES	
			
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Improved performances</p> </div> <div style="text-align: center;">  <p>Improved performances</p> </div> </div>			
∅ 6.5 mm		M8	
1.5 mm		1.5 mm	
—		—	
2 mm		2 mm	
—		—	
—		—	
—		—	
●		●	
●		●	
—		—	
●		●	
●		●	
●		●	
●		●	
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—		—	
—		—	
—25°C...+70°C		—25°C...+70°C	
IP67		IP67	
stainless steel		stainless steel	
PBT		PBT	
●		●	
●		●	
—		—	
—		—	
			



inductive

Standard

AH



ø 6.5 mm

AE



M8

AM



M12





AK



M18

dimensions		ø 6.5 mm	M8	M12	M18
standard shielded		1.5 mm	1.5 mm	2 mm	5 mm
standard unshielded		2.5 mm	2.5 mm	4 mm	8 mm
long distance shielded		2 mm	2 mm	4 mm	8 mm
long distance unshielded		4 mm	4 mm	8 mm	12 mm
standard housing		•	•	•	•
short housing		•	•	•	•
miniaturized housing		—	—	—	—
power supply	Vdc	•	•	•	•
	Vac	—	—	—	—
output type	NPN - NO	•	•	•	•
	NPN - NC	•	•	•	•
	PNP - NO	•	•	•	•
	PNP - NC	•	•	•	•
	PNP - NO + NC	—	—	—	•
	NPN - NO + NC	—	—	—	•
	DECOUT®	—	—	—	—
	SCR	—	—	—	—
	0...10 V	—	—	—	—
4...20 mA	—	—	—	—	
temperature range		-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
protection degree		IP67	IP67	IP67	IP67
housing material		stainless steel	nickel plated brass	nickel plated brass	nickel plated brass
active head material		PBT	PBT	PBT	PBT
output	cable	•	•	•	•
	M8 plug	•	•	•	—
	M12 plug	•	•	•	•
ATEX		II3GD	II3GD	II3GD	II3GD
other certifications					

DECOUT® NPN/PNP - NO/NC

AT	PM3	PK3
		
M30	M12	M18
10 mm	2 mm	5 mm
15 mm	4 mm	8 mm
15 mm	—	—
20 mm	—	—
•	•	•
—	—	—
—	—	—
•	•	•
—	—	—
•	—	—
•	—	—
•	—	—
•	—	—
•	—	—
—	—	—
—	•	•
—	—	—
—	—	—
—	—	—
-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
IP67	IP67	IP67
nickel plated brass	nickel plated brass	nickel plated brass
PBT	PBT	PBT
•	•	•
—	—	—
•	•	•
I13GD	I13GD	I13GD
 CE	CE	CE



inductive

IP68

PMS

PMW

PKS

PKW



		PMS	PMW	PKS	PKW
dimensions		M12	M12	M18	M18
standard shielded		2 mm	2 mm	5 mm	5 mm
standard unshielded		4 mm	4 mm	8 mm	8 mm
long distance shielded		—	—	—	—
long distance unshielded		—	—	—	—
standard housing		●	●	●	●
short housing		—	—	—	—
miniaturized housing		—	—	—	—
power supply	Vdc	●	●	●	●
	Vac	—	—	—	—
output type	NPN - NO	—	—	—	—
	NPN - NC	—	—	—	—
	PNP - NO	—	—	—	—
	PNP - NC	—	—	—	—
	PNP - NO + NC	●	●	●	●
	NPN - NO + NC	●	●	●	●
	DECOUT®	—	—	—	—
	SCR	—	—	—	—
temperature range		-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
protection degree		IP67/IP68	IP67/IP68	IP67/IP68	IP67/IP68
housing material		nickel plated brass	stainless steel	nickel plated brass	stainless steel
active head material		PPS	PPS	PSU	PSU
output	cable	—	—	—	—
	M8 plug	—	—	—	—
	M12 plug	●	●	●	●
ATEX		II3GD	II3GD	II3GD	II3GD
other certifications		CE	CE	CE	CE

AC

VM

VK

VT



M12

M18

M30

2 mm

5 mm

10 mm

4 mm

8 mm

15 mm

—

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-25°C...+70°C

-25°C...+70°C

-25°C...+70°C

IP67

IP67

IP67

nickel plated brass

nickel plated brass

nickel plated brass

PBT

PBT

PBT

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inductive

IP69K

PFM

PFK












PFM-26

PFK-26



dimensions		M12	M18	M12	M18
standard shielded		2 mm	5 mm	2 mm	5 mm
standard unshielded		4 mm	8 mm	4 mm	8 mm
long distance shielded		4 mm	8 mm	—	—
long distance unshielded		8 mm	12 mm	—	—
standard housing		●	●	●	●
short housing		—	—	—	—
miniaturized housing		—	—	—	—
power supply	Vdc	●	●	●	●
	Vac	—	—	—	—
output type	NPN - NO	●	●	—	—
	NPN - NC	—	—	—	—
	PNP - NO	●	●	—	—
	PNP - NC	—	—	—	—
	PNP - NO + NC	●	●	●	●
	NPN - NO + NC	●	●	●	●
	DECOUT®	—	—	—	—
	SCR	—	—	—	—
	0...10 V	—	—	—	—
4...20 mA	—	—	—	—	
temperature range		-40°C...+80°C	-40°C...+80°C	-25°C...+110°C	-25°C...+110°C
protection degree		IP68/IP69K	IP68/IP69K	IP68/IP69K	IP68/IP69K
housing material		stainless steel AISI316L	stainless steel AISI316L	stainless steel AISI316L	stainless steel AISI316L
active head material		PPS	PPS	PPS	PPS
output	cable	—	—	—	—
	M8 plug	—	—	—	—
	M12 plug	●	●	●	●
ATEX		II3GD	II3GD	—	—
other certifications		 	 	 	

Cubic

IL5	IL8	IL9	IL1
			
5x5 mm	8X8 mm	8X8 mm	10x16x28 mm
0.8 mm	1.5 mm	1.5 mm	—
—	—	—	—
1.5 mm	2 / 2.5 mm	2 / 2.5 mm	3 mm
—	—	—	6 mm
—	—	—	•
—	—	—	—
•	•	•	—
•	•	•	•
—	—	—	—
•	•	•	•
•	•	•	•
•	•	•	•
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
IP67	IP67	IP67	IP67
acciaio inox	acciaio inox	acciaio inox	PA
PBT	PBT	PBT	PA
•	•	•	•
—	•	•	•
—	—	—	—
—	—	—	—
 	 	 	


 inductive
Analogue


dimensions		M8	M12	M18
standard shielded		—	—	—
standard unshielded		—	—	—
long distance shielded		quasi embeddable 4 mm	quasi embeddable 6 mm	quasi embeddable 10 mm
long distance unshielded		—	—	—
standard housing		●	●	—
short housing		—	—	●
miniaturized housing		—	—	—
supply voltage	Vdc	●	●	●
	Vac	—	—	—
output type	NPN - NO	—	—	—
	NPN - NC	—	—	—
	PNP - NO	—	—	—
	PNP - NC	—	—	—
	PNP - NO + NC	—	—	—
	NPN - NO + NC	—	—	—
	DECOUT®	—	—	—
	SCR	—	—	—
	0...10 V	●	●	●
4...20 mA	—	●	●	
temperature range		-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
protection degree		IP67	IP67	IP67
housing material		plated brass	plated brass	plated brass
active head material		PBT	PBT	PBT
output	cable	●	●	●
	M8 plug	●	—	—
	M12 plug	—	●	●
ATEX		—	—	—
other certifications		CE	CE	CE

Extended temperature range

ETM

ETK



M12

M18

2 mm

5 mm

4 mm

8 mm

—

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-25°C...+110°C

-25°C...+110°C

IP68

IP68

stainless steel

stainless steel

PPS

PSU

—

—

—

—

●

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


—

—

CE

CE


 capacitive
Cylindrical

		C18	CE	CT	C30
					
dimensions		M18	ø 20 mm	M30	M30
standard shielded		—	10 mm	—	—
standard unshielded		—	—	—	—
long distance shielded		3...8 mm	—	15 mm	2...16 mm
long distance unshielded		3...12 mm	—	20 mm	4...25 mm
standard housing		●	●	●	●
short housing		—	—	—	—
miniaturized housing		—	—	—	—
supply voltage	Vdc	●	●	●	●
	Vac	●	—	—	●
output type	NPN - NO	—	—	●	—
	NPN - NC	—	—	●	—
	PNP - NO	—	—	●	—
	PNP - NC	—	—	●	—
	PNP - NO + NC	●	●	—	●
	NPN - NO + NC	●	●	—	●
	DECOUT®	—	—	—	—
	SCR	●	—	—	●
	0...10 V	—	—	—	—
4...20 mA	—	—	—	—	
temperature range		-25°C...+80°C	-25°C...+70°C	-25°C...+70°C	-25°C...+80°C
protection degree		IP67	IP65	IP65	IP67
housing material		PE	stainless steel	nickel plated brass	PE/ stainless steel
active head material		PE	LCP	PBT	PE
output	cable	●	●	●	●
	M8 plug	—	—	—	—
	M12 plug	●	●	●	●
ATEX		—	—	—	—
other certifications					

Cubic

CQ50

CQ55



7 x 30 x 50 mm

15 x 35 x 55 mm

—

—

—

—

5/6/7/10 mm

4...25 mm

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0°C...+60°C

-25°C...+80°C

IP67

IP67

Noryl

PC

Noryl

PC

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—

CE

UL LISTED CE





Area Sensors

— Area Sensors

— Special



Area

Area Sensors

BX04



BX10





BX80



AX100



		BX04	BX10	BX80	AX100
dimensions		20x44x120 mm	20x44x120 mm	20x44x120 mm	ø15x247 mm
sensing distance		up to 6 m	up to 6 m	up to 2.5 m	1 m/2 m
controlled area height		90 mm	90 mm	70 mm	150 mm
beam type		crossed	crossed	crossed/parallel	crossed/parallel
minimum detectable object		up to ø 15 mm	up to ø 5 mm	up to ø 2 mm	up to ø 5 mm
number of optics		4	10	12	16
optics step		30 mm	10 mm	6 mm	10 mm
blanking		—	—	—	—
power supply	Vdc	●	●	●	●
	Vac	—	—	—	—
output type	NPN + PNP - NO	●	●	—	—
	NPN + PNP - NC	●	●	—	—
	NPN - NO / NC	—	—	●	●
	PNP - NO / NC	—	—	●	●
	PNP - NO	—	—	—	—
	NPN - NO	—	—	—	—
	PNP - NC	—	—	—	—
	NPN - NC	—	—	—	—
	1xPNP/NO/NC + 1xNPN/NO/NC	—	—	—	—
	1 x 4...20 mA + 1 x 0...10 V	—	—	—	—
	NPN+4...20 mA + 0...10 V	—	—	—	●
temperature range		0°C...+50°C	0°C...+50°C	-25°C...+50°C	0°C...+50°C
protection degree		IP67	IP67/IP69K	IP67/IP69K	IP65
housing material		valox	valox	valox	PMMA
head material		PC	PC	PC	PMMA
output	cable	●	●	●	●
	M12 plug	●	●	●	●
	M12 pig-tail	—	—	—	—
	MOLEX 22-05-7048	—	—	—	—
ATEX		II3GD	II2GD, II3GD	II3GD	—
other certifications					

AX500	CX0 New Series	CX1 New Series	CX2 New Series
			
ø70x428...828 mm	20x36 mm	20x36 mm	20x36 mm
2 m / 4 m from 350 mm to 750 mm	up to 6 m from 160 mm to 320 mm	up to 6 mm from 160 to 960 mm	up to 6 mm from 160 to 960 mm
crossed/parallel ø 55 mm	crossed up to ø 3 mm	crossed/parallel up to ø 3 mm	crossed/parallel up to ø 1 mm
from 8 to 16	from 17 to 65	from 17 to 97	from 17 to 97
50 mm	5 - 10 mm	5 - 10 mm	5 - 10 - 20 mm.
—	—	—	●
●	●	●	●
—	—	—	—
—	—	—	—
●	—	—	—
●	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	●	●	●
—	—	—	●
●	—	—	—
0°C...+50°C	-10°C...+55°C*	-10°C...+55°C*	-10°C...+55°C*
IP65	IP67	IP67	IP67
PMMA	aluminium	aluminium	aluminium
PMMA	PMMA	PMMA	PMMA
●	—	—	—
—	—	—	—
—	●	●	●
—	—	—	—
—	—	—	—
CE	CE*	CE*	CE*

* without condensation



Area

Special



		NX	CST539-S	CST539-L	
dimensions		41x18x140...157 mm	24.3x12.7x203.2 mm	24.3x12.7x203.2 mm	
sensing distance		0.37...2m	420 mm	—	
controlled area height		from 132 mm to 150 mm	180 mm	180 mm	
minimum detectable object		up to \varnothing 5 mm	up to 10x10 mm	up to 11x11 mm	
number of optics		14 / 16	16	16	
optics step		10 mm	10 mm min. / 14 mm max.	10 mm min. / 14 mm max.	
power supply	Vdc	●	●	●	
	Vac	—	●	●	
output type	NPN + PNP - NO	—	—	—	
	NPN + PNP - NC	—	—	—	
	NPN - NO / NC	—	—	—	
	PNP - NO / NC	—	—	—	
	PNP - NO	●	—	—	
	NPN - NO	●	—	—	
	PNP - NC	●	—	—	
	NPN - NC	●	—	—	
	NPN + 4...20 mA + 0...10V	—	—	—	
	optoisolated, 20 mA parallels	—	●	●	
temperature range		0°C...+55°C	2°C...+42°C	2°C...+42°C	
protection degree		undefined	IP65	IP65	
housing material		without housing	crystal polystyrene	crystal polystyrene	
head material		no optics	crystal polystyrene	crystal polystyrene	
output	cable	—	●	●	
	M12 plug	—	—	—	
	MOLEX 22-05-7048	●	—	—	
ATEX		—	—	—	
other certifications		CE*	CE*	CE*	

*CE certification, to get together with the machine

CST539-SDX



24.3x12.7x203.2 mm
—
650 mm
up to 10x10 mm
16
10 mm min. / 14 mm max.
●
●
—
—
—
—
—
—
—
—
—
—
—
●
—
2°C...+42°C
IP65
crystal polystyrole
crystal polystyrole
●
—
—
—
CE*





Safety

Control unit Type 2

Single beam Photoelectric Sensors Type 2 and 4

Safety light curtains Type 2

Safety light curtains Type 4



Safety

Control unit Type 2

SBCR03



dimensions		84x76x110 mm
sensing distance		—
controlled area height		—
protection		—
resolution		—
beams number		up to 6
available functions	automatic restart	•
	manual restart	•
	EDM	•
	double muting	•
type		2 (EN 61496-1/-2) PL c (EN ISO 13849 -1) SIL CL 1 (EN 62061 - IEC 61508)
power supply	Vdc	•
	Vac	—
output type	2 relays	—
	2 PNP	•
	totem pole	—
temperature range		-20°C...+60°C
protection degree		IP20
housing material		ABS
head material		—
output	cable	—
	M12 plug	—
	terminals	•
ATEX		—
other certifications		

Single beam Photoelectric Sensors Type 2 and Type 4

SH-IA	TH-IA	SH-IC	TH-IC
			
M18	M30	M18	M30
10 m	30 m 60 m	10 m (axial) 5 m (right angle)	60 m
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
connected to SBCR03 unit	connected to SBCR03 unit	connected to external unit type 2 and type 4	connected to external unit type 2 and type 4
connected to SBCR03 unit	connected to SBCR03 unit	connected to external unit type 2 and type 4	connected to external unit type 2 and type 4
connected to SBCR03 unit	connected to SBCR03 unit	connected to external unit type 2 and type 4	connected to external unit type 2 and type 4
connected to SBCR03 unit	connected to SBCR03 unit	connected to external unit type 2 and type 4	connected to external unit type 2 and type 4
2	2	2/4 (IEC 61496-2) SIL CL1/SIL CL3 (EN62061) PL c/PL e (EN ISO 13849)	2/4 (IEC 61496-2) SIL CL1/SIL CL3 (EN62061) PL c/PL e (EN ISO 13849)
●	●	—	—
—	—	—	—
—	—	—	—
—	—	—	—
●	●	●	●
-25°C...+60°C	-25°C...+60°C	-20°C...+55°C	-20°C...+55°C
IP67	IP67	—	—
plastic / metallic	metallic	nickel plated brass/plastic	nickel plated brass
PMMA	PMMA / glass	glass	glass
—	—	●	—
●	●	●	●
—	—	—	—
—	—	—	—
			

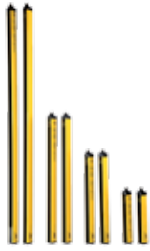


Safety

Safety light curtains Type 2

LS2

LS2_K & LS2_H



		LS2	LS2_K & LS2_H
dimensions		cubic 28x30 mm	cylindric ø 56 mm
sensing range		0..4/0..12 m sel..	0..3/0..10 m
controlled area height		from 160 to 1,510 mm	from 160 to 1,510 mm
protection		hand, body, access	hand, access
resolution		30 mm, 40 mm, 50 mm, 90 mm, 300 mm, 400 mm, 500 mm	30 mm, 300 mm, 400 mm, 500 mm
beams number		depending on height	depending on height
available functions	automatic restart	●	●
	manual restart	●	●
	EDM	●	●
	integrated connections for muting sensors	—	—
	sensitivity adjustment	●	●
	extended range	—	—
	master	●	—
	intermediate slave	●	—
	final slave	●	—
with passive element	—	—	
type		2 (EN 61496-2) SILCL 1 (EN 62061) PL c (EN ISO 13849 -1)	2 (EN 61496-2) SILCL 1 (EN 62061) PL c (EN ISO 13849 -1)
power supply	Vdc	●	●
	Vac	—	—
output type	2 relays	—	—
	2 PNP	●	●
temperature range		-10°C...+55°C	-10°C...+55°C (LS2_K) -25°C...+55°C (LS2_H)
protection degree		IP67	IP69K
housing material		aluminium	PMMA, POM-C, stainless steel AISI 361L
optic material		PMMA	PMMA
output	cable	—	●
	M12 plug, 5 wires	emitter and master/slave	—
	M12 plug, 8 wires	single receiver and master	—
	M23 plug, 19 wires	—	—
ATEX		—	—
other certifications			

















Safety

Safety light curtains Type 4



		LS4	LS4_K & LS4_H	LP4ER
dimensions		cubic 28x30 mm	cylindric ø 56 mm	cubic 50x60 mm
sensing distance		0..3/1..6 m sel. (res. 14 mm); 0..4/0..12 m e 0..10/3..20 m sel.	0..2/1..5 m (res. 14 mm); 0..8/3..17 m sel.	0..6/1..16 m sel.; 8..30/18..60 m sel.;
controlled area height		from 160 to 1,510 mm	from 160 to 1,510 mm	510 mm, 610 mm, 810 mm, 910 mm, 1,210 mm
protection		finger, hand, body, access	finger, hand, access	hand, access
resolution		14 mm, 20 mm, 30 mm, 40 mm, 50 mm, 90 mm, 300 mm, 400 mm, 500 mm	14 mm, 30 mm, 300 mm, 400 mm, 500 mm	40 mm, 300 mm, 400 mm, 500 mm
beams number		depending on height	depending on height	depending on height
available functions	automatic restart	●	●	●
	manual restart	●	●	●
	EDM	●	●	●
	integrated connections for muting sensors	—	—	—
	sensitivity adjustment	●	●	●
	extended range	●	●	●
	master	●	—	—
	intermediate slave	●	—	—
	final slave	●	—	—
with passive element	—	—	—	
type		4 (EN 61496-2) SILCL 3 (EN 62061) PL e (EN ISO 13849-1)	4 (EN 61496-2) SILCL 3 (EN 62061) PL e (EN ISO 13849-1)	4 (EN 61496-2) SILCL 3 (EN 62061) PL e (EN ISO 13849-1)
power supply	Vdc	●	●	●
	Vac	—	—	—
output type	2 relays	—	—	—
	2 PNP	●	●	●
temperature range		-10°C...+55°C	-10°C...+55°C (LS4_K) -25°C...+55°C (LS4_H)	-10°C...+55°C
protection degree		IP67	IP69K	IP65
housing material		aluminium	PMMA, POM-C, stainless steel AISI 316L	aluminium
optic material		PMMA	PMMA	PMMA
output	cable	—	●	—
	M12 plug, 5 wires	emitter and master / slave	—	emitter
	M12 plug, 8 wires	single emitter and master	—	receiver
	M23 plug, 19 wires	—	—	receiver
ATEX		—	—	—
other certifications				

LP4PF	LP4ER_M	LP4PT
		
cubic 50x60 mm	cubic 50x60 mm	cubic 50x60 mm
0..6m	0..6 / 1...16 m sel.; 8..30 / 18..60 m sel.	0..6m
510 mm, 810 mm, 910 mm	from 310 to 1,810 mm	510 mm, 810 mm, 910 mm
access	hand, body, access	access
500 mm, 400 mm, 300 mm	30 mm, 40 mm, 90 mm, 300 mm, 400 mm, 500 mm	500 mm, 400 mm, 300 mm
2, 3 and 4 beams	depending on height	2, 3 and 4 beams
●	●	●
●	●	●
●	●	●
—	●	●
—	●	—
—	●	—
—	—	—
—	—	—
—	—	—
●	—	●
4 (EN 61496-2) SILCL 3 (EN 62061) PL e (EN ISO 13849 -1)	4 (EN 61496-2) SILCL 3 (EN 62061) PL e (EN ISO 13849 -1)	4 (EN 61496-2) SILCL 3 (EN 62061) PL e (EN ISO 13849 -1)
●	●	●
—	—	—
—	—	—
●	●	●
-10°C...+55°C	0°C...+55°C	0°C...+55°C
IP65	IP65	IP65
aluminium	aluminium	aluminium
PMMA	PMMA	PMMA
—	—	—
—	emitter and muting sensors (male)	muting sensors (male)
active element	—	—
—	receiver	active element
—	—	—
  	  	  





Applicative Sensors

— Vibration Sensor

— Time of Flight Sensor

— Contrast & UV scanner

— Forks for edge detection





Applicative sensors

Vibration sensor

Time of Flight Sensor

VBR

Coming soon



TF

Coming soon



dimensions	M18	21x12,8x31,2 mm
power supply voltage	24 VDC +/-20%	24 VDC +/-20%
sensing range	+/-16g (Max)	0..180 mm (white 90%) 0..600 mm (white 90%)
resolution	15,62mg @ +/-2g 31,25mg @ +/-4g 62,50mg @ +/-8g 125mg @ +/-16g	1mm @ range 0..180mm 3mm @ range 0..600mm
accuracy	-	+/- 10mm
number of measurement axis	3 (X, Y, Z)	-
frequency range	0 .. 400 Hz	-
switching frequency	-	< 10 Hz
output type	RS-485 (addressable) + analogue 4..20mA / 0..10V (programmable)	2 x programmable digital outputs PNP/NPN/PushPull -- NO/NC
technology	MEMS	-
emission	-	LASER infrared, Class 1
wave lenght	-	850 nm
temperature range	-25°C .. +70°C	-10°C .. +60°C
protection degree	IP67 / IP68	IP67
housing material	nickel plated brass / stainless steel	plastic
front-end material	PBT	PMMA
connection	5-pins cable M12 5 pins Pig Tail	4-pins cable M12 4-pins Pig Tail
other certifications	CE	CE

		Contrast & UV scanner		Forks for edge detection	
		LTB \ LDLU	LDLV	FC3	FC4
					
dimensions		M18	M30	26x75x90 mm	26x83x162 mm
contrast scanner		● (LTB)	—	—	—
luminiscent scanner		● (LDLU)	●	—	—
sensing distance S_n		—	—	38 mm	43 mm
slot sensor for control edge detection		—	—	●	●
slot sensor for object detection		—	—	—	—
slot sensor for labels detection		—	—	—	—
sensing distance		12 mm (STF12) 25 mm (STF25)	30 mm	h = 38 mm	h = 43 mm
depth detection slot		—	—	—	—
minimum object dimension		—	—	—	—
emission		white (LTB), UV (LDLU)	UV	IR	IR
switching frequency		10 kHz	400 Hz	25 Hz	25 Hz
supply voltage	V _{dc}	●	●	●	●
	V _{ac}	—	—	—	—
output type	NPN - NO	—	—	—	—
	NPN - NC	—	—	—	—
	PNP - NO	—	—	—	—
	PNP - NC	—	—	—	—
	NPN - NO / NC	●	●	—	—
	PNP - NO / NC	●	●	—	●
	NPN/PNP - NO/NC	—	—	—	—
	SCR	—	—	●	—
temperature range		-5°C...+55°C	-5°C...+55°C	-25°C...+50°C	-25°C...+55°C
protection degree		IP65	IP65	IP64	IP67
housing material		PBT	nickel plated brass	PCB	PC
head material		PMMA	glass	PCB	PC
output	cable	●	—	—	●
	plug	M12	M12	M12 pig-tail	M12 pig-tail
ATEX		—	—	—	—
other certifications		CE	CE	CE	CE





Accessories

Universal accessories

Accessories for M8 cylindrical Sensors

Accessories for M12 cylindrical Sensors

Accessories for M18 cylindrical Sensors

Accessories for M30 cylindrical Sensors

Accessories for cubic Sensors

Accessories for Ultrasonic Sensors

Accessories for Area Sensors

Accessories for Safety Sensors



Universal accessories

model	description	suitable with
ST 82	screwdriver accessory for trimmer adjustment	sensors with trimmer adjustment
ST 100	accessory for testing DC sensors	sensors

Accessories for M8 cylindrical Sensors

model	description	suitable with
ST 08 - A	metal axial mount bracket	M8 cylindrical sensors
ST 08 - C	metal right angle mount bracket	M8 cylindrical sensors

Accessories for M12 cylindrical Sensors

model	description	suitable with
ST 04	plastic swing bracket	M12 cylindrical sensors
ST 12 - A	metal axial mount bracket	M12 cylindrical sensors
ST 12 - A7W	stainless steel AISI316L (DIN 1.4404) axial mount bracket	M12 cylindrical sensors
ST 12 - C	right angle mount bracket	M12 cylindrical sensors
ST 12 - C7W	stainless steel AISI316L (DIN 1.4404) right angle mount bracket	M12 cylindrical sensors
STFM-1 ... 4	M12 focusing devices (7,5 - 12,5 - 22 - 29 mm)	M12 cylindrical sensors (only emitter)
STOM 1 ... 6	shutters	M12 cylindrical sensors
ST 37	right angle beam adapter	M12 cylindrical sensors
ST 36	antidust front	M12 cylindrical sensors
ST 60	protective front	M12 cylindrical sensors

Accessories for M18 cylindrical Sensors

model	description	suitable with
ST 02	plastic swing bracket	M18 cylindrical sensors
ST 08	M18 metal ring nuts	sensori cilindrici M18
ST 29	M18 metal ring nuts	M18 metallic cylindrical sensors fixed to ST-02 plastic adjustable bearing
ST 18 - A	metal axial mount bracket	M18 cylindrical sensors
ST 18 - A7W	stainless steel AISI316L (DIN 1.4404) axial mount bracket	M18 cylindrical sensors
ST 18 - C	metal right angle mount bracket	M18 cylindrical sensors
ST 18 - C7W	stainless steel AISI316L (DIN 1.4404) right angle mount bracket	M18 cylindrical sensors
STC - 18	mounting bracket for cylindrical rod $\varnothing 12 \div 20$ mm	M18 cylindrical sensors
STF-12 ... 50	M18 focusing devices (12 - 25 - 50 mm)	M18 cylindrical sensors SAT-LDLU-LTB-SST-MST series
ST0S 1 ... 8	shutters	M18 cylindrical sensors
ST 03	right angle beam adapter	M18 cylindrical sensors
ST 30	antidust front	M18 cylindrical sensors
ST 32	anti-condensation front	M18 cylindrical sensors
ST 50	protective front	M18 cylindrical sensors
ST 03 - U	plastic right angle bea adapter	M18 cylindrical sensors
ST0FA1	kit adhesive shutter	M18 cylindrical sensors axial FA series
ST0FA2	kit adhesive shutter	M18 cylindrical sensors right angle FA series

Accessories for M30 cylindrical Sensors

articolo	descrizione	suitable with
ST 13	metal swing bracket with threaded holes	M30 cylindrical sensors
ST 14	metal swing bracket with screws	M30 cylindrical sensors
ST 30 - A	metal axial mount bracket	M30 cylindrical sensors
ST 30 - C	metal right angle mount bracket	M30 cylindrical sensors
ST 55	right angle beam adapter	M30 cylindrical sensors



Accessories for cubic sensors

model	description	suitable with
ST101	L vertical mounting bracket	QM rectangular sensors
ST102	L side mounting bracket	QM rectangular sensors
ST103	vertical mounting bracket with protective cover	QM rectangular sensors
ST104	horizontal mounting bracket with protective cover	QM rectangular sensors
STOM0	vertical and horizontal shutters	QM rectangular sensors
STQMS	screws - nuts - lockwashers	QM rectangular sensors
ST 01	metal mounting bracket	BS - BV rectangular sensors
ST 07	metal mounting bracket	PS - FS1 rectangular sensors
ST 70	metal mounting bracket	BS - BV rectangular sensors
ST 80	metal mounting bracket	RX rectangular sensors
ST 81	metal mounting bracket	RX rectangular sensors
STC - 80	metal mounting bracket for cylindrical rod $\varnothing 12 \div 20$ mm	RX - BS - BV - PS rectangular sensors
ST0FE	shutters for emitter/receiver	FE rectangular sensors
STPFE	focus for emitter/receiver	FE rectangular sensors
STDFX	bracket 1 pc	FX3 / FX4
STDFX - 10	bracket 10 pcs	FX3 / FX4
STZ3	undecal socket	URA - URB - URC - URD control units series

Accessories for Ultrasonic Sensors

model	description	suitable with
ST 18 - D - U	beam deflector bracket	M18 cylindrical sensors
ST 18 - D - F - U	focusing beam deflector bracket	M18 cylindrical sensors
ST 30 - D - U	beam deflector bracket	M30 cylindrical sensors
ST 30 - D - F - U	focusing beam deflector bracket	M30 cylindrical sensors
ST 03 - U	beam deflector	M18 cylindrical sensors
ST 55 - U	beam deflector	M30 cylindrical sensors

Accessories for Area Sensors

model	description	suitable with
ST 86	position adapter BX80 - AX80	Area Sensors BX80 series
ST 18 - A	metal axial mount bracket	Area Sensors
ST 18 - C	metal right angle mount bracket	Area Sensors



LP / BOX -1



SB400 & SB400M



STL 01 P

STL 01 S



ST FLEX



ST 30



SB300



ST02



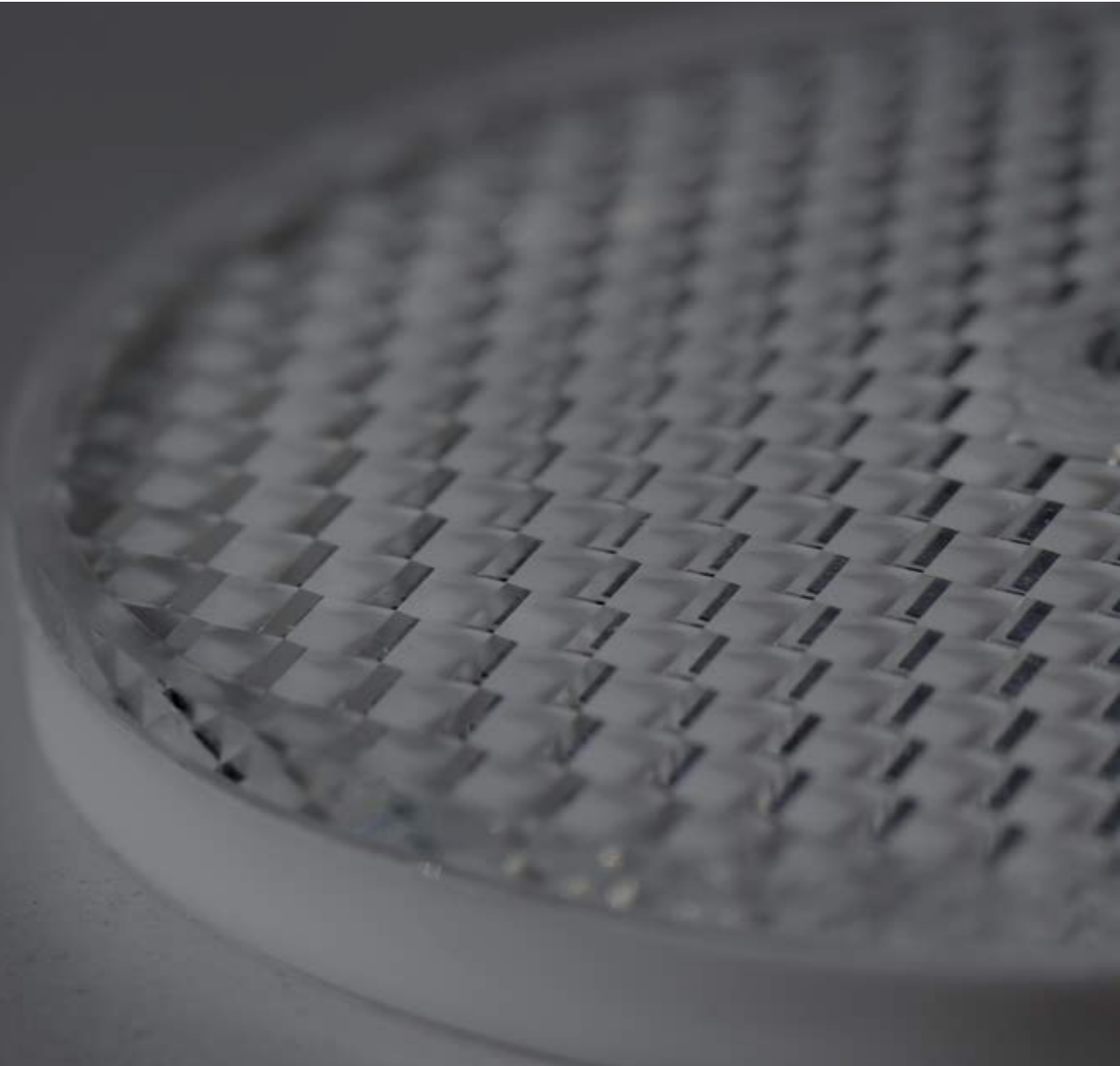
SL**CL

SL***

Accessories for Safety Sensors

model	description	suitable with
ST 85	box IP65	SBCR03 control unit serie
SBAL / 01	cover with rectangular male connector	SBA series
SBAL / 02	cover with PG11 connector	SBA series
SBAL / 03	internal female terminal	SBA series
SB 300	safety relay module for DIN rail mount	control units and Safety Sensors Cat. 2
CHR / 0B - 00	DIN 43650 connector	TH series
CSK / 07 - 01	rectangular connector	SBA series
LP / BOX - 1	checking box: start functions, override, muting lamp, M12 and M13 conn., Relay 2NA + 1NC	LP4 series
SB400	Relay Interface module	LS2 and LS4 series
SB400M	Relay Interface module with muting functions	LS2 and LS4 series
ST FIX	basement for columns	LP4, LS2 and LS4 series
ST FLEX	basement for columns with springs	LP4, LS2 and LS4 series
ST CL A	protective column barrier basement for barriers with 2 beams	LP4 series
ST CL B	protective column barrier basement for barriers with 3 beams	LP4 series
ST CL C	protective column barrier basement for barriers with 4 beams	LP4 series
ST CL 17	protective column barrier basement for barriers with controlled height up to 1,360 mm	LP4 series
ST CL 20	protective column barrier basement for barriers with controlled height up to 1,660 mm	LP4 series
ST CL AP	protective column barrier basement for barriers with lug PG11 for barriers with 2 beams	LP4 series
ST CL BP	protective column barrier basement for barriers with lug PG11 for barriers with 3 beams	LP4 series
ST CL CP	protective column barrier basement for barriers with lug PG11 for barriers with 4 beams	LP4 series
ST CL 17P	protective column barrier basement for barriers with lug PG11 for barriers with controlled height up to 1,360 mm	LP4 series
ST CL 20P	protective column barrier basement for barriers with lug PG11 for barriers with controlled height up to 1,660 mm	LP4 series
ST AX	column barrier basement for up to 4 beams barriers	LP4, LS2 and LS4 series
ST CLS B	protective column barrier basement for up to 2 beams barriers	LS2 and LS4 series
ST CLS C	protective column barrier basement with 3 or 4 beams barriers	LS2 and LS4 series
ST CLS 17	protective column barrier basement for barriers with controlled height up to 1,360 mm	LS2 and LS4 series
ST CLS 20	protective column barrier basement for barriers with controlled height up to 1,660 mm	LS2 and LS4 series
ST CLS BP	protective column barrier basement for barriers with lug PG11 for barriers with 2 beams	LS2 and LS4 series
ST CLS CP	protective column barrier basement for barriers with lug PG11 for barriers with 3 or 4 beams	LS2 and LS4 series
ST CLS 17P	protective column barrier basement for barriers with lug PG11 for barriers with controlled height up to 1,360 mm	LS2 and LS4 series
ST CLS 20P	protective column barrier basement for barriers with lug PG11 for barriers with controlled height up to 1,660 mm	LS2 and LS4 series

model	description	suitable with
SL A CL	protective column with mirror for 2 beams barriers	LP4, LS2 and LS4 series
SL B CL	protective column with mirror for 3 beams barriers	LP4, LS2 and LS4 series
SL C CL	protective column with mirror for 4 beams barriers	LP4, LS2 and LS4 series
SL 17 CL	protective column with mirror for barriers with controlled height up to 1,360 mm	LP4, LS2 and LS4 series
SL 20 CL	protective column with mirror for barriers with controlled height up to 1,660 mm	LP4, LS2 and LS4 series
SL 015	beam deflector mirror for barriers with 160 mm protected height	LP4, LS2 and LS4 series
SL 020	beam deflector mirror for barriers with 230 mm protected height	LP4, LS2 and LS4 series
SL 030	beam deflector mirror for barriers with 310 mm protected height	LP4, LS2 and LS4 series
SL 045	beam deflector mirror for barriers with 460 mm protected height	LP4, LS2 and LS4 series
SL 060	beam deflector mirror for barriers with 610 mm protected height and 2 beams	LP4, LS2 and LS4 series
SL 075	beam deflector mirror for barriers with 760 mm protected height and	LP4, LS2 and LS4 series
SL 090	beam deflector mirror for barriers with 910 mm protected height and 3 beams	LP4, LS2 and LS4 series
SL 105	beam deflector mirror for barriers with 1,060 mm protected height and 4 beams	LP4, LS2 and LS4 series
SL 120	beam deflector mirror for barriers with 1,210 mm protected height	LP4, LS2 and LS4 series
SL 135	beam deflector mirror for barriers with 1,360 mm protected height	LP4, LS2 and LS4 series
SL 145	beam deflector mirror for barriers with 1,440 mm protected height	LP4, LS2 and LS4 series
SL 150	beam deflector mirror for barriers with 1,510 mm protected height	LP4, LS2 and LS4 series
SL 165	beam deflector mirror for barriers with 1,660 mm protected height	LP4, LS2 and LS4 series
SL 180	beam deflector mirror for barriers with 1,810 mm protected height	LP4, LS2 and LS4 series
STL 01 P	laser pointer	LP4 series
STL 01 S	laser pointer	LS2 and LS4 series
ST VP 4	4 pcs. kit antivibration basement, from 310 to 1060 mm; 2,3,4 beams	LP4 series
ST VP 6	6 pcs. kit antivibration basement	LP4 series
ST 4V S	4 pcs. kit antivibration basement for barriers with 150 mm protected height	LS2 and LS4 series
ST 8V S	8 pcs. kit antivibration basement for barriers with protected height from 300 mm to 1,050 mm	LS2 and LS4 series
ST 12V S	12 pcs. kit antivibration basement for barriers with protected height from 1,500 mm to 1,800 mm	LS2 and LS4 series
ST 201 4	4 pcs. short L brackets	LP4 series
ST 201 6	6 pcs. short L brackets	LP4 series
ST 202 4	2 pcs. long L brackets	LP4 series
ST 203 4	4 pcs. fixing inserts	LP4 series
ST 203 6	6 pcs. fixing inserts	LP4 series
ST 204 4S	4 pcs. kit L brackets and related insert and bolts	LS2 and LS4 series
ST 204 6S	6 pcs. kit L brackets and related insert and bolts	LS2 and LS4 series
ST 206 4S	4 pcs. kit swing brackets for barriers with 1,050 mm protected height	LS2 and LS4 series
ST 206 6S	6 pcs. kit swing brackets for barriers with 1,200 mm protected height	LS2 and LS4 series
ST 207 S	4 pcs. kit swing brackets - 180° rotation	LS2 and LS4 series
ST 2214	14 mm testing rod	LP4, LS2 and LS4 series
ST 2220	20 mm testing rod	LS2 and LS4 series
ST 2230	30 mm testing rod	LP4, LS2 and LS4 series
ST 2240	40 mm testing rod	LP4, LS2 and LS4 series
ST 2250	50 mm testing rod	LS2 and LS4 series





Reflectors

RL serie

% reflector model ⁽¹⁾	RL098	RL100	RL100D (50x50mm)	RL100 DA4	RL100 DC4	RL100 DQ1	RL102	RL103	RL104	RL105G	RL106G	RL107	RL110
DMP	-	-	40	55	50	50	25	50	50	50	80	125	100
FAIC_axial	20	10	20	40	25	30	35	50	50	40	80	105	100
FAIM_axial	20	10	20	40	25	30	35	50	50	40	80	105	100
FAIC_90°	20	10	20	40	25	30	35	50	50	40	80	105	100
FAIM_90°	20	10	20	40	25	30	35	50	50	40	80	105	100
FARN_axial	-	-	25	40	30	35	40	45	50	40	80	110	100
FARP_axial	-	-	25	40	30	35	40	45	50	40	80	110	100
FARN_90°	-	-	20	35	25	30	30	25	35	40	110	130	100
FARP_90°	-	-	20	35	25	30	30	25	35	40	110	130	100
FARL_axial	-	-	-	-	-	-	-	-	-	-	-	-	100
FARL_90°	-	-	-	-	-	-	-	-	-	-	-	-	100
FALN	-	-	20	20	15	20	30	40	45	70	90	85	100
SSC	20	10	15	35	30	30	30	40	50	40	80	110	100
SPC	20	10	15	35	30	30	30	40	50	40	80	110	100
SSP	-	-	-	-	-	-	5	40	50	30	70	110	100
SPP	-	-	-	-	-	-	5	40	50	30	70	110	100
MSC	20	10	25	45	35	40	35	50	60	45	100	115	100
MPC	20	10	25	45	35	40	35	50	60	45	100	115	100
MSP	-	-	35	35	35	35	25	50	70	50	110	115	100
MPP	-	-	35	35	35	35	25	50	70	50	110	115	100
SAC	30	15	25	40	40	40	25	40	45	45	100	115	100
SAP	-	-	25	35	35	35	25	40	50	40	90	120	100
MVC	20	10	25	45	35	45	30	50	60	40	90	110	100
MVP	-	-	20	25	30	30	25	20	35	35	60	105	100
FQIC_axial	30	15	30	75	40	45	40	50	50	50	95	105	100
FQIC_90°	15	20	30	75	40	50	25	40	55	40	90	105	100
FQRN_axial	-	-	30	30	30	30	40	50	50	45	90	110	100
FQRN_90°	-	-	30	35	30	30	40	50	50	40	90	110	100
FQRL_axial	-	-	-	-	-	-	-	-	-	-	-	-	100
FQRL_90°	-	-	-	-	-	-	-	-	-	-	-	-	100
FFRN	-	-	25	30	30	30	35	45	50	45	90	110	100
FFRP	-	-	25	30	30	30	35	45	50	45	90	110	100
FFRL	-	-	-	-	-	-	-	-	-	-	-	-	100
QXP	-	-	30	35	35	35	25	30	40	40	80	110	100
QXC	-	-	-	40	30	15	20	25	35	40	90	100	100
BVC	40	20	35	85	50	55	40	50	55	50	95	110	100
BSC	40	20	35	85	50	55	40	50	55	50	95	110	100
PSC	-	-	-	30	25	25	20	20	10	40	30	115	100
RXC	25	20	25	50	30	40	30	30	20	35	80	95	100
RXP	-	-	30	50	35	40	10	10	40	45	60	110	100
QMIC	40	20	30	40	20	35	30	40	40	40	90	100	100
QMIG	-	-	-	-	-	-	-	-	-	-	-	-	100
QMRG_LP	-	-	-	-	-	-	-	-	-	-	-	-	100
QMRG	-	-	-	-	-	-	-	-	-	-	-	-	100
Q50RN	-	-	25	35	25	30	35	45	50	40	80	105	100
FGRN	5	-	15	30	30	30	35	50	55	45	75	105	100
QMRN	-	-	15	35	30	35	15	30	40	50	90	120	100
QMRL	-	-	-	-	-	-	-	-	-	-	-	-	100
protection degree ⁽²⁾	IP67												
material	acrylic / polycarbonate												

	RL110	RL111G	RL112G	RL113G	RL116	RL130	RL131	RL133	RL201	RL202	RL203	RL204	% reflector model ⁽¹⁾
	100	30	35	75	50	55	30	25	-	-	-	-	DMP
	100	40	50	80	80	80	30	25	-	-	-	-	FAIC_axial
	100	40	50	80	80	80	30	25	-	-	-	-	FAIM_axial
	100	40	50	80	80	80	30	25	-	-	-	-	FAIC_90°
	100	40	50	80	80	80	30	25	-	-	-	-	FAIM_90°
	100	35	45	70	75	75	35	10	-	-	-	-	FARN_axial
	100	35	45	70	75	75	35	10	-	-	-	-	FARP_axial
	100	15	15	60	20	45	25	7	-	-	-	-	FARN_90°
	100	15	15	60	20	45	25	7	-	-	-	-	FARP_90°
	100	-	-	70	70	-	-	-	-	-	-	-	FARL_axial
	100	-	-	55	70	-	-	-	-	-	-	-	FARL_90°
	100	60	70	85	85	90	15	15	130	120	90	90	FALN
	100	45	50	75	85	85	40	25	-	-	-	-	SSC
	100	45	50	75	85	85	40	25	-	-	-	-	SPC
	100	40	45	70	110	80	25	-	-	-	-	-	SSP
	100	40	45	70	110	80	25	-	-	-	-	-	SPP
	100	35	50	80	80	100	40	35	-	-	-	-	MSC
	100	35	50	80	80	100	40	35	-	-	-	-	MPC
	100	50	40	60	90	60	30	25	-	-	-	-	MSP
	100	50	40	60	90	60	30	25	-	-	-	-	MPP
	100	20	55	80	90	80	35	10	-	-	-	-	SAC
	100	30	30	80	50	40	20	20	-	-	-	-	SAP
	100	50	40	70	70	75	30	25	-	-	-	-	MVC
	100	25	30	60	55	55	30	7	-	-	-	-	MVP
	100	40	55	75	90	70	30	25	-	-	-	-	FQIC_axial
	100	40	55	80	90	70	30	25	-	-	-	-	FQIC_90°
	100	35	50	75	80	70	30	25	-	-	-	-	FQRN_axial
	100	20	30	70	40	65	35	20	-	-	-	-	FQRN_90°
	100	-	-	55	60	-	-	-	-	-	-	-	FQRL_axial
	100	-	-	55	60	-	-	-	-	-	-	-	FQRL_90°
	100	35	45	75	80	70	35	25	-	-	-	-	FFRN
	100	35	45	75	80	70	35	25	-	-	-	-	FFRP
	100	-	-	55	45	-	-	-	-	-	-	-	FFRL
	100	55	40	50	70	70	20	25	-	-	-	-	QXP
	100	25	30	35	40	45	-	-	-	-	-	-	QXC
	100	35	55	85	95	95	35	30	-	-	-	-	BVC
	100	35	55	85	95	95	35	30	-	-	-	-	BSC
	100	30	30	45	45	60	10	-	-	-	-	-	PSC
	100	30	40	60	60	65	-	-	-	-	-	-	RXC
	100	25	35	45	25	60	-	-	-	-	-	-	RXP
	100	35	50	80	80	85	30	20	-	-	-	-	QMIC
	100	-	-	50	60	-	-	-	-	-	-	-	QMIG
	100	-	-	65	70	-	-	-	-	-	-	-	QMRG_LP
	100	-	-	65	70	-	-	-	-	-	-	-	QMRG
	100	40	35	60	80	80	25	20	-	-	-	-	Q50RN
	100	40	45	70	80	80	25	30	-	-	-	-	FGRN
	100	35	45	70	80	80	30	15	-	-	-	-	QMRN
	100	-	-	70	80	-	-	-	-	-	-	-	QMRL
	IP67												protection degree ⁽²⁾
	acrylic /polycarbonate												material

Reflectors

scheme notes

- (1) Refers to individual data sheets for detailed specifications of Photoelectric Sensors
- (2) Applications in water immersion or steam are not advised
- (3) % of sensing ranges with retroreflective paper of specified size.

Measures on request.

notes

To ensure a constant detection performance, especially if used to the maximum sensing range, it is important to keep the reflector surface clean by wiping with a damp cloth

Together with reflector selection, also the working conditions are mandatory, since dust or high humidity may influence the product's performance:

RANGE

sensing distance x % reflector detection x % working conditions influence

The % working condition is an arbitrary value that can be determined only through experimentation, as typical values can be used:

clean = 100%

low levels of dust or humidity = 50%

moderate levels = 25%

high levels = 10%

The reflectors must be positioned at 90° to the optical axis with max. tolerance of $\pm 15^\circ$







Connectors

- _____ Connectors with PVC cable
- _____ Connectors with PUR cable
- _____ Connectors without cable
- _____ Connector plugs in line
- _____ Extension cable
- _____ Extended temperature connectors (-25°...+105°C)
- _____ Connectors with PVC cables and cCSAus certification
- _____ Connectors with PUR cables and cCSAus certification
- _____ Connectors with PUR cables for AC capacitive sensors



available models

connectors with PVC cable

plug	wires	led	axial	right angle	length (m)
M8	3	-	CD08/0A-***A1	CD08/0A-***C1	2 - 5 - 10
	4		CD08/0B-***A1	CD08/0B-***C1	
M12	3 NO	-	CD12M/AA-***A1	CD12M/AA-***C1	
	4		CD12M/0B-***A1	CD12M/0B-***C1	
	3 NO-NPN	2 led	-	CD12M/NA-***C1	
	3 NO-NPN			CD12M/PA-***C1	
	4 NO/NC-PNP			CD12M/VB-***C1	
4 DECOU [®]	Bi-led	CD12M/DB-***C1			
M12 IP69K	4	-	CD12F/0B-050A1	CD12F/0B-050C1	5
		3	-	CD12F/LB-050C1	

available models

connectors with PUR cable

plug	wires	led	axial	right angle	length (m)
M8	3	-	CD08/0A-***A5	CD08/0A-***C5	2 - 5 - 10
	4		CD08/0B-***A5	CD08/0B-***C5	
M12	3	-	CD12M/AA-***A5	CD12M/AA-***C5	
	4		CD12M/0B-***A5	CD12M/0B-***C5	
	5	3	-	CD12M/LB-***C5	5 - 10
	8	-	CD12M/0H-***A5	CD12M/0H-***C5	2 - 5 - 10
M12 (AC)	3	-	CD12M/0X-***A5	-	5 - 10 - 15
			CD12M/AC-050A5	CD12M/AC-050C5	5

available models

connectors without cable

plug	type	connection	wires	axial	right angle
M8	male	spring terminals	3	CV08/1A-00A	-
			4	CV08/1B-00A	-
		screw terminals	3	CV08/0A-00A	-
			4	CV08/0B-00A	-
	female	spring terminals	3	CL08/1A-00A	-
			4	CL08/1B-00A	-
		screw terminals	3	CL08/0A-00A	-
			4	CL08/0B-00A	-
M12	male	screw terminals	4	CV12/0B-00A	CV12/0B-00B
	female			CL12/0B-00A	CL12/0B-00C
	male		5	CV12/0H-00A	CV12/0H-00C
	female			CL12/0H-00A	CL12/0H-00C

available models

in line plug connectors

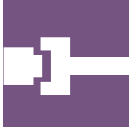
plug	type	connection	wires	model	cable diameter
M8	male	in line	4	CDV-37	ø 3,75 mm
				CDV-47	ø 4,7 mm
				CDV-50	ø 5 mm
				CDV-55	ø 5,5 mm

available models

extension cable

plug	wires	female plug	male plug	model	length (m)
M8	3	axial	axial	CDP08/0A-***AA	(*)
M12	4			CDP08/0B-***AA	
				CDP12/0B-***AA	

(*)= Please contact M.D. Sales Department for cable length and possible minimum orderable quantity.



available models

extended temperature connectors (-25°C...+105°C)

connector	nr. of wires	led	axial	right angle	length (m)
M12	4	-	CD12M/0B-***A1HT	CD12M/0B-***C1HT	5 - 10

available models

connectors with PVC cable and cCSAus certification

connector	nr. of wires	led	axial	right angle	length (m)
M8	3	-	CD08/0A-***A1US	CD08/0A-***C1US	5 - 10 - 15
	4		CD08/0B-***A1US	CD08/0B-***C1US	
M12				CD12/0B-***A1US	

available models

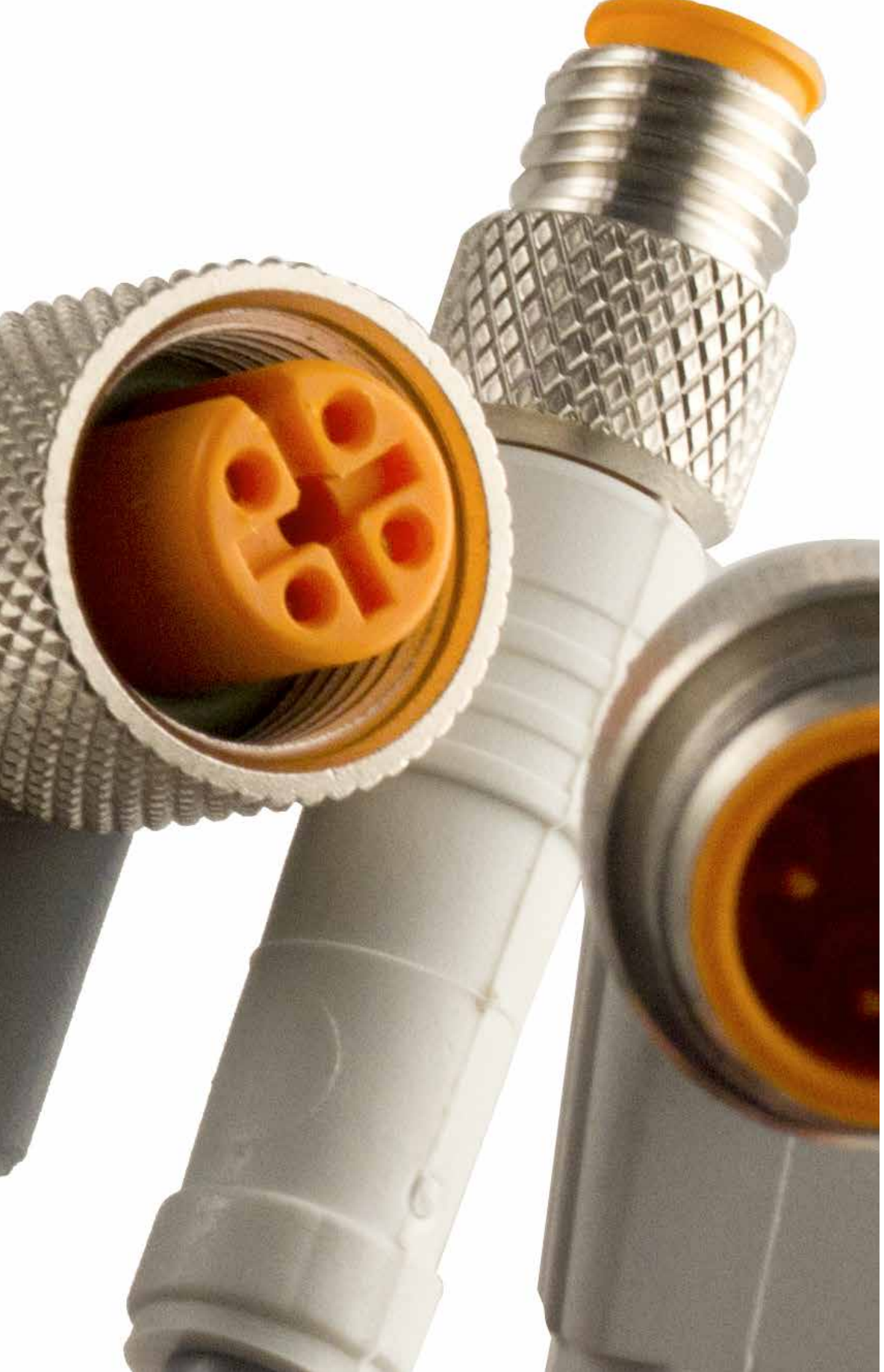
connectors with PUR cable and cCSAus certification

connector	nr. of wires	led	axial	right angle	length (m)
M8	3	-	CD08/0A-***A5US	CD08/0A-***C5US	5 - 10 - 15
	4		CD08/0B-***A5US	CD08/0B-***C5US	
M12				CD12/0B-***A5US	

available models

Connectors with PUR cable for AC capacitive sensors

connector	nr. of wires	led	axial	right angle	length (m)
M12	2 wires + PE	-	CD12M/AC-050A5	CD12M/AC-050C5	5



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Any variation will be implemented in this catalogue and its electronic version, available on the corresponding page of M.D. Micro Detectors website:
www.microdetectors.com



M.D. Micro Detectors S.p.A.

Str. S. Caterina 235
41122 Modena - Italy
tel. +39 059 420411
fax +39 059 253973

info@microdetectors.com

Micro Detectors Ibérica, S.A.U.

c/.Antic Cami Real de València, 38
08880 Castelldefels
(Barcelona)
Tel.: +34 93 448 66 30
Fax: + 34 93 645 28 15

info@microdetectors.es

www.microdetectors.es

**M.D. Micro Detectors (Tianjin)
Co, LTD.**

XEDA International Industry
area B2-3 Xiqing District
300385 - Tianjin
(China)

Tel.: +86 022 23471915
Fax: +86 022 2347191

www.microdetectors.com

