

# Proximity sensors

## Inductive

Serie	PA	PB	PC	PD	PP	IL	PH	PE	PM	PK	AH	AE	AM	AK	AT	PMS	PMW	PKS	PKW	VM	VK	VT
Dimensions	Ø3mm	M4	Ø4mm	M5	Ø4.5mm	10x10mm	Ø6.5mm	M8	M12	M18	Ø6.5mm	M8	M12	M18	M30	M12	M12	M18	M18	M12	M18	M30
Models	standard	standard	standard	standard	standard	long distance	standard short body	standard short body	DECOU <sup>®</sup>	DECOU <sup>®</sup>	standard	standard	standard	standard	standard	standard	standard	standard	standard	standard	standard	standard
Operating distances	0.6mm(Ø4)	0.6mm(Ø4)	0.6mm(Ø4)	0.6mm(Ø4)	0.6mm(Ø4)	3mm(Ø4)/5mm(Ø4)	1.5mm(Ø4)	1.5mm(Ø4)	2mm(Ø4)/3mm(Ø4)	5mm(Ø4)/8mm(Ø4)	1.5mm(Ø4)/2.5mm(Ø4)	1.5mm(Ø4)/2.5mm(Ø4)	1.5mm(Ø4)/2.5mm(Ø4)	1.5mm(Ø4)/2.5mm(Ø4)	10mm(Ø4)/12mm(Ø4)	2mm(Ø4)/5mm(Ø4)	2mm(Ø4)/5mm(Ø4)	2mm(Ø4)/5mm(Ø4)	5mm(Ø4)/8mm(Ø4)	5mm(Ø4)/8mm(Ø4)	2mm(Ø4)/5mm(Ø4)	2mm(Ø4)/5mm(Ø4)
Operating voltage	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC
Output type	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC	NPN or PNP, NO or NC
Load current	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA	<100mA
Switching frequency (min/max)	20Hz	20Hz	50Hz	50Hz	50Hz	20Hz/30Hz	20Hz	20Hz	50Hz	0.30Hz	2.5kHz/30Hz	2.5kHz/30Hz	750Hz/20Hz	150Hz/600Hz	75Hz/200Hz	20Hz	20Hz	20Hz	20Hz	25Hz	25Hz	25Hz
LED indicators	yellow	yellow	yellow	yellow	-	yellow	red	yellow	red	red	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow
Temperature range	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C
Protection degree	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67
Housing material	stainless steel	nickel-plated brass	stainless steel	nickel-plated brass	nickel-plated brass	vestamid	stainless steel	nickel-plated brass	nickel-plated brass	nickel-plated brass	stainless steel	nickel-plated brass	nickel-plated brass	nickel-plated brass	nickel-plated brass	nickel-plated brass	stainless steel	stainless steel	nickel-plated brass	nickel-plated brass	nickel-plated brass	nickel-plated brass
Sensing face material	PBT	PBT	PBT	PBT	PBT	vestamid	PBT	PBT	PBT	PBT	PBT	PBT	PBT	PBT	PBT	PBT	PBT	PBT	PBT	PBT	PBT	PBT
Wiring	axial cable	axial cable	axial cable	axial cable	axial cable	axial cable	axial cable	axial cable	axial cable	axial cable	axial cable	axial cable	axial cable	axial cable	axial cable	M12 plug	M12 plug	M12 plug	M12 plug	M12 plug	M12 plug	M12 plug

## Capacitive

Serie	CE	CT
Dimensions	Ø20mm	M30
Models	standard	standard
Operating distances	with self-monitoring 10mm(Ø4)	15mm(Ø4)/20mm(Ø4)
Operating voltage	10...30VDC	10...30VDC
Output type	NPN or PNP, NO or NC	NPN or PNP, NO or NC
Load current	<100mA	<100mA
Switching frequency (min/max)	300Hz	100Hz
LED indicators	yellow	green, red
Temperature range	-25...+70°C	-25...+70°C
Protection degree	IP65	IP65
Housing material	stainless steel	nickel-plated brass
Sensing face material	LEP	PBT
Wiring	axial cable	axial cable

# Proximity sensors

## Ultrasonic

Serie	SU	TU
Dimensions	M18	M30
Models	diffuse reflection	diffuse reflection
Operating distances	100...400mm	300...3000mm
Operating voltage	18...30VDC	19...30VDC
Output type	PNP-NO (digital version)	PNP-NO (digital version)
Load current	<500mA	<500mA
Switching frequency (min/max)	8Hz/25Hz (digital version)	1Hz (digital version)
LED indicators	yellow (digital version)	yellow (digital version)
Temperature range	0...+70°C	0...+70°C
Protection degree	IP67	IP67
Housing material	PBT	PBT
Sensing face material	ceramic	ceramic
Wiring	M12 in-line plug	M12 plug

# Photoelectric sensors

## Cylindrical

Serie	H8	HE	HM	DM	SS	SP	MS	MP	MV	MQ	SA	MT
Description	M8 miniaturized photoelectric sensors	M8 miniaturized photoelectric sensors	M12 photoelectric sensors	M12 photoelectric sensors with teach-in function	M18 standard photoelectric sensors with axial optic	M18 standard photoelectric sensors with right angle optic	M18 DECOU <sup>®</sup> photoelectric sensors with axial optic	M18 DECOU <sup>®</sup> photoelectric sensors with right angle optic	M18 multivoltage photoelectric sensors with axial optic	M18 multivoltage photoelectric sensors with right angle optic	M18 photoelectric sensors with high performances	M30 photoelectric sensors with high distances
Operating voltage	5VDC (emitter) 30VDC (receiver)	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	10...30VDC	20...253VAC (50/60Hz)	20...253VAC (50/60Hz)	10...30VDC	10...30VDC
Output type	open collector	NPN or PNP open collector, NO or NC	NPN or PNP, NO/NC selectable	NPN or PNP, NO/NC selectable	NPN or PNP, NO or NC	NPN or PNP, NO or NC	DECOU <sup>®</sup> (NPN, PNP, NO, NC)	DECOU <sup>®</sup> (NPN, PNP, NO, NC)	TRIAK, NO or NC	TRIAK, NO or NC	NPN or PNP, NO/NC selectable	NPN or PNP, NO/NC selectable
Load current	<50mA	<50mA	<50mA	<200mA	<100mA	<100mA	<100mA	<100mA	5...30mA	5...30mA	<100mA	<400mA
Switching frequency (min/max)	500Hz	100Hz	100Hz	250Hz/450Hz	25Hz/250Hz	25Hz/250Hz	30Hz/30Hz	25Hz	25Hz	25Hz	10Hz	10Hz
LED indicators	-	red	red	yellow	red, yellow	red, yellow	red	red	red	red	yellow, green	green, yellow, red
Temperature range	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C
Protection degree	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP65	IP67
Housing material	stainless steel	stainless steel	nickel-plated brass	nickel-plated brass	acrylic	acrylic	PMMA	PMMA	PMMA	PMMA	PMMA	PMMA
Lens material	PMMA	PMMA	acrylic	acrylic	PMMA	PMMA	PMMA	PMMA	PMMA	PMMA	PMMA	PMMA
Wiring	axial cable	axial cable	axial cable	axial cable	axial cable	axial cable	axial cable	axial cable	axial cable	axial cable	M12 right angle plug	M12 right angle plug

## Rectangular

Serie	PS	BS	BV	QX	RX	SX	TX
Description	miniaturized photoelectric sensors	DECOU <sup>®</sup> photoelectric sensors	M12 photoelectric sensors	photoelectric sensors with high performances	photoelectric sensors with static or relay output	rectangular photoelectric sensors	rectangular photoelectric sensors
Operating voltage	10...30VDC	10...30VDC	20...253VAC (50/60Hz)	10.8...30VDC	10...30VDC	10...30VDC	10...30VDC
Output type	NPN or PNP, NO or NC	DECOU <sup>®</sup> (NPN, PNP, NO, NC)	TRIAK, NO/NC selectable	NPN/PNP selectable, NO or NC	DECOU <sup>®</sup> (NPN, PNP, NO, NC), SPST relay	NPN or PNP, NO/NC	PNP-NO/NC
Load current	<100mA	<100mA	5...300mA	<300mA	<100mA, 3Amax	<100mA	<100mA, 100W/600VA
Switching frequency (min/max)	25Hz/200Hz	80Hz	25Hz	500Hz/750Hz	25Hz/250Hz	700Hz	10Hz/250Hz
LED indicators	red	red	red	red, green	red, green	yellow	green
Temperature range	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	-40...+60°C	-25...+60°C
Protection degree	IP65	IP65	IP65	IP65	IP65	IP67	IP65, IP67
Housing material	ABS	ABS	ABS	ABS	PC	PC	PC
Lens material	Plexiglass	Plexiglass	Plexiglass	acrylic	PMMA/PL glass	PMMA	PMMA
Wiring	right angle cable	right angle cable	right angle cable	axial cable	axial cable	plastic M12 plug	right angle cable

# Photoelectric sensors

## Photoelectric amplifier

Serie	UR	FS	FX	SSF	MSF
Description	control unit for DGI/OSA sensors	control unit for optical fibres	control unit with self-learning for optical fibres	M18 control unit with teach-in function for optical fibres	M18 DECOU <sup>®</sup> control unit for optical fibres
Operating voltage	24VDC, 24VAC, 115VAC, 230VAC	10...30VDC	10...30VDC	10...30VDC	10...30VDC
Output type	NO/NC SPST relay + NO alarm relay + timer	NPN or PNP, NO/NC selectable	NPN/PNP selectable, NO/NC selectable	NPN or PNP, NO/NC selectable	DECOU <sup>®</sup> (NPN, PNP, NO, NC)
Load current	3A	<100mA	<100mA	<100mA	<100mA
Switching frequency (min/max)	30Hz	10Hz	10Hz	450Hz/800Hz	500Hz
LED indicators	red, green	red	luminous multifunction touch-pad	yellow	red
Temperature range	-10...+50°C	-25...+70°C	0...+60°C	-25...+70°C	-25...+70°C
Protection degree	IP20	IP65	IP65	IP67	IP67
Housing material	PP0	PA	PA	nickel-plated brass (metal) PA (plastic)	nickel-plated brass (metal) PA (plastic)
Lens material	aluminum/glass, steel/plastic (sensors)	plastic, glass (optical fibres)	plastic, glass (optical fibres)	plastic, glass (optical fibres)	plastic, glass (optical fibres)
Wiring	Unidex socket	right angle cable	M8 plug	axial cable	axial cable

# Photoelectric sensors with special function

## Area

Serie	BX04	BX10	AX80	AX100	AX500
Description	rectangular area sensor	medium resolution area sensor	high resolution cylindrical area sensor	medium resolution cylindrical area sensor	cylindrical area sensor
Operating voltage	10...30VDC	10...30VDC	12...24VDC	12...24VDC	12...24VDC
Load current	<100mA	<100mA	<100mA	<100mA	<100mA
Switching frequency	150Hz	150Hz	150Hz	150Hz	150Hz
LED indicators	green, red, yellow	green, red, yellow	green, red, yellow	green, red, yellow	green, red, yellow
Temperature range	0...+50°C	0...+50°C	0...+50°C	0...+50°C	0...+50°C
Protection degree	IP67	IP67	IP65	IP65	IP65
Housing material	PC	PC	PMMA	PMMA	PMMA
Lens material	PC	PC	PC	PC	PC
Wiring	cable	cable	cable	cable	cable

## Surface

Serie	GL
Description	cylindrical surface sensor
Operating voltage	10.8...30VDC
Load current	<100mA
Switching frequency	500Hz
LED indicators	red
Temperature range	-25...+55°C
Protection degree	IP67
Housing material	PMMA
Lens material	PMMA
Wiring	M12 plug

## Contrast

Serie	LT	LTB
Description	rectangular contrast scanner	M18 cylindrical contrast scanner
Operating voltage	10...30VDC	10...30VDC
Load current	<100mA	<100mA
Switching frequency	100Hz	100Hz
LED indicators	red, 2 green	yellow, green
Temperature range	-10...+55°C	-5...+55°C
Protection degree	IP67	IP65
Housing material	metal	PBT
Lens material	glass	plexiglass 7N
Wiring	M12 turnable plug	right angle cable

## Luminescence

Serie	LDL1	LDL2	LDLU	LDLV
Description	regular luminescence scanner	rectangular luminescence scanner	M18 cylindrical luminescence scanner	M30 cylindrical luminescence scanner
Operating voltage	10mm, 20mm, 50mm	10mm, 20mm, 50mm	12mm, 25mm	30mm
Load current	<100mA	<100mA (digital) 0.5...10mA (analogic)	<100mA	<100mA
Switching frequency	1.5kHz	1.5kHz	100Hz	450Hz
LED indicators	green, yellow	green, yellow	yellow, green	yellow
Temperature range	-10...+55°C	-10...+55°C	-5...+55°C	-5...+55°C
Protection degree	IP67	IP67	IP65	IP67
Housing material	metal	metal	PBT	nickel-plated brass
Lens material	glass	plexiglass 7N	plexiglass 7N	plexiglass 7N
Wiring	M12 turnable plug	M12 turnable plug	right angle cable	right angle cable

## Colour

Serie	LC
Description	colour sensors with microcontroller
Operating voltage	18mm, 50mm
Load current	<100mA
Switching frequency	500Hz
LED indicators	0...5s
Temperature range	luminous multifunction keyboard
Protection degree	-40...+60°C
Housing material	IP65
Lens material	PC
Wiring	glass (fiber connected)

## Data transmission

Serie	CS
Description	M30 serial data transmission
Operating voltage	up to 100V
Load current	<100mA (NPN)
Switching frequency	2400 baud, 9600 baud
LED indicators	green, red, yellow
Temperature range	-25...+60°C
Protection degree	IP67
Housing material	nickel-plated brass
Lens material	PMMA
Wiring	M12 right angle plug

# Photoelectric sensors with special function

## Slot reader

Serie	FC3
Description	dual beam slot sensors for edge detection
Beam diameter	3mm
Beam spacing	6.8mm
Slot height	38mm
Slot depth	50mm
Supply voltage	1