

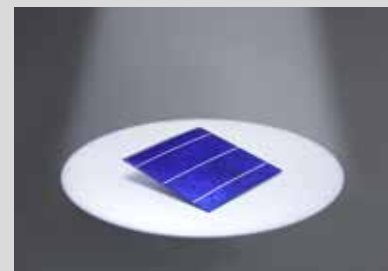
VISOR[®] and sensors

Effective automation solutions for practical use

PRODUCT OVERVIEW



Product overview – vision sensors and systems






















































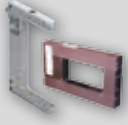


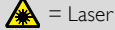
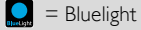
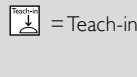
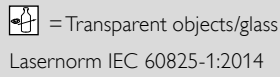
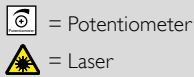
Features/sensors	VISOR® Allround			VISOR® Object Sensor	
	V10/V20 Advanced	V10C/V20C Advanced	V20 Professional	V10 Standard	V10/V20 Advanced
Highlights	Object detection and identification			Object detection and classification	
	–	Colour area	–		
	–	Colour list	–		
	–	Colour value	–		
	Data code	Data code	Data codes		
	Bar code	Bar code	Bar codes		
	Optical character recognition (OCR)	Optical character recognition (OCR)	Optical character recognition (OCR)		
	–	–	Multishot		
Functions					
Resolution in pixels V10	736 x 480 Mono	736 x 480 Colour	–	736 x 480 Mono	736 x 480 Mono
Resolution in pixels V20	1280 x 1024 Mono	1280 x 1024 Colour	1280 x 1024 Mono	–	1280 x 1024 Mono
Image rate per second V10 V20	50 40	40 20	– 40	50 –	50 40
Number of jobs detectors	max. 255 max. 255	max. 255 max. 255	max. 255	8 32	max. 255 max. 255
Position tracking	✓	✓	✓	✓	✓
Calibration	✓	✓	✓	–	✓
Contour matching (X-,Y-translation, rotation)	✓	✓	✓	✓	✓
Pattern comparison (X-,Y-translation)	✓	✓	✓	✓	✓
BLOB	✓	✓	✓	–	✓
Calliper	✓	✓	✓	–	✓
Grey threshold	✓	✓	✓	✓	✓
Contrast	✓	✓	✓	✓	✓
Brightness	✓	✓	✓	✓	✓
Freeform tool	✓	✓	✓	Contour only	✓
Interfaces					
Inputs outputs	2 4	2 4	2 4	2 4	2 4
Freely definable switching outputs/inputs, PNP or NPN	4	4	4	2	4
Encoder input	✓	✓	✓	–	✓
I/O expansion	✓	✓	✓	–	✓
RS 422 RS 232	✓ ✓	✓ ✓	✓	– –	✓ ✓
Ethernet	✓ ✓	✓ ✓	✓	✓	✓
EtherNet/IP	✓ ✓	✓ ✓	✓	✓	✓
PROFINET	✓ ✓	✓ ✓	✓	✓	✓
SensoWeb	✓	✓	✓	✓	✓
Lens					
V10 integrated, 6 mm 12 mm 25 mm	✓ ✓ ✓	✓ ✓ ✓	–	✓ ✓ –	✓ ✓ ✓
V20 integrated, 12 mm	✓	✓	✓	–	✓
C-mount	✓	✓	✓	–	✓



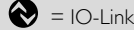
VISOR® Color		VISOR® Code Reader			VISOR® Solar Sensor	
V10C Standard	V10C/V20C Advanced	V10 Standard	V10/V20 Advanced	V20 Professional (OCR)	V10 Standard	V10/V20 Advanced
Improved object detection through additional colour information		Code reading			Positioning and inspecting solar cells	
Colour area	Colour area				Wafer position and breakouts	Wafer position and breakouts
–	Colour list				–	Busbar position and number
–	Colour value					
		Data code	Data code	Data code		
		Bar code	Bar code	Bar code		
		–	–	Optical character recognition (OCR)		
736 x 480 Colour	736 x 480 Colour	736 x 480 Mono	736 x 480 Mono	–	736 x 480 Mono	736 x 480 Mono
–	1280 x 1024 Colour	–	1280 x 1024 Mono/Colour	1280 x 1024 Mono/Colour	–	1280 x 1024 Mono
40 –	40 20	50 –	50 40	– 40	50 –	50 40
8 32	max. 255 max. 255	8 2	max. 255 max. 255	max. 255 max. 255	8 32	max. 255 max. 255
✓	✓	–	✓	✓	–	✓
–	✓	–	–	–	–	–
✓	✓	–	–	–	–	–
–	✓	–	✓	✓	–	✓
–	✓	–	–	–	–	✓
–	✓	–	–	–	–	✓
–	✓	–	✓	✓	✓	✓
✓	✓	–	✓	✓	✓	✓
–	✓	–	✓	✓	✓	✓
–	✓	–	✓	✓	–	✓
2 4	2 4	2 4	2 4	2 4	2 4	2 4
2	4	2	4	4	2	4
–	✓	–	✓	✓	–	✓
–	✓	✓	✓	✓	–	✓
– –	✓ ✓	✓ ✓	✓ ✓	✓ ✓	– –	✓ ✓
✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓
✓ ✓ –	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	–	✓ – –	✓ ✓ –
–	✓	–	✓	✓	–	✓
–	✓	–	✓	✓	–	✓

Product overview – optical sensors

Product family Dimensions (H x W x D)		Distance sensors (Analogue sensors)	Colour (C), contrast (K) and luminescence sensors (UV)	Proximity switches
F 10 21,1 x 14,6 x 8 mm				
F 25 34 x 20 x 12 mm		FT 25-RLA 20–100 mm  	FT 25-RL 250 mm K  	FT 25-RL 250 mm  
		FT 25-RA 20–80 mm 	FT 25-W 12 mm K 	FT 25-R 800 mm 
		FT 25-RA 30–200 mm 	FT 25-RGB 12 mm K 	
			FT 25-C 12 mm C 	
F 55 50 x 50 x 23 mm		FT 55-RLAP 5 m  		FT 55-RL 1,200 mm  
		FR 55-RLAP 70 m  		FT 55-R 2,000 mm 
		FT 55-RLAP2 5 m  		
F 20 32 x 20 x 12 mm				
F 50 50 x 50 x 17 mm		FT 50-RLA-20 40–60 mm 	FT 50-C 32 mm C  	
		FT 50-RLA-40 45–85 mm 	FT 50-C-UV 50 mm UV 	
		FT 50-RLA-70 30–100 mm   		
		FT 50-RLA-100 70–170 mm   		
		FT 50-RLA-220 80–300 mm   		
Cylindrical sensors Ø 4/5 mm Ø 12 mm Ø 18 mm Ø 30 mm				FM 04/05 50 mm
				FT 12-R 300 mm
				FT 18-2-R 400 mm
				FMS 18-B 400 mm
				FT 18-2-IR 800 mm
				FMS 30-B 1.000 mm
FL 70 84 x 35 x 10 mm		FL 70-RA-xD  		
		Proximity switch 310 mm P/E switch 810 mm		
F 80 83 x 65 x 25 mm F 90 95 x 93 x 42 mm		FT 80-RLA-500 250–750 mm   		
		FT 91/92-ILA 6 m    		
		FT 90-ILA 10 m    		
		FR 91/92-ILA 50 m    		
		FR 90-ILA 250 m    		
FG FGL				










Lasernorm IEC 60825-1:2014



Proximity switches with background suppression (BGS) / with foreground suppression (FGS)	Photoelectric reflex switches	Through-beam photoelectric switches	Fibre-optic sensors
FT 10-RLH 60 mm	FR 10-RL 2 m	FS/FE 10-RL 3 m	
FT 10-B-RLF 15/30 mm	FR 10-R 1,6 m		
FT 10-RH 70 mm			
FT 10-RF 15/30/50 mm			
FT 10-BF 30/50 mm			
FT 25-RLH 120 mm	FR 25-RL 13 m	FS/FE 25-RL 18 m	
FT 25-RH 200 mm	FR 25-R 6 m	FS/FE 25-R 13 m	
FT 25-RHD 400 mm	FR 25-RF 3 m	FS/FE 25-RF 4 m	
FT 25-RF 60/80 mm	FR 25-RGO 2 m		
FT 25-BF 80 mm			
FT 25-RV (FGS) 200 mm	FR 25-RLO 4 m		
FT 55-RLH 800 mm	FR 55-RL 12 m	FS/FE 55-RL 25 m	
FT 55-RLH2 1.000 mm	FR 55-R 12 m	FS/FE 55-R 20 m	
FT 55-B-RH 800 mm	FR 55-RLO 20 m		
FT 55-RH 1.200 mm	FR 55-RLP 70 m		
FT 55-BH 1.200 mm			
FT 55-RLHP2 5 m			
			FL 20-R Proximity switch 100 mm P/E switch 1.000 mm
FT 50-RLH 150 mm	FR 50-RL 20 m	FS/FE 50-I 15 m	
FT 50-RLHD 300 mm	FR 50-R 5,5 m		
FT 50-RH 300 mm			
FT 50-IH 600 mm			
FT 12-RH 60 mm	FR 12-R 1,5 m	FS/FE 12-RL 5 m	
FT 12-RF 24 mm		FS/FE 12-R 4 m	
FMH 18 120 mm		FS/FE 18-RL 50 m	FMS 18-U Proximity switch 160 mm P/E switch 700 mm
	FR 18-2-R 3 m	FS/FE 18-R 20 m	FMS 30-U Proximity switch 800 mm P/E switch 4.800 mm
	FR 18-2-IR 3,6 m	FLS/FLE 18-WV 50 m	P/E switch 4.800 mm
		FSE 18-2-I 10 m	FAV 30 500 mm
			FL 70-R Proximity switch 310 mm P/E switch 810 mm
			FL 70-R-xD Proximity switch 310 mm P/E switch 810 mm
FT 92-IL			
		FGL-RK /-IK 30 – 120 mm	
		FGL 5-IK 5 mm	
		FGL 5 – 220 mm	
		FG 40 – 120 x 80 mm ²	

Product overview – ultrasonic, inductive and capacitive sensors, Smart

Ultrasonic Sensors

Products		Adjustment	Scanning distances	Special features
UT 20		Teach-in 	140 mm / 150 mm / 240 mm / 700 mm	Ultrasonic sensors with soundpipe, PNP, NPN, analogue output
UT 12		Via control input	400 mm	PNP, NPN, analogue output
UT/UM 18		Via control input	250 mm / 300 mm / 800 mm	Variants with stainless steel housings, PNP, NPN, analogue output
UMT 30		Teach-in or display  	350 mm / 1300 mm / 3400 mm / 6000 mm	Display, PNP, 2 x PNP or analogue output


Inductive Sensors

Products		Design	Switching distance	Special features
IT 8 / 10 / 12 / 40 IS 455 / 588		Cubic	0.8 mm / 1.5 mm / 3 mm / 4 mm / 8 mm / 15 mm / 20 mm / 35 mm	Miniature housing, AC/DC variants
IS 33		Cylindrical Ø 3 mm	0.6 mm	PNP, NPN
ISN 44-20 IS 34 IT 4		Cylindrical Ø 4 mm	0.8 mm	PNP, NPN, NAMUR, stainless steel housing
IMT 5		Cylindrical Ø 5 mm	0.8 mm	PNP, NPN, stainless steel housing
ISZ 46 IS 46 / 56 IDT 6		Cylindrical Ø 6,5 mm	1.5 mm / 2 mm / 3 mm	PNP, NPN
IS 48 / 58 IMT 8		Cylindrical Ø 8 mm	1.5 mm / 2 mm / 3 mm / 6 mm	PNP, NPN
IMT 12 IT 12 IS 512		Cylindrical Ø 12 mm	2 mm / 4 mm / 6 mm / 10 mm	PNP, NPN
IS 514		Cylindrical Ø 14 mm	3 mm	PNP, stainless steel housing
IMT 18 IS 518 IT 18		Cylindrical Ø 18 mm	5 mm / 8 mm / 10 mm / 12 mm / 20 mm	PNP, NPN, stainless steel housing
IMT 30 IS 530 IT 30		Cylindrical Ø 30 mm	10 mm / 15 mm / 20 mm / 22 mm / 40 mm	PNP, NPN, stainless steel housing
IS 512 / 518		Cylindrical Ø 12 mm / 18 mm analogue	6 mm / 10 mm	Analogue output

Capacitive Sensors

Products		Installation	Adjustment	Switching distance
KD/KL 06		Flush / non-flush	Potentiometer	0.1 ... 1.5 / 0.1 ... 3 mm
KD/KL 08		Flush / non-flush	Potentiometer	0.1 ... 1.5 / 0.1 ... 3 mm
KD/KL 12		Flush / non-flush	Potentiometer	1 ... 4 / 1 ... 8 mm
KD/KL 18		Flush / non-flush	Potentiometer	2 ... 8 / 2 ... 15 mm
KD/KL 30		Flush / non-flush	Potentiometer	1 ... 20 / 1 ... 30 mm

SmartPlug

Products	Special features
MFI (Inverter)	 <p>Inverts NPN to PNP or PNP to NPN devices, N.C./N.O. also adjustable</p> <p>Adjustable counter (pulses or intervals) between 1 ... 65535</p> <p>Adjustable on-delay or drop-out delay between 1 ... 65535 ms</p> <p>Adjustable frequency monitoring between 15 ... 1000 Hz</p> <p>Adjustable wipe function for falling or rising edges; time range 1 ... 65535 ms</p> <p>All-in multifunctional switching device programmable via USB</p>
MFC (Counter)	
MFT (Timer)	
MFF (Frequency)	
MFW (Wipe Function)	
MFU (Universal)	

Accessories

Products	Description
Mechanical accessories 	Brackets for sensors
	Mountings for VISOR® and illumination
Optical accessories 	Reflectors and reflective tape
	Lenses and protective casings
	Illumination
Electrical accessories 	Cables
	Converters
	Power supply units, switching devices and Panel Viewer

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 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

Germany
SensoPart
Industriesensorik GmbH
79288 Gottenheim
Tel. +49 7665 94769-0
info@sensopart.de

France
SensoPart France SARL
77420 Champs sur Marne
Tel. +33 164 730061
info@sensopart.fr

United Kingdom
SensoPart UK Limited
Pera Business Park, Nottingham Road,
Melton Mowbray, Leicestershire, LE13 0PB
Tel. +44 1664 561539
uk@sensopart.com

USA
SensoPart Inc.
Perrysburg OH 43551
Tel. +1 866 2827610
usa@sensopart.com

China
SensoPart (Shanghai) Co. Ltd.
201803 Shanghai
Tel. +86 21 69017660
china@sensopart.cn