SENSOPART

VISOR® and sensors

Effective automation solutions for practical use

Vision sensors and systems | Optical sensors | Ultrasonic sensors | Inductive sensors

Product overview VISOR® vision sensors

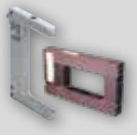
	VISOR® Allround		VISOR® Object	
	Presence, completeness, measurement, color, reading of barcodes, 2D codes		Presence, completeness, measurement, color	
	Advanced	Professional	Standard	Advanced
Resolution				
V10 | V10C 800 x 600	Monochrome | Color	–	Monochrome | Color	
Number of images per second V10 | V10 C	75 | 50	– | –	75 | 50	
V20 | V20C 1440 x 1080	Monochrome | Color		–	Monochrome | Color
Number of images per second V20 | V20 C	40 | 20		– | –	40 | 20
Lighting	white, red[1], infrared[1]			
Multishot (only at monochrome hardware)	✓		–	
Target laser	✓		–	✓
Lenses				
V10 wide | medium | narrow | c-mount	✓ | ✓ | ✓ | ✓		✓ | ✓ | ✓ | –	✓ | ✓ | ✓ | ✓
V20 wide | medium | narrow | c-mount	✓ | ✓ | ✓ | ✓		– | – | – | –	✓ | ✓ | ✓ | ✓
Interfaces				
Inputs | outputs | selectable	2 | 2 | 6		2 | 2 | 4	2 | 2 | 6
Encoder input	✓		–	✓
Ethernet | EtherNet/IP | Profinet | SensoWeb	✓ | ✓ | ✓ | ✓		✓ | ✓ | ✓ | ✓	
Service port	✓		–	✓
Job/Detectors				
Number of jobs (max.)	255		8	255
Number of detectors per job (max.)	255		32	255
Calibration				
Calibration (scaling, perspective)	✓		–	✓
Robot calibration	–	✓	–	
Preprocessing				
Preprocessing filter	✓		–	✓
Multiple image capture/Shutter variation	✓		–	✓
Free-form search area	✓		✓	
Position tracking				
Contour comparison (translation, rotation 360°)	✓		✓	
Pattern matching (translation, rotation 360°)	✓		–	✓
Edge detection (translation, rotation)	✓		–	✓
Object detection				
Contour comparison (translation, rotation 360°)	✓		✓	
Multiple contour detection	✓		–	✓
Pattern matching (translation, rotation 360°)	✓		✓	
Grey level | Contrast | Brightness	✓		✓	
Calliper	✓		–	✓
BLOB	✓		–	✓
Identification				
Datacode	✓		–	
Datacode advanced	✓		–	
Barcode	✓		–	
Barcode advanced	✓		–	
Clear text (OCR)	✓		–	
Robotics functions				
Result offset	–	✓	–	
Checking space around gripper	–	✓	–	
Color detectors[2]				
Color field	✓		✓	
Color value	✓		–	✓
Color list	✓		–	✓
Color distance | Binarisation	✓		–	✓

	VISOR® Robotic		VISOR® Code Reader		
	Robotics, presence, completeness, measurement, positioning		Reading of barcodes, 2D codes, text		
	Advanced	Professional	Standard	Advanced	Professional
Resolution					
V10 | V10C 800 x 600	Monochrome	–	Monochrome		
Number of images per second V10 | V10 C	75	– | –	75 | –		
V20 | V20C 1440 x 1080	Monochrome | Color		–	Monochrome	
Number of images per second V20 | V20 C	40 | 20		– | –	40 | –	
Lighting	white, red[1], infrared[1]				
Multishot	–		–		
Target laser	✓		–	✓	
Lenses					
V10 wide | medium | narrow | c-mount	✓ | ✓ | ✓ | ✓		✓ | ✓ | ✓ | –	✓ | ✓ | ✓ | ✓	
V20 wide | medium | narrow | c-mount	✓ | ✓ | ✓ | ✓		– | – | – | –	✓ | ✓ | ✓ | ✓	
Interfaces					
Inputs | outputs | selectable	2 | 2 | 6		2 | 2 | 4	2 | 2 | 6	
Encoder input	✓			✓	
Ethernet | EtherNet/IP | Profinet | SensoWeb	✓ | ✓ | ✓ | ✓			✓ | ✓ | ✓ | ✓	
Service port	✓		–	✓	
Job/Detectors					
Number of jobs (max.)	255		8	255	
Number of detectors per job (max.)	255		2	255	
Calibration					
Calibration (scaling, perspective)	✓			–	
Robot calibration	✓			–	
Preprocessing					
Preprocessing filter	✓		–	–	✓
Multiple image capture/Shutter variation	✓		–	–	✓
Free-form search area	✓		–	–	✓
Position tracking					
Contour comparison (translation, rotation 360°)	✓			–	✓
Pattern matching (translation, rotation 360°)	✓			–	✓
Edge detection (translation, rotation)	✓			–	✓
Object detection					
Contour comparison (translation, rotation 360°)	✓			–	
Multiple contour detection	✓			–	
Pattern matching (translation, rotation 360°)	✓			–	✓
Grey level | Contrast | Brightness	✓			–	✓
Calliper	✓			–	
BLOB	✓			–	
Identification					
Datacode	–	✓	✓	✓	
Datacode advanced	–	✓	–	✓	
Barcode	–	✓	✓	✓	
Barcode advanced	–	✓	–	✓	
Clear text (OCR)	–	✓		–	✓
Robotics functions					
Result offset	✓			–	
Checking space around gripper	✓			–	
Color detectors[2]					
Color field	–			–	
Color value	–			–	
Color list	–			–	
Color distance | Binarisation	✓			–	

[1] not with color hardware V10C/V20C

[2] only color hardware

Product overview – optical sensors

Product family Dimensions (H x W x D)		Distance sensors	Color (C), contrast (K) and luminescence sensors (UV)	Photoelectric diffuse sensors
F 10 21,1 x 14,6 x 8 mm		FT 10-RLA | **10–70 mm**		
F 25 34 x 20 x 12 mm		FT 25-RLA | **20–100 mm** FT 25-RA | **20–80 mm** FT 25-RA | **30–200 mm**	FT 25-RL | **250 mm** | K FT 25-W | **12 mm** | K FT 25-RGB | **12 mm** | K FT 25-C | **12 mm** | C	FT 25-RL | **250 mm** FT 25-R | **800 mm**
F 55 **Metal** 50 x 50 x 25 mm **Plastic** 50 x 50 x 23 mm		FT 55-RLAP | **5 m** FR 55-RLAP | **70 m** FT 55-RLAP2 | **5 m** FT 55-RLAM | **1 m**	FT 55-CM I **150 mm**	FT 55-RL | **1.2 m** FT 55-R | **2 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-RLA-40 | **45–85 mm** FT 50-RLA-70 | **30–100 mm** FT 50-RLA-100 | **70–170 mm** FT 50-RLA-220 | **80–300 mm**	FT 50-C | **32 mm** | C FT 50-C-UV | **50 mm** | UV	
Barrel type Ø 4 mm M 5 M 12 M 18 M 30				FT 04 | **50 mm** FT 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 m**
FL 70 84 x 35 x 10 mm		FL 70-RA-xD | Fiber-optic sensors Diffuse **310 mm** Through-beam **810 mm**		
F 90 95 x 93 x 42 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				

= Display = Potentiometer = Transparent objects/glass = PC = Teach-in
= BlueLight = Laser Lasernorm IEC 60825-1:2014 = IO-Link

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Photoelectric diffuse sensors with background suppression (BGS)	Photoelectric retro-reflective sensors	Photoelectric through-beam sensors	Fiber-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**			
	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 m**	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 | **1.2 m**	FR 55-RLP | **70 m**		
FT 55-BH(2) | **1.2 m**			
FT 55-RLHP2 | **5 m**			
			FL 20-R | Diffuse **100 mm** Through-beam **1 m**
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-BH | **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 | Diffuse **160 mm** Through-beam **700 mm**
	FR 18-2-R | **3 m**	FS/FE 18-R | **20 m**	
	FR 18-2-IR | **3.6 m**	FLS/FLE 18-W | **50 m**	FMS 30-U | Diffuse **800 mm** Through-beam **4.8 m**
		FSE 18-2-I | **10 m**	FAV 30 | **500 mm**
			FL 70-R | Diffuse **310 mm** Through-beam **810 mm**
			FL 70-R-xD | Diffuse **310 mm** Through-beam **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 mm²**	

Product overview – ultrasonic and inductive sensors, SmartPlug and

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 / 1.3 m / 3.4 m / 6 m	Display, PNP, 2 x PNP or analogue output

Inductive Sensors

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

SmartPlug

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

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
		Cables, SensoIO, power supply units and switching devices, Panel Viewer

We look ahead

Yesterday, today and in the future

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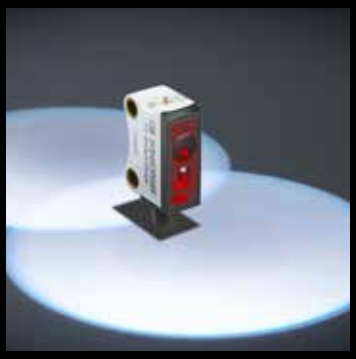
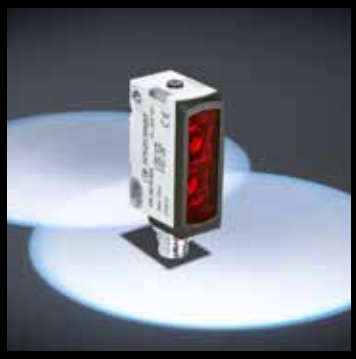
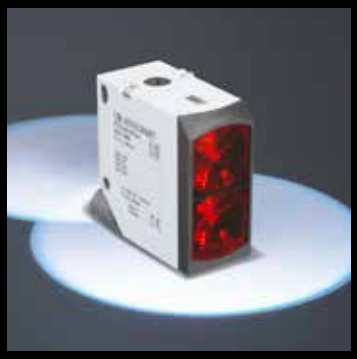


"We gauge ourselves not by what is possible today, but by our vision of what can be achieved" – this has been our motto since the foundation of SensoPart in 1994. Our goal is to always be a step ahead and to be able to offer our customers the most innovative sensor for industrial automation.

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
- Color sensors
- Contrast sensors
- Anti-collision sensors
- Slot sensors
- Fibre-optic amplifiers
- Inductive sensors
- Ultrasonic sensors
- Vision sensors
- Smart cameras
- Vision systems
- Object detection
- Object measurement
- Color detection
- Code reading
- Lighting
- Lenses