

VISOR[®] and sensors

Effective automation solutions for practical use



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 × 600	Monochrome Color	–	Monochrome Color	
Number of images per second V10 V10 C	75 50	– –	75 50	
V20 V20C 1440 × 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 detectors²				
Color field	✓		✓	
Color value	✓		–	✓
Color list	✓		–	✓
Color distance Binarisation	✓		–	✓












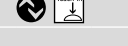




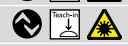









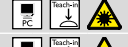
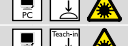
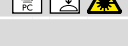


















	VISOR® Robotic		VISOR® Code Reader		
	Robotics, presence, completeness, measurement, positioning		Reading of barcodes, 2D codes, text		
	Advanced	Professional	Standard	Advanced	Professional
Resolution					
V10 V10C 800 x 600	Monochrome	–	Monochrome		
Number of images per second V10 V10 C	75	– –	75 –		
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 detectors²					
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-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 Metal 50 x 50 x 25 mm Plastic 50 x 50 x 23 mm 	FT 55-RLAP 5 m 	FT 55-CM 150 mm 	FT 55-RL 1.2 m 	
	FR 55-RLAP 70 m 		FT 55-R 2 m 	
	FT 55-RLAP2 5 m 			
	FT 55-RLAM 1 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 			
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

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	FMS 30-U Diffuse 800 mm Through-beam 4.8 m
	FR 18-2-IR 3.6 m	FLS/FLE 18-W 50 m	FAV 30 500 mm
		FSE 18-2-I 10 m	
			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 mm ²	

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 / 3 mm / 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

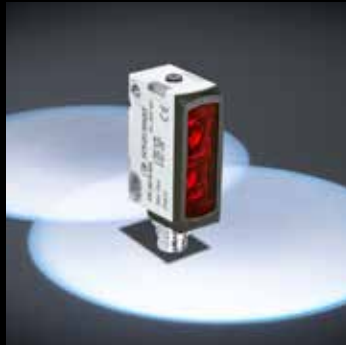
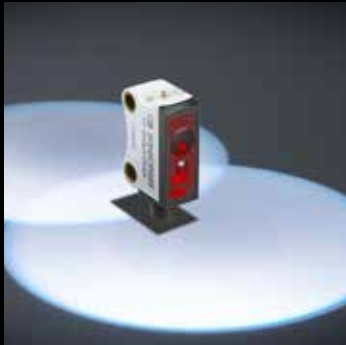
SmartPlug

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



"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

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