



- *High precision and switching frequency*
- *Colour independence and transparent object detection*
- *Easy Teach-in setting and 2 bi-coloured signalling LEDs*
- *Models with digital NPN - PNP and 0 - 10 V or 4- 20 mA analogue outputs*

US18 SERIES

The range of measurement and inspection devices is enriched thanks to the introduction of new ultrasonic M18x1 ABS tubular sensors of the **US18** series.

Models with axial or radial acoustic emission and with discrete bipolar output (1 NPN and 1 PNP) or with 4-20 mA or 0-10 V analogue output are available.

The extremely reduced blind zone and the unequalled 5 ms response speed are only two of the many features that are worth highlighting.

The sensors are easily configured through the Teach-in function, while the operating status is visibly signalled by 2 bi-coloured LEDs.

The temperature compensation function corrects the sound speed changes due to temperature variations, so the sensor precision remains unchanged in all situations and a 0.5 mm resolution is guaranteed.

The electrical connection is accomplished through standard M12 5-pole connectors.

The new **US18** ultrasonic sensors detect all objects independent from the non sound-absorbent material, reflectivity, transparency and colour, thus perfectly suiting applications in the automotive, packaging, machine tool fields and material transformation processes.

ULTRASONIC SENSORS

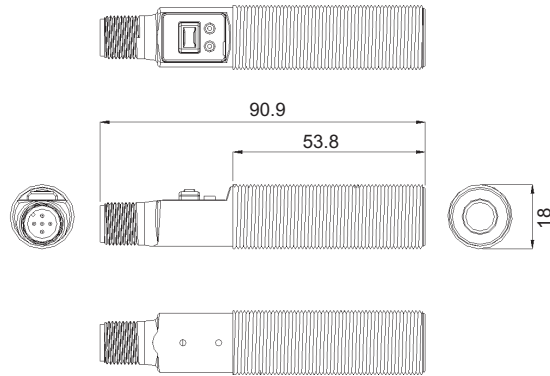
Models with discrete output are excellent foreground and/or background suppressors. The Teach-in procedure allows to fix a switching window with 10 mm width and to detect minimum and maximum values.

The models with analogue output are conceived as distance sensors: the analogue output can be scaled on windows of any width inside the operating range, or positioned at the centre of a detection window with a fixed width of 100 mm.

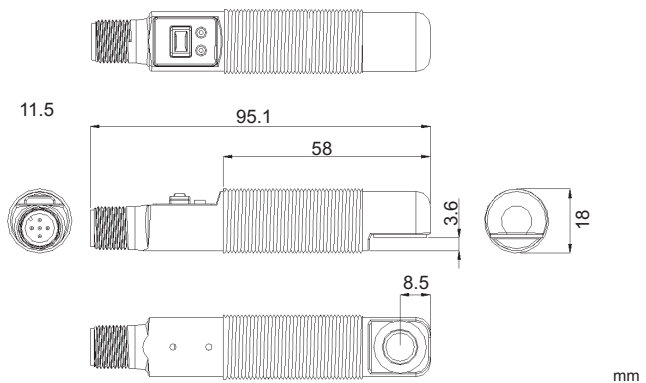


DIMENSIONS

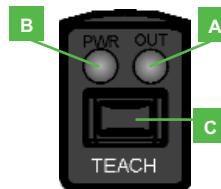
AXIAL VERSIONS



RADIAL VERSIONS



INDICATORS AND SETTINGS



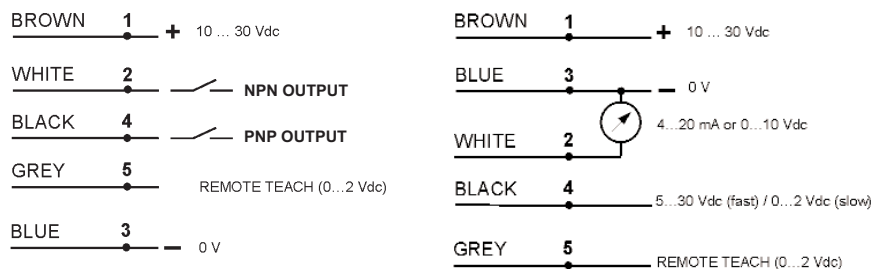
- A** Output status LED
- B** Power / signal intensity LED
- C** Teach-in push-button

ACCESSORIES

For dedicated accessories refer to the **ACCESSORIES** section of this catalogue.

Refer also to **Connectors (A.03)** and **Fixing Brackets (A.04)** of the **General Catalogue**.

CONNECTIONS





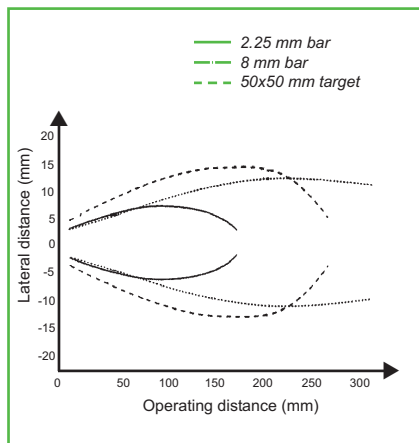
TECHNICAL DATA

	Models with discrete output	Models with analogue output
Operating distance (typical values):	30 ... 300 mm	
Power supply:	10 ... 30 Vdc (limit values), polarity inversion protection	
Ripple:	≤ 2 Vpp	
Consumption:	65 mA max., 40 mA typical at 25 Vdc	
Output type:	NPN and PNP	0...10 Vdc or 4...20 mA
Output current:	100 mA max., short-circuit protection	
Saturation voltage:	PNP < 1.2 V at 10 mA, < 1.6 V at 100 mA NPN < 200 mV at 10 mA, < 600 mV at 100 mA	
Load resistance:		voltage output: 2.5 kΩ min. current output: 1 kΩ max.
Response time:	5 ms	2.5 ms (black wire at 0-2 Vdc or unconnected) 30 ms (black wire at 5-30 Vdc)
Switching frequency:	100 Hz	200 Hz (black wire at 0-2 Vdc or unconnected) 16 Hz (black wire at 5-30 Vdc)
Delay at powering:	300 ms	
Indicators:	yellow-green bi-coloured OUTPUT LED red POWER LED	
Setting:	Teach-in or remote input	
Ultrasonic emission frequency:	300 KHz, repeated each 2.5 ms	
Temperature drift:	minor than 1.7 % at detection distance	
Repeatability:	0.5 mm	
Minimum detection window:	5 mm	
Hysteresis:	0.7 mm	
Resolution *:	±1 mm with 2.5 ms response time ±0.5 mm with 30 ms response time	
Minimum detection window dimension:	5 mm	
Operating temperature:	-25 ... 55 °C	
Storage temperature:	-25 ... 70 °C	
Electrical protection:	Class 2	
Housing material:	Polyester	
Mechanical protection:	IP67	
Connections:	M12 5-pole connector	
Weight:	25 g	
Standard reference:	EN 60068-2-6, EN 60068-2-27	

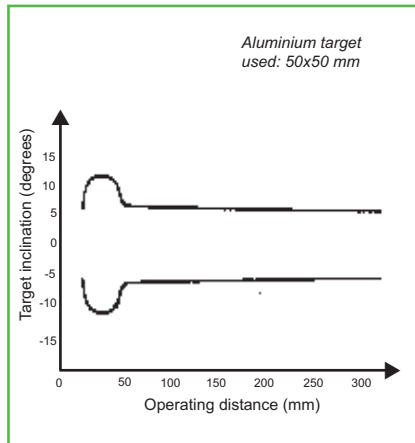
* with 50x50 mm aluminium target at 22°C and constant operating conditions



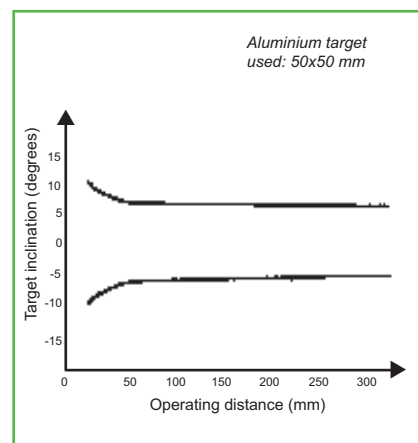
DETECTION DIAGRAMS



**Beam - distance variation
(typical values)**



**Maximum target inclination
(models with discrete output)**



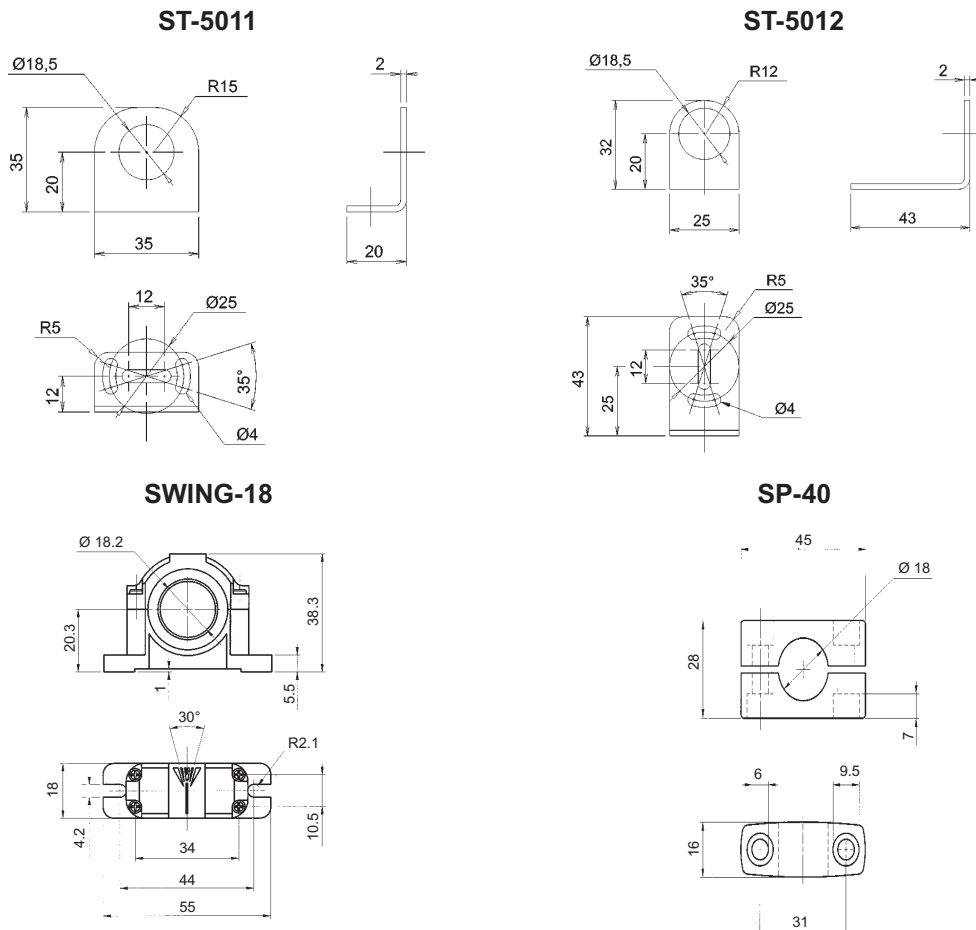
**Maximum target inclination
(models with analogue output)**

MODEL SELECTION AND ORDER INFORMATION

MODEL	HOUSING TYPE	OUTPUT	ORDER N°
US18-PA-5-N03-OH	axial	NPN and PNP	95B040000
US18-PR-5-N03-OH	radial	NPN and PNP	95B040010
US18-PA-5-N03-IH	axial	4-20 mA analogue	95B040020
US18-PR-5-N03-IH	radial	4-20 mA analogue	95B040030
US18-PA-5-N03-VH	axial	0-10 V analogue	95B040040
US18-PR-5-N03-VH	radial	0- 10 V analogue	95B040050

ACCESSORIES

DIMENSIONS



ACCESSORY SELECTION AND ORDER INFORMATION

MODEL	DESCRIPTION	ORDER N°
ST-5011	M18 fixing bracket	95ACC5240
ST-5012	M18 fixing bracket	95ACC5250
SWING-18	adjustable support for plastic tubular M18 sensors	895000006
SP-40	fixed support for tubular M18 sensors	95ACC1370
CS-A1-03-G-03	axial M12 5 pole unshielded 3 m connector	95ACC2110
CS-A1-03-G-05	axial M12 5 pole unshielded 5 m connector	95ACC2120

Refer also to **Accessories for Sensors of the General Catalogue**



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