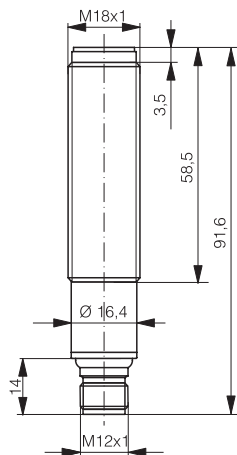


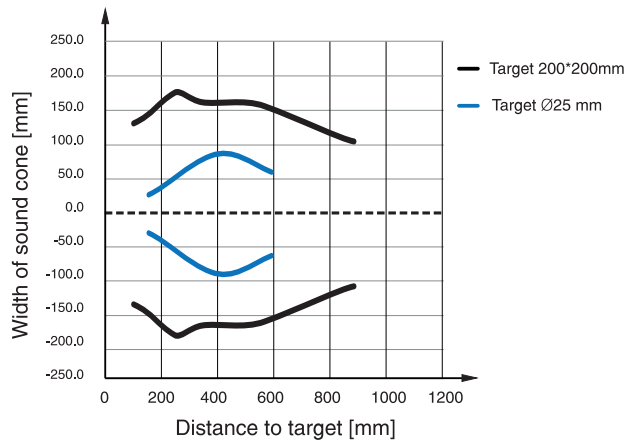
HOUSING	OPERATING RANGE	✓ PBT housing	✓ Range setting by teach button
M18	100 ... 900 mm	✓ Diffuse with fore- and background suppression	✓ NO/NC configuration by teach button
		✓ PNP, NPN & analog output	



DETECTION DATA		INTERFACE	
Operating range (Sn)	100...900 mm	Sensitivity adjustment	100...900 mm, teach button
Transducer frequency	300 kHz	Indicator LED, yellow	Output state/Teach function
Repeat accuracy	0.5%	Indicator LED, green	Echo detection
Resolution	< 2 mm		
Linearity error	1%		
Hysteresis	1%		

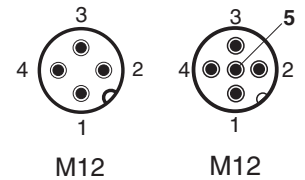
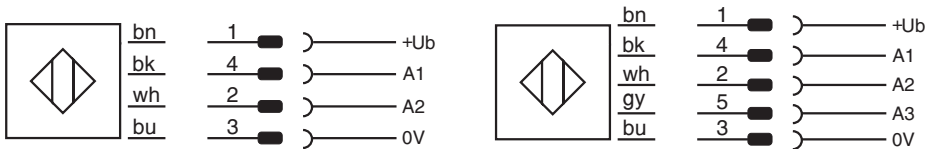
ELECTRICAL DATA		MECHANICAL DATA	
Supply voltage range (U _b)	10...30 VDC	Protection degree	IP67
Residual ripple	≤ 5% V _{pp}	Temperature range	-20...+70°C
Power consumption (no-load)	≤ 50 mA @ 24V	Temperature compensation	✓
Output current	≤ 100 mA	Housing material	PBT
Switching frequency	≤ 4 Hz	Active head material	Epoxy – glass resin
Analog output (current version)	4...20 mA	Connector type	M12 4-pin or M12 5-pin
Analog output (voltage version)	0...10 V	Weight (connector version)	70 g
Response time analog	≤ 400 ms	Weight (cable version)	110 g
Short circuit & voltage reversal protection	✓		

SOUND CONE



WIRING DIAGRAMS

PIN ASSIGNMENT



SYNCHRONISATION

Crosstalk occurs when an ultrasonic sensor receives the signal of an adjacent sensor. Unless both are synchronized, erroneous readings will result. The fix is simply to synchronize the ultrasonic sensors. Once the ultrasonic sound waves are in synchronization, the effects of crosstalk will be reduced. The SYNC pin allows crosstalk to be avoided by synchronizing multiple ultrasonic sensors. There are two ways to synchronize sensors:

1) SYNCHRONISATION MODE: Links together the SYNC pins of all sensors within a limited area.

At power-on, the SYNC line is floating. This state triggers simultaneous measurement by all sensors. Since any interference signals will have a longer sensing distance, they will reach the sensor later and be ignored. Up to 6 sensors can be synchronized via the SYNC pin in this way.

NOTE: The effectiveness of this method will be reduced if the target has a non-linear shape or if the sensors are in different positions.

2) MULTIPLEXER (MUX) MODE: Links the control pin of all sensors to each other.

At power-on, the SYNC line is connected to ground, then after 5 seconds it is released. While the first sensor is measuring, the other sensors are disabled. After the first measurement is complete, the second sensor is allowed to send and receive signals. After the second sensor, the third sensor becomes active, and so on. A maximum of 4 sensors can be interconnected. If the sensor is switched off during the MUX function, the multiplexer will still be available at the next power-on. To switch back to Synchronization mode, teach the sensor with no target in front of it and restore the factory settings. The multiplex function increases sensor response as follows:

$Response_time = (Response_time * N) + T_elab$ where

$T_elab = 25\ ms$

$N = \text{number of sensors connected}$

AVAILABLE TYPES

Part number	Part reference	Polarity	Connection	Output (A1)	Output (A2)	Output (A3)
605 010 249	UST-M18PS-TMS-403	PNP	Connector M12 4-pin	NO (default) / NC	---	---
605 010 251	UST-M18PS-TMS-301	NPN	Connector M12 4-pin	NO (default) / NC	---	---
605 010 253	UST-M18PS-TMS-603	PNP	Connector M12 4-pin	NO	NC	---
605 010 255	UST-M18PS-TMS-101	NPN	Connector M12 4-pin	NO	NC	---
605 010 257	UST-M18PS-TMS-839	PNP	Connector M12 5-pin	NO	NC	4 - 20 mA
605 010 259	UST-M18PS-TMS-729	NPN	Connector M12 5-pin	NO	NC	4 - 20 mA
605 010 261	UST-M18PS-TMS-83A	PNP	Connector M12 5-pin	NO	NC	0 - 10 V
605 010 263	UST-M18PS-TMS-72A	NPN	Connector M12 5-pin	NO	NC	0 - 10 V
605 010 265	UST-M18PS-TMS-813	PNP	Connector M12 5-pin	NO	NC	SYNC/MUX
605 010 267	UST-M18PS-TMS-711	NPN	Connector M12 5-pin	NO	NC	SYNC/MUX

Note: additional suffix can appear to indicate a revision version or a special version.

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