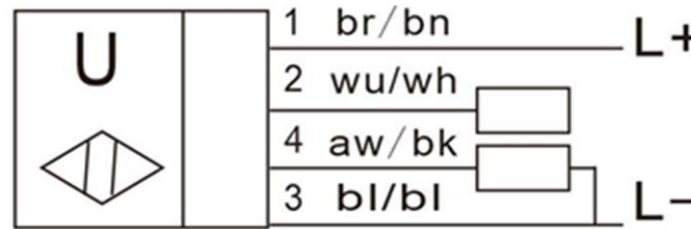
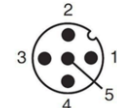


Ultrasonic Sensor General Information

Sensing Range	35...300 mm
Adjustment Range	50...300 mm
Blind Zone	0...35 mm
Standard Target	100 mm × 100 mm
Transducer Frequency	approx. 390 kHz
Response Time	approx. 50 ms
Operating / Display Mode	
LED Yellow	Power On
Yellow LED steady on	object within sensing range
	Yellow LED flashing: target detected in TEACH-IN mode
LED Red	Red LED steady on: error
	Red LED flashing: no target detected in TEACH-IN mode
Electrical Data	
Operating Voltage	18...30 VDC, ripple 10 %ss
No-load Current	≤ 20 mA
Input	
Input Type	One TEACH-IN input Lower limit of sensing range A1 = Ua...+1 V; upper limit A2 = +6...+ Ua Input impedance: > 4.7 kΩ; TEACH-IN pulse: ≥ 1 s
Output	
Output Type	2switchingoutputs,PNPNO/NC,configurable
Rated Operating Current	200 mA; short-circuit protection / overload protection
Voltage Drop	≤ 3 V
Repeat Accuracy	≤ 1 %
Switching Frequency	≤ 4 Hz
Hysteresis	1 % of set switching distance
Temperature Drift	± 1.5 % of full-scale value
Ambient Conditions	
Ambient Temperature	-25...70 °C (248...343 K)
Storage Temperature	-40...85 °C (233...358 K)
Mechanical Data	
Protection Rating	IP67
Connection	Connector (M12 × 1), 5-pin
Material	Stainless steel
Transducer	Epoxy resin / hollow glass microsphere mixture; polyurethane foam, housing PBT
Weight	120 g
Compliance	
Standard	EN 60947-5-2:2007 IEC 60947-5-2:2007



1. BN—Brown 2. WH — White
3. BU — Blue 4. BK — Black
5. GY — Grey(TEACH-IN)

Connector**Set switching point**

The ultrasonic sensor features one switching output with two configurable switching points. Setting procedure: Connect the TEACH-IN input terminal to the power supply -U respectively. Connect the TEACH-IN input to -U to set point A1, and connect it to +U to set point A2.

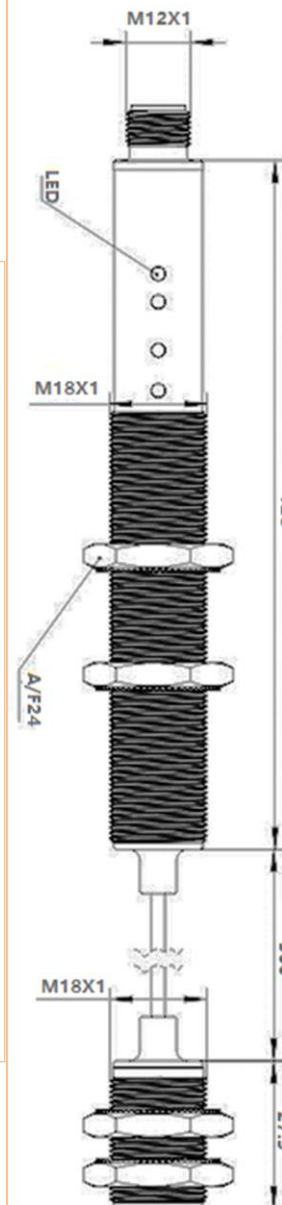
Five different output modes are optional.

1. Window mode, Normally Closed (NC)
2. Switching-point mode, Normally Open (NO)
3. Switching-point mode, Normally Closed (NC)
4. Object-throuWindow mode, Normally Open (NO)
5. gh detection mode

★The switching points can only be set immediately after power-on. The internal clock of the ultrasonic sensor prevents modification of the switching points 5 minutes after power-up. To change the switching points, the user must restart the power supply and set the required values.

Window Mode, Normally Open (NO)

- Place the target object at the near switching point ● Connect the TEACH-IN input terminal to -U to set point A1
- Place the target object at the far switching point ● Connect the TEACH-IN input terminal to +U to set point A2

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Window Mode, Normally Closed (NC)

● Place the target object at the near switching point ● Connect the TEACH-IN input terminal to +U to set point A2 ● Place the target object at the far switching point ● Connect the TEACH-IN input terminal to -U to set point A1

Switching-point Mode, Normally Open (NO)

● Place the target object at the near switching point ● Connect the TEACH-IN input terminal to +U to set point A2 ● Cover the sensor by hand or remove all objects within the sensor's detection range ● Connect the TEACH-IN input terminal to -U to set point A1

Switching-point Mode, Normally Closed (NC)

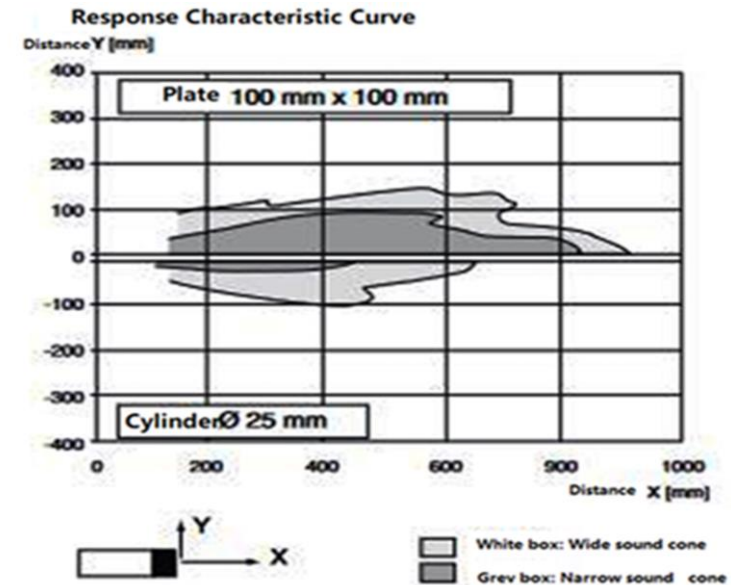
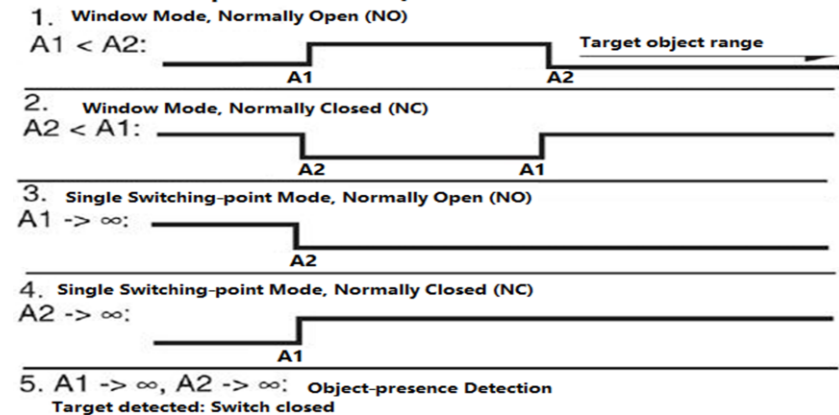
● Place the target object at the near switching point ● Connect the TEACH-IN input terminal to -U to set point A1 ● Cover the sensor by hand or remove all objects within the sensor's detection range ● Connect the TEACH-IN input terminal to +U to set point A2

Object-presence Detection Mode

● Cover the sensor by hand or remove all objects within the sensor's detection range ● Connect the TEACH-IN input terminal to -U to set point A1 ● Connect the TEACH-IN input terminal to +U to set point A2

Factory Setting

Operating Status	Red LED	Yellow LED
Switching-point setting:		
Target detected	OFF	Flashing
No target detected	Flashing	OFF
Target undefined (Invalid TEACH-IN setting)	ON	OFF
Normal operating mode	OFF	Switch status
Error	ON	Retain previous status

**Switch Output Modes sequence chart**

Installation Conditions: If the proximity switch is installed on-site where the ambient temperature may drop below 0 °C, protective measures must be taken. When the proximity switch is mounted directly into a through-hole using steel nuts, it shall be secured at the centre of the mounting thread.