

**Operating manual ultrasonic sensors**

UR18S\*\*\*030/ UR18S\*\*\*120  
Retroreflective

**Delivery**

- 1x ultrasonic sensor
- Operation manual
- 2 metallic nuts SW24 (metallic version)
- 2 plastic nuts SW22 + 2 washer SW22 (plastic version)

**Intended use**

elobau ultrasonic sensors are used for non-contact detection of liquid media and objects.

**Safety instructions**

- Read the instructions before use
- Connection, installation and adjustment by qualified personnel only
- Protect the device against humidity and contamination during commissioning
- Not a safety component according to EU Machinery Directive

**Notes for effective use**

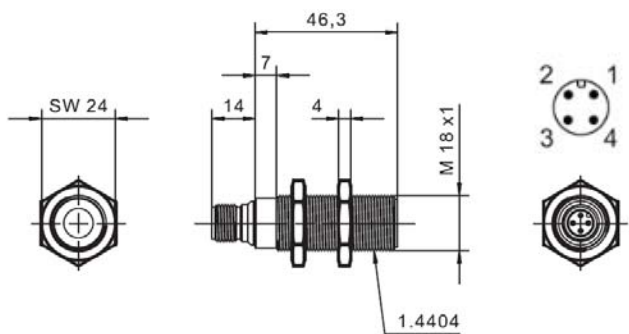
- Remove the black protective cap before use.
- Reliable measurement is not guaranteed within the blind zone. The ultrasonic sensors have internal temperature compensation. The optimum operating point is reached after approx. 20 minutes of operation. Rapid temperature changes require renewed internal temperature compensation.
- Ensure that the specified electrical data is complied with and not exceeded.
- Ensure that the sensor surface is not exposed to hot water (> 50 ° C), water vapour, acids or solvents.
- Sound-absorbing or diffusely reflecting materials can also reduce the specified measuring ranges.
- No flush mounting of sensor surface with object surface.
- The sensor retains the last set parameters after the operating voltage has been removed.

**Operation / Maintenance:**

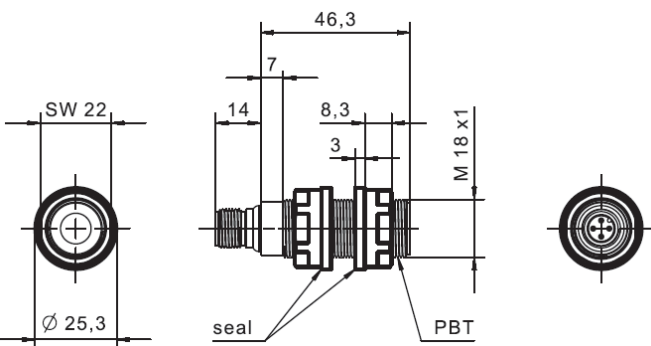
elobau ultrasonic sensors are maintenance-free. Nevertheless, it is advisable to clean the sensor surface with a damp cloth at regular intervals and to check the screw connections. Slight contamination of the sensor surface has no effect on the function. Heavy contamination or sticking of product may affect the function and must be removed.

**Dimensions**

UR18SM\* - Stainless steel version



UR18SP\* - Plastic version

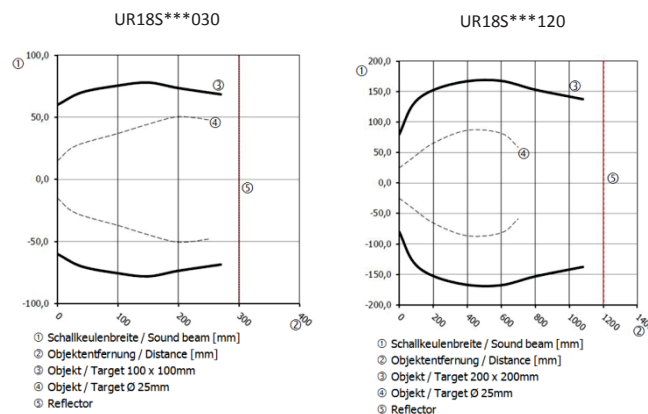


**Technical data**

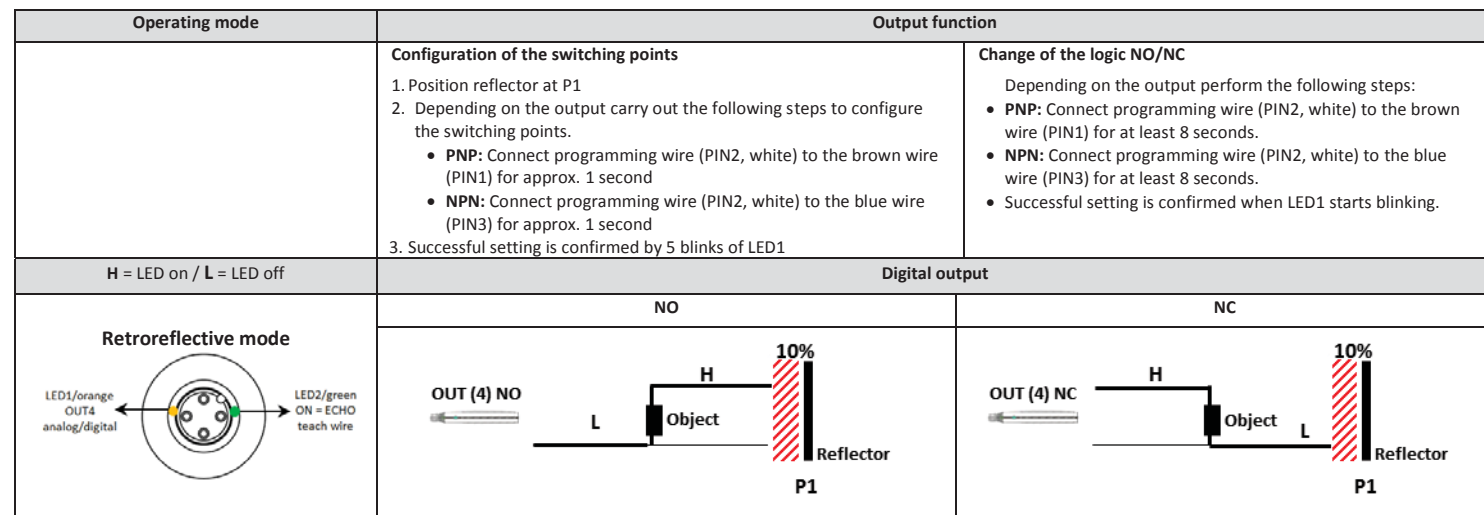
	UR18S***030	UR18S***120
Technology	Ultrasonic	
Operating mode	Retroreflective	
Sensing range	0...300mm <sup>1</sup>	0...1200mm <sup>2</sup>
Minimum distance sensor/reflector (Retroreflective mode sensor)	50mm	100mm
Minimum distance object/reflector (Retroreflective mode sensor)	10% <sup>4</sup>	
Blind zone	-	
Opening angle of sound cone	7°±2°	8°±2°
Operating voltage	10...30V	
Ripple	5%	
Current consumption	<40mA	
Operating frequency	300kHz	200kHz
Polarity reversal protection	yes	
Outputs	PNP / NPN	
Switching output	PNP/NPN NO/NC selectable	
Continuous current	100mA	
Switching frequency	8Hz	3Hz
Linearity error	1%	
Repeating accuracy	0.5%	
Resolution	≤2mm	≤3mm
Temperature compensation	yes	
Thermal drift	±2%	
Overload protection	yes	
Short-circuit protection	yes	
Start-up time digital output	400ms	
Synchronization	no	
Multiplexing	no	
Controls	Programming wire	
Indicators	Switching status: 1 LED orange, Echo: 1 LED green	
Application specific	-	
Operating temperature	-20°C...+70°C	
Storage temperature	-30°C...+80°C	
EMC	EN 60947-5-2	
CE label	yes	
UL approval	cULus listed	
CCC approval	<36V yes	
MTTF	216	
Housing design	cylindrical	
Thread	M18	
Housing material	DIN 1.4404 / PBT	
Dimensions	M18x1; L=60,3mm	
Material sound transducer	Epoxy resin with glass balls	
Connector type	M12 4-pol.	
Protection class	IP 67 <sup>3</sup> (EN60529)	
Torque	50Nm (metallic version)/1Nm (plastic version)	
Weight	80g (metallic version)/65g (plastic version)	
Accessories supplied	2 metallic nuts SW24 (metallic version) / 2 plastic nuts SW22 + 2 washer SW22 (plastic version)	

<sup>1</sup>Objekt / Target 100 x 100mm  
<sup>2</sup>Objekt / Target 200 x 200mm  
<sup>3</sup>IP67 only with well mounted cable connection  
<sup>4</sup>Automatic calculation depending on the measuring length

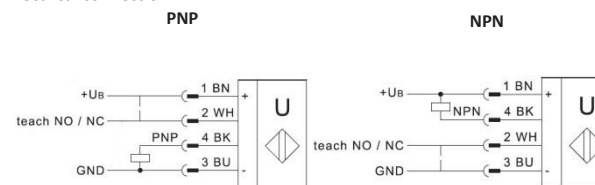
**Sound cone**



**Adjustment of the ultrasonic sensors with programming wire**



**Electrical connection**



**Factory settings**

**Resetting the switching points P1 / P2**

Program line without object (LED 2, green, off) depending on the output form - see logic change. LED 1 flashes 5x to confirm successful reset. After the reset, the maximum and minimum values of the measuring range are set. Logic (NO / NC) and operating mode do not change.