

Operating manual ultrasonic sensors

UC18S***030/ UC18S***120
IO-LINK

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

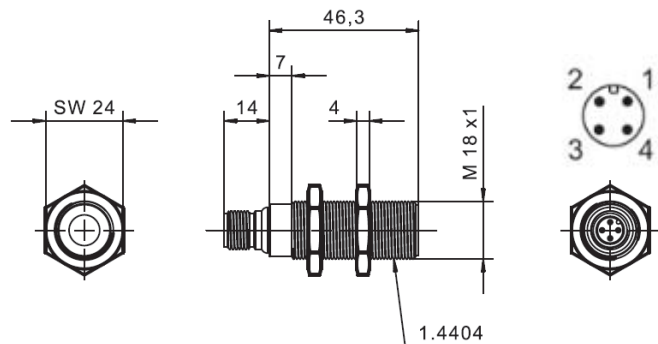
- Remove the black protective cap before use.
- Reliable measurement is not guaranteed within the blind zone.
- The ultrasonic sensors have internal temperature compensation. The optimum operating temperature is reached after approx. 20 minutes of operation. Rapid temperature changes require renewed 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:

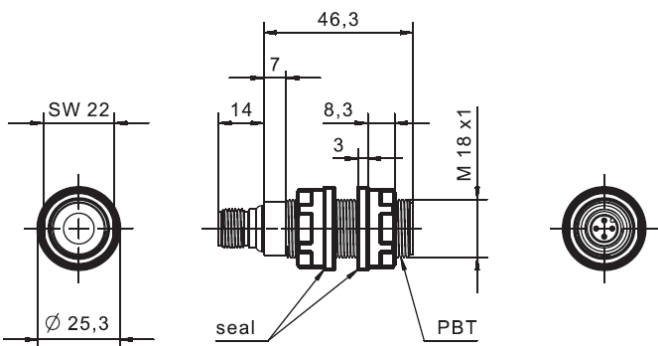
elobau ultrasonic sensors are maintenance-free. Nevertheless, it is advisable to clean the sensor surface with a damp cloth at regular intervals and to check the screw connections. Slight contamination of the sensor surface has no effect on the function. Heavy contamination or sticking of product may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

Dimensions

UC18SM* - Stainless steel versions



UC18SP* - Plastic versions

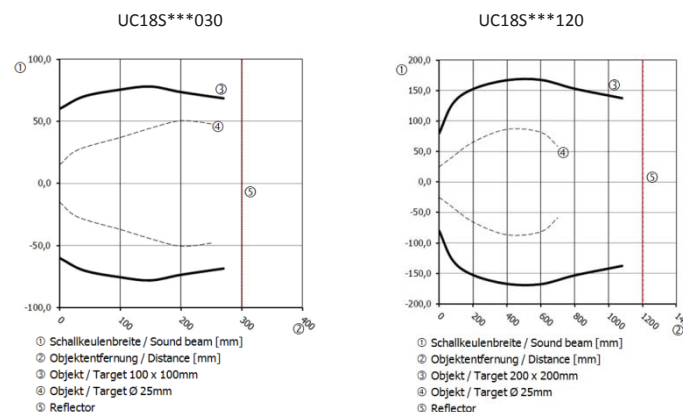


Technical Data

	UC18S***030	UC18S***120
Technology	Ultrasonic	
Operating mode	Diffuse/Retroreflective	
Sensing range	40...300mm ¹	80...1200mm ²
Minimum distance sensor/reflector (Retroreflective mode sensor)	50mm	100mm
Minimum distance object/reflector (Retroreflective mode sensor)	10% ⁴	
Blind zone	0...40mm	0...80mm
Opening angle of sound cone	7°±2°	8°±2°
Operating voltage	10...30V	
Ripple	5%	
Current consumption	<35mA	
Operating frequency	300kHz	200kHz
Polarity reversal protection	yes	
Outputs	Push-Pull (IO-Link)	
Switching output	Push-Pull - NO/NC selectable	
Continuous current	100mA	
Switching frequency	selectable (10Hz default)	selectable (3Hz default)
Linearity error	1%	
Repeating accuracy	1%	
Resolution	1mm	
Temperature compensation	yes	
Thermal drift	±2%	
Overload protection	yes	
Short-circuit protection	yes	
Start-up time digital output	600ms	
Synchronization	no	
Multiplexing	no	
Controls	IO-Link	
Indicators	Switching status: 1 LED orange, Echo: 1 LED green	
Application specific	IO-Link	
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 ³ (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)	
IO-Link	yes	
Master port class	port class A	
IO-Link version	1.1	
Transfer rate	38400bit/sec	
Cycle time	3.2ms	16ms
Process data width	32bit	
SIO mode	yes	

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

Sound cone



Adjustment of the ultrasonic sensors with IO-Link

Operating mode	Output function	
Selection of the operating mode: The selection is only possible when using IO-Link.	Configuration of the switching points: Configuration of the switching points only with IO-Link.	Change of logic NO/NC Selection of the logic only with IO-Link.
H = LED on / L = LED off	NO - positive slope	NC - negative slope
Window mode 		
Two point mode 		
Single point mode 		
Retroreflective mode 		

Electrical connection

