

Specifications

Ultrasonic specifications

Operating range ¹⁾	0 ... 650mm
Adjustment range	0 ... 650mm in steps
Ultrasonic frequency	300kHz
Typ. opening angle	12°

Timing

Switching frequency	max. 100Hz
Delay before start-up	100ms

Electrical data

Operating voltage U_B	10 ... 30V DC (incl. $\pm 10\%$ residual ripple)
Residual ripple	$\pm 10\%$ of U_B
Bias current	receiver ≤ 15 mA, transmitter ≤ 35 mA
Switching output	1 PNP and 1 NPN transistor
Function characteristics	object detected
Output current	max. 150mA
Switch positions	positions 1 ... 5, see Tables

Indicators

LED green	ready
LED yellow	object detected

Mechanical data

Housing	metal
Transducer	see remarks
Weight	70g each
Connection type	M12 connector, 5-pin

Environmental data

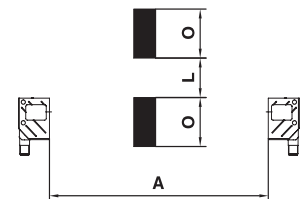
Ambient temp. (operation/storage)	0°C ... +70°C/-40°C ... +85°C
Protective circuit ²⁾	1, 2, 3
VDE safety class	III
Protection class	IP 65
Standards applied	IEC 60947-5-2
Fitting position	any

1) For the complete temperature range, measured object $\geq 20 \times 20$ mm

2) 1=short-circuit and overload protection, 2=polarity reversal protection (not for analogue inputs), 3=wire break and inductive protection

Tables

Switch position	Switching frequency [Hz]	Typical values		
		A_{max} [mm]	O_{min} [mm]	L_{min} [mm]
1	100	250	20	1
2	100	350	30	1
3	50	450	40	1
4	50	550	50	1
5	50	650	50	2



O Object
 L Gap
 A Distance transmitter/receiver

Diagrams

Order guide

	Designation	Part No.
With M12 connector	LSU 18/24-S12	
Transmitter	LSSU 18-S12	501 03365
Receiver	LSEU 18/24-S12	501 03364

Remarks

- The response behaviour is dependent on the container shape.
- Not suitable for use in wet environments. Avoid cleaning with cleaning agents.

LSU 18

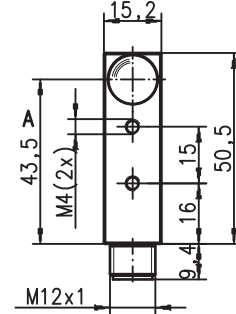
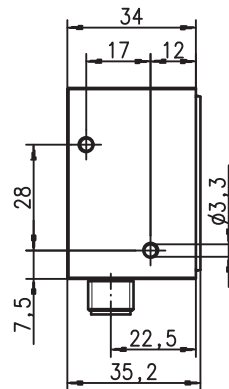
Throughbeam ultrasonic sensor

Art. Nr. 501 09125

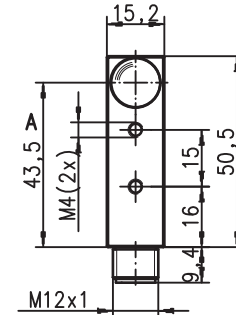
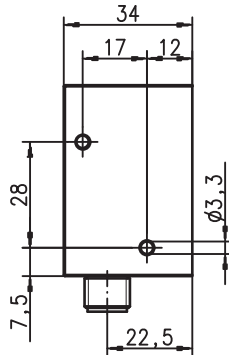


Dimensioned drawing

Transmitter



Receiver



A Centre of ultrasonic transducer



0 ... 500 mm



- Colour and transmission independent detection of objects, even in extremely wet environments
- Optimised for container entry
- Stainless steel housing
- Teflon coated ultrasonic transducer
- Insensitive to chemical cleaning agents
- Detection of narrow gaps
- Detection of fast moving objects

Electrical connection

LSEU 18/4.52-S12	
10-30V DC +	1 - br/BN
Sens 1	2 - ws/WH
GND	3 - bl/BU
●	4 - sw/BK
◇	5 - gr/GY

LSSU 18.52-S12	
10-30V DC +	1 - br/BN
NC	2 - ws/WH
GND	3 - bl/BU
NC	4 - sw/BK
NC	5 - gr/GY

Accessories:

(available separately)

- Mounting systems
- Cable with M12 connector (K-D ...)



We reserve the right to make changes • 18_e03gb.fm

Specifications

Ultrasonic specifications

Operating range	0 ... 500mm
Adjustment range	0 ... 500mm in steps, see Tables
Ultrasonic frequency	300kHz
Typ. opening angle	12°

Timing

Switching frequency	200Hz
Delay before start-up	100ms

Electrical data

Operating voltage U_B	10 ... 30V DC (incl. $\pm 10\%$ residual ripple)
Residual ripple	$\pm 10\%$ of U_B
Bias current	receiver ≤ 15 mA, transmitter ≤ 35 mA
Switching output	1 PNP transistor (dark switching)
Function characteristics	object detected
Output current	max. 150mA
Range adjustment	external, via Sens 1 and Sens 2, see Tables

Mechanical data

Housing	stainless steel
Transducer	Teflon coated
Weight	90g each
Connection type	M12 connector, stainless steel, 5-pin with gold-plated contacts

Environmental data

Ambient temp. (operation/storage)	0°C ... +70°C/-40°C ... +85°C
Protective circuit ¹⁾	1, 2, 3
VDE safety class	III
Protection class	IP 67, IP 69K
Environmentally tested acc. to	ECOLAB, CleanProof+
Standards applied	IEC 60947-5-2
Fitting position	any
Chemical resistance	tested in accordance with ECOLAB and CleanProof+ (see Chemical resistance)

Options

Range adjustment	Sens 1 and Sens 2
Active/not active	$\geq 8V/\leq 2V$ or not connected
Input resistance	R_{in} : 10k Ω

1) 1=short-circuit and overload protection, 2=polarity reversal protection (not for analogue inputs), 3=wire break and inductive protection

Chemical resistance

Product group	Product designation	Concentration	Temp.	Applic. time	
Foam cleaner	P3-topactive 200	4%	20°C	28 days	ECOLAB
Foam cleaner	P3-topax 19	5%	20°C	28 days	
Foam cleaner	P3-topax 56	5%	20°C	28 days	
Disinfection agent	P3-topax 91	3%	20°C	28 days	CleanProof+
Foam cleaner	P3-topactive 200	4%	50°C	21 days	
Disinfection agent	P3-topactive DES	3%	50°C	21 days	
Foam cleaner	P3-topax 52	5%	50°C	21 days	
Disinfection agent	P3-topax 66	5%	50°C	21 days	
Disinfection agent	P3-steril	1%	50°C	21 days	
Conveyor belt lubricant	P3-lupodrive	0.1%	50°C	21 days	
Disinfection agent	Hydrogen peroxide H ₂ O ₂	6%	20°C	21 days	
Disinfection agent	Peracetic acid	1%	20°C	21 days	
Disinfection agent	Ethanol	70%	20°C	10 hours *	

* corresponds to approx. 5000 wipe cycles at 10 sec. per cycle.

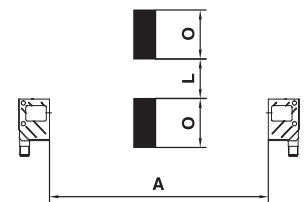
ECOLAB	Test procedure according to Ecolab F&E No. 40-1
CleanProof+	Leuze test procedure (based on Ecolab F&E No. 40-1)

Order guide

	Designation	Part No.
Stainless steel housing with M12 connector	LSU 18/4.52-S12	
Transmitter	LSSU 18.52-S12	501 08348
Receiver	LSEU 18/4.52-S12	501 08347

Tables

Pin 5 (Sens 2)	Pin 2 (Sens 1)	Switching frequency [Hz]	Typical values		
			A _{max} [mm]	O _{min} [mm]	L _{min} [mm]
1	1	200	250	10	2
0	1	200	300	10	2
1	0	200	400	10	3
0	0	200	500	10	5



O Object
L Gap
A Distance transmitter/receiver

Diagrams

Remarks

- **Approved purpose:**
The throughbeam ultrasonic sensors are ultrasonic sensors for acoustic, contactless detection of objects.
- The response behaviour is dependent on the container shape.
- Direct spraying results in switching errors.
- Mount sensors in such a way that no drops can collect near the transducer.