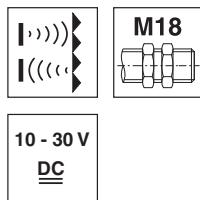


RKU318

en 01-2017/02 5 0135687



0 ... 300mm
0 ... 800mm

- Function largely independent of surface properties, ideal for detection of liquids, bulk materials, transparent media, ...
- Small dead zone at long scanning range
- Adjustment of the reflector distance can be taught
- NO/NC function reversible
- 1 switching output (PNP or NPN)
- Extra short construction
- NEW** – Stable plastic design
- NEW** – Temperature-compensated scanning range

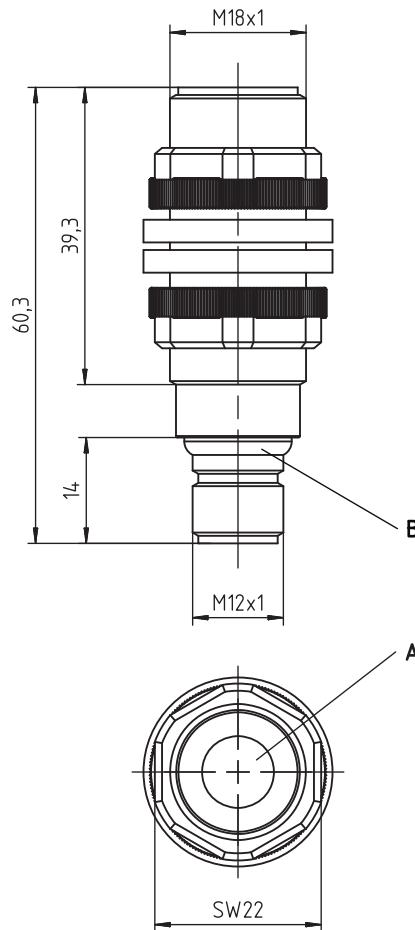


Accessories:

(available separately)

- Mounting systems
- Mounting adapter M18-M30: BTX-D18M-D30 (Part no. 50125860)
- Cables with M12 connector (KD ...)
- Teach adapter PA1/XTSX-M12 (Part no. 50124709)

Dimensioned drawing



A Active sensor surface
B Indicator diodes

Electrical connection



Technical data

Ultrasonic specifications

	RKU318-300/...-M12	RKU318-800/...-M12
Operating range ¹⁾	0 ... 300mm ²⁾	0 ... 800mm ²⁾
Reflector distance	50 ... 300mm	80 ... 800mm
Object distance to background (reflector)	≥ 50mm	≥ 80mm
Ultrasonic frequency	300kHz	230kHz
Typ. opening angle	7° ± 2°	8° ± 2°
Resolution	< 2mm	< 2mm
Direction of beam	Axial	Axial
Reproducibility	± 0.5% ^{1) 3)}	± 0.5% ^{1) 3)}
Switching hysteresis	1% ³⁾	1% ³⁾
Temperature drift	≤ 5% ⁴⁾	≤ 5% ⁴⁾

Timing

Switching frequency	8Hz	5Hz
Response time	62ms	100ms
Readiness delay	< 100ms	< 100ms

Electrical data

Operating voltage U_B ⁵⁾	10 ... 30V DC (incl. ± 5% residual ripple)
Residual ripple	± 5% of U_B
Open-circuit current	≤ 35mA
Switching output	.../4... .../2...
Function	1 PNP transistor switching output
Output current	1 NPN transistor switching output
Setting the reflector distance	NO (normally open), preset
Changeover	Max. 100mA
NO/NC	Teach-in (pin 2) 2 ... 7s for U_B
	Teach-in (pin 2) > 12s to U_B

Indicators

Yellow LED	OUT1: object detected
Flashing yellow and green LEDs	Teach-in / teaching error
Green LED	Object within the scanning range

Mechanical data

Housing	Plastic (PBT)
Active surface	Epoxy resin, glass fiber reinforced
Weight	65g
Ultrasonic transducer	Piezoceramic ⁶⁾
Connection type	M12 connector, 4-pin
Fitting position	Any

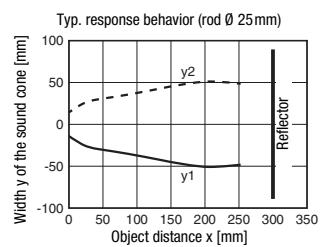
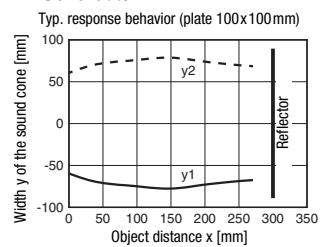
Environmental data

Ambient temp. (operation/storage)	-20° ... +70°C/-20° ... +70°C
Protective circuit	1, 2, 3
VDE protection class	III
Degree of protection	IP 67
Standards applied	EN 60947-5-2
Certifications	UL 508, CSA C22.2 No.14-13 ^{5) 8)}

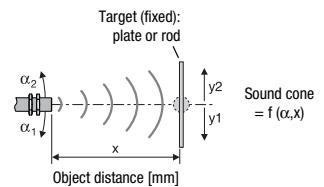
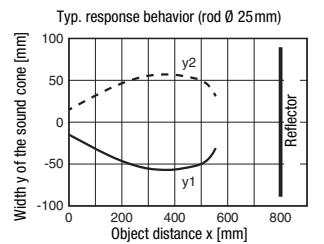
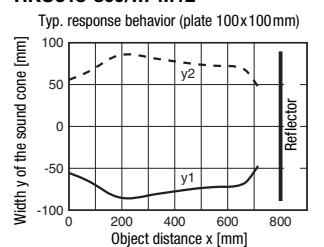
- 1) At 20°C
- 2) Target: 100mm x 100mm plate
- 3) From end value
- 4) Over the temperature range -20°C ... +70°C
- 5) For UL applications: use is permitted exclusively in Class 2 circuits according to NEC
- 6) The ceramic material of the ultrasonic transducer contains lead zirconium titanate (PZT)
- 7) 1=short-circuit and overload protection, 2=polarity reversal protection, 3=wire break and inductive protection
- 8) These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/CYJV7 or PVVA/PVVA7)

Diagrams

RKU318-300/...-M12



RKU318-800/...-M12



Notes

Observe intended use!

- ⚠ This product is not a safety sensor and is not intended as personnel protection.
- ⚠ The product may only be put into operation by competent persons.
- ⚠ Only use the product in accordance with its intended use.

Part number code

R	K	U	3	1	8	-	8	0	0	.	3	/	4	T	-	M	1	2
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Operating principle

HTU Ultrasonic sensor, scanning principle, with background suppression

DMU Ultrasonic sensor, distance measurement

RKU Ultrasonic sensor, retro-reflective ultrasonic sensor

Series

318 318 series, cylindrical short M18 design

Operating ranges in mm

300 0 ... 300

800 0 ... 800

Equipment (optional)

.3 Teach button on the sensor

Pin assignment of connector pin 4 / black cable wire (OUT1)

4 PNP output, NO contact preset

P PNP output, NC contact preset

2 NPN output, NO contact preset

N NPN output, NC contact preset

C Analog output 4 ... 20mA

V Analog output 0 ... 10V

Pin assignment of connector pin 2 / white cable wire (Teach-IN)

T Teach input

Connection technology

M12 M12 connector, 4-pin

Order guide

The sensors listed here are preferred types; current information at www.leuze.com.

	Designation	Part no.
Operating range / switching output / teach-in		
0 ... 300mm / PNP / Teach input	RKU318-300/4T-M12	50136078
0 ... 300mm / NPN / Teach input	RKU318-300/2T-M12	50136079
0 ... 800mm / PNP / Teach input	RKU318-800/4T-M12	50136080
0 ... 800mm / NPN / Teach input	RKU318-800/2T-M12	50136081

Device functions and indicators

The sensor detects objects from 0 mm to the reflector distance less the dead zone.
The dead zone is max. 10% of the selected reflector distance.

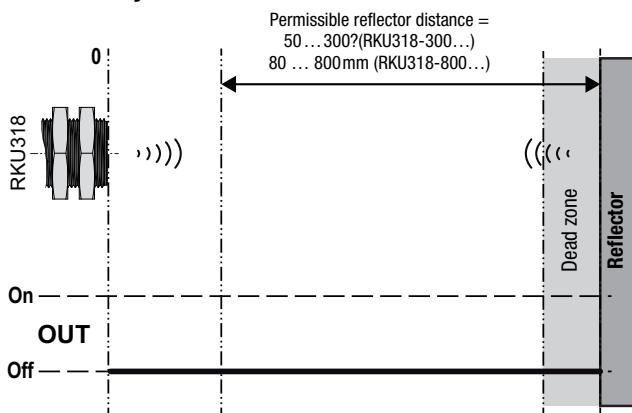


Note!

The switching behavior is not defined in the dead zone.

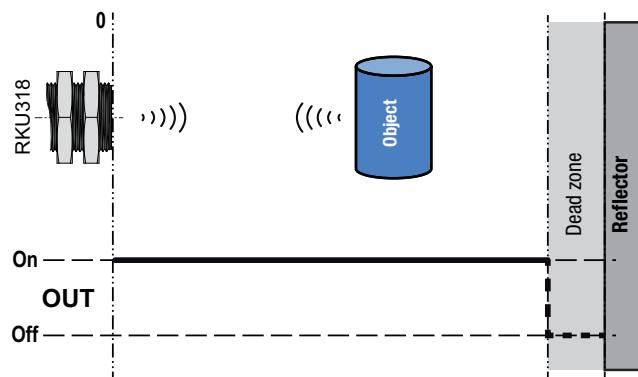
All settings on the sensor are taught-in via the **Teach-IN** input. Device status and switching states are indicated as follows by means of a LED:

Without object



Switching output **OUT 1 = not active (Off)**
Green **LED** is on

With object



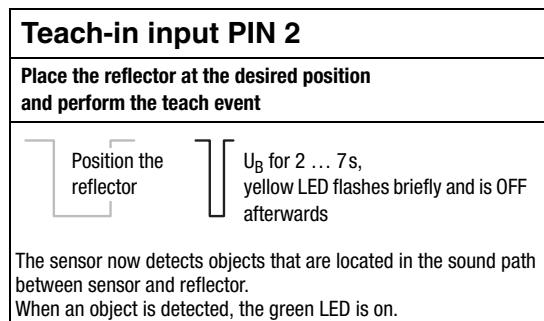
Switching output **OUT 1 = active (On)**
Green **LED** is off

Adjusting the reflector distance via the teach input

The reflector distance of the sensor is set to 300mm or 800mm on delivery.

Through a simple teach event, the reflector distance can be taught in within the respective operating range.

The Leuze PA1/XTSX-M12 Teach Adapter can be used for this purpose. The adapter can also be used to easily switch the output function from NO contact to NC contact.



Adjusting the switching function (NC/NO) via the teach input

The switching function of the sensor is set to normally open (NO) on delivery.

The output function can be switched from NO contact (NO - normally open) to NC contact (NC - normally closed) and vice versa. If the switching function is changed, the switching output is changed to the opposite state (toggled).

Changeover of the switching function
<p>1. To change the switching function, connect the Teach-IN input to U_B for more than 12s (Leuze Teach Adapter: position "Teach-U_B"). The current state of output OUT1 is frozen while the adjustment is made.</p>
<p>2. The green and yellow LEDs flash alternately at 2Hz. The switching function was changed over. The switching behavior corresponds to the diagram shown above.</p>

Resetting to factory settings

The sensor can be reset to the factory setting (reflector distance at 300 mm or 800 mm).
Leuze Teach Adapter **PA1/XTSX-M12** can be used for this purpose.

Resetting to factory settings

- 1. When switching on the supply voltage (during Power-On), connect the Teach-IN input to U_B for > 5s (Leuze Teach Adapter position "Teach- U_B ").**
The green and yellow LEDs flash alternately and very quickly for a brief time.
- 2. Disconnect the Teach-IN input from U_B .** The sensor was reset to the factory setting:
reflector distance 300 mm or 800 mm.