TURCK

18mm Ultrasonic Barrel Sensors with Side -sensing Transducer

To ensure advanced sensing capabilities in compact applications, Turck's 18mm ultrasonic barrel sensors now feature a right-angle, side-sensing transducer. The new design simplifies mounting in applications where there is little space, and increases flexibility to mount the sensor in a location that minimizes damage. Sensing ranges available are 40cm and 1 meter.

Please see the following pages for the data sheets for the product included in this extension.

| Part Number	ID Number	Com-pact	Teach By Wire	Teach by Button	Teach via IO-Link	Sensing Range	Housing	Output
RU40U-M18MS-UP8X2-H1151	M1610009	X	X			40cm	18mm Barrel	PNP
RU100U-M18MS-UP8X2-H1151	M1610011	X	X			100cm	18mm Barrel	PNP
RU40U-M18MS-LFX-H1151	M1610019		X			40cm	18mm Barrel	Frequency
RU100U-M18MS-LFX-H1151	M1610020		X			100cm	18mm Barrel	Frequency
RU40U-M18MS-UN8X2-H1151	M1610082	X	X			40cm	18mm Barrel	NPN
RU100U-M18MS-UN8X2-H1151	M1610083	X	X			100cm	18mm Barrel	NPN
RU40L-M18MS-UP8X2-H1151 ***	M1610078	X	X			40cm	18mm Barrel	PNP
RU100L-M18MS-UP8X2-H1151 ***	M1610079	X	X			100cm	18mm Barrel	PNP
RU40L-M18MS-UN8X2-H1151 ***	M1610086	X	X			40cm	18mm Barrel	NPN
RU100L-M18MS-UN8X2-H1151 ***	M1610087	X	X			100cm	18mm Barrel	NPN

***-Retro-reflective sensors only

Ultrasonic sensor
diffuse mode sensor
RU40U-M18MS-UP8X2-H1151
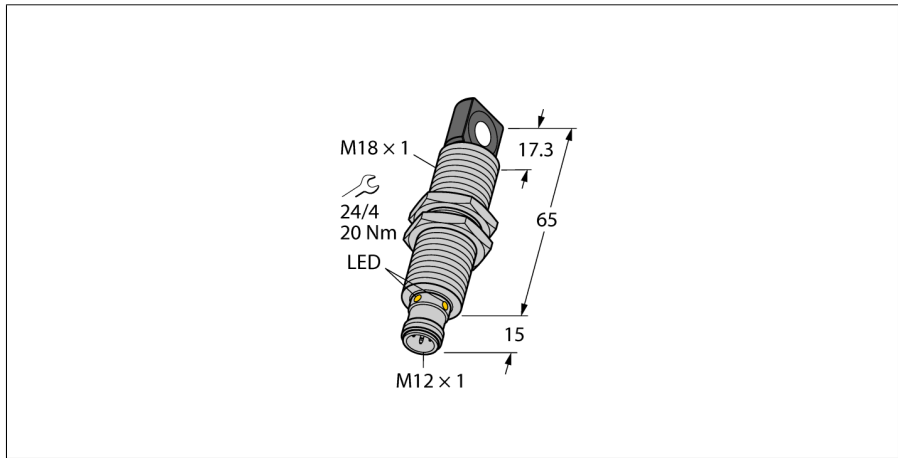
- **Rectangular transducer front**
- **Cylindrical housing M18, potted**
- **Connection via M12 x 1 male**
- **Temperature compensation**
- **Blind zone: 2.5 cm**
- **Range: 40 cm**
- **Resolution: 0.5 mm**
- **Sonic cone angle: 9°**
- **1 x switching output, PNP**
- **NO/NC programmable**
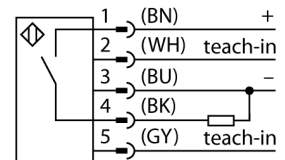
Wiring Diagram

Functional principle

Ultrasonic sensors capture a multitude of objects contactless and wear-free with ultrasonic waves. It does not matter whether the object is transparent or opaque, metallic or nonmetallic, firm, liquid or powdery. Even environmental conditions such as spray, dust or rain hardly affect their function.
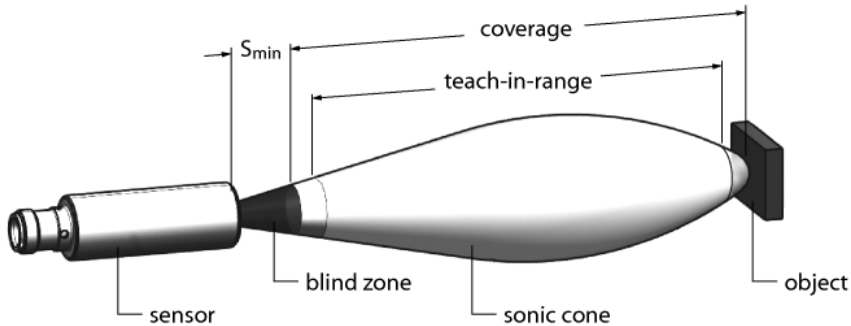
Sonic Cone
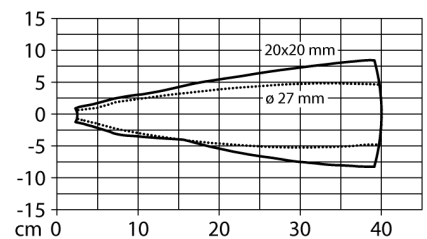
Type code	RU40U-M18MS-UP8X2-H1151
Ident-No.	1610009

Pass speed	≤ 1.5 m/s
Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	20 mm
Hysteresis	≤ 5 mm
Ambient temperature	-25…+70 °C
Storage temperature	-40…+80°C

Operating voltage	15… 30VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 150 mA
No-load current I_0	≤ 50 mA
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 2.5 V
Wire breakage / Reverse polarity protection	yes/ yes
Output function	5-wire, NO/NC , PNP
Output 1	Switching output
Readiness delay	≤ 300 ms

Construction	Threaded barrel, M18
Dimensions	80 mm
Housing material	Metal, CuZn, nickel-plated
Electrical connection	Flange connector, M12 x 1
Protection class	IP67
MTTF	281 years acc. to SN 29500 (Ed. 99) 40 °C

Switching state	LED yellow

Ultrasonic sensor
diffuse mode sensor
RU40U-M18MS-UP8X2-H1151

Mounting instructions / Description

Setting the switchpoint

The ultrasonic sensor features a switching output with adjustable switchpoint. The green and yellow LED indicate whether the sensor has detected an object.

One switchpoint is taught. This must be within the sensing range. In this operating mode the background is suppressed.

Easy-Teach

●Connect teach adapter TX1-Q20L60 between sensor and connection cable
●Place object at the end of the switching range
●Press and hold button for at least 2 s against Gnd

After successful teaching, the green LED flashes at 3 Hz and the sensor runs automatically in normal mode.

LED response

In standard operating mode both LEDs signal the switching state of the sensor.
●green: object is in the detection range but not in the switching range
● yellow: object is in the switching range
●off: object is outside the detection range or signal loss

Ultrasonic sensor
diffuse mode sensor
RU40U-M18MS-UP8X2-H1151

Teach cable

Compatibility mode

Teach-IN Pin 2 (WH)	Gnd Pin 3 (BU)	LED
3 seconds	Limit value	LED yellow, flashes for 2 sec. 0.83 Hz, then steady (low signal > fast flashing 5Hz)

Switching to extended mode

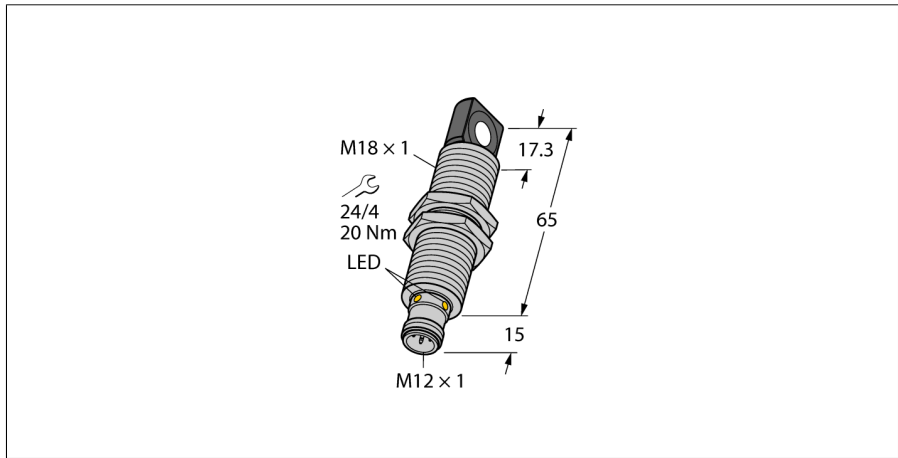| Teach-IN Pin 5 (GY)	Ub Pin 1 (BN)	LED
10 seconds	Extended mode	LED green, flashes fast 3 times, then steady, turns yellow after 8 sec. and flashes normal for 2 sec. 5 Hz

Extended mode

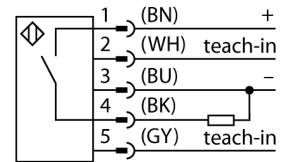| Teach-IN Pin 5 (GY)	Gnd Pin 3 (BU)	Ub Pin 1 (BN)	LED
2 seconds	1. Limit value	2. Limit value	LED yellow, flashes for 2 sec. 0.83 Hz, then steady (low signal > fast flashing 5Hz)

Default setting

Teach-IN Pin 5 (GY)	Ub Pin 1 (BN)	LED
10 seconds	Sensor locked	LED yellow, flashes 2 sec. 0.83 Hz then steady, turns green after 8 sec. and flashes for 2 sec.

Ultrasonic sensor
diffuse mode sensor
RU100U-M18MS-UP8X2-H1151

- ■ **Rectangular transducer front**
- ■ **Cylindrical housing M18, potted**
- ■ **Connection via M12 x 1 male**
- ■ **Temperature compensation**
- ■ **Blind zone: 15 cm**
- ■ **Range: 100 cm**
- ■ **Resolution: 1 mm**
- ■ **Sonic cone angle: 16°**
- ■ **1xSchaltausgang, PNP**
- ■ **Einstellbar über Teach-In**
- ■ **Parametrierbar Schließer/Öffner**

Wiring Diagram

Functional principle

Ultrasonic sensors capture a multitude of objects contactless and wear-free with ultrasonic waves. It does not matter whether the object is transparent or opaque, metallic or nonmetallic, firm, liquid or powdery. Even environmental conditions such as spray, dust or rain hardly affect their function.
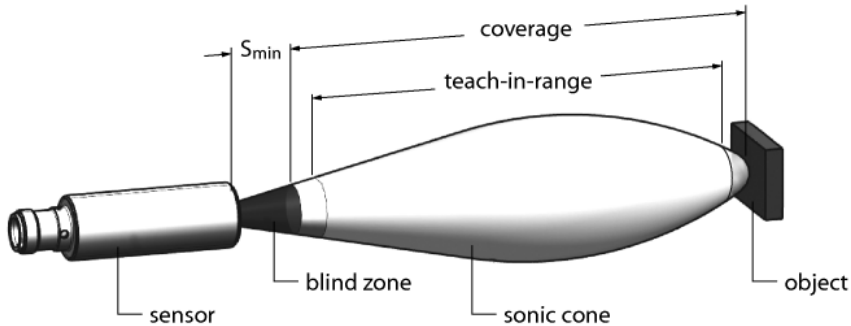
Sonic Cone
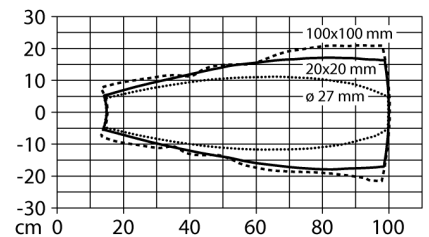
Type code	RU100U-M18MS-UP8X2-H1151
Ident-No.	1610011

Pass speed	≤ 1.5 m/s
Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	100 mm
Hysteresis	≤ 10 mm
Ambient temperature	-25…+70 °C
Storage temperature	-40…+80°C

Operating voltage	15… 30VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 150 mA
No-load current I_0	≤ 50 mA
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 2.5 V
Wire breakage / Reverse polarity protection	yes/ yes
Output function	5-wire, NO/NC , PNP
Output 1	Switching output
Readiness delay	≤ 300 ms

Construction	Threaded barrel, M18
Dimensions	80 mm
Housing material	Metal, CuZn, nickel-plated
Electrical connection	Flange connector, M12 x 1
Protection class	IP67
MTTF	281 years acc. to SN 29500 (Ed. 99) 40 °C

Switching state	LED yellow

Ultrasonic sensor
diffuse mode sensor
RU100U-M18MS-UP8X2-H1151

Mounting instructions / Description

Setting the switchpoint

The ultrasonic sensor features a switching output with adjustable switchpoint. The green and yellow LED indicate whether the sensor has detected an object.

One switchpoint is taught. This must be within the sensing range. In this operating mode the background is suppressed.

Easy-Teach

- Connect teach adapter TX1-Q20L60 between sensor and connection cable
- Place object at the end of the switching range
- Press and hold button for at least 2 s against Gnd

After successful teaching, the green LED flashes at 3 Hz and the sensor runs automatically in normal mode.

LED response

In standard operating mode both LEDs signal the switching state of the sensor.

- green: object is in the detection range but not in the switching range
- yellow: object is in the switching range
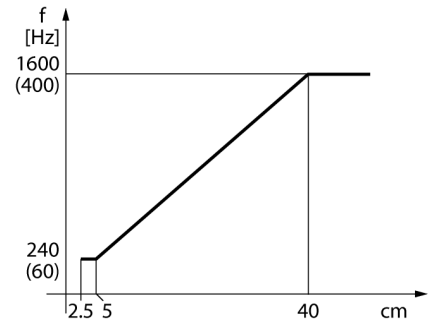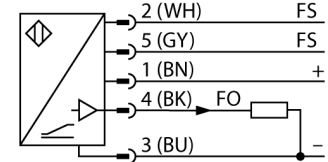- off: object is outside the detection range or signal loss

Ultrasonic sensor
diffuse mode sensor
RU40U-M18MS-LFX-H1151

- **Rectangular transducer front**
- **Cylindrical housing M18, potted**
- **Connection via M12 x 1 male**
- **Temperature compensation**
- **Blind zone: 2.5 cm**
- **Range: 40 cm**
- **Resolution: 0.5 mm**
- **Sonic cone angle: 9°**
- **Frequency output 240…1600 Hz (60… 400 Hz)**
- **Frequency range selectable via FS control line (see functional principle)**

Type code	RU40U-M18MS-LFX-H1151
Ident-No.	1610019

Pass speed	≤ 1.5 m/s
Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	20 mm
Ambient temperature	-25…+70 °C
Storage temperature	-40…+80°C

Operating voltage	15… 30VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 150 mA
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 2.5 V
Wire breakage / Reverse polarity protection	yes/ yes
Output function	5-wire, Frequency
Readiness delay	≤ 300 ms

Construction	Threaded barrel, M18
Dimensions	80 mm
Housing material	Metal, CuZn, nickel-plated
Electrical connection	Flange connector, M12 x 1
Protection class	IP67
MTTF	281 years acc. to SN 29500 (Ed. 99) 40 °C

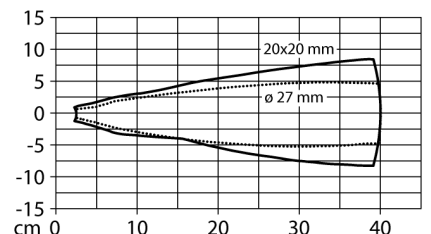| Switching state	LED yellow

Wiring Diagram

Functional principle

Ultrasonic sensors capture a multitude of objects contactless and wear-free with ultrasonic waves. It does not matter whether the object is transparent or opaque, metallic or nonmetallic, firm, liquid or powdery. Even environmental conditions such as spray, dust or rain hardly affect their function.
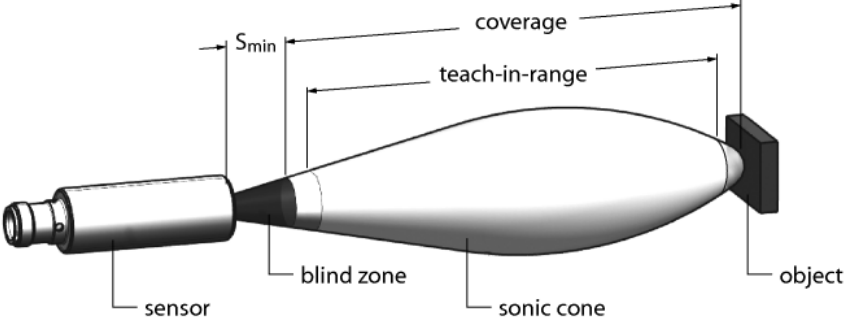
The frequency range can be selected via the control input. If this is connected to ground (-), the lower frequency range is selected. If it is not connected to ground or connected to the supply voltage, the output works in the higher frequency range.
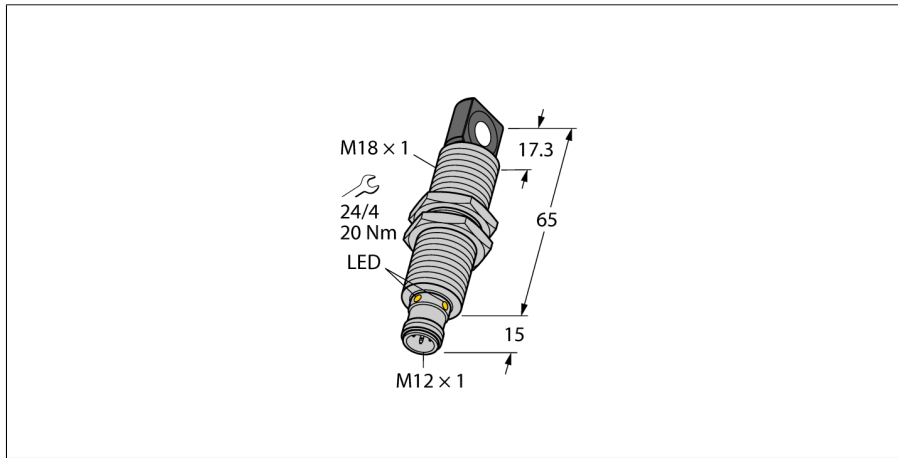
Sonic Cone

Ultrasonic sensor
diffuse mode sensor
RU40U-M18MS-LFX-H1151

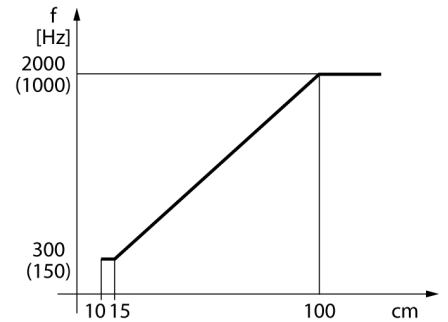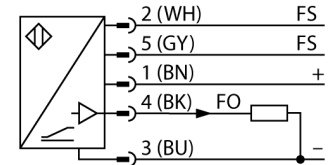---

Mounting instructions / Description

Ultrasonic sensor
diffuse mode sensor
RU100U-M18MS-LFX-H1151

- ■ **Rectangular transducer front**
- ■ **Cylindrical housing M18, potted**
- ■ **Connection via M12 x 1 male**
- ■ **Temperature compensation**
- ■ **Blind zone: 15 cm**
- ■ **Range: 100 cm**
- ■ **Resolution: 1 mm**
- ■ **Sonic cone angle: 16°**
- ■ **Frequency output 300…2000 Hz (150… 1000 Hz)**
- ■ **Frequency range selectable via FS control line (see functional principle)**

Type code	RU100U-M18MS-LFX-H1151
Ident-No.	1610020

Pass speed	≤ 1.5 m/s
Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	100 mm
Ambient temperature	-25…+70 °C
Storage temperature	-40…+80°C

Operating voltage	15… 30VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 150 mA
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 2.5 V
Wire breakage / Reverse polarity protection	yes/ yes
Output function	5-wire, Frequency
Readiness delay	≤ 300 ms

Construction	Threaded barrel, M18
Dimensions	80 mm
Housing material	Metal, CuZn, nickel-plated
Electrical connection	Flange connector, M12 x 1
Protection class	IP67
MTTF	281 years acc. to SN 29500 (Ed. 99) 40 °C

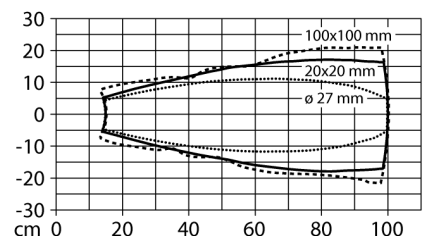| Switching state	LED yellow

Wiring Diagram

Functional principle

Ultrasonic sensors capture a multitude of objects contactless and wear-free with ultrasonic waves. It does not matter whether the object is transparent or opaque, metallic or non-metallic, firm, liquid or powdery. Even environmental conditions such as spray, dust or rain hardly affect their function.
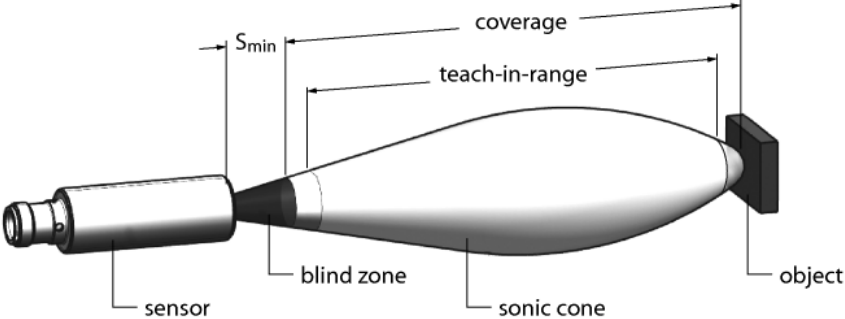
The frequency range can be selected via the control input. If this is connected to ground (-), the lower frequency range is selected. If it is not connected to ground or connected to the supply voltage, the output works in the higher frequency range.
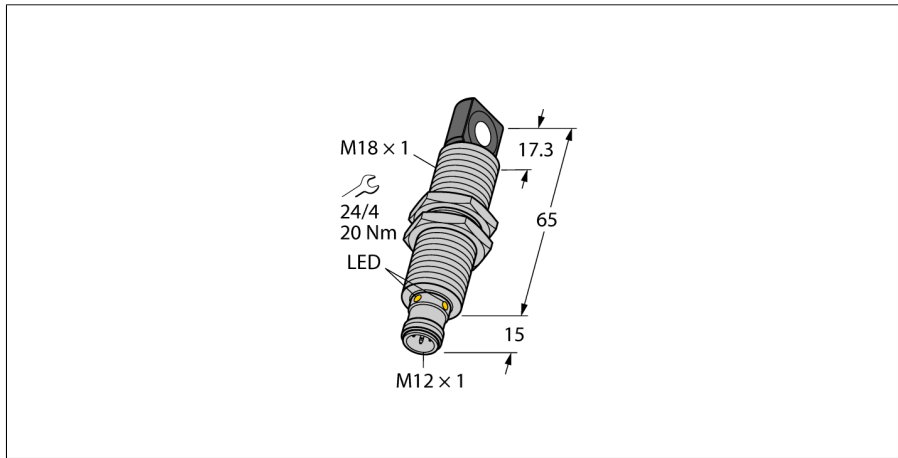
Sonic Cone

Ultrasonic sensor
diffuse mode sensor
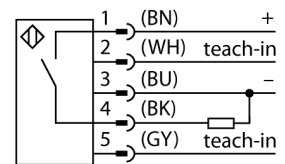# RU100U-M18MS-LFX-H1151

Mounting instructions / Description

Ultrasonic sensor
Retroreflective Sensor
RU40L-M18MS-UP8X2-H1151

- **Rectangular transducer front**
- **Cylindrical housing M18, potted**
- **Connection via M12 x 1 male**
- **Temperature compensation**
- **Teaching range 2.5…39cm**
- **Sonic cone angle: 9°**
- **1 x switching output, PNP**
- **Teachable settings**
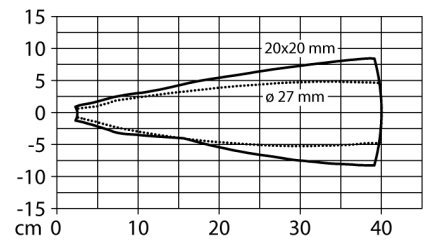- **NO/NC programmable**

Wiring Diagram

Functional principle

Ultrasonic sensors capture a multitude of objects contactless and wear-free with ultrasonic waves. It does not matter whether the object is transparent or opaque, metallic or non-metallic, firm, liquid or powdery. Even environmental conditions such as spray, dust or rain hardly affect their function.
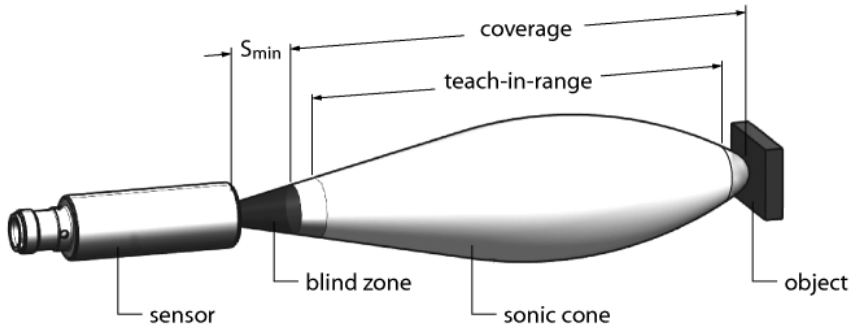
Sonic Cone

Type code	RU40L-M18MS-UP8X2-H1151
Ident-No.	1610078

Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	20 mm
Hysteresis	≤ 5 mm
Ambient temperature	-25…+70 °C
Storage temperature	-40…+80°C

Operating voltage	15… 30VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 150 mA
No-load current I_0	≤ 50 mA
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 2.5 V
Wire breakage / Reverse polarity protection	yes/ yes
Output function	5-wire, NO/NC , PNP
Output 1	Switching output
Readiness delay	≤ 300 ms

Construction	Threaded barrel, M18
Dimensions	80 mm
Housing material	Metal, CuZn, nickel-plated
Electrical connection	Flange connector, M12 x 1
Protection class	IP67
MTTF	281 years acc. to SN 29500 (Ed. 99) 40 °C

Switching state	LED yellow

Ultrasonic sensor
Retroreflective Sensor
RU40L-M18MS-UP8X2-H1151

Mounting instructions / Description

Teaching the reflector position

The ultrasonic sensor features a switching output with adjustable window. The green and yellow LED indicate whether the sensor has detected an object.

Teach the window limits. The limits must be within the detection range. In this operating mode, the taught reflector position is detected permanently without an object.

Easy-Teach

- Connect teach adapter TX1-Q20L60 between sensor and connection cable
- Stationary reflector within the detection range
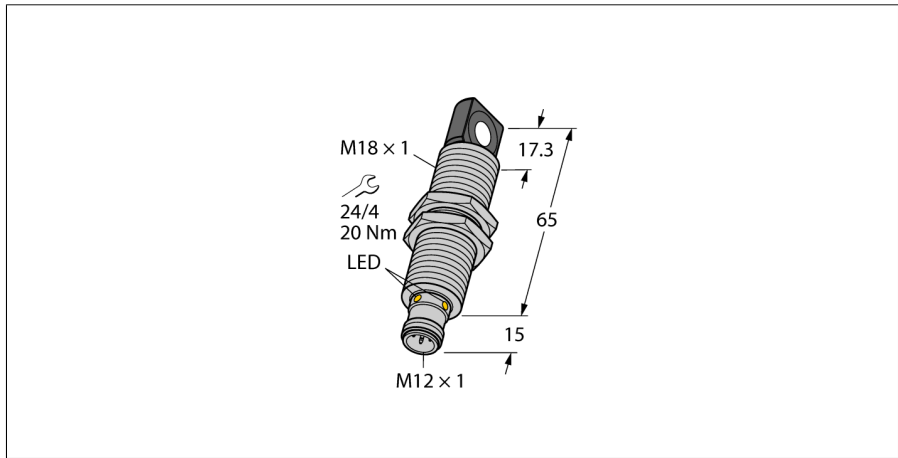- Press and hold button for at least 2 s against Gnd

After successful teaching, the green LED flashes at 3 Hz and the sensor runs automatically in normal mode.

LED response

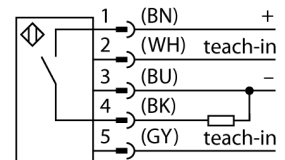In standard operating mode both LEDs signal the switching state of the sensor.
- green: reflector within the detection range
- yellow: object between the sensor and reflector

Ultrasonic sensor
Retroreflective Sensor
RU100L-M18MS-UP8X2-H1151

- **Rectangular transducer front**
- **Cylindrical housing M18, potted**
- **Connection via M12 x 1 male**
- **Temperature compensation**
- **Teaching range 15…98cm**
- **Resolution: 1 mm**
- **Sonic cone angle: 16°**
- **1 x switching output, PNP**
- **Teachable settings**
- **NO/NC programmable**

Wiring Diagram

Type code	RU100L-M18MS-UP8X2-H1151
Ident-No.	1610079

Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	100 mm
Hysteresis	≤ 10 mm
Ambient temperature	-25…+70 °C
Storage temperature	-40…+80°C

Operating voltage	15… 30VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 150 mA
No-load current I_0	≤ 50 mA
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 2.5 V
Wire breakage / Reverse polarity protection	yes/ yes
Output function	5-wire, NO/NC , PNP
Output 1	Switching output
Readiness delay	≤ 300 ms

Construction	Threaded barrel, M18
Dimensions	80 mm
Housing material	Metal, CuZn, nickel-plated
Electrical connection	Flange connector, M12 x 1
Protection class	IP67
MTTF	281 years acc. to SN 29500 (Ed. 99) 40 °C

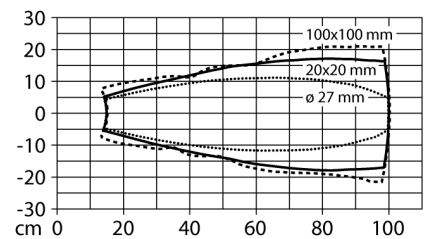|	
Switching state	LED yellow

Functional principle

Ultrasonic sensors capture a multitude of objects contactless and wear-free with ultrasonic waves. It does not matter whether the object is transparent or opaque, metallic or non-metallic, firm, liquid or powdery. Even environmental conditions such as spray, dust or rain hardly affect their function.
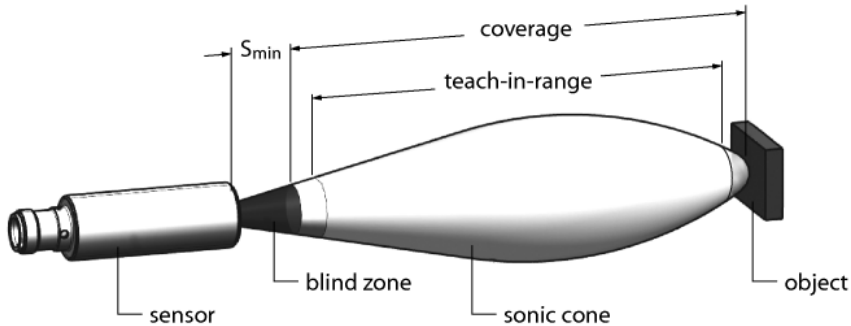
Sonic Cone

Ultrasonic sensor
Retroreflective Sensor
RU100L-M18MS-UP8X2-H1151

Mounting instructions / Description

Teaching the reflector position

The ultrasonic sensor features a switching output with adjustable window. The green and yellow LED indicate whether the sensor has detected an object.

Teach the window limits. The limits must be within the detection range. In this operating mode, the taught reflector position is detected permanently without an object.

Easy-Teach
- Connect teach adapter TX1-Q20L60 between sensor and connection cable
- Stationary reflector within the detection range
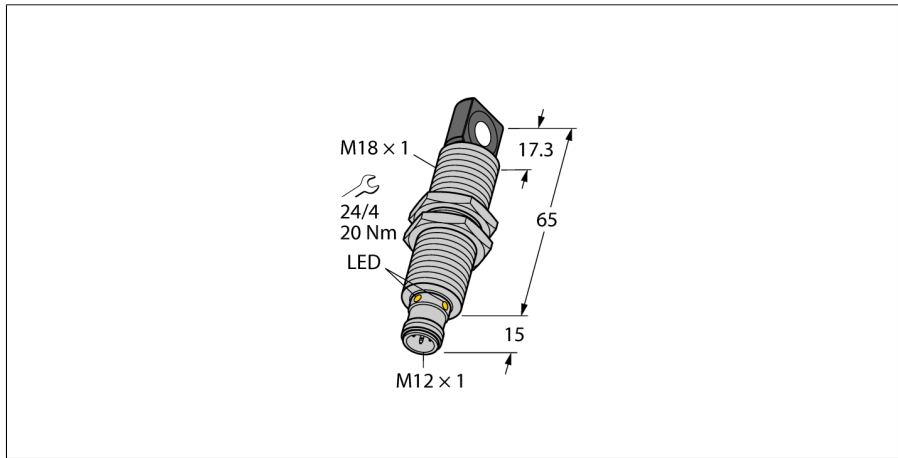- Press and hold button for at least 2 s against Gnd

After successful teaching, the green LED flashes at 3 Hz and the sensor runs automatically in normal mode.

LED response
In standard operating mode both LEDs signal the switching state of the sensor.
- green: reflector within the detection range
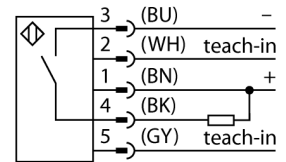- yellow: object between the sensor and reflector

Ultrasonic sensor
diffuse mode sensor
RU40U-M18MS-UN8X2-H1151

- **Rectangular transducer front**
- **Cylindrical housing M18, potted**
- **Connection via M12 x 1 male**
- **Temperature compensation**
- **Blind zone: 2.5 cm**
- **Range: 40 cm**
- **Resolution: 0.5 mm**
- **Sonic cone angle: 9°**
- **1xSchaltausgang, NPN**
- **Einstellbar über Teach-In**
- **Parametrierbar Schließer/Öffner**

Type code	RU40U-M18MS-UN8X2-H1151
Ident-No.	1610082

Pass speed	≤ 1.5 m/s
Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	20 mm
Hysteresis	≤ 5 mm
Ambient temperature	-25…+70 °C
Storage temperature	-40…+80°C

Operating voltage	15… 30VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 150 mA
No-load current I_0	≤ 50 mA
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 2.5 V
Wire breakage / Reverse polarity protection	yes/ yes
Output function	5-wire, NO/NC , NPN
Output 1	Switching output
Readiness delay	≤ 300 ms

Construction	Threaded barrel, M18
Dimensions	80 mm
Housing material	Metal, CuZn, nickel-plated
Electrical connection	Flange connector, M12 x 1
Protection class	IP67
MTTF	281 years acc. to SN 29500 (Ed. 99) 40 °C

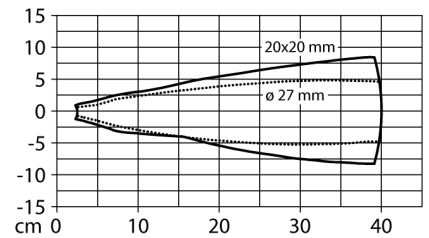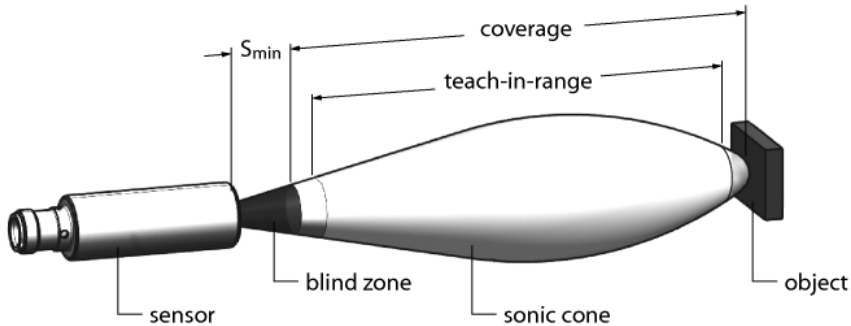|	
Switching state	LED yellow

Wiring Diagram

Functional principle

Ultrasonic sensors capture a multitude of objects contactless and wear-free with ultrasonic waves. It does not matter whether the object is transparent or opaque, metallic or non-metallic, firm, liquid or powdery. Even environmental conditions such as spray, dust or rain hardly affect their function.

Sonic Cone

Ultrasonic sensor
diffuse mode sensor
RU40U-M18MS-UN8X2-H1151

Mounting instructions / Description

Setting the switchpoint

The ultrasonic sensor features a switching output with adjustable switchpoint. The green and yellow LED indicate whether the sensor has detected an object.

One switchpoint is taught. This must be within the sensing range. In this operating mode the background is suppressed.

Easy-Teach
- Connect teach adapter TX1-Q20L60 between sensor and connection cable
- Place object at the end of the switching range
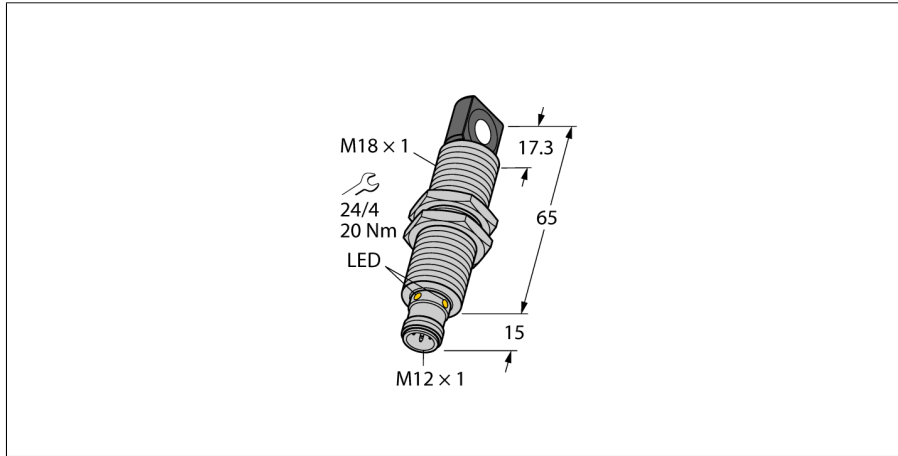- Press and hold button for at least 2 s against Gnd

After successful teaching, the green LED flashes at 3 Hz and the sensor runs automatically in normal mode.

LED response

In standard operating mode both LEDs signal the switching state of the sensor.
- green: object is in the detection range but not in the switching range
- yellow: object is in the switching range
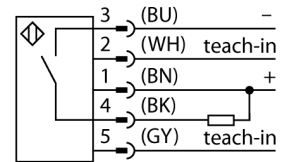- off: object is outside the detection range or signal loss

Ultrasonic sensor
diffuse mode sensor
RU100U-M18MS-UN8X2-H1151

- ■ **Rectangular transducer front**
- ■ **Cylindrical housing M18, potted**
- ■ **Connection via M12 x 1 male**
- ■ **Temperature compensation**
- ■ **Blind zone: 15 cm**
- ■ **Range: 100 cm**
- ■ **Resolution: 1 mm**
- ■ **Sonic cone angle: 16°**
- ■ **1xSchaltausgang, NPN**
- ■ **Einstellbar über Teach-In**
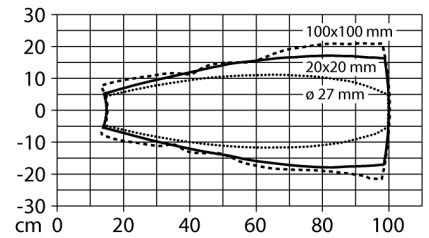- ■ **Parametrierbar Schließer/Öffner**

Wiring Diagram
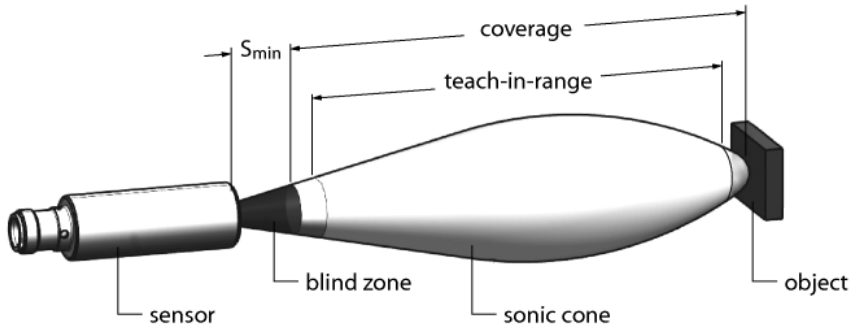

Functional principle

Ultrasonic sensors capture a multitude of objects contactless and wear-free with ultrasonic waves. It does not matter whether the object is transparent or opaque, metallic or non-metallic, firm, liquid or powdery. Even environmental conditions such as spray, dust or rain hardly affect their function.

Sonic Cone

Type code	RU100U-M18MS-UN8X2-H1151
Ident-No.	1610083

Pass speed	≤ 1.5 m/s
Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	100 mm
Hysteresis	≤ 10 mm
Ambient temperature	-25…+70 °C
Storage temperature	-40…+80°C

Operating voltage	15… 30VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 150 mA
No-load current I_0	≤ 50 mA
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 2.5 V
Wire breakage / Reverse polarity protection	yes/ yes
Output function	5-wire, NO/NC , NPN
Output 1	Switching output
Readiness delay	≤ 300 ms

Construction	Threaded barrel, M18
Dimensions	80 mm
Housing material	Metal, CuZn, nickel-plated
Electrical connection	Flange connector, M12 x 1
Protection class	IP67
MTTF	281 years acc. to SN 29500 (Ed. 99) 40 °C

Switching state	LED yellow

Ultrasonic sensor
diffuse mode sensor
RU100U-M18MS-UN8X2-H1151

Mounting instructions / Description

Setting the switchpoint

The ultrasonic sensor features a switching output with adjustable switchpoint. The green and yellow LED indicate whether the sensor has detected an object.

One switchpoint is taught. This must be within the sensing range. In this operating mode the background is suppressed.

Easy-Teach

- Connect teach adapter TX1-Q20L60 between sensor and connection cable
- Place object at the end of the switching range
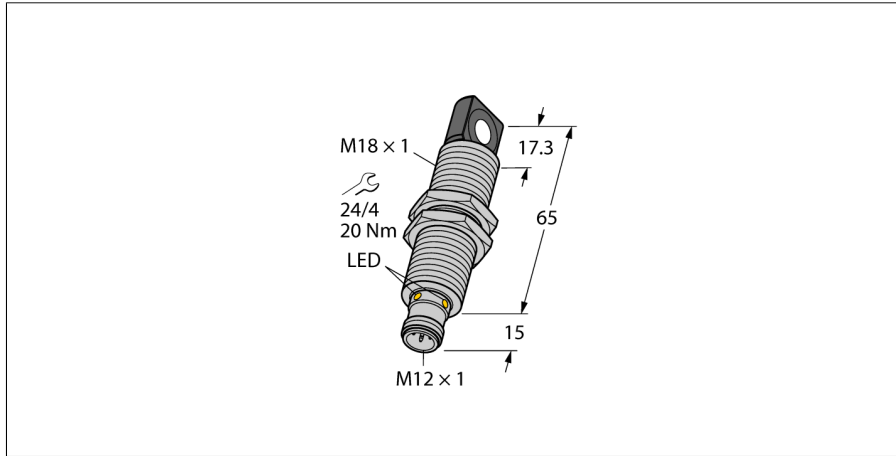- Press and hold button for at least 2 s against Gnd

After successful teaching, the green LED flashes at 3 Hz and the sensor runs automatically in normal mode.

LED response

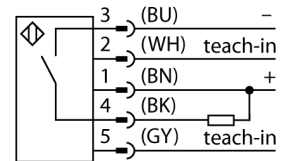In standard operating mode both LEDs signal the switching state of the sensor.

- green: object is in the detection range but not in the switching range
- yellow: object is in the switching range
- off: object is outside the detection range or signal loss

Ultrasonic sensor
Retroreflective Sensor
RU40L-M18MS-UN8X2-H1151

- **Rectangular transducer front**
- **Cylindrical housing M18, potted**
- **Connection via M12 x 1 male**
- **Temperature compensation**
- **Teaching range 2.5…39cm**
- **Sonic cone angle: 9°**
- **1 x switching output, NPN**
- **Teachable settings**
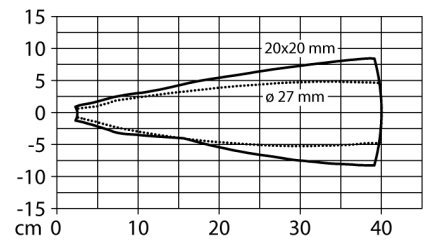- **NO/NC programmable**

Wiring Diagram

Functional principle

Ultrasonic sensors capture a multitude of objects contactless and wear-free with ultrasonic waves. It does not matter whether the object is transparent or opaque, metallic or non-metallic, firm, liquid or powdery. Even environmental conditions such as spray, dust or rain hardly affect their function.
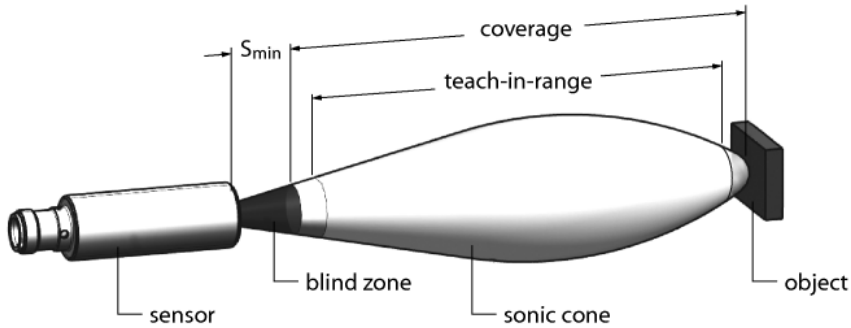
Sonic Cone

Type code	RU40L-M18MS-UN8X2-H1151
Ident-No.	1610086

Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	20 mm
Hysteresis	≤ 5 mm
Ambient temperature	-25…+70 °C
Storage temperature	-40…+80°C

Operating voltage	15… 30VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 150 mA
No-load current I_0	≤ 50 mA
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 2.5 V
Wire breakage / Reverse polarity protection	yes/ yes
Output function	5-wire, NO/NC , NPN
Output 1	Switching output
Readiness delay	≤ 300 ms

Construction	Threaded barrel, M18
Dimensions	80 mm
Housing material	Metal, CuZn, nickel-plated
Electrical connection	Flange connector, M12 x 1
Protection class	IP67
MTTF	281 years acc. to SN 29500 (Ed. 99) 40 °C

Switching state	LED yellow

Ultrasonic sensor
Retroreflective Sensor
RU40L-M18MS-UN8X2-H1151

Teaching the reflector position

The ultrasonic sensor features a switching output with adjustable window. The green and yellow LED indicate whether the sensor has detected an object.

Teach the window limits. The limits must be within the detection range. In this operating mode, the taught reflector position is detected permanently without an object.

Easy-Teach

●Connect teach adapter TX1-Q20L60 between sensor and connection cable
● Stationary reflector within the detection range
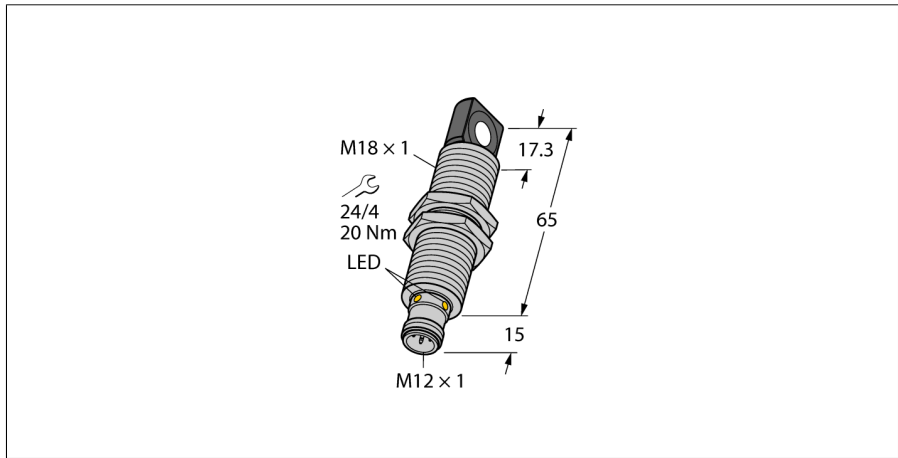●Press and hold button for at least 2 s against Gnd

After successful teaching, the green LED flashes at 3 Hz and the sensor runs automatically in normal mode.

LED response

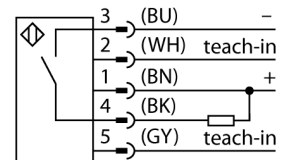In standard operating mode both LEDs signal the switching state of the sensor.
●green: reflector within the detection range
● yellow: object between the sensor and reflector

Ultrasonic sensor
Retroreflective Sensor
RU100L-M18MS-UN8X2-H1151

- **Rectangular transducer front**
- **Cylindrical housing M18, potted**
- **Connection via M12 x 1 male**
- **Temperature compensation**
- **Teaching range 15…98cm**
- **Resolution: 1 mm**
- **Sonic cone angle: 16°**
- **1 x switching output, NPN**
- **Teachable settings**
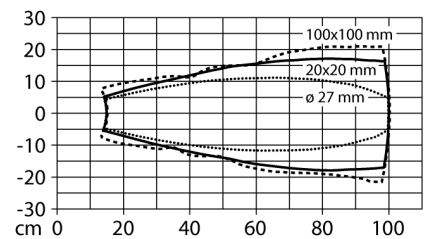- **NO/NC programmable**

Wiring Diagram

Functional principle

Ultrasonic sensors capture a multitude of objects contactless and wear-free with ultrasonic waves. It does not matter whether the object is transparent or opaque, metallic or nonmetallic, firm, liquid or powdery. Even environmental conditions such as spray, dust or rain hardly affect their function.
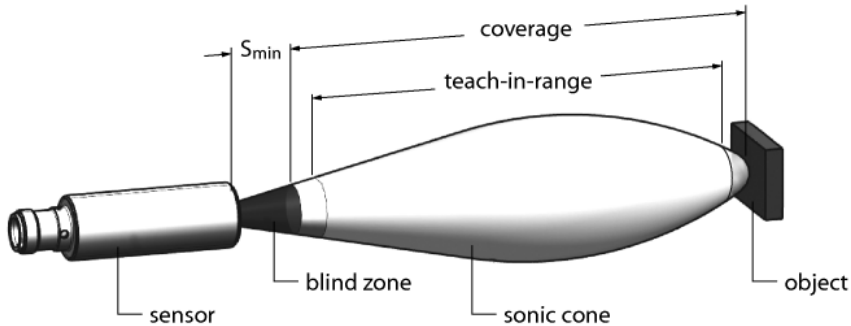
Sonic Cone

Type code	RU100L-M18MS-UN8X2-H1151
Ident-No.	1610087

Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	100 mm
Hysteresis	≤ 10 mm
Ambient temperature	-25…+70 °C
Storage temperature	-40…+80°C

Operating voltage	15… 30VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 150 mA
No-load current I_0	≤ 50 mA
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 2.5 V
Wire breakage / Reverse polarity protection	yes/ yes
Output function	5-wire, NO/NC , NPN
Output 1	Switching output
Readiness delay	≤ 300 ms

Construction	Threaded barrel, M18
Dimensions	80 mm
Housing material	Metal, CuZn, nickel-plated
Electrical connection	Flange connector, M12 x 1
Protection class	IP67
MTTF	281 years acc. to SN 29500 (Ed. 99) 40 °C

Switching state	LED yellow

Ultrasonic sensor
Retroreflective Sensor
RU100L-M18MS-UN8X2-H1151

Mounting instructions / Description

Teaching the reflector position
The ultrasonic sensor features a switching output with adjustable window. The green and yellow LED indicate whether the sensor has detected an object.

Teach the window limits. The limits must be within the detection range. In this operating mode, the taught reflector position is detected permanently without an object.

Easy-Teach
●Connect teach adapter TX1-Q20L60 between sensor and connection cable
● Stationary reflector within the detection range
●Press and hold button for at least 2 s against Gnd

After successful teaching, the green LED flashes at 3 Hz and the sensor runs automatically in normal mode.

LED response
In standard operating mode both LEDs signal the switching state of the sensor.
●green: reflector within the detection range
● yellow: object between the sensor and reflector