

HTU418B...W

Ultrasonic sensors, angled 90° with 1 switching output

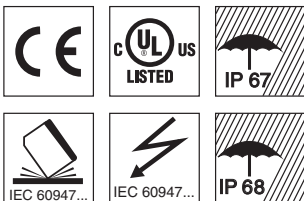
Dimensioned drawing



25 ... 400mm
150 ... 1000mm



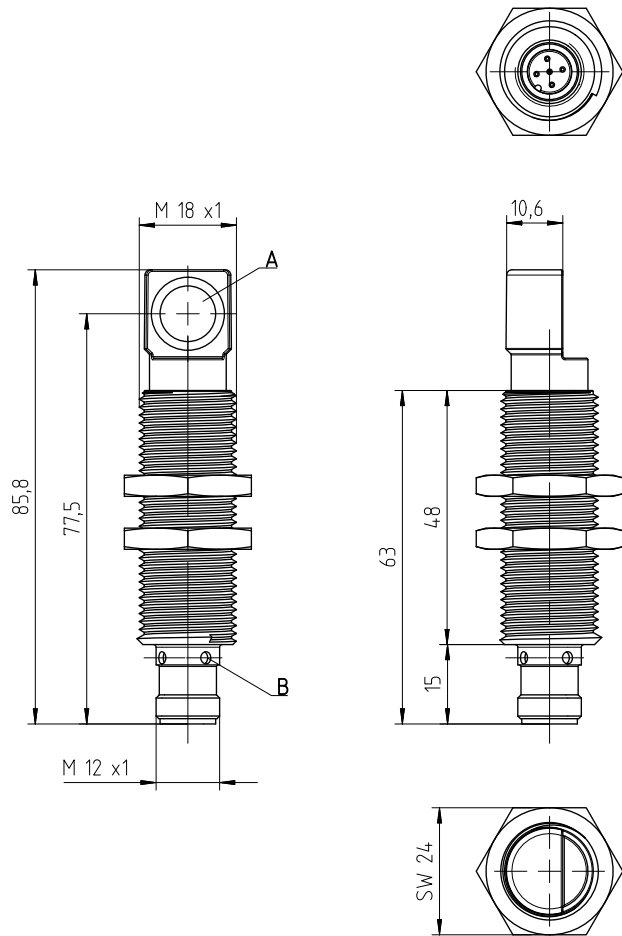
- Function largely independent of surface properties, ideal for detection of liquids, bulk materials, transparent media, ...
- Sound exit less than 90° to the longitudinal axis
- Small dead zone at long scanning range
- Adjustment of the switching point can be taught
- NO/NC function reversible
- 1 switching output (PNP)
- Extra short construction



Accessories:

(available separately)

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



- A Active sensor surface
B Indicator diodes

Electrical connection

15-30V DC+	1	br/BN
Teach-IN	2	ws/WH
GND	3	bl/BU
OUT 1	4	sw/BK
Teach-IN	5	gr/GY

Specifications

Ultrasonic specifications

Scanning range ¹⁾
Adjustment range
Ultrasonic frequency
Typ. opening angle
Resolution switching output
Direction of beam
Reproducibility
Switching hysteresis
Temperature drift

Timing

Switching frequency
Response time
Delay before start-up

Electrical data

Operating voltage U_B ⁴⁾
Residual ripple
Open-circuit current
Switching output
Function
Output current
Switching range adjustment

Changeover NO/NC

Indicators

Yellow LED
Yellow LED, flashing
Green LED

Mechanical data

Housing
Weight
Ultrasonic transducer
Connection type
Fitting position

Environmental data

Ambient temp. (operation/storage)
Protective circuit ⁶⁾
VDE safety class
Degree of protection
Standards applied
Certifications

HTU418B-400.W/4TX...

25 ... 400mm ²⁾
25 ... 400mm
310kHz
9°
0.5mm
axial
 $\pm 0.15\%$ of end value ¹⁾
5mm ¹⁾
0.17%/K

7Hz
71ms
< 300ms

15 ... 30V DC (incl. $\pm 10\%$ residual ripple)
 $\pm 10\%$ of U_B
 ≤ 50 mA
1 x PNP transistor
NO contact, reversible
max. 150mA
teach-in (Pin 2):
for OUT1: connected to GND for 2 ... 7 s
teach-in (pin 2):
for OUT1: connected to U_B for 2 ... 7 s

OUT1: object detected
teach-in / teaching error
object within the scanning range

all metal - brass, nickel-plated
50g
piezoceramic ⁵⁾
M12 connector, 5-pin
any

-25°C ... +70°C/-30°C ... +85°C
1, 2, 3
III
IP 67 and IP 68
EN 60947-5-2
UL 508, C22.2 No.14-13 ⁴⁾ ⁷⁾ ⁸⁾

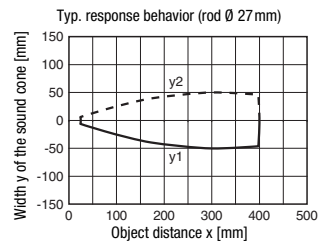
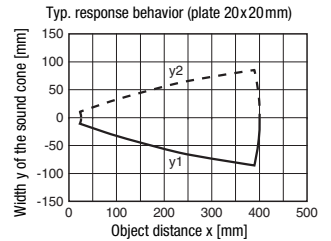
HTU418B-1000.W/4TX...

150 ... 1000mm ³⁾
150 ... 1000mm
200kHz
16°
1mm
axial
 $\pm 0.15\%$ of end value ¹⁾
10mm ¹⁾
0.17%/K

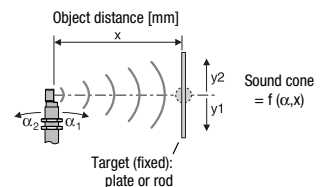
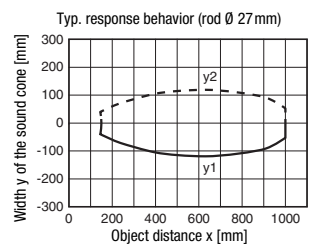
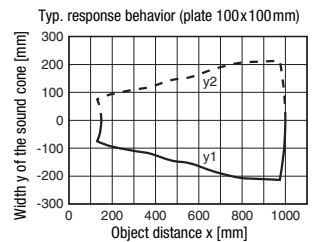
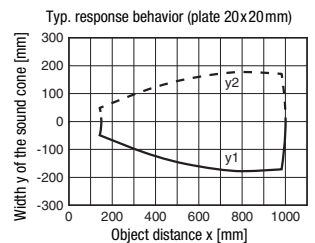
8Hz
62ms
< 300ms

Diagrams

HTU418B-400.W/...-M12



HTU418B-1000.W/...-M12



Remarks

Operate in accordance with 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 the intended use.

HTU418B...W

Ultrasonic sensors, angled 90° with 1 switching output

Part number code

H	T	U	4	1	8	B	-	1	0	0	0	.	W	/	4	T	X	-	M	1	2
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Operating principle

HTU Ultrasonic sensor, scanning principle, with background suppression

Series

418B 418B Series, cylindrical M18 construction

Scanning range in mm

400 25 ... 400

1000 150 ... 1000

Equipment (optional)

W Design with angle head of 90°

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

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

T Teach input

Pin assignment of connector pin 5 / gray cable wire (OUT2)

4 PNP output, NO contact preset

P PNP output, NC contact preset

2 NPN output, NO contact preset

N NPN output, NC contact preset

X Connection not assigned (n. c. - not connected)

Connection technology

M12 M12 connector, 5-pin

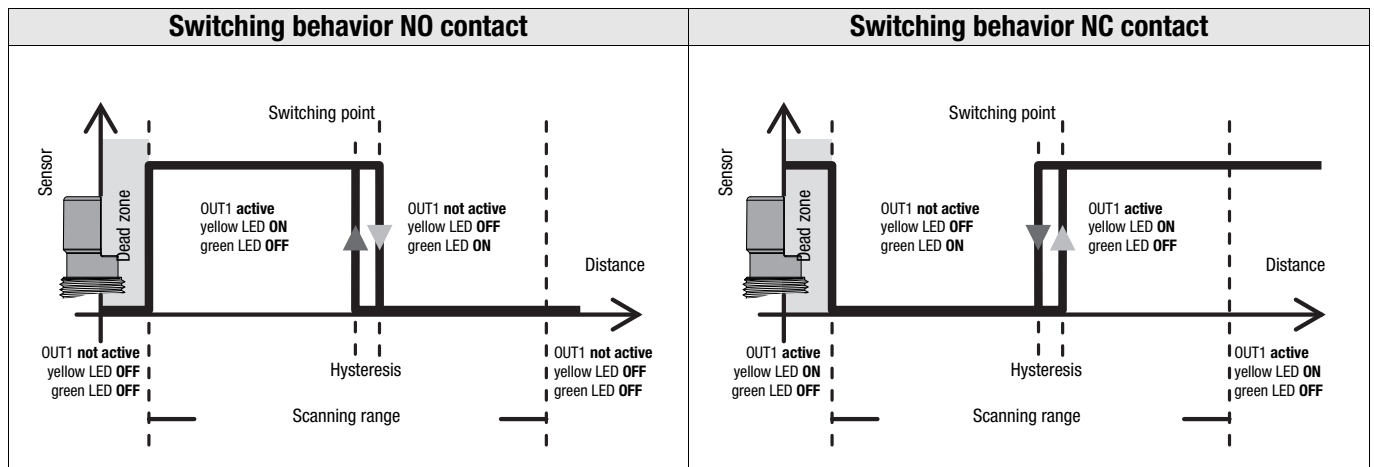
Order guide

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

	Designation	Part no.
Scanning range		
25 ... 400mm	HTU418B-400.W/4TX-M12	50129824
150 ... 1000mm	HTU418B-1000.W/4TX-M12	50129825

Device functions and indicators

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 yellow and green LED:



Adjusting the switching point via the teach input

The switching point of the sensor is set to 400mm or 1000mm on delivery.

By means of a simple teach event, the switching point can be taught to an arbitrary distance within the scanning 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.

1-point teach
1. Place object at desired switching distance.
2. For the adjustment of OUT1 , connect input Teach-IN to GND for 2 ... 7s (Leuze teach adapter: position "Teach-GND"). The current state of output OUT1 is frozen during the teach event.
3. The yellow LED flashes at 3Hz and is then ON . The current object distance has been taught as the new switching point.
4. Error-free teach: LED states and switching behavior according to the diagram shown above. Faulty teach (object may be too close or too far away – please note scanning range): yellow LED flashes at 5Hz until an error-free teach event is performed. Output OUT1 is inactive as long as there is a teach error.

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

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

If the switching function is changed, the switching output is changed to the opposite state (toggled).

Changeover of the switching function
1. To change the switching function, connect input Teach-IN to U_B for 2 ... 7s (Leuze teach adapter: position "Teach-U _B "). The current state of output OUT1 is frozen while the adjustment is made.
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.



Notice!

Please note that **pin 2** and **pin 5** are internally **connected** within the sensor. The input is configured so that **the switching point is taught when GND is connected** and **the output function is reversed when U_B is connected**.

If no sensor action is desired, pin 2 and pin 5 must remain unconnected!