

## Technical data sheet

### Ultrasonic sensor

Part no.: 50150571

HTU420B-1000.3/6T-M8

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For illustration purposes only



# Technical data

## Basic data

Series	420B
Operating principle	Diffuse reflection principle with background suppression

## Special version

Special version	Teach input
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## Characteristic parameters

MTTF	430 years
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## Ultrasonic specifications

Operating range	0.02 ... 1 m
Operating range	Guaranteed operating range
Ultrasonic frequency	220 kHz
Shape of sound lobe	standard
Direction of beam	Front
Opening angle	4 °
Adjustment range	20 ... 1,000 mm

## Measurement data

Resolution	1.0 mm
Repeatability	0.5 mm
Temperature drift	2 %
Reference value, temperature drift	End value

## Electrical data

Protective circuit	Inductive protection
	Polarity reversal protection
	Short circuit protected

### Performance data

Supply voltage $U_B$	12 ... 30 V, DC
Residual ripple	0 ... 10 %, From $U_B$
Open-circuit current	0 ... 35 mA
Switching hysteresis	4 %

### Inputs

Number of teach inputs	1 Piece(s)
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### Teach inputs

Voltage type	DC
Switching voltage	high: $\geq 12V$
	low: $\leq 2 V$

### Teach input 1

Active switching state	High
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### Outputs

Number of digital switching outputs	1 Piece(s)
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### Switching outputs

Voltage type	DC
Switching current, max.	100 mA
Switching voltage	low: $\leq 2 V$

### Switching output 1

Switching element	Transistor, Push-pull
Switching principle	Light switching (PNP)/dark switching (NPN)

## Time behavior

Switching frequency	8 Hz
Response time	60 ms
Readiness delay	300 ms

## Connection

Number of connections	1 Piece(s)
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### Connection 1

Function	Signal OUT
	Teach input
	Voltage supply
Type of connection	Connector
Thread size	M8
Type	Male
Material	Metal
No. of pins	4 -pin

## Mechanical data

Design	Cubic
Dimension (W x H x L)	20.5 mm x 41 mm x 15 mm
Housing material	Plastic
Plastic housing	ASA, PMMA
Ultrasonic transducer material	Piezoceramics (contains lead zirconium titanate (PZT))
Net weight	22 g
Housing color	Black
Type of fastening	Through-hole mounting

## Operation and display

Type of display	LED
Number of LEDs	3 Piece(s)
Operational controls	Teach button
Function of the operational control	Range adjustment

## Environmental data

Ambient temperature, operation	-25 ... 65 °C
Ambient temperature, storage	-25 ... 75 °C

## Certifications

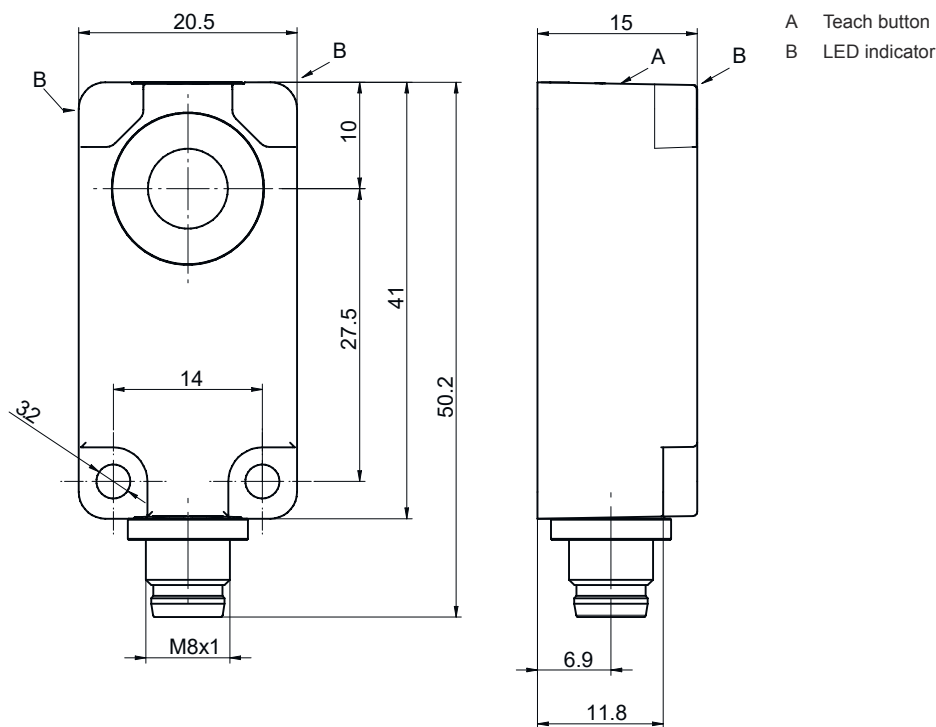
Degree of protection	IP 67
Protection class	III
Certifications	c UL US
Standards applied	IEC 60947-5-2

## Classification

Customs tariff number	85365019
ECLASS 5.1.4	27272803
ECLASS 8.0	27272803
ECLASS 9.0	27272803
ECLASS 10.0	27272803
ECLASS 11.0	27272803
ECLASS 12.0	27272803
ECLASS 13.0	27272803
ETIM 5.0	EC001849
ETIM 6.0	EC001849
ETIM 7.0	EC001849
ETIM 8.0	EC001849
ETIM 9.0	EC001849

# Dimensioned drawings

All dimensions in millimeters



## Electrical connection

### Connection 1

Function	Signal OUT
	Teach input
	Voltage supply
Type of connection	Connector
Thread size	M8
Type	Male
Material	Metal
No. of pins	4 -pin

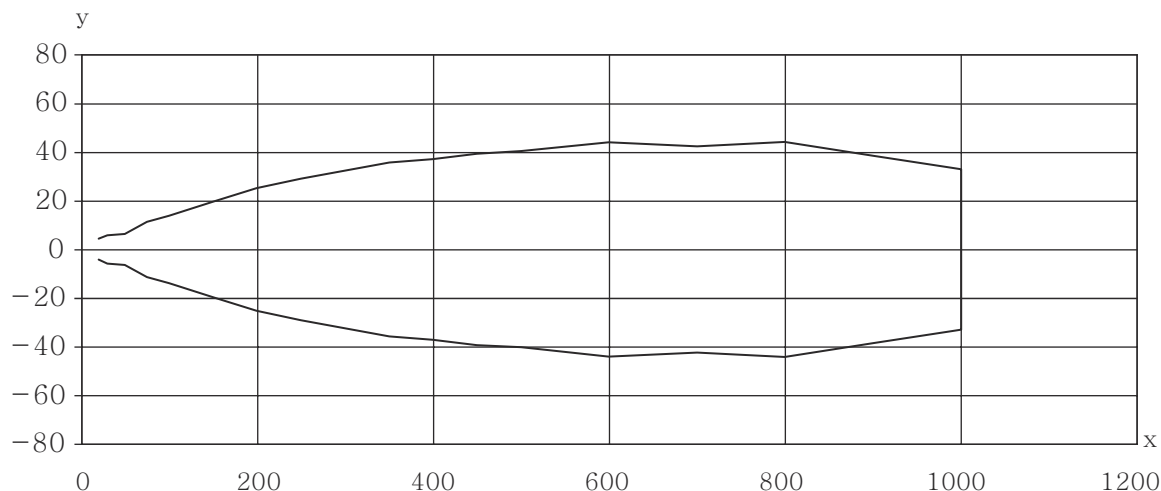
Pin	Pin assignment
1	V+
2	Teach-in
3	GND
4	OUT 1



## Diagrams

Typ. response behavior

Standard object, size 100 x 100 mm, aligned perpendicular to the sensor reference axis



x Object distance [mm]  
y Sound cone width [mm]

## Operation and display

LED	Display	Meaning
1	Blue, continuous light	Teach active
2	Green, continuous light	Operational readiness
3	Yellow, continuous light	Object detected

## Part number code

Part designation: AAA4BB-xxxx.C/DEF-GG

AAA	<b>Operating principle</b> HTU: Ultrasonic sensor, scanning principle, with background suppression DMU: Ultrasonic sensor, distance measurement
4BB	<b>Design</b> 420B: Cubic 412B: Cylindrical with M12 thread
xxxx	<b>Operating range</b> Operating range in millimeters
C	<b>Operating range adjustment</b> 3: teach-in via button
D	<b>Switching output / function OUT 1/IN: Pin 4</b> 6: push-pull switching output, PNP light switching, NPN dark switching G: Push-pull switching output, PNP dark switching, NPN light switching L: IO-Link
E	<b>Switching output / function OUT 2/IN: pin 2</b> T: teach-in via cable C: Analog current output V: Analog voltage output X: pin not used 6: push-pull switching output, PNP light switching, NPN dark switching

## Part number code

<b>F</b>	<b>Switching output / function OUT 3/IN: Pin 5</b> T: teach-in via cable
<b>GG</b>	<b>Electrical connection</b> M12: M12 connector M8: M8 connector

Note	
	↪ A list with all available device types can be found on the Leuze website at <a href="http://www.leuze.com">www.leuze.com</a> .

## 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.

⚠ For UL applications:	
	↪ For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).

## Accessories

### Connection technology - Connection cables

	Part no.	Designation	Article	Description
	50130850	KD U-M8-4A-V1-050	Connection cable	Connection 1: Connector, M8, Axial, Female, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5.000 mm Sheathing material: PVC
	50130871	KD U-M8-4W-V1-050	Connection cable	Connection 1: Connector, M8, Angled, Female, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5.000 mm Sheathing material: PVC

## Accessories

### Note



🔗 A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.