

Technical data sheet

Ultrasonic distance sensor

Part no.: 50150577
DMU420B-250.3/LC-M8



For illustration purposes only

Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Diagrams
- Operation and display
- Part number code
- Notes
- Accessories



Technical data

Basic data

Series	420B
--------	------

Characteristic parameters

MTTF	390 years
------	-----------

Ultrasonic specifications

Ultrasonic frequency	370 kHz
Direction of beam	Front
Opening angle	3 ... 6 °

Measurement data

Measurement range	10 ... 250 mm
Resolution	< 0.3 mm / < 0.5 mm
Accuracy	2 %
Reference value, accuracy	End value
Repeatability	0.5 mm, End value
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 %

Outputs

Number of analog outputs	1 Piece(s)
Number of digital switching outputs	1 Piece(s)
Load resistance	100 ... 1,000 Ω , < (+Vs - 10V) / 0.02 A

Analog outputs

Current	4 ... 20 mA
---------	-------------

Analog output 1

Type	Current
------	---------

Switching outputs

Voltage type	DC
Switching current, max.	100 mA
Switching voltage	low: ≤ 2 V

Switching output 1

Switching element	Transistor, Push-pull
Switching principle	IO-Link / light switching (PNP)/dark switching (NPN)

Time behavior

Switching frequency	20 Hz
Response time	< 25 ms
Readiness delay	300 ms

Interface

Type	IO-Link
------	---------

IO-Link

COM mode	COM2
Min. cycle time	COM2 = 5 ms
Frame type	2.2
Specification	V1.1
Device ID	3097
SIO-mode support	Yes
Process data, length	48 bit

Connection

Number of connections	1 Piece(s)
-----------------------	------------

Connection 1

Function	Signal IN
	Signal OUT
	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	Red
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
Approvals	c UL US
Standards applied	IEC 60947-5-2

Electrical connection

Connection 1

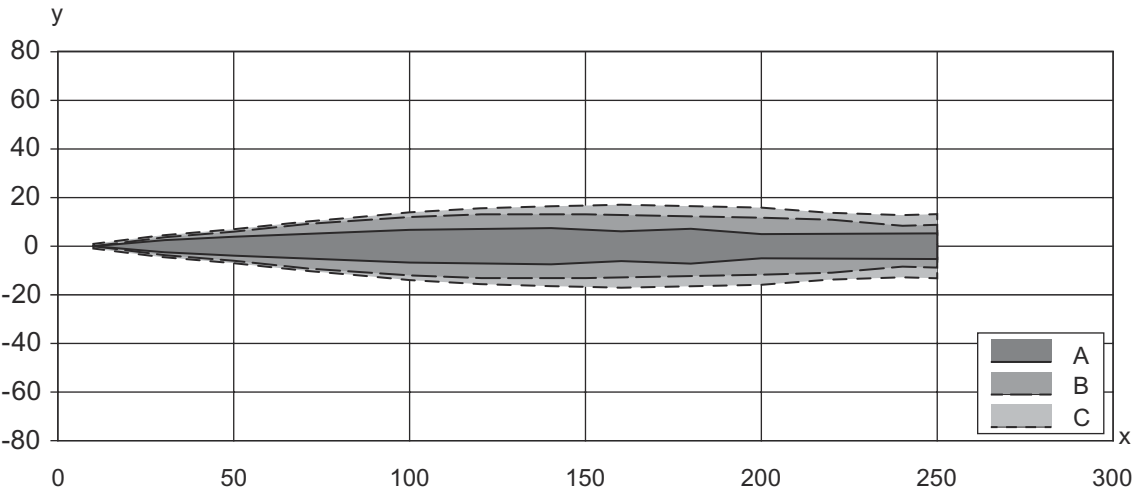
Function	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Connector
Thread size	M8
Type	Male
Material	Metal
No. of pins	4 -pin

Pin	Pin assignment
1	V+
2	OUT mA
3	GND
4	IO-Link / OUT 1



Diagrams

Typ. response behavior
Standard object, size 15 x 15 mm, aligned perpendicular to the sensor reference axis



- x Object distance to the sensor [mm]
y Lateral offset to the reference axis [mm]
A Narrow
B Medium
C Wide

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	Operating principle HTU: Ultrasonic sensor, scanning principle, with background suppression DMU: Ultrasonic sensor, distance measurement
4BB	Design 420B: Cubic 412B: Cylindrical with M12 thread
xxxx	Operating range Operating range in millimeters
C	Operating range adjustment 3: teach-in via button
D	Switching output / function OUT 1/IN: Pin 4 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 / light switching (PNP)/dark switching (NPN)
E	Switching output / function OUT 2/IN: pin 2 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
F	Switching output / function OUT 3/IN: Pin 5 T: teach-in via cable
GG	Electrical connection M12: M12 connector M8: M8 connector

Note



↪ A list with all available device types can be found on the Leuze website at www.leuze.com.

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	Application: Chemical resistant 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	Application: Chemical resistant 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

Note



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