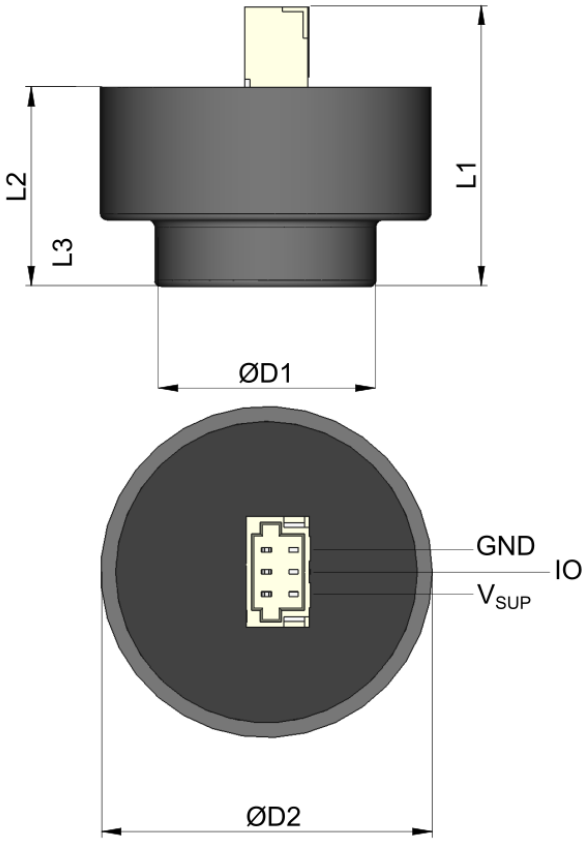
Ultrasonic sensor module

Ultrasonic time-of-flight sensor with integrated driving unit

Series/Type:	**X150P0754**
Ordering code:	**B59150X0754P030**
Date:	2021-12-07
Version:	1.1.3

Piezo driven ultrasonic time-of-flight sensor module with integrated driving unit

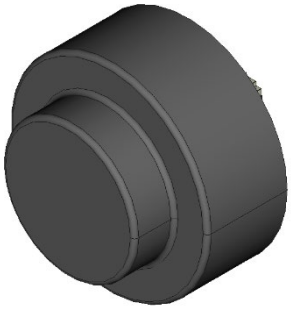


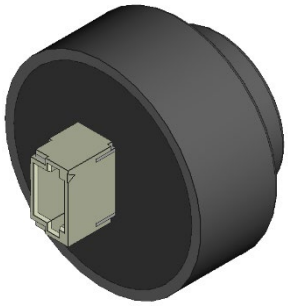
Applications

- Distance and level measurement in air
- Obstacle detection in air

Features

- Digital 3-pin interface
- Compact, closed membrane ultrasonic sensor design
- Configurable by user
- 15 up to 200 cm measurement range
- Front side dust and splash water protected





Dimensions

	Parameter	Symbol	Unit	Typical
1	Front diameter	D1	mm	10
2	Total diameter	D2	mm	15
3	Total length	L1	mm	13
4	Pot length	L2	mm	9
5	Length of front cylinder	L3	mm	3

Electrical specification

	Parameter	Symbol	Unit	Typical
1	Supply voltage	V_{SUP}	V	12
2	Current consumption	I	mA	5.5
3	Power down mode	I	mA	<1
4	Communication Interface [1)]	proprietary bidirectional IO (3-pin), point to point architecture		
5	Connector	Harwin M40-3010346 compatible		

1) The IO line is not equipped with a pull-up resistor.

Functional parameters

	Parameter	Symbol	Unit	Typical
1	Minimal measuring distance [1)]	D_{min}	cm	15
2	Maximal measuring distance [1)]	D_{max}	cm	200
3	Directivity [2)]	α	°	+/-30
4	Operating frequency [3)]	f	kHz	73.5 +/- 1.5

1) Evaluated based on test target: cylindrical pole, 75 mm diameter, 1 m height, standard conditions for temperature and humidity.

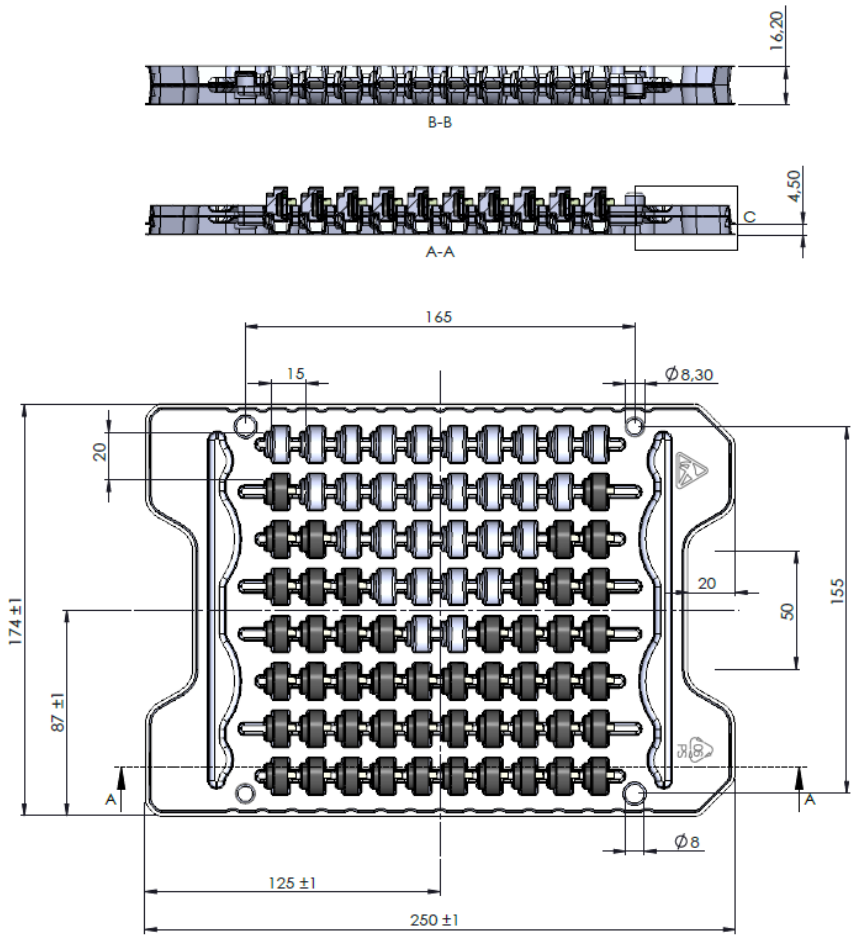
2) -6 dB sound pressure level, circular beam.

3) Parts are sorted, marked and packaged in classes with respect to their operating frequency to allow cooperative operation in send/receive mode.

Overall system performance depends on mounting conditions.

Packaging and labels

- Delivery in polystyrol trays
- 80 pcs. per tray
- Sensors are individually marked according to operation frequency class
- Each tray contains sensors of only one frequency class



Cautions and warnings

Handling

- Do not drop the component
- Do not use defect / dropped components
- Do not touch the 3-pin connector without ESD protection

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Release 2020-06