Datasheet

µGT i2x

Ultra low noise acceleration sensor

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Description

The µGT i2x is an ultra low noise biaxial acceleration sensor with excellent sensitivity-to-mass ratio. It comprises an internal temperature sensor (LM335), stabilized IEPE voltage output and comes in a rugged aluminum case.

For installation the sensor must be screwed or glued to the surface on which the acceleration measurement shall be performed.

Key Features

- Ultra low frequency performance (0.08 ... 400 Hz)
- High sensitivity
- Ultra low noise

Applications (examples)

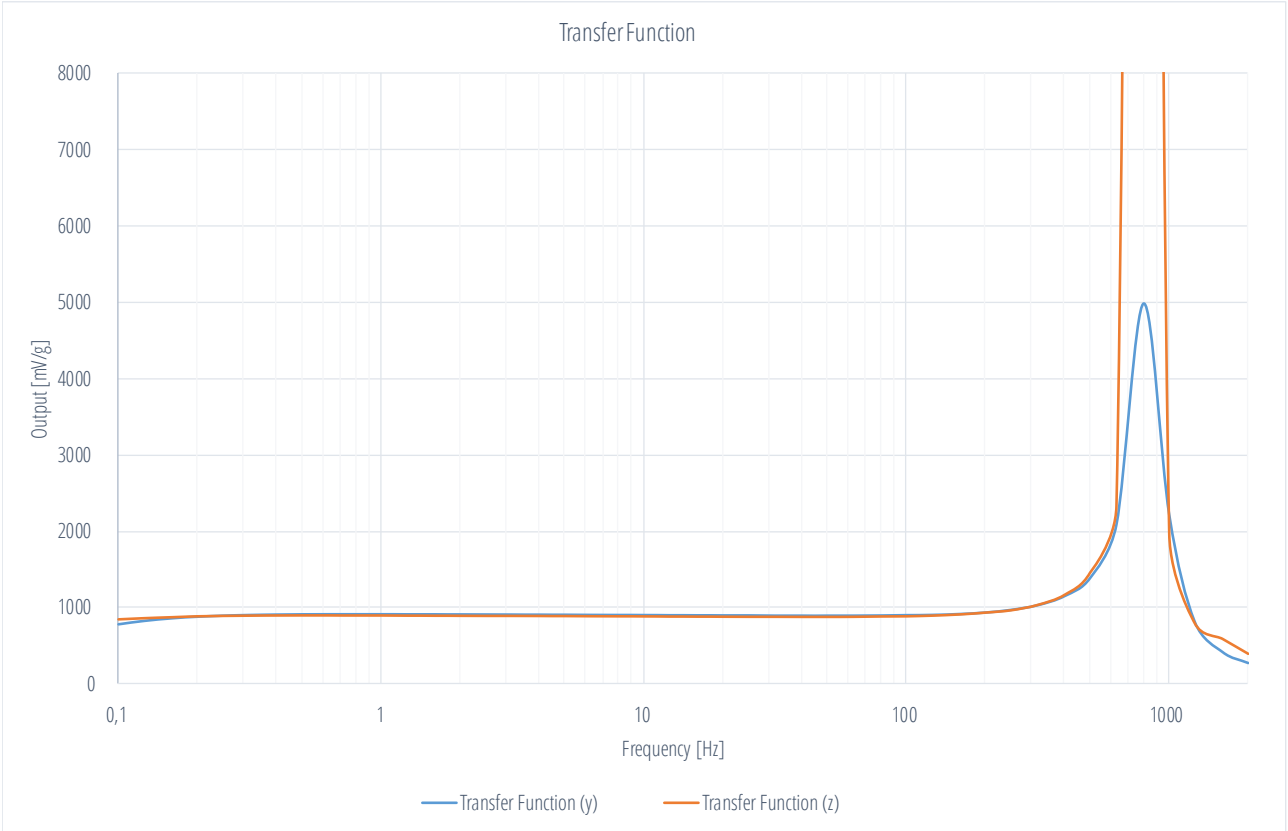
- High value asset monitoring (wind turbines)
- Vibration monitoring in structures
- Observation of abnormalities and impact measurement in highly stressed materials

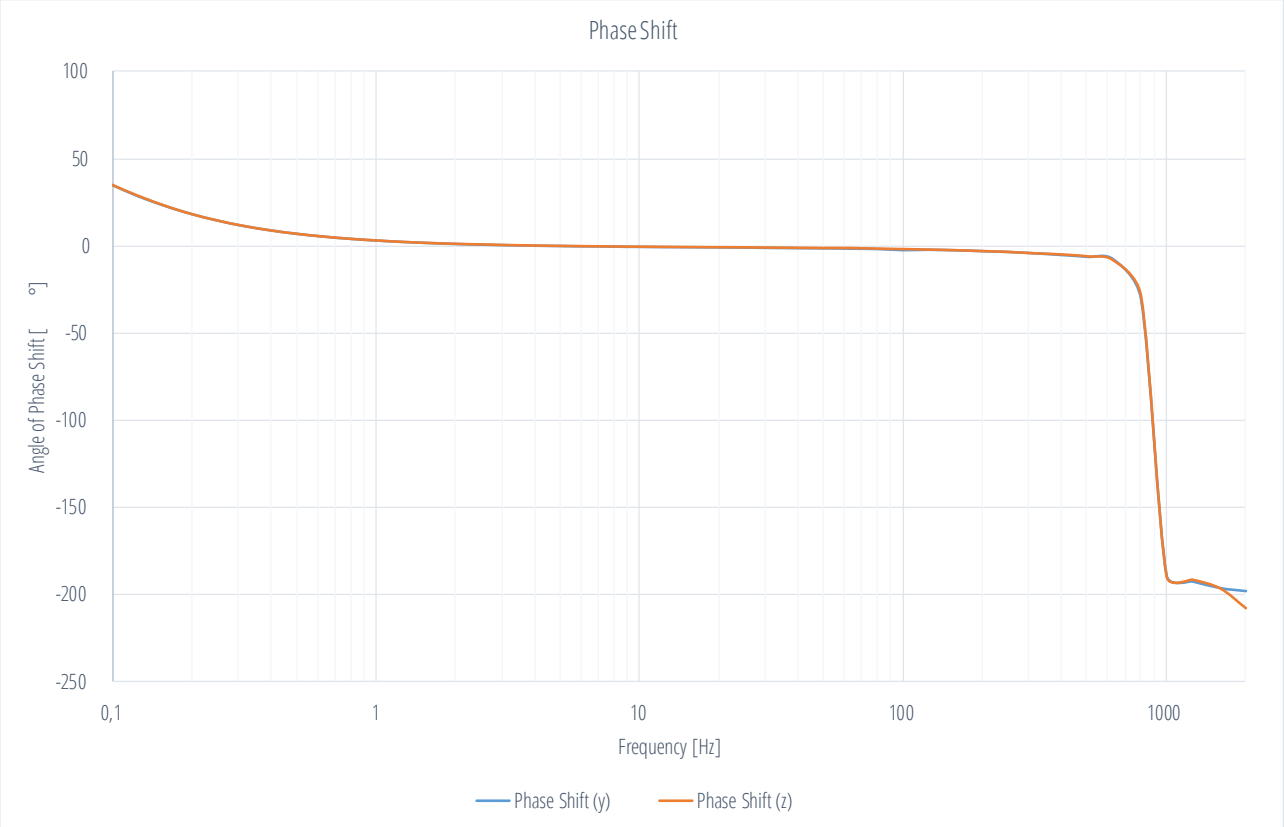
Properties

Performance	Value	Unit
Sensitivity	930	mV/g
Sensitivity Tolerance	+/- 2	%
Frequency Respone (+/- 3 dB)	0.08 ... 400	Hz
Maximum Range	+/- 5.37	g
Maximum Shock Protection	3000	g
Long Term Drift	Not determined	
Sensitivity Temperature Coefficient	0.40 +/- 0.01	%/K
Electrical	**Value**	**Unit**
IEPE Offset Voltage, temperature stabilized	13	V
IEPE Voltage Range	8 - 18	V
IEPE Supply Voltage	20 - 35	V
IEPE Supply Current	4	mA
Turn On Settling Time	10	s
Noise Performance	**Value**	**Unit**
Spectral Noise @ 1 Hz	< 2.5	µg/√Hz
Spectral Noise @ 10 Hz	< 0.5	µg/√Hz
Spectral Noise @ 100 Hz	< 0.2	µg/√Hz
Wide Band Noise 0.1 ... 400 Hz (RMS)	< 2.5	µg
Temperature Sensor	**Value**	**Unit**
Sensor	LM335 Pecision Temperature Sensor See datasheet for more details: https://www.st.com/resource/en/datasheet/lm335.pdf	
Type	2-terminal Zener, calibrateable, breakdown voltage is directly proportional to the absolute temperature.	
Sensitivity	10	mV/°K
Accuracy, uncalibrated	1 (typical)	°C
Accuracy, calibrated	0.5 (typical)	°C
Supply Current	0.45 ... 5	mA

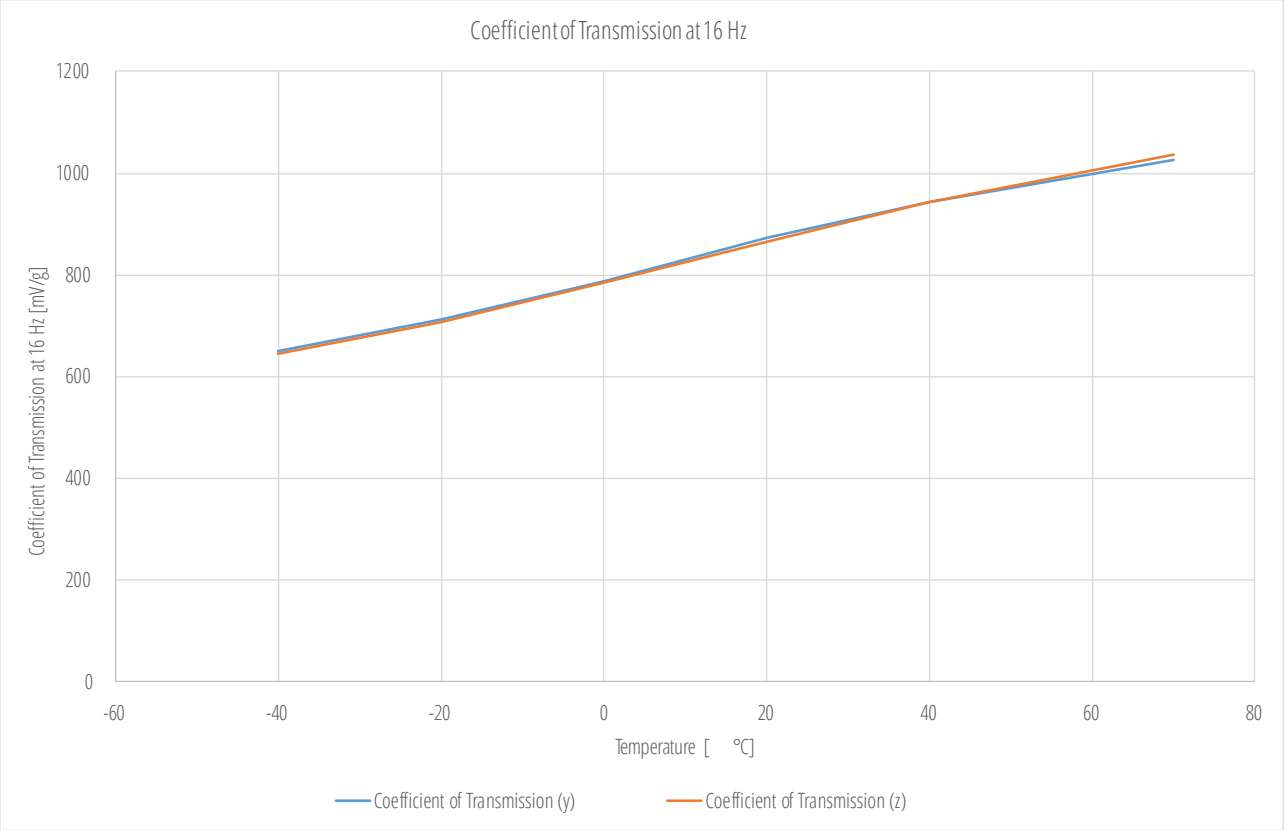
Environmental	Value	Unit
Operating Temperature	-40 ... 85 °C	°C
Storage Temperature	-40 ... 85 °C	°C
Shock & Vibration	Tested according to EN 60068-2 (pending)	
Electromagnetic Compatibility (EMC)	Tested according to EN 61000-4 and 61000-6 (pending)	
Physical	**Value**	**Unit**
Weight	150	g
Case Material	Aluminium	
Mounting	Glue	
Ingress Protection	IP68	
Order Information / Product Options	**Description**	
µGT i2x A 2 7	Connector: 8-pin Lumberg 0317-2 08-1	
µGT i2x B 2 7	Connector: 8-pin Lumberg 0307-2 08-1	

Typical Performance Characteristics



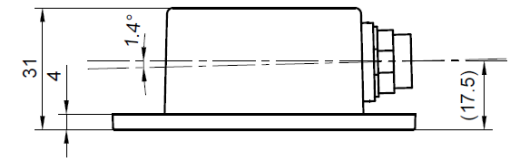

Phase Shift
100
50
0
-50
-100
-150
-200
-250
Angle of Phase Shift [°]
0,1
1
10
100
1000
Frequency [Hz]
Phase Shift (y)
Phase Shift (z)

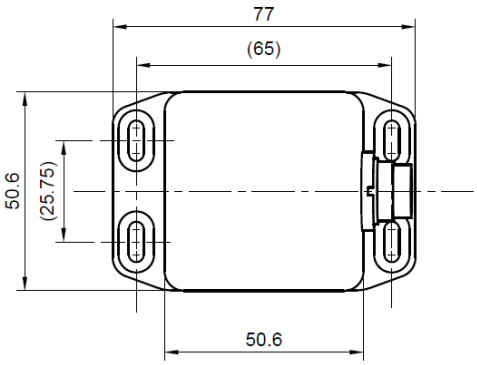

Temperature Characteristics
1400
1200
1000
800
600
400
200
0
Coefficient of Transmission [mV/g]
10
100
Frequency [Hz]
-40 °C (y)
-20 °C (y)
0 °C (y)
20 °C (y)
40 °C (y)
70 °C (y)
-40 °C (z)
-20 °C (z)
0 °C (z)
20 °C (z)
40 °C (z)
70 °C (z)



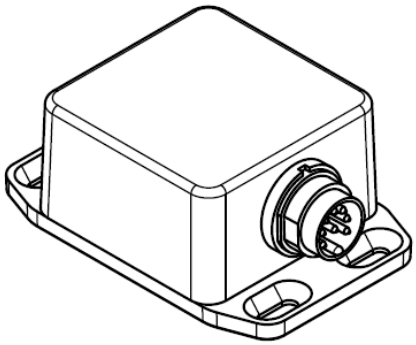
Technical Drawings

µGT i2x A 2 7





- All dimensions in mm
- Sensor can be mounted with glue or screws



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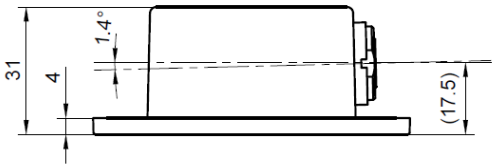

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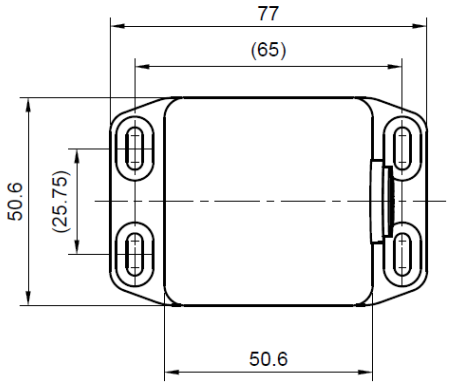

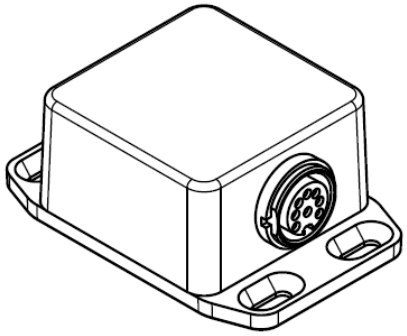

Pin Allocation

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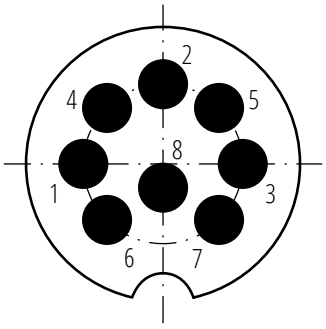
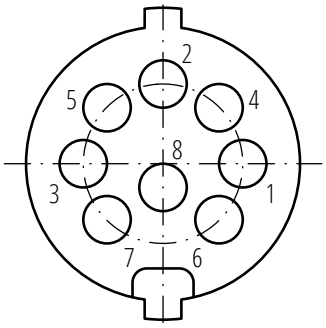


Allocation Lumberg 0317-2 08-1 (view from inside to the outside)

1. X-Axis (IEPE)
2. Y-Axis (IEPE)
3. Z-Axis (IEPE)
4. Common GND
5. Not connected
6. TEMP Sens minus (four wire measurement)
7. TEMP Source plus
8. TEMP Sens plus (four wire measurement)

µGT i2x B 2 7



Allocation Lumberg 0307-2 08-1 (view from inside to the outside)

1. Z-Axis (IEPE)
2. Y-Axis (IEPE)
3. X-Axis (IEPE)
4. Not connected
5. Common GND
6. Temp Source plus
7. TEMP Sens minus (four wire measurement)
8. TEMP Sens plus (four wire measurement)

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Herein described is a pre-series version of the µeps iXS product. These versions are seen as engineering samples and may vary from the valid technical specifications of the product series contained in this data sheet. They are therefore not intended or fit for resale to third parties or for use in end products. Their sole purpose is internal client testing. The testing of an engineering sample may in no way replace the testing of a product series. INDTact assumes no liability for the use of samples. The purchaser shall indemnify iNDTact from all claims arising from the use of pre-series versions.

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Application Examples

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- RoHS (pending)
- Reach (pending)
- 3TG (pending)