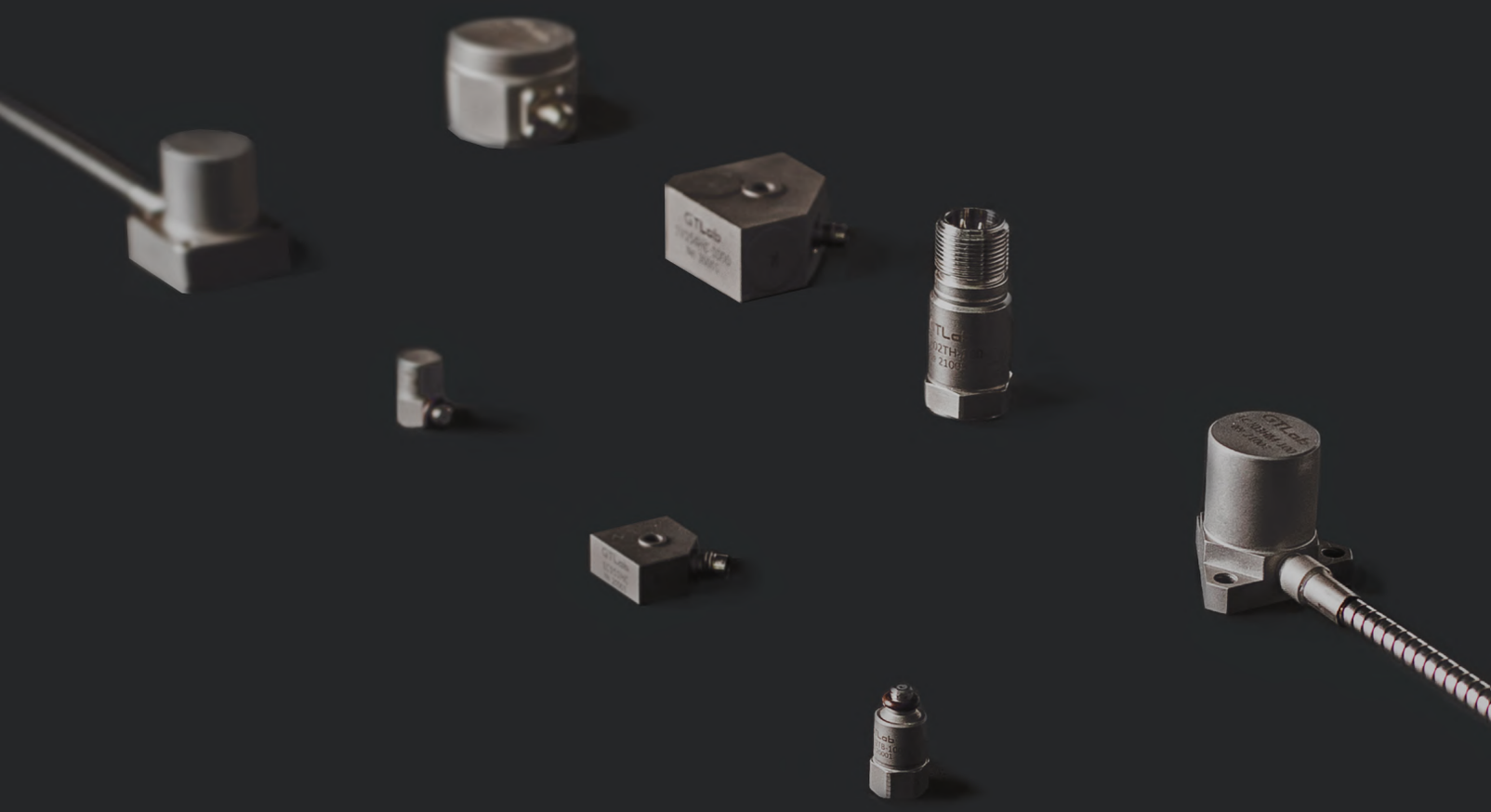
GTLab

Sensors, instruments and software for parameter analysis
vibrations,
pressures,
force,
Acoustic emission parameters.

From development to production.

Catalog 2022



GTLab - sensors for measuring vibration, pressure, force, acoustic emission, measuring instruments and software from a team of professionals with many years of experience.

Over **30 years**
experience in the development and production of piezoelectric sensors and electronic devices.

Over 400 types
types of products

Verification interval
for charge and IEPE sensors:

3 years

Development of sensors, devices and software modules –

from 2 weeks

LLC «GTLab»

Nizhny Novgorod region, Sarov,
Shvernika street

8 83130 49444
info@gtlab.pro
order@gtlab.pro (for requests)

ISO 9001 : 2015
ГОСТ РВ 0015-002-2012

Contents

Product naming convention

Sensors

1

Measured parameter or operating principle:
1 – vibration acceleration
2 – vibration speed
3 – vibration displacement
4 – force
5 – dynamic pressure
6 – static-dynamic pressure
7 – acoustic emission
8 – eddy current

2

Output:
V – voltage
C – charge
A – current
D – digital

3

Sensor type:
0 – reference
1 – general purpose
2 – industrial
3 – shock
4 – high-sensitive

4

Sensor model and number of measuring axes:
01 - 49 one-component
50 - 89 three-component
90 - 99 two-component

5

Cable output direction:
T – vertical
H – horizontal

6

Split/all-in-one plug:
A - all-in-one
M - all-in-one metal jacket
X - split
(where x is - cable connector code, see table 2)

7

Coefficient (numeric value):
For vibration sensors - coeff-t of conversion to mV/g.
For pressure sensors, upper range limit in bar-s
(for IEPE), or the conversion coefficient in pC/bar.

Example: 1V204NM-100 – vibration acceleration sensor (accelerometer) with voltage output, industrial, one-component, with horizontal cable output, all-in-one plug, cable in a metal sleeve, conversion coefficient – 100 mV/g.

Signal generators

A

1

Features:
0 - Matching
1 - Conversion
2 - Commutation
3 - Eddy current
4 - Acoustic emission

2

Input type, model:
01 - 19 Voltage
20 - 29 Charge
30 - 39 Charge differential
40 - 59 Charge and voltage
60 - 79 Current
80 - 99 Digital

Example: A002 – matching signal generator, voltage.

Measuring devices

D

1

Features:
0 - ADC
1 - Vibrometers
2 - Eddy current

2

Input type, model:
01 - 19 Voltage
20 - 29 Charge
30 - 39 Charge differential
40 - 59 Charge and voltage
60 - 79 Current
80 - 99 Digital

Example: D141 – Vibrometer, for sensors with charge output and IEPE standard voltage output.

Calibrators

S

Example: S01 – portable calibrator.

ACCELEROMETERS

ACCELEROMETERS

Electromechanical transducers for vibration measurement and shock accelerations.

With charge output

Accelerometers for extreme applications: high temperature, high intensity shock acceleration in a wide frequency range.

General purpose

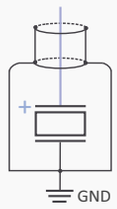
Measurement of parameters of medium-and high-intensity vibration processes.

One-component

Series 1C101

Series 1C102

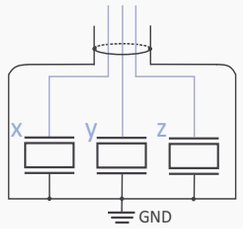
Series 1C103



Three-component

Series 1C151

Series 1C152



Pages:

Industrial

Measurement of parameters of high-intensity shock processes

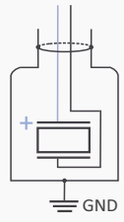
Series 1C201

Series 1C202

Series 1C203

Series 1C204

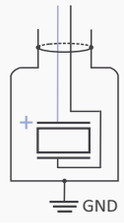
Series 1C206



Pages:

Series 1C205

Series 1C221



Pages:

Shock

Measurement of parameters of high-intensity shock processes

One-component

1C301HA

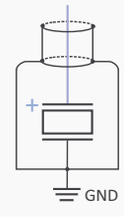
1C302HA

1C303HA

1C304HA

1C305HA

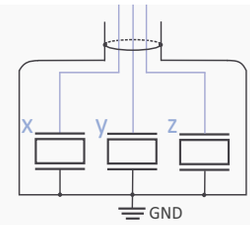
1C306HA



Pages:

Three-component

1C351



Pages:

With voltage output

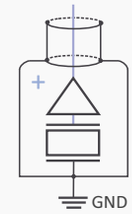
Accelerometers with increased noise immunity.

General purpose

Measurement of parameters of vibration processes (in multi - channel systems, modal analysis, industrial sanitation analysis).

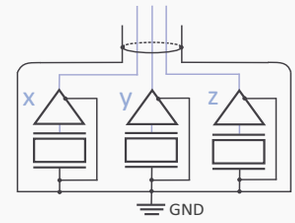
One-component

Series 1V101 **Series 1V102**



Three-component

Series 1V151 **1V152HE** **1V154HC**

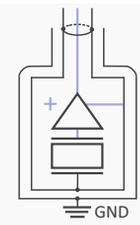


Pages:

Industrial

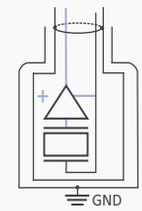
Industrial equipment condition monitoring in harsh industrial interference conditions.

Series 1V201 **Series 1V202** **Series 1V203** **Series 1V206**



Pages:

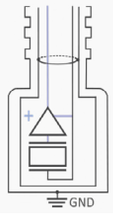
Серия 1V209HA



Pages:

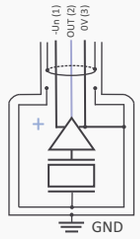
+7 (831-30) 4-94-44 gtlab.pro

Серия 1V209HM



With negative power supply

Series 1V208XX



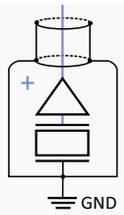
Pages:

Shock

Measurement of parameters of high-intensity shock processes

1V301HA

1V302HA

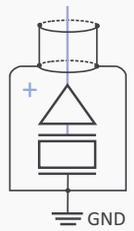


Pages:

High-sensitive

Measurement of low-frequency parameters in low-intensity vibration processes.

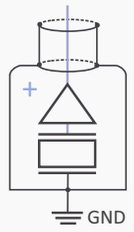
Series 1V401HS-XX



Pages

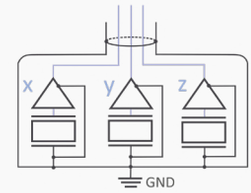
Shock pulses

Series 1V601TA-XX



Pages

Underwater



Series 1V751HA

Pages

With digital output

Accelerometers with built-in ADC.

Industrial

Modbus
RS485

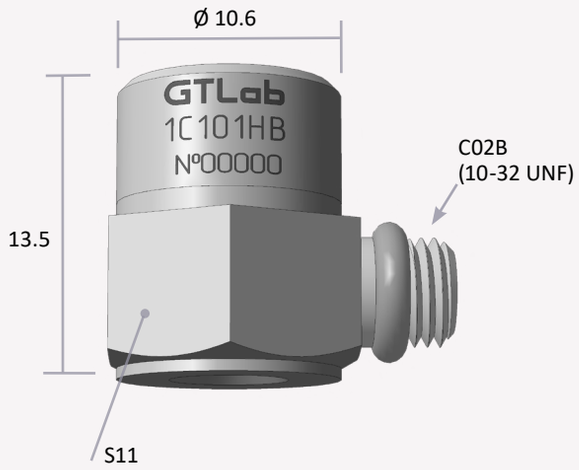
1D201HA

Page

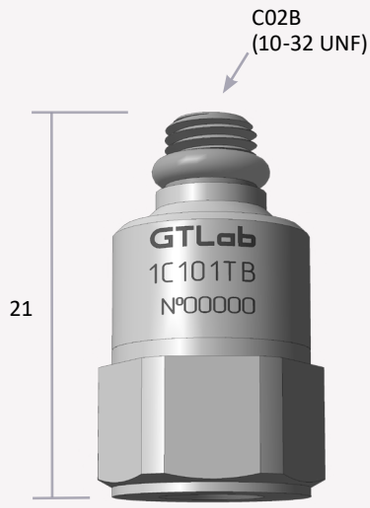
High-sensitive

1D401HC **1D401HA** **1D402HA** **USB**

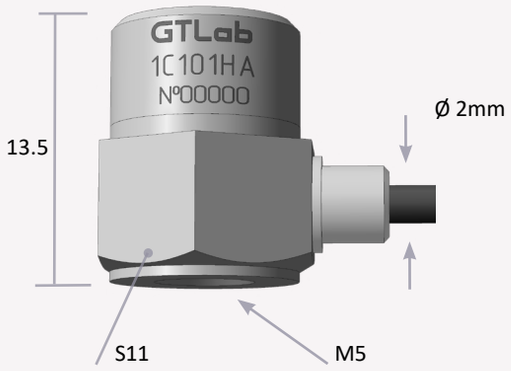
Pages:



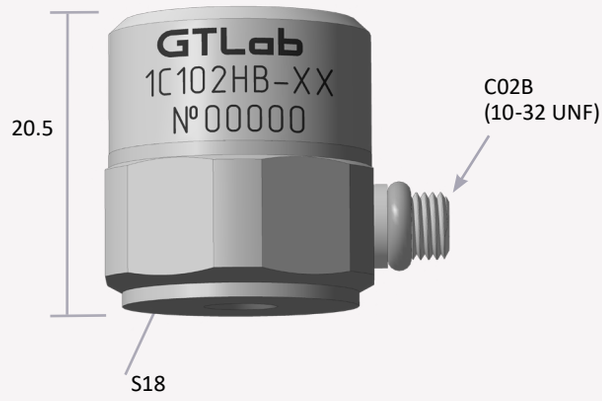
Parameter	1C101HB	1C101HB-01
Sensitivity (± 20%)	1 pC/(m·s^{-2})	
Transverse sensitivity	< 5 %	
Measurement range	± 100 000 m/s^2	
Maximum shock limit (peak value)	± 150 000 m/s^2	
Temperature range	– 60 … + 150 °C	
Frequency range (uneven frequency response ± 1 dB)	0.5 … 16 000Hz	
Resonant frequency	> 50 kHz	
Electric capacity	800 … 1100 pF	
Insulation resistance under normal conditions	> 10 000 MOhm	
Housing material	stainless steel	titanium
Weight (without cable)	10 g	7.6 g
Supplied accessories	cable 03B1B1 (as per customer's request)pin P0505	



Parameter	1C101TB	1C101TB-01
Sensitivity (± 20%)	1 pC/(m·s^{-2})	
Transverse sensitivity	< 5 %	
Measurement range	± 100 000 m/s^2	
Maximum shock limit (peak value)	± 150 000 m/s^2	
Temperature range	– 60 … + 150 °C	
Frequency range (uneven frequency response) ± 1 dB)	0.5 … 16 000Hz	
Resonant frequency	> 50 kHz	
Electric capacity	800 … 1100 pF	
Insulation resistance under normal conditions	> 10 000 MOhm	
Housing material	stainless steel	titanium
Weight (without cable)	10 g	7.6 g
Supplied accessories	cable 03B1B1 (as per customer's request) pin P0505	



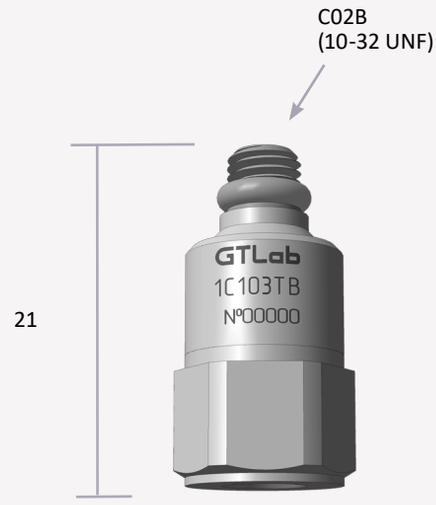
Parameter	1C101HA	1C101HA-01
Sensitivity (± 20%)	1 pC/(m·s^{-2})	
Transverse sensitivity	< 5 %	
Measurement range	± 100 000 m/s^2	
Maximum shock limit (peak value)	± 150 000 m/s^2	
Temperature range	– 60 … + 150 °C	
Frequency range (uneven frequency response ± 1 dB)	0.5 … 16 000Hz	
Resonant frequency	> 50 kHz	
Electric capacity	800 … 1100 pF	
Insulation resistance under normal conditions	> 10 000 MOhm	
Housing material	stainless steel	titanium
Weight (without cable)	10 g	7.6 g
Supplied accessories	pin P0505	



Parameter	1C102HB
Sensitivity (± 20%)	10 pC/(m·s^{-2})
Transverse sensitivity	< 5 %
Measurement range	± 15 000 m/s^2
Maximum shock limit (peak value)	± 50 000 m/s^2
Temperature range	– 60 … + 150 °C
Frequency range (uneven frequency response ± 1 dB)	0.5 … 8 000Hz
Resonant frequency	> 20 kHz
Electric capacity	1000 … 1500 pF
Insulation resistance under normal conditions	> 10 000 MOhm
Housing material	stainless steel
Weight (without cable)	40 g
Supplied accessories	cable 03B1B1 (as per customer's request) pin P0505

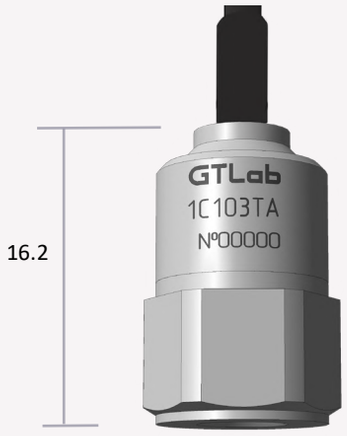
1C102TB

Parameter	1C102TB
Sensitivity (± 20%)	10 pC/(m·s^{-2})
Transverse sensitivity	< 5 %
Measurement range	± 15 000 m/s^2
Maximum shock limit (peak value)	± 50 000 m/s^2
Temperature range	– 60 … + 150 °C
Frequency range (uneven frequency response ± 1 dB)	0.5 … 8 000Hz
Resonant frequency	> 20 kHz
Electric capacity	1000 … 1500 pF
Insulation resistance under normal conditions	> 10 000 MOhm
Housing material	stainless steel
Weight (without cable)	40 g
Supplied accessories	cable 03B1B1 (as per customer's request) pin P0505

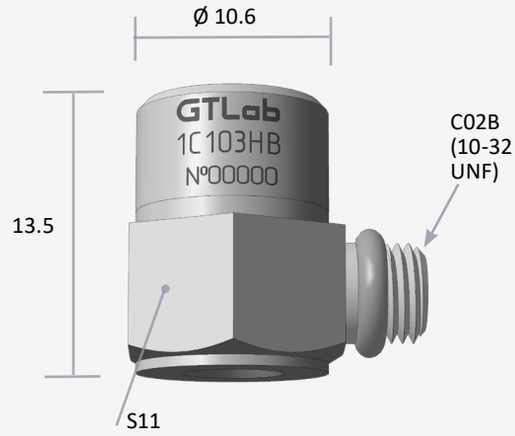


Parameter	1C103TB	1C103TB-01
Sensitivity (± 20%)	1 pC/(m·s^{-2})	
Transverse sensitivity	< 5 %	
Measurement range	± 100 000 m/s^2	
Maximum shock limit (peak value)	± 150 000 m/s^2	
Temperature range	– 60 … + 250 °C	
Frequency range (uneven frequency response ± 1 dB)	0.5 … 16 000Hz	
Resonant frequency	> 50 kHz	
Electric capacity	700 … 1 000 pF	
Insulation resistance under normal conditions	> 10 000 MOhm	
Housing material	stainless steel	titanium
Weight (without cable)	10 g	7.6 g
Supplied accessories	cable 03B1B1 (as per customer's request) pin P0505	

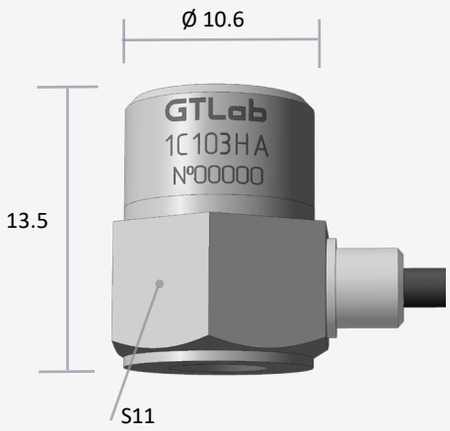
1C103TA, 1C103TA-01



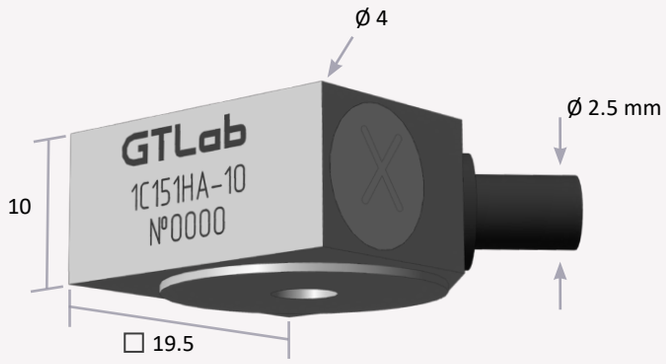
Parameter	1C103TA	1C103TA-01
Sensitivity (± 20%)	1 pC/(m·s^{-2})	
Transverse sensitivity	< 5 %	
Measurement range	± 100 000 m/s^2	
Maximum shock limit (peak value)	± 150 000 m/s^2	
Temperature range	– 60 … + 250 °C	
Frequency range (uneven frequency response ± 1 dB)	0.5 … 16 000Hz	
Resonant frequency	> 50 kHz	
Electric capacity	700 … 1 000 pF	
Insulation resistance under normal conditions	> 10 000 MOhm	
Housing material	stainless steel	titanium
Weight (without cable)	10 g	7.6 g
Supplied accessories	pin P0505	

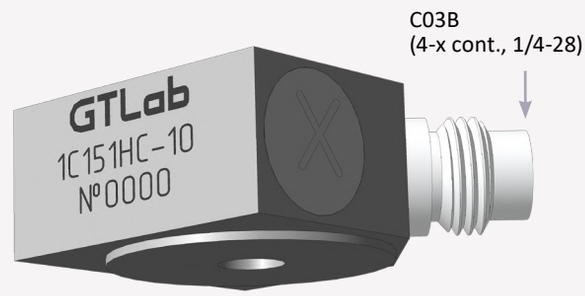


Parameter	1C103HB	1C103HB-01
Sensitivity (± 20%)	1 pC/(m·s^{-2})	
Transverse sensitivity	< 5 %	
Measurement range	± 100 000 m/s^2	
Maximum shock limit (peak value)	± 150 000 m/s^2	
Temperature range	– 60 … + 250 °C	
Frequency range (uneven frequency response ± 1 dB)	0.5 … 16 000Hz	
Resonant frequency	> 50 kHz	
Electric capacity	700 … 1 000 pF	
Insulation resistance under normal conditions	> 10 000 MOhm	
Housing material	stainless steel	titanium
Weight (without cable)	10 g	7.6 g
Supplied accessories	cable 03B1B1 (as per customer's request) pin P0505	



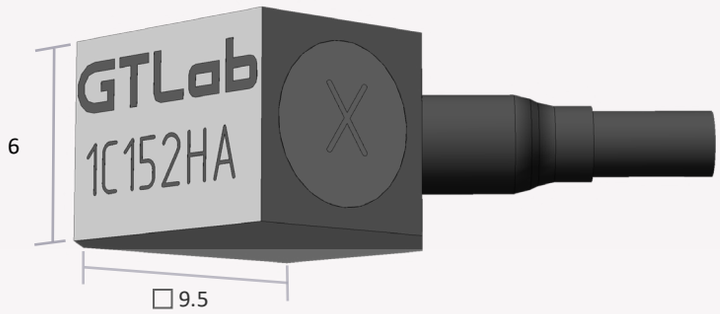
Parameter	1C103HA	1C103HA-01
Sensitivity (± 20%)	1 pC/(m·s^{-2})	
Transverse sensitivity	< 5 %	
Measurement range	± 100 000 m/s^2	
Maximum shock limit (peak value)	± 150 000 m/s^2	
Temperature range	– 60 … + 250 °C	
Frequency range (uneven frequency response ± 1 dB)	0.5 … 16 000Hz	
Resonant frequency	> 50 kHz	
Electric capacity	700 … 1 000 pF	
Insulation resistance under normal conditions	> 10 000 MOhm	
Housing material	stainless steel	titanium
Weight (without cable)	10 g	7.6 g
Supplied accessories	pin P0505	



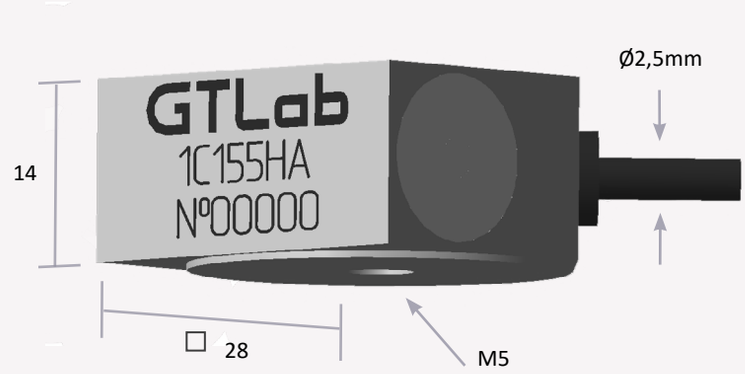


Parameter	1C151HA	1C151HC
Sensitivity (± 20%)	1 pC/(m·s^{-2})	
Transverse sensitivity	< 5 %	
Measurement range	± 25 000 m/s^2	
Maximum shock limit (peak value)	± 100 000 m/s^2	
Temperature range	– 60 … + 150 °C	
Frequency range (uneven frequency response ± 1 dB)	0.5 … 10 000Hz	
Resonant frequency	> 30 kHz	
Electric capacity	800 … 1 100 pF	
Insulation resistance under normal conditions	> 10 000 MOhm	
Housing material	titanium alloy	
Weight (without cable)	17 g	
Supplied accessories	screw M5 × 15	cable 41C1B3 (as per customer's request)screw M5 × 15

1C152HA

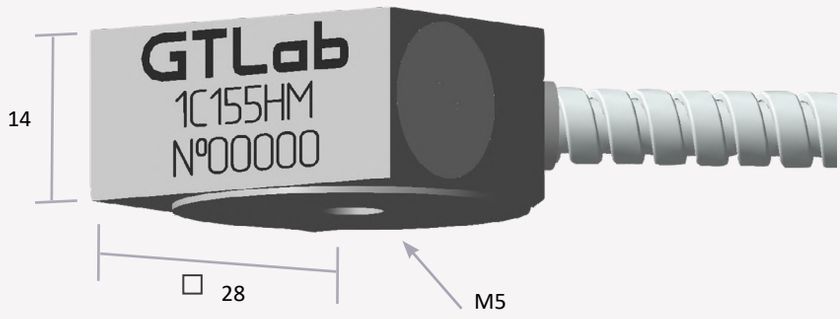


Parameter	1C152HA
Sensitivity (± 20%)	0.2 pC/(m·s^{-2})
Transverse sensitivity	< 5 %
Measurement range	± 30 000 m/s^2
Maximum shock limit (peak value)	± 100 000 m/s©
Temperature range	– 60 … + 150 °C
Frequency range (uneven frequency response ± 1 dB)	5 … 20 000Hz
Resonant frequency	> 60 kHz
Electric capacity	600 … 900 pF
Insulation resistance under normal conditions	> 10 000 MOhm
Housing material	titanium alloy
Weight (without cable)	3 g

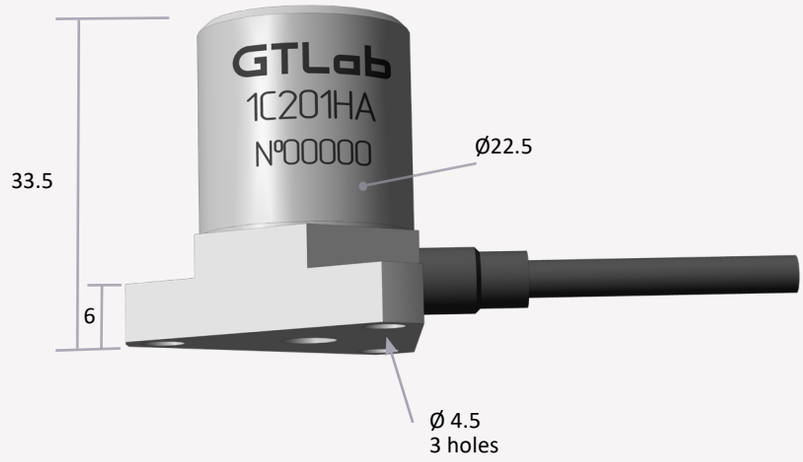


Parameter	1C155HA
Sensitivity (± 20%)	0.1 pC/(m·s^{-2})
Transverse sensitivity	< 5 %
Measurement range	± 10 000 m/s^2
Maximum shock limit (peak value)	± 50 000 m/s©
Temperature range	– 60 … + 150 °C
Frequency range (uneven frequency response ± 1 dB)	0.5 … 10 000Hz
Resonant frequency	> 30 kHz
Electric capacity	200 … 300 pF
Insulation resistance under normal conditions	> 10 000 MOhm
Housing material	titanium alloy
Weight (without cable)	86 g
Supplied accessories	screw M5 × 15

1C155HM

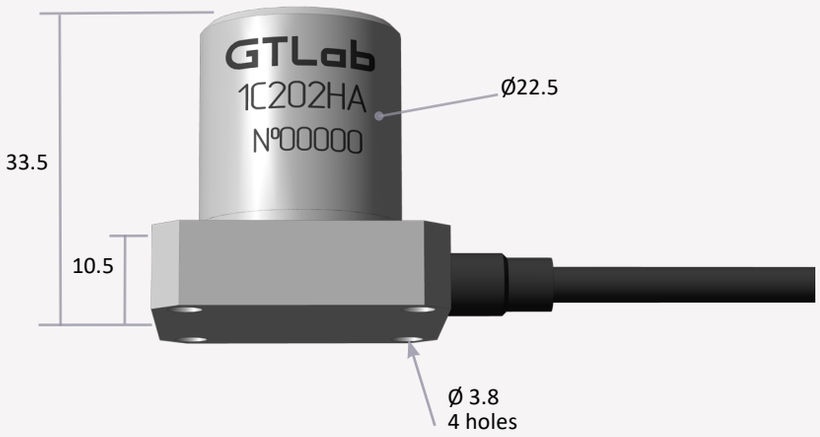


Parameter	1C155HM
Sensitivity (± 20%)	0.1 pC/(m·s^{-2})
Transverse sensitivity	< 5 %
Measurement range	± 10 000 m/s^2
Maximum shock limit (peak value)	± 50 000 m/s$^{©}$
Temperature range	– 60 … + 150 °C
Frequency range (uneven frequency response ± 1 dB)	0.5 … 10 000Hz
Resonant frequency	> 30 kHz
Electric capacity	200 … 300 pF
Insulation resistance under normal conditions	> 10 000 MOhm
Housing material	titanium alloy
Weight (without cable)	86 g
Supplied accessories	screw M5 × 15

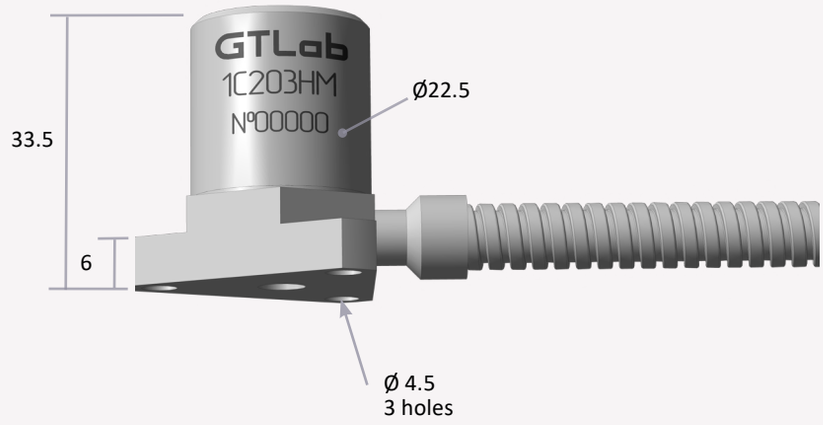


Parameter	1C201HA-2	1C201HA-5	1C201HA-10
Sensitivity (± 20%)	0.2 pC/(m·s^{-2})	0.5 pC/m·s^{-2}	1 pC/m·s^{-2}
Transverse sensitivity	< 5 %		
Measurement range	± 50 000 m/s^2	± 30 000 m/s^2	± 10 000 m/s^2
Maximum shock limit (peak value)	± 50 000 m/s^2		
Temperature range	– 60 … + 400 °C		
Frequency range (uneven frequency response ± 1 dB)	2 … 12 000Hz	2 … 10 000Hz	2 … 8 000Hz
Resonant frequency	> 36 kHz	> 30 kHz	> 24 kHz
Electric capacity	500 … 700 pF		
Insulation resistance under normal conditions	> 100 MOhm		
Housing material	stainless steel		
Explosion-proof	1Ex ib IIB T6...T1 Gb		
Weight (without cable)	100 g		
Supplied accessories	3 screws DIN 404 M4*12 A2		

1C202HA-XX

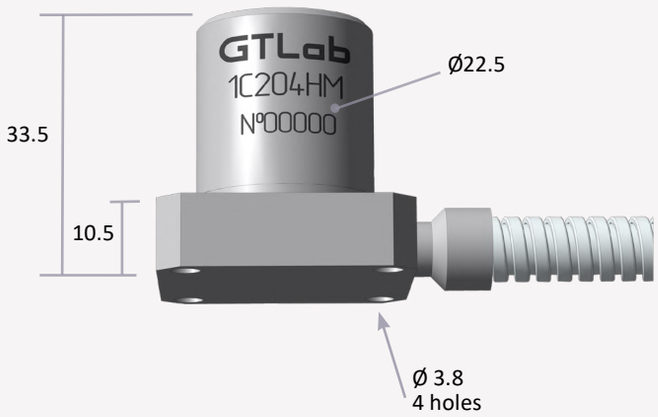


Parameter	1C202HA-2	1C202HA-5	1C202HA-10
Sensitivity (± 20%)	0.2 pC/(m·s^{-2})	0.5 pC/(m·s^{-2})	1 pC/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 50 000 m/s^2	± 30 000 m/s^2	± 10 000 m/s^2
Maximum shock limit (peak value)	± 50 000 m/s^2		
Temperature range	– 60 … + 400 °C		
Frequency range (uneven frequency response ± 1 dB)	2 … 12 000Hz	2 … 10 000Hz	2 … 8 000Hz
Resonant frequency	> 36 kHz	> 30 kHz	24 kHz
Electric capacity	500 … 700 pF		
Insulation resistance under normal conditions	> 100 MOhm		
Housing material	stainless steel		
Weight (without cable)	125 g	140 g	
Explosion-proof	1Ex ib IIB T6...T1 Gb		
Supplied accessories	4 screws DIN 404 M3.5*14 A2		

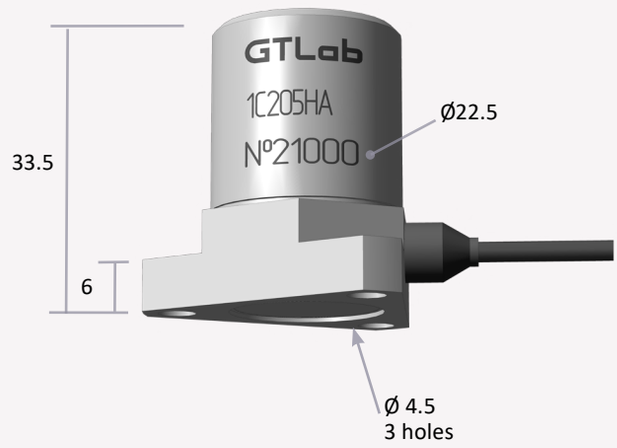


Parameter	1C203HM- 10	1C203HM- 20	1C203HM- 50	1C203HM- 100	1C203HM-250	1C203HM- 500
Sensitivity (± 20%)	1 pC/(m·s^{-2})	2 pC/(m·s^{-2})	5 pC/(m·s^{-2})	10 pC/(m·s^{-2})	25 pC/(m·s^{-2})	50 pC/(m·s^{-2})
Transverse sensitivity	< 5 %					
Measurement range	± 20 000 m/s^2	± 15 000 m/s^2	± 125 000 m/s^2	± 10 000 m/s^2	± 8 000 m/s^2	± 5 000 m/s^2
Maximum shock limit (peak value)	± 50 000 m/s^2					
Temperature range	– 60 … + 250 °C					
Frequency range (uneven frequency response ± 1 dB)	2 … 12 000Hz		2 … 10 000Hz	2 … 8 000Hz	2 … 6 000Hz	2 … 5 000Hz
Resonant frequency	> 36 kHz		> 30 kHz	> 24 kHz	> 18 kHz	> 15 kHz
Electric capacity	900 … 1500 pF					
Insulation resistance under normal conditions	> 1000 MOhm					
Explosion-proof	1Ex ib IIB T6...T1 Gb					
Housing material	stainless steel					
Weight (without cable)	90 g	100 g	110 g	120 g	130 g	140 g
Supplied accessories	3 screws DIN 404 M4*12 A2					

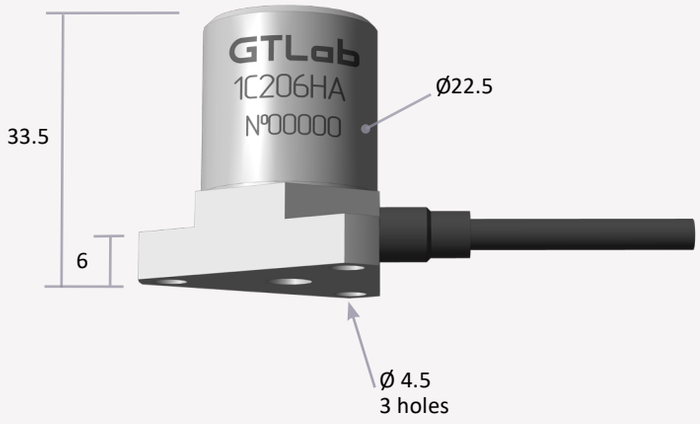
1C204HM-XX



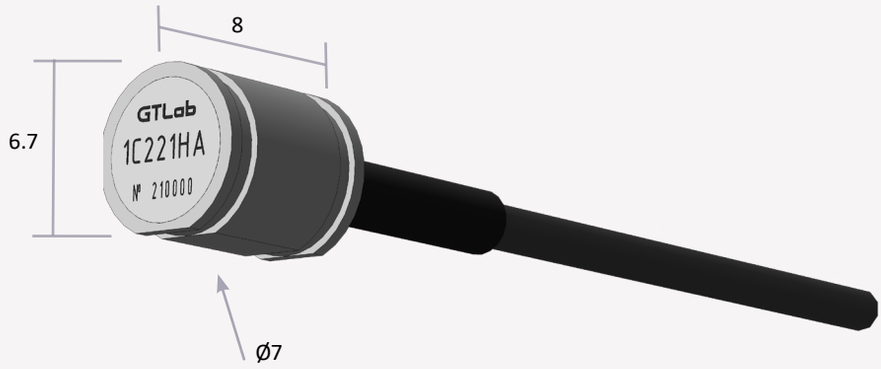
Parameter	1C204HM-10	1C204HM-20	1C204HM-50	1C204HM-100	1C204HM-250	1C204HM-500
Sensitivity (± 20%)	1 pC/(m·s^{-2})	2 pC/(m·s^{-2})	5 pC/(m·s^{-2})	10 pC/(m·s^{-2})	25 pC/(m·s^{-2})	50 pC/(m·s^{-2})
Transverse sensitivity	< 5 %					
Measurement range	± 20 000 m/s^2	± 15 000 m/s^2	± 12 000 m/s^2	± 10 000 m/s^2	± 8 000 m/s^2	± 5 000 m/s^2
Maximum shock limit (peak value)	± 50 000 m/s^2					
Temperature range	– 60 … + 250 °C					
Frequency range (uneven frequency response ± 1 dB)	2 … 12 000Hz		2 … 10 000Hz	2 … 8 000Hz	2 … 6 000Hz	2 … 5 000Hz
Resonant frequency	> 36 kHz		> 30 kHz	> 24 kHz	> 18 kHz	> 15 kHz
Electric capacity	5 000 … 6 000 pF					
Insulation resistance under normal conditions	> 1000 MOhm					
Housing material	stainless steel					
Explosion-proof	1Ex ib IIB T6... T1 Gb					
Weight (without cable)	100 g	120 g	130 g	140 g	150 g	160 g
Supplied accessories	4 screws DIN 404 M3*16 A2					



Parameter	1C205HA-2	1C205HA-5
Sensitivity (± 20%)	0.2 pC/(m·s^{-2})	0.5 pC/(m·s^{-2})
Transverse sensitivity	< 5 %	
Measurement range	± 10 000 m/s^2	
Maximum shock limit (peak value)	± 50 000 m/s^2	
Temperature range	– 60 … + 600 °C	
Frequency range (uneven frequency response ± 1 dB)	3 … 3 000Hz	2 … 1 500Hz
Resonant frequency	> 8 kHz	> 5 kHz
Electric capacity	400 … 800 pF	
Insulation resistance under normal conditions	> 1000 MOhm	
Housing material	stainless steel	
Weight (without cable)	95 g	110 g
Supplied accessories	3 screws DIN 404 M4 *12 A2	

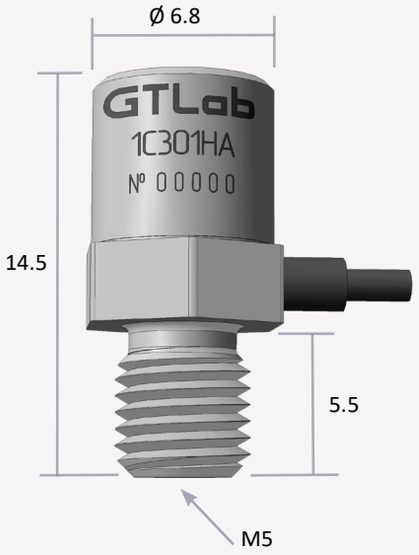


Parameter	1C206HA
Sensitivity (± 20%)	10 pC/(m·s^{-2})
Transverse sensitivity	< 5 %
Measurement range	± 10 000 m/s^2
Maximum shock limit (peak value)	± 50 000 m/s^2
Temperature range	– 60 … + 250 °C
Frequency range (uneven frequency response ± 1 dB)	2 … 8 000Hz
Resonant frequency	> 24 kHz
Electric capacity	5 000 … 6 000 pF
Insulation resistance under normal conditions	> 1000 MOhm
Housing material	stainless steel
Weight (without cable)	90 g
Supplied accessories	3 screws DIN 404 M4 *12 A2

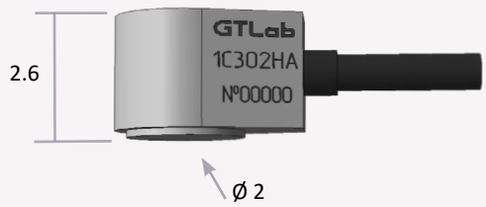


Parameter	1C221HA
Sensitivity (± 20%)	0.2 pC/(m·s^{-2})
Transverse sensitivity	< 5 %
Measurement range	± 10 000 m/s^2
Maximum shock limit (peak value)	± 50 000 m/s^2
Temperature range	– 60 … + 300 °C
Frequency range (uneven frequency response ± 1 dB)	5 … 10 000 Hz
Resonant frequency	> 30 kHz
Electric capacity	500 … 900 pF
Insulation resistance under normal conditions	> 1000 MOhm
Housing material	stainless steel
Weight (without cable)	2.5 g

1C301HA

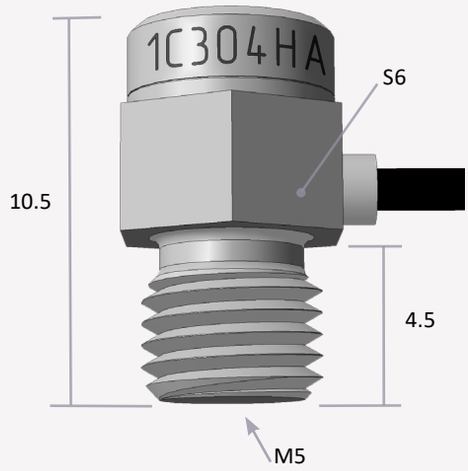


Parameter	1C301HA
Sensitivity (± 30%)	0.0025 pC/(m·s^{-2})
Transverse sensitivity	< 5 %
Measurement range	± 1 000 000 m/s^2
Maximum shock limit (peak value)	± 1 500 000 m/s ^{2}
Temperature range	– 60 … + 200 °C
Frequency range (uneven frequency response) ± 1 dB)	20 … 50 000Hz
Resonant frequency	> 150 kHz
Electric capacity	200 … 300 pF
Insulation resistance under normal conditions	> 10 000 MOhm
Coefficient of the effect of the ambient temperature	< 0,02 %/ °C
Housing material	stainless steel
Weight (without cable)	2.6 g



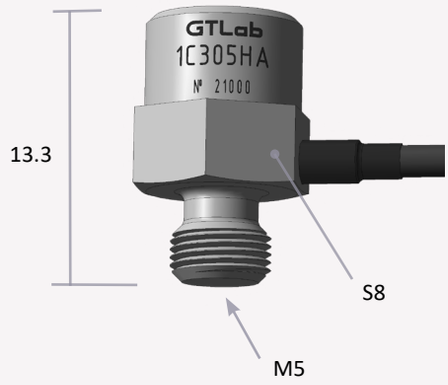
Parameter	1C302HA
Sensitivity (± 30%)	0.02 pC/(m·s^{-2})
Transverse sensitivity	< 5 %
Measurement range	± 200 000 m/s^2
Maximum shock limit (peak value)	± 500 000 m/s^2
Temperature range	– 60 … + 150 °C
Frequency range (uneven frequency response) ± 1 dB)	20 … 30 000Hz
Resonant frequency	> 90 kHz
Electric capacity	400 … 500 pF
Insulation resistance under normal conditions	> 1 000 MOhm
Housing material	titanium alloy
Weight (without cable)	0.15 g

Parameter	1C303HA	1C303HA-01
Sensitivity (± 30%)	0.2 pC/(m·s^{-2})	
Transverse sensitivity	< 3 %	
Measurement range	± 100 000 m/s^2	
Maximum shock limit (peak value)	± 200 000 m/s^2	
Temperature range	– 60 … + 150 °C	
Frequency range (uneven frequency response) ± 1 dB)	5 … 20 000Hz	
Resonant frequency	> 60 kHz	
Electric capacity	600 … 800 pF	
Insulation resistance under normal conditions	> 10 000 MOhm	
Housing material	stainless steel	titanium alloy
Weight (without cable)	1.2 g	0.9 g

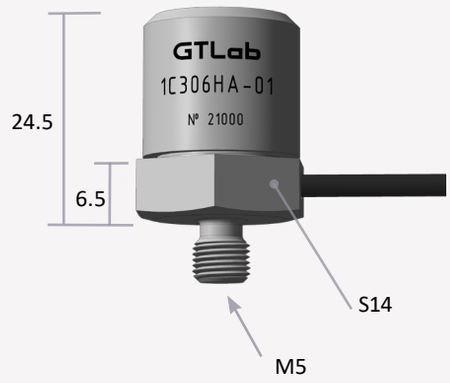


Parameter	1C304HA	1C304HA-01
Sensitivity (± 30%)	0.1 pC/(m·s^{-2})	
Transverse sensitivity	< 3 %	
Measurement range	± 150 000 m/s^2	
Maximum shock limit (peak value)	± 500 000 m/s^2	
Temperature range	– 60 … + 150 °C	
Frequency range (uneven frequency response) ± 1 dB)	5 … 23 000 Hz	
Resonant frequency	> 70 kHz	
Electric capacity	600 … 800 pF	
Insulation resistance under normal conditions	> 10 000 MOhm	
Housing material	stainless steel	titanium alloy
Weight (without cable)	1.4 g	1.1 g

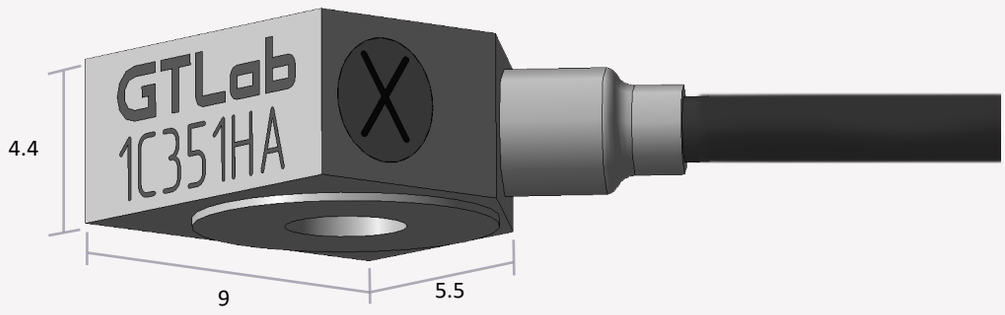
1C305HA



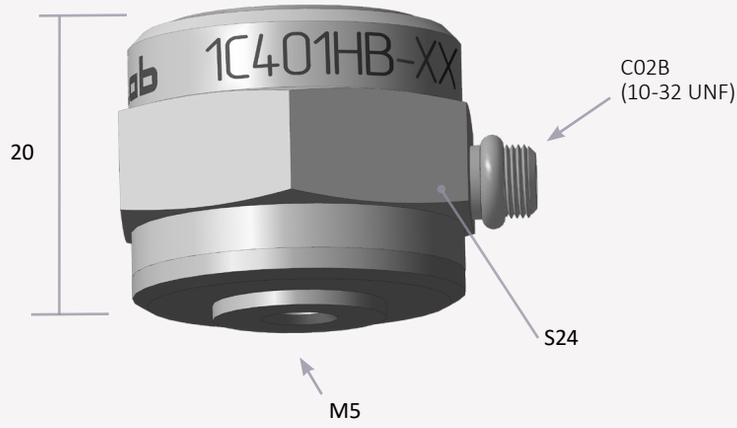
Parameter	1C305HA
Sensitivity (± 30%)	0.2 pC/(m·s^{-2})
Transverse sensitivity	< 3 %
Measurement range	± 100 000 m/s^2
Maximum shock limit (peak value)	± 200 000 m/s^2
Temperature range	– 60 … + 150 °C
Frequency range (uneven frequency response) ± 1 dB)	3 … 20 000 Hz
Resonant frequency	> 60 kHz
Electric capacity	650 … 850 pF
Insulation resistance under normal conditions	> 10 000 MOhm
Housing material	stainless steel
Weight (without cable)	3.5 g



Parameter	1C306HA	1C306HA-01
Sensitivity (± 30%)	0.03 pC/(m·s^{-2})	
Transverse sensitivity	< 3 %	
Measurement range	± 1 000 000 m/s^2	
Maximum shock limit (peak value)	± 1 500 000 m/s^2	
Temperature range	– 60 … + 200 °C	
Frequency range (uneven frequency response) ± 1 dB)	2 … 20 000 Hz	
Resonant frequency	> 60 kHz	
Electric capacity	200 … 300 pF	
Insulation resistance under normal conditions	> 10 000 MOhm	
Housing material	stainless steel	titanium alloy
Weight (without cable)	22 g	13 g

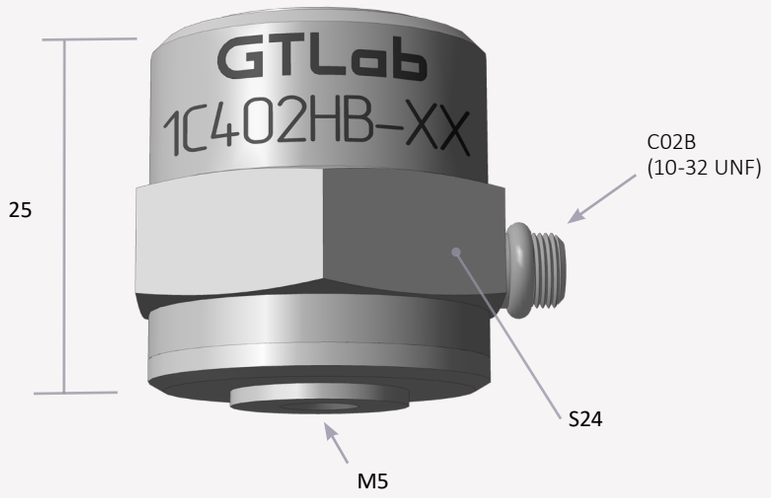


Parameter	1C351HA
Sensitivity (± 30%)	0.02 pC/(m·s^{-2})
Transverse sensitivity	< 5 %
Measurement range	± 200 000 m/s^2
Maximum shock limit (peak value)	± 400 000 m/s^2
Temperature range	–60 … + 150 °C
Frequency range (uneven frequency response) ± 1 dB)	20 … 30 000Hz
Resonant frequency	> 90 kHz
Electric capacity	400 … 500 pF
Insulation resistance under normal conditions	> 1 000 MOhm
Housing material	stainless steel
Weight (without cable)	2.3 g
Supplied accessories	screw ISO 7380 M3 × 8

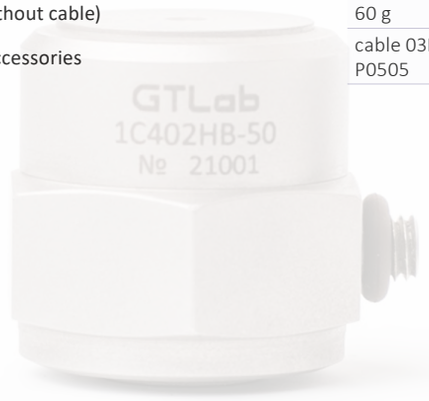


Parameter	1C401HB-200	1C401HB-300
Sensitivity (± 30%)	20 pC/(m·s^{-2})	30 pC/(m·s^{-2})
Transverse sensitivity	< 10 %	
Measurement range	± 4 000 m/s^2	
Maximum shock limit (peak value)	± 60 000 m/s^2	
Temperature range	–60 … + 150 °C	–60 … + 100 °C
Frequency range (uneven frequency response) ± 1 dB)	0.1 … 3 000 Hz	
Resonant frequency	> 10 kHz	
Deformation sensitivity	< 0. 001 m/s2 /10^{-6}	
Electric capacity	1 500 … 2 000 pF	3 000 … 4 000 pF
Insulation resistance under normal conditions	> 10 000 MOhm	
Coefficient of the effect of the ambient temperature	± 0,2 %/°C	
Housing material	stainless steel	
Weight (without cable)	40 g	
Supplied accessories	cable 03B1B1 (as per customer's request) pin P0505	

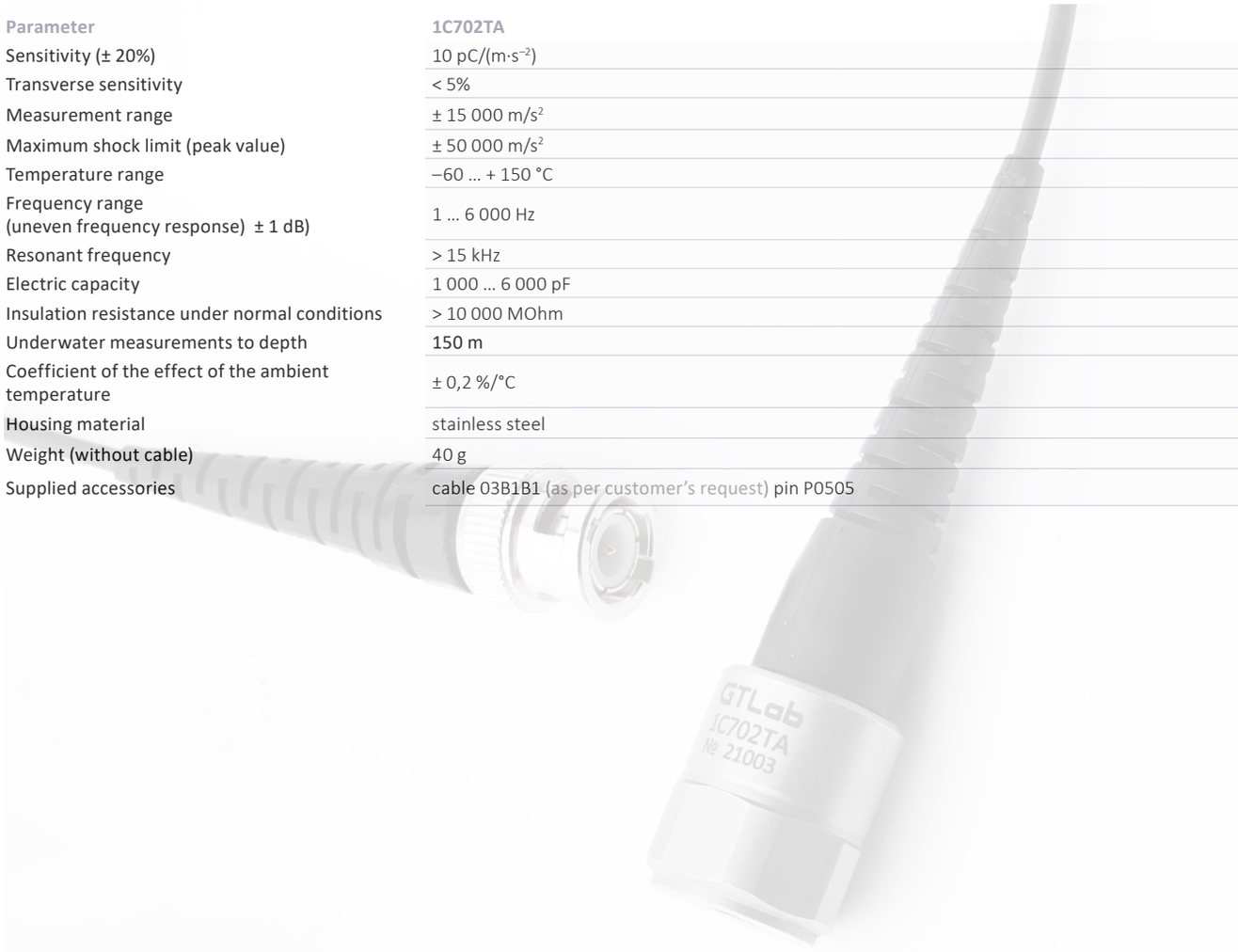
1C402HB-XX

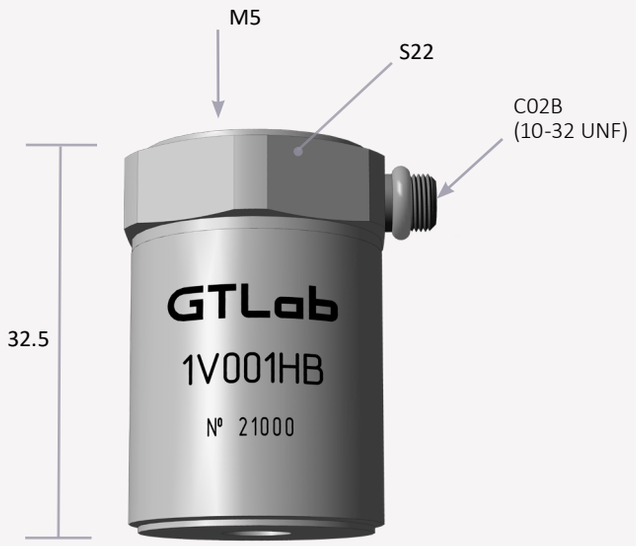


Parameter	1C402HB-500	1C402HB-1000
Sensitivity (± 30%)	50 pC/(m·s^{-2})	100 pC/(m·s^{-2})
Transverse sensitivity	< 10 %	
Measurement range	± 3 000 m/s^2	
Maximum shock limit (peak value)	± 40 000 m/s^2	
Temperature range	–60 … + 150 °C	–60 … + 100 °C
Frequency range (uneven frequency response) ± 1 dB)	0.1 … 3 000 Hz	
Resonant frequency	> 10 kHz	
Deformation sensitivity	< 0. 001 m/s2 /10^{-6}	
Electric capacity	3 000 … 4 000 pF	6 000 … 8 000 pF
Insulation resistance under normal conditions	> 10 000 MOhm	
Coefficient of the effect of the ambient temperature	± 0,2 %/°C	
Housing material	stainless steel	
Weight (without cable)	60 g	
Supplied accessories	cable 03B1B1 (as per customer's request) pin P0505	

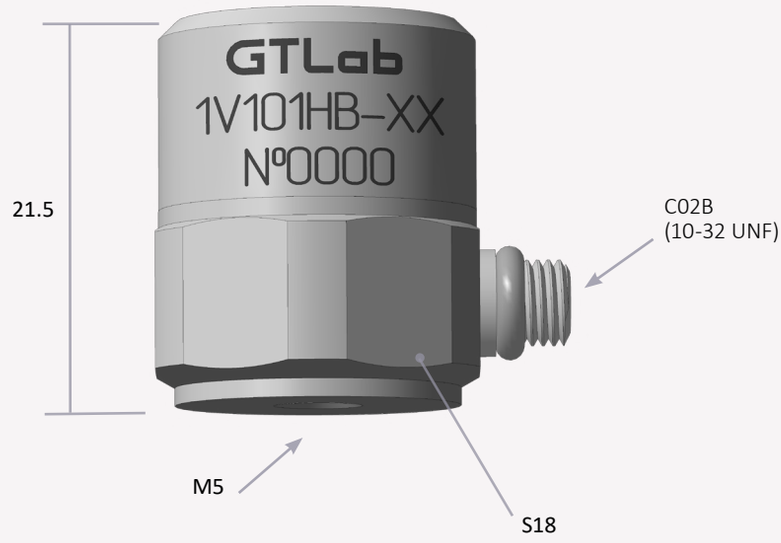


Parameter	1C702TA
Sensitivity (± 20%)	10 pC/(m·s^{-2})
Transverse sensitivity	< 5%
Measurement range	± 15 000 m/s^2
Maximum shock limit (peak value)	± 50 000 m/s^2
Temperature range	–60 … + 150 °C
Frequency range (uneven frequency response) ± 1 dB)	1 … 6 000 Hz
Resonant frequency	> 15 kHz
Electric capacity	1 000 … 6 000 pF
Insulation resistance under normal conditions	> 10 000 MOhm
Underwater measurements to depth	150 m
Coefficient of the effect of the ambient temperature	± 0,2 %/°C
Housing material	stainless steel
Weight (without cable)	40 g
Supplied accessories	cable 03B1B1 (as per customer's request) pin P0505





Parameter	1V001HB-100
Sensitivity	10 mV/(m·s^{-2})
Transverse sensitivity	< 3 %
Measurement range	± 500 m/s^2
Maximum shock limit (peak value)	± 50 000 m/s^2
Temperature range	– 55 … + 125 °C
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 18 000Hz 0.5 … 12 000Hz 1 … 7 000Hz
Resonant frequency	> 36 kHz
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2
Output impedance	< 100 Ohm
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA
Constant output voltage level	8 … 13 V
Coefficient of the effect of the ambient temperature	± 0,03 %/°C
Run mode setting time	4 s
Housing material	stainless steel
Weight (without cable)	85 g
Supplied accessories	cable 03B1D1 (as per customer's request)pin P0505



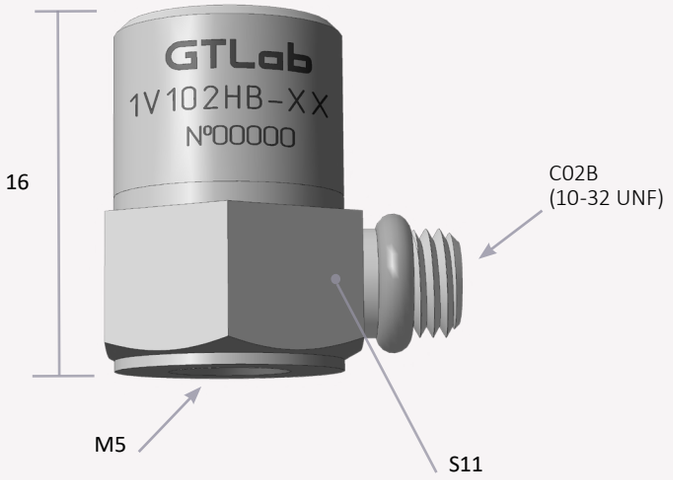
Parameter	1V101HB-100	1V101HB-500	1V101HB-1000
Sensitivity	10 mV/(m·s^{-2})	50 mV/(m·s^{-2})	100 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 500 m/s^2	± 100 m/s^2	± 50 m/s^2
Maximum shock limit (peak value)	± 25 000 m/s^2		
Temperature range	– 55 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.2 … 12 000Hz 0.5 … 6 300Hz 1 … 4 800Hz		
Resonant frequency	> 20 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.0005 m/s^2	0.0004 m/s^2	0.0003 m/s^2
Output impedance	< 500 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0,2 %/°C		
Run mode setting time	4 s		
Housing material	stainless steel		
Weight (without cable)	42 g		
Supplied accessories	cable 03B1D1 (as per customer's request)pin P0505		

1V101TA-XX

Parameter	1V101TA-100	1V101TA-500	1V101TA-1000
Sensitivity	10 mV/(m·s^{-2})	50 mV/(m·s^{-2})	100 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 500 m/s^2	± 100 m/s^2	± 50 m/s^2
Maximum shock limit (peak value)	± 25 000 m/s^2		
Temperature range	– 55 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.5 … 8 000Hz 1 … 5 000Hz 2 … 3 000Hz		
Resonant frequency	> 15 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.0005 m/s^2	0.0004 m/s^2	0.0003 m/s^2
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/°C		
Run mode setting time	4 s		
Housing material	stainless steel		
Weight (without cable)	42 g		
Supplied accessories	pin P0505		

1V101TB-XX

Parameter	1V101TB-100	1V101TB-500	1V101TB-1000
Sensitivity	10 mV/(m·s^{-2})	50 mV/(m·s^{-2})	100 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 500 m/s^2	± 100 m/s^2	± 50 m/s^2
Maximum shock limit (peak value)	± 25 000 m/s^2		
Temperature range	– 55 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.2 … 12 000Hz 0.5 … 6 300Hz 1 … 4 800Hz		
Resonant frequency	> 20 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.0005 m/s^2	0.0004 m/s^2	0.0003 m/s^2
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/°C		
Run mode setting time	4 s		
Housing material	stainless steel		
Weight (without cable)	42 g		
Supplied accessories	cable 03B1D1 (as per customer's request)pin P0505		

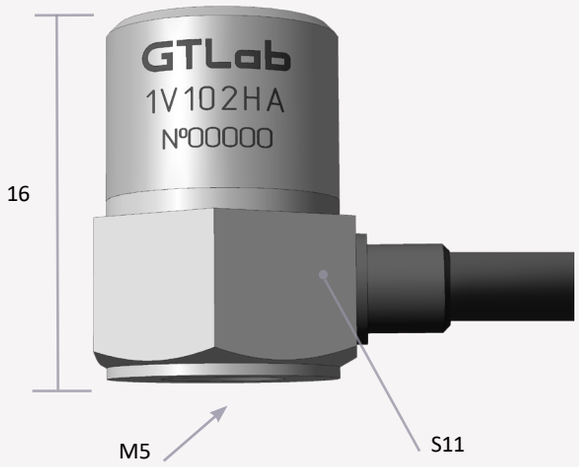


Parameter	1V102HB-1	1V102HB-2	1V102HB-5	1V102HB-10	1V102HB-100	1V102HB-500
Sensitivity	0.1 mV/(m·s^{-2})	0.2 mV/(m·s^{-2})	0.5 mV/(m·s^{-2})	1 mV/(m·s^{-2})	10 mV/(m·s^{-2})	50 mV/(m·s^{-2})
Transverse sensitivity	< 5 %					
Measurement range	± 50 000 m/s^2	± 25 000 m/s^2	± 10 000 m/s^2	± 5 000 m/s^2	± 500 m/s^2	± 100 m/s^2
Maximum shock limit (peak value)	± 100 000 m/s^2					
Temperature range	– 55 … + 125 °C					
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 3 … 30 000Hz 5 … 23 000Hz 10 … 14 000Hz		 0.2 … 24 000Hz 0.5 … 16 000Hz 1 … 10 000Hz			
Resonant frequency	> 70 kHz		> 50 kHz			
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.05 m/s^2	< 0.03 m/s^2	< 0.01 m/s^2	< 0.005 m/s^2	0.0035 m/s^2	< 0.002 m/s^2
Output impedance	< 100 Ohm					
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA					
Constant output voltage level	8 … 13 V					
Coefficient of the effect of the ambient temperature	± 0.2 %/°C					
Run mode setting time	4 s					
Housing material	stainless steel					
Weight (without cable)	13 g					
Supplied accessories	cable 03B1D1 (as per customer's request) pin P0505					

1V102TB-XX

Parameter	1V102TB-1	1V102TB-2	1V102TB-5	1V102TB-10	1V102TB-100	1V102TB-500
Sensitivity	0.1 mV/(m·s^{-2})	0.2 mV/(m·s^{-2})	0.5 mV/(m·s^{-2})	1 mV/(m·s^{-2})	10 mV/(m·s^{-2})	50 mV/(m·s^{-2})
Transverse sensitivity	< 5 %					
Measurement range	± 50 000 m/s^2	± 25 000 m/s^2	± 10 000 m/s^2	± 5 000 m/s^2	± 500 m/s^2	± 100 m/s^2
Maximum shock limit (peak value)	± 100 000 m/s^2					
Temperature range	– 55 … + 125 °C					
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 3 … 30 000Hz 5 … 23 000Hz 10 … 14 000Hz		 0.2 … 24 000Hz 0.5 … 16 000Hz 1 … 10 000Hz			
Resonant frequency	> 70 kHz		> 50 kHz			
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.05 m/s^2	< 0.03 m/s^2	< 0.01 m/s^2	< 0.005 m/s^2	0.0035 m/s^2	< 0.002 m/s^2
Output impedance	< 100 Ohm					
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA					
Constant output voltage level	8 … 13 V					
Coefficient of the effect of the ambient temperature	± 0.2 %/°C					
Run mode setting time	4 s					
Housing material	stainless steel					
Weight (without cable)	13 g					
Supplied accessories	cable 03B1D1 (as per customer's request) pin P0505					

1V102HA-XX

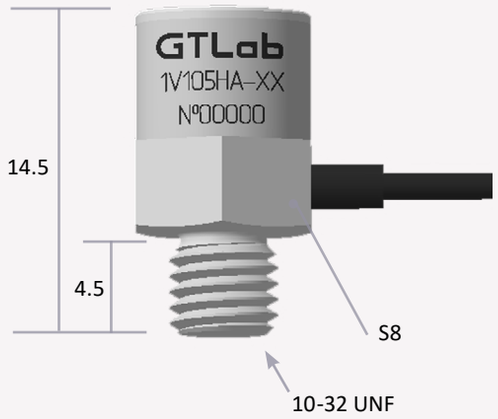


Parameter	1V102HA-1	1V102HA-2	1V102HA-5	1V102HA-10	1V102HA-100	1V102HA-500
Sensitivity	1 mV/(m·s^{-2})				10 mV/(m·s^{-2})	50 mV/(m·s^{-2})
Transverse sensitivity	< 5 %					
Measurement range	± 50 000 m/s^2	± 25 000 m/s^2	± 10 000 m/s^2	± 5 000 m/s^2	± 500 m/s^2	± 100 m/s^2
Maximum shock limit (peak value)	± 100 000 m/s^2					
Temperature range	– 55 … + 125 °C					
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 3 … 30 000Hz 5 … 23 000Hz 10 … 14 000Hz		 0.2 … 24 000Hz 0.5 … 16 000Hz 1 … 10 000Hz			
Resonant frequency	> 70 kHz		> 50 kHz			
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.05 m/s^2	< 0.03 m/s^2	< 0.01 m/s^2	< 0.005 m/s^2	< 0.0035 m/s^2	< 0.002 m/s^2
Output impedance	< 100 Ohm					
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA					
Constant output voltage level	8 … 13 V					
Coefficient of the effect of the ambient temperature	± 0.2 %/°C					
Run mode setting time	4 s					
Housing material	stainless steel (titanium alloy) as per customer's request					
Weight (without cable)	13 g					
Supplied accessories	pin P0505					

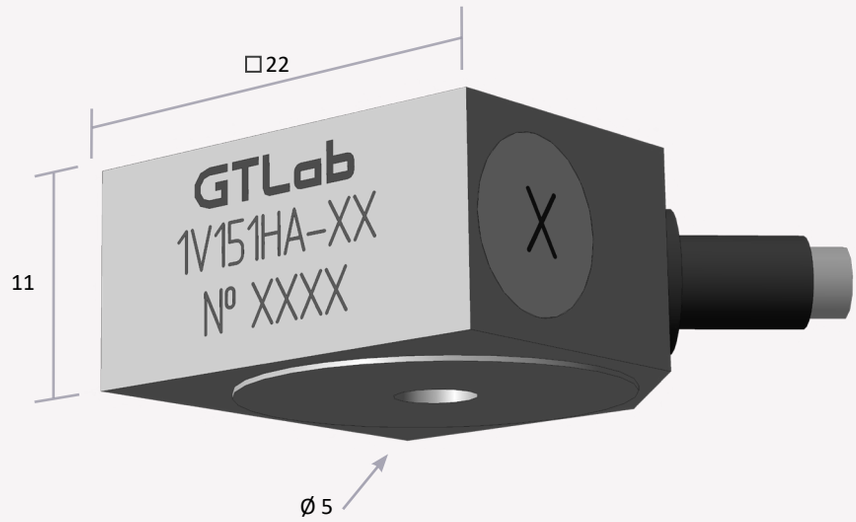
Parameter	1V103TB-1	1V103TB-10	1V103TB-100
Sensitivity	0.1 mV/(m·s^{-2})	1 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 50 000 m/s^2	± 5 000 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 100 000 m/s^2		
Temperature range	– 55 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 3 … 27 000Hz 5 … 18 000Hz 10 … 11 000Hz	 2 … 22 000Hz 5 … 15 000Hz 10 … 9 000Hz	
Resonant frequency	> 55 kHz	> 45 kHz	
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.005 m/s^2	< 0.0035 m/s^2	< 0.002 m/s^2
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/°C		
Run mode setting time	4 s		
Housing material	titanium alloy (As per customer's request)		
Weight (without cable)	11 g		
Supplied accessories	cable 03B1D1 (As per customer's request)		

Parameter	1V103TA-1	1V103TA-10	1V103TA-100
Sensitivity	0.1 mV/(m·s^{-2})	1 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 50 000 m/s^2	± 5 000 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 100 000 m/s^2		
Temperature range	– 55 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 3 … 27 000Hz 5 … 18 000Hz 10 … 11 000Hz	 2 … 22 000Hz 5 … 15 000Hz 10 … 9 000Hz	
Resonant frequency	> 55 kHz	> 45 kHz	
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.03 m/s^2	< 0.01 m/s^2	< 0.005 m/s^2
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/°C		
Run mode setting time	4 s		
Housing material	titanium alloy		
Weight (without cable)	3 g		

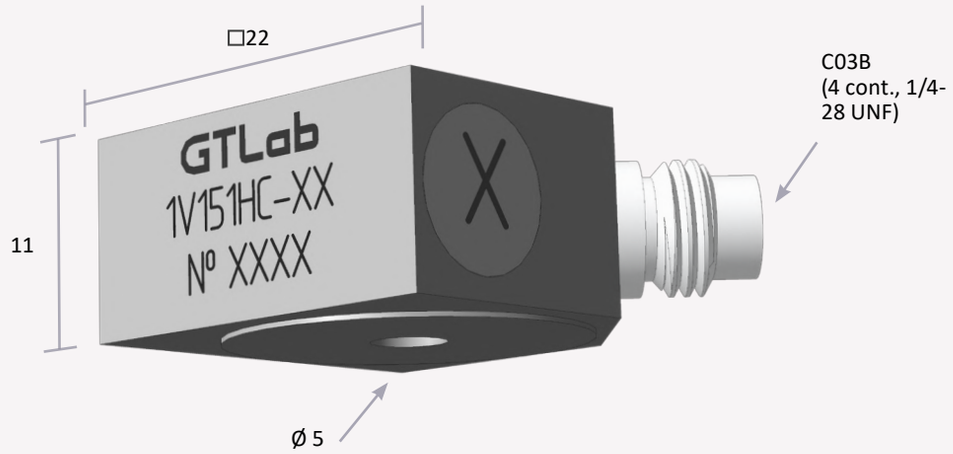
Parameter	1V104HA-1	1V104HA-10	1V104HA-100
Sensitivity	0.1 mV/(m·s^{-2})	1 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 50 000 m/s^2	± 5 000 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 100 000 m/s^2		
Temperature range	– 55 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 3 … 27 000Hz 5 … 18 000Hz 10 … 11 000Hz	 2 … 22 000Hz 5 … 15 000Hz 10 … 9 000Hz	
Resonant frequency	> 55 kHz	> 45 kHz	
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.03 m/s^2	< 0.02 m/s^2	< 0.01 m/s^2
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/°C		
Run mode setting time	4 s		
Housing material	titanium alloy		
Weight (without cable)	3 g		



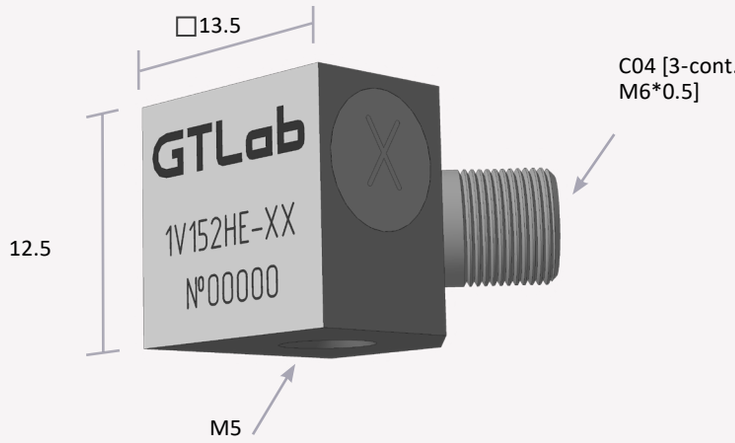
Parameter	1V105TA-1	1V105TA-10	1V105TA-100
Sensitivity	0.1 mV/(m·s^{-2})	1 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 50 000 m/s^2	± 5 000 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 100 000 m/s^2		
Temperature range	– 55 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 3 … 27 000Hz 5 … 18 000Hz 10 … 11 000Hz	 2 … 22 000Hz 5 … 15 000Hz 10 … 9 000Hz	
Resonant frequency	> 55 kHz	> 45 kHz	
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.03 m/s^2	< 0.01 m/s^2	< 0.005 m/s^2
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/°C		
Run mode setting time	4 s		
Housing material	titanium alloy		
Weight (without cable)	3 g		



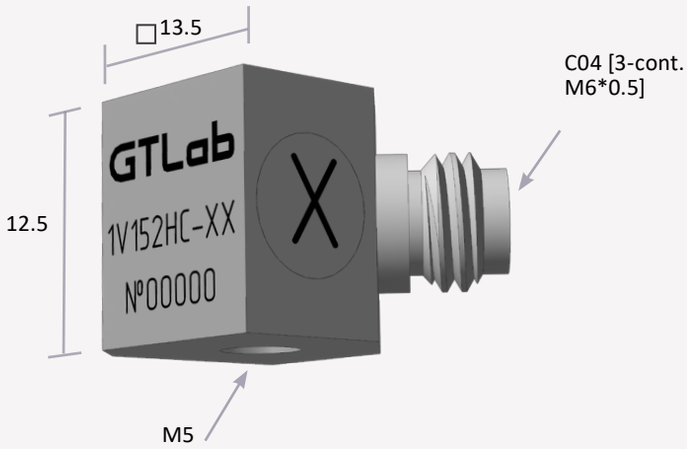
Parameter	1V151HA- 10	1V151HA-100	1V151HA-500
Sensitivity	1 mV/(m·s^{-2})	10 mV/(m·s^{-2})	50 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 5 000 m/s^2	± 500 m/s^2	± 100 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2		
Temperature range	– 55 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 22 500Hz 0.5 … 15 000Hz 1 … 9 000Hz		
Resonant frequency	> 45 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.005 m/s^2	< 0.003 m/s^2	< 0.002 m/s^2
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/°C		
Run mode setting time	4 s		
Housing material	titanium alloy		
Weight (without cable)	26 g		
Supplied accessories	screw ISO 7380 M4 × 16		



Parameter	1V151HC- 10	1V151HC-100	1V151HC-500
Sensitivity	1 mV/(m·s^{-2})	10 mV/(m·s^{-2})	50 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 5 000 m/s^2	± 500 m/s^2	± 100 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2		
Temperature range	– 55 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 22 500Hz 0.5 … 15 000Hz 1 … 9 000Hz		
Resonant frequency	> 45 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.005 m/s^2	< 0.003 m/s^2	< 0.002 m/s^2
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/°C		
Run mode setting time	4 s		
Housing material	titanium alloy		
Weight (without cable)	26 g		
Supplied accessories	cable 41C1D3 (as per customer's request) screw ISO 7380 M5 × 16		

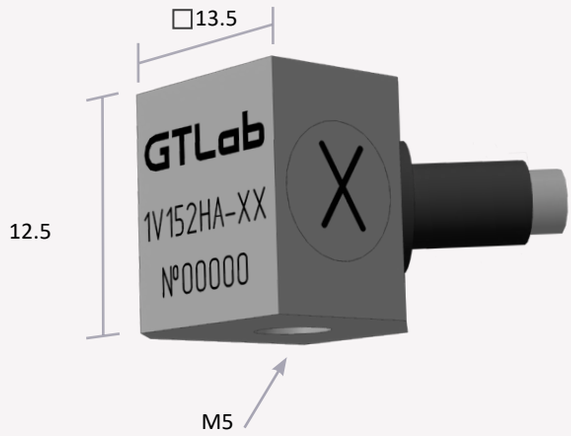


Parameter	1V152HE- 1	1V152HE- 10	1V152HE-30	1V152HE-100
Sensitivity	0.1 mV/(m·s^{-2})	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %			
Measurement range	± 50 000 m/s^2	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2			
Temperature range	– 55 … + 125 °C			
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 22 500Hz 0.5 … 15 000Hz 1 … 9 000Hz			
Resonant frequency	> 45 kHz			
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.05 m/s^2	< 0.01 m/s^2	< 0.009 m/s^2	< 0.008 m/s^2
Output impedance	< 500 Ohm			
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA			
Constant output voltage level	8 … 13 V			
Coefficient of the effect of the ambient temperature	± 0.2 %/°C			
Run mode setting time	4 s			
Housing material	titanium alloy			
Weight (without cable)	9 g			
Supplied accessories	cable 41E1D3 (as per customer's request) pin P0505			

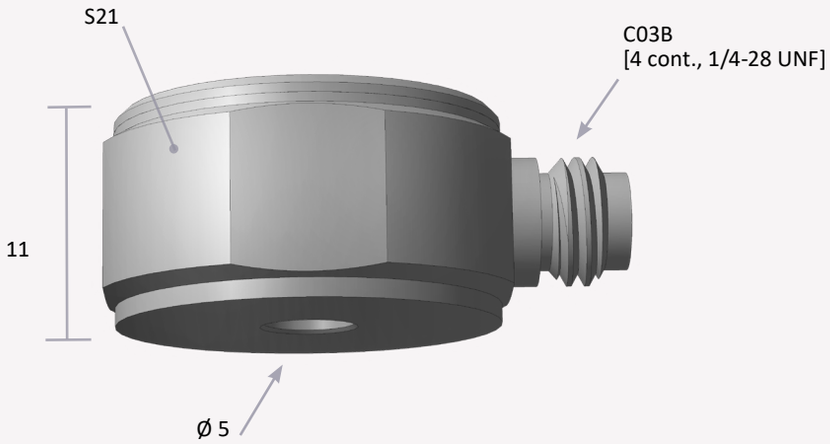


Parameter	1V152HC- 1	1V152HC- 10	1V152HC-30	1V152HC-100
Sensitivity	0.1 mV/(m·s^{-2})	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %			
Measurement range	± 50 000 m/s^2	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2			
Temperature range	– 55 … + 125 °C			
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 22 500Hz 0.5 … 15 000Hz 1 … 9 000Hz			
Resonant frequency	> 45 kHz			
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.05 m/s^2	< 0.01 m/s^2	< 0.009 m/s^2	< 0,008 m/s^2
Output impedance	< 500 Ohm			
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA			
Constant output voltage level	8 … 13 V			
Coefficient of the effect of the ambient temperature	± 0.2 %/°C			
Run mode setting time	4 s			
Housing material	titanium alloy			
Weight (without cable)	13 g			
Supplied accessories	cable 41E1D3 (as per customer's request) pin P0505			

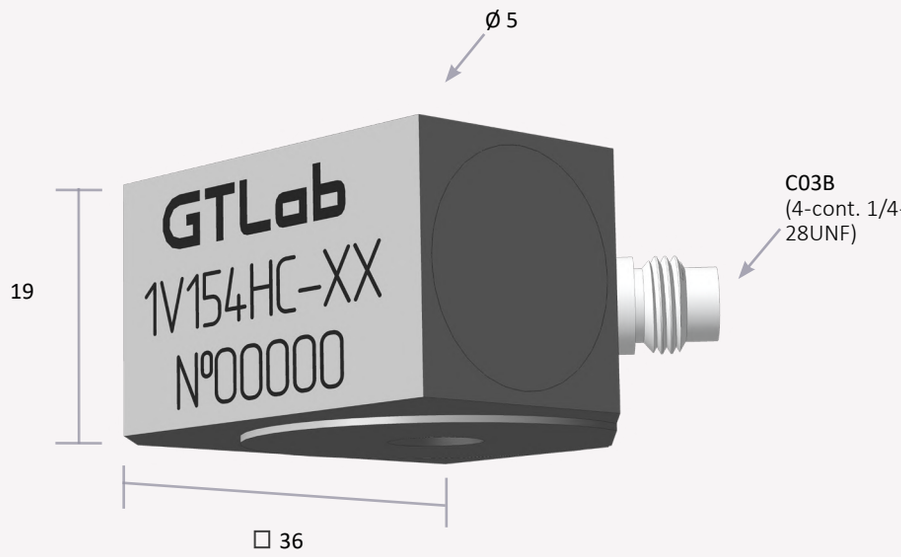
1V152HA-XX



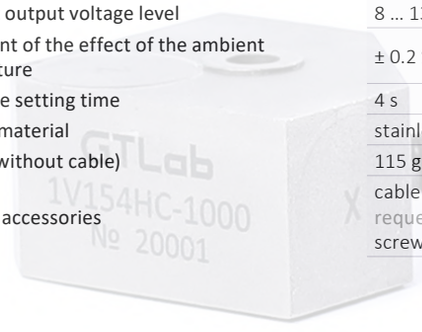
Parameter	1V152HA- 1	1V152HA- 10	1V152HA-30	1V152HA-100
Sensitivity	0.1 mV/(m·s^{-2})	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %			
Measurement range	± 10 000 m/s^2	± 5 000 m/s^2	± 1600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2			
Temperature range	– 55 … + 125 °C			
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 22 500Hz 0.5 … 15 000Hz 1 … 9 000Hz			
Resonant frequency	> 45 kHz			
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.05 m/s^2	< 0.01 m/s^2	< 0.009 m/s^2	< 0.008 m/s^2
Output impedance	< 100 Ohm			
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA			
Constant output voltage level	8 … 13 V			
Coefficient of the effect of the ambient temperature	± 0.2 %/°C			
Run mode setting time	4 s			
Housing material	titanium alloy			
Weight (without cable)	12 g			
Supplied accessories	pin P0505			

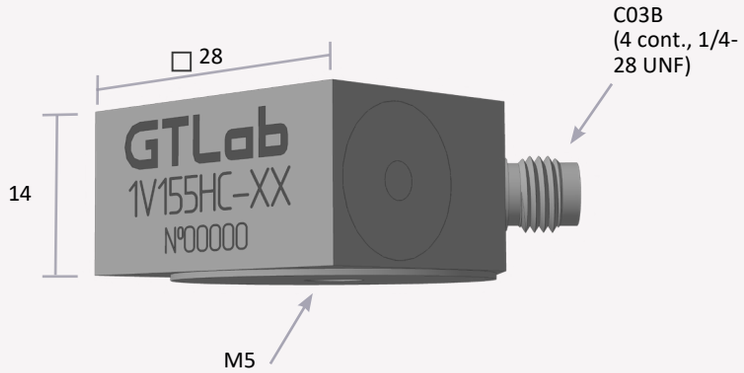


Parameter	1V153HC- 10 1V153HC- 10-01	1V153HC-30 1V153HC-30 - 01	1V153HC-50 1V153HC-50 - 01	1V153HC-100 1V153HC-100-01
Sensitivity	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	5 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %			
Measurement range	± 5 000 m/s^2	± 1 600 m/s^2	± 1 000 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 30 000 m/s^2			
Temperature range	–55 … +125 °C			
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 10 000 Hz 0.5 … 6 000 Hz 1 … 4 000 Hz			
Resonant frequency	> 18 kHz			
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.01 m/s^2			
Output impedance	< 100 Ohm			
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA			
Constant output voltage level	8 … 13 V			
Electrical insulation from the case	> 10 000 Ohm			
Coefficient of the effect of the ambient temperature	± 0.2 %/°C			
Run mode setting time	4 s			
Housing material	titanium alloy / stainless steel (for option -01)			
Weight (without cable)	15 g / 22 g (for option -01)			
Supplied accessories	cable 41C1D3 (as per customer's request) screw M5 ×16			



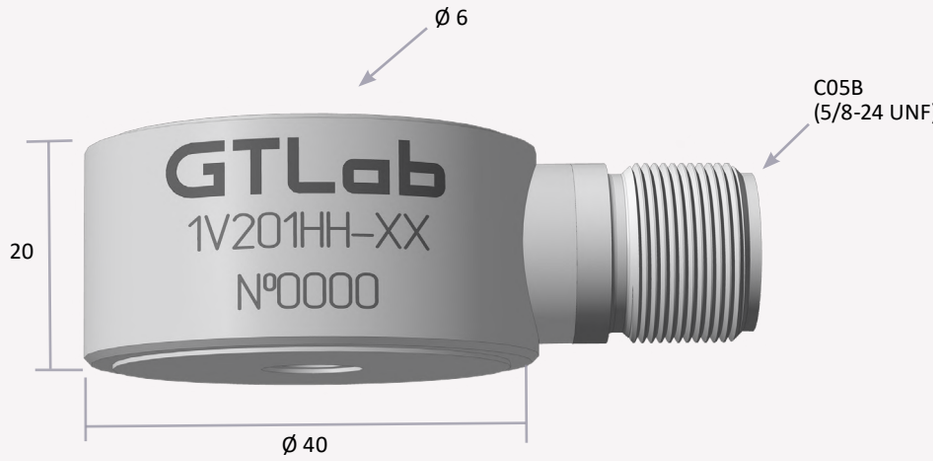
Parameter	1V154HC-100	1V154HC-500	1V154HC-1000
Sensitivity	10 mV/(m·s^{-2})	50 mV/(m·s^{-2})	100 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 500 m/s^2	± 100 m/s^2	± 50 m/s^2
Maximum shock limit (peak value)	± 20 000 m/s^2		
Temperature range	– 55 … + 125 °C		
Frequency range :			
▪ uneven frequency response ± 3 dB	0.3 … 10 000Hz		
▪ uneven frequency response ± 1 dB	0.5 … 6 000Hz		
▪ uneven frequency response ± 5%	1 … 4 000Hz		
Resonant frequency	> 18 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.0005 m/s^2	0.0004 m/s^2	0,0003 m/s^2
Output impedance	< 100 Ohm		
Power:			
▪ voltage	+ (18 … 30) V		
▪ current	2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/°C		
Run mode setting time	4 s		
Housing material	stainless steel		
Weight (without cable)	115 g		
Supplied accessories	cable 41C1D3 (as per customer's request) screw M5 × 25 A2		





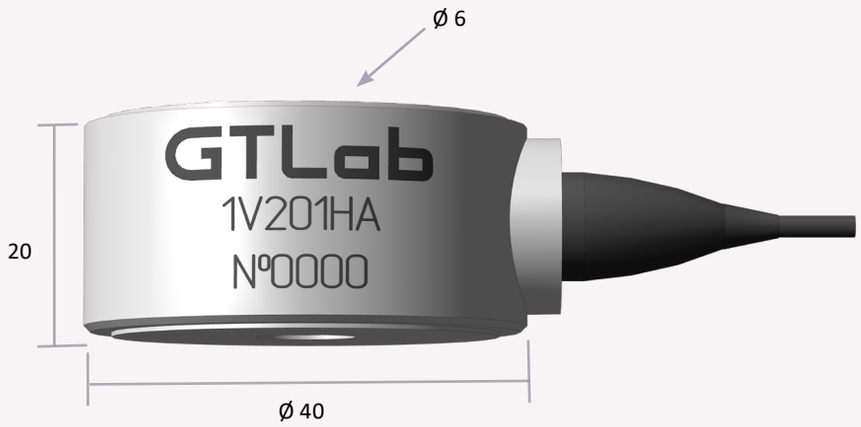
Parameter	1V155HC- 10	1V155HC-30
Sensitivity	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})
Transverse sensitivity	< 5 %	
Measurement range	± 5 000 m/s^2	± 1 600 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2	
Temperature range	–55 … +125 °C	
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 22 500 Hz 0.5 … 15 000 Hz 1 … 9 000 Hz	
Resonant frequency	> 45 kHz	
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.01 m/s^2	< 0.007 m/s^2
Output impedance	< 100 Ohm	
▪ Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 мА	
Constant output voltage level	8 … 13 V	
Coefficient of the effect of the ambient temperature	± 0.02 %/°C	
Run mode setting time	4 s	
Housing material	titanium alloy	
Weight (without cable)	50 g	
Supplied accessories	cable 41C1D3 (as per customer's request) screw M5 × 20	

1V201HH-XX



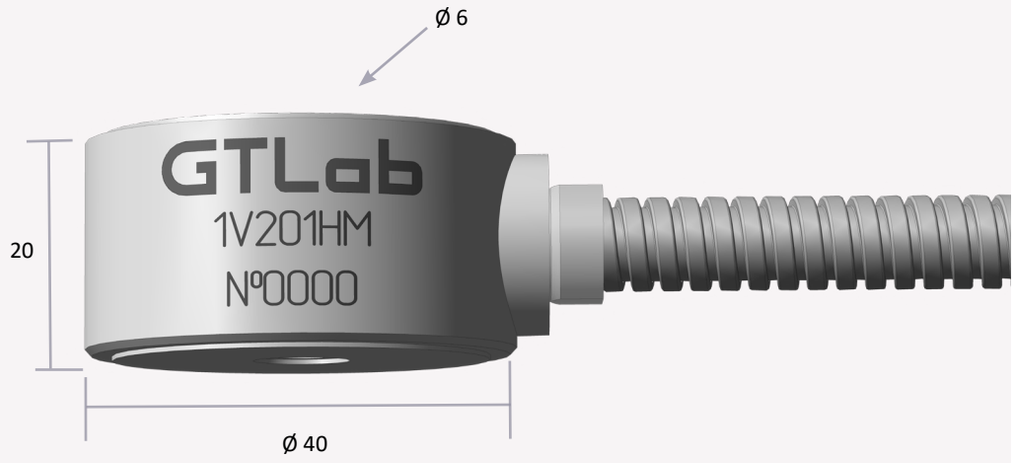
Parameter	1V201HH-10	1V201HH-30	1V201HH-100
Sensitivity	3 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2		
Temperature range	– 55 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 15 000Hz 0.5 … 9 000Hz 1 … 6 000Hz		
Resonant frequency	> 30 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2		
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Run mode setting time	4 s		
Housing material	stainless steel		
Weight (without cable)	90 g		
Supplied accessories	cable 03H1D1 (as per customer's request) screw M6-8g × 30		

1V201HA-XX / (T)



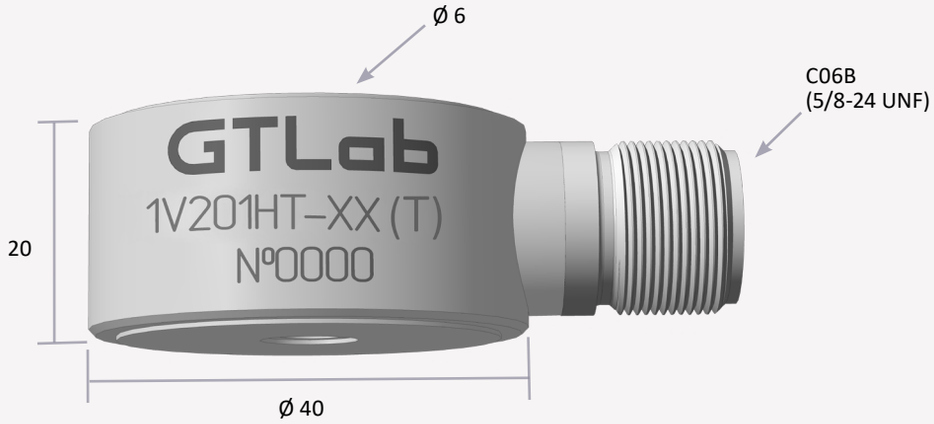
Parameter	1V201HA-10 / (T)	1V201HA-30 / (T)	1V201HA-100 / (T)
Sensitivity	3 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2		
Temperature range	– 55 … + 125 °C – 40 … + 125 °C (T)		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 15 000Hz 0.5 … 9 000Hz 1 … 6 000Hz		
Resonant frequency	> 30 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2		
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Run mode setting time	4 s		
Conversion coefficient on temperature (±2 %)	10 mV/ °C (T)		
Constant output voltage level on temperature (temperature 0°C)	500 mV (T)		
Housing material	stainless steel		
Weight (without cable)	90 g		
Supplied accessories	screw M6-8g × 30		

1V201HM-XX / (T)



Parameter	1V201HM-10 / (T)	1V201HM-30 / (T)	1V201HM-100 / (T)
Sensitivity	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2		
Temperature range	– 55 … + 125 °C – 40 … + 125 °C (T)		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 15 000Hz 0.5 … 9 000Hz 1 … 6 000Hz		
Resonant frequency	> 30 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2		
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Run mode setting time	4 s		
Conversion coefficient on temperature (±2 %)	10 mV/ °C (T)		
Constant output voltage level on temperature (temperature 0°C)	500 mV (T)		
Housing material	stainless steel		
Weight (without cable)	90 g		
Supplied accessories	screw M6-8g × 30		

1V201HT-XX (T)



Parameter	1V201HT-10 (T)	1V201HT-30 (T)	1V201HT-100 (T)
Sensitivity	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2		
Temperature range	– 40 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 15 000Hz 0.5 … 9 000Hz 1 … 6 000Hz		
Resonant frequency	> 30 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2		
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Run mode setting time	4 s		
Conversion coefficient on temperature (±2 %)	10 mV/ °C		
Constant output voltage level on temperature (temperature 0°C)	500 mV		
Housing material	stainless steel		
Weight (without cable)	90 g		
Supplied accessories	cable 41T1A3 (as per customer's request) screw M6-8g × 30		

1V202TH-XX

Parameter	1V202TH-10	1V202TH-30	1V202TH-100
Sensitivity	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2		
Temperature range	– 55 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 12 000Hz 0.5 … 9 000Hz 1 … 7 000Hz		
Resonant frequency	> 30 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2		
Output impedance	<100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Run mode setting time	4 s		
Housing material	stainless steel		
Weight (without cable)	42 g		
Supplied accessories	cable 03H1D1 (as per customer's request)pin P0606		

1V202TA-XX / (T)

Parameter	1V202TA-10 / (T)	1V202TA-30 / (T)	1V202TA-100 / (T)
Sensitivity	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2		
Temperature range	– 55 ... + 125 °C – 40 ... + 125 °C (T)		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 15 000Hz 0.5 … 9 000Hz 1 … 6 000Hz		
Resonant frequency	> 30 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2		
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Run mode setting time	4 s		
Conversion coefficient on temperature (±2 %)	10 mV/ °C (T)		
Constant output voltage level on temperature (temperature 0°C)	500 mV (T)		
Housing material	stainless steel		
Weight (without cable)	42 g		
Supplied accessories	pin P0606		

1V202TT-XX(T)

Parameter	1V202TT-10(T)	1V202TT-30(T)	1V202TT-100(T)
Sensitivity	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2		
Temperature range	– 40 ... + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 15 000Hz 0.5 … 9 000Hz 1 … 7 000Hz		
Resonant frequency	> 30 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2		
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Run mode setting time	4 s		
Conversion coefficient on temperature (±2 %)	10 mV/ °C		
Constant output voltage level on temperature (temperature 0°C)	500 mV		
Housing material	stainless steel		
Weight (without cable)	42 g		
Supplied accessories	cable 41T1A3 (as per customer's request) screw M6-8g × 30		

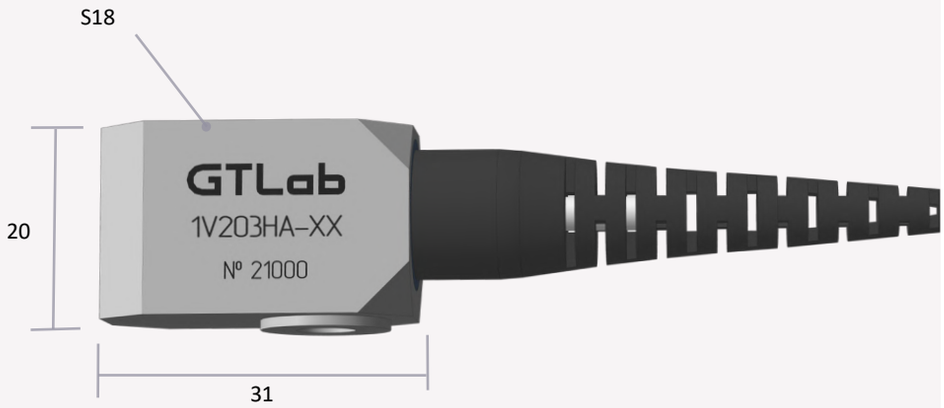
1V202TM-XX / (T)

Parameter	1V202TM-10 / (T)	1V202TM-30 / (T)	1V202TM-100 / (T)
Sensitivity	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2		
Temperature range	– 55 ... + 125 °C – 40 ... + 125 °C (T)		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 15 000 Hz 0.5 … 9 000 Hz 1 … 7 000 Hz		
Resonant frequency	> 30 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2		
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Run mode setting time	4 s		
Conversion coefficient on temperature (±2 %)	10 mV/ °C (T)		
Constant output voltage level on temperature (temperature 0°C)	500 mV (T)		
Housing material	stainless steel		
Weight (without cable)	42 g		
Supplied accessories	pin P0606		

1V203HH-XX

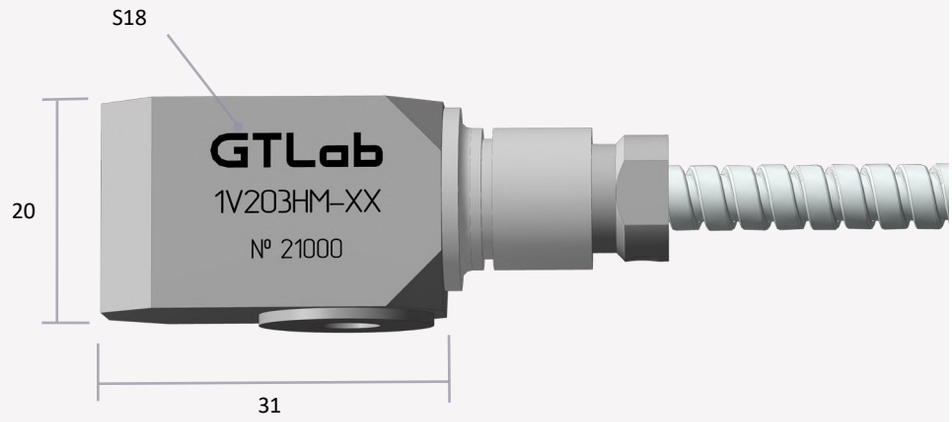
Parameter	1V203HH-10	1V203HH-30	1V203HH-100
Sensitivity	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2		
Temperature range	– 55 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 15 000 Hz 0.5 … 9 000 Hz 1 … 4 000 Hz		
Resonant frequency	> 30 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2		
Output impedance	<100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Run mode setting time	4 s		
Housing material	stainless steel		
Weight (without cable)	70 g		
Supplied accessories	cable 03H1D1 (as per customer's request)pin P0606		

1V203HA-XX / (T)



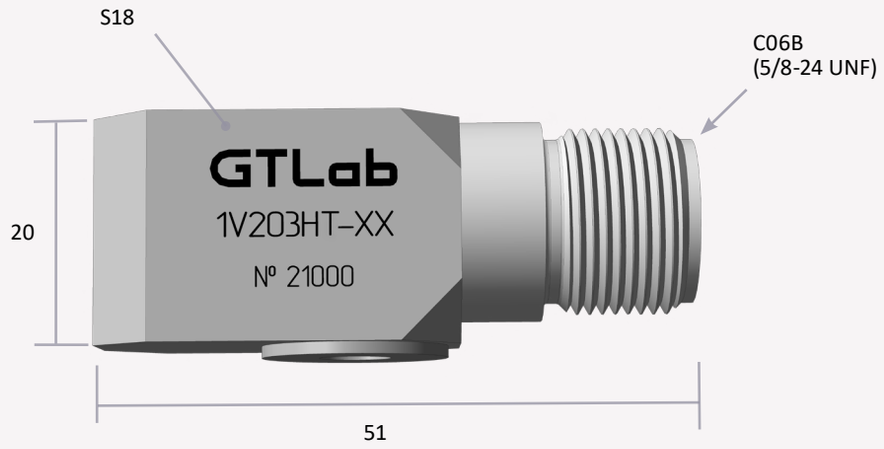
Parameter	1V203HA-10 / (T)	1V203HA-30 / (T)	1V203HA-100 / (T)
Sensitivity	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2		
Temperature range	– 55 ... + 125 °C – 40 ... + 125 °C (T)		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 ... 15 000 Hz 0.5 ... 9 000 Hz 1 ... 4 000 Hz		
Resonant frequency	> 30 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2		
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 ... 30) V 2 ... 20 mA		
Constant output voltage level	8 ... 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Run mode setting time	4 s		
Conversion coefficient on temperature (±2 %)	10 mV/ °C (T)		
Constant output voltage level on temperature (temperature 0°C)	500 mV (T)		
Housing material	stainless steel		
Weight (without cable)	70 g		
Supplied accessories	screw M6-8g × 30		

1V203HM-XX / (T)



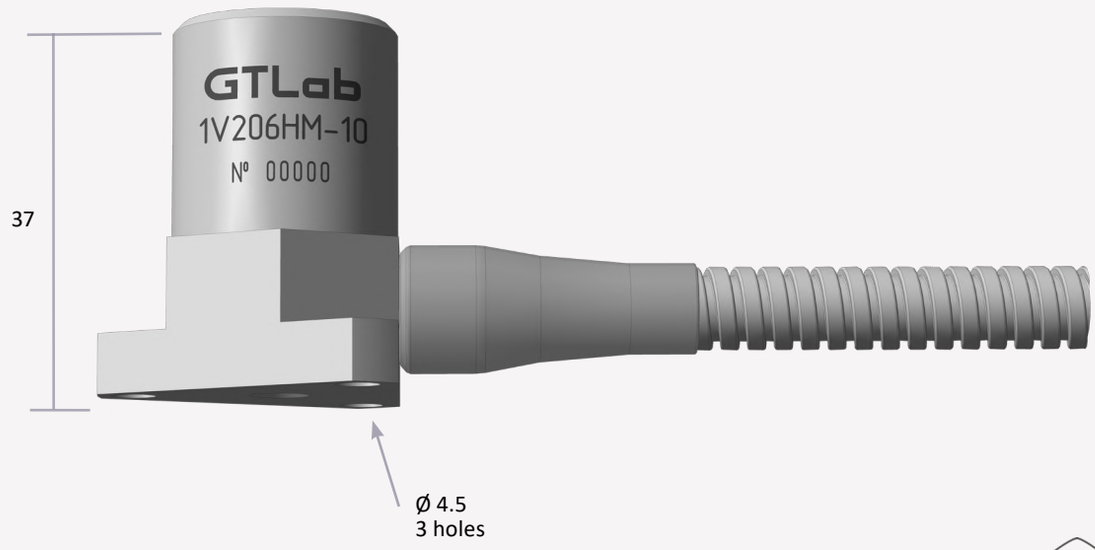
Parameter	1V203HM-10 / (T)	1V203HM-30 / (T)	1V203HM-100 / (T)
Sensitivity	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2		
Temperature range	– 55 ... + 125 °C – 40 ... + 125 °C (T)		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 15 000 Hz 0.5 … 9 000 Hz 1 … 4 000 Hz		
Resonant frequency	> 30 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2		
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Run mode setting time	4 s		
Conversion coefficient on temperature (±2 %)	10 mV/ °C (T)		
Constant output voltage level on temperature (temperature 0°C)	500 mV (T)		
Housing material	stainless steel		
Weight (without cable)	70 g		
Supplied accessories	screw M6-8g × 30		

1V203HT-XX (T)



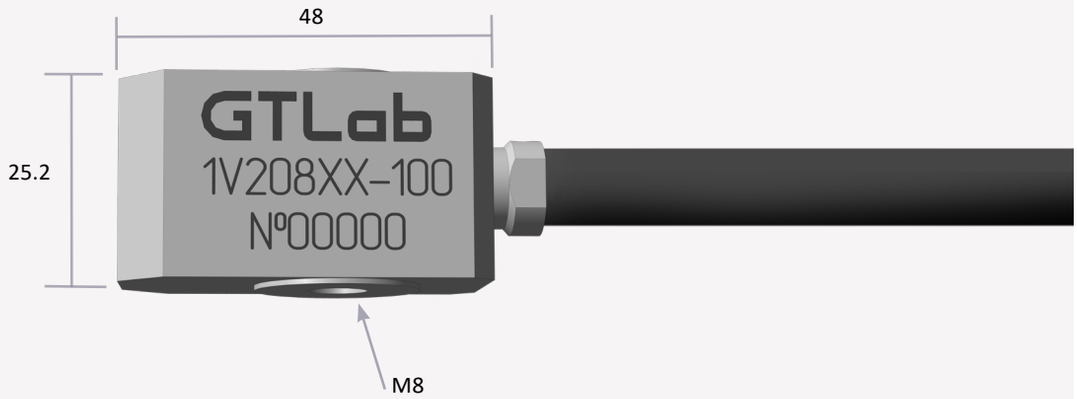
Parameter	1V203HT-10 (T)	1V203HT-30 (T)	1V203HT-100 (T)
Sensitivity	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2		
Temperature range	– 40 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.3 … 15 000Hz 0.5 … 9 000Hz 1 … 4 000Hz		
Resonant frequency	> 30 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2		
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Run mode setting time	4 s		
Conversion coefficient on temperature (±2 %)	10 mV/ °C		
Constant output voltage level on temperature (temperature 0°C)	500 mV		
Housing material	stainless steel		
Weight (without cable)	70 g		
Supplied accessories	cable 41T1A3 (as per customer's request) screw M6-8g × 30		

1V206HM-10



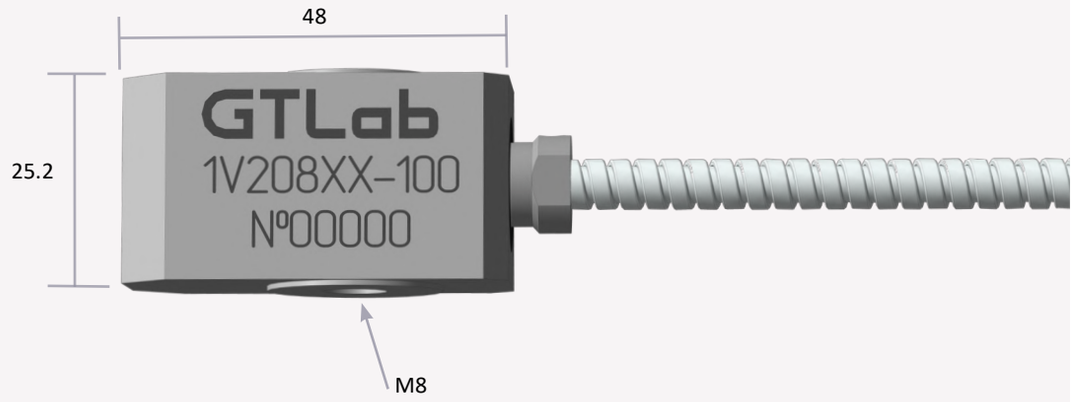
Parameter	1V206HM-10
Sensitivity	1 mV/(m·s^{-2})
Transverse sensitivity	< 5 %
Measurement range	± 4 000 m/s^2
Maximum shock limit (peak value)	± 5 000 m/s^2
Temperature range	– 60 … + 150 °C
Frequency range :	
▪ uneven frequency response ± 3 dB	0.4 … 12 000Hz
▪ uneven frequency response ± 1 dB	1 … 8 000Hz
▪ uneven frequency response ± 5%	2 … 5 000Hz
Resonant frequency	> 25 kHz
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.005 m/s^2
Output impedance	< 500 Ohm
Power:	
▪ voltage	+ (9 … 30) V
▪ current	2 … 5 mA
Constant output voltage level	5 … 6 V
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C
Run mode setting time	4 s
Housing material	stainless steel
Weight (without cable)	95 g
Supplied accessories	3 screws M4*14

1V208HA-100



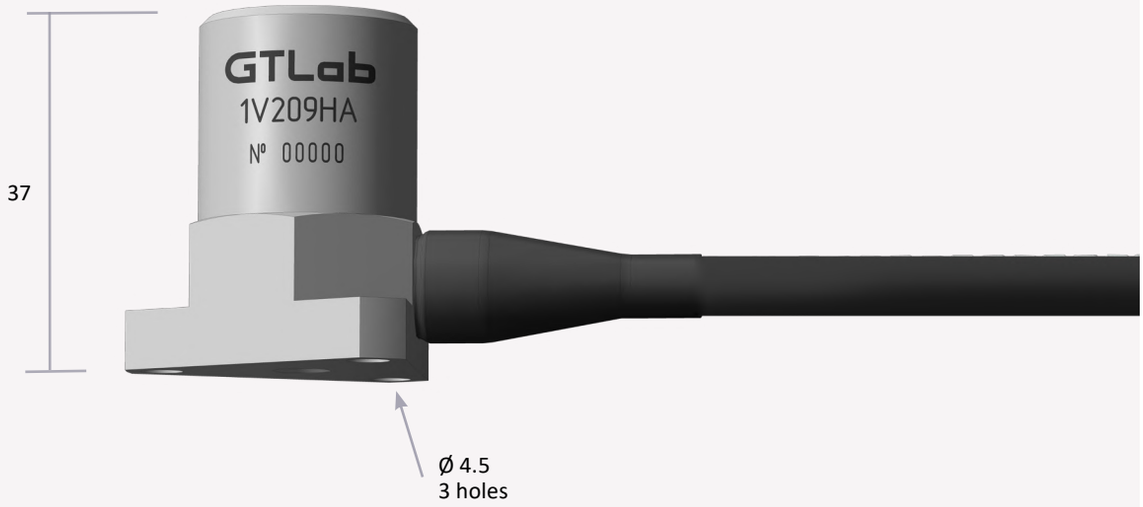
Parameter	1V208HA-100
Conversion factor ± 5%	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %
Maximum value of measured vibration acceleration namplitude	± 500 m/s^2
Maximum shock limit (peak value)	± 5 000 m/s^2
Temperature range	–50 ... +125 °C
Pyrosensitivity: from 4 Hz	0,01 g/ °C
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 1.5 … 12 000 Hz 2 … 10 000 Hz 4 … 7 000 Hz
Self-resonant frequency	30 kHz
Noise level, root mean square value(1 Hz ÷ 10 kHz)	<0,002 m/s^2
Output impedance	<50 Ohm
Power: ▪ voltage ▪ current	 - (18 … 30) V < 5 mA
Constant output voltage level	-10 … -14 V
Run mode setting time	4 s
Coefficient of the effect of the ambient temperature	± 0,2 %/ °C
Electric strength of insulation between the case and cable cores	500 V
Housing material	stainless steel
Weight (without cable)	160 g
Supplied accessories	screw M8 × 40

1V208HM-100

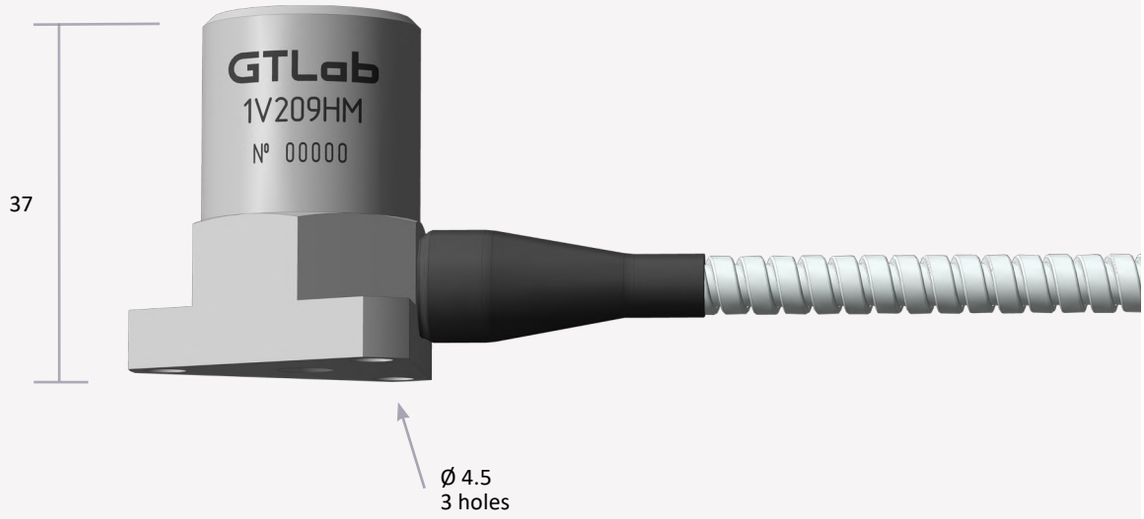


PARAMETER	1V208HM-100
Conversion factor ± 5%	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %
Maximum value of measured vibration acceleration amplitude	± 500 m/s^2
Maximum shock limit (peak value)	± 5 000 m/s^2
Temperature range	–50 ... +125 °C
Pyrosensitivity: from 4 Hz	0.01 g/ °C
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 1.5 … 12 000 Hz 2 … 10 000 Hz 4 … 7 000 Hz
Self-resonant frequency	30 kHz
Noise level, root mean square value(1 Hz ÷ 10 kHz)	< 0.002 m/s^2
Output impedance	< 50 Ohm
Power: ▪ voltage ▪ current	 - (18 … 30) V < 5 mA
Constant output voltage level	-10 … -14 V
Run mode setting time	4 s
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C
Electric strength of insulation between the case and cable cores	500 V
Housing material	stainless steel
Weight (without cable)	160 g
Supplied accessories	screw M8 × 40

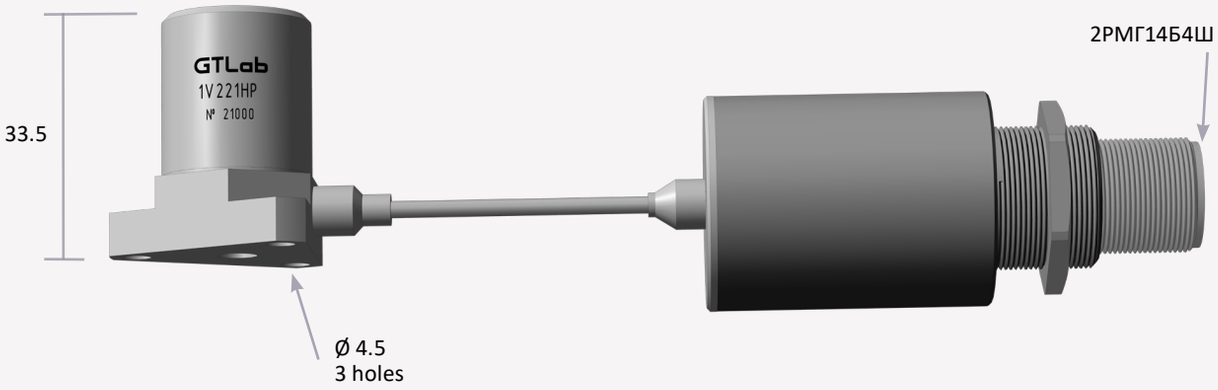
1V209HA-10



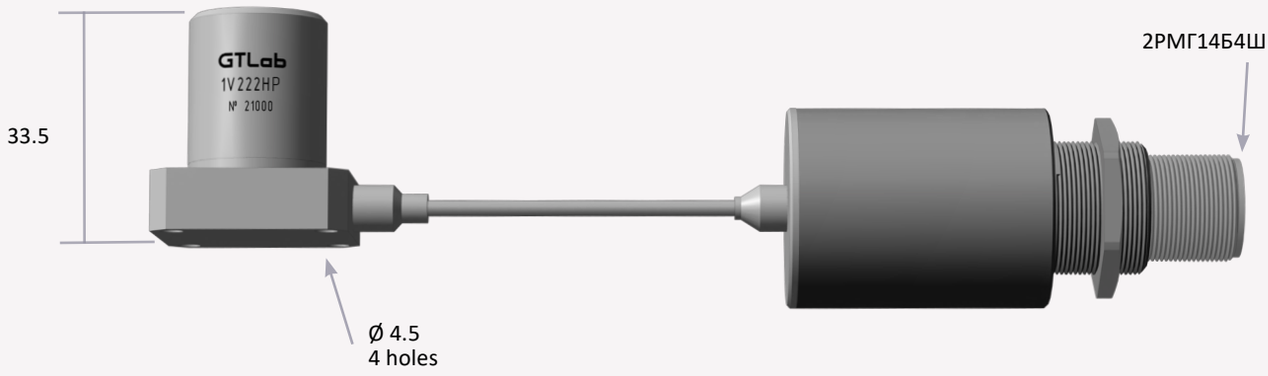
PARAMETER	1V209HA-10	1V209HA-30	1V209HA-100
Conversion factor	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Maximum value of measured vibration acceleration amplitude	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 5 000 m/s^2		
Temperature range	–55 ... +125 °C		
Pyrosensitivity: ▪ from 0,2 Hz ▪ from 3 Hz	 0.002 g/ °C 0.0005 g/ °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.2 … 12 000 Hz 0.5 … 8 000 Hz 1 … 5 000 Hz		
Self-resonant frequency	> 25 kHz		
Noise level, root mean square value(1 Hz ÷ 10 kHz)	0.005 m/s^2	0.002 m/s^2	
Output impedance	< 500 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Run mode setting time	4 s		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Electric strength of insulation between the case and cable cores	500 V		
Housing material	stainless steel		
Weight (without cable)	90 g		
Supplied accessories	3 screws M4 × 14		



PARAMETER	1V209HM-10	1V209HM-30	1V209HM-100
Conversion factor	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Maximum value of measured vibration acceleration amplitude	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 5 000 m/s^2		
Temperature range	–55 ... +125 °C		
Pyrosensitivity: ▪ от 0,2 Hz ▪ от 3 Hz	 0.002 g/ °C 0.0005 g/ °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.2 … 12 000 Hz 0.5 … 8 000 Hz 1 … 5 000 Hz		
Self-resonant frequency	> 25 kHz		
Noise level, root mean square value(1 Hz ÷ 10 kHz)	0.005 m/s^2	0.002 m/s^2	
Output impedance	< 500 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Run mode setting time	4 s		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Electric strength of insulation between the case and cable cores	500 V		
Housing material	stainless steel		
Weight (without cable)	90 g		
Supplied accessories	3 screws M4 × 14		

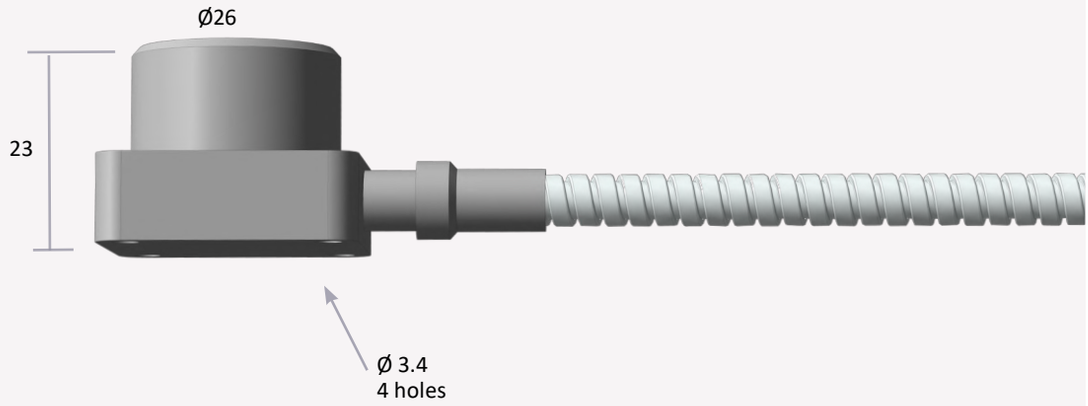


PARAMETER	1V221HP-10
Output acceleration	
Conversion factor ± 5%	1 mV/(m·s^{-2})
Maximum value of measured vibration acceleration amplitude	± 5 000 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2
Frequency range :	
▪ uneven frequency response ± 3 dB	10 … 8 000 Hz
▪ uneven frequency response ± 1 dB	20 … 5 000 Hz
▪ uneven frequency response ± 5%	40 … 3 000 Hz
Noise level, root mean square value(1 Hz ÷ 10 kHz)	0.15 m/s^2
Output speed	
Conversion factor ± 5%	4 mV/(m·s^{-2})
Range of measured speeds	0.1 … 1 270 mm/c
Frequency range :	
▪ uneven frequency response ± 3 dB	25 … 2 000 Hz
▪ uneven frequency response ± 5%	40 … 1 000 Hz
Noise level, root mean square value(1 Hz ÷ 10 kHz)	0.05 m/s^2
General requirements	
Self-resonant frequency	> 15 kHz
Transverse sensitivity	< 5 %
Temperature range	–60 … +400 °C
Temperature range electronic unit	–40 … +125 °C
Output impedance	< 100 Ohm
Power:	
▪ voltage	- (18 … 30) V
▪ current	< 10 mA
Constant output voltage level	8 … 13 V
Run mode setting time	4 s
Coefficient of the effect of the ambient temperature	± 0.05 %/ °C
Electric strength of insulation between the case and cable cores	500 V
Housing material	stainless steel
Weight (without cable)	95 g
Supplied accessories	3 screws DIN M4 × 12 A2



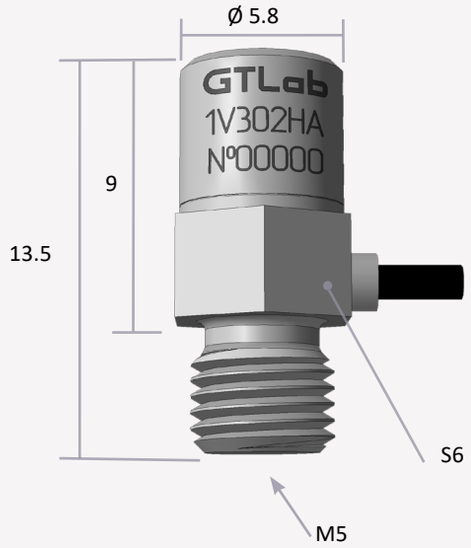
PARAMETER	1V222HP-10
Output acceleration	
Conversion factor ± 5%	1 mV/(m·s^{-2})
Maximum value of measured vibration acceleration amplitude	± 5 000 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 10 … 8 000 Hz 20 … 5 000 Hz 40 … 3 000 Hz
Noise level, root mean square value(1 Hz ÷ 10 kHz)	0.15 m/s^2
Output speed	
Conversion factor ± 5%	4 mV/(m·s^{-2})
Range of measured speeds	0.1 ... 1 270 mm/c
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 5%	 25 … 2 000 Hz 40 … 1 000 Hz
Noise level, root mean square value(1 Hz ÷ 10 kHz)	0.05 m/s^2
General requirements	
Self-resonant frequency	> 15 kHz
Transverse sensitivity	< 5 %
Temperature range	–60 ... +400 °C
Temperature range electronic unit	–40 ... +125 °C
Output impedance	< 100 Ohm
Power: ▪ voltage ▪ current	 - (18 … 30) V < 10 mA
Constant output voltage level	8 … 13 V
Run mode setting time	4 s
Coefficient of the effect of the ambient temperature	± 0.05 %/ °C
Electric strength of insulation between the case and cable cores	500 V
Housing material	stainless steel
Weight (without cable)	125g
Supplied accessories	4 screws DIN404 M3 × 16

1V251HM-100

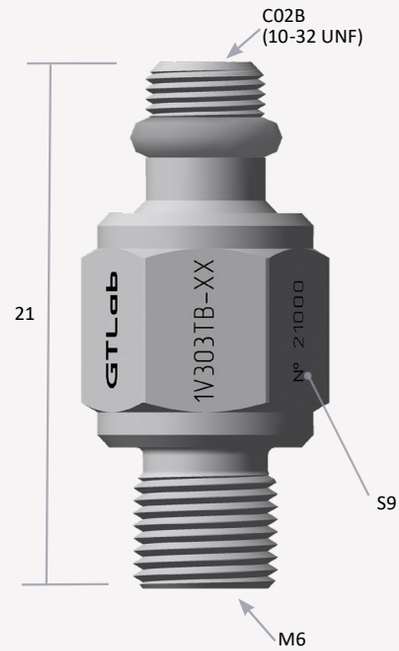


Parameter	1V251HM- 100
Sensitivity	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %
Measurement range	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2
Temperature range	–40 … +125 °C
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.5 … 2 400 Hz 1 … 800 Hz 2 … 500 Hz
Resonant frequency	> 5 kHz
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.01 m/s^2
Output impedance	< 500 Ohm
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA
Constant output voltage level	8 … 13 V
Coefficient of the effect of the ambient temperature	± 0.1 %/°C
Run mode setting time	4 s
Housing material	stainless steel
Weight (without cable)	90 g
Supplied accessories	4 screws DIN 404 M3 × 16

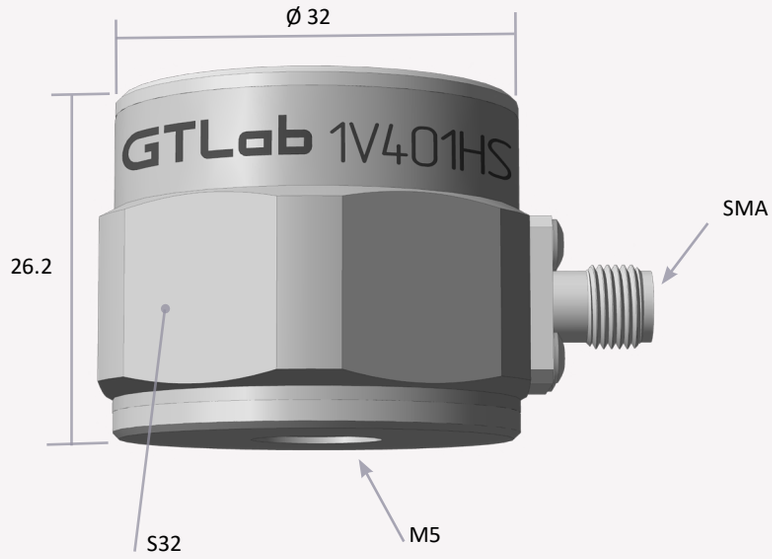
Parameter	1V301HA-1	1V301HA-3
Sensitivity	0.1 mV/(m·s^{-2})	0.3 mV/(m·s^{-2})
Transverse sensitivity	< 5 %	
Measurement range	± 50 000 m/s^2	± 16 000 m/s^2
Maximum shock limit (peak value)	± 100 000 m/s^2	± 30 000 m/s^2
Temperature range	– 55 … + 125 °C	
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 5 … 38 000Hz 10… 25 000Hz 20 … 10 000Hz	 5 … 27 000Hz 10… 18 000Hz 20 … 12 000Hz
Resonant frequency	> 75 kHz	> 55 kHz
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.02 m/s^2	
Output impedance	< 100 Ohm	
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA	
Constant output voltage level	8 … 13 V	
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C	
Run mode setting time	4 s	
Housing material	stainless steel	
Weight (without cable)	2 g	



Parameter	1V302HA-1	1V302HA-2
Sensitivity	0.1 mV/(m·s^{-2})	0.2 mV/(m·s^{-2})
Transverse sensitivity	< 5 %	
Measurement range	± 50 000 m/s^2	± 25 000 m/s^2
Maximum shock limit (peak value)	± 150 000 m/s^2	
Temperature range	– 55 … + 125 °C	
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 5 … 38 000Hz 10… 25 000Hz 20 … 15 000Hz	 5 … 35 000Hz 10… 23 000Hz 20 … 14 000Hz
Resonant frequency	> 75 kHz	> 70 kHz
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.02 m/s^2	
Output impedance	< 100 Ohm	
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA	
Constant output voltage level	8 … 13 V	
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C	
Run mode setting time	4 s	
Housing material	stainless steel	
Weight (without cable)	2 g	

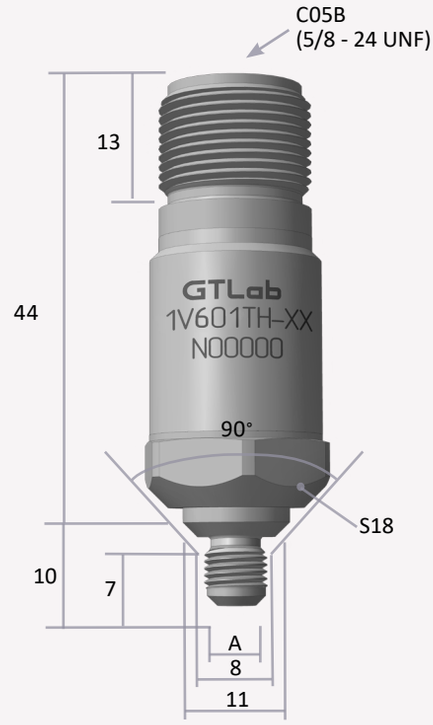


Parameter	1V303TB-0.5	1V303TB-1	1V303TB-2
Sensitivity	0.05 mV/(m·s^{-2})	0.1 mV/(m·s^{-2})	0.2 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 100 000 m/s^2	± 50 000 m/s^2	± 25 000 m/s^2
Maximum shock limit (peak value)	± 150 000 m/s^2		
Temperature range	– 55 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 10 … 38 000 Hz 20 … 25 000 Hz 40 … 10 000 Hz	 5 … 27 000 Hz 10 … 18 000 Hz 20 … 12 000 Hz	
Resonant frequency	> 75 kHz	> 55 kHz	
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.02 m/s^2		
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Run mode setting time	4 s		
Housing material	stainless steel		
Weight (without cable)	2 g		
Supplied accessories	cable 02B1D1 (as per the customer's request)		

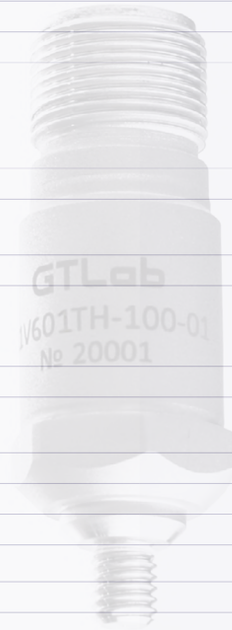


Parameter	1V401HS-500	1V401HS-1000
Sensitivity	50 mV/(m·s^{-2})	100 mV/(m·s^{-2})
Transverse sensitivity	< 5 %	
Measurement range	± 100 m/s^2	± 50 m/s^2
Maximum shock limit (peak value)	± 1 000 m/s^2	
Temperature range	– 55 … + 125 °C	
Sensitivity to variable temperature cutoff frequency of HPF 0,2Hz 3Hz	 0.002 g/°C 0.0005 g/°C	
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.04 … 4 500 Hz 0.1 … 3 000 Hz 0.2 … 1 800 Hz	 0.04 … 3 000 Hz 0.1 … 2 000 Hz 0.2 … 1 200 Hz
Resonant frequency	> 9 kHz	> 6 kHz
Noise level, root mean square value (0,1 … 2 000Hz)	< 0.0001 m/s^2	
Output impedance	< 100 Ohm	
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA	
Constant output voltage level	8 … 13 V	
Coefficient of the effect of the ambient temperature	± 0.2 %/°C	
Run mode setting time	10 s	
Housing material	stainless steel	
Weight (without cable)	160 g	
Supplied accessories	cable 03S1D1 (as per the customer's request) pin P0505	

1V601TH-100-XX



Parameter	1V601TH-100-01	1V601TH-100-02	1V601TH-100-03
Conversion factor (± 10%)	10 mV/(m·s^{-2})		
Transverse sensitivity	< 5 %		
Measurement range	± 600 m/s^2		
Measuring range of shock pulses	–20 … +75 dB		
Temperature range	– 55 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 1 … 10 000 Hz 2 … 6 000 Hz 4 … 5 000 Hz		
Self-resonant frequency	28 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2		
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/°C		
Run mode setting time	2 s		
Housing material	stainless steel		
Explosion-proofness	OExiaIICT4		
Protection against external influences	IP67		
Weight (without cable)	50 g		
Supplied accessories	cable 03S1D1 (as per the customer's request)		
Thread size A	M6	M8	UNF 5/16
Mounting torque	4 H*m	10 H*m	



1V601TA-100-XX

Parameter	1V601TA-100-01	1V601TA-100-02	1V601TA-100-03
Conversion factor (± 10%)	10 mV/(m·s^{-2})		
Transverse sensitivity	< 5 %		
Measurement range	± 600 m/s^2		
Measuring range of shock pulses	–20 … +75 dB		
Temperature range	– 55 … + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 1 … 10 000 Hz 2 … 6 000 Hz 4 … 5 000 Hz		
Self-resonant frequency	28 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2		
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/°C		
Run mode setting time	2 s		
Housing material	stainless steel		
Explosion-proofness	OExiaIICT4		
Protection against external influences	IP67		
Weight (without cable)	50 g		
Supplied accessories	cable 03S1D1 (as per the customer's request)		
Thread size A	M6	M8	UNF 5/16
Mounting torque	4 H*m	10 H*m	

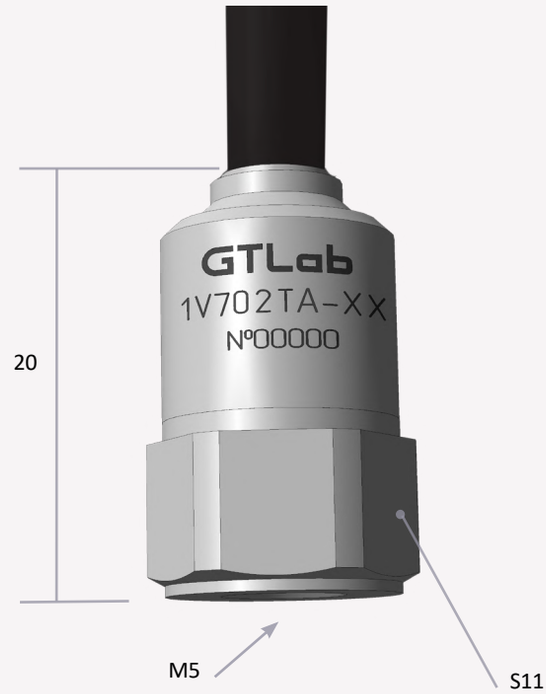
1V601TM-100-XX

Parameter	1V601TM-100-01	1V601TM-100-02	1V601TM-100-03
Conversion factor (± 10%)	10 mV/(m·s^{-2})		
Transverse sensitivity	< 5 %		
Measurement range	± 600 m/s^2		
Measuring range of shock pulses	–20 ... +75 dB		
Temperature range	– 55 ... + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 1 ... 10 000 Hz 2 ... 6 000 Hz 4 ... 5 000 Hz		
Self-resonant frequency	28 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2		
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 ... 30) V 2 ... 20 mA		
Constant output voltage level	8 ... 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/°C		
Run mode setting time	2 s		
Housing material	stainless steel		
Explosion-proofness	OExiaIICT4		
Protection against external influences	IP67		
Weight (without cable)	50 g		
Supplied accessories	cable 03S1D1 (as per the customer's request)		
Thread size A	M6	M8	UNF 5/16
Mounting torque	4 H*m	10 H*m	

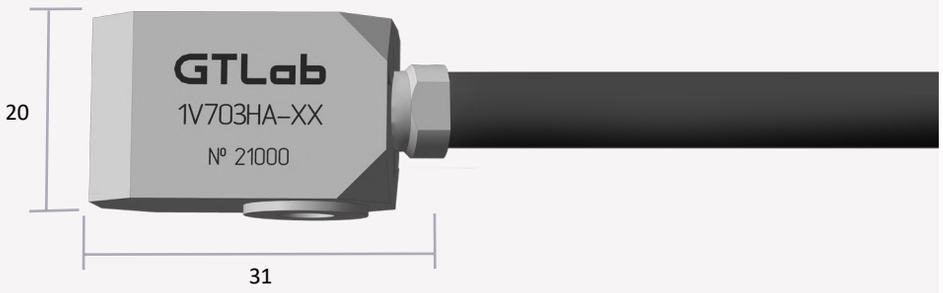
1V701TA-XX

Parameter	1V701TA-100	1V701TA-500	1V701TA-1000
Sensitivity	10 mV/(m·s^{-2})	50 mV/(m·s^{-2})	100 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 500 m/s^2	± 100 m/s^2	± 50 m/s^2
Maximum shock limit (peak value)	± 25 000 m/s^2		
Temperature range	– 55 ... + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.5 ... 8 000 Hz 1 ... 5 000 Hz 2 ... 4 000 Hz		
Resonant frequency	> 36 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.0005 m/s^2	< 0.0004 m/s^2	< 0.0003 m/s^2
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 ... 30) V 2 ... 20 mA		
Constant output voltage level	8 ... 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Run mode setting time	4 s		
Underwater measurements to depth	150 m		
Housing material	stainless steel		
Weight (without cable)	50 g		
Supplied accessories	cable 03B1D1 (as per the customer's request) pin P0505		

1V702TA-XX

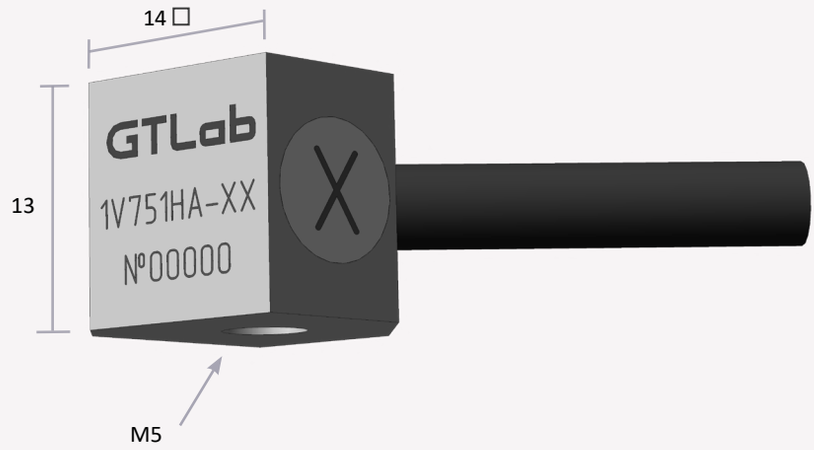


Parameter	1V702TA-10	1V702TA-100	1V702TA-500
Sensitivity	1 mV/(m·s^{-2})	10 mV/(m·s^{-2})	50 mV/(m·s^{-2})
Transverse sensitivity	< 5 %		
Measurement range	± 5 000 m/s^2	± 500 m/s^2	± 100 m/s^2
Maximum shock limit (peak value)	± 100 000 m/s^2		
Temperature range	– 55 ... + 125 °C		
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.5 … 18 000 Hz 1 … 12 000 Hz 2 … 7 000 Hz		
Resonant frequency	> 36 kHz		
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.005 m/s^2	< 0.0035 m/s^2	< 0.002 m/s^2
Output impedance	< 100 Ohm		
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA		
Constant output voltage level	8 … 13 V		
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C		
Run mode setting time	4 s		
Underwater measurements to depth	150 m		
Housing material	stainless steel		
Weight (without cable)	15 g		
Supplied accessories	cable 03B1D1 (as per the customer's request) pin P0505		



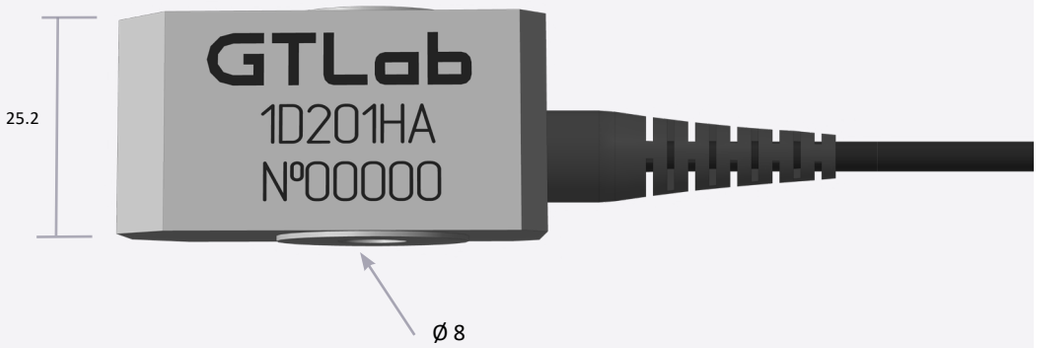
Parameter	1V703HA-30	1V703HA-100
Sensitivity	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %	
Measurement range	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2	
Temperature range	– 55 ... + 125 °C	
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.5 ... 15 000 Hz 1 ... 9 000 Hz 2 ...6 000 Hz	
Resonant frequency	> 30 kHz	
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.002 m/s^2	
Output impedance	< 100 Ohm	
Power: ▪ voltage ▪ current	 + (18 ... 30) V 2 ... 20 mA	
Constant output voltage level	8 ... 13 V	
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C	
Run mode setting time	4 s	
Underwater measurements to depth	150 m	
Housing material	stainless steel	
Weight (without cable)	90 g	
Supplied accessories	screw M6-8g × 30	

1V751HA-XX



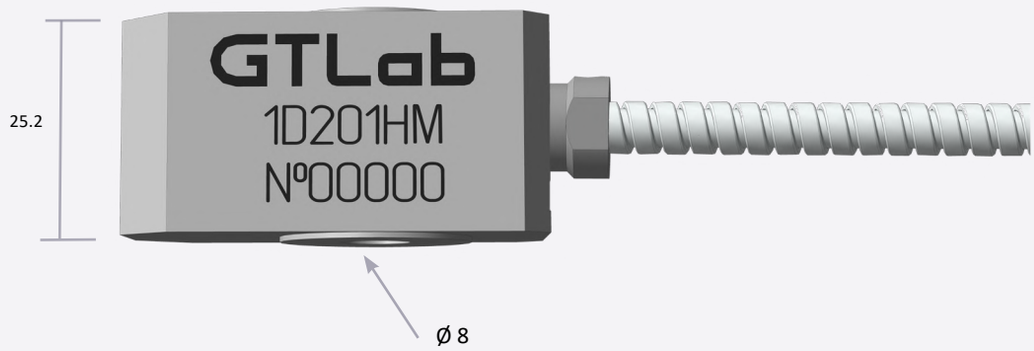
Parameter	1V751HA-1	1V751HA-10	1V751HA-30	1V751HA-100
Sensitivity	0.1 mV/(m·s^{-2})	1 mV/(m·s^{-2})	3 mV/(m·s^{-2})	10 mV/(m·s^{-2})
Transverse sensitivity	< 5 %			
Measurement range	± 50 000 m/s^2	± 5 000 m/s^2	± 1 600 m/s^2	± 500 m/s^2
Maximum shock limit (peak value)	± 10 000 m/s^2			
Temperature range	– 55 … + 125 °C			
Frequency range : ▪ uneven frequency response ± 3 dB ▪ uneven frequency response ± 1 dB ▪ uneven frequency response ± 5%	 0.2 … 22 500 Hz 0.5 … 15 000 Hz 1 … 9 000 Hz			
Resonant frequency	> 45 kHz			
Noise level, root mean square value (1 Hz ÷ 10 kHz)	< 0.05 m/s^2	< 0.01 m/s^2	< 0.009 m/s^2	< 0.008 m/s^2
Output impedance	< 100 Ohm			
Power: ▪ voltage ▪ current	 + (18 … 30) V 2 … 20 mA			
Constant output voltage level	8 … 13 V			
Coefficient of the effect of the ambient temperature	± 0.2 %/ °C			
Run mode setting time	4 s			
Underwater measurements to depth	150 m			
Housing material	stainless steel			
Weight (without cable)	16 g			
Resistance to	oil, fuels and lubricants, solvents			
Supplied accessories	screw P0505			

Modbus
RS485



Parameter	1D201HA
Range of measured amplitudes vibration accelerations	0 ... 100 m/s² 0 ... 200 m/s² 0 ... 400 m/s² (user configurable)
Measurement Mode	vibration acceleration, vibration velocity, vibration displacement
Detector	magnitude ,Peak, RMS
Measured temperature range by integrated sensor (± 2 °C)	- 40 ... +125°C
high-pass filter	2, 3, 5, 10 Hz (user configurable)
low-pass filter	200,500,1000 Hz (user configurable)
Frequency range uneven frequency response ± 3 dB	2 ... 1 000 Hz 3 ... 1 000 Hz 5 ... 1 000 Hz 10 ...1 000 Hz (user configurable)
Maximum impact (peak)	± 1 000 m/s²
Transverse sensitivity	< 5%
Temperature range	- 40 ... + 125°C
Output	RS-485, protocol Modbus RTU
Supply voltage	10 ... 24 В
Number of measuring axes	3 (x, y, z)
Housing material	stainless steel
Weight	160g
Supplied accessories	screw M8 × 35

Modbus
RS485



Parameter	1D201HM
Range of measured amplitudes vibration accelerations	0 ... 100 m/s² 0 ... 200 m/s² 0 ... 400 m/s² (user configurable)
Measurement Mode	vibration acceleration, vibration velocity, vibration displacement
Detector	magnitude ,Peak, RMS
Measured temperature range by integrated sensor (± 2 °C)	- 40 ... +125°C
high-pass filter	2, 3, 5, 10 Hz (user configurable)
low-pass filter	200,500,1000 Hz (user configurable)
Frequency range uneven frequency response ± 3 dB	2 ... 1 000 Hz 3 ... 1 000 Hz 5 ... 1 000 Hz 10 ...1 000 Hz (user configurable)
Maximum impact (peak)	± 1 000 m/s²
Transverse sensitivity	< 5%
Temperature range	- 40 ... + 125°C
Output	RS-485, protocol Modbus RTU
Supply voltage	10 ... 24 В
Number of measuring axes	3 (x, y, z)
Housing material	stainless steel
Weight	160g
Supplied accessories	screw M8 × 35

Modbus
RS485

Parameter	1D201HN
Range of measured amplitudes vibration accelerations	0 ... 100 m/s² 0 ... 200 m/s² 0 ... 400 m/s² (user configurable)
Measurement Mode	vibration acceleration, vibration velocity, vibration displacement
Detector	magnitude ,Peak, RMS
Measured temperature range by integrated sensor (± 2 °C)	- 40 ... +85°C
High-pass filter	2, 3, 5, 10 Hz (user configurable)
Low-pass filter	200,500,1000 Hz (user configurable)
Frequency range uneven frequency response ± 3 dB	2 ... 1 000 Hz 3 ... 1 000 Hz 5 ... 1 000 Hz 10 ... 1 000 Hz (user configurable)
Maximum impact (peak)	± 1 000 m/s²
Transverse sensitivity	< 5%
Temperature range	- 40 ... +85°C
Output	RS-485, protocolModbus RTU
Supply voltage ± 10 %	+ (5 ... 12) V
Consumption current	≤ 20 mA
Number of measuring axes	3 (x, y, z)
Housing material	stainless steel
Weight	160 g
Supplied accessories	cable 55N1A4 (as per customer's request) screw M8 × 35

Modbus
RS485

PARAMETER	1D202TA
Range of measured amplitudes vibration accelerations	0 ... 100 m/s² 0 ... 200 m/s² 0 ... 400 m/s² (user configurable)
Measurement Mode	vibration acceleration, vibration velocity, vibration displacement
Detector	magnitude ,Peak, RMS
Measured temperature range by integrated sensor (± 2 °C)	- 40 ... +85°C
High-pass filter	2, 3, 5, 10 Hz (user configurable)
Low-pass filter	200, 500, 1000 Hz (user configurable)
Frequency range uneven frequency response ± 3 dB	2 ... 1 000 Hz 3 ... 1 000 Hz 5 ... 1 000 Hz 10 ... 1 000 Hz (user configurable)
Maximum impact (peak)	± 1 000 m/s²
Transverse sensitivity	< 5%
Temperature range	- 40 ... + 85°C
Output	RS-485, protocolModbus RTU
Supply voltage ± 10 %	+ (5 ... 12) V
Consumption current	≤ 20 mA
Number of measuring axes	3 (x, y, z)
Housing material	stainless steel
Weight	160 g
Supplied accessories	screw P0606

Modbus
RS485

PARAMETER	1D202TM
Range of measured amplitudes vibration accelerations	0 ... 100 m/s² 0 ... 200 m/s² 0 ... 400 m/s² (user configurable)
Measurement Mode	vibration acceleration, vibration velocity, vibration displacement
Detector	magnitude ,Peak, RMS
Measured temperature range by integrated sensor (± 2 °C)	- 40 ... +85°C
High-pass filter	2, 3, 5, 10 Hz (user configurable)
Low-pass filter	200, 500, 1000 Hz (user configurable)
Frequency range uneven frequency response ± 3 dB	2 ... 1 000 Hz 3 ... 1 000 Hz 5 ... 1 000 Hz 10 ... 1 000 Hz (user configurable)
Maximum impact (peak)	± 1 000 m/s²
Transverse sensitivity	< 5%
Temperature range	- 40 ... + 85°C
Output	RS-485, protocolModbus RTU
Supply voltage ± 10 %	+ (5 ... 12) V
Consumption current	≤ 20 mA
Number of measuring axes	3 (x, y, z)
Housing material	stainless steel
Weight	160 g
Supplied accessories	screw P0606

Modbus
RS485

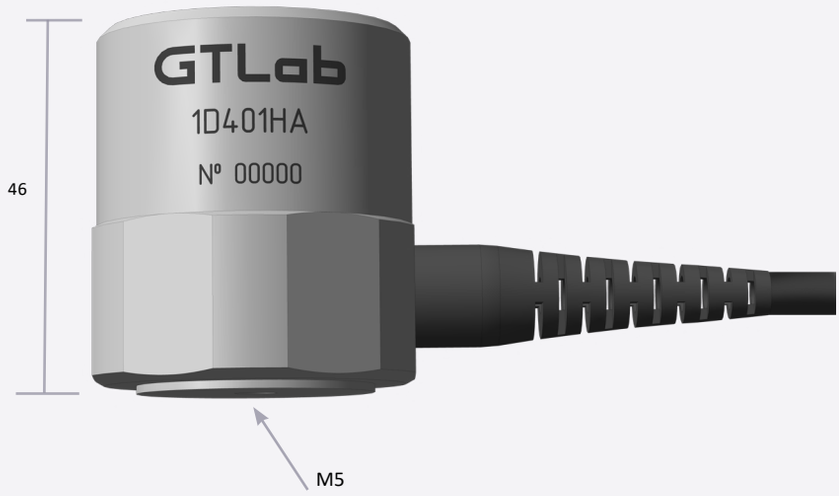
PARAMETER	1D202TN
Range of measured amplitudes vibration accelerations	0 ... 100 m/s² 0 ... 200 m/s² 0 ... 400 m/s² (user configurable)
Measurement Mode	vibration acceleration, vibration velocity, vibration displacement
Detector	magnitude ,Peak, RMS
Measured temperature range by integrated sensor (± 2 °C)	- 40 ... +85°C
High-pass filter	2, 3, 5, 10 Hz (user configurable)
Low-pass filter	200, 500, 1000 Hz (user configurable)
Frequency range uneven frequency response ± 3 dB	2 ... 1 000 Hz 3 ... 1 000 Hz 5 ... 1 000 Hz 10 ... 1 000 Hz (user configurable)
Maximum impact (peak)	± 1 000 m/s²
Transverse sensitivity	< 5%
Temperature range	- 40 ... +85°C
Output	RS-485, protocolModbus RTU
Supply voltage ± 10 %	+ (5 ... 12) V
Consumption current	≤ 20 mA
Number of measuring axes	3 (x, y, z)
Housing material	stainless steel
Weight	160 g
Supplied accessories	cable 55N1A4 (determined by the customer's request) screw P0606

1D401HC

Parameter	1V401HC
Conversion factor	10 / 20 / 50 / 100 mV/(m·s^{-2})
Measurement range	10 / 20 / 50 / 100 m/s^2
Maximum shock limit (peak value)	± 1 000 m/s^2
Temperature range	– 20 … + 70 °C
Frequency range (uneven frequency response ± 3 dB)	0.5 … 5 000 Hz
Output interface	USB 2.0 full speed
Number of ADC bits	24 bit
Input sampling rate	48 000 Hz
Noise level, root mean square value (1 … 5 000 Hz)	< 0.02 m/s^2
Time of establishment of the operating mode	10 s
Power voltage	+ 5 V
current consumption	80 mA
Housing material	stainless steel
Connector type	C03B
Weight (without cable)	250 g
Supplied accessories	cable73C1U1 pin P0505 GTL software

GTL Software Features

- oscilloscope;
- spectrum analyzer;
- amplitude-phase frequency response;
- modal analysis;
- AC voltmeter;
- DC voltmeter;
- recording and sound;
- cardioscreening;
- flexible digital filters LPF, HPF, bandpass, notch;
- data recording to a personal computer running Windows XP-/-7/8/10.



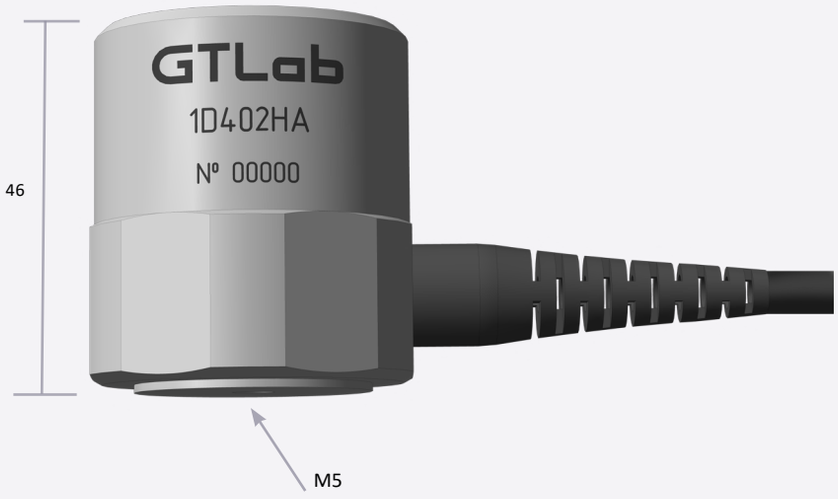
USB

Parameter	1V401HA
Conversion factor	10 / 20 / 50 / 100 mV/(m·s^{-2})
Measurement range	10 / 20 / 50 / 100 m/s^2
Maximum shock limit (peak value)	± 1 000 m/s^2
Temperature range	– 20 … + 70 °C
Frequency range (uneven frequency response ± 3 dB)	0.5 … 5 000 Hz
Output interface	USB 2.0 full speed
Number of ADC bits	24 bit
Input sampling rate	48 000 Hz
Noise level, root mean square value (1 … 5 000Hz)	< 0.02 m/s^2
Time of establishment of the operating mode	10 s
Power voltage	+ 5 V
current consumption	80 mA
Housing material	stainless steel
Connector type	USB A (m)
Weight (without cable)	250 g
Supplied accessories	cable73C1U1 pin P0505 GTL software

GTL Software Features

- oscilloscope;
- spectrum analyzer;
- amplitude-phase frequency response;
- modal analysis;
- AC voltmeter;
- DC voltmeter;
- recording and sound;
- cardioscreening;
- flexible digital filters LPF, HPF, bandpass, notch;
- data recording to a personal computer running Windows XP / 7/8/10.

1D402HA



USB

Parameter	1V402HA
Frequency range (uneven frequency response ± 3 dB)	0.5 ... 5 000 Hz
Temperature range	– 20 ... + 70 °C
Power voltage	+ 5 V
current consumption	80 mA
Housing material	stainless steel
Connector type	USB A (m)
Weight (without cable)	250 g
Supplied accessories	pin P0505 GTL software

1D402HA accelerometer is designed for non-invasive vibroacoustic cardiovascular screening

VIBRATION SPEED TRANSDUCERS

VIBRATION SPEED TRANSDUCERS

Vibration transducers of speed with a standard current output 4… 20 mA. Designed to measure the RMS vibration velocity of industrial equipment in conditions of strong industrial interference. The increased noise immunity (including protection against the pyroelectric effect) is ensured by the design features of the shear sensitive element, the board, the screen and its electrical isolation from the object of study.

With current output

Demountable

2A201TH

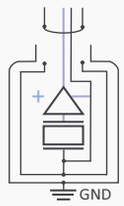
2A202TH

2A203HH

2A204HH

2A205HH

2A206HH



One-piece

2A201TA

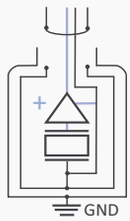
2A202TA

2A203HA

2A204HA

2A205HA

2A206HA



One-piece in metal hose

2A201TM

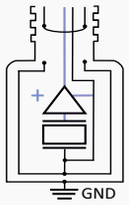
2A202TM

2A203HM

2A204HM

2A205HM

2A206HM

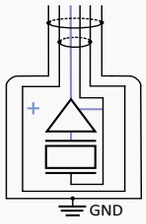


With voltage output

Demountable

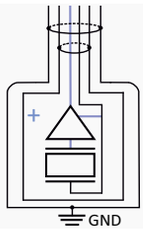
2V201HT

2V202HT



One-piece

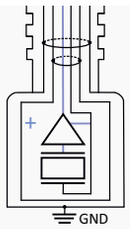
2V202HA



One-piece in metal hose

2V201HM

2V202HM



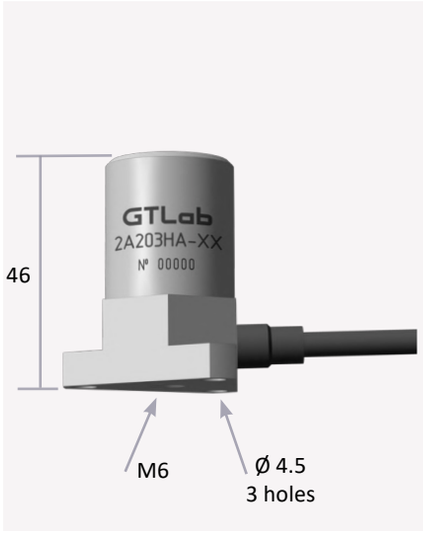
VIBRATION SPEED TRANSDUCERS WITH CURRENT OUTPUT

2A201TA-XX / (T), 2A202TA-XX / (T)

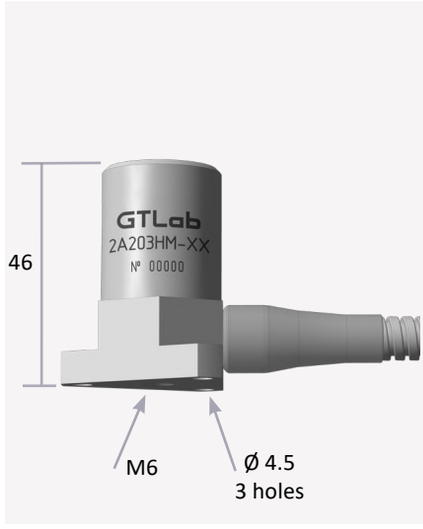
2A201TM-XX / (T), 2A202TM-XX / (T)

2A201TH-XX / (T), 2A202TH-XX / (T)

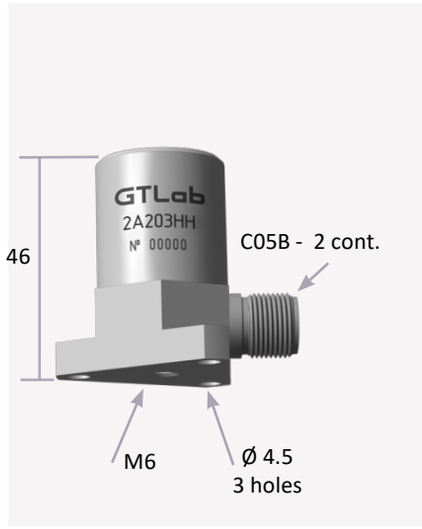
2A203HA-XX / (T), 2A204HA-XX / (T)



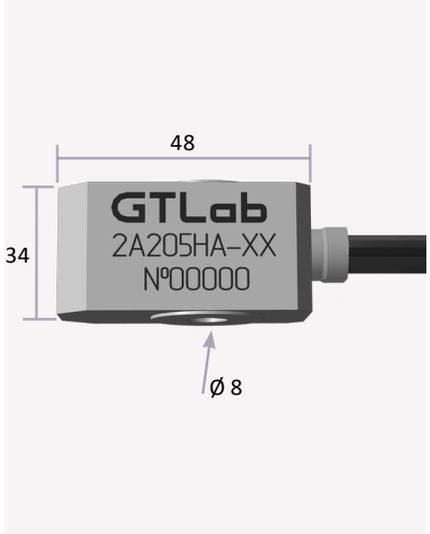
2A203HM-XX / (T), 2A204HM-XX / (T)



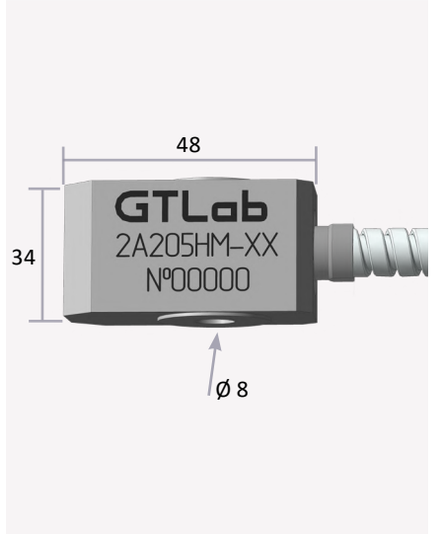
2A203HH-XX / (T), 2A204HH-XX / (T)



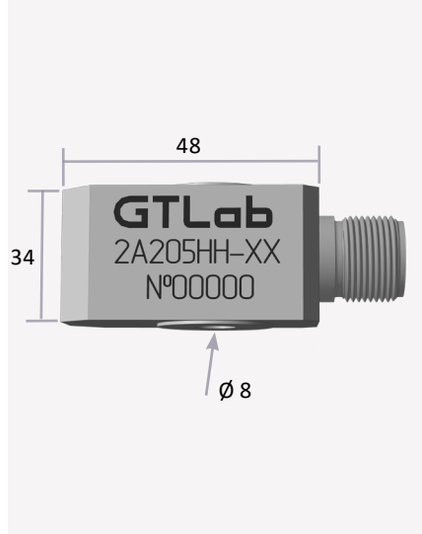
2A205HA-XX / (T), 2A206HA-XX / (T)



2A205HM-XX/ (T), 2A206HM-XX / (T)



2A205HH-XX / (T), 2A206HH-XX / (T)



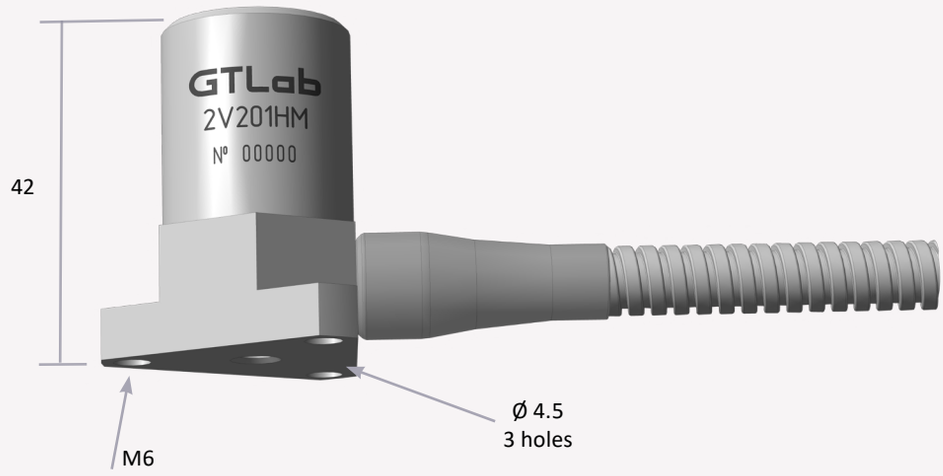
VIBRATION SPEED TRANSDUCERS WITH CURRENT OUTPUT (CONTINUED)

Table 1

PARAMETER	2A20XXX-10 2A20XXX-10(T)	2A20XXX-20 2A20XXX-20(T)	2A20XXX-40 2A20XXX-40(T)	2A20XXX-80 2A20XXX-80(T)	2A20XXX-160 2A20XXX-160(T)	2A20XXX-200 2A20XXX-200(T)
Sensitivity by vibration speed to current signal 4 … 20 mA, (± 10 %)	1,6 mA·s/mm	0,8 mA·s/mm	0,4 mA·s/mm	0,2 mA·s/mm	0,1 mA·s/mm	0,08 mA·s/mm
Range of measured vibration velocity, RMS	10 mm/s	20 mm/s	40 mm/s	80 mm/s	160 mm/s	200 mm/s
Frequency range of the measured vibration speed	according to table 2 - A					
Variation in frequency response relative to the base frequency of 159.15 Hz, within	from 3 to minus 12.5 %					
Transverse sensitivity	< 5 %					
Temperature range ▪ standard ▪ (T)	 –40 … +85 °C –40 … +125 °C					
Coefficient of the effect of the ambient temperature	± 0,2 %/°C					
Power from an external DC power source	+ (10 ... 24) V					
Run mode setting time	< 4 s					
Housing material	stainless steel					
Explosion-proofness	1Ex d IIC T6...T4 Gb, 0Ex ia IIC T6...T4 Ga					
Protection against external influences	IP67					
Weight (without cable)	according to table 2 - B					
Supplied accessories	according to table 2 - C					

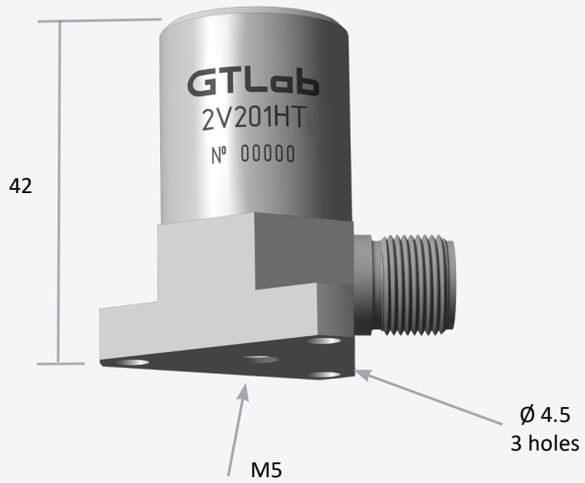
Table 2

PARAMETER	A	B	C
2A201TA-XX 2A201TM-XX 2A201TH-XX	10 … 1 000 Hz	60 g	pin P0606 cable **anti-vibration** 41H1A3 (-TH, -HH)
2A202TA-XX 2A202TM-XX 2A202TH-XX	2 … 1 000 Hz		
2A203HA-XX 2A203HM-XX 2A203HH-XX	10 … 1 000 Hz	145 g	3 screw M4 × 12 cable **anti-vibration**41H1A3 (-TH, -HH)
2A204HA-XX 2A204HM-XX 2A204HH-XX	2 … 1 000 Hz		
2A205HA-XX 2A205HM-XX 2A205HH-XX	10 … 1 000 Hz	330 g	screw M8 × 40 cable **anti-vibration**41H1A3 (-TH, -HH)
2A206HA-XX 2A206HM-XX 2A206HH-XX	2 … 1 000 Hz		

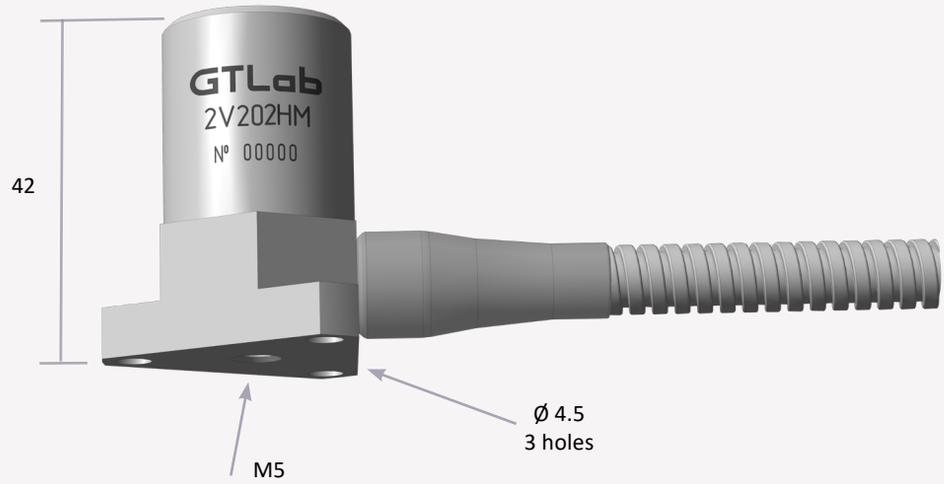


Parameter	2V201HM
Sensitivity at the base frequency 80 Hz	2.5 ± 0.25 mV/mm/s
Range of measured speeds	0.1 ...500 mm/s
Frequency range of the measured vibration speed	2 ... 3 000 Hz
Unevenness of the frequency response relative to the value at the base frequency 80 Hz: ▪ in frequency range 2 ... 3 000Hz ▪ in frequency range 5 ... 2 000Hz	 ± 1 dB 5 %
Transverse sensitivity	< 5 %
Temperature range	– 50 … + 150°C
Coefficient of the effect of the ambient temperature	± 0.1 %/°C
SCR level of own noise, given to the input	< 0.04 mm/s
Maximum output voltage with a non-linear distortion coefficient of no more than 5 %	± 5 V
Output impedance	< 100 Ohm
Power mode: ▪ external DC voltage source ▪ current	 + (20 ... 30) V < (7 ... 9) mA
Constant output voltage level	+ (7 ... 15) V
Housing material	stainless steel
Explosion-proofness	1Ex d IIC T6...T4 Gb, 0Ex ia IIC T6...T4 Ga
Weight (without cable)	120 g
Supplied accessories	3 screws DIN 404 M4*12 A2

2V201HT

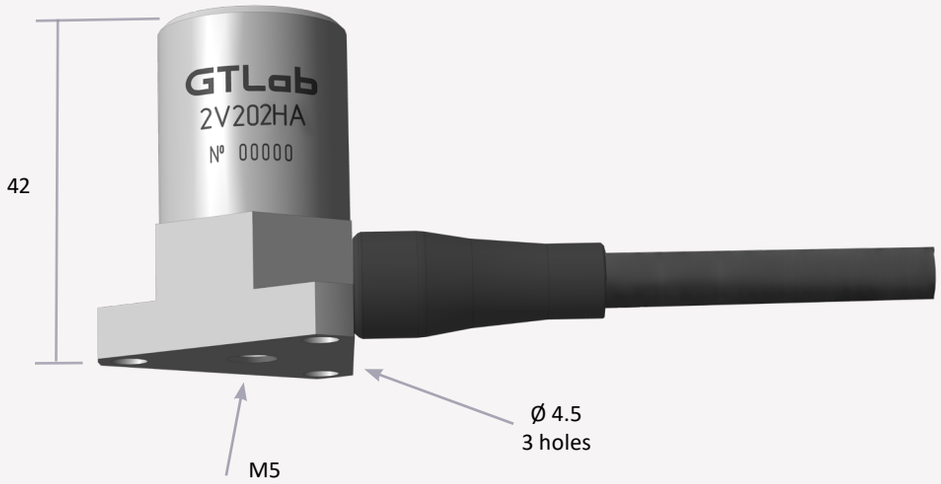


PARAMETER	2V201HT
Conversion factor at basic frequency 80 Hz	2.5 ± 0.25 mV/mm/s
Vibration velocity measuring range	0.1 ...1 500 mm/s
Frequency range of the measured vibration speed	2 ... 3 000 Hz
Unevenness of the frequency response relative to the value at the base frequency 80 Hz: ▪ in frequency range 2 ... 3 000 Hz ▪ in frequency range 5 ... 2 000 Hz	 ± 1 dB 5 %
Transverse sensitivity	< 5 %
Temperature range	–50 ... +150°C
Coefficient of the effect of the ambient temperature	± 0.1 %/°C
RMS level of intrinsic noise, reduced to the input	< 0.04 mm/s
Maximum output voltage with a nonlinear distortion factor of no more than 5%	± 5 V
Output impedance	< 100 Ohm
Power: ▪ external source of voltage dc ▪ current	 + (20 ... 30) V < (7 ... 9) mA
Constant output voltage level	+ (7 ... 15) V
Explosion-proofness	1Ex d IIC T6...T4 Gb, 0Ex ia IIC T6...T4 Ga
Housing material	stainless steel
Weight (without cable)	120 g
Supplied accessories	cable 32T1AA4 (as per customer's request) 3 screws DIN 404 M4 × 12 A2

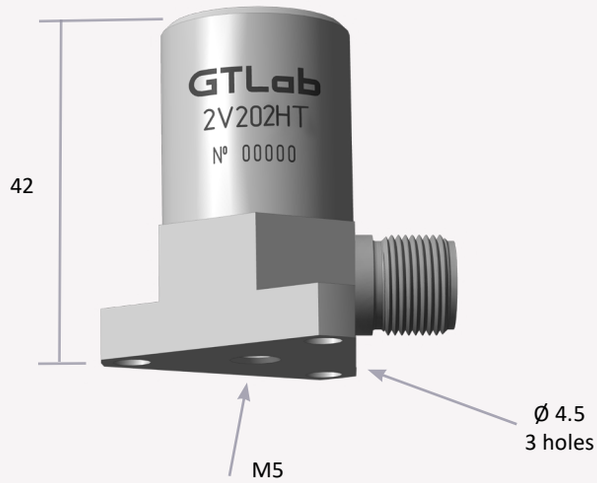


PARAMETER	2V202HM
Conversion factor at basic frequency 80 Hz	5 ± 0.5 mV/mm/s
Vibration velocity measuring range	0.1 ...800 mm/s
Frequency range of the measured vibration speed	5 ... 1 000 Hz
Variation in frequency response relative to the value at the base frequency of 80 Hz in the frequency range 5 ... 1000 Hz	± 1 dB
Transverse sensitivity	< 5 %
Temperature range	–50 ... +150°C
Coefficient of the effect of the ambient temperature	± 0.1 %/°C
RMS level of intrinsic noise, reduced to the input	< 0.02mm/s
Maximum output voltage with a nonlinear distortion factor of no more than 5%	± 5 V
Output impedance	< 500 Ohm
Power: ▪ external source of voltage dc ▪ current	 + (20 ... 30) V < (7 ... 9) mA
Constant output voltage level	+ (7 ... 15) V
Explosion-proofness	1Ex d IIC T6...T4 Gb, 0Ex ia IIC T6...T4 Ga
Housing material	stainless steel
Weight (without cable)	120 g
Supplied accessories	3 screws DIN 404 M4 × 12 A2

2V202HA



PARAMETER	2V202HA
Conversion factor at basic frequency 80 Hz	5 ± 0.5 mV/mm/s
Vibration velocity measuring range	0.1 ...800 mm/s
Frequency range of the measured vibration speed	5 ... 1 000 Hz
Variation in frequency response relative to the value at the base frequency of 80 Hz in the frequency range 5 ... 1000 Hz	± 1 dB
Transverse sensitivity	< 5 %
Temperature range	–50 … +150°C
Coefficient of the effect of the ambient temperature	± 0.1 %/°C
RMS level of intrinsic noise, reduced to the input	< 0.02mm/s
Maximum output voltage with a nonlinear distortion factor of no more than 5%	± 5 V
Output impedance	< 500 Ohm
Power: ▪ external source of voltage dc ▪ current	 + (20 ... 30) V < (7 ... 9) mA
Constant output voltage level	+ (7 ... 15) V
Explosion-proofness	1Ex d IIC T6...T4 Gb, 0Ex ia IIC T6...T4 Ga
Housing material	stainless steel
Weight (without cable)	120 g
Supplied accessories	3 screws DIN 404 M4 × 12 A2



PARAMETER	2V202HT
Conversion factor at basic frequency 80 Hz	5 ± 0.5 mV/mm/s
Vibration velocity measuring range	0.1 ...800 mm/s
Frequency range of the measured vibration speed	5 ... 1 000 Hz
Variation in frequency response relative to the value at the base frequency of 80 Hz in the frequency range 5 ... 1000 Hz	± 1 dB
Transverse sensitivity	< 5 %
Temperature range	–50 … +150°C
Coefficient of the effect of the ambient temperature	± 0.1 %/°C
RMS level of intrinsic noise, reduced to the input	< 0.02 mm/s
Maximum output voltage with a nonlinear distortion factor of no more than 5%	± 5 V
Output impedance	< 500 Ohm
▪ Power: ▪ external source of voltage dc ▪ current	 + (20 ... 30) V < (7 ... 9) mA
Constant output voltage level	+ (7 ... 15) V
Housing material	stainless steel
Explosion-proofness	1Ex d IIC T6...T4 Gb, 0Ex ia IIC T6...T4 Ga
Weight (without cable)	120 g
Supplied accessories	cable 32T1AA4 (as per customer's request) 3 screws DIN 404 M4 × 12 A2

VIBRATION
DISPLACEMENT SENSORS

VIBRATION DISPLACEMENT SENSORS

Vibration displacement sensors with a standard current output 4… 20 mA. Designed to measure the vibration displacement amplitude of industrial equipment in conditions of strong industrial interference. The increased noise immunity (including protection against the pyroelectric effect) is ensured by the design features of the shear sensitive element, the board, the screen and its electrical isolation from the object of study.

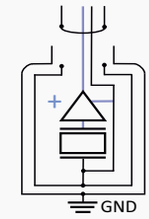
With current output

Разъемные

3A201TH

3A203HH

3A205HH

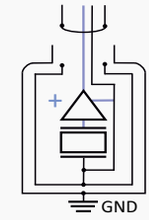


Неразъемные

3A201TA

3A203HA

3A205HA

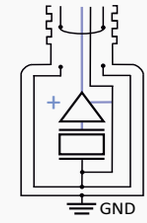


Неразъемные в металлорукаве

3A201TM

3A203HM

3A205HM



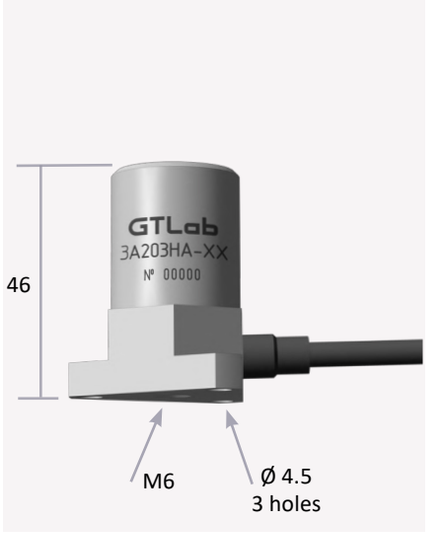
VIBRATION DISPLACEMENT SENSORS WITH CURRENT OUTPUT

3A201TA-XX

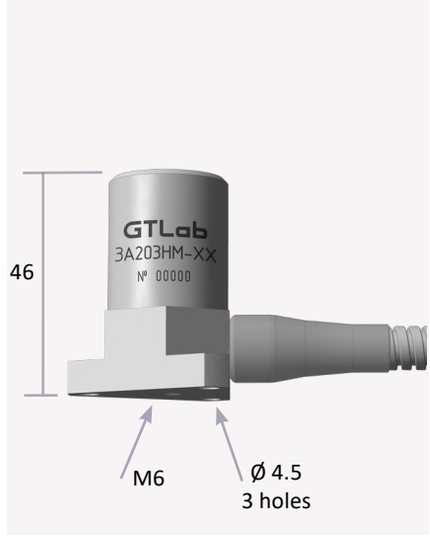
3A201TM-XX

3A201TH-XX

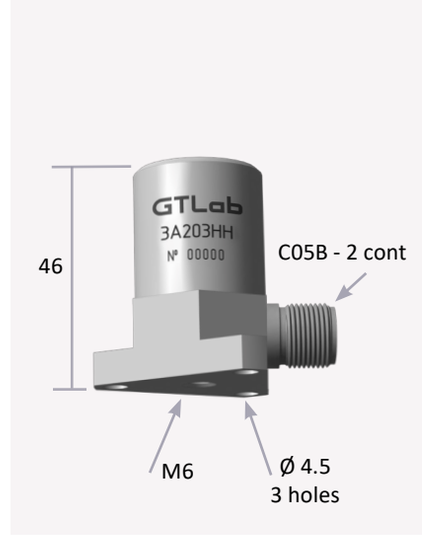
3A203HA-XX



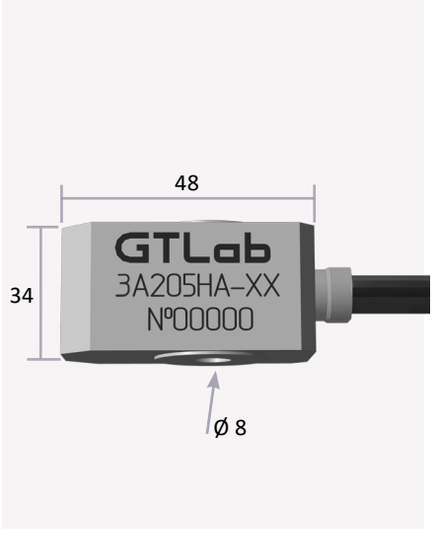
3A203HM-XX



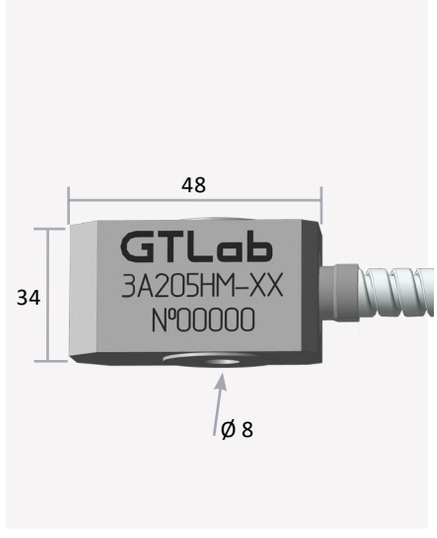
3A203HH-XX



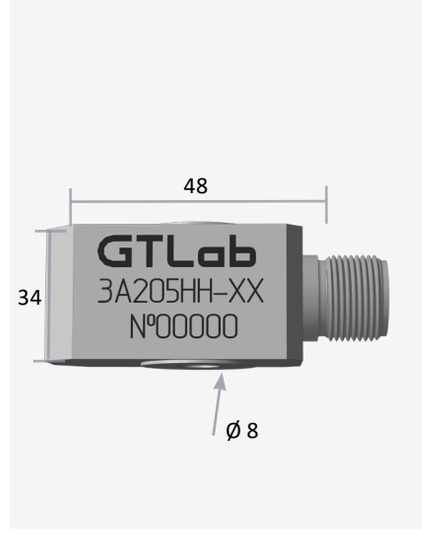
3A205HA-XX



3A205HM-XX



3A205HH-XX



VIBRATION DISPLACEMENT SENSORS WITH CURRENT OUTPUT (CONTINUED)

Table 1

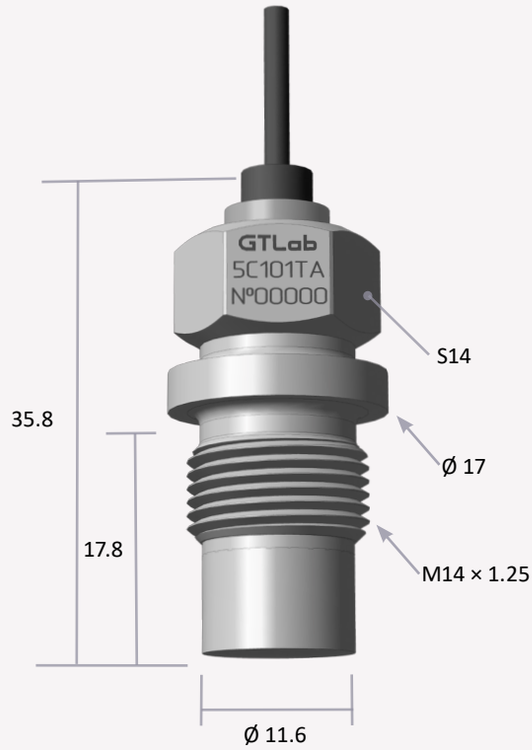
PARAMETER	3A20XXX-160	2A20XXX-320	2A20XXX-640
Sensitivity by vibration displacement to current signal 4 … 20 mA, (± 10 %)	0,1 mA·s/mkm	0,05 mA·s/mm	0,025 mA·s/mm
Range of measured vibration displacement, magnitude	160 mkm/s	320 mm/s	640 mm/s
Frequency range of the measured vibration displacement	10 … 1 000 Hz		
Variation in frequency response relative to the base frequency of 159.15 Hz, within	from 3 to minus 12.5 %		
Transverse sensitivity	< 5 %		
Temperature range	–40 … +85 °C		
Coefficient of the effect of the ambient temperature	± 0,2 %/°C		
Power from an external DC power source	+ (10 … 24) V		
Run mode setting time	< 4 s		
Housing material	stainless steel		
Explosion-proofness	1Ex d IIC T6...T4 Gb, 0Ex ia IIC T6...T4 Ga		
Protection against external influences	IP67		
Weight (without cable)	according to table 2 - A		
Supplied accessories	according to table 2 - B		

Table 2

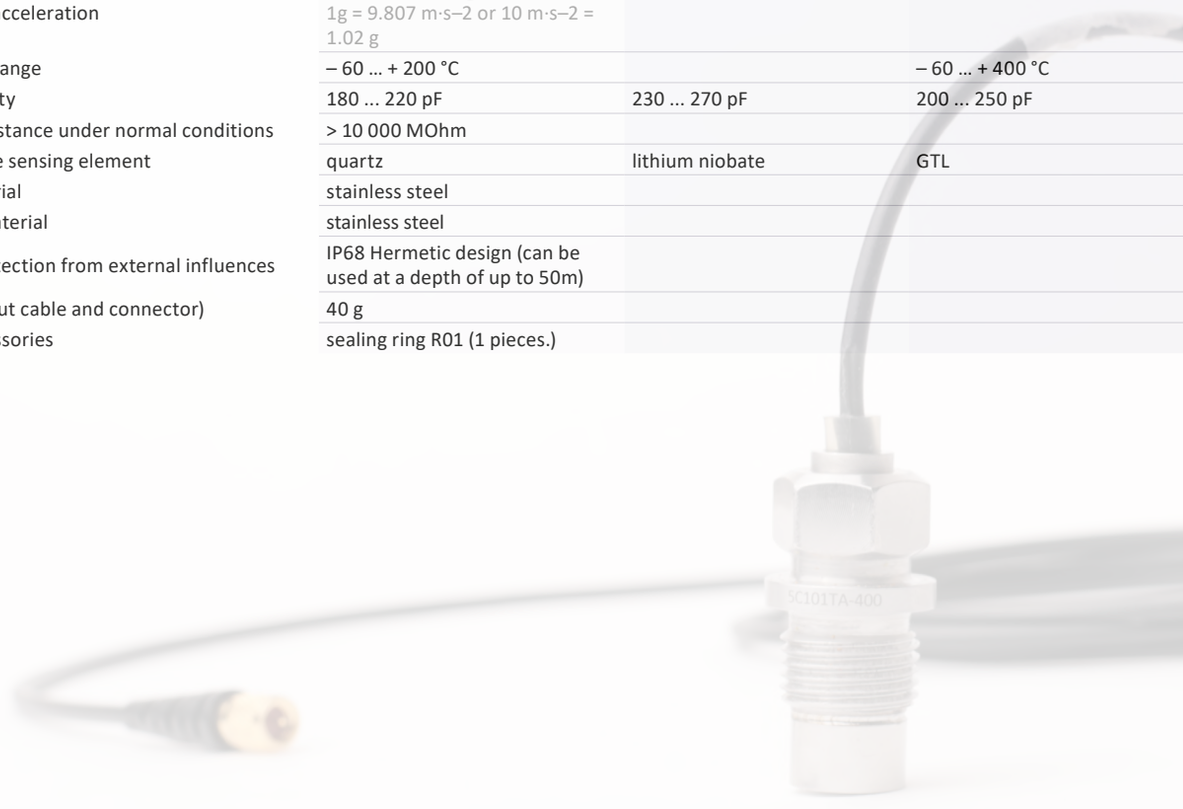
PARAMETER	B	C
3A201TA-XX 3A201TM-XX 3A201TH-XX	60 g	pin P0606 cable **anti-vibration** 41H1A3 (-TH)
2A203HA-XX 2A203HM-XX 2A203HH-XX	145 g	3 screw M4 × 12 cable **anti-vibration**41H1A3 (-HH)
2A205HA-XX 2A205HM-XX 2A205HH-XX	330 g	screw M8 × 40 cable **anti-vibration**41H1A3 (-HH)

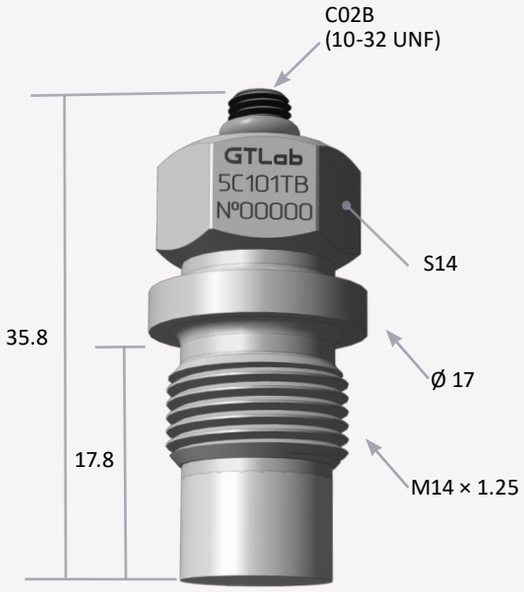
DYNAMIC PRESSURE SENSORS

5C101TA-250-XX



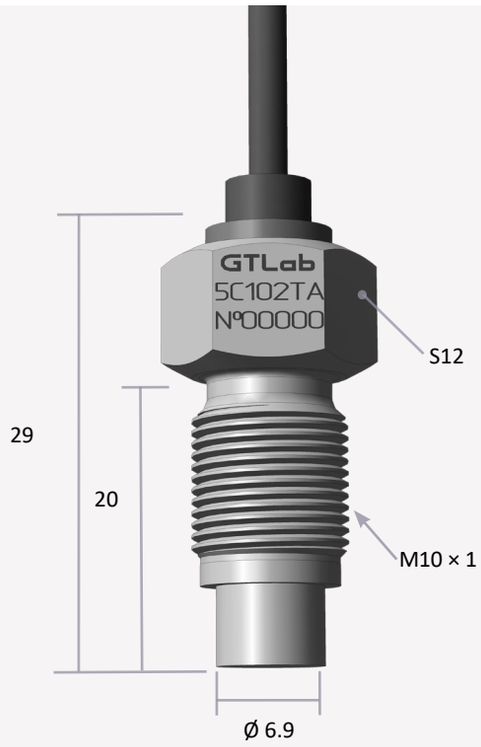
Parameter	5C101TA-250-20	5C101TA-250-400	5C101TA-250-60
Upper limit of measurement	25 MPa		
Sensitivity	200 pC/MPa	4 000 pC/MPa	600 pC/MPa
Limits of the permissible basic error reduced to the upper limit of measurement	± 2.5 %		
Resonant frequency	> 30 kHz		
Sensitivity to acceleration	< 0.00005 MPa/g 1g = 9.807 m·s–2 or 10 m·s–2 = 1.02 g		
Temperature range	– 60 … + 200 °C		– 60 … + 400 °C
Electric capacity	180 ... 220 pF	230 ... 270 pF	200 ... 250 pF
Insulation resistance under normal conditions	> 10 000 MOhm		
Material of the sensing element	quartz	lithium niobate	GTL
Housing material	stainless steel		
Membrane material	stainless steel		
Degree of protection from external influences	IP68 Hermetic design (can be used at a depth of up to 50m)		
Weight (without cable and connector)	40 g		
Supplied accessories	sealing ring R01 (1 pieces.)		



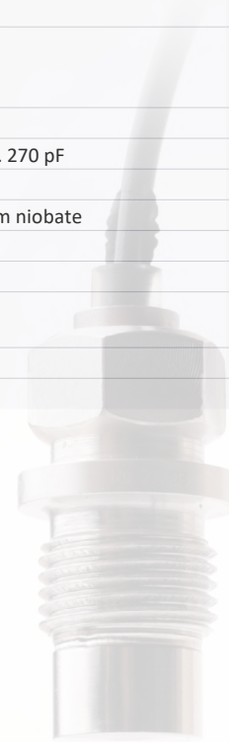


Parameter	5C101TB-250 -20	5C101TB-250 -400	5C101TB-250-60
Upper limit of measurement	25 MPa		
Sensitivity	200 pC/MPa	4 000 pC/MPa	600 pC/MPa
Limits of the permissible basic error reduced to the upper limit of measurement	± 2.5 %		
Resonant frequency	> 30 kHz		
Sensitivity to acceleration	< 0.00005 MPa/g 1g = 9,807 m·s–2 or 10 m·s–2 = 1,02 g		
Temperature range	– 60 … + 200 °C		– 60 … + 400 °C
Electric capacity	7 ... 12 pF	50 ... 70 pF	20 ... 30 pF
Insulation resistance under normal conditions	> 10 000 MOhm		
Material of the sensing element	quartz	lithium niobate	GTL
Housing material	stainless steel		
Membrane material	stainless steel		
Degree of protection from external influences	IP65		
Weight (without cable and connector)	40 g		
Supplied accessories	cable 03B1B1 (as per customer's request), sealing ring R01 (1 pieces.)		

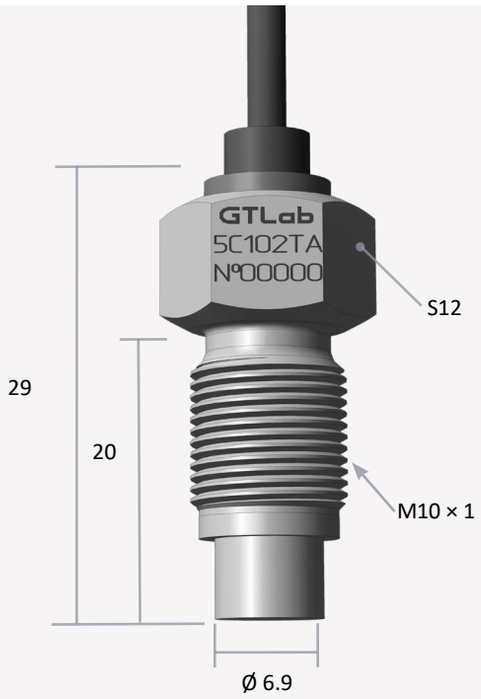
5C102TA-2500-XX



PARAMETER	5C102TA-2500-7	5C102TA-2500-140	5C102TA-2500-20
Upper limit of measurement	250 MPa		
Sensitivity	70 pC/MPa	1400 pC/MPa	200 pC/MPa
Limits of the permissible basic error reduced to the upper limit of measurement	± 2.5 %		
Resonant frequency	> 100 kHz		
Sensitivity to acceleration	< 0.00005 MPa/g 1g = 9.807 m·s–2 or 10 m·s–2 = 1.02 g		
Temperature range	– 60 … + 200 °C		– 60 … + 400 °C
Electric capacity	170 ... 230 pF	250 ... 270 pF	200 ... 250 pF
Insulation resistance under normal conditions	> 10 000 MOhm		
Material of the sensing element	quartz	lithium niobate	GTL
Housing material	stainless steel		
Membrane material	stainless steel		
Degree of protection from external influences	IP68 Hermetic design (can be used at a depth of up to 50 m)		
Weight (without cable and connector)	15 g		
Supplied accessories	sealing ring R02 (1 pieces.)		

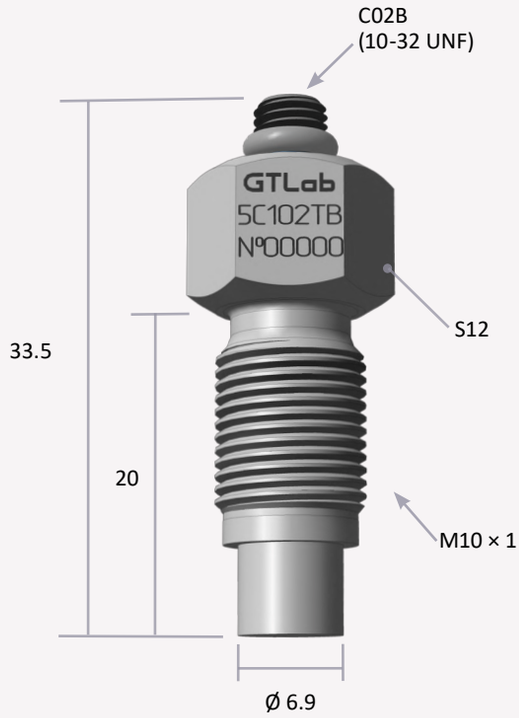


5C102TA-250-XX



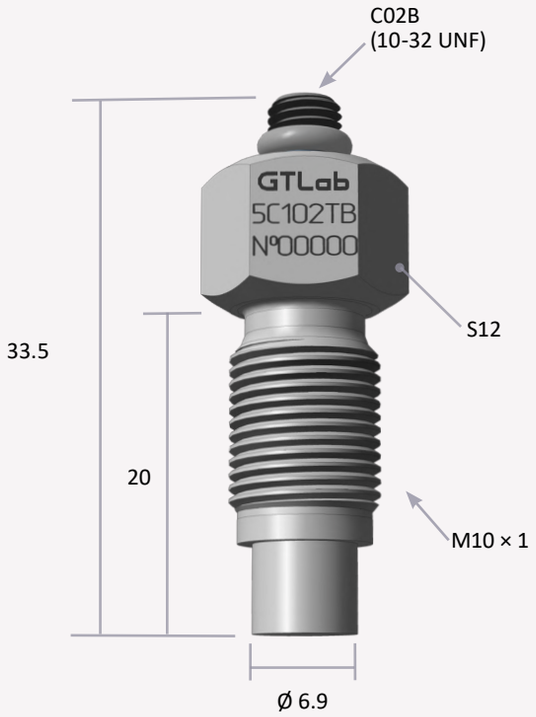
PARAMETER	5C102TA-250-7	5C102TA-250 -140	5C102TA-250 -20
Upper limit of measurement	25 MPa		
Sensitivity	70 pC/MPa	1400 pC/MPa	200 pC/MPa
Limits of the permissible basic error reduced to the upper limit of measurement	± 2,5 %		
Resonant frequency	> 100 kHz		
Sensitivity to acceleration	< 0,00005 MPa/g 1g = 9,807 m·s–2 or 10 m·s–2 = 1,02 g		
Temperature range	– 60 … + 200 °C		–60 … +400 °C
Electric capacity	170 … 230 pF	250 … 270 pF	200 … 250 pF
Insulation resistance under normal conditions	> 10 000 MOhm		
Material of the sensing element	quartz	lithium niobate	GTL
Housing material	stainless steel		
Membrane material	stainless steel		
Degree of protection from external influences	IP68 Hermetic design (can be used at a depth of up to 50 m		
Weight (without cable and connector)	15g		
Supplied accessories	sealing ring R02 (1 pieces)		

5C102TB-2500-XX



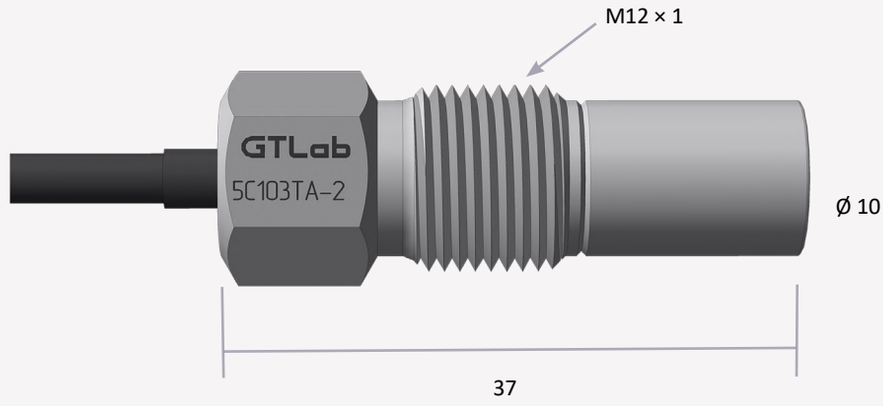
Parameter	5C102TB-2500-7	5C102TB-2500 -140	5C102TB-2500 -20
Upper limit of measurement	250 MPa		
Sensitivity	70 pC/MPa	1400 pC/MPa	200 pC/MPa
Limits of the permissible basic error reduced to the upper limit of measurement	± 2.5 %		
Resonant frequency	> 100 kHz		
Sensitivity to acceleration	< 0.00005 MPa/g 1g = 9.807 m·s–2 or 10 m·s–2 = 1.02 g		
Temperature range	– 60 … + 200 °C		– 60 … + 400 °C
Electric capacity	7 ... 12 pF	50 ... 70 pF	20 ... 30 pF
Insulation resistance under normal conditions	> 10 000 MOhm		
Material of the sensing element	quartz	lithium niobate	GTL
Housing material	stainless steel		
Membrane material	stainless steel		
Degree of protection from external influences	IP65		
Weight (without cable and connector)	15 g		
Supplied accessories	cable 03B1D1 (as per customer's request)sealing ring R02 (1 pieces.)		

5C102TB-250-XX

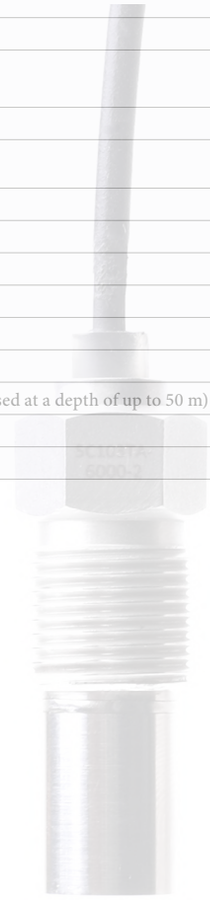


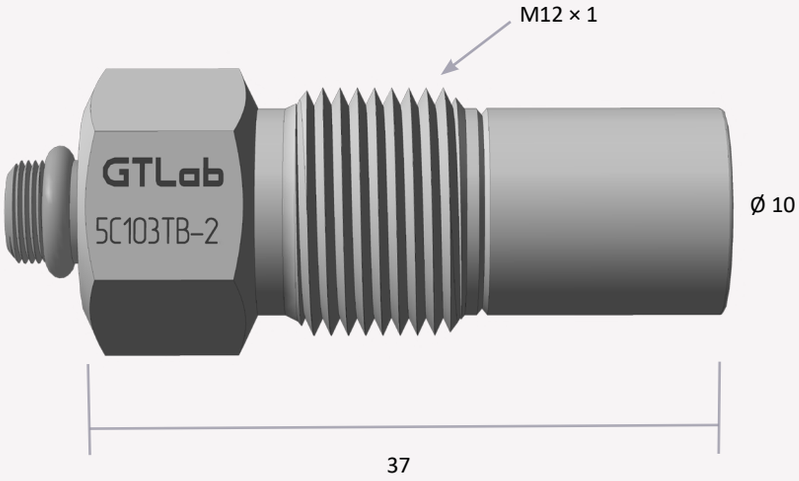
PARAMETER	5C102TB-250-7	5C102TB-250 -140	5C102TB-250 -20
Upper limit of measurement	25 MPa		
Sensitivity	70 pC/MPa	1400 pC/MPa	200 pC/MPa
Limits of the permissible basic error reduced to the upper limit of measurement	± 2,5 %		
Resonant frequency	> 100 kHz		
Sensitivity to acceleration	< 0,00005 MPa/g 1g = 9,807 m·s–2 or 10 m·s–2 = 1,02 g		
Temperature range	–60 … +200 °C		–60 … +400 °C
Electric capacity	7 … 12 pF	50 … 70 pF	20 … 30 pF
Insulation resistance under normal conditions	> 10 000 MOhm		
Material of the sensing element	quartz	lithium niobate	GTL
Housing material	stainless steel		
Membrane material	stainless steel		
Degree of protection from external influences	IP65		
Weight (without cable and connector)	15g		
Supplied accessories	cable 03B1D1 (as per customer's request) sealing ring R02 (1 pieces)		

5C103TA-6000-2

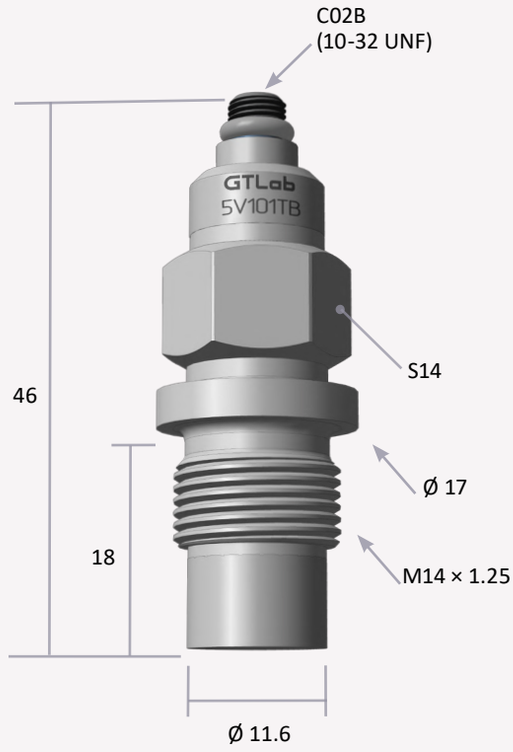


PARAMETER	5C103TA-6000-2
Upper limit of measured pressures	600 MPa
Conversion factor	20 pC/MPa
Limits of acceptable basic error reduced to the upper-range value	± 3 %
Self-resonant frequency	> 150 kHz
Acceleration sensitivity	< 0.0001 MPa/g 1g = 9.807 m-s-2 or 10 m-s2 = 1
Temperature range	– 60 … + 200 °C
Electric capacity with a cable length of 2m	180 … 220 pF
Insulation resistance under normal conditions	> 10 000 MOhm
Sensing element material	quartz
Housing material	stainless steel
Membrane material	stainless steel
Protection against external influences	IP68 Waterproof version (can be used at a depth of up to 50 m)
Weight (without cable and connector)	25 g
Supplied accessories	o- ring R03 (1 pcs)



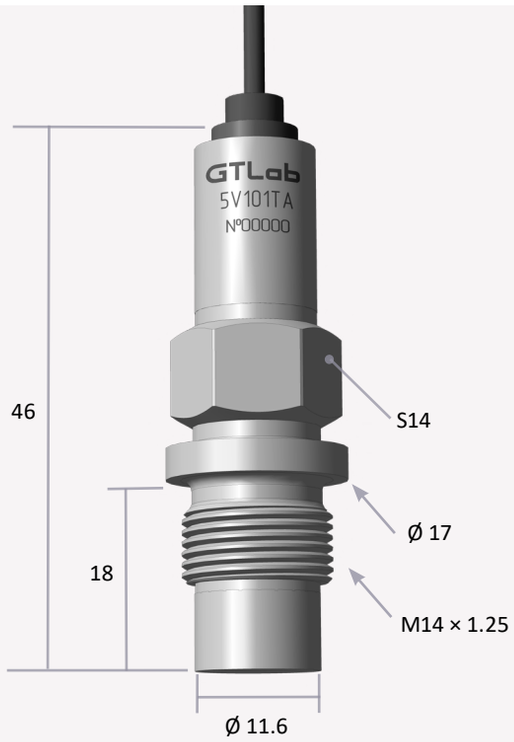


PARAMETER	5C103TB-6000-2
Upper limit of measured pressures	600 MPa
Conversion factor	20 pC/MPa
Limits of acceptable basic error reduced to the upper-range value	± 3 %
Self-resonant frequency	> 150 kHz
Acceleration sensitivity	< 0.0001 MPa/g 1g = 9.807 m-s-2 or 10 m-s2 = 1
Temperature range	– 60 ... + 200 °C
Electric capacity with a cable length of 2m	180 ... 220 pF
Insulation resistance under normal conditions	> 10 000 MOhm
Sensing element material	quartz
Housing material	stainless steel
Membrane material	stainless steel
Protection against external influences	IP65 Waterproof version (can be used at a depth of up to 50 m)
Weight (without cable and connector)	25 g
Supplied accessories	cable 03B1B1 (as per customer's request) o- ring R03 (1 pcs)



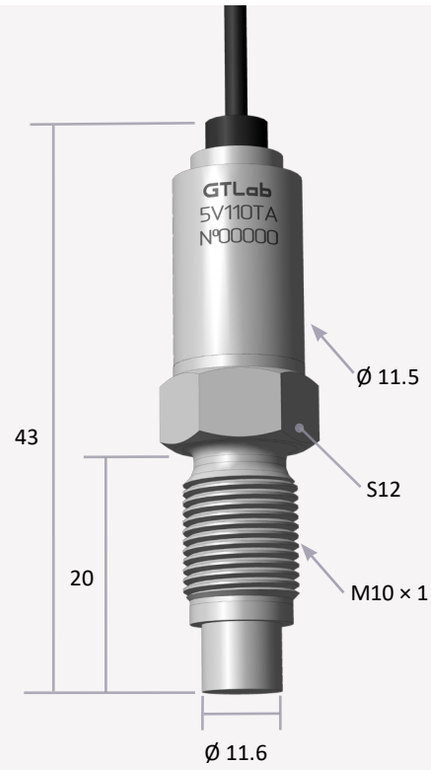
Parameter	5V101TB-0.6	5V101TB-6	5V101TB-60	5V101TB-250
Upper limit of measurement	0.06 MPa	0.6 MPa	6 MPa	25 MPa
Sensitivity	80 000 mV/MPa	8 000 mV/MPa	800 mV/MPa	200 mV/MPa
Limits of the permissible basic error reduced to the upper limit of measurement	± 2.5%			
Resonant frequency	> 30 kHz			
Sensitivity to acceleration	< 0.00005 MPa/g 1g = 9.807 m·s^{-2} or 10 m·s^{-2} = 1.02 g			
Temperature range	– 60 … + 125 °C			
Output impedance	< 100 Ohm			
Power: ▪ external DC voltage source ▪ current	 + (15 … 30) V 2 … 20 mA			
Constant output voltage level	8 … 11 V			
Material of the sensing element	lithium niobate	quartz		
Housing material	stainless steel			
Membrane material	stainless steel			
Degree of protection from external influences	IP65			
Weight (without cable and connector)	38 g			
Supplied accessories	cable 03B1D1 (as per customer's request) sealing ring R01			

5V101TA-XX



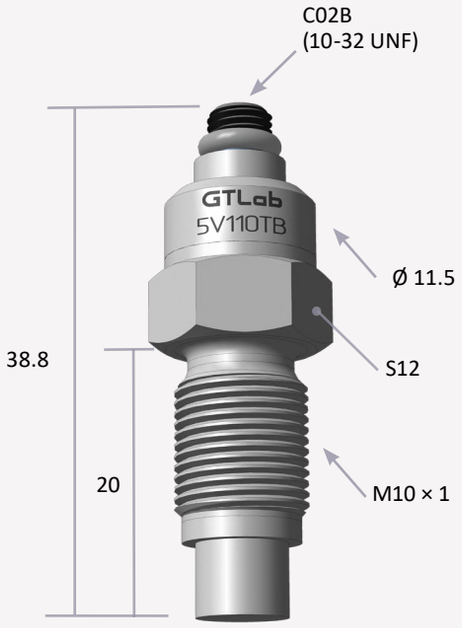
Parameter	5V101TA-0.6	5V101TA-6	5V101TA-60	5V101TA-250
Upper limit of measurement	0.06 MPa	0.6 MPa	6 MPa	25 MPa
Sensitivity	80 000 mV/MPa	8 000 mV/MPa	800 mV/MPa	200 mV/MPa
Limits of the permissible basic error reduced to the upper limit of measurement	± 2.5 %			
Resonant frequency	> 30 kHz			
Sensitivity to acceleration	< 0.00005 MPa/g 1g = 9,807 m·s^{-2} or 10 m·s^{-2} = 1,02 g			
Temperature range	– 60 … + 125 °C			
Output impedance	< 100 Ohm			
Power: ▪ external DC voltage source ▪ current	 + (15 … 30) V 2 … 20 mA			
Constant output voltage level	8 … 11 V			
Material of the sensing element	lithium niobate	quartz		
Housing material	stainless steel			
Membrane material	stainless steel			
Degree of protection from external influences	IP68 Hermetic design (can be used at a depth of up to 50 m)			
Weight (without cable and connector)	40 g			
Supplied accessories	sealing ring R01 (2 pieces.)			

5V110TA-XX

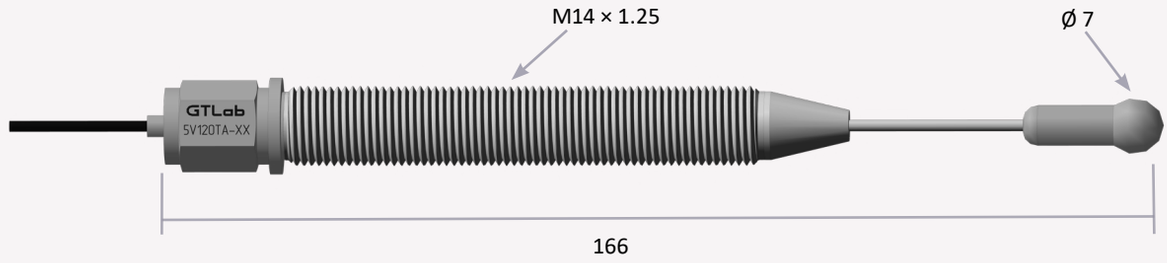


Parameter	5V110TA-6	5V110TA-600	5V110TA-1000	5V110TA-1600	5V110TA-2500
Upper limit of measurement	0.6 MPa	60 MPa	100 MPa	160 MPa	250 MPa
Sensitivity	8 000 mV/MPa	80 mV/MPa	50 mV/MPa	30 mV/MPa	20 mV/MPa
Limits of the permissible basic error reduced to the upper limit of measurement	± 2.5%				
Resonant frequency	> 100 kHz				
Sensitivity to acceleration	< 0.00005 MPa/g 1g = 9.807 $m \cdot s^{-2}$ or 10 $m \cdot s^{-2}$ = 1.02 g				
Temperature range	– 60 … + 125 °C				
Output impedance	< 100 Ohm				
Power: ▪ external DC voltage source ▪ current	 + (15 … 30) V 2 … 20 mA				
Constsnt output votage level	8 … 11 V				
Material of the sensing element	lithium niobate	quartz			
Housing material	stainless steel				
Membrane material	stainless steel				
Degree of protection from external influences	IP68				
Weight (without cable and connector)	25 g				
Supplied accessories	sealing ring R02 (2 pieces.)				

5V110TB-XX

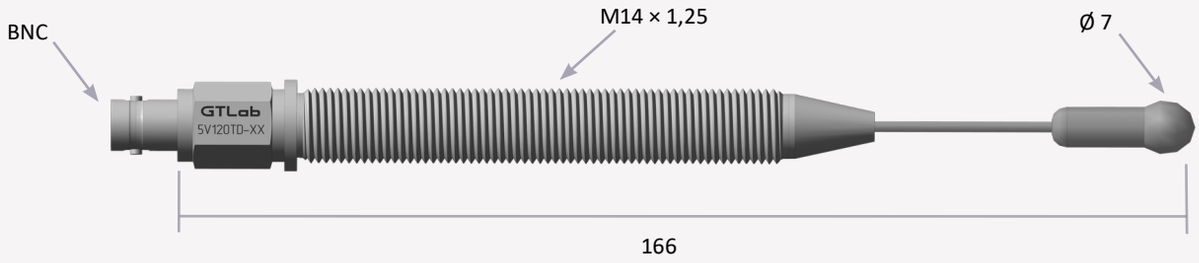


Parameter	5V110TB-6	5V110TB-600	5V110TB-1000	5V110TB-1600	5V110TB-2500
Upper limit of measurement	0.6 MPa	60 MPa	100 MPa	160 MPa	250 MPa
Sensitivity	8 000 mV/MPa	80 mV/MPa	50 mV/MPa	30 mV/MPa	20 mV/MPa
Limits of the permissible basic error reduced to the upper limit of measurement	± 2.5%				
Resonant frequency	> 100 kHz				
Sensitivity to acceleration	< 0.00005 MPa/g 1g = 9.807 $m \cdot s^{-2}$ or 10 $m \cdot s^{-2}$ = 1.02 g				
Temperature range	– 60 … + 125 °C				
Output impedance	< 500 Ohm				
Power: ▪ external DC voltage source ▪ current	 + (15 … 30) V 2 … 20 mA				
Constant output voltage level	8 … 11 V				
Material of the sensing element	lithium niobate	quartz			
Housing material	stainless steel				
Membrane material	stainless steel				
Degree of protection from external influences	IP65				
Weight (without cable and connector)	25 g				
Supplied accessories	cable 03B1D1 (as per customer's request) sealing ring R02 (2 pieces.)				

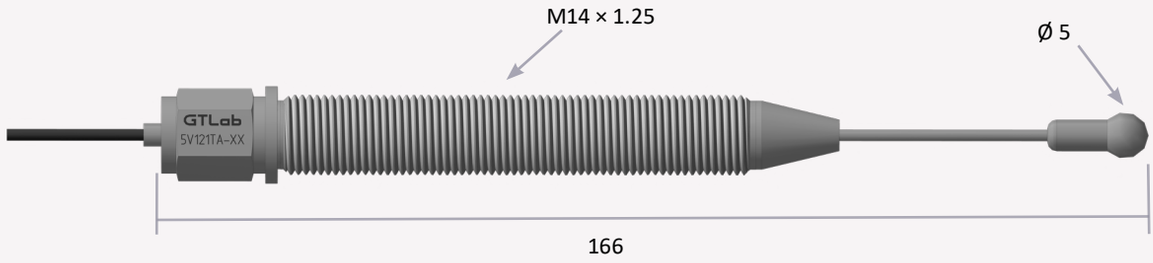


PARAMETER	5V120TA-10	5V120TA-25	5V120TA-60	5V120TA-100
Upper limit of measured pressures	1 000 kPa	2 500 kPa	6 000 kPa	10 000 kPa
Conversion factor	5 mV/kPa	2 mV/kPa	0.8 mV/kPa	0.5 mV/kPa
Limits of acceptable basic error reduced to the upper-range value	± 2%			
Upper limit of the operating frequency range	> 25 kHz			
Temperature range	– 30 … + 50 °C			
Output impedance	< 100 Ohm			
Power: ▪ voltage ▪ current	 + (15 … 30) V 2 … 20 mA			
Constant output voltage level	8 … 11 V			
Sensing element material	Lead zirconate titanate (ЦТС-19)			
Housing material	stainless steel			
Case execution	carving M14×1.25			
Protection against external influences	IP68			
Weight (without cable and connector)	110 g			
Supplied accessories	mounting nut M14×1.25 - 2 pc			

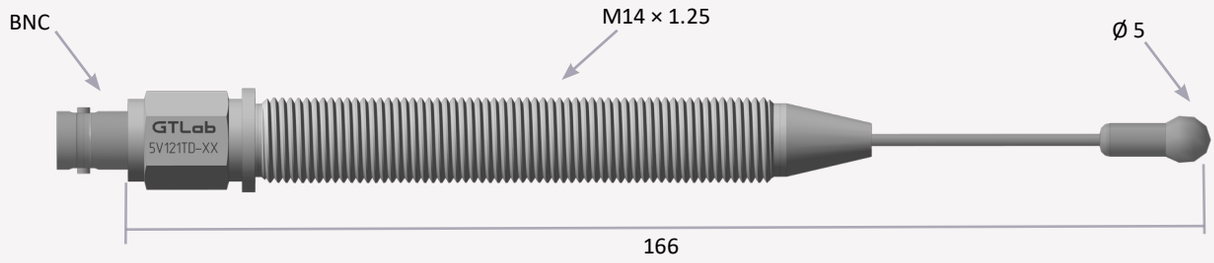
5V120TD-XX



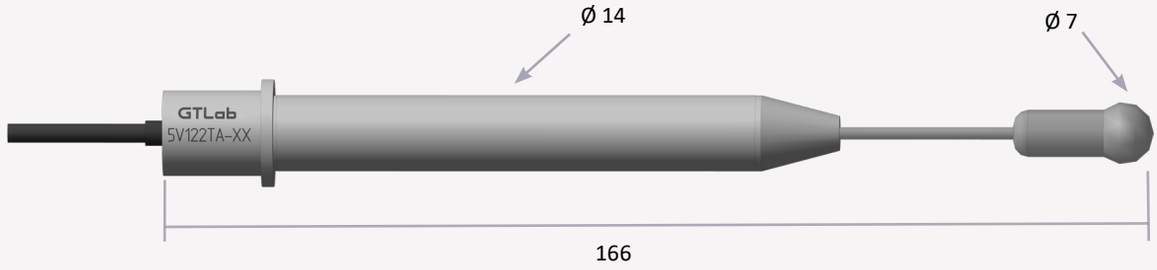
PARAMETER	5V120TD-10	5V120TD-25	5V120TD-60	5V120TD-100
Upper limit of measured pressures	1 000 kPa	2 500 kPa	6 000 kPa	10 000 kPa
Conversion factor	5 mV/kPa	2 mV/kPa	0.8 mV/kPa	0.5 mV/kPa
Limits of acceptable basic error reduced to the upper-range value	± 2%			
Upper limit of the operating frequency range	> 25 kHz			
Temperature range	– 30 … + 50 °C			
Output impedance	< 500 Ohm			
Power: ▪ voltage ▪ current	 + (15 … 30) V 2 … 20 mA			
Constant output voltage level	8 … 11 V			
Sensing element material	Lead zirconate titanate (ЦТС-19)			
Housing material	stainless steel			
Case execution	carving M14×1,25			
Protection against external influences	IP65			
Weight (without cable and connector)	110 g			
Supplied accessories	mounting nut M14×1.25 - 2 pc cable 03D1D1 (as per customer's request)			



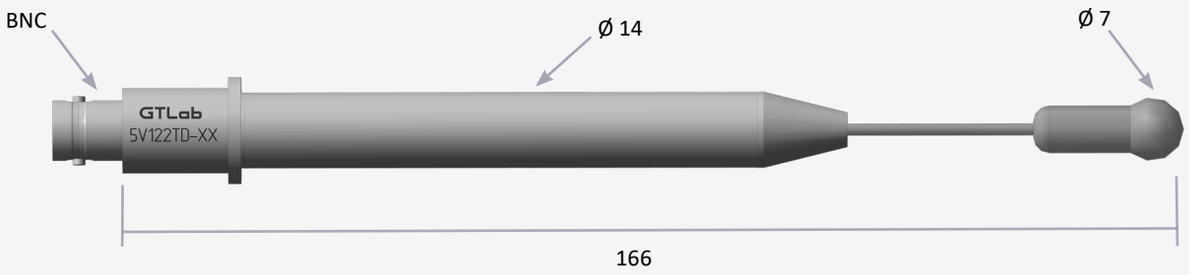
PARAMETER	5V121TA-10	5V121TA-25	5V121TA-60	5V121TA-100
Upper limit of measured pressures	1 000 kPa	2 500 kPa	6 000 kPa	10 000 kPa
Conversion factor	5 mV/kPa	2 mV/kPa	0.8 mV/kPa	0.5 mV/kPa
Limits of acceptable basic error reduced to the upper-range value	± 2%			
Upper limit of the operating frequency range	> 25 kHz			
Temperature range	– 30 … + 50 °C			
Output impedance	< 100 Ohm			
Power: ▪ voltage ▪ current	 + (15 … 30) V 2 … 20 mA			
Constant output voltage level	8 … 11 V			
Sensing element material	Lead zirconate titanate (ЦТС-19)			
Housing material	stainless steel			
Case execution	carving M14×1.25			
Protection against external influences	IP68			
Weight (without cable and connector)	110 g			
Supplied accessories	mounting nut M14×1.25 - 2 pc			



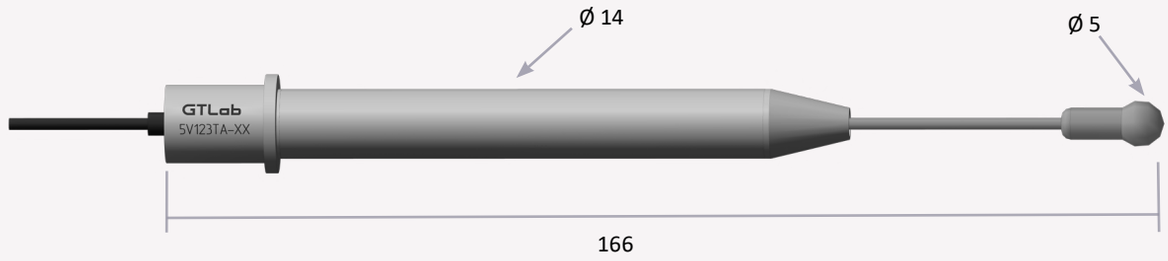
PARAMETER	5V121TD-10	5V121TD-25	5V121TD-60	5V121TD-100
Upper limit of measured pressures	1 000 kPa	2 500 kPa	6 000 kPa	10 000 kPa
Conversion factor	5 mV/kPa	2 mV/kPa	0.8 mV/kPa	0.5 mV/kPa
Limits of acceptable basic error reduced to the upper-range value	± 2%			
Upper limit of the operating frequency range	> 25 kHz			
Temperature range	– 30 … + 50 °C			
Output impedance	< 100 Ohm			
Power: ▪ voltage ▪ current	 + (15 … 30) V 2 … 20 mA			
Constant output voltage level	8 … 11 V			
Sensing element material	Lead zirconate titanate (ЦТС-19)			
Housing material	stainless steel			
Case execution	carving M14×1.25			
Protection against external influences	IP65			
Weight (without cable and connector)	110 g			
Supplied accessories	mounting nut M14×1.25 - 2 pc cable 03D1D1 (as per customer's request)			



Parameter	5V122TA-10	5V122TA-25	5V122TA-60	5V122TA-100
Upper limit of measured pressures	1 000 kPa	2 500 kPa	6 000 kPa	10 000 kPa
Conversion factor	5 mV/kPa	2 mV/kPa	0.8 mV/kPa	0.5 mV/kPa
Limits of acceptable basic error reduced to the upper-range value	± 2%			
Upper limit of the operating frequency range	> 25 kHz			
Temperature range	– 30 … + 50 °C			
Output impedance	< 100 Ohm			
Power: ▪ voltage ▪ current	 + (15 … 30) V 2 … 20 mA			
Constant output voltage level	8 … 11 V			
Sensing element material	Lead zirconate titanate (ЦТС-19)			
Housing material	stainless steel			
Case execution	smooth			
Protection against external influences	IP68			
Weight (without cable and connector)	110 g			
Supplied accessories	mounting nut M14×1.25 - 2 pc			

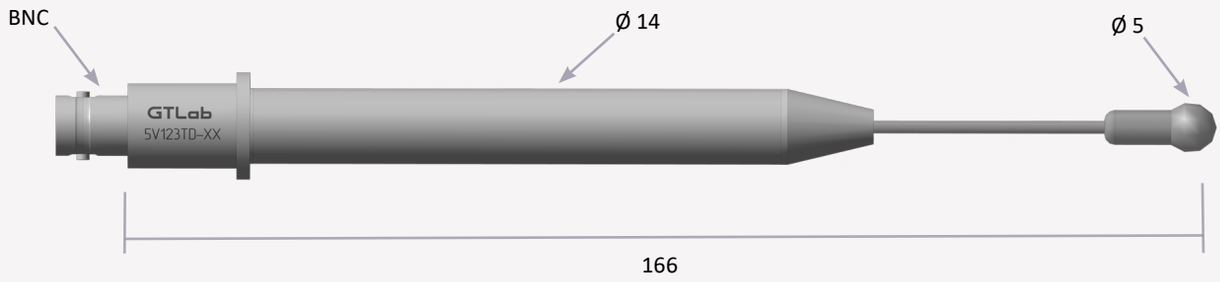


PARAMETER	5V122TD-10	5V122TD-25	5V122TA-60	5V122TD-100
Upper limit of measured pressures	1 000 kPa	2 500 kPa	6 000 kPa	10 000 kPa
Conversion factor	5 mV/kPa	2 mV/kPa	0.8 mV/kPa	0.5 mV/kPa
Limits of acceptable basic error reduced to the upper-range value	± 2%			
Upper limit of the operating frequency range	> 25 kHz			
Temperature range	– 30 … + 50 °C			
Output impedance	< 100 Ohm			
Power: ▪ voltage ▪ current	 + (15 … 30) V 2 … 20 mA			
Constant output voltage level	8 … 11 V			
Sensing element material	Lead zirconate titanate (ЦТС-19)			
Housing material	stainless steel			
Case execution	smooth			
Protection against external influences	IP65			
Weight (without cable and connector)	110 g			
Supplied accessories	mounting nut M14×1.25 - 2 pc cable 03D1D1 (as per customer's request)			



PARAMETER	5V123TA-10	5V123TA-25	5V123TA-60	5V123TA-100
Upper limit of measured pressures	1 000 kPa	2 500 kPa	6 000 kPa	10 000 kPa
Conversion factor	5 mV/kPa	2 mV/kPa	0.8 mV/kPa	0.5 mV/kPa
Limits of acceptable basic error reduced to the upper-range value	± 2%			
Upper limit of the operating frequency range	> 25 kHz			
Temperature range	– 30 … + 50 °C			
Output impedance	< 100 Ohm			
Power: ▪ voltage ▪ current	 + (15 … 30) V 2 … 20 mA			
Constant output voltage level	8 … 11 V			
Sensing element material	Lead zirconate titanate (ЦТС-19)			
Housing material	stainless steel			
Case execution	smooth			
Protection against external influences	IP68			
Weight (without cable and connector)	110 g			
Supplied accessories	mounting nut M14×1.25 - 2 pc			

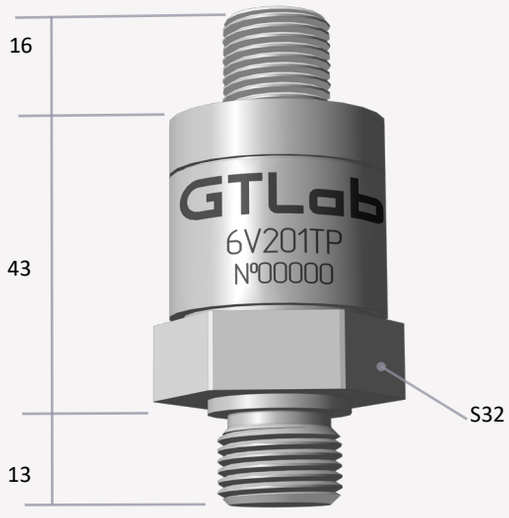
5V123TD-XX



PARAMETER	5V123TD-10	5V123TD-25	5V123TD-60	5V123TD-100
Upper limit of measured pressures	1 000 kPa	2 500 kPa	6 000 kPa	10 000 kPa
Conversion factor	5 mV/kPa	2 mV/kPa	0.8 mV/kPa	0.5 mV/kPa
Limits of acceptable basic error reduced to the upper-range value	± 2%			
Upper limit of the operating frequency range	> 25 kHz			
Temperature range	– 30 … + 50 °C			
Output impedance	< 100 Ohm			
Power: ▪ voltage ▪ current	 + (15 … 30) V 2 … 20 mA			
Constant output voltage level	8 … 11 V			
Sensing element material	Lead zirconate titanate (ЦТС-19)			
Housing material	stainless steel			
Case execution	smooth			
Protection against external influences	IP65			
Weight (without cable and connector)	110 g			
Supplied accessories	mounting nut M14×1.25 - 2 pc cable 03D1D1 (as per customer's request)			

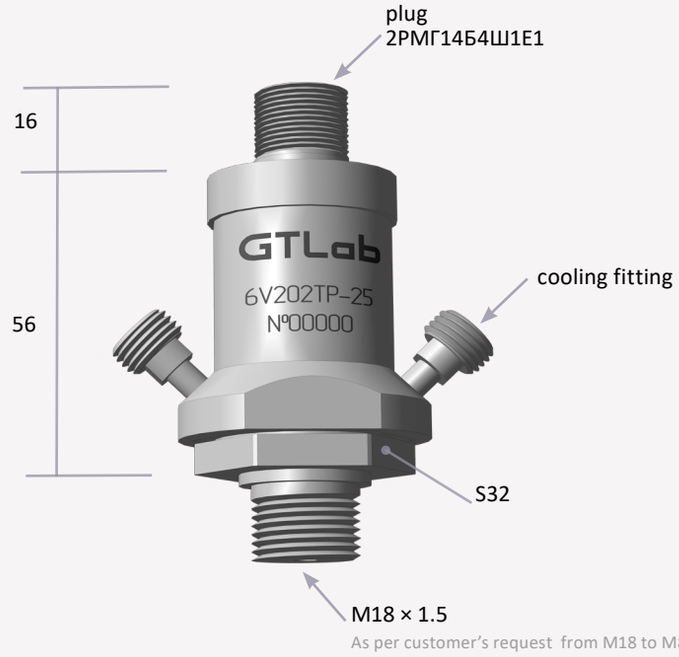
STATIC-DYNAMIC PRESSURE SENSORS

6V201TP-XX



Parameter	6V201TP-XX	6V201TP-XX-5
Measurement range	according to table 1	
Output voltage	10 V	5 V
Resonant frequency	according to table 2	
Constant output voltage level	400 ...600 mV	
Sensitivity to acceleration	< 0.001 bar/g	
Ambient temperature	– 50...+ 85 °C	
Temperature of the measured medium	– 50...+ 300 °C	
Supply voltage	+(9 ... 15) V	
Current consumption	25 mA	
Housing material	stainless steel	
Weight (without cable)	190 g	

Parameter	Табл. 1	Табл. 2
6V201TP-16, 6V201TP-16-5	from -0,1 to 1,6 MPa	18 kHz
6V201TP-25, 6V201TP-25-5	from -0,1 to 2,5 MPa	22 kHz
6V201TP-40, 6V201TP-40-5	from -0,1 to 4 MPa	28 kHz
6V201TP-60, 6V201TP-60-5	from -0,1 to 6 MPa	32 kHz
6V201TP-100, 6V201TP-100-5	from -0,1 to 10 MPa	45 kHz
6V201TP-160, 6V201TP-160-5	from -0,1 to 16 MPa	55 kHz
6V201TP-250, 6V201TP-250-5	from -0,1 to 25 MPa	70 kHz
6V201TP-400, 6V201TP-400-5	from -0,1 to 40 MPa	90 kHz
6V201TP-600, 6V201TP-600-5	from -0,1 to 60 MPa	100 kHz
6V201TP-1000, 6V201TP-1000-5	from -0,1 to 100 MPa	140 kHz
6V201TP-1600, 6V201TP-1600-5	from -0,1 to 160 MPa	170 kHz

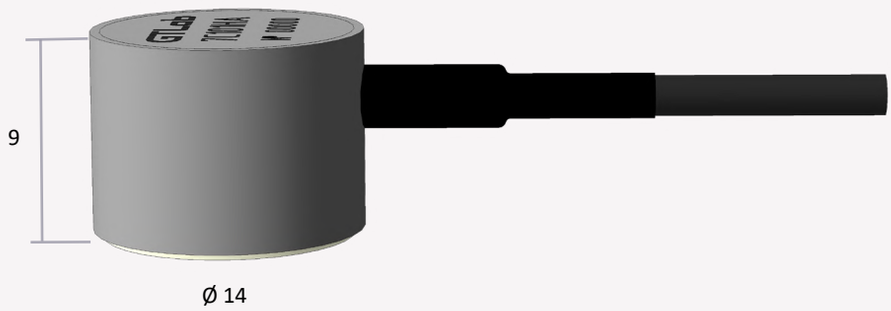


PARAMETER	6V202TP-XX	6V202TP-XX-5
Measurement range	according to table 1	
Output voltage	10 V	5 V
Self-resonant frequency	according to table 2	
Acceleration sensitivity	< 0.001 bar/g	
Ambient temperature	–50 ... +85 °C	
Medium temperature ▪ without cooling ▪ with cooling	 –50 ... +300 °C +1 000 °C	
Supply voltage	+(11 ... 14) V	
Consumption current	30 mA	
Housing material	stainless steel	
Weight (without cable)	300 g	

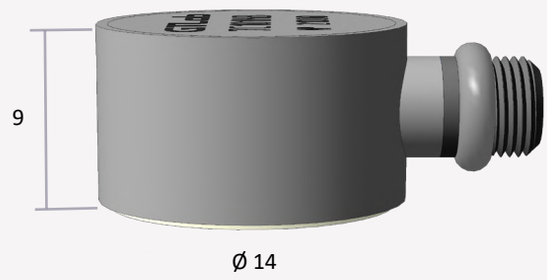
PARAMETER	table 1	table 2
6V202TP-16, 6V202TP-16-5	from –0.1 to 1.6 MPa	18 kHz
6V202TP-25, 6V202TP-25-5	from –0.1 to 2.5 MPa	22 kHz
6V202TP-60, 6V202TP-60-5	from –0.1 to 6 MPa	32 kHz
6V202TP-160, 6V202TP-160-5	from –0.1 to 16 MPa	55 kHz

ACOUSTIC EMISSION SENSORS

PARAMETER	7V201TA
Sensitivity	> 4 000 · 10^6 V/m
Resonant frequency	158 kHz
Bandwidth	50 ... 500 kHz
Amplification	10
Supply voltage	+ (9 ... 12) V
Current consumption	< 20 mA
Temperature range	–105 ... +125 °C
Explosion-proof	1ExibIICT4
Housing material	stainless steel
Weight (without cable)	40g

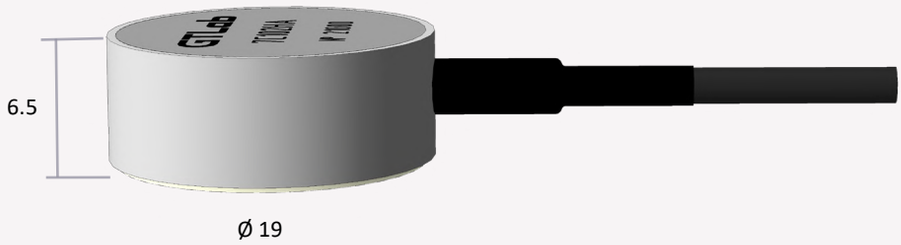


PARAMETER	7C101HA
Sensitivity	> 450 · 10^6 V/m
Resonant frequency	158 kHz
Bandwidth	50 … 500 kHz
Electric capacity with a cable length of 0.5 m	200 … 400 pF
Insulation resistance under normal conditions	> 1 000 MOhm
Temperature range	–105 … +150 °C
Housing material	stainless steel
Weight (without cable)	6g

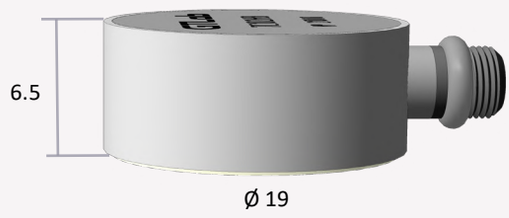


PARAMETER	7C101HB
Sensitivity	> 450 · 10^6 V/m
Resonant frequency	158 kHz
Bandwidth	50 … 500 kHz
Electric capacity with a cable length of 0.5 m	200 … 400 pF
Insulation resistance under normal conditions	> 1 000 MOhm
Temperature range	–60 … +120 °C
Housing material	stainless steel
Weight (without cable)	7g

7C102HA

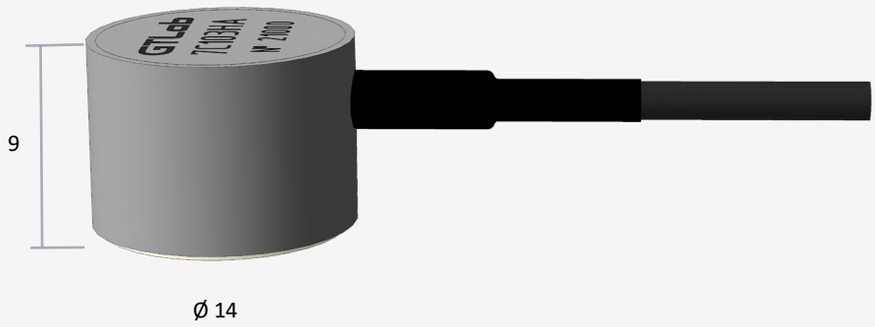


PARAMETER	7C102HA
Sensitivity	> 400 · 10^6 V/m
Resonant frequency	283 kHz
Bandwidth	100 … 800 kHz
Electric capacity with a cable length of 0.5 m	400 … 650 pF
Insulation resistance under normal conditions	> 1 000 MOhm
Temperature range	–105 … +150 °C
Housing material	stainless steel
Weight (without cable)	10g



PARAMETER	7C102HB
Sensitivity	> 400 · 10^6 V/m
Resonant frequency	283 kHz
Bandwidth	100 ... 800 kHz
Electric capacity with a cable length of 0.5 m	400 ... 650 pF
Insulation resistance under normal conditions	> 1 000 MOhm
Temperature range	–60 ... +120 °C
Housing material	stainless steel
Weight	13g

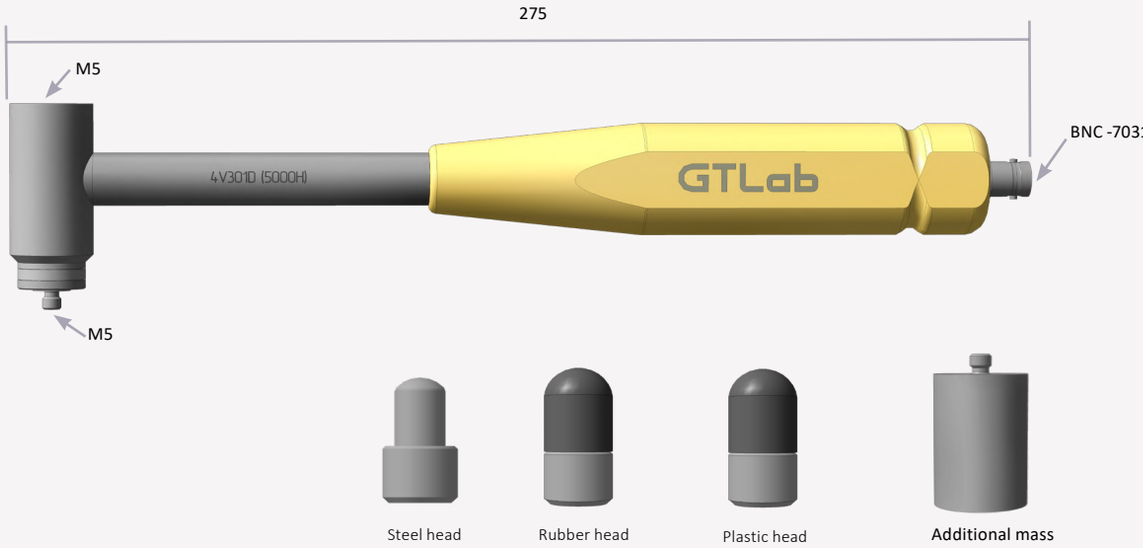
7C103HA



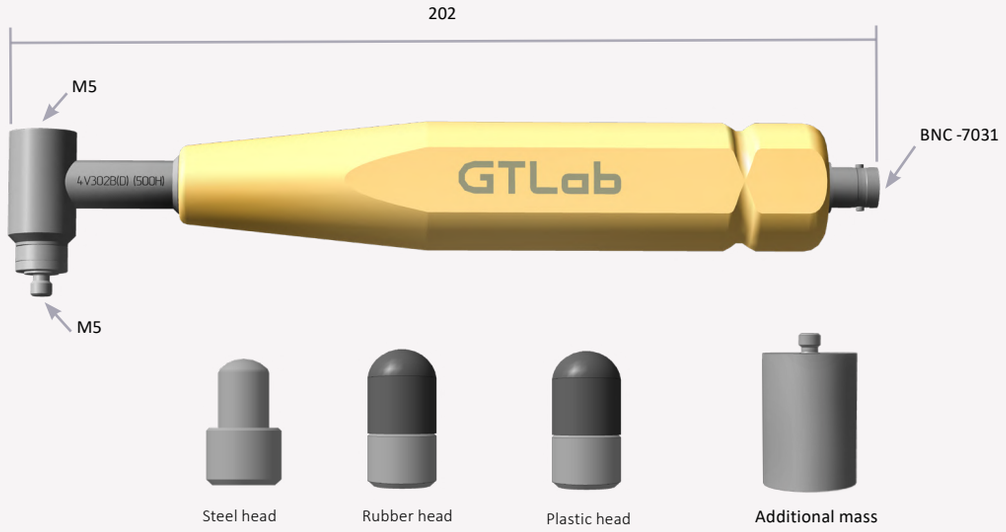
PARAMETER	7C103HA
Sensitivity	> 300 · 10^6 V/m
Resonant frequency	194 kHz
Bandwidth	50 … 750 kHz
Electric capacity with a cable length of 0.5 m	150 … 300 pF
Insulation resistance under normal conditions	> 1 000 MOhm
Temperature range	–105 … +150 °C
Housing material	stainless steel
Weight (without cable)	5g

PARAMETER	7C103HB
Sensitivity	> 300 · 10^6 V/m
Resonant frequency	194 kHz
Bandwidth	50 … 750 kHz
Electric capacity with a cable length of 0.5 m	150 … 300 pF
Insulation resistance under normal conditions	> 1 000 MOhm
Temperature range	–60 … +120 °C
Housing material	stainless steel
Weight	6g

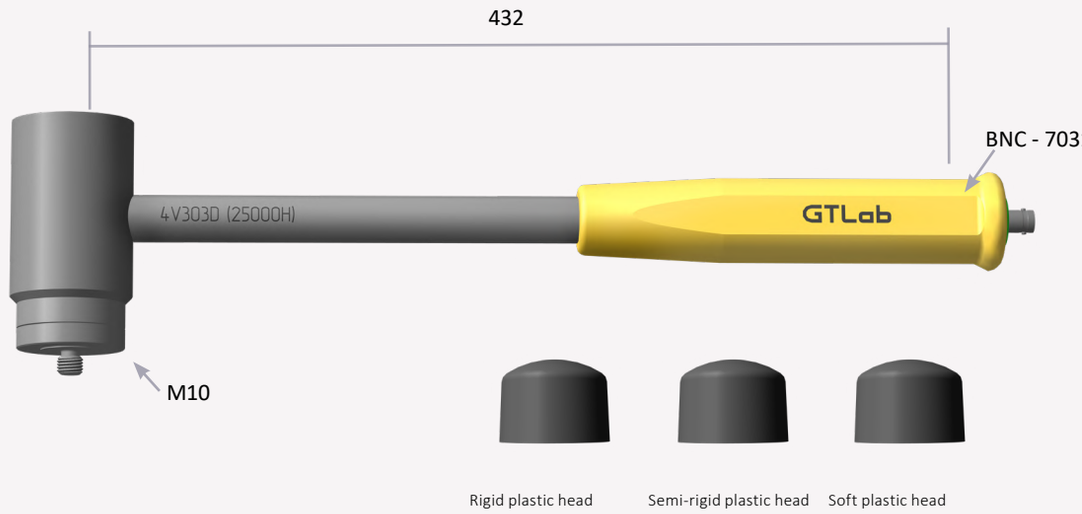
IMPULSE HAMMERS



Parameter	4V301D
Sensitivity	1 mV/H
The peak value of the dynamic force: ▪ with a steel head ▪ with a plastic head ▪ with a rubber head	 5 000 H 1 000 H 700 H
Duration of the shock pulse: ▪ with a steel head ▪ with a steel head and additional mass ▪ with a plastic head ▪ with a plastic head and additional mass ▪ with a rubber head ▪ with a rubber head and additional mass	 0.1 … 0.2 ms 0.15 … 0.3 ms 0.4 … 0.6 ms 0.5 … 0.8 ms 1.2 … 2.6 ms 1.7 … 3.9 ms
Weight of hammer in a set with sensor without additional weight and head	300 g
Additional mass	100 g
Weight of head ▪ steel ▪ plastic ▪ rubber	 13 g 14 g 14 g
Temperature range	– 40 … + 125 °C
Power: ▪ voltage ▪ current	 + (15 … 30) V 2 … 20 mA
Noise level, root mean square value (1 Hz ÷ 10 kHz)	$5 \cdot 10^{-3}$ H
Constsnt output votage level	8 … 10 V
Output impedance	< 500 Ohm
Connector type	BNC
Supplied accessories	hammer, additional mass, steel head, plastic head, rubber head, cable 03D1D1 (as per customer's request)

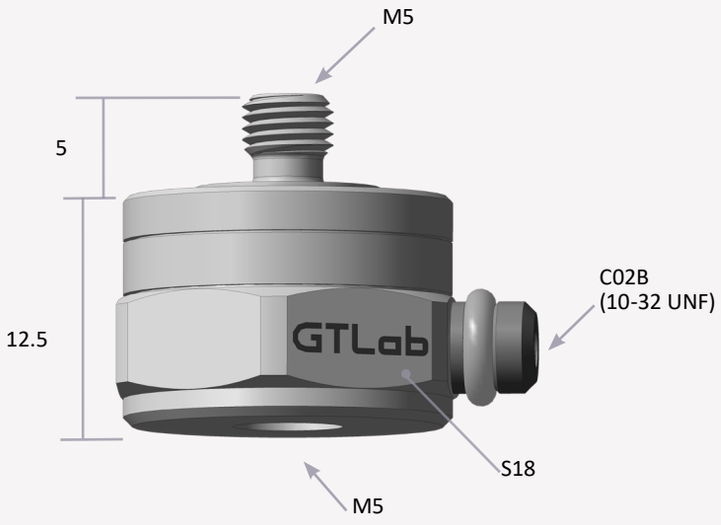


Parameter	4V302D
Sensitivity	10 mV/H
The peak value of the dynamic force: ▪ with a steel head ▪ with a plastic head ▪ with a rubber head	 500 H 100 H 70 H
Duration of the shock pulse: ▪ with a steel head ▪ with a steel head and additional mass ▪ with a plastic head ▪ with a plastic head and additional mass ▪ with a rubber head ▪ with a rubber head and additional mass	 0.1 … 0.2 ms 0.15 … 0.3 ms 0.4 … 0.6 ms 0.5 … 0.8 ms 1.2 … 2.6 ms 1.7 … 3.9 ms
Weight of hammer in a set with sensor without additional weight and head	200 g
Additional mass	30 g
Weight of head ▪ steel ▪ plastic ▪ rubber	 13 g 14 g 14 g
Temperature range	– 40 … + 125 °C
Power: ▪ voltage ▪ current	 + (15 … 30) V 2 … 20 mA
Noise level, root mean square value (1 Hz ÷ 10 kHz)	$1 \cdot 10^{-3}$ H
Constant output voltage level	8 … 10 V
Output impedance	< 500 Ohm
Connector type	BNC
Supplied accessories	hammer, additional mass, steel head, plastic head, rubber head cable 03D1D1 (as per customer's request)

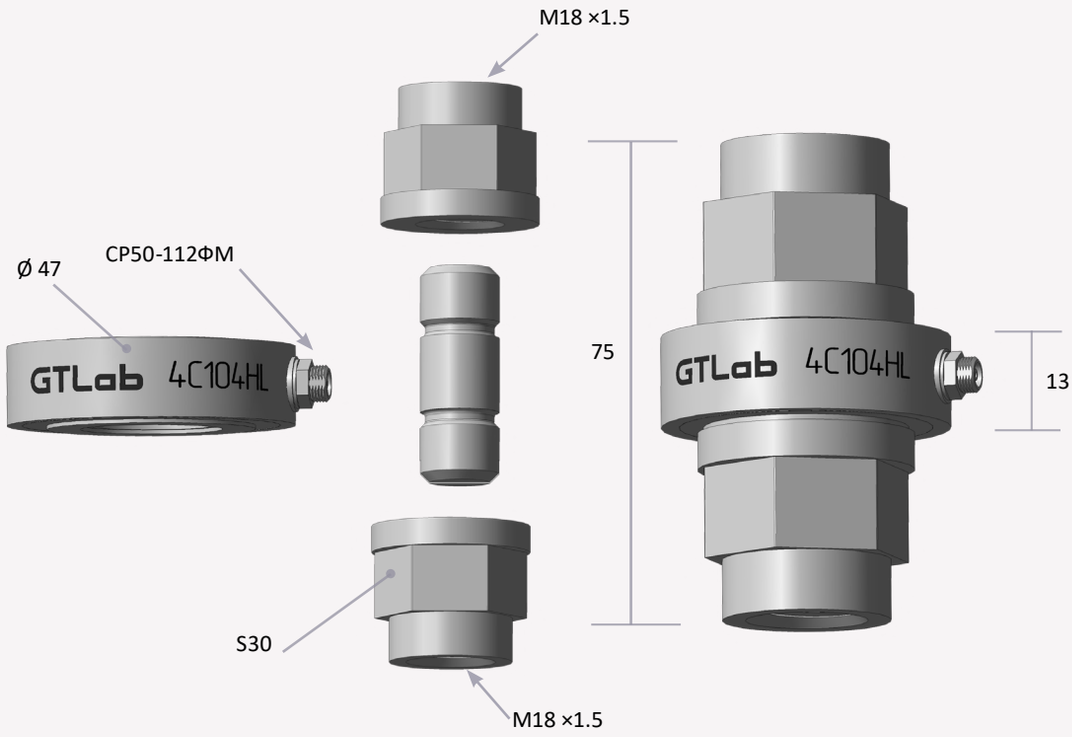


Parameter	4V303D
Sensitivity	0.2 mV/H
The peak value of the dynamic force: ▪ with a rigid plastic head ▪ with a semi-rigid plastic head ▪ with a soft plastic head	 25 000 H 10 000 H 5 000 H
Duration of the shock pulse: ▪ with a rigid plastic head ▪ with a semi-rigid plastic head ▪ with a soft plastic head	 0.5 … 1 ms 1.0 … 2 ms 2 … 5 ms
Weight of hammer in a set with sensor without additional weight and head	2 000 g
Additional mass	30 g
Weight of head ▪ rigid plastic ▪ semi-rigid plastic ▪ soft plastic	 260 g 260 g 260 g
Temperature range	– 40 … + 125 °C
Power: ▪ voltage ▪ current	 + (15 … 30) V 2 … 20 mA
Noise level, root mean square value (1 Hz ÷ 10 kHz)	$3 \cdot 10^{-3}$ H
Constsnt output votage level	8 … 10 V
Output impedance	< 500 Ohm
Connector type	BNC
Supplied accessories	rigid plastic head semi-rigid plastic head soft plastic head cable 03D1D1 (as per customer's request)

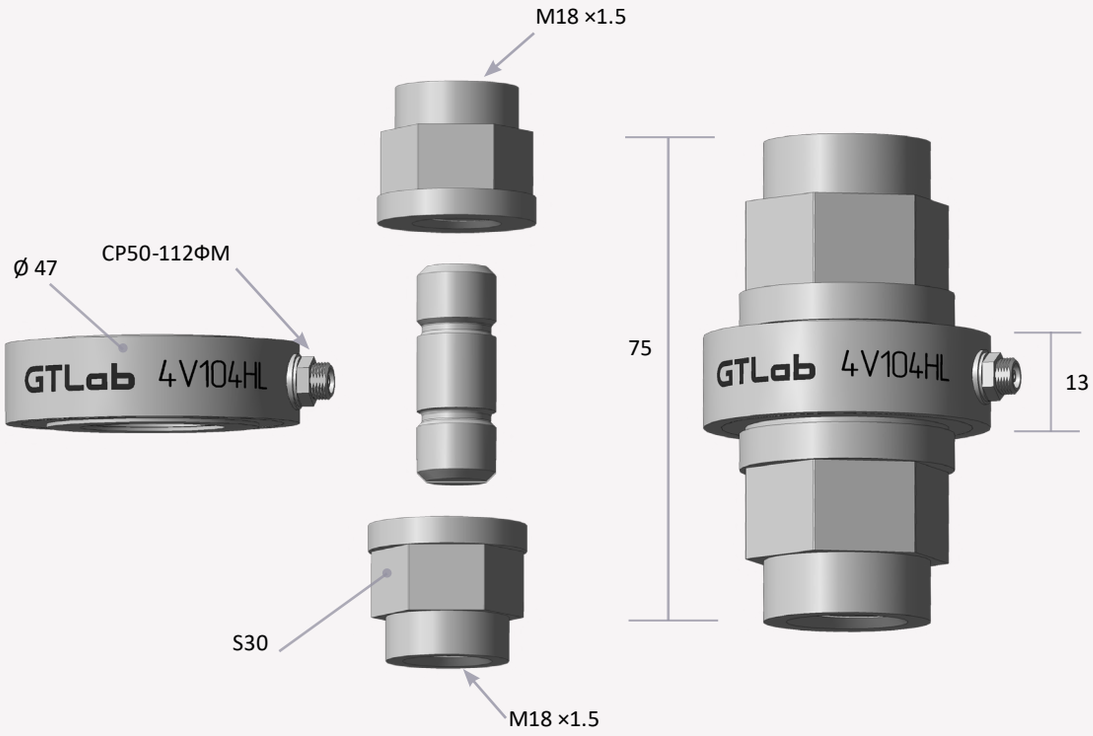
4C101HB



Parameter	4C101HB
Force measurement range	– 1 000...+ 5 000 H
Sensitivity (± 20 %) (nominal value)	4 pC/H
Transverse sensitivity	< 5%
Coefficient of the effect of the ambient temperature	< 0.05 %/°C
Temperature range	– 60...+ 200 °C
Deformation sensitivity	< 0.03 H·m/µm
Electric capacity	10 ... 14 pF
Insulation resistance under normal conditions	> 1 000 MOhm
Resonant frequency	> 30 kHz
Effective inertial mass ▪ top of the piezoelectric element ▪ bottom of the piezoelectric element	 4 g 15 g
Housing material	stainless steel
Supplied accessories	cable 03B1B1 (as per customer's request) pin P0505
Weight (without cable)	20 g

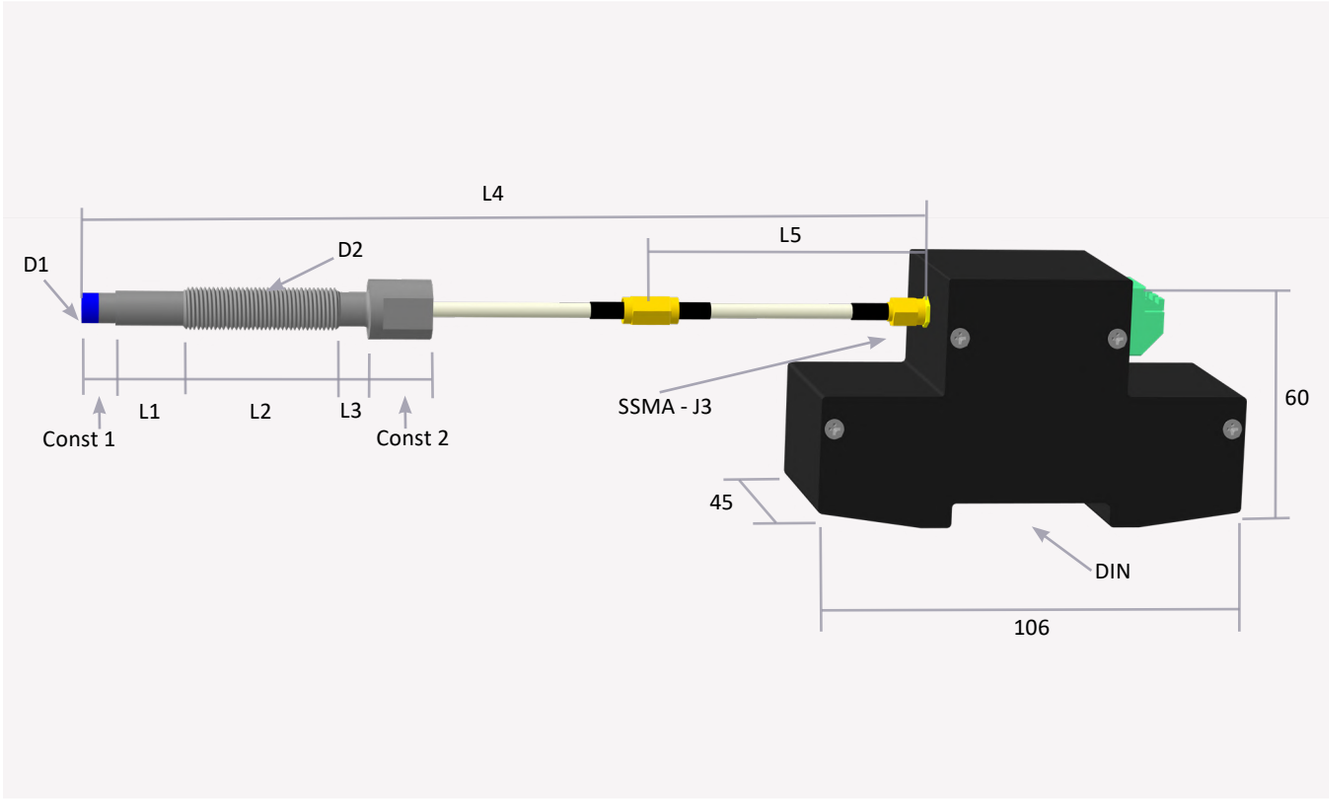


PARAMETER	4C104HL
Force measurement range	–50 000 … +100 000 H
Sensitivity (± 20 %) (nominal value)	2 pC/H
Transverse sensitivity	< 5%
Coefficient of the effect of the ambient temperature	< 0,05 %/°C
Temperature range	–60 … +200°C
Deformation sensitivity	< 0.05 H·m/µm
Electric capacity	18 … 23 pF
Insulation resistance under normal conditions	> 1 000 MOhm
Resonant frequency	> 12 kHz
Effective inertial mass ▪ top of the piezoelectric element ▪ bottom of the piezoelectric element	 230g 230g
Housing material	stainless steel
Supplied accessories	Two load nuts M18 × 1.6 pin M18 × 1.5
Weight	500g



PARAMETER	4V104HL
Force measurement range	–50 000 ... +100 000 H
Sensitivity (± 20 %) (nominal value)	0,05 mV/H
Transverse sensitivity	< 5%
Coefficient of the effect of the ambient temperature	< 0,05 %/°C
Temperature range	–40 ... +125 °C
Deformation sensitivity	< 0,05 H·m/µm
Resonant frequency	> 12 kHz
Noise level, root mean square value (1 Hz ÷ 10 kHz)	0,01 H
Power: ▪ voltage ▪ current	 + (18 ... 30) V 2 ... 20 mA
Constsnt output votage level	8 ... 13 V
Output impedance	< 100 Ohm
Effective inertial mass ▪ top of the piezoelectric element ▪ bottom of the piezoelectric element	 230g 230g
Housing material	stainless steel
Supplied accessories	Two load nuts M18 × 1,6 pin M18 × 1,5
Weight	500g

EDDY CURRENT SENSORS



1. Sensor:

8V	D1	A/M	L1	L2	L3	L4	L5	D2
	Diameter of measuring tip	A – built-in cable without metal hose, M – built-in cable with metal hose.	Length of the pre-threaded part (mm)	Thread length (mm)	Length after threaded part (mm)	Total length (m)	Extension cable length (m)	Thread
	7 mm – (05)		min – 0 (000) max – 200 (200)	min – 50 (050) max – 100 (100)	min – 0 (00) max – 50 (50)	min – 0.5 (005) max – 18 (180)	min – 00 (00) max – 17 (17)	M8x1 – (00)
								¼ - 28 UNF – (01)
	10 mm – (08)							M10x1 – (00)
								¾ - 24 UNF – (01)

Example:

8V05A.120.085.00.120.00.01

- Thread ¼ - 28 UNF
- Extension cable length 0 м
- Total length 12 м
- Length after threaded part 0 м
- Thread length 85 mm
- Length of the pre-threaded part 120 mm
- built-in cable without metal hose
- Diameter of measuring tip 7 mm

2. Signal generators:

A3	31 – Source signal, output: 4-20 мА и 0 ...2 В.	D1.	L4.			
	10 – Measuring RPM, output signal - voltage			XXX.	AB.	AB.
	61 – Signal amplitude, permanent displacement, output: 4-20 мА.					
	70 – Measuring RPM, output signal – current.			XXX.	AB.	AB.

XXX – Number of responses per shaft rotation, from 001 to 255.
AB – Lower and upper limits of the speed measurement range, rpm: A*10B . (1 rpm corresponds: 1 * 100 → 10 , 60 000 rpm corresponds: 6*104→ 64)

Example:

A310.05.120.001.10.64

- upper limit of measurement 60 000 rpm
- lower limit of measurement 1 rpm
- 1 shaft turnover response
- total length of inverter 12 m
- probe diameter 7 mm
- measurement of the number of revolutions, the output signal - voltage

3. Measuring channel (sensor + signal generators):

D201.	D1	A/M.	L1.	L2.	L3.	L4.	XXX.	AB.	AB

Example:

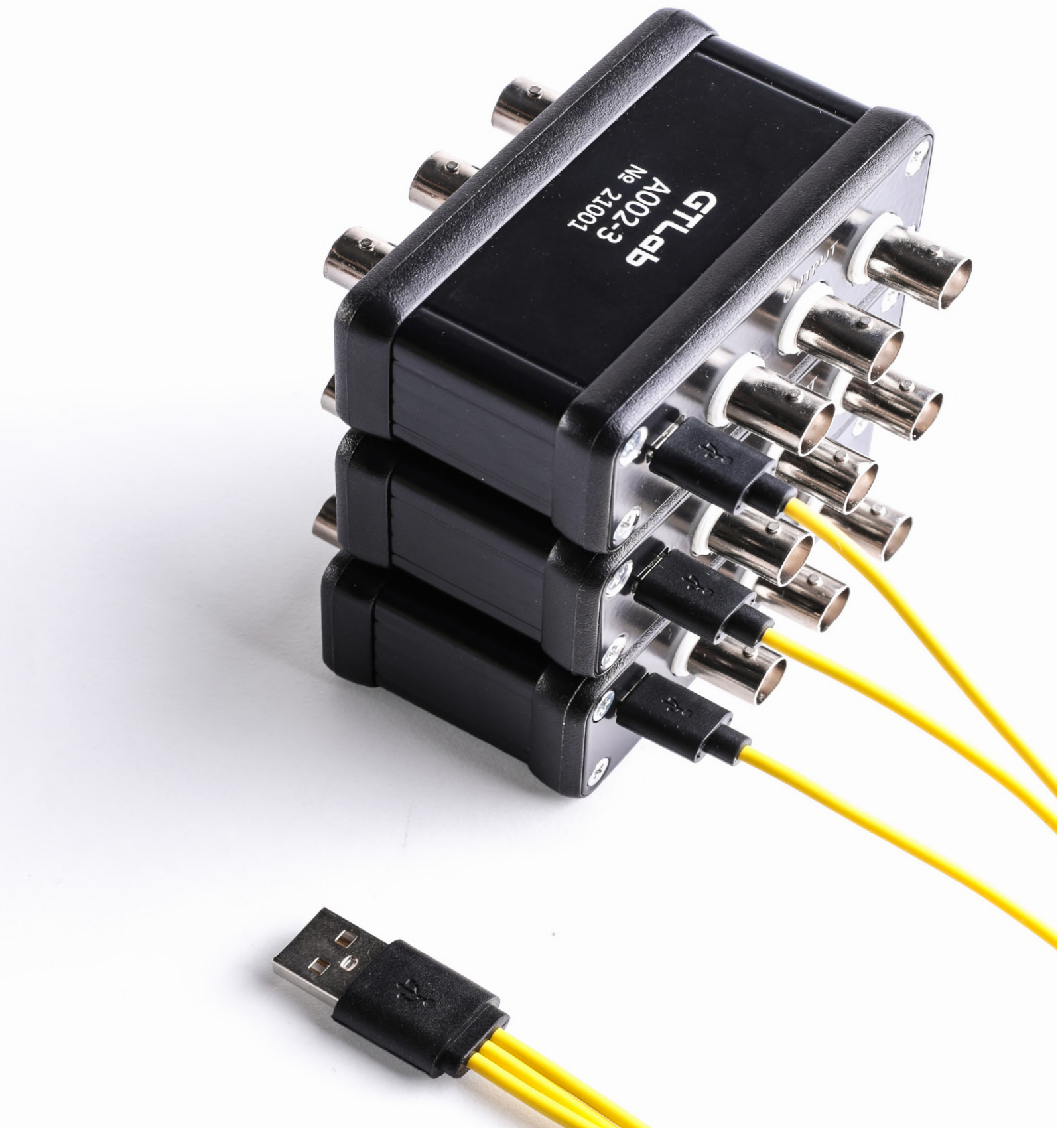
D201.05A.120.085.00.120. 001.10.64

- Upper limit of measurement 60 000 rpm
- lower limit of measurement 1 rpm
- 1 shaft turnover response
- total length of inverter 12 m
- Length after threaded part 0 m
- Thread length 85 mm
- Length of the pre-threaded part120 mm
- built-in cable without metal hose
- probe diameter 7 mm

Measurable ranges:

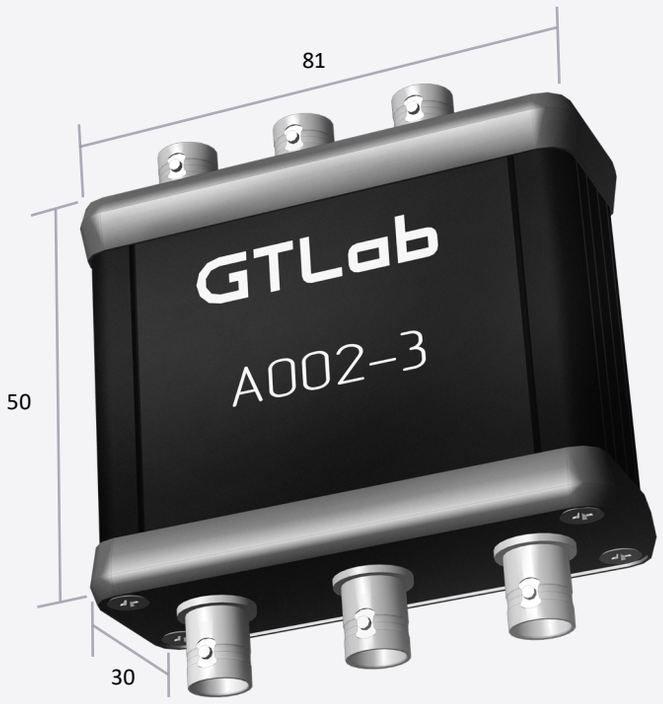
Measured value	Diameter of the measuring tip	Measuring range
Displacement	7 mm	0.2 – 2.2 mm
	10 mm	0.3 – 3.3 mm
Number of RPMs	7 mm	0 – 60 000 rpm
	10 mm	

SIGNAL GENERATORS

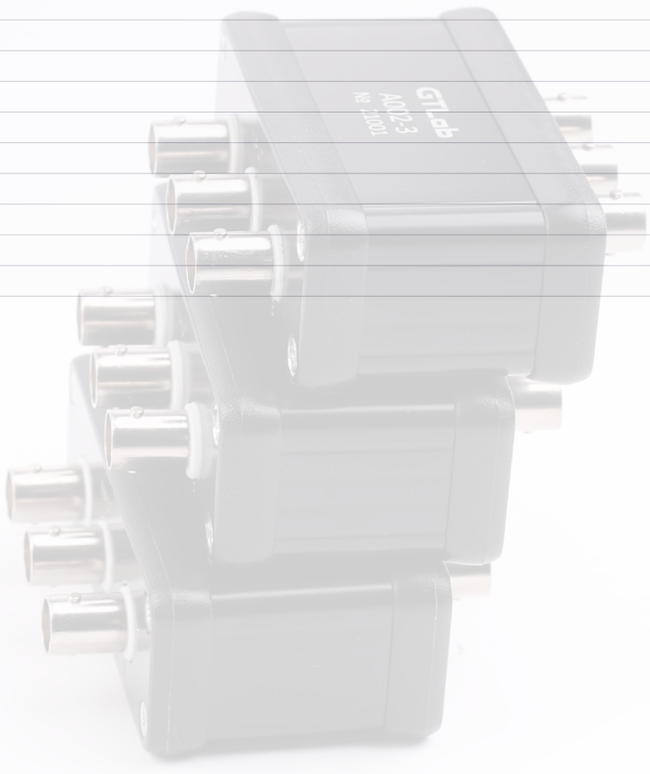


Parameter	A002
Sensor supply voltage	24 V ± 1 %
Sensor supply current	5.7 ± 10 mA
Frequency range (uneven frequency response ± 1 dB)	0.5 ...100 000 Hz
Voltage of the external source	5± 10 % V
Current consumption	< 50 mA
Temperature range	-40...+85°C
Input impedance of recorder	≥ 1 MOhm
Input connector	BNC
Output connector	BNC
Connectors for power supply	Micro USB
Housing material	aluminum
Weight	65 g
Purpose	for IEPE sensors

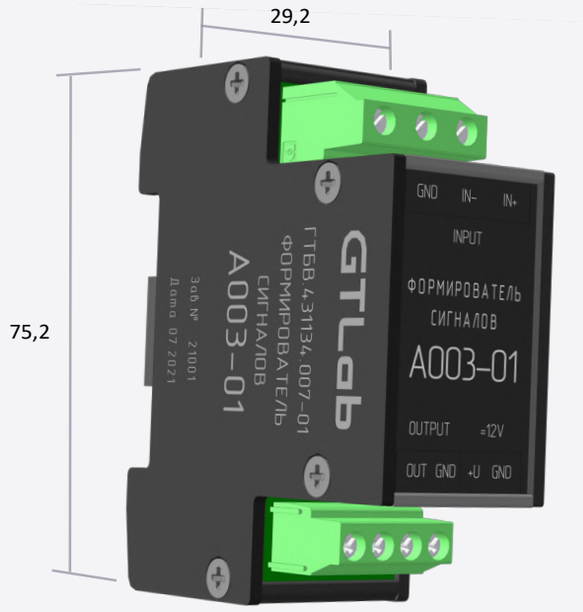
A002-3



Parameter	A002-3
Sensor supply voltage	24 V ± 1 %
Sensor supply current	5,7 ± 10 % mA
Frequency range (uneven frequency response ± 1 dB)	0,5 ...100 000 Hz
Voltage of the external source	5± 10 % V
Current consumption	< 50 mA
Temperature range	-40...+85°C
Input impedance of recorder	≥ 1 MOhm
Input connector	BNC
Output connector	BNC
Connectors for power supply	Micro USB
Housing material	aluminum
Weight	135 g
Purpose	for IEPE sensors

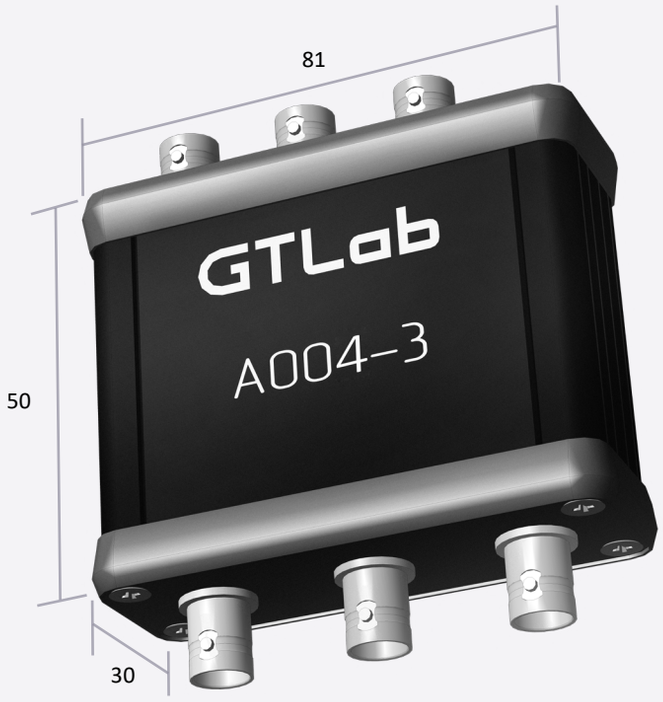


PARAMETER	A003	A003-02
Sensor supply voltage	± 12V ± 10%	+5V ± 10 %
Frequency range (uneven frequency response ± 1 dB)	0. 5 ...30 000 Hz	
Voltage of the external source	+5V ± 10 %	+5V ± 10 %
Current consumption	< 50 mA	
Temperature range	–40 ... +85 °C	
Output impedance	< 100 MOhm	
Input connector	terminals	
Output connector	BNC	
Connectors for power supply	Micro USB	
Housing material	aluminum	
Weight	100g	
Purpose	for sensors with voltage output	
Feature	-	-



PARAMETER	A003-01
Sensor supply voltage	± 12V ± 10%
Frequency range (uneven frequency response ± 1 dB)	0,5 ...30 000 Hz
Voltage of the external source	+12V ± 10 %
Current consumption	< 50 mA
Temperature range	–40 ... +85 °C
Output impedance	< 100 MOhm
Input/output connector	terminals
Connectors for power supply	terminals
Housing material	aluminum
Weight	125g
Purpose	for sensors with voltage output
Feature	DIN-rail mount

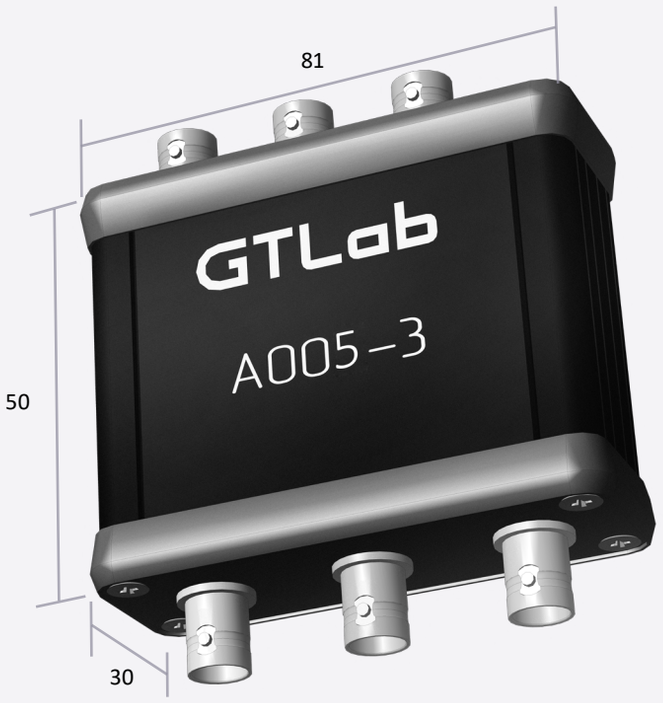
PARAMETER	A004
Sensor supply voltage	24V ± 10%
Sensor supply current	5.7 ± 10 % mA
Frequency range (uneven frequency response ± 1 dB)	0.1 ...100 000 Hz
Voltage of the external source	5 ± 10 % V
Current consumption	< 50 mA
Temperature range	–40 ... +85 °C
Input impedance of recorder	< 100 Ohm
Input/output connector	BNC
Connectors for power supply	Micro USB
Housing material	aluminum
Weight	65g
Purpose	for IEPE sensors with frequency range from 0.1Hz



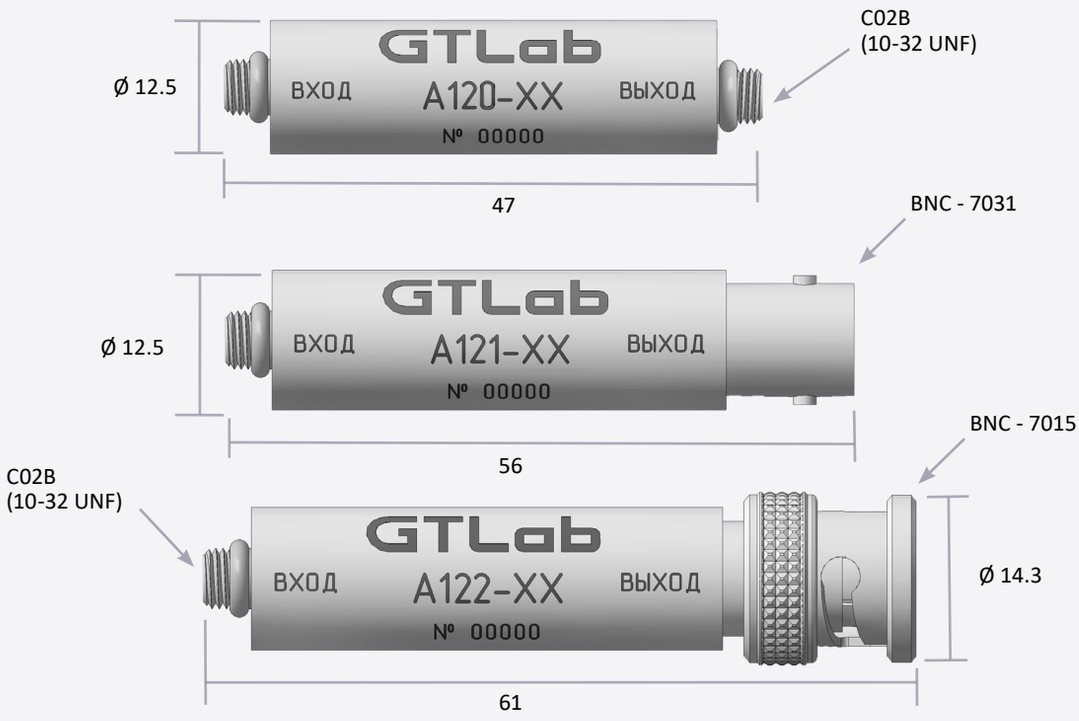
PARAMETER	A004-3
Sensor supply voltage	24V ± 10%
Sensor supply current	5.7 ± 10 % mA
Frequency range (uneven frequency response ± 1 dB)	0.1 ...100 000 Hz
Voltage of the external source	5 ± 10 % B
Current consumption	< 50 мА
Temperature range	–40 ... +85 °C
Input impedance регистратора	< 100 Ohm
Input/output connector	BNC
Connectors for power supply	Micro USB
Housing material	aluminum
Weight	135g
Purpose	for IEPE sensors with frequency range from 0.1Hz

PARAMETER	A005
Output voltage	24V ± 10%
Output impedance	50 ± 0.5 Ohm
Frequency range (uneven frequency response ± 1 dB)	10kHz ...1Hz
Voltage of the external source	5 ± 10 % V
Current consumption	< 50 mA
Temperature range	–40...+85°C
Input/output connector	BNC
Connectors for power supply	Micro USB
Housing material	aluminum
Weight	65g
Purpose	for IEPE sensors
Feature	for ADC with input multiplexer

A005-3



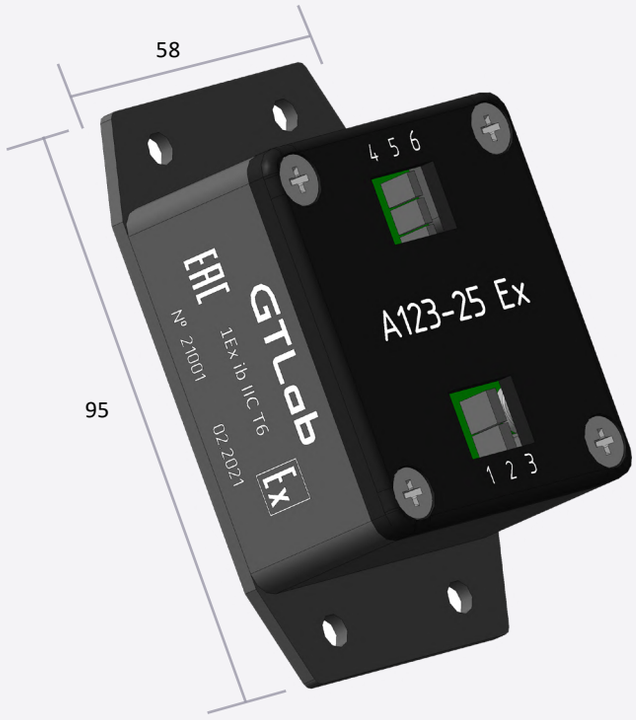
PARAMETER	A005-3
Sensor supply voltage	24V ± 10%
Sensor supply current	5.7 ± 10 % mA
Frequency range (uneven frequency response ± 1 dB)	0.5 ...100 000 Hz
Voltage of the external source	5 ± 10 % V
Current consumption	50 mA
Temperature range	–40...+85°C
Input impedance of the recorder	<100 Ohm
Input/output connector	BNC
Connectors for power supply	Micro USB
Housing material	aluminum
Weight	135 g
Purpose	for IEPE sensors
Feature	for ADC with input multiplexer



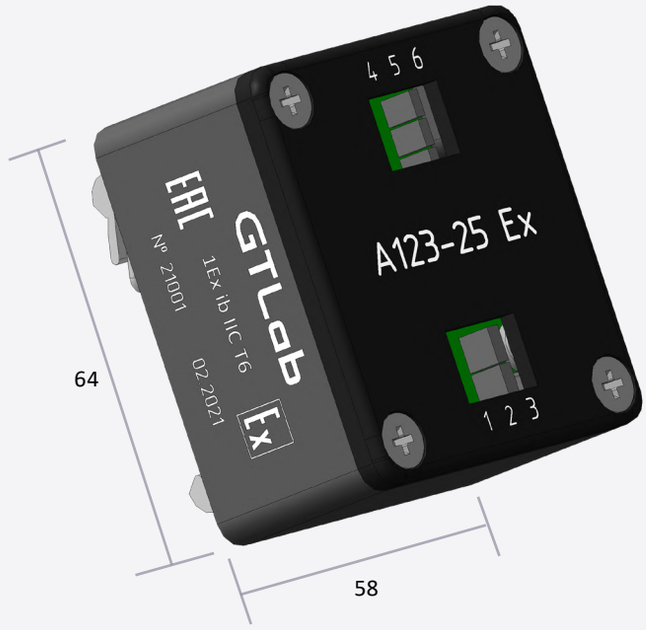
PARAMETER	A120-XX	A121-XX	A122-XX
Limits of the permissible basic relative error of the charge conversion coefficient at a frequency of 1 kHz	± 2 %		
Output impedance	< 500 Ohm		
Maximum amplitude of the output voltage	± 5 V		
Non-linear distortion coefficient	< 5 %		
Limits of permissible additional relative error of the charge conversion coefficient in the Temperature range	± 2 %		
Power mode: ▪ external DC voltage source ▪ current	 +(18 ... 30)V 2 ... 20 mA		
Constant output voltage level	8 ... 13 V		
Weight	16 g	19 г	21 г
Temperature range	–40 ... +85 °C		

	Sensitivity by charge-XX	Maximum input charge (peak)	Frequency range (uneven frequency response ± 1 dB)	SCR level of own noise in the range 1 ... 22 000Hz
A120-XX A121-XX A122-XX	0,1 mV/pC	± 50 000 pC	0,5 ... 100 000 Hz	$30 \cdot 10^{-6}$ pC/pF
	0,2 mV/pC	± 25 000 pC		
	0,5 mV/pC	± 10 000 pC		
	1 mV/pC	± 5 000 pC		$5 \cdot 10^{-6}$ pC/pF
	2 mV/pC	± 2 500 pC		
	5 mV/pC	± 1 000 pC		
	10 mV/pC	± 500 pC		
	20 mV/pC	± 250 pC	0,5 ... 50 000 Hz	$2 \cdot 10^{-6}$ pC/pF
	50 mV/pC	± 100 pC	0,5 ... 30 000 Hz	

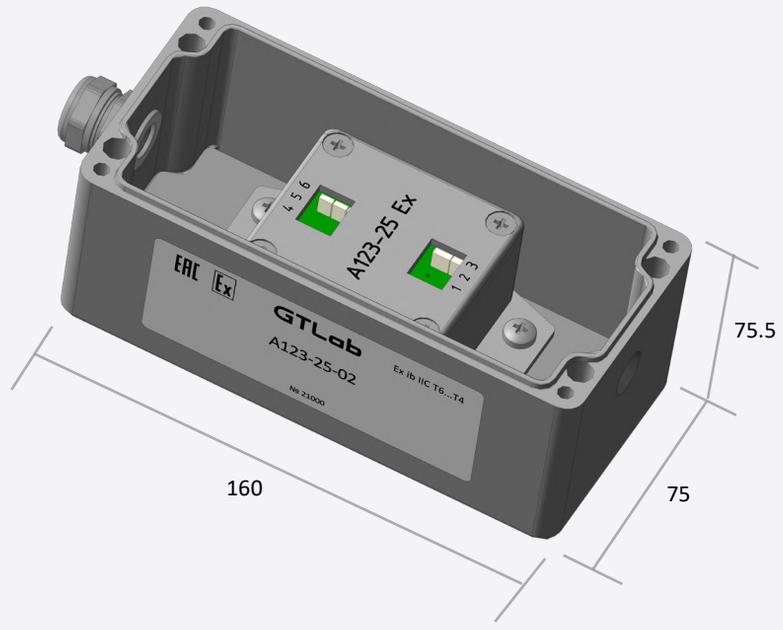
A123-25



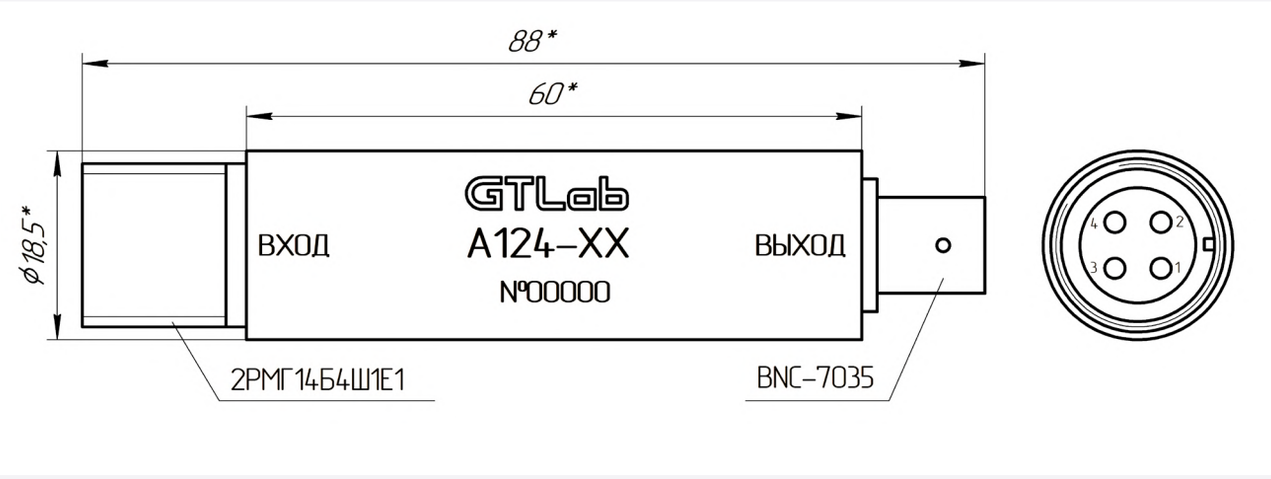
PARAMETER	A123-25
Maximum input charge (peak)	200 pC
Frequency range (uneven frequency response - 3 dB)	2 ... 20 000 Hz
Conversion coefficient to current signal	25 µA/pC
Maximum output current amplitude	± 5 mA
DC output current level	12 ± 0.5 mA
Measurement error in the operating temperature range	2 %
Temperature range	–40 ... +85 °C
Voltage of the external source	15 ... 25 V
Current consumption	< 25 mA
Run mode setting time	< 4 s
Input/output connector	terminals
Housing material	aluminium alloy
Weight	225g



PARAMETER	A123-25-01
Maximum input charge (peak)	200 pC
Frequency range (uneven frequency response - 3 dB)	2 ... 20 000Hz
Conversion coefficient to current signal	25 µA/pC
Maximum output current amplitude	± 5 mA
DC output current level	12 ± 0.5 mA
Measurement error in the operating temperature range	2 %
Temperature range	–40 ... +85 °C
Voltage of the external source	15 ... 25 V
Current consumption	< 25 mA
Run mode setting time	< 4 s
Input/output connector	terminals
Housing material	aluminium alloy
Weight	270 g
DIN-rail mounting	yes

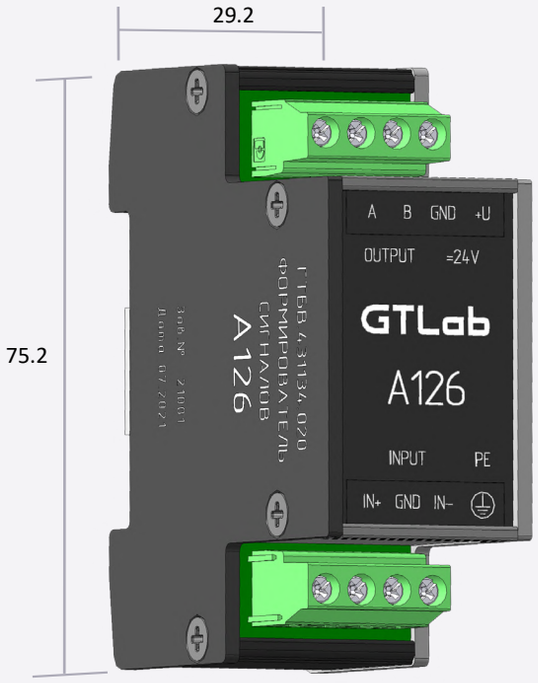


PARAMETER	A123-25-02
Maximum input charge (peak)	200 pC
Frequency range (uneven frequency response - 3 dB)	2 ... 20 000 Hz
Conversion coefficient to current signal	25 µA/pC
Maximum output current amplitude	± 5 mA
DC output current level	12 ± 0.5 mA
Measurement error in the operating temperature range	2 %
Temperature range	–40 ... +85 °C
Voltage of the external source	15 ... 25 V
Current consumption	< 25 mA
Run mode setting time	< 4 c
Input/output connector	terminals
Housing material	aluminium alloy
Weight	800 g
Feature	explosion-proof enclosure

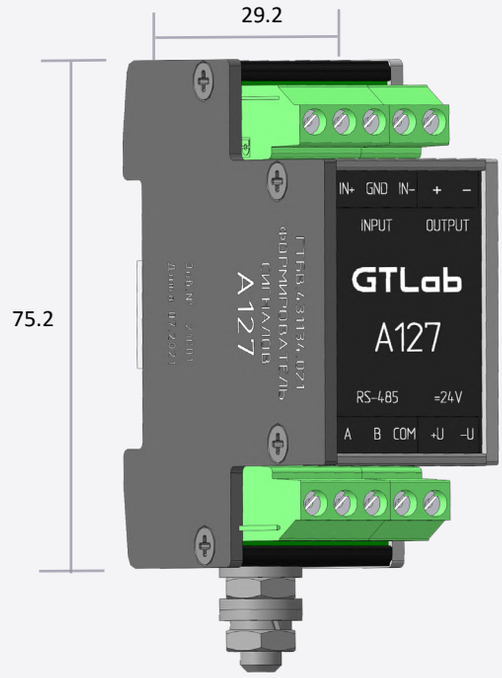


PARAMETER	A124-1	A124-10	A124-100
Limits of the permissible basic relative error of the charge conversion coefficient at a frequency of 1 kHz	± 2 %		
Output impedance	< 100 Ohm		
Maximum amplitude of the output voltage	± 4 V		
Non-linear distortion coefficient	< 5 %		
Input load capacitance	10 ... 10 000 pF		
Limits of permissible additional relative error of the charge conversion coefficient in the Temperature range	< 1 %		
Power mode: ▪ voltage ▪ current	 + (18 ... 30) V 4.7 ... 20 mA		
Constant output voltage level	8 ... 13 V		
Weight	100 g		
Temperature range	–40 ... +85 °C		
Input connector	2РМГ14Б4Ш1В1		
Output connector	BNC		

	Sensitivity by charge - XX	Maximum input charge (peak)	Frequency range (uneven frequency response - 3 dB)	SCR level of own noise, input
A124-XX	0.1 мВ/пС	± 40 000 пС	1... 10 000Hz	$10 \cdot 10^{-6}$ пС/пФ
	1 мВ/пС	± 4 000 пС		
	10 мВ/пС	± 400 пС		

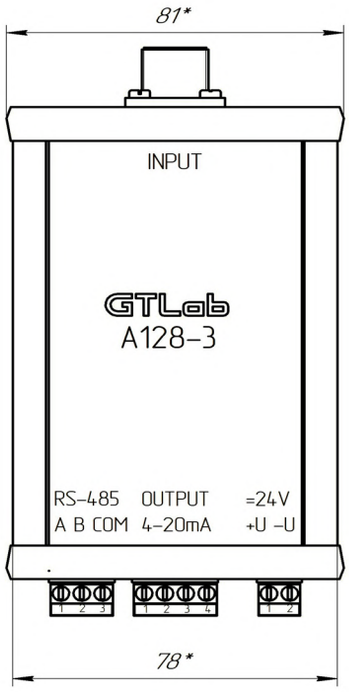


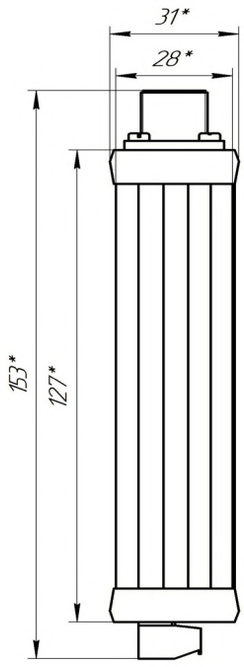
PARAMETER	A126
Sensitivity by charge ± 2%	1 mV/pC
Sensitivity by charge with integration ± 3%	1 000 mV/pC*c
Frequency range (uneven frequency response - 3 dB)	40 ... 2 000Hz
Maximum input charge (peak)	5 000 pC
Maximum amplitude of the output voltage	± 5 B
Noise level, root mean square value by charge	< $5 \cdot 10^{-6}$ pC/pF
Noise level, root mean square value by charge with integratio	< $15 \cdot 10^{-6}$ pC/pF
Output impedance	< 100 Ohm
Voltage of the external source	+ (9 ... 25) V
Current consumption	< 20 mA
Limits of the permissible basic relative error of the charge conversion coefficient	± 1%
Input/output connector	terminals
Housing material	aluminium alloy
Weight	150g
Purpose	Converting the charge into a voltage output signal . Example, proportional to vibration acceleration / vibration speeds, dynamic pressure / velocities of changes in dynamic pressure
Feature	DIN-rail mounting

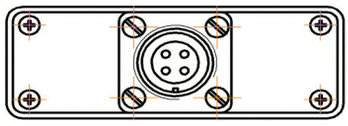


PARAMETER	A127
Sensitivity by charge (± 2 %)	1; 2; 5; 10; 20; 50; 100; 200; 500 mV/pC
Frequency range (uneven frequency response - 3 dB)	2 ... 20 000 Hz
Maximum input charge (peak)	± 10 000 pC
Maximum amplitude of the output voltage	± 10 V
Noise level, root mean square value	< $20 \cdot 10^{-6}$ pC/pF
Output impedance	< 100 Ohm
Amplitude of the test signal (± 2,5 %)	100 mV
Frequency signal of the test generator	16 ± 0.5 Hz
Data exchange in the information system	RS485
Measurement error in the operating temperature range	± 2 %
Temperature range	–40 ... +85 °C
Voltage of the external source	+(18 ... 30) V
Current consumption	≤ 50 mA
Input connector	terminals
Output connector	terminals
Housing material	aluminium alloy
Weight	150 g
DIN-rail mount	yes
Purpose	Conversion of the high-impedance signal of a piezoelectric transducer (vibration transducer, force sensor, etc.) into a low-impedance voltage signal
Feature	Charge conversion to vibration acceleration output signal; symmetrical (balanced) input and output; control of test oscillator switching and conversion coefficient switching via RS-485; galvanic isolated from, common, power and RS485; performance stability and reliability during operation; low noise level

A128-3





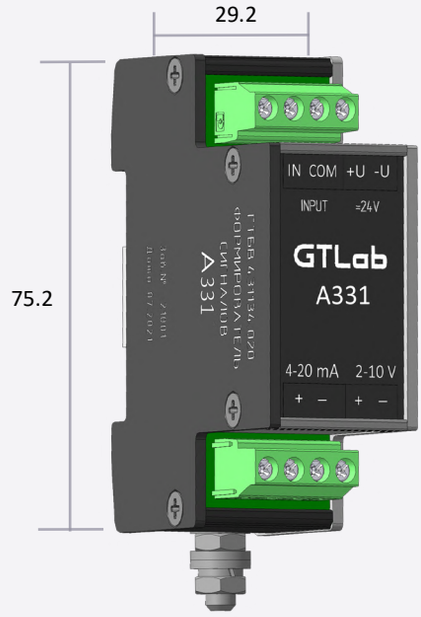


PARAMETER	A128-3
Maximum input charge (peak)	± 500 pC
Frequency range (uneven frequency response - 1 dB)	10 ... 1 000 Hz
Range of measured vibration velocity, RMS	0,1 ... 10; 0,2 ... 20; 0,5 ...50; 1 ... 100 mm/c
Sensitivity by vibration speed to current signal 4 … 20 mA, (± 10 %)	1,6; 0,8; 0,32; 0,16 mA/mm/c
Error of measurement	± 2 %
Measurement error in the operating temperature range	± 2 %
Temperature range	–40 ... +70 °C
Data exchange in the information system	RS485
Voltage of the external source	+(18 … 30) V
Current consumption	≤ 100 mA
Input connector	screw terminals
Output connector	screw terminals (RS485, output 4-20 мА, power)
Housing material	aluminium alloy
Weight	150g
Purpose	Measurement of RMS value of object vibration velocity and signal output via 4-20 mA current loop interface
Feature	Operation with charge three-component vibration transducers; 4-20 mA current loop interface output; RS-485 digital interface for entering conversion coefficients of used vibration transducer and measuring ranges of vibration velocity

PARAMETER	A142
Types of connectable transducers	IEPE; PE
Maximum input voltage (IEPE)	± 10 V
Maximum input charge (peak) (PE)	10^5 pC
Range sensitivity ▪ by voltage (IEPE) ▪ by charge (PE)	 10^{-12}... 10^3 V/Unit 10^{-12}... 10^3 pC/Unit
Frequency range	0.3 ... 100 000Hz
Input impedance of the recorder	> 10^9 Ohm
Output impedance	< 100 Ohm
Maximum output voltage amplitude	± 10 V
Noise level, root mean square value by voltage	≤ 20 μV
Noise level, root mean square value by charge	≤ $20 \cdot 10^{-6}$ pC/pF
Voltage of the external source IEPE sensors	+24 ± 2 V
IEPE sensor supply current	+5.7 ± 1.2 mA
Amplification factor by voltage , (+0,5%)	1; 2; 5; 10; 20; 50; 100
Sensitivity by charge, (+0,5%) (PE)	0,1; 0,2; 0,5; 10; 20; 50; 100 mV/pC
Coefficient of the effect of the ambient temperature	≤ 0,025 %°C
High-pass filter with frequency response decay ≥ 80 dB/decade, at -1 dB	0,3; 1; 2; 10
Low-pass filter with frequency response decay ≥ 80 dB/decade, at -1 dB	0,2; 0,5; 10; 20; 50; 100 kHz
Voltage of the external source	12 ± 2 V
Current consumption	≤ 1 A
Input connector	TNC
Output connector	BNC
Connectors for power supply	Power adapter
Weight	3300 g
Purpose	Measurement of dynamic process parameters in charge amplifier/voltage amplifier mode voltage
Feature	Sensor conversion factor normalization mode; overload indication mode; low noise level; galvanically isolated inputs; built-in display; operation mode control via Ethermet

A181

Parameter	A181
USB protocol	version 2.0 (full speed)
RS485 specification	EIA/TIA-485
RS485 transmission rate	300 ... 921 600 bit/s
Electrical strength of galvanic isolation	1000 V
Temperature range	- 40 ... + 85 °C
Power	+ 5 V (USB)
Current consumption with load	< 500 mA
Built-in power converter:	
▪ voltage	+ 5 ± 0.5 V
▪ current	< 400 mA
Housing material	aluminum
Weight	80 g

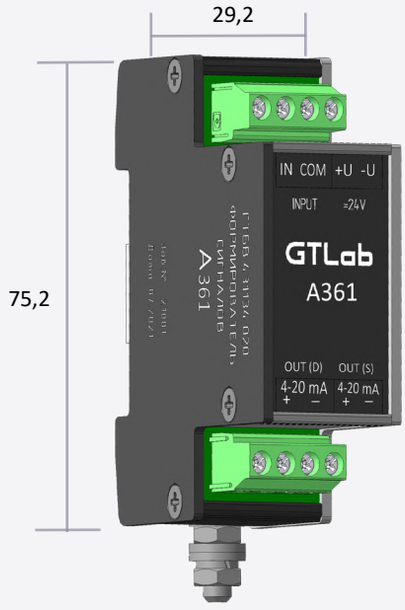


Designation:

A331	.XX	.XX
	Sensor coil diameter, mm	Sensor cable length, м

Example: A331.05.05 - Signal generators for measuring relative motion with a 5 mm. coil sensor, cable length - 5 m.

PARAMETER	A331.XX.XX
Range of displacement measurement: ▪ for a 5 mm coil ▪ for a 8 mm coil	 0.2 ... 2.2 mm 0.3 ... 3.3 mm
Relative displacement measurement conversion coefficients with current output: ▪ for a 5 mm coil ▪ for a 8 mm coil	 8 µA/µm 5.3 µA/µm
Relative displacement measurement conversion coefficients with voltage output: ▪ for a 5 mm coil ▪ for a 8 mm coil	 4 mV/µm 2.7 mV/µm
Error in setting the conversion coefficients	± 5%
Nonlinearity of the amplitude response	± 5%
Frequency range (uneven frequency response ± 1 dB)	0 ... 10 000Hz
Temperature range	-30 ... 65 °C
Measurement error in the operating temperature range	± 2%
Temperature range sensor	-40 ... 150 °C
Measurement error in the operating temperature range with sensor	± 10%
Voltage of the external source	+ (18 ... 30) V
Current consumption	< 35 mA
Noise level, root mean square value: ▪ for a 5 mm coil ▪ for a 8 mm coil	 ≤ 3 µm ≤ 4 µm
Input/output connector	terminals
Sensor cable length	0.5 ... 18 m
Weight	150 g
DIN-rail mount	yes
Purpose	In combination with a sensor forms a means of measuring vibration and movement of machine parts and mechanisms
Feature	Analog current 4-20 mA and voltage 2-10 V outputs; high temperature and time stability of characteristics; possibility of replacing the same type of primary converters; transmission of current output signal to a distance of 1000 m.

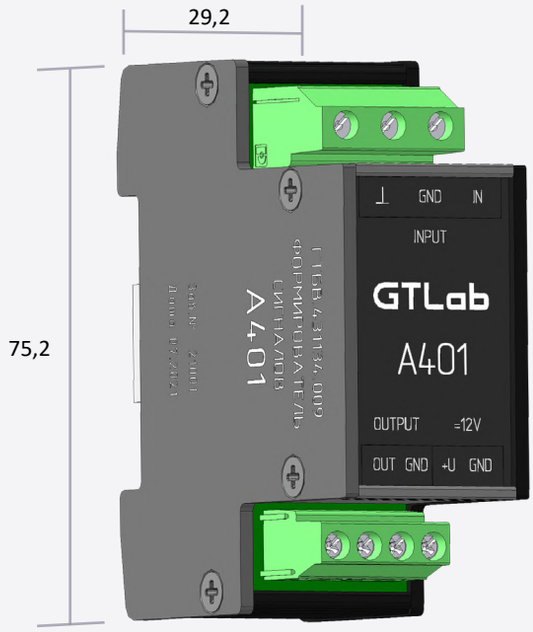


Designation:

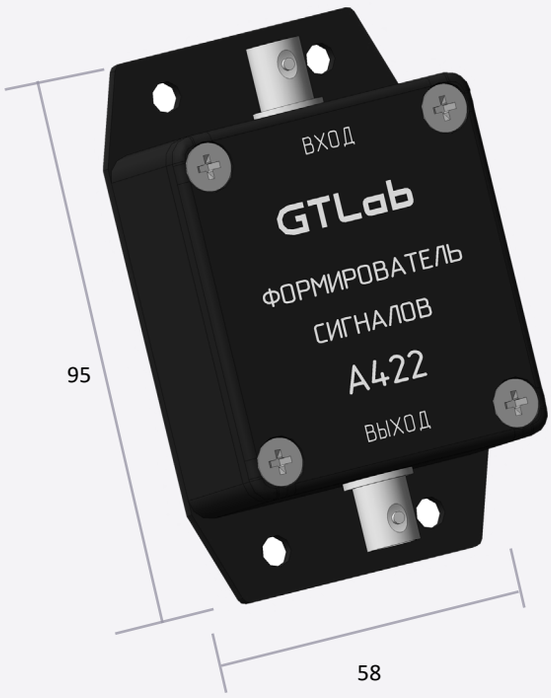
A361	.XX	.XX	.XXX
	Sensor coil diameter, mm	Sensor cable length, м	Range of measured relative vibration displacement

Example: A361.05.05.250 - Signal generators for static clearance measurements 0,2 ... 2,2 mm and relative vibration displacement 250 µm sensor with 5 mm. coil, cable length - 5 m.

PARAMETER	A361.XX.XX.XXX
Measurement range static clearance : ▪ for a 5 mm coil ▪ for a 8 mm coil	 0,2 ... 2,2 mm 0,3 ... 3,3 mm
Range of the measured relative vibration displacement: ▪ for a 5 mm coil ▪ for a 8 mm coil	 0,125; 0,25; 0,5 mm 0,25; 0,5; 1 mm
Conversion factors for relative displacement peak-to-peak measurements with 4-20 mA DC output: ▪ for a 5 mm coil ▪ for a 8 mm coil	 128; 64; 32 µA/µm 64; 32; 16 µA/µm
Conversion factors for static gap measurement with 4-20 mA DC output ▪ for a 5 mm coil ▪ for a 8 mm coil	 8 µA/µm 5,3 mA/µm
Error in setting the conversion coefficients	± 5%
Nonlinearity of the amplitude response	± 5%
Frequency range (uneven frequency response ± 1 dB)	2 ... 10 000Hz
Temperature range	-30 ... 65 °C
Measurement error in the operating temperature range	± 2%
Temperature range of the sensor	-40 ... 150 °C
Measurement error in the operating temperature range with sensor	± 10%
Voltage of the external source	+ (18 ... 30) V
Current consumption	< 35 mA
Noise level, root mean square value: ▪ for a 5 mm coil ▪ for a 8 mm coil	 ≤ 3 µm ≤ 4 µm
Input/output connector	terminals
Sensor cable length	0,5 ... 18 m
Weight	150g
DIN-rail mount	yes
Purpose	In combination with a sensor, it forms a means for measuring vibration and movement of machine parts and mechanisms
Feature	Output current 4-20 mA relative vibration displacement OUT (D); current output 4-20 mA static gap OUT (S); high temperature and time stability of characteristics; the possibility of replacing the same type of primary converters; transmission of the output current signal over a distance of up to 1000 m.



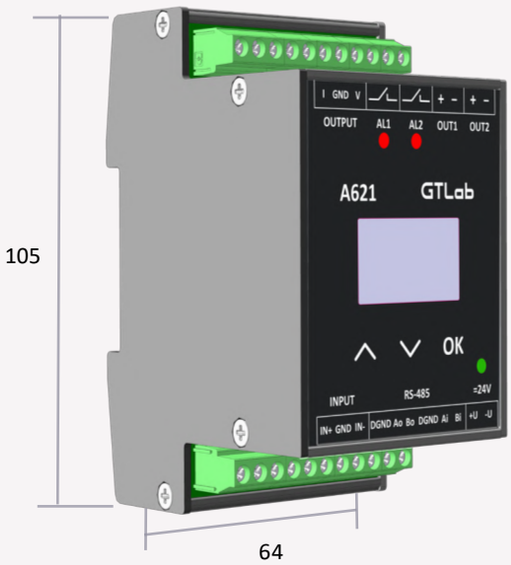
PARAMETER	A401
Amplification factor	20 ± 0.25 dB
Frequency range (uneven frequency response ± 3 dB)	10 000 ... 800 000Hz
Maximum amplitude of output voltage	± 1 V
Non-linear distortion coefficient	< 5 %
Noise level, root mean square value, given to input	< 5 µV
Output impedance	75 ± 0,5 Ohm
Measurement error in the operating temperature range	± 2 %
Temperature range	–40 ... +85 °C
Sensor supply voltage	9 ± 0,5 V
Voltage of the external source	12 ± 1 V
Current consumption	< 25 mA
Input/output connector	terminals screw
Housing material	aluminium alloy
Weight	150 g
DIN-rail mount	yes
Explosion proof	[Exib]IIC
Purpose	Reception and amplification to normalized values of signals from acoustic emission transducers with built-in electronics
Feature	Allows to use long communication lines from the sensor to the amplifier (up to 10m); work on a coaxial 75 Ohm line up to 100 m long; small intrinsic noise



PARAMETER	A422
Amplification factor	40 ± 0,25 dB
Frequency range	10 000 ... 800 000Hz
Maximum amplitude of output voltage	± 2 V
High-pass filter with frequency response roll-off ≥ 20 dB / octave, attenuation ≤ 3 dB at the cutoff frequency	10 000Hz
Low-pass filter with frequency response roll-off ≥ 20 dB / octave, attenuation ≤ 3 dB at the cutoff frequency	800 000Hz
Non-linear distortion coefficient	< 5 %
Noise level, root mean square value, given to input	< 5 µmV
Output impedance	50 Ohm
Input impedance	100 000 Ohm
Measurement error in the operating temperature range	± 2 %
Temperature range	–40 ... +85 °C
Voltage of the external source	24 ± 2 V
Current consumption	< 35 mA
Input/output connector	BNC
Housing material	aluminium alloy
Weight	200g
Purpose	Reception and amplification to normalized values of signals from acoustic emission transducers
Feature	Work on coaxial 75 Ohm line up to 100 m long; low inherent noise; hermetically sealed housing

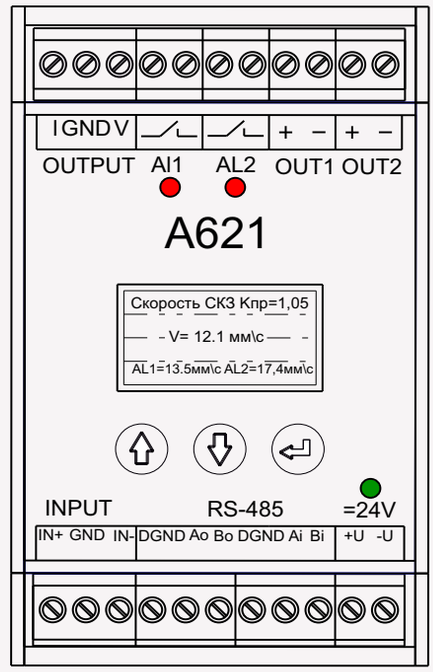
VIBRATION CONTROLLERS

A621 VIBRATION CONTROLLER

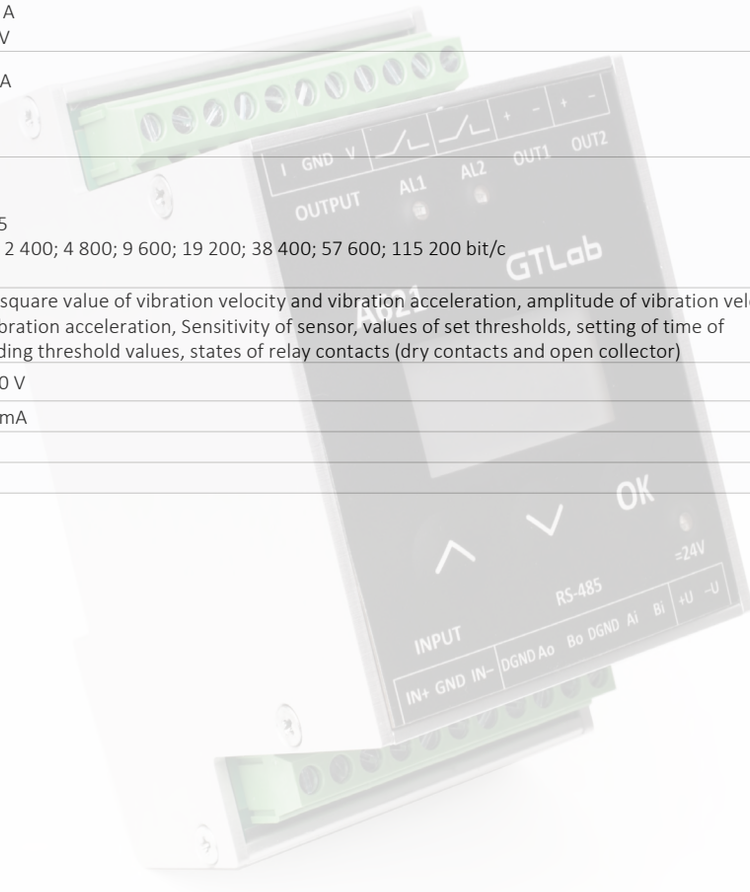


PARAMETER	A621
Measuring range: ▪ vibration acceleration amplitudes ▪ vibration velocity amplitudesи	1.41 ...141 m/s² 1.41 ...56.4 mm/c
Maximum input charge (peak)	± 5 000 pC
Frequency range measured vibration velocity and vibration acceleration (uneven frequency response - 1 dB)	30 ... 400 Hz 10 ... 1 000 Hz 10 ... 2 500 Hz
Voltage of the external source	0 ...5 V
Current consumption	4 ... 20 mA
Temperature range	–40 ... +70 °C
Parameters of built-in comparators: ▪ values of the set triggering thresholds mean square value of vibration acceleration ▪ values of the set thresholds of vibration acceleration amplitudes ▪ step setting of vibration acceleration thresholds ▪ values of the set triggering thresholds mean square value of vibration velocity ▪ values of the set triggering thresholds vibration velocity amplitudesи ▪ step setting of vibration velocity thresholds	2 ...100 м/с² 3 ...141 м/с² 1 m/s² 2 ...40 mm/c 2.8 ...56,4 mm/c 0.1 mm/c
Input/output connector	terminals screw
Measurement error in the operating temperature range	±2 %
Types of connectable vibration transducers	charge
Data exchange in the information system	RS485
Dry relay contacts: ▪ to control the vibration velocity and vibration acceleration	AL1, AL2
Signal conditions (closed or open) of relay contacts «AL1», «AL2»	Continuous exceeding of the set threshold value by the informative signal within 0-9 s
Time step setting of exceeding vibration velocity thresholds	1 s
Relay contact operation mode	lock/self-repair
Condition of self-restoration	vibration reduction from the trigger threshold by 6%

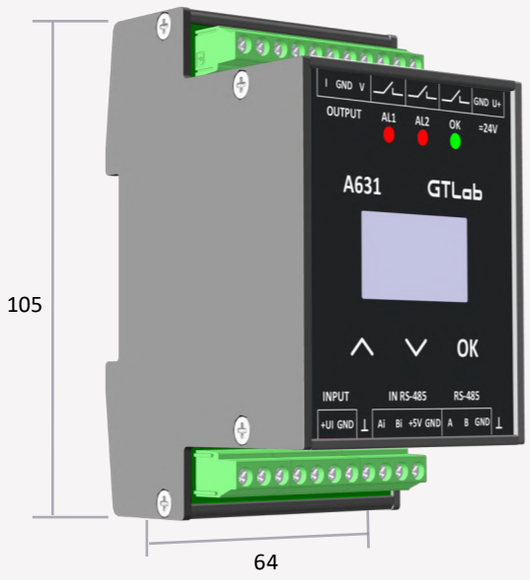
A621 VIBRATION CONTROLLER (continued)



PARAMETER	A621
Vibration control delay after establishing operating mode/self-recovery	0 or 20
Parameters of the "dry" contact ▪ direct current commutations ▪ commutation voltage	 < 0.15 A < 250 V
Open collector contact parameters ▪ DC current Ic ▪ collector - emitter voltage ▪ emitter-collector voltage	 <20 mA <80 V <7 V
Parameters of the digital code output: ▪ number of digits of the measurement result code ▪ interface ▪ transfer rate	 12 RS-485 1 200; 2 400; 4 800; 9 600; 19 200; 38 400; 57 600; 115 200 bit/c
Information displayed on the built-in display	Mean square value of vibration velocity and vibration acceleration, amplitude of vibration velocity and vibration acceleration, Sensitivity of sensor, values of set thresholds, setting of time of exceeding threshold values, states of relay contacts (dry contacts and open collector)
Voltage of the external source (±10 %)	18 ...30 V
Current consumption	< 200 mA
DIN-rail mounting	yes
Weight	200g



A631 VIBRATION CONTROLLER

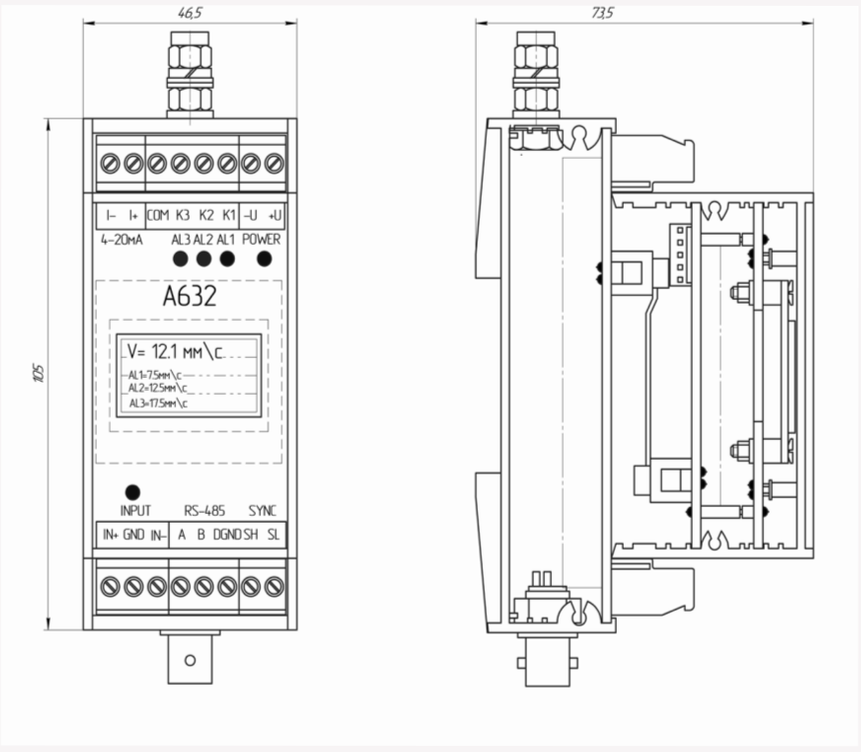


PARAMETER	A631
Range of measured vibration velocity, root mean square value	200 mm/s
Frequency range of the measured vibration velocity (uneven frequency response ± 3 dB)	2 … 1 000 Hz 10 … 1 000 Hz
Temperature range	–40 … +70 °C
Input/output connector	terminals screw
Measurement error in the operating temperature range	±2 %
Types of connectable vibration transducers	IEPE, 4-20 mA, RS-485 (to 8 pieces)
Data exchange in the information system	RS485
Voltage of the external source sensor: ▪ IEPE, 4-20 мА ▪ RS-485	 24 + 2 V 5± 0,5 V
IEPE sensor power supply current (±10 %)	5.7 mA
Dry relay contacts: ▪ to control the vibration velocity ▪ to monitor the connected sensor	 AL1, AL2 OK
Setting thresholds step	0.1 (1) mm/c
Signal conditions (closed or open) of relay contacts «AL1», «AL2»	Continuous exceeding of the set threshold value by the informative signal within 0-9 s
Time step setting of exceeding vibration velocity thresholds	1 s
Relay contact operation mode	lock/self-repair
Condition of self-restoration	vibration reduction from the trigger threshold by 6%
Vibration control delay after establishing operating mode/self-recovery	0 or 20
▪ Parameters of the "dry" coaptation ▪ commutation voltage	<1A <30 V
Information displayed on the built-in display	Mean square value of vibration velocity, values of set thresholds, error codes in case of cable breakage and sensor failure, thresholds excess time setting, relay contacts status
Voltage of the external source (±10 %)	18 ...30 V
Current consumption	< 200 mA
DIN-rail mounting	yes
Weight	200g

A632 VIBRATION CONTROLLER

PARAMETER	A632
Maximum value of measured vibration acceleration, root mean square value	200 m/s^2
Frequency range of the measured vibration acceleration (uneven frequency response ±10 %): ▪ High-pass filter ▪ Low-pass filter	 2,3,5,10,30 Hz (user configurable) 200,500,1 000,2 000 Hz (user configurable)
Maximum value of measured vibration velocity, root mean square value	200 mm/c
Maximum value of the measured range of vibration displacement, root mean square value	1 000 µm
Temperature range	–40 … +70 °C
Input/output connector	terminals screw, BNC
Measurement error in the operating temperature range	±2 %
Types of connectable vibration transducers	IEPE; 4-20 mA
Data exchange in the information system	RS485
Voltage of the external source sensors: ▪ IEPE; 4-20 мА	 24 + 2 V
IEPE sensor power supply current (±10 %)	5.7 mA
Current consumption (terminals)	4 ... 20 mA
Voltage of the external source (BNC)	± 5 V (signal)
Dry relay contacts: ▪ to control the measured parameter	 AL1, AL2, AL3
Setting thresholds step	0.1 (1) mm/c
Signal conditions (closed or open) of relay contacts «AL1», «AL2», «AL3»	Continuous exceeding of the set threshold value by the informative signal within 0-9 s
Time step setting of exceeding vibration velocity thresholds	1 c
Relay contact operation mode	lock/self-repair
Condition of self-restoration	vibration reduction from the trigger threshold by 6%
Vibration control delay after establishing operating mode/self-recovery	0 or 20
▪ Parameters of the "dry" coaptation ▪ commutation voltage	<1 A <30 V

A632 VIBRATION CONTROLLER (continued)



Differential synchronization line	exist
Information displayed on the built-in display	measured parameter, sensor sensitivity, preset thresholds values, error codes in case of cable breakage and sensor failure, thresholds excess time setting, relay contacts status
Voltage of the external source (±10 %)	18 ...30 V
Current consumption	< 200 mA
DIN-rail mounting	yes
Weight	200 g

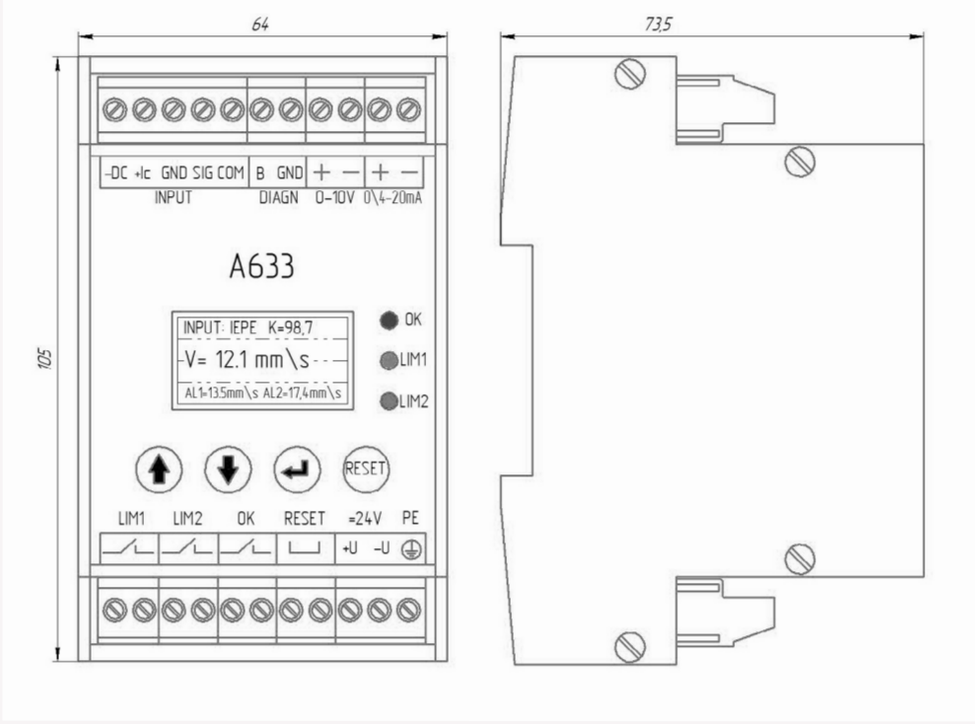
Description:

- Galvanic isolation of the power supply circuits from the rest of the inverter circuits.
- Indication of power supply, operability, numerical value of the measured parameter.
- Galvanic isolation of passive unified 4-20 mA current output.
- The presence of an input/output for connecting a synchronization signal.
- Galvanic isolation of the RS-485 interface.
- Diagnostic output for connection to ADC.

A633 VIBRATION CONTROLLER

PARAMETER	A633
Range of measured vibration velocity, root mean square value	0 ... 10 mm/s 0 ... 20 mm/s 0 ... 50 mm/s 0 ... 100 mm/s
Frequency range measured vibration velocity (neven frequency response - 1 dB)	1 ... 1 000 Hz 2 ... 1 000 Hz 3 ... 1 000 Hz 5 ... 1 000 Hz 10 ... 1 000 Hz
Output • voltage • current	 0 ... 10 V 0 ... 20 mA 4 ... 20 mA
Temperature range	–40 ... +70 °C
Input/output connector	terminals screw
Measurement error in the operating temperature range	±2 %
Types of connectable vibration transducers	IEPE, with voltage output and negative power supply
Voltage of the external source sensors: ▪ IEPE ▪ with voltage output and negative power suppl	 + 24 ± 2 V - 24 ± 2 V
IEPE sensor power supply current (±10 %)	5,7 mA
Dry relay contacts: ▪ to control the vibration velocity ▪ to monitor the connected sensor	 LIM1, LIM2 OK
Parameters of built-in comparators: ▪ root mean square value of vibration velocity thresholds ▪ setting thresholds step vibration velocity	 0,1 ... 100 mm/c 0,1 (1) mm/c
Signal conditions (closed or open) of relay contacts «LIM1», «LIM2»	continuous exceeding of the set threshold value by the informative signal within 0-100
Time step setting of exceeding vibration velocity thresholds	1 s
Relay contact operation mode	lock/self-repair
Condition of self-restoration	vibration reduction from the trigger threshold by 6%
Vibration control delay after establishing operating mode/self-recovery	0 or 20

A633 VIBRATION CONTROLLER (continued)

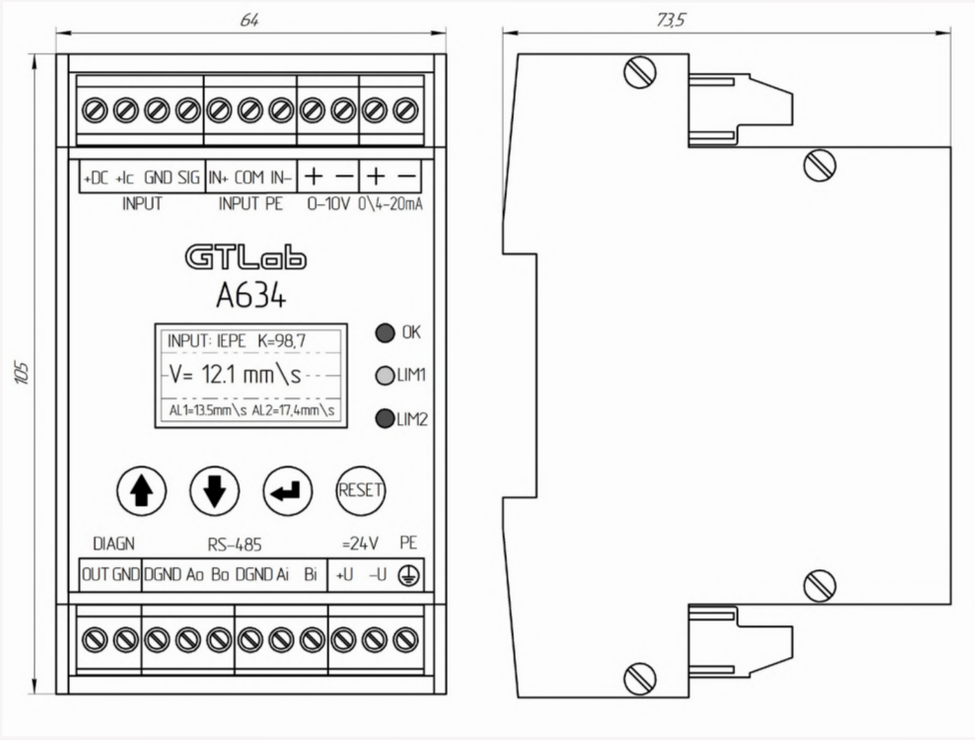


▪ Parameters of the "dry" coaptation ▪ commutation voltage	< 2 A 0 ... ± 60 V
Information displayed on the built-in display	Root mean square value of vibration velocity, sensor sensitivity, values of the set thresholds, error codes in case of cable breakage and sensor failure, setting of time when thresholds are exceeded, relay contact status
Voltage of the external source (±10 %)	18 ...36 V
Current consumption	< 200 mA
DIN-rail mounting	yes
Weight	200 g
Feature	parameters are measured using spectral analysis (BPF)

A634 VIBRATION CONTROLLER

PARAMETER	A634
Range of measured vibration velocity, root mean square value	0 … 10 mm/s 0 … 20 mm/s 0 … 50 mm/s 0 … 100 mm/s
Measuring ranges of relative vibration displacement	0 … 125 µm 0 … 250 µm 0 … 500 µm 0 … 1 000 µm
Static gap measurement ranges	0.2 … 2.2 mm 0.3 … 3.3 mm
Frequency range measured vibration velocity (neven frequency response - 1 dB)	1 … 1 000 Hz 2 … 1 000 Hz 3 … 1 000 Hz 5 … 1 000 Hz 10 … 1 000 Hz
Frequency range of the measured vibration displacement (neven frequency response - 1 dB)	1 … 10 000 Hz 2 … 10 000 Hz 3 … 10 000 Hz 5 … 10 000 Hz 10 … 10 000 Hz
Maximum input charge (peak)	± 5 000 pC
Maximum AC input voltage	± 5 V
Maximum DC input voltage	24 ± 2 V
Выход: • voltage • current	 0 … 10 V 0 … 20 mA 4 … 20 mA
Temperature range	–40 … +70 °C
Data exchange in the information system	RS485
Input/output connector	terminals screw
Measurement error in the operating temperature range	±2 %
Measurement error	±2 %

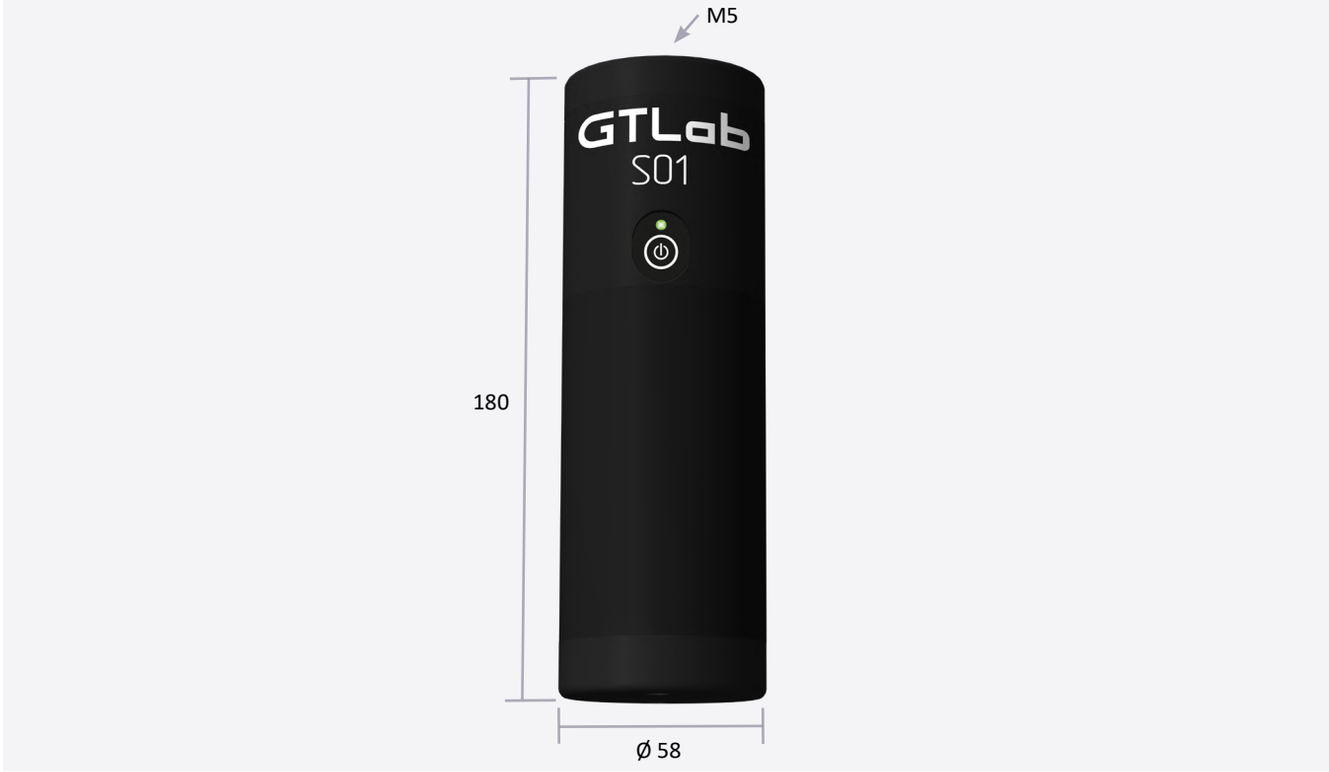
A634 VIBRATION CONTROLLER (continued)



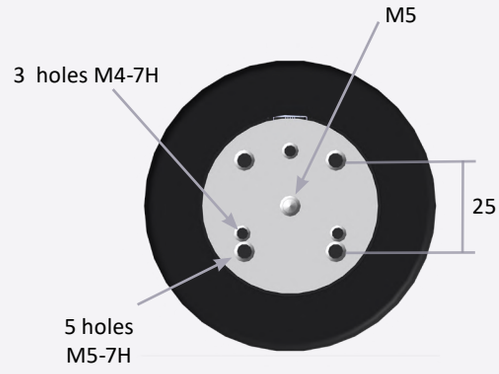
PARAMETER	A634
Voltage of the external source sensors:	
▪ IEPE	24 ± 2 V
▪ with voltage output	24 ± 2 V
Current питания sensors (±10 %):	
▪ IEPE	5.7 mA
▪ with voltage output	< 50 mA
Parameters of built-in comparators:	
▪ values of the set triggering thresholds	0.1 -100 mm/s
▪ Setting thresholds step	0.1 (1) mm/s
Excess signals conditions	continuous exceeding of the set threshold value by the informative signal within 0-100 s
Step of setting the time of exceeding the thresholds	1 s
Mode of operation	with interlock or with self-healing
Condition of self-restoration	Level reduction from the triggering threshold by 6%
Vibration control delay after the self-restoring operating mode is established	0 or 20 s
Information displayed on the built-in display	Root mean square value of vibration velocity, relative vibration displacement or static clearance; The conversion coefficient of the sensor used; Values of the specified thresholds of operation; Error codes for cable breakage and sensor failure; The preset time when the information signal exceeds the thresholds.
Voltage of the external source	18 ...30 V
Current consumption	< 200 mA
DIN-rail mounting	yes
Weight	200 g
Feature	Operation with PE charge vibration transducers, with built-in electronics of IEPE type, with built-in electronics with positive supply and voltage output, with vortex signal generators; Diagnostic analog output; Parameter measurement by spectral analysis (BPF)

CALIBRATORS

S01



Parameter	S01
Vibration frequency (± 1%)	159.2 Hz
Acceleration (RMS ± 2%)	10 m/s²
Velocity (RMS ± 2%)	10 mm/s
Displacement (RMS ± 2%)	10 µm
Transverse vibration amplitude	< 5 %
Nonlinear distortions	< 3 %
Operating mode setting time	< 5 s
Maximum weight of calibration sensor	200 g
Temperature range	–10 ... +50 °C
Maximum mounting torque of calibrated sensor	0.1 N·m (in the absence of a torque tool, it is allowed to attach the calibrated sensors by hand)
Weight	900 g
Power	stand-alone or from USB
Connector for external power supply and battery charging	Micro USB
Supplied accessories	adapter P0005, studs P0505, P0508, P0506, battery charger AA: 4 pcs, USB cable, adapter 220 V

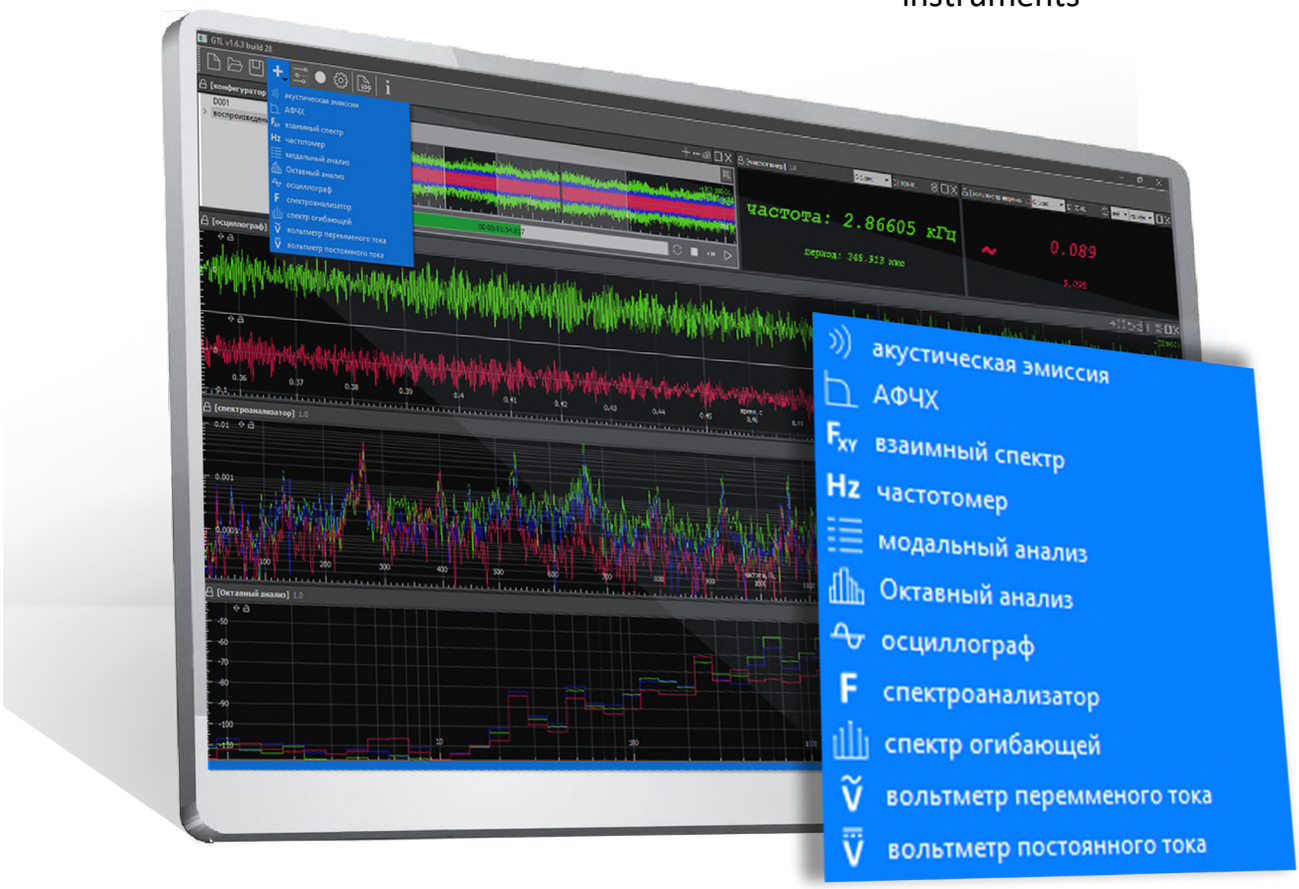


PARAMETER	S03
Vibration frequency (± 1%)	40Hz
Acceleration (RMS ± 2%)	2,51 м/с²
Velocity (RMS ± 2%)	10 mm/c
Displacement (RMS ± 2%)	40 µm
Transverse vibration amplitude	< 7 %
Nonlinear distortions	< 5 %
Operating mode setting time	< 5 c
Maximum weight of calibration sensor	250g
Temperature range	–10 ... +50 °C
Weight	1 500g
Power	stand-alone or from USB
Connector for external power supply and battery charging	Micro USB
Supplied accessories	adapter P0005, studs P0505, P0508, P0506, battery charger AA: 4 pcs, USB cable, adapter 220 V

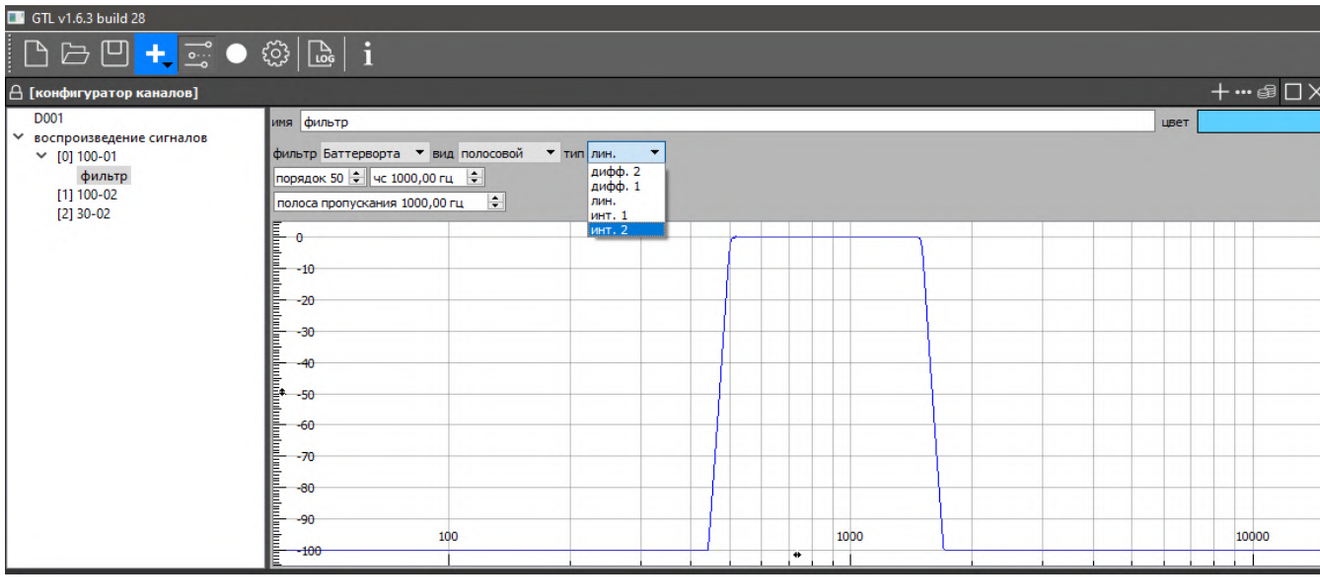
MEASURING DEVICES

GTL. Software for registration, processing, recording and visualization of signals.

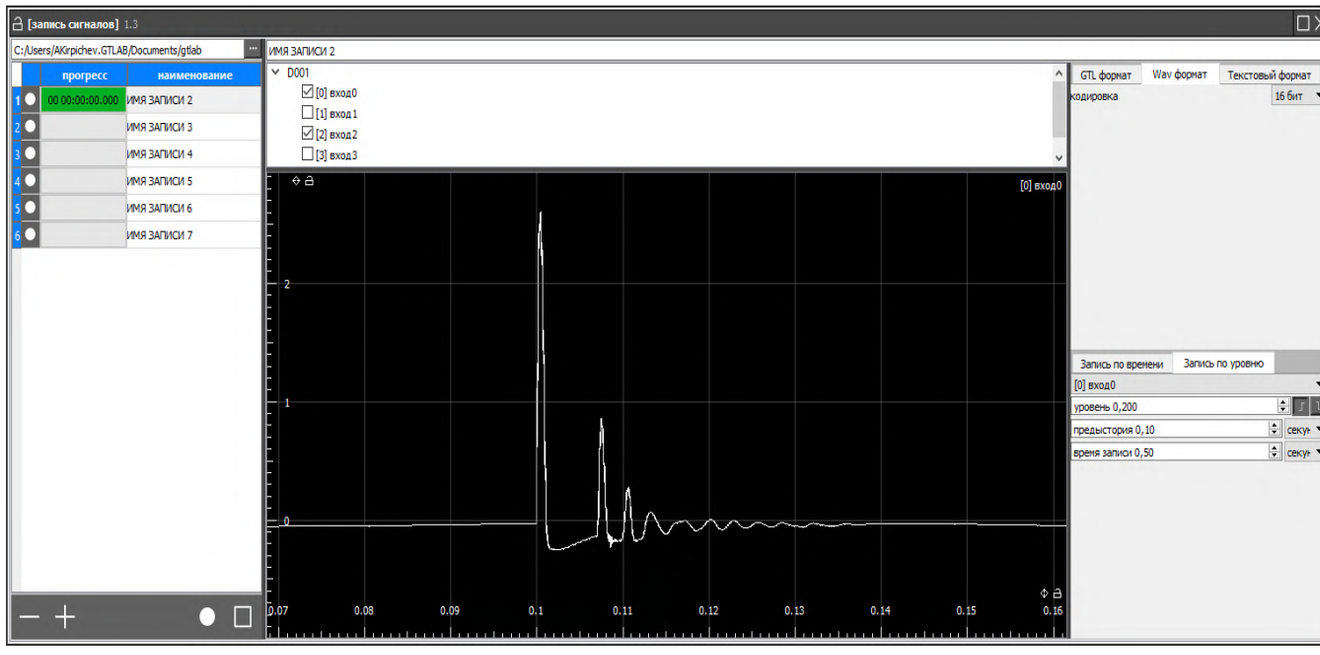
Wide range of virtual instruments



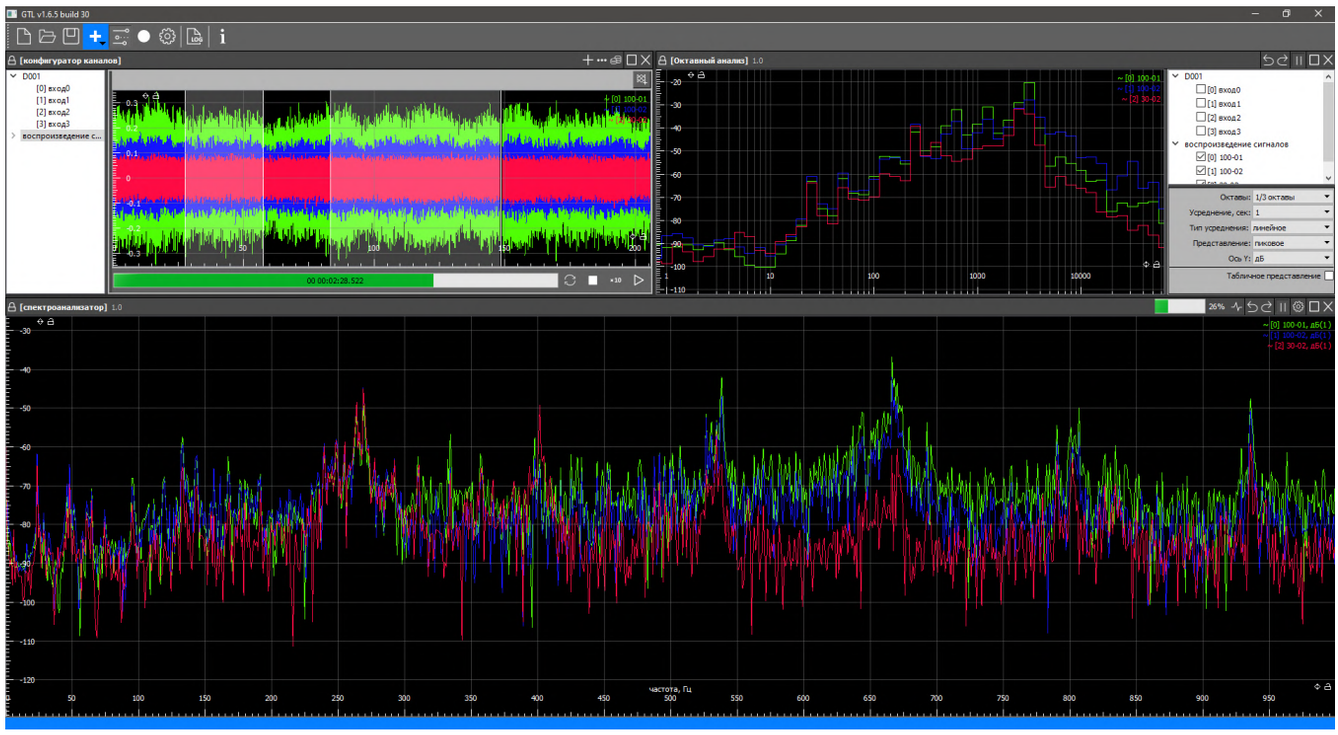
Filtering (up to order 50), integration, differentiation of signals



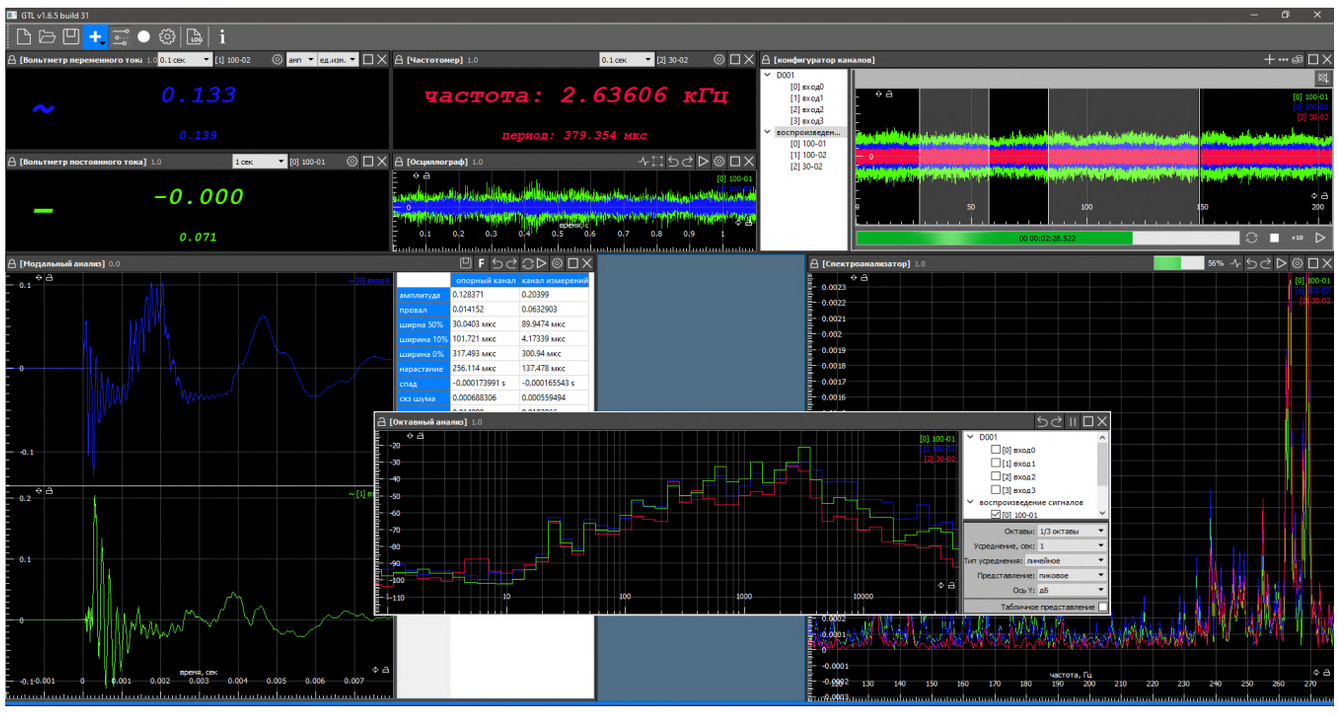
Multi-channel recording of signals by time or level with subsequent display of the recorded oscilloscope



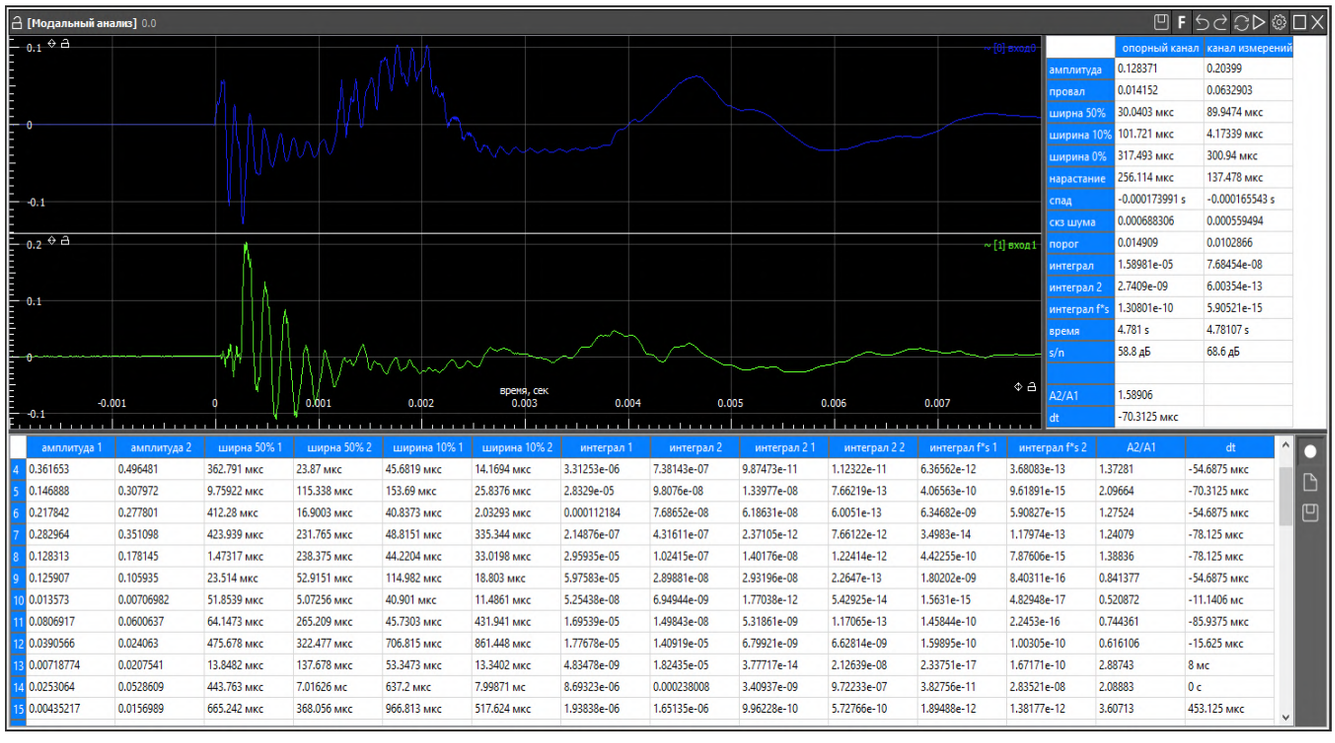
Playback of signals with the possibility of selecting individual fragments for their subsequent spectral analysis.



Flexible layout of virtual instrument windows.



Development of modules according to individual requirements.

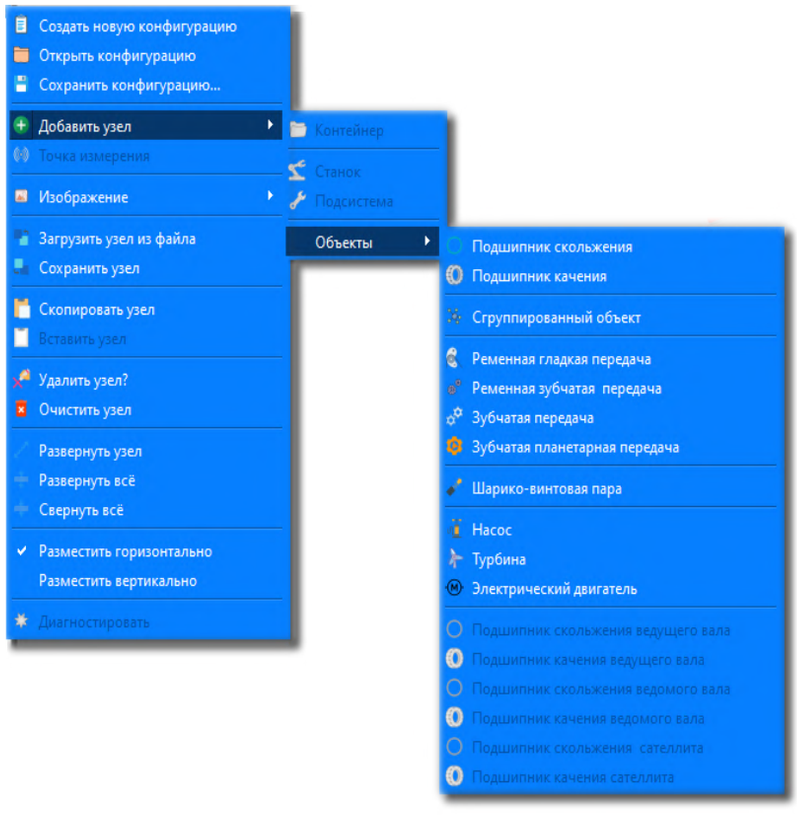


	опорный канал	канал измерений
амплитуда	0.128371	0.20399
провал	0.014152	0.0632903
ширна 50%	30.0403 мкс	89.9474 мкс
ширина 10%	101.721 мкс	4.17339 мкс
ширина 0%	317.493 мкс	300.94 мкс
нарастание	256.114 мкс	137.478 мкс
спад	-0.000173991 s	-0.000165543 s
скз шума	0.000688306	0.000559494
порог	0.014909	0.0102866
интеграл	1.58981e-05	7.68454e-08
интеграл 2	2.7409e-09	6.00354e-13
интеграл f*s	1.30801e-10	5.90521e-15
время	4.781 s	4.78107 s
s/n	58.8 дБ	68.6 дБ
A2/A1	1.58906	
dt	-70.3125 мкс	

	амплитуда 1	амплитуда 2	ширна 50% 1	ширна 50% 2	ширина 10% 1	ширина 10% 2	интеграл 1	интеграл 2	интеграл 2 1	интеграл 2 2	интеграл f*s 1	интеграл f*s 2	A2/A1	dt
4	0.361653	0.496481	362.791 мкс	23.87 мкс	45.6819 мкс	14.1694 мкс	3.31253e-06	7.38143e-07	9.87473e-11	1.12322e-11	6.36562e-12	3.68083e-13	1.37281	-54.6875 мкс
5	0.146888	0.307972	9.75922 мкс	115.338 мкс	153.69 мкс	25.8376 мкс	2.8329e-05	9.8076e-08	1.33977e-08	7.66219e-13	4.06563e-10	9.61891e-15	2.09664	-70.3125 мкс
6	0.217842	0.277801	412.28 мкс	16.9003 мкс	40.8373 мкс	2.03293 мкс	0.000112184	7.68652e-08	6.18631e-08	6.0051e-13	6.34682e-09	5.90827e-15	1.27524	-54.6875 мкс
7	0.282964	0.351098	423.939 мкс	231.765 мкс	48.8151 мкс	335.344 мкс	2.14876e-07	4.31611e-07	2.37105e-12	7.66122e-12	3.4983e-14	1.17974e-13	1.24079	-78.125 мкс
8	0.128313	0.178145	1.47317 мкс	238.375 мкс	44.2204 мкс	33.0198 мкс	2.95935e-05	1.02415e-07	1.40176e-08	1.22414e-12	4.42255e-10	7.87606e-15	1.38836	-78.125 мкс
9	0.125907	0.105935	23.514 мкс	52.9151 мкс	114.982 мкс	18.803 мкс	5.97583e-05	2.89881e-08	2.93196e-08	2.2647e-13	1.80202e-09	8.40311e-16	0.841377	-54.6875 мкс
10	0.013573	0.00706982	51.8539 мкс	5.07256 мкс	40.901 мкс	11.4861 мкс	5.25438e-08	6.94944e-09	1.77038e-12	5.42925e-14	1.5631e-15	4.82948e-17	0.520872	-11.1406 мс
11	0.0806917	0.0600637	64.1473 мкс	265.209 мкс	45.7303 мкс	431.941 мкс	1.69539e-05	1.49843e-08	5.31861e-09	1.17065e-13	1.45844e-10	2.2453e-16	0.744361	-85.9375 мкс
12	0.0390566	0.024063	475.678 мкс	322.477 мкс	706.815 мкс	861.448 мкс	1.77678e-05	1.40919e-05	6.79921e-09	6.62814e-09	1.59895e-10	1.00305e-10	0.616106	-15.625 мкс
13	0.00718774	0.0207541	13.8482 мкс	137.678 мкс	53.3473 мкс	13.3402 мкс	4.83478e-09	1.82435e-05	3.77717e-14	2.12639e-08	2.33751e-17	1.67171e-10	2.88743	8 мс
14	0.0253064	0.0528609	443.763 мкс	7.01626 мс	637.2 мкс	7.99871 мс	8.69323e-06	0.000238008	3.40937e-09	9.72233e-07	3.82756e-11	2.83521e-08	2.08883	0 с
15	0.00435217	0.0156989	665.242 мкс	368.056 мкс	966.813 мкс	517.624 мкс	1.93838e-06	1.65135e-06	9.96228e-10	5.72766e-10	1.89488e-12	1.38177e-12	3.60713	453.125 мкс

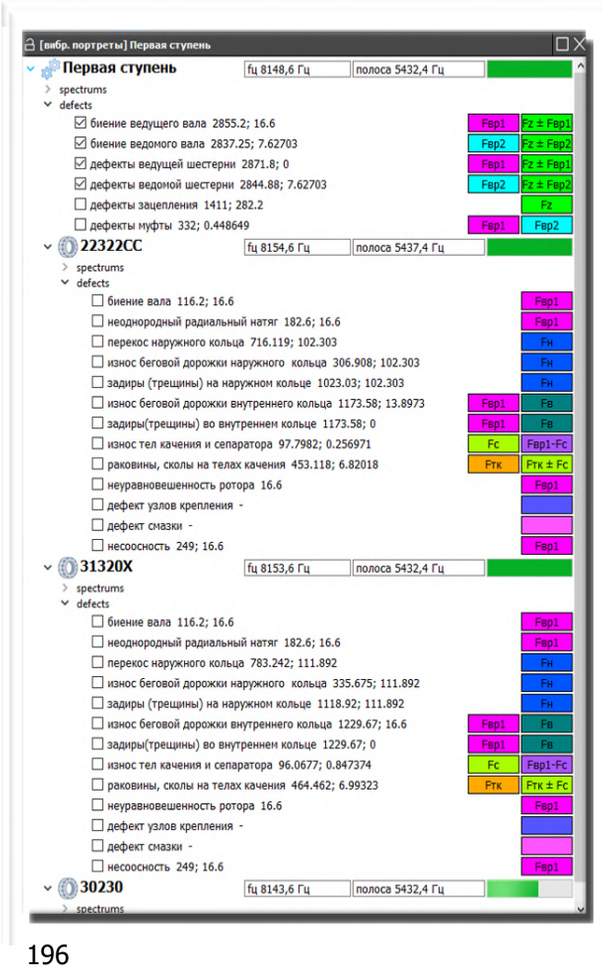
GTLd. Software for monitoring and automated vibration diagnostics of industrial machinery

Monitoring and vibrodiagnostics



Detect defects in the following mechanisms:

- Rolling bearings
- Plain bearings
- Ball screws (ball screw pairs of CNC machines)
- Gears
- Planetary gearboxes
- Belt transmission
- Chain transmission
- Pumps
- Compressors
- Electric motors

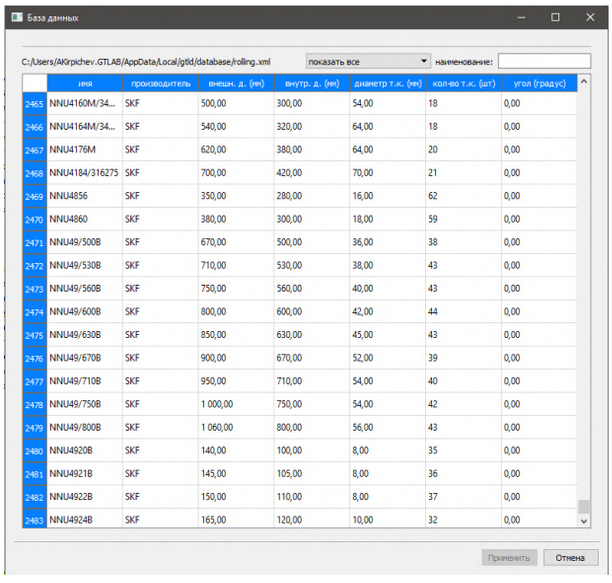


- TOTAL: identification of more than 70 possible defects of industrial equipment

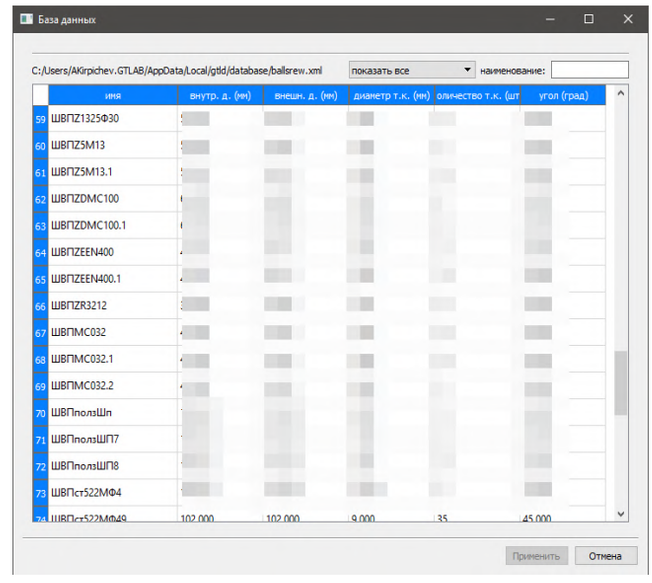
Applying multithreaded spectral analysis to digitize of the worked out techniques of the experts

Databases:

rolling bearings
(more than 2500 items);



ball screws of machine tool equipment (Certificate of State Registration of Database No. 2021620395).

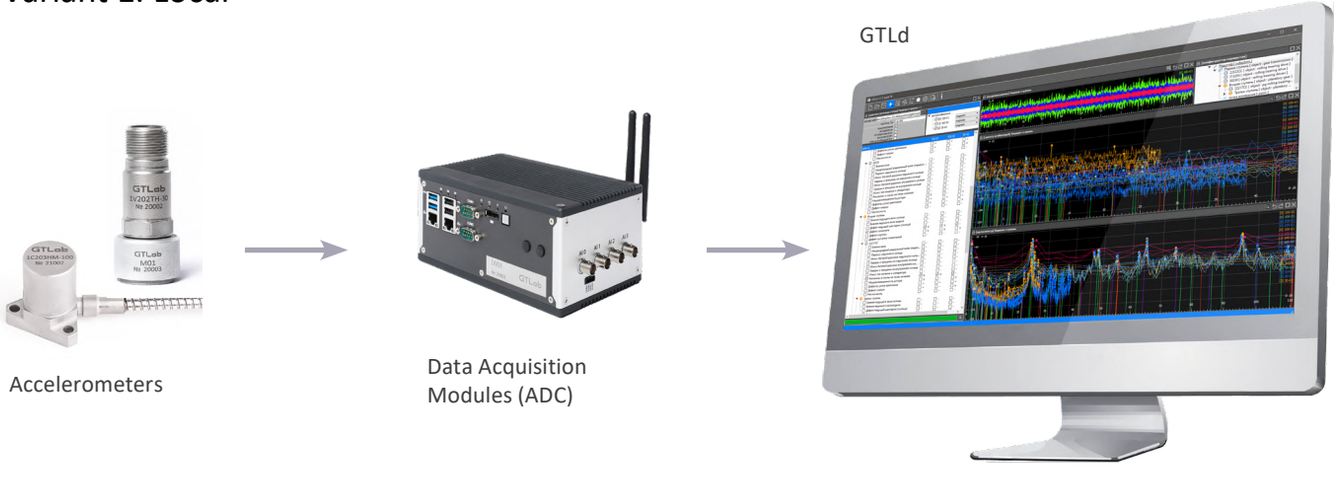


Machine park databases.

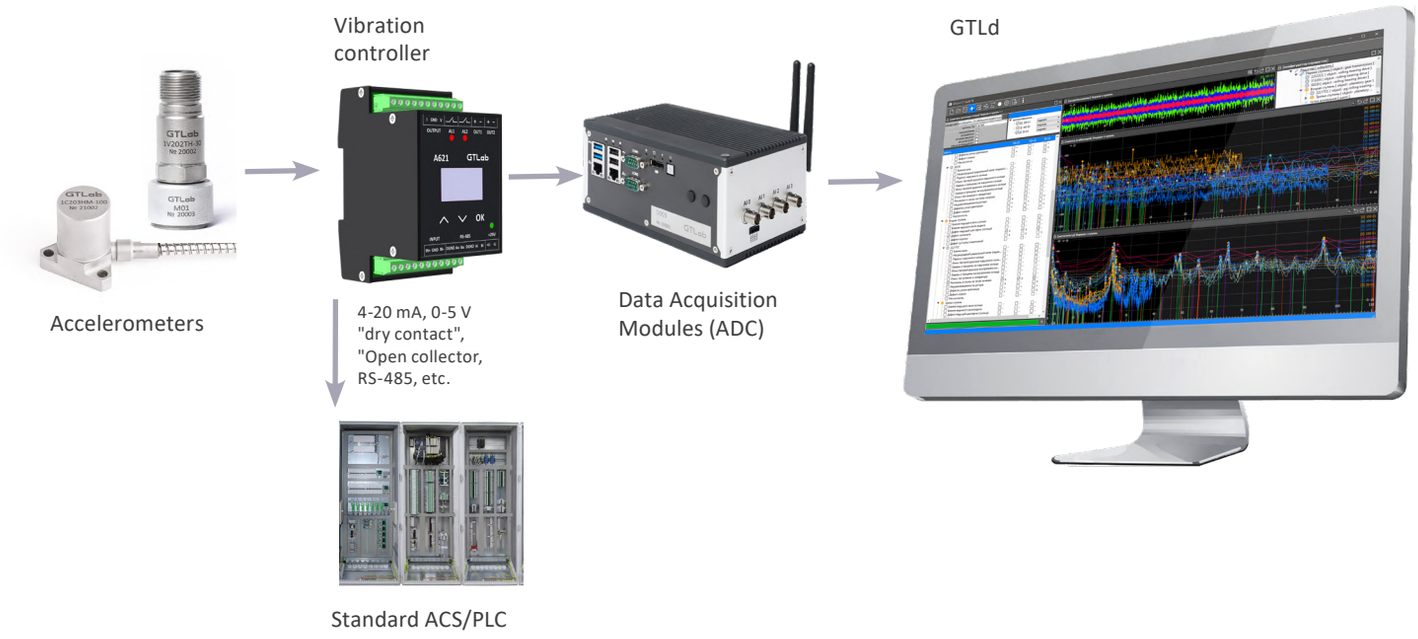
Станок 1А740РФ3	Станок 1К20Ф2С32	Станок 1М512МФ3
Станок 1П732Ф3	Станок 2А636Ф1	Станок 3М196
Станок 3М428	Станок 16М30Ф3	Станок 16А20Ф3
Станок 65А90Ф1	Станок 67К25РF11	Станок 200НТ
Станок 500V2V4	Станок 552МФ4	Станок 1516Ф3
Станок 3283	Станок DMG100	Станок DMG100_2
Станок EEN-400	Станок Leadell V30i	Станок Leadell V40i
Станок Masturu550	Станок MAXO 800	Станок MCFV1680
Станок OPTIMA	Станок RF-32	Станок SKT-211S
Станок VC-85	Станок VT2 26-60	Станок VT-23
Станок WHN(Q)13CNC	Станок ГФ2171С5	Станок ГФ2251
Станок ИР357рг1	Станок ИС800ПМФ4	Станок ЛС536Ф3
Станок МГГСП 161 01МФ4	Станок ОШ600Ф3	Станок СТП 220АП
Станок УФ5225 привода	Станок ФП-17МН	

Principle diagrams of the vibration control system organization (vibrodiagnostics and vibromonitoring).

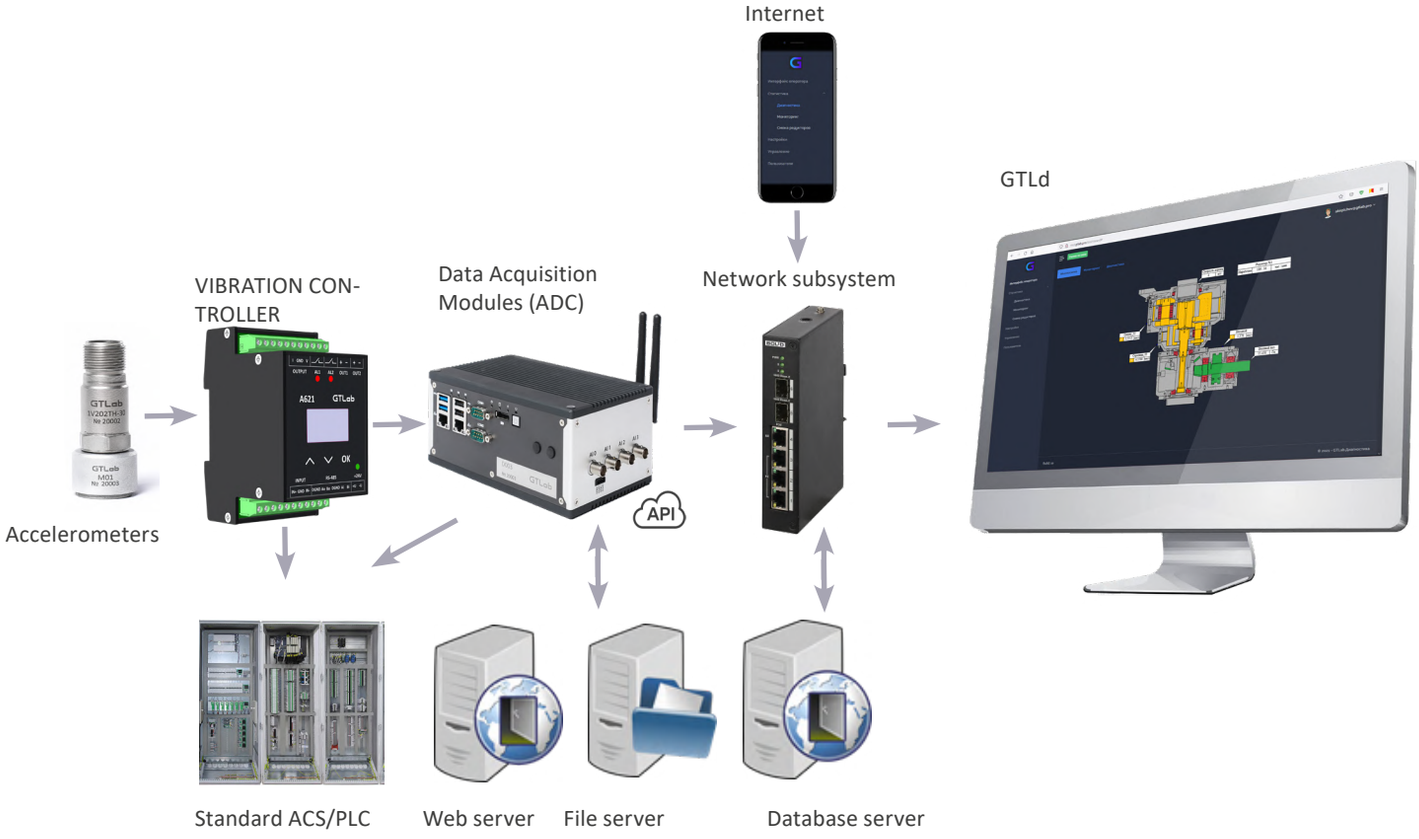
Variant 1: Local



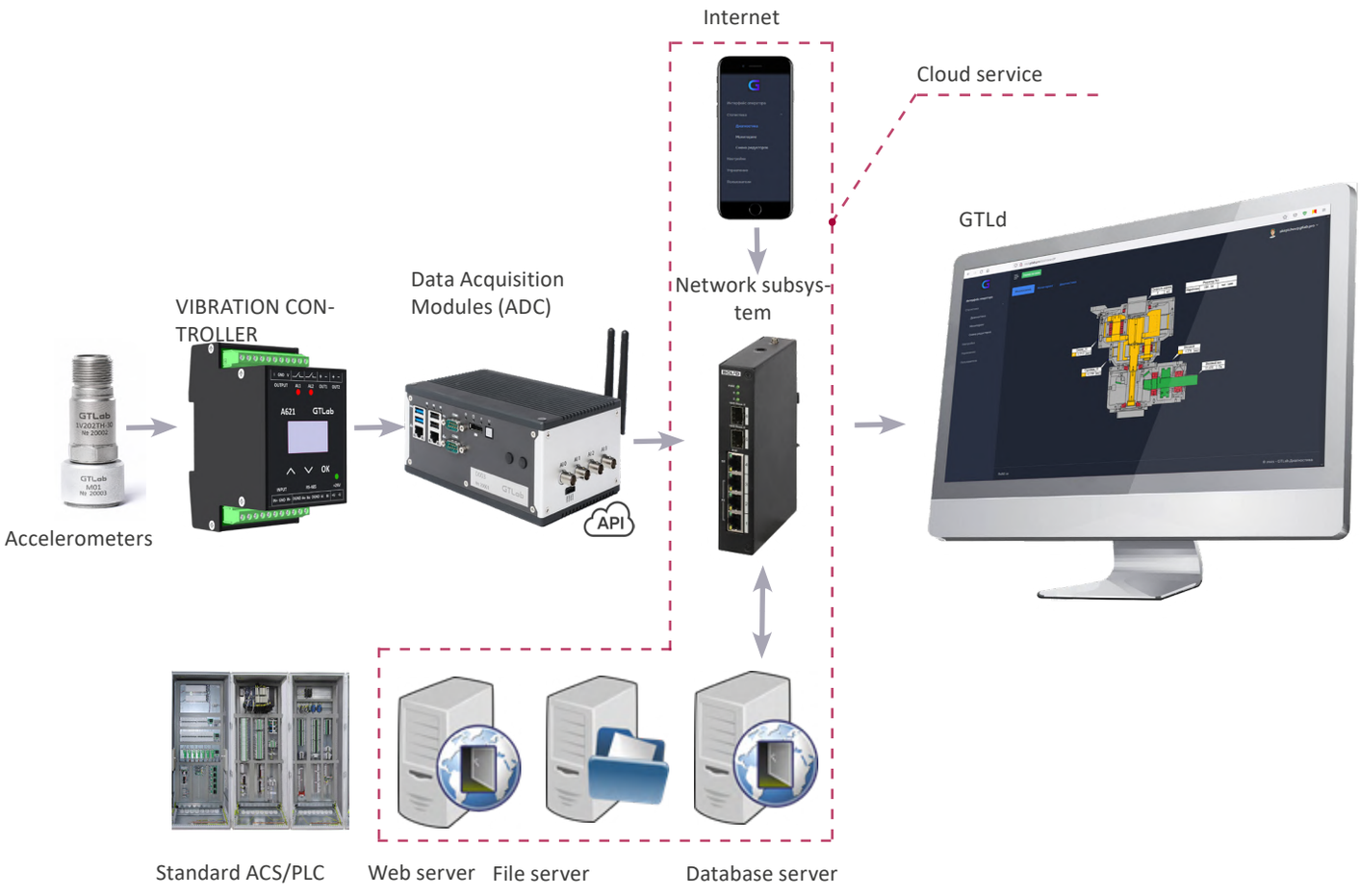
Variant 2. Local with integration into existing SCADA / PLC / ACS



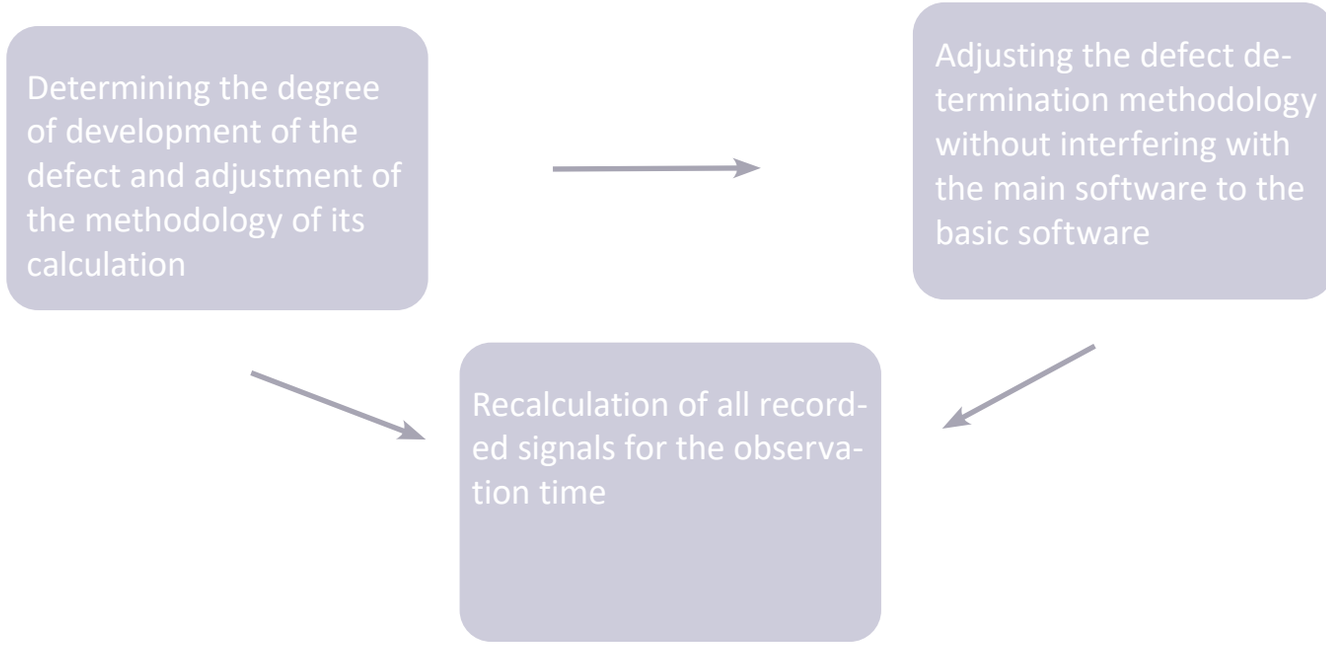
Variant 3. Scalable, stand-alone with remote access in multi-user mode (SCADA for vibration control)



Variant 4. Cloudy. Providing infrastructure and software.



Scheme of continuous improvement of defect determination techniques for specific operating conditions of the diagnosed object



WEB – SCADA. Mnemonic diagram of the diagnosed object

1. Indication of installation locations sensors with display of instantaneous values (root mean square value, amplitude, etc.), diagnosed nodes and highlighting them in color according to the diagnostic results.

2. Vibrodiagnostic statistics display

4. Flexible functionality for comparing data from different time periods

3. Vibrodiagnostic statistics display

D001

Parameter	D001
Sampling frequency of the ADC	128 kHz
Type of input connectors	BNC
Interface	USB 2.0 (HighSpeed)
Operating temperature	0 ... + 55 °C
Power	USB
Number of analog inputs	4 differential
Frequency range	50 000 Hz
Ranges of measured DC and AC voltage	± 10 000 mV
Number of ADC bits	24 bit
Input impedance	200 kOhm
Synchronization of the devices (number)	8 pieces
Possibility to connect sensors according to the IEPE standard (2 mA, 24V)	exist

Software features:

- oscilloscope;
- spectrum analyzer;
- the amplitude-phase frequency characteristic;
- modal analysis;
- ac voltmeter;
- DC voltmeter;
- recording and playback of the signal.
- Flexible digital filters for low-pass, high-pass, band-pass, and notch filters..

D002

Parameter	D002
Sampling frequency of the ADC	2000 kHz
Interface	USB 2.0 (HighSpeed)
Operating temperature	0 ... + 55 °C
Power	USB
Number of analog inputs	4 differential
Frequency range	600 kHz
Ranges of measured DC and AC voltage	± 10 000 mV
Number of ADC bits	16 bit
Input impedance	900 MOhm

Software features:

- oscilloscope;
- spectrum analyzer;
- the amplitude-phase frequency characteristic;
- modal analysis;
- ac voltmeter;
- DC voltmeter;
- recording and playback of the signal.
- Flexible digital filters for low-pass, high-pass, band-pass, and notch filters..

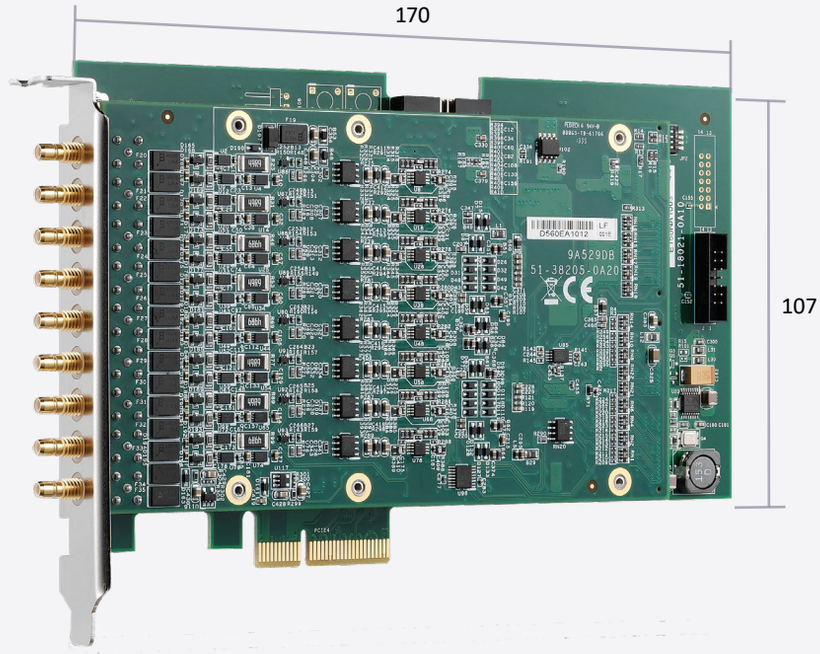
D003

PARAMETER	D003
ADC sampling frequency	128 kHz
Type of input connectors	BNC
Interface	2x USB 2.0 + 2x USB 3.0
Operating temperature	0 ... +55 °C
Power	6 - 36 B (DC)
Number of analog inputs	4
Frequency range	50 000Hz
Voltage ranges of measured DC and AC voltage	± 10 000 mV
Number of ADC digits	24 bit
Input impedance	200 kOhm
Synchronization of devices (number)	8 pcs
IEPE connectivity (2 mA, 24 V)	exist
Processor	Intel Atom® x7-E3950 processor
Video output	1x DisplayPort
RAM	DDR3L 1600 SODIMM 4 GB
Data storage subsystem	Factory installed 128 GB mSATA SSD
Network interface	2x GbE LAN (Intel® I210-IT)
Serial ports	2x COM (2 x RS-232/422/485)
Expansion slots	2x Mini PCIe card slots
Wireless communication	Wi-Fi Kit
Energy consumption, full load by subsystems (platform)	25 W
Power consumption, full load by subsystems (Processor)	35.2 W
Power consumption, full load by subsystems (USB peripherals)	38 W
Operating system	MS Windows 10

D004

Parameter	D004
Sampling frequency of the ADC	128 kHz
Type of input connectors	BNC
Interface	Ethernet
Operating temperature	0 ... +55 °C
Power	6 - 36 В (DC)
Number of analog inputs	4 differential
Frequency range	50 000 Hz
Ranges of measured DC and AC voltage	± 10 000 mV
Number of ADC bits	24 bit
Input impedance	200 kOhm
Synchronization of devices (number)	8 pc
Possibility of connecting sensors according to the IEPE standard (2 mA, 24 V)	+

D005



PARAMETER	D005
ADC sampling frequency	128 kHz
Type of input connectors	SMB
Interface	PCI Express
Operating temperature	0 ... +55 °C
Number of analog inputs	8
Frequency range	50 000 Hz
Voltage ranges of measured DC and AC voltage	± 10 000 mV
Number of ADC digits	24 bit
Input impedance	200 kOhm
IEPE connectivity (2 mA, 24 V)	exist

Software features:

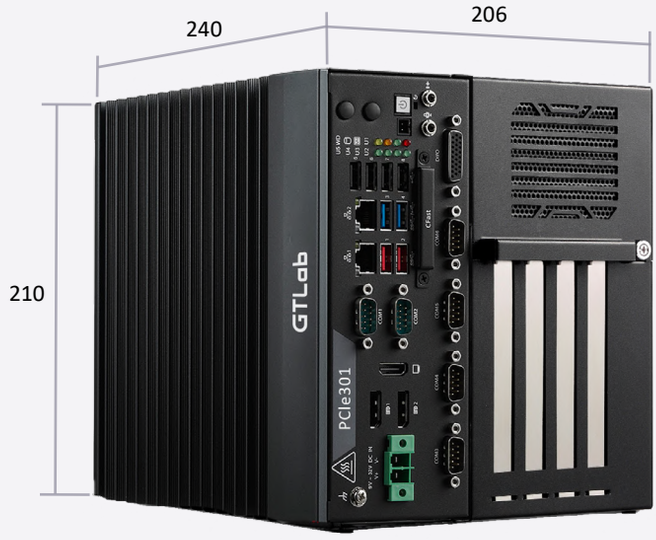
- oscilloscope;
- spectrum analyzer;
- the amplitude-phase frequency characteristic;
- modal analysis;
- ac voltmeter;
- DC voltmeter;
- recording and playback of the signal.
- Flexible digital filters for low-pass, high-pass, band-pass, and notch filters..

PARAMETER	D006
ADC sampling frequency	128 kHz
Type of input connectors	SMB
Interface	PXI Express
Operating temperature	0 ... +55 °C
Number of analog inputs	8
Frequency range	50 000 Hz
Voltage ranges of measured DC and AC voltage	± 10 000 mV
Number of ADC digits	24 bit
Input impedance	200 kOhm
IEPE connectivity (2 mA, 24 V)	exist

Software features:

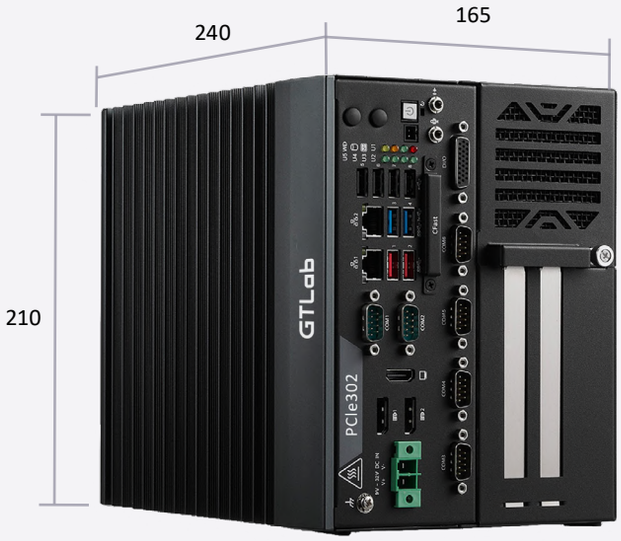
- oscilloscope;
- spectrum analyzer;
- the amplitude-phase frequency characteristic;
- modal analysis;
- ac voltmeter;
- DC voltmeter;
- recording and playback of the signal.
- Flexible digital filters for low-pass, high-pass, band-pass, and notch filters..

PCIe301



PARAMETER	PCIe301
Number of slots	4
Number of analog inputs	to 32
Processor	Intel® Core™ i7-9850HE 45W
RAM	DDR4 dual SODIMMs 4GB (Up to 32 GB) 2400MHz
Interface	2x USB 3.1 Gen 2 + 2x USB 3.1 Gen 1 + 4x USB 2.0, 1x internal USB 2.0 dongle
Video output	2x DisplayPort, 1x HDMI
Audio output	Line-out, Mic-in (Optional: speaker-out)
Data storage subsystem	2.5 SATA (2x internal supports RAID 0, 1, 5, 10), Optional: additional 2x internal
Network interface	2x GbE (Intel® 1x i211AT + 1x i219), iAMT support
Serial ports	6x COM port (COM1/2: RS-232/422/485, COM3/4/5/6: RS-232)
Wireless communication	Wi-Fi Kit
Operating system	Microsoft Windows 10 64 bit
Power	9 - 32 V (DC)
Operating temperature	0 ... +50 °C (extended temperature range-20°C ... 70°C for 1xSODIMMs
Storage temperature	-40 ... 85 °C
Weight	4.9 kg

PCIe302



PARAMETER	PCIe302
Number of slots	2
Number of analog inputs	to 16
Processor	Intel® Core™ i7-9850HE 45W
RAM	DDR4 dual SODIMMs 4GB (Up to 32 GB) 2400MHz
Interface	2x USB 3.1 Gen 2 + 2x USB 3.1 Gen 1 + 4x USB 2.0, 1x internal USB 2.0 dongle
Video output	2x DisplayPort, 1x HDMI
Audio output	Line-out, Mic-in (Optional: speaker-out)
Data storage subsystem	2.5» SATA (2x internal supports RAID 0, 1, 5, 10), Optional: additional 2x internal
Network interface	2x GbE (Intel® 1x i211AT + 1x i219), iAMT support
Serial ports	6x COM port (COM1/2: RS-232/422/485, COM3/4/5/6: RS-232)
Wireless communication	Wi-Fi Kit
Operating system	Microsoft Windows 10 64 bit
Power	9 - 32 V (DC)
Operating temperature	0 ... +50 °C (extended temperature range-20°C ... 70°C for 1xSODIMMs
Storage temperature	-40 ... 85 °C
Weight	4.6 kg

PXIExpress™

PARAMETER	PXIe301
Number of slots	17
Number of analog inputs	to 136
Processor	Intel® Core™ i7-7820EQ 3.0 GHz 14nm processor, 3.7 GHz
RAM	DDR4 dual SODIMMs 4GB (Up to 32 GB) 2400MHz
Interface	4x USB 2.0 + 2x USB 3.0
Video output	2x DisplayPort
Data storage subsystem	Pre-integrated SATA solid state drive at 240GB
Network interface	2x GbE LAN (Intel® Ethernet controller I219-LM, I210) 2x
Serial ports	COM port (D-sub9 serial RS-232/422/485)
Module synchronization interface PXI	PXI trigger connector (SMB jack)
General purpose interface bus	IEEE488 GPIB controller, Micro-D 25-pin connector)
Operating system	Microsoft Windows 10 64 bit
Operating temperature	0 ... +55 °C
Storage temperature	-40 ... +71 °C
Weight	12.9 kg

PXIe302

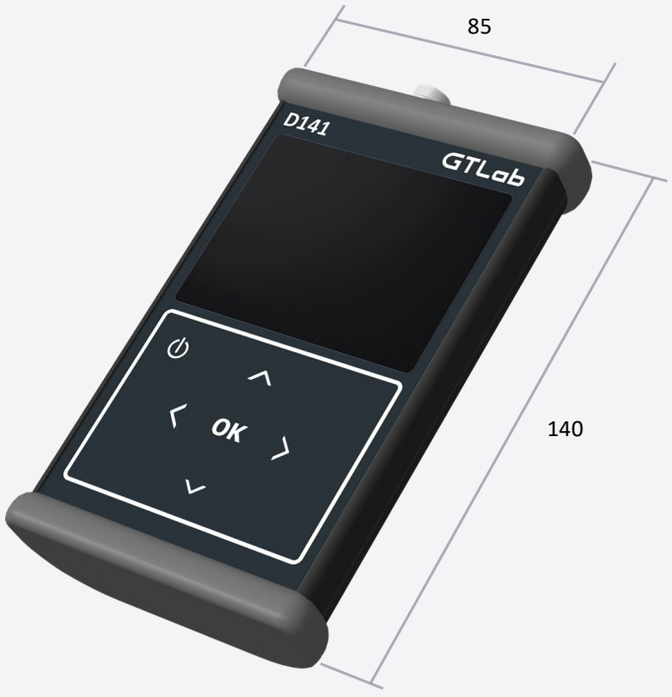
PARAMETER	PXIe302
Number of slots	5
Number of analog inputs	to 40
Processor	Intel® Core™ i7-7820EQ 3.0 GHz 14nm processor, 3.7 GHz
RAM	DDR4 dual SODIMMs 4GB (Up to 32 GB) 2400MHz
Interface	4x USB 2.0 + 2x USB 3.0
Video output	2x DisplayPort
Data storage subsystem	Pre-integrated SATA solid state drive at 240GB
Network interface	2x GbE LAN (Intel® Ethernet controller I219-LM, I210) 2x
Serial ports	COM port (D-sub9 serial RS-232/422/485)
Module synchronization interface PXI	PXI trigger connector (SMB jack)
General purpose interface bus	IEEE488 GPIB controller, Micro-D 25-pin connector)
Operating system	Microsoft Windows 10 64 bit
Operating temperature	0 ... +55 °C
Storage temperature	-40 ... +71 °C
Weight	6,85 кг

VIBROMETER


D141
GTLab
OSC
04:12
СКЗ,м/с²
0.21028
106.5 dB
A
0.351 м/с²
264.453 мс
СТАРТ
254.1
279.1
304.1
мс
OK


GTLab
101HB-100
№ 20011

D141



Parameter	D141
Sampling frequency of the ADC	51.2 kHz
Measurement mode	Vibration Acceleration, Vibration Speed, Vibration Displacement
Virtual instrument	spectrum, oscilloscope, vibrometer, signal recording
Frequency range	1Hz ... 20 kHz
Detector	magnitude, peak, RMS value
Input charge (max)	$48 \cdot 10^3$ pC
Input voltage (max)	± 4.8 V
Data exchange	mini USB
Data storage	SD card
Temperature range	– 20 ... +55 °C
Weight	260 g
Size	140x80x25 mm
Battery time	at least 8 hours
Housing material	aluminum, 2mm

ACCESSORIES

Pins

P0506
[10-32UNF- M6]

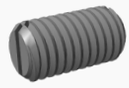
P0608
[M6- M8]

P0505
[10-32 UNF]

P0606
[M6]

P0505i
[10-32 UNF, Insulating]

P0303
[M3]



P0808
[M8]

P0305
[M3 - 10-32 UNF]

P0508
[10-32 UNF - M8]

Cable switches

Z1010
[10-32UNF_f]

Z0010
[10-32UNF_f]

Z1001
[10-32UNF_f - BNC_m]

Z0501
[SMA_f - BNC_m]

Z0503
[SMA_f - TNC_m]

Z0203
[BNC_f - TNC_m]

Z0202
[BNC_f - BNC_f]

Z0204
[BNC_f - TNC_f]

Z0404
[TNC_f - TNC_f]

Magnets

M0105
[d24 ×19]
Breakaway
forcea - 150 [H]

M0105i
[d24×19 Insulating]
Breakaway
forcea - 150 [H]

M0205
[d29×21,6×M5]
Breakaway
forcea - 250 [H]

M0205i
[d29×21,6×M5 Insulating]
Breakaway
forcea - 250 [H]

M0206
[d29×21,6×M6]
Breakaway
forcea - 250 [H]

M0206i
[d29×21,6×M6 Insulating]
Breakaway
forcea - 250 [H]

M0305
[d15 ×6]
Breakaway
forcea - 100 [H]

M0305i
[d17 ×7 Insulating]
Breakaway
forcea - 100 [H]

M0405
[d43 ×20×M5]
Breakaway
forcea - 300 [H]

M0406
[d43 ×20×M6]
Breakaway
forcea - 300 [H]

M0408
[d43 ×20×M8]
Breakaway
forcea - 100 [H]

M0505
[25 ×24×M5]

M0506
[25 ×24×M8]

M0508
[25 ×24×M8]

Thread

P0005
[10-32UNF]

Adapters

B01

B02

B0308

B0306

B03516

Ceramic insulators

R21 (d6)

R22 (d10)

R23 (d14)

Mounting set

K11 (pin M4-M5,
nut - wingnut M4)

K12 (pin M5,
nut - wingnut M5)

Wax mastic

W01 (5r)

O-rings

R01 (D-17, d-14)

R02 (D-8,9, d-7)

R03 (D-10,5, d-7)

R04 (D-12, d-5)

CABLE PRODUCT

1 **Cable code**
(according to table 1).

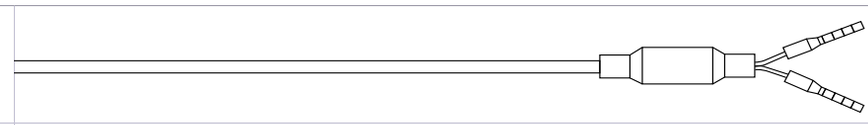
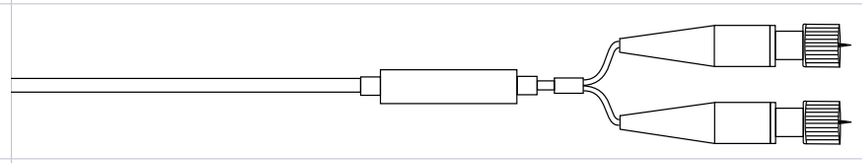
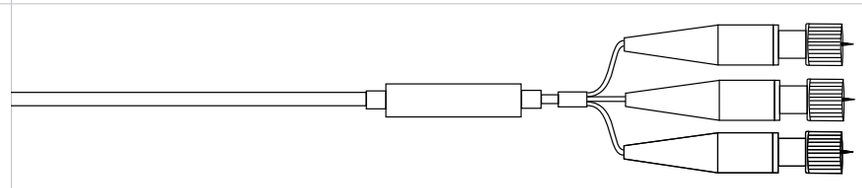
2 **Input connector code**
(according to table 2).

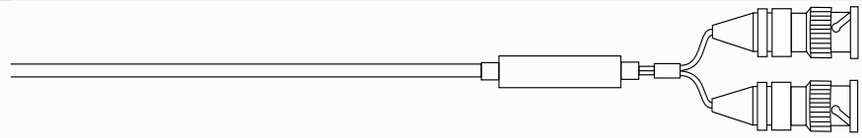
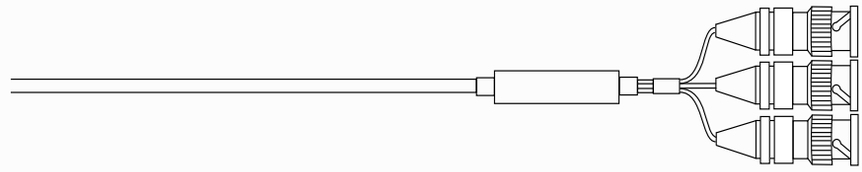
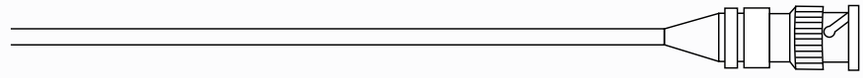
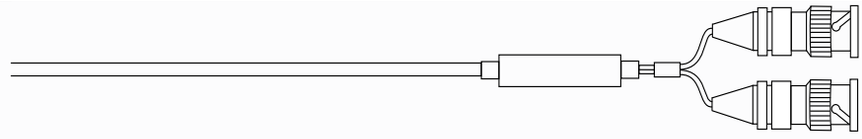
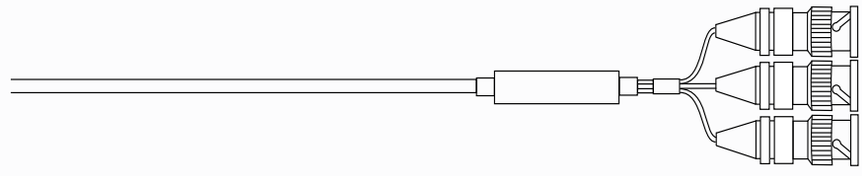
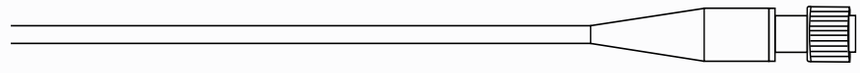
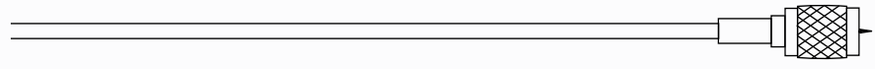
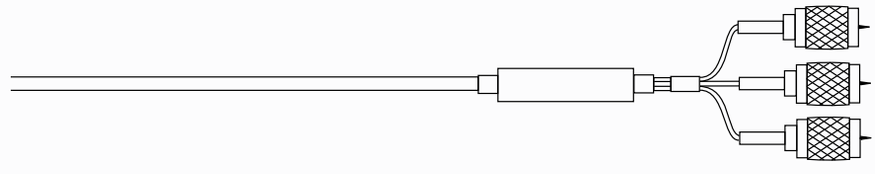
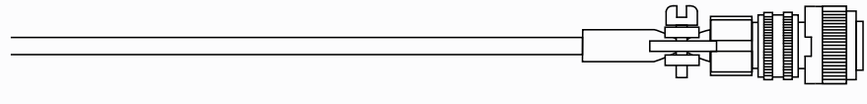
3 **Output connector code**
(according to table 2).

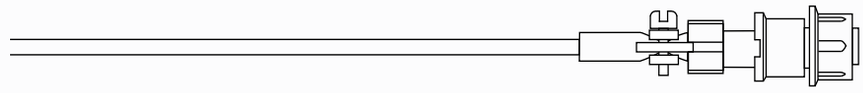
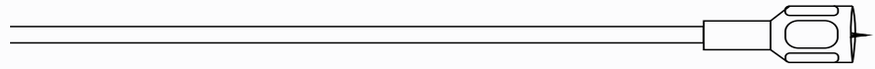
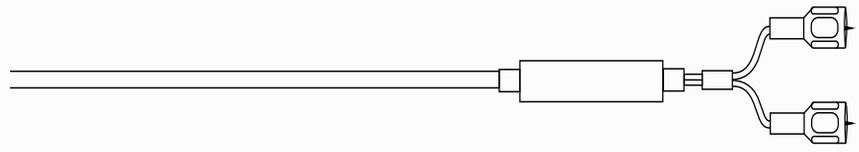
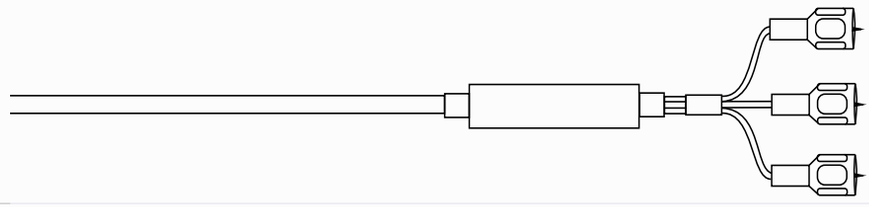
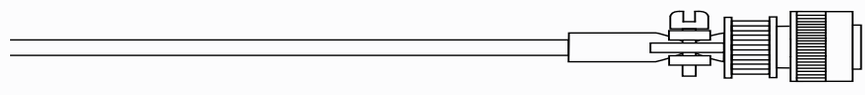
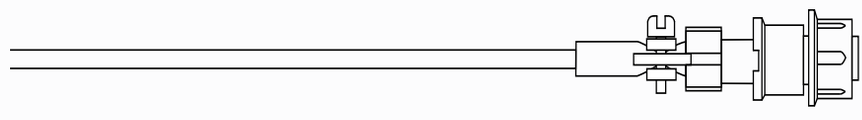
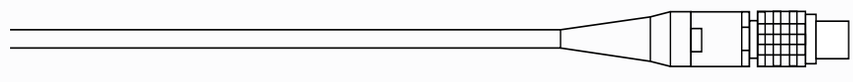
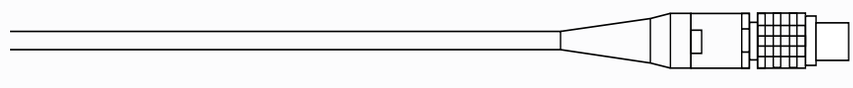
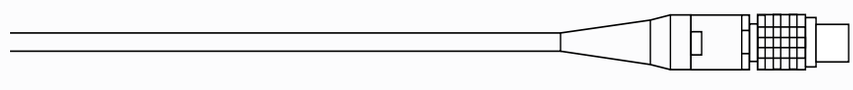
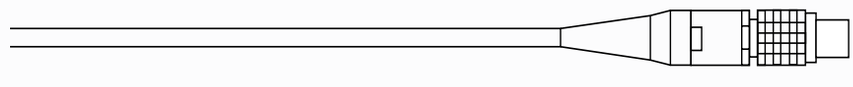
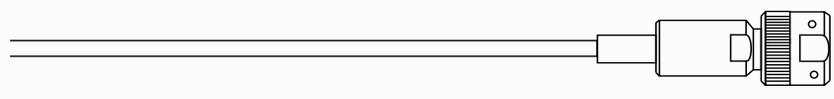
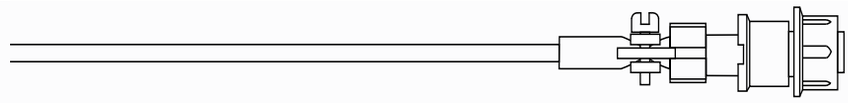
Table 1.

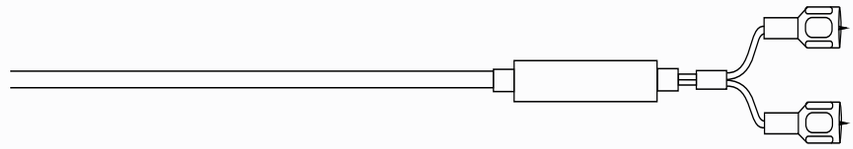
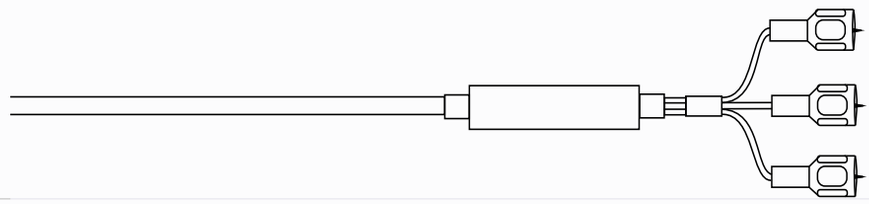
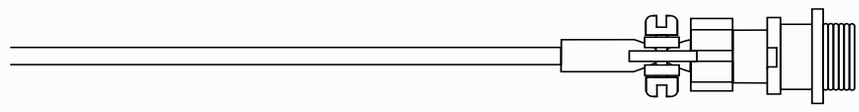
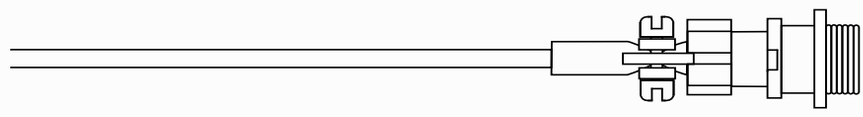
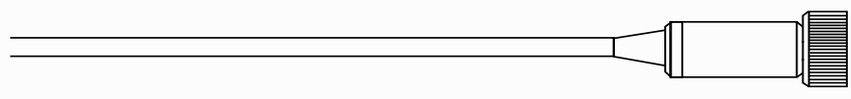
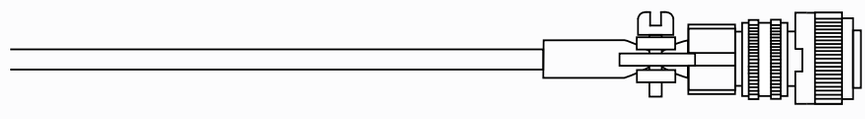
Cable		Code	Characteristic	View
Single-core	anti-vibration	01	d 0.7 mm.	
		02	d 1.1 (±0,1) mm.	
		03	d 2 mm.	
		04	d 2.5 mm., underwater version	
Three-core	anti-vibration	41	d 2.5 mm.	

Table 2.

Code	Connector	View
A2	2*Mechanical clamp terminal	
A3	3*Mechanical clamp terminal	
AA2	2*Soldering leads	
AA3	3*Soldering leads	
B1	C02 [10-32UNF]	
B2	2*C02 [10-32UNF]	
B3	3*C02 [10-32UNF]	
C1	C03 [4-pin. 1/4-28UNF]	

D1	BNC	
D2	2 × BNC	
D3	3 × BNC	
DC1	CP50-77ФВ	
DC2	2 × CP50-77ФВ	
DC3	3 × CP50-77ФВ	
E1	C04 [3-pin. M6 × 0.5]	
F1	TNC	
F2	2 × TNC	
F3	3 × TNC	
H1	C05 [2-pin 5/8-24UNF]	

K1	СР50-276ФВ	
P1	2РМ14КПН4Г	
S1	SMA	
S2	2 × SMA	
S3	3 × SMA	
PA1	СНЦ23- 4/14Р - 11	
PB1	2РМD18КПН4Г	
NB1	lemo FFA.05.302	
NC1	lemo PCA.05.302	
ND1	lemo FGG.1B.303	
NE1	lemo FGG.1B.305	
K1	СР50-276ФВ	
P1	2РМ14КПН4Г	
S1	SMA	

S2	2 × SMA	
S3	3 × SMA	
PC1	2 РМД18БПН4Ш	
PD1	2 РМ14БПН4Ш	
R1	РС4ТВ	
T1	С06 [3-pin. 5/8 - 24 UNF]	

Example: 41C1B3 – three-core anti-vibration cable (C03 [4-pin. 1/4-28UNF] - 3*C02 [10-32UNF]).

+7 (83130) 4-94-44
+7 (83130) 4-98-88
info@gtlab.pro
https://gtlab.pro
Nizhny Novgorod region, Sarov, Shvernika street

GTLab