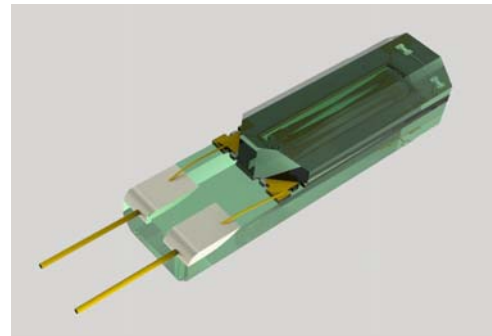


Specification	<b>RKMA-P-OS-21</b>	Rev.: 1	Date: 2016-09-09
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Type: **Quartz Pressure Sensor**

**Features:**

- Pressure sensing crystal element
- Frequency varies with pressure induced stress
- High resolution and accuracy
- High long term crystal stability
- Wide temperature range -40°C up to +180°C
- Low power consumption of driving oscillator
- For precision downhole applications



Parameter	min.	typ.	Max.	Unit	Condition
Frequency range	47.000		49.000	kHz	
Pressure range (See order code)			40 100	MPa MPa	Option "P" = 40 Option "P" = 100
Series resonance resistance R <sub>1</sub>		100 160	120 200	kΩ kΩ	@ 20°C @ +180°C
Drive level			1.0	μW	Note 1
Aging per year			±15 ±95	ppm ppm	@ 20°C @ +180°C
Insulation resistance	100			MΩ	
Frequency-pressure equation (3 <sup>rd</sup> order)	$f(p) = f_0 + A_1 \cdot p + A_2 \cdot p^2 + A_3 \cdot p^3$				f <sub>0</sub> = frequency at p=0 A <sub>1</sub> = sensitivity [Hz/MPa] A <sub>2</sub> , A <sub>3</sub> = 2 <sup>nd</sup> and 3 <sup>rd</sup> order coefficients
Sensitivity A <sub>1</sub>	70			Hz/MPa	Note 2
2 <sup>nd</sup> and 3 <sup>rd</sup> order coefficients A <sub>2</sub> , A <sub>3</sub>					Note 2
Maximum deviation over temperature				%	0°C to +120°C
Maximum short-time overstress FS = full scale			1.3·FS 1.1·FS	MPa MPa	0°C to +120°C 120°C to +180°C
Operating temperature range	0 -40		+130 +180	°C °C	On request
Storage temperature range	-55		+85	°C	Note 3
Dimensions	14.5 x 4 x 4			mm	See drawing

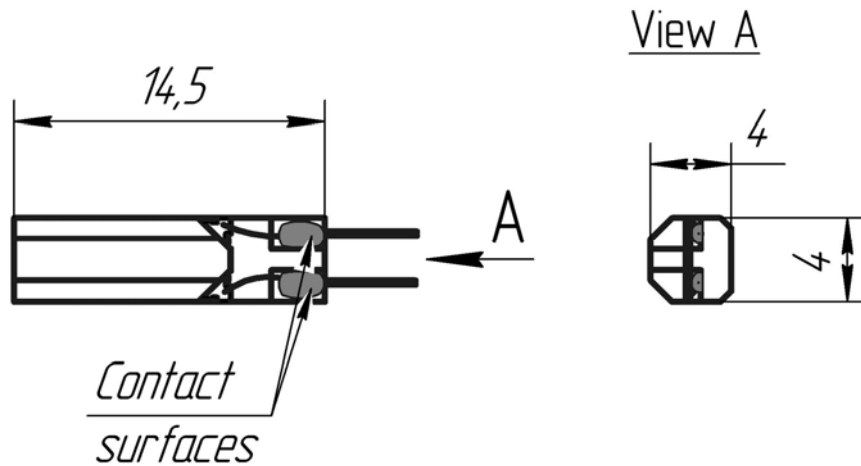
**Notes:**

1. Exceeding maximum drive level will degrade the performance and damage the crystal
2. Data will be provided with sample delivery
3. Temperatures higher than +85°C only for limited time. Consult factory for details

**Ordering Code**

RKMA - P - OS-21			
Pressure range (MPa) – Option P			
40	60	80	100

Enclosure drawing:



**Revision History**

Rev.	Drawing	Date [dd.mm.yyyy]	Remarks	Author	Checked
1	D0	09.09.2016	First issue RKMA-P-OS-21	BN	BN