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Ltd. "SKTB ELPA" designed and engineered sensors for measuring pressure of various fluids: fresh and salt water, oil and its derivatives products, food products (milk, paste).

Hydrostatic pressure sensors to measure pressure (level) of fresh and marine waters based on manometric precision quartz resonators.

One of the first sensors to measure the water level in the well PDTK P-1mg was developed jointly with JSC "Exploration", St. Petersburg-based precision quartz resonator absolute pressure gauge RKMA-R-1. This sensor has high accuracy, long-term stability, low temperature error, and has been used successfully (over 8 years) in the monitoring field gidrogeodeformatsionnogo "Radius" for 5 years Zagorsk HPP.

Further work in this direction continued with CJSC "Avangard Elionika" and CJSC "Aquamarine" St-Petersburg, resulting in a modification of the new sensors developed PDTK P-2 mg, PDTK P-3mg and PDTK-R- MN-2.0 (see Fig. 1) with improved metrological characteristics and reduced overall dimensions



Fig. 1. Hydrostatic pressure sensor PDTK P-MG

At present, developed and manufactured prototypes of small hydrostatic pressure sensors PDTK P-3mg-based precision quartz resonator compact gauge of absolute pressure RKMA-P-2. The advantage of this sensor are: small size, modularity, extended operating temperature range.

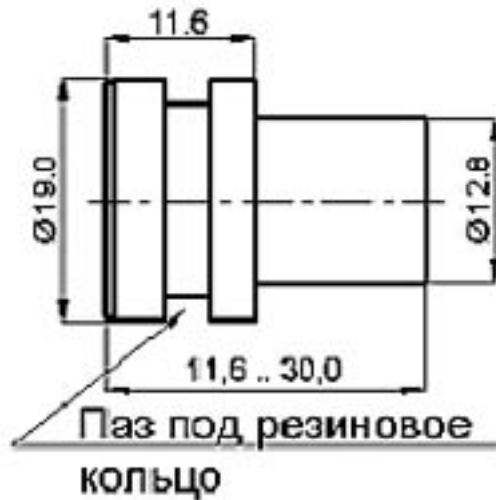


Fig. 2. Pressure sensor module the modular design means the ability to use for various tasks module of Reproduced with high precision temperature-monotonic frequency response of the quartz sensor enable Determination of the temperature is the same temperature-sensitive quartz resonator CT (B) 206, ie in o Recently, demand for quartz sensors for excitement at sea level and at ports. LLC "SKTB ELPA" developo Recorders are operated on the east coast of Sakhalin Island, Nizhny Novgorod State Technical Universi

To date, the hydrostatic pressure sensors are available with a basic error in the whole temperature range of 0.06, 0.08, 0.1 ... 1% of full scale., With a resolution of 0.001% of span.

Sensors for measuring pressure (level) of crude oil and petroleum products on the basis of high-precision quartz resonators.

Work in this area began with a quartz crystal to pressure 60 MPa in 1990, improved on the design of the resonator, and eventually with the MiFi and «Insens" Moscow were developed and

pilot batch precision deep downhole pressure sensors that designed to operate at high temperatures and corrosive environment that achieved by using the separation of bellows (see Fig. 3). At the moment, sensors are being tested by customers and has more than two years in operation at the wells. Sensors are being developed simultaneously with the upper limit of the conversion to 100 MPa, as well as sensors with a reduced diameter.

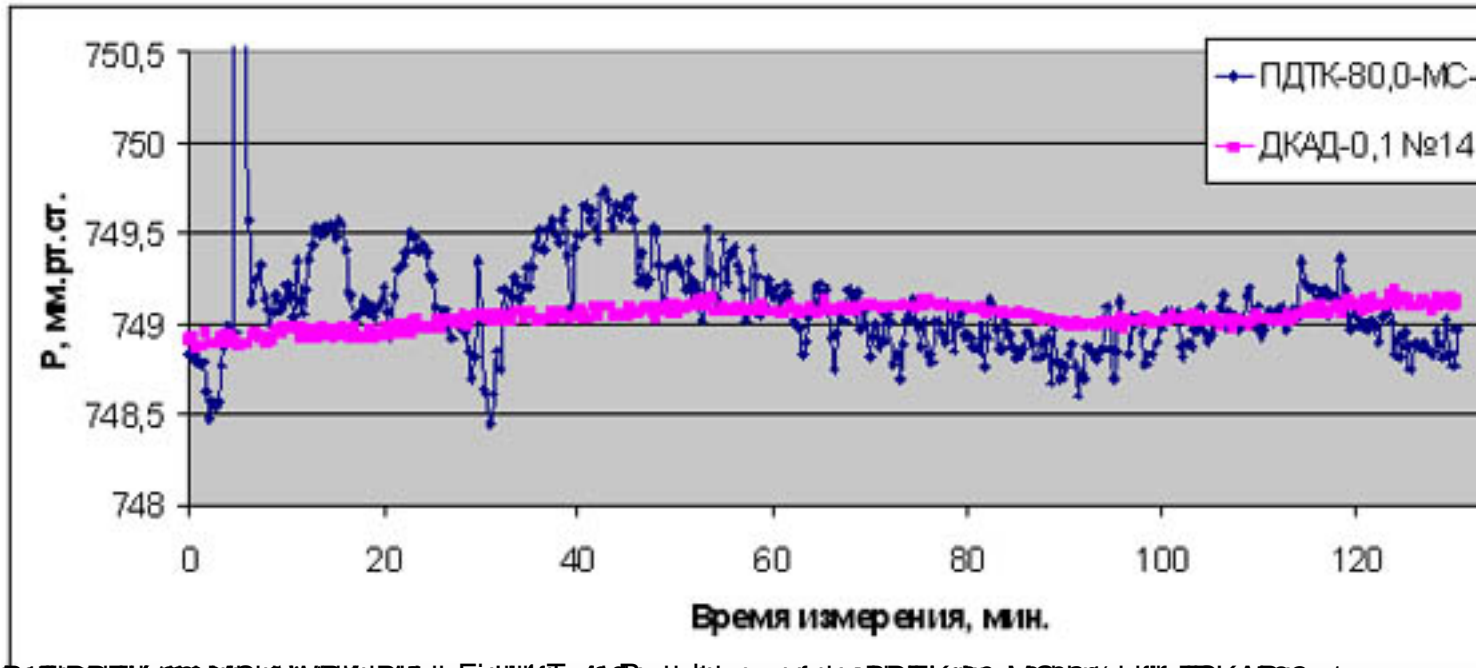


Fig. 3. Precision quartz downhole sensor PDTK-60MC

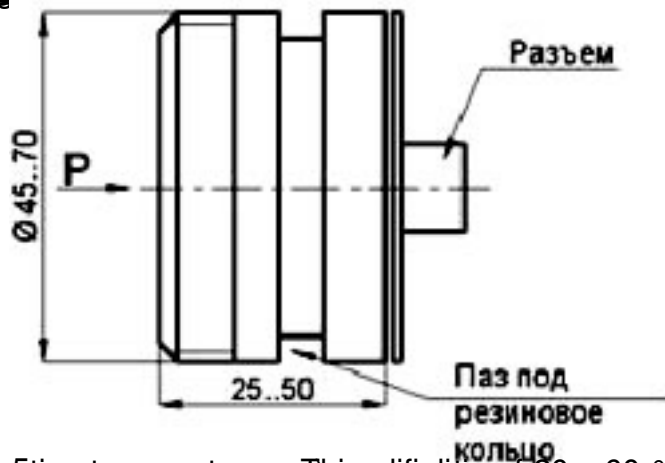
To date, six developed sensor package options to pressure from 0 to 20.0, 40.0, 60.0, 80.0 and 100.0 MPa are set: Quartz barochuvstvitelnye and heat-sensitive crystals, generators powered by a 2.8 to 5 and consumption of 0.8 mA.

About the sensors measure the pressure of liquids

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Стороны, соединяемые с фитингом, выполнены из нержавеющей стали. ДКАД-0,1 №14



Operating temperatures: This modification of sensor is with frequency modification device 100°C. This design is