

# CONCEPT:

- THE HIGH-PRECISION THERMOMETRY IS ONE OF THE MOST INFORMATIVE GEOPHYSICAL METHODS OF THE RESEARCH OF OPERATING MODES AND TECHNICAL CONDITION OF WELLS:
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- FOR PRODUCTION WELLS:
  - 1. Identification of area of inflow;
  - 2. Detection of intrawell overflows;
  - 3. Detection of behind-the-casing circulation;
  - 4. Assessment of technical condition of columns and tubing;
  - 5. Definition of intervals of water breakthrough from the neighboring delivery wells.
  - 6. Distribution of pressure and temperature on a wellbore
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- FOR INJECTION WELLS:
  - 1. Identification of area of injection;
  - 2. Detection of intrawell overflow;
  - 3. Detection of behind-the-casing flow;
  - 4. Assessment of technical condition of columns and tubing;
  - 5. Identification of flowing back of injected fluid below of hole bottom or an interval of a research.

# HPT – HIGH-PRECISION THERMOMETRY

The instrument DMPT is the complex borehole independent instrument intended for measurement of pressure and temperature for welltests of injection and production wells. In the instrument the sapphire sensor of measurement of pressure and the high-speed platinum sensor of temperature measurement with high resolution capability are used that provides high-precision measurements. Service life of the instrument is one year.

The non-volatile memory of large volume and the programmable interface provide universality of carrying out borehole measurements. By means of the fast USB-bus the convenient interface for data loading is provided. The rugged construction of the instrument guarantees reliability of data record in difficult borehole conditions. By means of the user-friendly software of AutoMAN the simple data interchange with memory of the instrument is carried out, the programming interface is provided, processing of basic data and their unloading in generally available file formats of data is executed.

# FEATURES

- The high-speed sensor of temperature measurement with high resolution capability
- The sensor of measurement of pressure with compensating of temperature influences
- Service life of batteries – 1 year
- The big memory expected more than 500 000 reference points
- Built-in timer
- Programmable start-up
- Programmable frequency of selection

# EQUIPMENT AND SOFTWARE



Parameter	Значение параметра
Range of measurement of pressure	0.01 – 60 MPa
The relative error of measurement of pressure	0.01%
Resolution capability on pressure	0.001 MPa
Operating temperature range	32 - 305 °F (0 - 150 °C)
Absolute error of temperature measurement	0.18 °F (0.1 °C)
Resolution capability on temperature	0.0018 °F (0.001 °C)
Energy cell type	lithium cell AA
Interface	USB
Logged data	Time/pressure/temperature
Memory size	500 000 reference points (optionally 1 000 000)
Selection frequency	1 sec. - 10 hours
Outside diameter of the instrument	1 <sup>1</sup> / <sub>16</sub> inches (27 mm)
Instrument length	15.7 inches (27 mm)
Casing material	Stainless steel