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HARDWARE AND SOFTWARE METHOD OF THE OUTPUT SIGNAL TEMPERATURE DRIFT COMPENSATING OF THE METHANE CONCENTRATION OPTICAL METER

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Abstract

Processes in the developed optical methane concentration measurer are probed. It is determined that the additional error in measuring the methane concentration due to a change in temperature from + 5 to + 35 °C, in (64 ÷ 142) times exceeds the regulated main error, which makes +/- 0,2 vol. %. A hardware-software method of the output signal temperature drift compensating of the methane concentration meter has been developed and implemented. The LED of the measuring channel is used as a thermosensitive element in the measuring instrument, voltage drop on it is used as an information signal. Implementation of the proposed hardware-software method allowed to achieve the additional error magnitude of the methane

concentration measuring from the temperature change, which doesn't exceed the basic one.
References 10, figures 3.

Key words: optical measuring instrument, concentration, methane, temperature, compensation.

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