

Automatic pressure calibrating and controlling device AGK



Intended use

Automatic pressure generation, control and high-precision measurement for all stages of production and testing of pressure transducers (sensors) and pressure gauges. Verification and calibration in automatic and semi-automatic modes of excess and absolute pressure measuring instruments such as pressure calibrators, sensors, reference and technical pressure gauges of accuracy classes 0.02 and lower in the range of 0... 100 MPa.

Highlights

- Automatic pressure generation and control in the range from 0 to 100 MPa.
- From one to three built-in reference pressure sensors. The possibility of easy replacement of sensors and completing with sensors for different measurement ranges and accuracy classes. An optional built-in barometric sensor for monitoring and measuring gauge and absolute pressure values.
- Accuracy classes: from 0.01 to 0.1.
- Instability of automatic pressure control: $\pm 0.005\%$.
- Control is carried out from a touchscreen multifunctional monitor or remotely via a PC (USB interface).
- An open protocol and a standard set of commands for the possibility of writing an individual control software.
- The instrument is not sensitive to contaminations.
- The low noise level allows to install the instrument directly at a metrologist's workplace.
- A compact design, versions for desktop installation and 19" rack mounting.
- The operating environments are oils, water and other non-aggressive fluids.
- Power supply: from a single-phase 220V/50 Hz. Power consumption: less than 2 kW. No pneumatic air supplies are required.

Main Technical and Performance Data

	AGK
Automatic pressure generation range	0...100 MPa
Pressure measuring ranges: – absolute pressure – positive excessive pressure – atmospheric pressure	from 0,1...1,7 to 0,1...100,1 MPa from 0...1,6 to 0...100 MPa 80...110 kPa
Accuracy classes	0,01; 0,015; 0,02; 0,025; 0,05; 0,1
Improved accuracy options	$\pm 0,01\%$ Rdg* in the range of 50...100% FS* $\pm 0,005\%$ FS* the range of 0...50% FS* $\pm (0,005\% \text{ Rdg}^* + 0,005\% \text{ FS}^*)$
Operating environment	oil, water
Power requirements	220 V/50 Hz

*Rdg – Readings

*FS – Full Scale

Overall dimensions

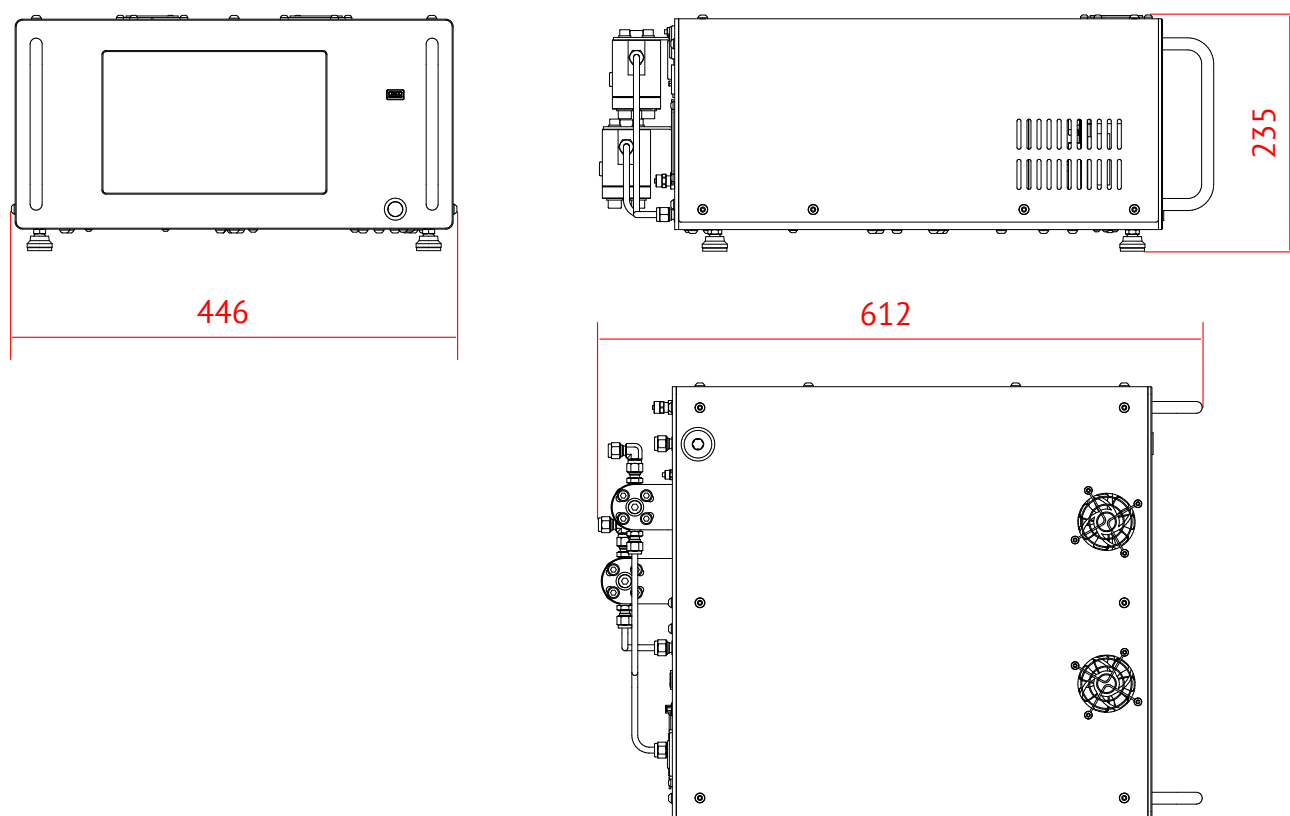


Fig. 1. Control unit

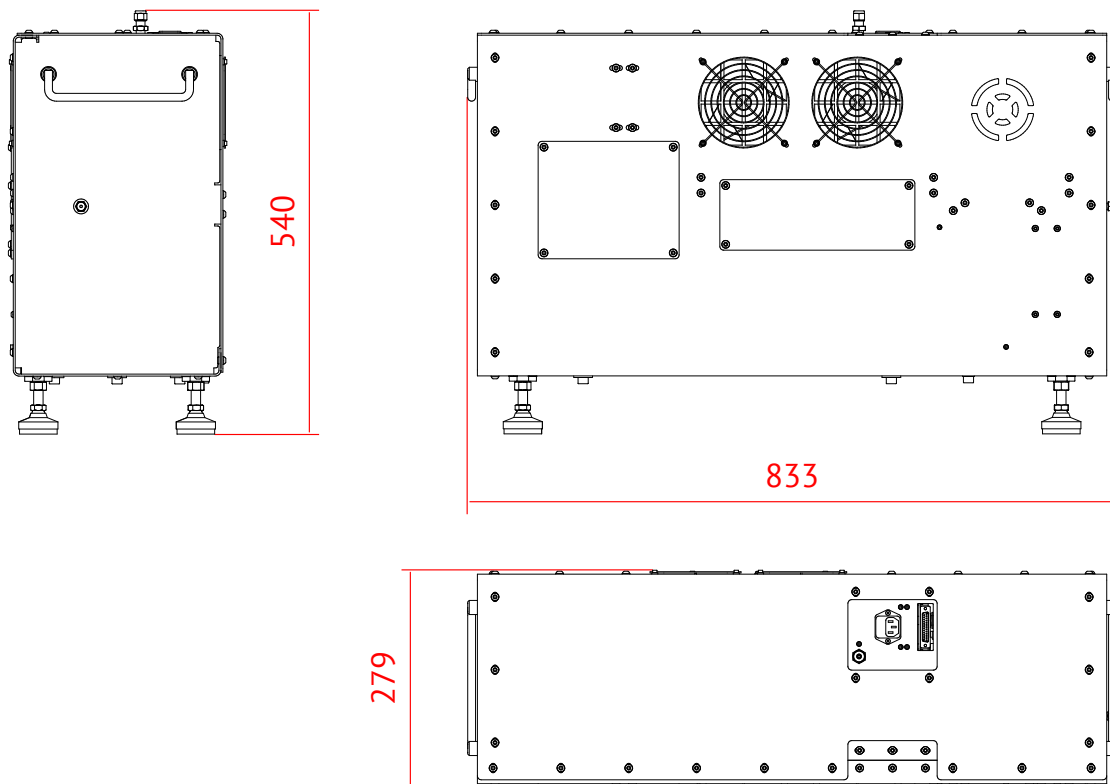


Fig. 2. Power unit

Principle of operation

AGK consists of an electronic control unit (Fig. 1) based on microprocessor technology and a power unit (Fig. 2), which generates and control the necessary pressure. It has two modes: "Measurement" and "Task". In the "Tasks" mode AGK automatically reproduces the necessary pressure. In the "Measurement" mode the current pressure is measured in the system. The operating mode is set via the multifunctional touchscreen display or by external control via PC.

Up to 3 reference pressure sensors as well as a barometric sensor can be installed simultaneously in the AGK for for monitoring and measuring both gauge and absolute pressure. The pressure gauges and barometer are removable, so The calibrator can be equipped with an unlimited number of them.

The electronic unit serves to control the operation, process the obtained measurement result, indicate on the display the current value of the measured (set) pressure, as well as the measuring range, units and other information on the display. There is a function of both manual selection of the range and selection of the range in automatic mode. When the pressure than the upper limit of one of the modules, the switchover to the next higher pressure sensor in the range is made. The device is equipped with various functions: selection of measurement units, selection of pressure type (absolute/gauge pressure), setting of the pressure set point, zero calibration, calibration at different points of the ranges, change of the set point speed. The following functions are available: pressure units selection (absolute/gauge pressure), setting the limits of the pressure task, zero calibration, calibration at different points of the ranges, change of the pressure setting speed, the possibility of pressure reproduction according to the pre-defined algorithm, choice of menu languages, etc.

AGK can be installed both on the table (the power unit is installed under the table) and in a 19" rack.

Certification

Certificate of approval.

Package

Standard package:

- Electronic unit with selected number and operating ranges of built-in reference sensors.
- Power unit.
- Kit of connection fittings and hoses.

Options:

- Additional reference pressure sensors.
- Rack-mounted version 19"
- Fully organized workplace according to the terms of reference.