



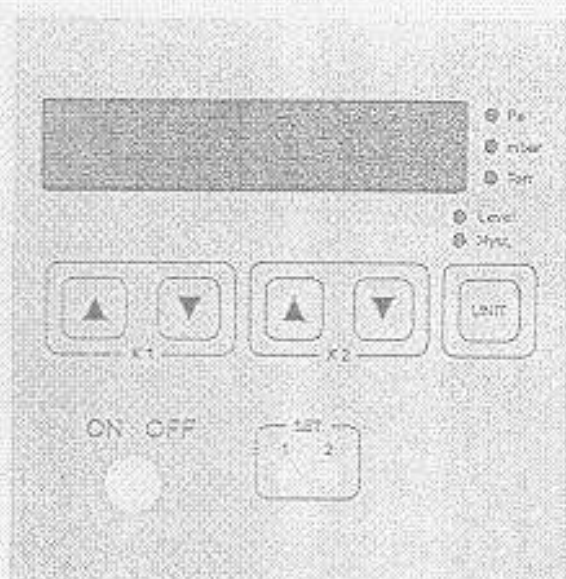
Instruction Manual

LABOVAC®
PIA 100

PIRANI-Vacuum Gauge

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LABOVAC PIA 100 PIRANI VACUUM GAUGE VACUUM CONTROLLER



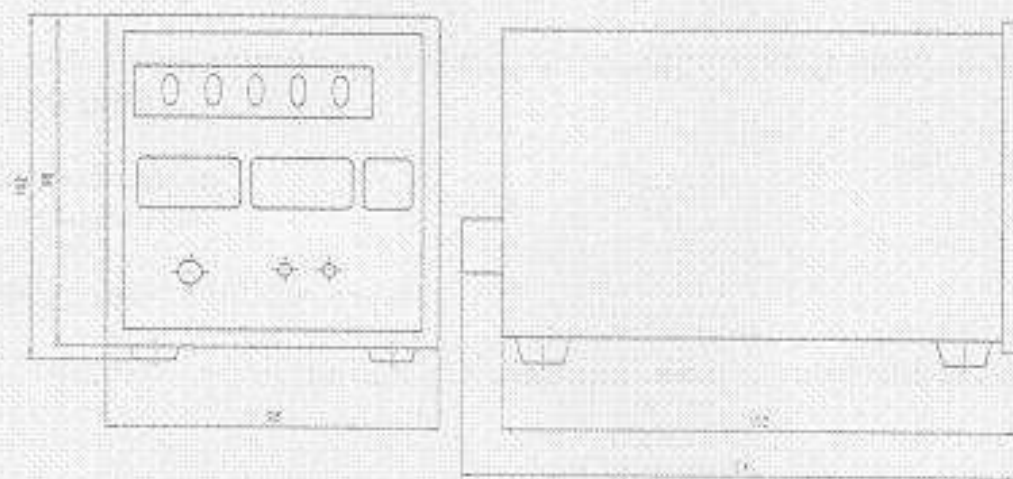
APPLICATION

- Universal pressure measurement within the fine and rough vacuum range for use in labs and industries, for instance as lab analyzing instruments, vacuum pumping units
- Vacuum controller as control unit or for process control in backing pumps or vacuum systems

Unit characteristics and specifications

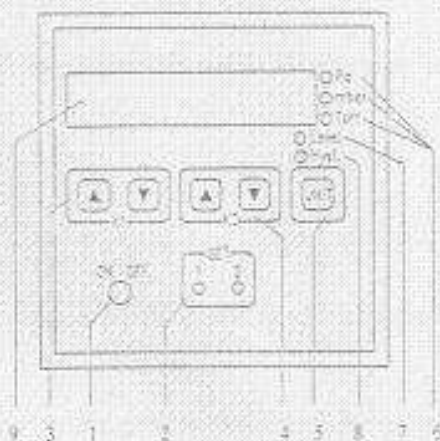
- Vacuum measurement (hot-wire) is based upon the thermal conductivity of gases
- Easily programmable on the front panel using a keyboard
- High display resolution in digital read-out
- High read-out rate
- Measuring tube, measuring line and power supply line are forming part of the delivery
- The vacuum controller can be made available in a table set or panel instrument version, respectively
- Measuring range: $10^3 - 10^1$ mbar
- Measuring accuracy: 20 % across the overall range
- Read-out: digital, optionally in mbar, Pa and Torr

- **Switching thresholds:** 2-fold 220/230 V, 2A each; adjustable on front panel using the keyboard
- **Accuracy of switching:** ± 1 digit
- **Hysteresis:** ± 1 digit
- **Recorder output:** 0-10 V; max. 5 mA
- **Preset controller for pressure adjustment:** "SET" top read-out value: atmospheric pressure (10^{-3} mbar)
lower read-out value: 10^{-3}
- **Read-out:** five times per second
- **Height of digits:** 10 mm (colour red)
- **Operating voltage:** 220/230V, 50/60 Hz
- **Power input:** approx. 15 Watts
- **Protection index** IP 20
- **Length of measuring line:** 2 m
- **Order No. for table set:** 600011
- **Order No. for flush-type instrument:** 600012



Vacuum Gauge PLA 100
- Dimension drawing -

LABOVAC PLA 100 Pirani Vacuum Gauge Vacuum Controller



Operating panel of the vacuum controller

- 1 - ON/OFF mains switch
 - 1 highest reading: 10^3 mbar
- 2 - SET, preset controller
 - 2 lowest reading: atmospheric pressure
- 3 - Switching channel 1 with cursor keys for setting or sampling of the high (level) or low (hysteresis) set point
 - ↗ - set point maximization
 - ↘ - set point minimization
- 4 - K2, switching channel 2 analogous to K1
- 5 - Unit, key for optionally setting the vacuum technological measuring units such as Pa, mbar, Torr
 - Pa
- 6 - LED mbar, display of the preset measuring unit Pa, mbar, Torr
- 7 - LED level, display for presetting the set point
- 8 - LED hyst, display for presetting the hysteresis value
- 9 - Digital display

Operating instructions

• Switching ON

The instrument is switched on, using the mains switch 1, the actual value measured is represented in the digital display 9.

• Selection of the vacuum technological read-out.

By operating the key "UNIT" 5, the required read-out (Pa, mbar, Torr) may be preselected for the read-out display.

• Calibration

The read-out value 10^{-3} is set when a pressure $<10^{-3}$ mbar is applied, using the controller SET 1.

The read-out value is set to atmospheric pressure when applying the atmospheric pressure, using the controller SET 2.

• Utilization of switching channels - Presetting the set points (level and hysteresis):

The instrument disposes of two identical and absolutely independent working switching channels with relay output whose switching points including the corresponding hysteresis values are freely variable.

a) The instrument displays the actual value measured.

b) When operating the cursor keys \blacktriangleleft or \blacktriangleright the high (level) or low (hysteresis), respectively, the set point can be sampled.

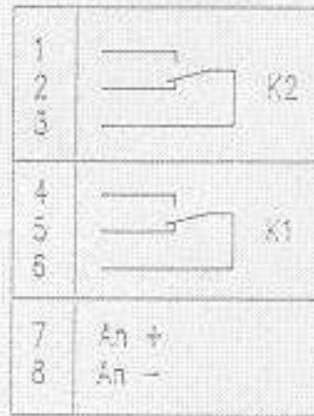
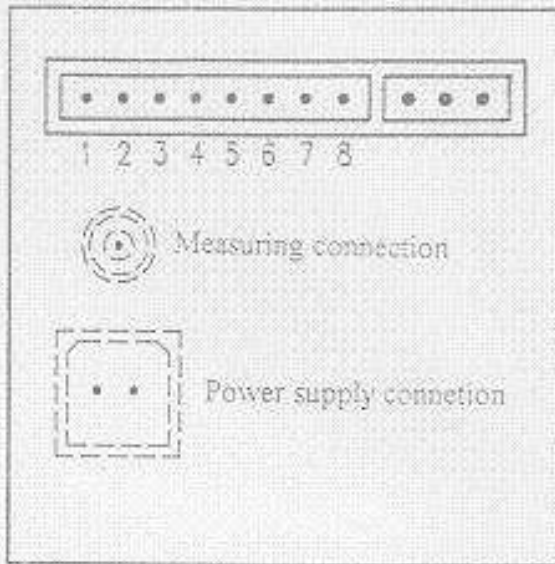
If read-out meets the requirements for switching, no repro-gramming is required.

c) After key operation, this set point remains in the read-out display for 2 seconds, then returns to the value measured.

a) When operating the two cursor keys \blacktriangleleft , \blacktriangleright , the programming mode is enabled, the read-out display starts blinking and the LED "level" 7 lights up. Set the upper set point (level), using the cursor keys. After setting has been completed (last key operation), the display switches over to hysteresis after 2 seconds, the LED "hyst" 8 lights up. The required hysteresis value may now be set in the same way. Once again, 2 seconds after the last key operation, the display jumps into the measuring mode, and the values set for the level and hysteresis are stored and will be maintained up to the next programming mode.

Indication

- Short-time pressing the cursor keys will change the values stepwise; long-time pressing will let the values pass more rapidly.
- If the programming mode is enabled, but no key operation is effected, read-out jumps back into the read-out of the value measured without changing the values set.



Pin connection PIZ 100
 PEN 100
 PIA 100