USER MANUAL

VACUUM GAUGE

PCE-VG 20

ENGLISH



User manuals in various languages (français, italiano, español, português, nederlands, türk, polski) can be found via our product search on:
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OVERVIEW

The PCE-VG 20 Vacuum Gauge is a specialized auxiliary instrument designed for installation and maintenance of refrigeration systems such as air conditioners and cold storage units. It is also suitable for monitoring the operating conditions of vacuum pumps.
By measuring vacuum level and moisture evaporation temperature, the device provides critical insights into the system's dehydration status and the extent of contamination removal (e.g., oil, ambient gases). This enables optimal judgment for refrigerant charging and precise evaluation of pump performance.
The instrument features a Pirani vacuum sensor for signal acquisition, paired with an integrated 32-bit digital processing unit to ensure high-precision readings and stable operation. The multi-information TFT LCD display offers clear, easy-to-read data and intuitive operation. The housing is made of high-strength engineering plastic, making the unit durable and comfortable to hold.

SAFETY RULES AND PRECAUTIONS

This manual includes instructions for proper use, safety warnings, and maintenance guidelines. Failure to follow these instructions may damage the instrument.
This device is designed and manufactured in strict compliance with IEC/EN61010-1 safety standards.

- Please read this manual thoroughly before using the instrument and familiarize yourself with the product.
- Pay attention to all safety notices and warning labels to avoid personal injury or equipment damage.
- Do not open the instrument housing or modify internal circuits without authorization, as this may compromise safety and functionality.
- Do not operate the instrument if the casing or connector shows any signs of damage.
- Remove batteries if the device will not be used for an extended period.
- Always comply with local safety regulations during operation to prevent hazards.
- Do not use or store the instrument in environments with high temperature, high humidity, flammable/explosive materials, or strong electromagnetic fields.
- Wear appropriate certified personal protective equipment during testing to ensure personal safety.
- Use the device only in well-ventilated areas to avoid inhalation of toxic gases.

TECHNICAL SPECIFICATIONS

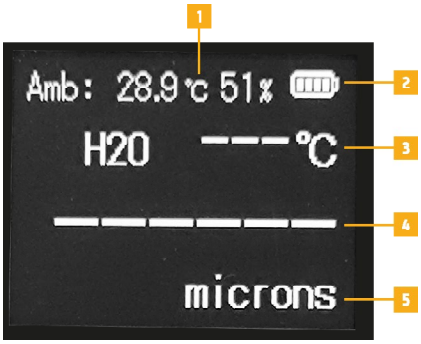
Max Overload Pressure (Relative)	2 bar
Vacuum Range	0 ... 75000 µm
Vacuum Unit	µm, mTorr, µmmHg, Torr, mmHg, Pa, hPa, kPa, mbar, psia, inHg
Vacuum Resolution	1 µm (0 ... 1000 µm) 10 µm (1000 ... 2000 µm) 100 µm (2000 ... 5000 µm) 500 µm (5000 ... 10000 µm) 5000 µm(10.000 ... 75.000 µm)
Vacuum Accuracy	±(10% of the measured value + 10 µm (100 ... 1000 µm))
Temperature Unit	°C, °F
Temperature Range	–10°C ... +50°C (±0.5°C) / 14°F ... 122°F (±0.9°F)
Humidity Range	0 ... 100% RH (±3% RH)
Measurement Cycle	0.5 s
Sensor Type	Pirani sensor
Interface	1/4“ SAE (7/16”–20 UNF) male thread
Power Supply	3 x 1.5V AA batteries
Operating Temperature	–10°C ... +50°C / 14°F ... 122°F
Storage Temperature	–20°C .... +50°C / –4°F ... 122°F
Dimensions	6.5 x 3.5 x 14.5 cm
Weight	190 g

DEVICE DESCRIPTION

1 - LCD Display
2 - Buttons
3 - 1/4“ SAE (7/16”–20 UNF) Inlet Port



1 - Ambient Temperature / Humidity
2 - Power Indicator
3 - Moisture Evaporation Temperature
4 - Vacuum Reading
5 - Vacuum Unit



BUTTON DESCRIPTION

Backlight / Power Button

» Short press: Turn on/off backlight.

» Long press (2 sec): Power on/off.

Right Shift / Setting Button

» Short press (in test mode): Switch temperature unit (°C/°F).

» Short press (in threshold setting mode): Move cursor right.

» Long press (in threshold): Enter threshold setting mode.

» Long press (in setting mode): Cancel and return to test mode.

Increment / Confirm Button

» Short press (in test mode): Switch vacuum unit.

» Short press (in setting mode): Increase digit at cursor position.

» Long press (in setting mode): Confirm and save setting, then return to test mode.

OPERATION INSTRUCTIONS

Power On & Measurement

» Install 3 pcs of 1.5V AA batteries

» Long-press the BACKLIGHT/POWER button for 2 seconds to power on. The screen displays ------.

» Short-press RIGHT/SET button and UP/CONFIRM button to select temperature and vacuum units.

» Connect the instrument to the system under test.

» Start the system and obtain the test reading.

Unit Switching (in Test Mode)

» Press RIGHT/SET button to select temperature unit (°C / °F).

» Press UP/CONFIRM button to select vacuum unit.

Vacuum Threshold Setting

» In test mode, long-press RIGHT/SET button to enter threshold setting (cursor appears).

» Short-press UP/CONFIRM button to adjust the digit at cursor position.

» Short-press RIGHT/SET button to move cursor to next digit.

» After setting the desired threshold, long-press UP/CONFIRM button to confirm and return to test mode.

» To cancel without saving, long-press RIGHT/SET button.

Threshold Alert

Once a threshold is set, the screen backlight color changes when the measured vacuum reaches the preset threshold.

Battery Level Indicator

Battery status is shown in the top-right corner of the screen. Replace batteries promptly when power is low to ensure normal operation.

DISPOSAL

For the disposal of batteries in the EU, the (EU) 2023/1542 directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose. In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law. For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations. If you have any questions, please contact PCE Instruments.

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