



PGE20 Series
General Purpose
Digital Pressure Gauge



User Manual

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1. General Information

1. General Information



- 1 Display
- 2 Port for Micro-USB type B
- 3 Controls
- 4 Process connection

1.1 Description

The model PGE20 digital pressure gauge combines the high accuracy of digital electronics with the convenience and easy handling of an analog master gauge. Thanks to an accuracy of $\pm 0.5\%$ full scale or $\pm 0.25\%$ full scale, the PGE20 can be used as calibration or reference instrument for various applications:

- Hydrostatic pressure test
- Burst tests
- Leakage measurement
- Setting of switch points on pressure switches
- Analysis of process pressures
- Any application requiring high-accuracy pressure measurement

PGE20 Menu functions:

- Sampling rate
- Tare
- Damping
- Automatic power-off
- Min./Max. measurement
- Data logging (optional)

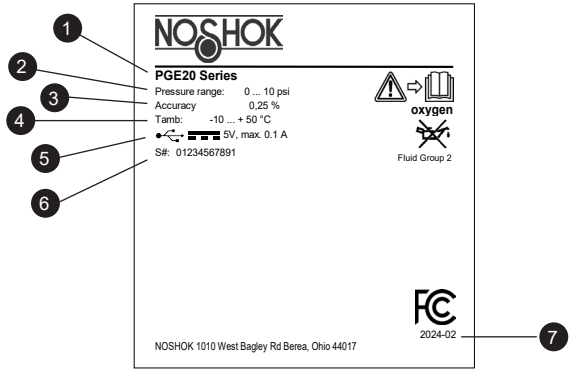
The model PGE20 is equipped with a Micro-USB interface for simple data transmission. Once the digital pressure gauge is configured, the settings can be password-protected to prevent changes to the configuration.

1. General Information

1.2 Product Label (example)

The product label is located on the rear of the PGE20 on the cover of the battery compartment and process connection.

- 1 Series
- 2 Pressure range
- 3 Accuracy
- 4 Ambient temperature rating
- 5 Power
- 6 Serial number
- 7 Date of manufacturing



Process Connection Label

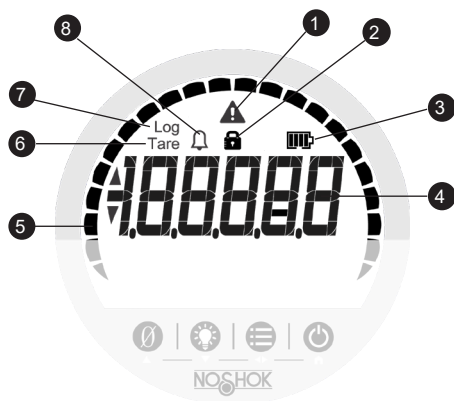
- 1 Digital Gateway QR code
- 2 Configured part number



2. Design and Function

2. Design and Function

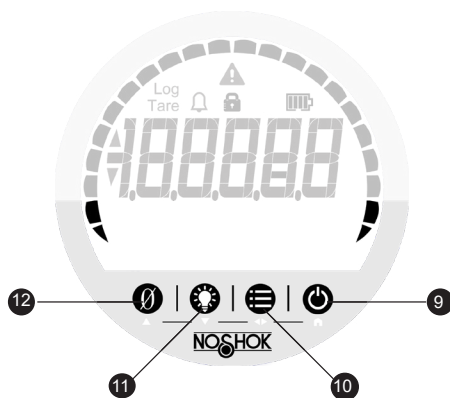
2.1 Front display



Item	Symbol	The symbol is displayed on:
1		<ul style="list-style-type: none"> ■ Exceeding or dropping below the pressure range ■ Exceeding or dropping below the temperature range ■ Data logger memory is more than 90 % full ■ Instrument defect or battery status < 10 %
2		<p>Lock symbol</p> <p>It is locked, if the [ZERO/▲] or [MENU/◀▶] buttons have been locked via NOSHOK configuration and data logging software, the PIN must be entered manually on the PGE20.</p>
3		<p>Battery symbol</p> <ul style="list-style-type: none"> ■ The battery symbol is displayed only during battery operation. ■ On connection of a USB power supply unit, no battery symbol is displayed.
		<p>Battery status 100 % ... 40 %</p> <ul style="list-style-type: none"> ■ Outline is displayed continuously ■ One segment is displayed for each 20 %
		<p>Battery status 20 %</p> <ul style="list-style-type: none"> ■ Outline is displayed continuously ■ New batteries must be used

2. Design and Function

Item	Symbol	The symbol is displayed on:
4		Pressure indication The 4 ½-digit 15-segment display always indicates the current pressure value.
5		Bar graph indicates the current pressure graphically The bar graph consists of 20 segments and two end points. The bar graph indicates the current pressure proportionally to the measuring range. (If the measuring range has been underrun, the front point lights up; with an overrun, the rear point lights up.)
6	Tare	TARE function active The display appears as soon as the TARE function is activated.
7	Log	Data logger function active The display appears as soon as the data logger function is activated.
8		Alarm Measured value has exceeded or dropped below the alarm limits.







Function buttons

The PGE20 is controlled via 4 function buttons, with each button having a main and a secondary function. In general, the information printed on the buttons corresponds to the main function: **ZERO**, **LIGHT MENU**, **ON/OFF**. Once the **[MENU/◀▶]** button is activated, the secondary function applies. These are, from left to right: Cursor up **[UP/▲]**, cursor down **[DOWN/▼]**, left/right cursor **[L/◀]** or **[R/▶]** and **[HOME]**.

NOTE:	If you are in the MENU function and if there is no further input within 30 seconds, HOME is automatically executed. This does not apply when one is in the input mode for a number or a name.
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2. Design and Function

Item	Button	
9		<p>On/Off or Home button</p> <p>The main function is switching the PGE20 on and off. If the digital pressure gauge is already in menu mode, a short press on the [On/Off] button brings up "HOME". A long press (at least 2 seconds) switches the PGE20 off.</p>
10		<p>MENU button</p> <p>Calling up the menu by pressing the [MENU/◀▶] button. If the PGE20 is already in menu mode, the operation of "◀" or "▶" will depend on the display. If the button is pressed for longer, after 2 seconds the cursor switches (left ◀ or right ▶). If the arrow is pointing to the left (◀), releasing the [MENU/◀▶] button immediately jumps back one menu level. Inputs are confirmed with the [MENU/◀▶] button.</p>
11		<p>LIGHT button</p> <p>Turning the backlighting on and off By pressing the [LIGHT/▼] button (short press or long press), the light will be switched on. The duration of the light is dependent on "LIGHT OFF" in "Setting".</p> <ul style="list-style-type: none"> ■ 1 x press of the [LIGHT/▼] button (Light = On) ■ Pressing [LIGHT/▼] button again (Light = Off) <p>If the PGE20 is in menu mode, with a short press on the [LIGHT/▼] button, the cursor can be moved downwards.</p>
12		<p>ZERO button</p> <p>The current pressure value will be set to "0" (gauge) or reference pressure (abs.). By pressing the [ZERO/▲] button, the current pressure value is set to "0". A maximum of 5 % of the measuring span can be corrected. If the PGE20 is in menu mode, with a short press on the [ZERO/▲] button, the cursor can be moved upwards.</p>
	NOTE:	<p>For gauge pressure measuring instruments, in the range of $\pm 5\%$ of the zero point, the measured value will be set to "0". With absolute pressure sensors, on pressing the [ZERO/▲] button, an input window appears. Here, the current reference pressure must be entered. The reference pressure must also be within $\pm 5\%$ of the initial absolute pressure of the instrument, then the measured value will be set to the reference pressure entered.</p>

2. Design and Function

2.2 USB interface

The Micro-USB, type B interface is located under the side cover and is marked with the USB symbol. It can be used to read out data, configure the instrument via software and supply it with power.

Plug the USB power supply unit's Micro-USB type B connector into the socket on the side panel of the PGE20 and plug the adapter into a power outlet. The battery status display is off when the instrument is powered by the USB power supply unit.

Specifications for USB port

USB input	DC 5 V, 100 mA, 0.5 W
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2.2.1 Integrated data logger

The PGE20 can, optionally, be configured with an integrated data logger. This data logger can be switched on and set via “**Menu**” / “**Data Logger**”.

2.2.2 Activating/enabling the data logger

Each instrument has an individual activation code to activate the data logger. The password for enabling the data logger only has to be entered once and remains stored, even after a restart and factory reset of the instrument.

The menu item **Data Logger** is always displayed in the menu. If the data logger is not enabled, a password input field appears when you select this menu item.

If the password is entered incorrectly, an error message appears. If the password entry is correct, further menu items appear for the configuration of the data logger.

3. Usage, operation

3. Usage, operation

3.1 Instrument operation/Basic functions

3.1.1 Switching on/Switching off

- ▶ Make a long press on the [On/Off] button to switch on the digital pressure gauge.
- ▶ Push the button for 2 seconds to switch it off.

After switching on, the start-up screen with pressure range is shown on the display for approx. 2 seconds.

3.1.2 Zero point adjustment

Zeroing the indication value to 0

- ▶ Press the [ZERO/▲] button.

For gauge pressure measuring ranges, the PGE20 must be set to **0** with the [ZERO/▲] button before each use.



3.1.3 MAX/MIN

The PGE20 stores the minimum and maximum pressure in the memory.

This value can be viewed under **“Menu” / “Measure mode” / “Peak values”**.

4. Operation via Menu Functions

4. Operation via Menu Functions

4.1 Short overview menu functions

- ▶ Press [MENU/◀▶] button to start
- ▶ The next menu level can be accessed via the [MENU/◀▶] button.
- ▶ Press and hold the [MENU/◀▶] button to go back one menu level. To do this, hold down the [MENU/◀▶] button until the arrow turns to the left and release the button immediately. The return is automatic and does not need to be confirmed.
- ▶ Select the setting with [LIGHT/▼] or [ZERO/▲].
- ▶ Confirm the selection with the [MENU/◀▶] button.

Menu level 1	Menu level 2	Menu level 3
Measuring mode		
	Unit	
		bar
		mbar
		psi (default)
		kg/cm ²
		MPa
		kPa ¹⁾
		mPa ¹⁾
		Pa ¹⁾
		mmH ₂ O ¹⁾
		mH ₂ O ¹⁾
		inH ₂ O ¹⁾
		ftH ₂ O ¹⁾
		mmHg ¹⁾
		inHg ¹⁾
		kN/m ² ¹⁾
		m ^{1) 2)}
		cm ^{1) 2)}
		mm ^{1) 2)}
		feet ^{1) 2)}
		inch ^{1) 2)}
		User-defined unit 1 ¹⁾
		User-defined unit 2 ¹⁾

1) Only in combination with accuracy 0.25 % full scale

2) Units are only displayed if the setting **Level** = is set to **On**

4. Operation via Menu Functions

Menu level 1	Menu level 2	Menu level 3
	Peak values	
		Off (default)
		On
		Clear
	Temperature	
		Off (default)
		°C
		°F
		K
	Tare	
		Off (default)
		On
		Offset (value-dependent)
	Damping	
		Off (default)
		Low
		Medium
		High
	Sample rate	
		1/s
		2/s (default)
		4/s
		10/s
		Data logger interval
	Alarm	
		Off (default)
		On
		Lower (value-dependent)
		Upper (value-dependent)
	Density unit ¹⁾	
		kg/dm ³
		lb/ft³ (default)
		kg/m ³

1) Only in combination with accuracy 0.25 % full scale

4. Operation via Menu Functions

Menu level 1	Menu level 2	Menu level 3
	Level 1)	
		Off (default)
		On
		Density (value-dependent) [unit density]
	Adjustment	
		Offset (default 0)
		Span factor (default 1)
Data logger 3)		
	Start / Stop	
	Interval	
		10.0 s (default) [Limit: 0 ... 3,600 s] 0 corresponds to the logging with measuring rate shown above.
	Duration	
		Off (default)
		On
		Duration (0000 h 00 min 01 s) [Limit: 9999 h 59 min 59 s]
	Delay 1)	
		Off (default)
		On
		Delay (0000 h 00 min) [Limit: 23 h 59 min]
	Clear last	
		No
		Yes
	Clear all	
		No
		Yes
	Rename	
	Entry 1	
	Entry 1	

1) Only in combination with accuracy 0.25 % full scale

3) Only available when data logger is enabled

4. Operation via Menu Functions

Menu level 1	Menu level 2	Menu level 3
Settings		
	Language	
		English (default)
		German
		Spanish
		French
		Italian
		Polish
		Russian
	Auto-off time	
		Off
		15 min (default)
	Light-off time	
		Off (default)
		30 s
	User unit	
		Name1
		Factor1
		Name2 ¹⁾
		Factor2 ¹⁾
	Factory reset	
		No (default)
		Yes

1) Only in combination with accuracy 0.25 % full scale

4. Operation via Menu Functions

4.2 Measuring mode

4.2.1 Pressure unit

The PGE20 is factory preset to the pressure unit of “**psi**”. Via the menu, different units of measure are available. An additional 15 units of measure and 2 user specified units are available with 0.25% accuracy.

To change the unit, proceed as follows under “**Menu**” / “**Measure mode**” / “**Unit**”:

1. Press the [**LIGHT/▼**] button or [**ZERO/▲**] button until the “▶” arrow points to the desired unit.
2. Confirm the setting by pressing the [**MENU/◀▶**] button.
⇒ The instrument moves back one menu level.
3. Press the [**HOME**] button in order to exit the menu.

4.2.2 Peak values

When the **Peak values** function is set to “**On**”, the minimum and maximum pressures are shown in **HOME** on the third and fourth rows of the display. Resolution and unit are identical to the main display. The last selected (alarm, peak values or temperature) is always displayed in the secondary display.

To change the peak-value indication, activate it or clear the memory, proceed as follows under “**Menu**” / “**Measure mode**” / “**Peak values**”:

1. With the [**LIGHT/▼**] button or [**ZERO/▲**] button, select the desired function.
2. Confirm the selection with the [**MENU/◀▶**] button.
⇒ The instrument moves back one menu level.
3. Press the [**HOME**] button in order to exit the menu.

If “**Clear**” is selected, the peak value memory is reset to the current measured pressure.

4.2.3 Temperature

This option displays the temperature measured by the internal sensor. The indication unit can be selected in the menu under “**Measuring Mode**” / “**Temperature**” in degrees Fahrenheit, degrees Celsius or Kelvin.

The last selected (alarm, peak values or temperature) is always displayed in the secondary display.

When the **Temperature** function is set to “**On**”, the sensor temperature is displayed in **HOME** in the lower half of the display.

To change, activate or deactivate the temperature indication, proceed as follows under “**Menu**” / “**Measure mode**” / “**Temperature**”:

1. With the [**LIGHT/▼**] button or [**ZERO/▲**] button, select the desired function.
2. Confirm the selection with the [**MENU/◀▶**] button.
⇒ The instrument moves back one menu level.
3. Press the [**HOME**] button in order to exit the menu.

4. Operation via Menu Functions

4.2.4 Tare

The **Tare** function makes it possible to enter an Offset value for the pressure value.

If a value other than 0 is entered and tare is “**ON**”, tare is activated and the pressure value in the main display changes immediately.

The **Tare** value entered is added to the pressure value.

For example, if a value of 1.000 is entered, this value will be added to the measured pressure value. If -2.589 is entered, this value is also added to the measured pressure value.

To change, activate or deactivate the **Tare** function, proceed as follows under “**Menu**” / “**Measure mode**” / “**Tare**”:

1. With the [**LIGHT/▼**] button or [**ZERO/▲**] button, select the desired function.
2. Confirm the selection with the [**MENU/◀▶**] button.
⇒ With ON or OFF, the instrument moves back one menu level.
⇒ If Offset is selected, an input field for the Offset number appears.
⇒ The entry is made from left to right.
3. Use the [**LIGHT/▼**] button or [**ZERO/▲**] button to select the number and use the [**MENU/◀▶**] button to jump one digit to the right.
4. To accept the set tare value, press the [**MENU/◀▶**] button repeatedly until the instrument jumps back one menu level.
5. Press the [**HOME**] button in order to exit the menu.

The tare value depends on the technical units of measurement and the resolution selected for the display.

If the **Tare** function is activated, the **Tare** symbol will be displayed.

NOTE:

The **Tare** value input is limited to the measuring range. The limitation is calculated depending on the measuring range and unit. If a measured value due to a tare setting exceeds the value that can be indicated, “-----” is displayed.

4.2.5 Damping

The filter influences the currently displayed measured value.

The measured value of the sensor, which is used for other functions, is not affected.

The following factors can be selected:

- Off
- Low
- Medium
- High

4. Operation via Menu Functions

To change, activate or deactivate the damping, proceed as follows under “Menu” / “Measure mode” / “Damping”:

1. With the [LIGHT/▼] button or [ZERO/▲] button, select the desired function.
2. Confirm the setting by pressing the [MENU/◀▶] button.
⇒ The instrument moves back one menu level.
3. Press the [HOME] button in order to exit the menu.

4.2.6 Sample rate

The sample rate indicates the interval at which the PGE20 requests pressure values from the sensor.

The following values can be selected:

- 1/s
- 2/s (default)
- 4/s
- 10/s
- Data logger interval

To change the sample rate, proceed as follows under “Menu” / “Measure mode” / “Sample rate”:

1. With the [LIGHT/▼] button or [ZERO/▲] button, select the desired rate.
2. Confirm the setting by pressing the [MENU/◀▶] button.
⇒ The instrument moves back one menu level.
3. Press the [HOME] button in order to exit the menu.

If the “Data logger” / “Interval” function is selected, sample rate = data logger interval is automatically set.

Example:

Interval of 10 seconds ≥ every 10 seconds, values are queried from the sensor.

If in the “Measure mode” / “Sample rate” function, the data logger interval is selected, **Low-Power Mode** appears in the top line of the matrix field.

To switch to **Low-Power Mode**, the data logger interval must be set to > 5 seconds.

If the interval is > 5 seconds, the display shows “-----” until a new pressure value is called from the sensor. The lowest data logger interval full scale is 1/s.

During **Low-Power Mode**, the last measured value is displayed in the middle of the display.

By pressing the [HOME] button, a current pressure value can be displayed from the sensor during **Low-Power Mode**. This is shown in the main display for 5 seconds. If log is activated, this value is not recorded.

4. Operation via Menu Functions

4.2.7 Alarm

If the **Alarm** function is switched “**On**”, the set alarm limits are displayed in **HOME** in the third and fourth line of the display and the **Alarm** symbol appears on the main screen.

If the measured value exceeds or drops below an alarm value, the alarm is triggered and this is signaled by the bar graph and the main display flashing. In addition, the corresponding alarm limit is highlighted with a flashing black bar.

In order to activate or deactivate the **Alarm** function or to change the alarm limits, proceed as follows under “**Menu**” / “**Measure mode**” / “**Alarm**”:

1. With the [**LIGHT/▼**] button or [**ZERO/▲**] button, select the desired function.
2. Confirm the selection with the [**MENU/◀▶**] button.
 - ⇒ With ON or OFF, the instrument moves back one menu level.
 - ⇒ If UPPER or LOWER is selected, an input field appears for the limit value.
 - ⇒ The input is made from left to right.
3. Use the [**LIGHT/▼**] button or [**ZERO/▲**] button to select the number and sign and use the [**MENU/◀▶**] button to jump one digit to the right.
4. To accept the set alarm value, press the [**MENU/◀▶**] button repeatedly until the instrument jumps back one menu level.
5. Press the [**HOME**] button in order to exit the menu.

The preset alarm limits are always the measuring range limits $\pm 3\%$.
The maximum input value of the alarm limit is $\pm 5\%$ of the measuring range limit.

The last selected (alarm, peak values or temperature) is always displayed in the secondary display.
Resolution and unit are identical to the main display.

4.2.8 Density

The settings for the density unit for the entry of values are made in the level menu item, see chapter 4.2.9 "Level".

To change the density unit, proceed as follows under “**Menu**” / “**Measure mode**” / “**Density**”:

1. With the [**LIGHT/▼**] button or [**ZERO/▲**] button, select the desired unit.
2. Confirm the setting by pressing the [**MENU/◀▶**] button.
 - ⇒ The instrument moves back one menu level.
3. Press the [**HOME**] button in order to exit the menu.

4. Operation via Menu Functions

4.2.9 Level

If the **Level** function is activated, the level units appear under the selectable units. In this menu item, the density of the medium can be specified in the selected unit.

The default value for density is always **1.00000 kg/dm³**.

If the density unit is changed, the value is automatically converted.

In order to activate or deactivate the **Level** function or to change the calculation factor, proceed as follows under “**Menu**” / “**Measure mode**” / “**Level**”:

1. With the [**LIGHT/▼**] button or [**ZERO/▲**] button, select the desired action.
2. Confirm the selection with the [**MENU/◀▶**] button.
⇒ With ON or OFF, the instrument moves back one menu level.
⇒ If Density is selected, an input field for the calculation factor appears.
⇒ The input is made from left to right.
3. Use the [**LIGHT/▼**] button or [**ZERO/▲**] button to select the number and use the [**MENU/◀▶**] button to jump one digit to the right.
4. To accept the set calculation factor, press the [**MENU/◀▶**] button repeatedly until the instrument jumps back one menu level.
5. Press the [**HOME**] button in order to exit the menu.

4.2.10 Adjustment

Under **Adjustment**, the calibration curve can be shifted by an offset value or a factor related to the span.

The default settings are:

Offset	0.0000	Limited to $\pm 5\%$
Span factor	1.00000	Limited to $\pm 10\%$

In order to make an adjustment of the zero point or the span, proceed as follows under “**Menu**” / “**Measure mode**” / “**Adjustment**”:

1. With the [**LIGHT/▼**] button or [**ZERO/▲**] button, select the desired action.
2. Confirm the selection with the [**MENU/◀▶**] button.
⇒ An input field, Correction factor, appears.
⇒ The input is made from left to right.
3. Use the [**LIGHT/▼**] button or [**ZERO/▲**] button to select the number and use the [**MENU/◀▶**] button to jump one digit to the right.
4. To accept the set correction factor, press the [**MENU/◀▶**] button repeatedly until the instrument jumps back one menu level.
5. Press the [**HOME**] button in order to exit the menu.

4. Operation via Menu Functions

4.3 Data Logger

The data logger menu item is always displayed in the menu, even for instruments that were not delivered with a data logger enabled.

NOTE:	The data logger can be activated subsequently on all instruments.
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If you have any questions about the procedure, please contact NOSHOK customer support.

NOTE:	The values stored during the data logger process are always the actual measured values of the sensor and not the filtered values of the display.
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4.3.1 Start / Stop

When the data logger is started, the **LOG** symbol is displayed.

The interval set for this data logger process and the set data logger duration are displayed.

If no value is entered for the data logger duration, it will not be displayed and the instrument will store values until the memory is full or the batteries are empty, whichever comes first.

If the data logger process is interrupted in an uncontrolled manner due to empty batteries, the data logger values are not lost as they are stored immediately during the data logger process.

After changing the battery, the instrument restarts, though the data logger process is not continued, it must be restarted.

If the data logger process has started and a delay has been set, this is first counted down and the data logger process then starts.

If the data logger memory is full, the data logger process is automatically stopped.

The data logger file contains the following values:

- ▶ Data logger settings (once at the start)
- ▶ Indicated pressure value if measuring interval = data logger interval
- ▶ Arithmetic mean value if measuring interval < data logger interval
- ▶ Peak Min./Max. if interval > sample rate
- ▶ Temperature value
- ▶ Set zero value
- ▶ Density

The stored data logger processes can be downloaded via USB interface using the NOSHOK calibration and data logging software.

4. Operation via Menu Functions

The following functions are blocked during the data logger process:

- Change unit
- Change Tare or activate/deactivate
- Change sample rate
- Delete last data logger process
- Delete all data logger data sets
- Reset to factory settings

4.3.2 Interval

The **Interval** function defines the time between two pressure value recordings. If the data logger interval is set to **0**, the measuring rate is used. If, in this case, the measuring rate is set to data logger interval, the measuring rate is automatically set to 1/s.

In order to change the data logger interval, proceed as follows under “**Menu**” / “**Data Logger**” / “**Interval**”:

1. Enter the desired data logger interval in seconds in the input field.
⇒ The input is made from left to right.
2. Use the [**LIGHT/▼**] button or [**ZERO/▲**] button to select the number and use the [**MENU/◀▶**] button to jump one digit to the right.
3. To accept the set data logger interval value, press the [**MENU/◀▶**] button repeatedly until the instrument jumps back one menu level.
4. Press the [**HOME**] button in order to exit the menu.

4.3.3 Duration

The **Duration** function specifies the time from the start to the automatic stop of the data logger process. If the duration is set to “**OFF**”, the data logger process will continue until one of the following occurs:

- Manual stop of the data logger process
- Batteries discharged
- Data logger memory full

NOTE:	This function is only displayed in combination with the accuracy 0.25 % full scale.
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In order to change the data logger duration, proceed as follows under “**Menu**” / “**Data Logger**” / “**Duration**”:

1. With the [**LIGHT/▼**] button or [**ZERO/▲**] button, select the desired action.
2. Confirm the selection with the [**MENU/◀▶**] button.
⇒ With ON or OFF, the instrument moves back one menu level.
⇒ If Duration is selected, an input field appears with hour, minute and second values.
⇒ The input is made from left to right.
3. Use the [**LIGHT/▼**] button or [**ZERO/▲**] button to select the number and use the [**MENU/◀▶**] button to jump one digit to the right.
4. Press the [**HOME**] button in order to exit the menu.

4. Operation via Menu Functions

4.3.4 Delay

The start of the data logger process can be postponed in steps of one minute up to 24 hours.

NOTE:

This function is only displayed in combination with the accuracy 0.25 % full scale.

In order to change the delay time, proceed as follows under “Menu” / “Data Logger” / “Delay”:

1. With the [LIGHT/▼] button or [ZERO/▲] button, select the desired action.
2. Confirm the selection with the [MENU/◀▶] button.
⇒ With ON or OFF, the instrument moves back one menu level.
⇒ If Delay is selected, an input field appears with hour and minute values.
⇒ The input is made from left to right.
3. Use the [LIGHT/▼] button or [ZERO/▲] button to select the number and use the [MENU/◀▶] button to jump one digit to the right.
4. Press the [HOME] button in order to exit the menu.

4.3.5 Clear last

In the **Clear last** function, only the last stored data logger process is deleted.

4.3.6 Clear all

In the menu item **Clear All**, all saved data logger processes are deleted.

4.3.7 Rename

All stored logs are listed under each other in the menu. With the [▲] and [▼] buttons, the desired data logger process can be navigated to. Then, confirm the desired log and the name of the log can be changed as desired.

The letters are selected with the [▲] and [▼] buttons and the digits with the [▶] button.

In order to accept the set name, press the [MENU/◀▶] button repeatedly until you return to the previous menu level.

NOTE:

It is not possible to rename a data logger process that has already been stored while the data logger process is running/active.

4. Operation via Menu Functions

4.4 Settings

4.4.1 Language

The **Language** function shows a selection of the languages available on the PGE20.

To change the instrument language, proceed as follows under “**Menu**” / “**Settings**” / “**Language**”:

1. With the [**LIGHT/▼**] button or [**ZERO/▲**] button, select the desired language.
2. Confirm the setting by pressing the [**MENU/◀▶**] button.
⇒ The instrument moves back one menu level.
3. Press the [**HOME**] button in order to exit the menu.

4.4.2 Auto-off time

The **Auto-off time** function specifies the time after the last button was pressed or values were last called up via the USB interface, after which the PGE20 switches off automatically.

With the setting “**Off**”, the PGE20 runs continuously and does not switch off automatically. The instrument then remains active until instrument is switched off manually using the [**ON/OFF**] button.

If the auto-off time is activated and the data logger is running, the data logger has priority and the auto-off time only starts after the data logger process has been successfully completed.

In order to change the auto-off time, proceed as follows under “**Menu**” / “**Settings**” / “**Auto-off time**”:

1. With the [**LIGHT/▼**] button or [**ZERO/▲**] button, select the desired language.
2. Confirm the setting by pressing the [**MENU/◀▶**] button.
⇒ The instrument moves back one menu level.
3. Press the [**HOME**] button in order to exit the menu.

4.4.3 Light-off time

In the **Light Off** function, the time after which the backlighting switches off automatically is specified.

If the setting is “**Off**”, the backlighting is continuous and does not switch off automatically.

With the setting “**30 s**”, the backlighting of the display switches off automatically after 30 seconds. This time only applies after the last button press and is restarted if another button is pressed in the meantime.

To change the **Light off time** function, proceed as follows under “**Menu**” / “**Settings**” / “**Light off time**”:

4. Operation via Menu Functions

1. With the [LIGHT/▼] button or [ZERO/▲] button, select the desired option.
2. Confirm the selection with the [MENU/◀▶] button.
⇒ The instrument moves back one menu level.
3. Press the [HOME] button in order to exit the menu.

4.4.4 User-defined unit

In addition to the standard units, there are one or two configurable custom units to choose from. The user-defined units are defined in “Settings” / “User unit” by “Name 1”, “Factor 1” and “Name 2”, “Factor 2”.

The default designation is “UsUnit1” or “UsUnit2” and the factor “1.000”.

Calculation factor of the user-defined unit

To change the calculation factor of the user-defined unit, proceed as follows under “Menu” / “Settings” / “User unit”:

1. With the [LIGHT/▼] button or [ZERO/▲] button, select the factor to be changed.
2. Confirm the selection with the [MENU/◀▶] button.
⇒ An input field for the calculation factor appears.
⇒ The input is made from left to right.
3. Use the [LIGHT/▼] button or [ZERO/▲] button to select the number and use the [MENU/◀▶] button to jump one digit to the right.
4. To accept the set calculation factor, press the [MENU/◀▶] button repeatedly until the instrument jumps back one menu level.
5. Press the [HOME] button in order to exit the menu.

NOTE:	There are 7 significant digits available for entering the conversion factor, plus decimal point, plus sign (+/-).
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The conversion is always made for the unit “bar”, independent from the indicating unit.

The conversion is done using the following formula:

Current measured value (bar) x conversion factor

Example:

Current measured value in “bar” = 5.123 bar

Conversion factor “user unit 1”: +0.264

Measured value in “User unit 1” = 5.113 * 0.264 = 1.352

4. Operation via Menu Functions

Designation of the user-defined unit

To change the designation of the user-defined unit, proceed as follows under “Menu” / “Settings” / “User unit”:

1. With the [LIGHT/▼] button or [ZERO/▲] button, select the unit to be changed.
2. Confirm the selection with the [MENU/◀▶] button.
⇒ An input field for the limit value appears.
⇒ The input is made from left to right.
3. Use the [LIGHT/▼] button or [ZERO/▲] button to select the letter and use the [MENU/◀▶] button to jump one digit to the right.
4. To confirm the name, press the [MENU/◀▶] button repeatedly until the instrument jumps back one menu level.
5. Press the [HOME] button in order to exit the menu.

When entering, the following must be observed:

- The maximum number of characters for the custom unit name is 6 characters.
- The second configurable user-defined unit is only available with 0.25 % full scale accuracy.

4.4.5 Factory reset

The **Factory reset** function resets the PGE20 to default settings. Stored data logger processes are retained. The entry of the password to enable the data logger remains stored after a factory reset of the instrument.

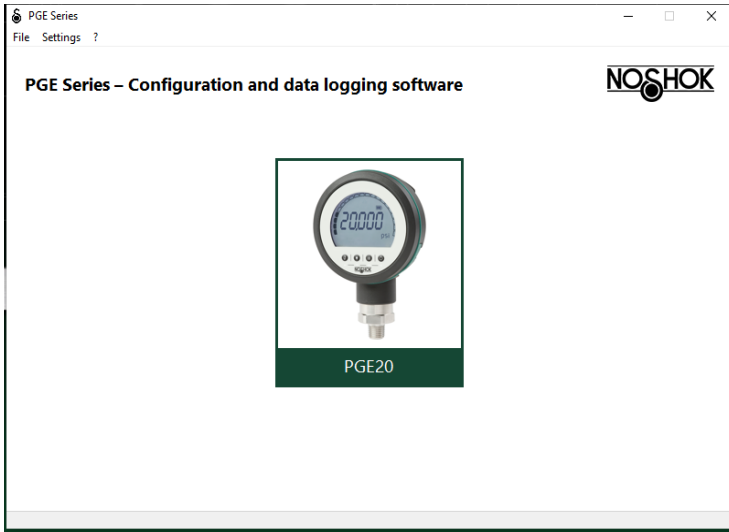
5. Configuration and Data Logging Software

5. Configuration and Data Logging Software

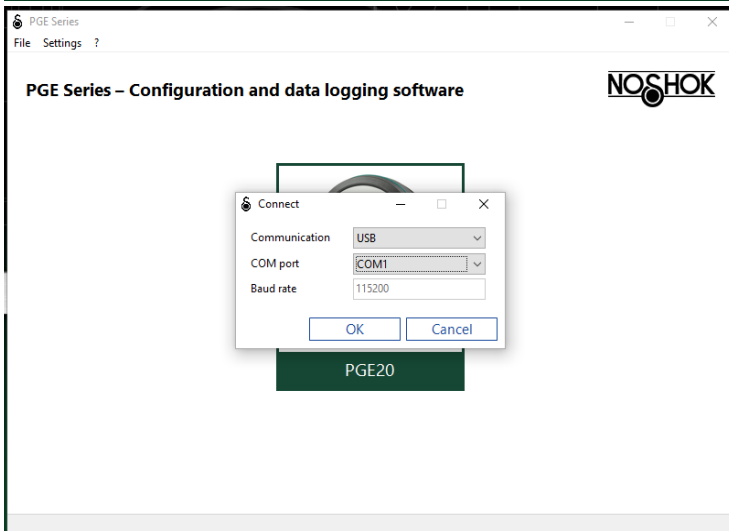
The communication between the software and the PGE20 can be operated via USB interface (instrument is operated via a virtual COM port).

5.1 Connection window

- a. When the PGE20 is connected via the USB cable and powered on, connection can be achieved by clicking the PGE20 display icon, choosing the correct communications port, and selecting OK.



b.



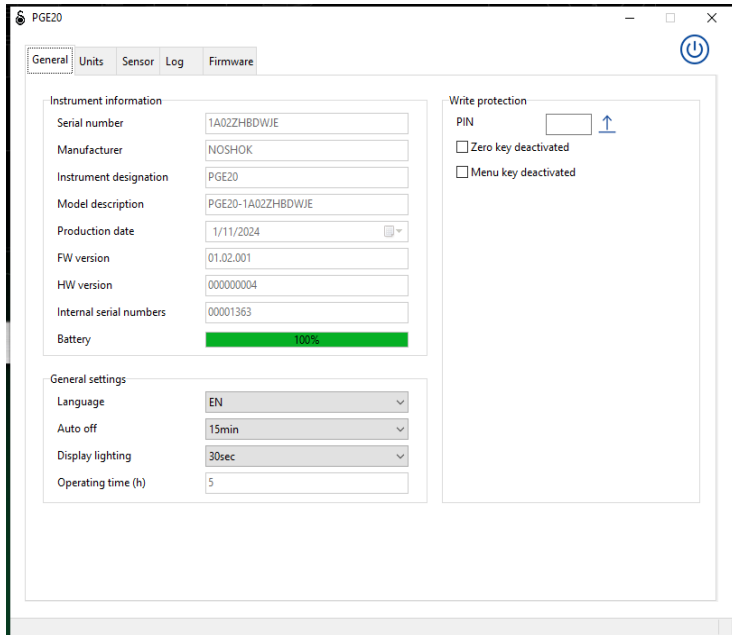
c.

5. Configuration and Data Logging Software

5.2 General tab

- a. The General Tab provides basic information about the PGE20 digital gauge. On this tab, users can change the default language, auto off time, and display light timeout of the device.
- b. Password protection PIN is also available to set on this tab.

Default PIN is 0000.

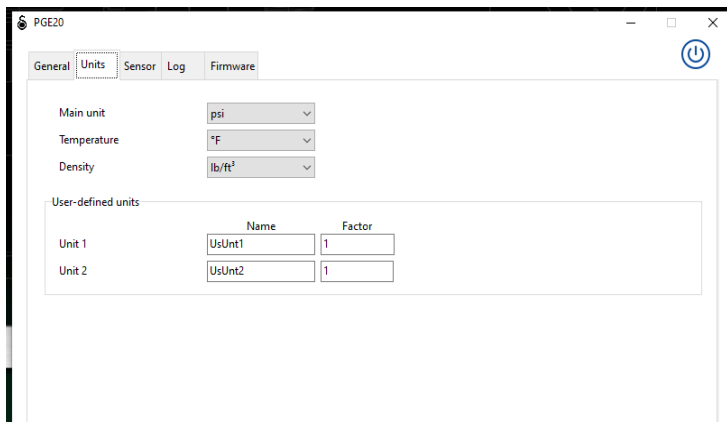


C.

5. Configuration and Data Logging Software

5.3 Units of measure

- a. The Units Tab allows users to set the units of measurement that values are displayed in. User defined measurement units are also available to set on this tab.



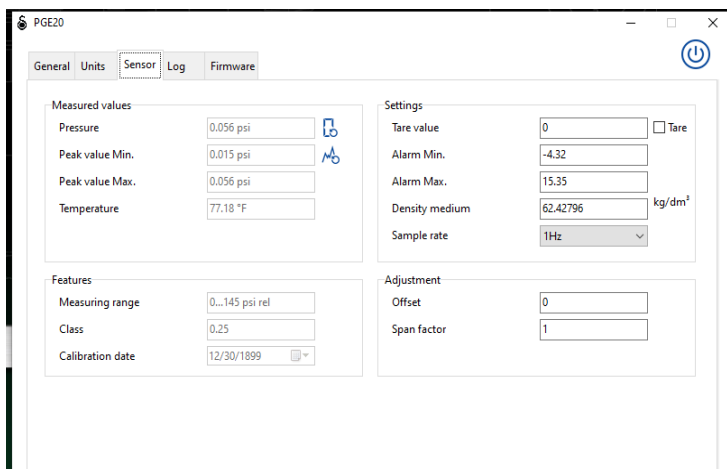
The screenshot shows the 'Units' configuration tab in the PGE20 software. The interface includes a navigation bar with 'General', 'Units', 'Sensor', 'Log', and 'Firmware' tabs. The 'Units' tab is active. Below the navigation bar, there are three dropdown menus for 'Main unit' (set to 'psi'), 'Temperature' (set to '*F'), and 'Density' (set to 'lb/ft³'). A section titled 'User-defined units' contains a table with two rows. Each row has a 'Name' field and a 'Factor' field. The first row is 'Unit 1' with 'UsUnt1' and '1'. The second row is 'Unit 2' with 'UsUnt2' and '1'. A power button icon is visible in the top right corner of the window.

	Name	Factor
Unit 1	UsUnt1	1
Unit 2	UsUnt2	1

b.

5.4 Sensor

- a. The Sensor Tab provides live measurement values of the digital pressure gauge including pressure and temperature. This tab also provides facilities for alarm and tare values. Lastly, there is an adjustment section for offset and span factors.



The screenshot shows the 'Sensor' configuration tab in the PGE20 software. The interface includes a navigation bar with 'General', 'Units', 'Sensor', 'Log', and 'Firmware' tabs. The 'Sensor' tab is active. The 'Measured values' section displays live data: Pressure (0.056 psi), Peak value Min. (0.015 psi), Peak value Max. (0.056 psi), and Temperature (77.18 *F). The 'Settings' section includes 'Tare value' (0), 'Alarm Min.' (-4.32), 'Alarm Max.' (15.35), 'Density medium' (62.42796 kg/dm³), and 'Sample rate' (1Hz). The 'Adjustment' section includes 'Offset' (0) and 'Span factor' (1). A 'Tare' checkbox is present next to the 'Tare value' field. A power button icon is visible in the top right corner of the window.

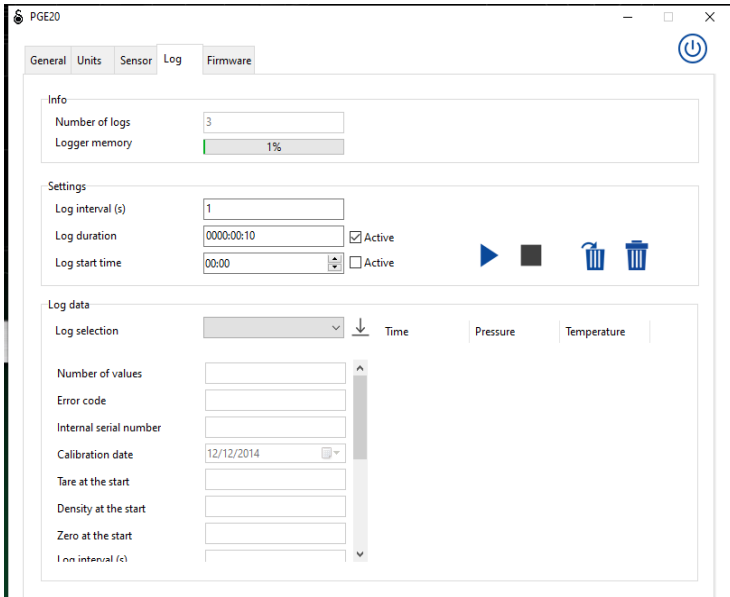
Measured values	Settings	Adjustment
Pressure: 0.056 psi	Tare value: 0	Offset: 0
Peak value Min.: 0.015 psi	Alarm Min.: -4.32	Span factor: 1
Peak value Max.: 0.056 psi	Alarm Max.: 15.35	
Temperature: 77.18 *F	Density medium: 62.42796 kg/dm ³	
	Sample rate: 1Hz	

b.

5. Configuration and Data Logging Software

5.5 Data logging

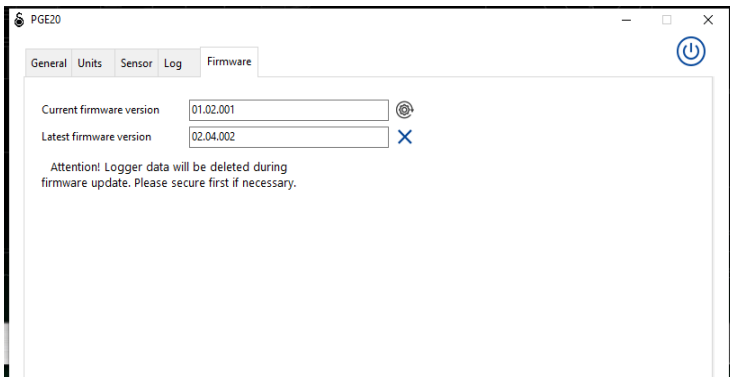
- a. The Log Tab allows users to control and access data logging features of the PGE20 digital gauge.



b.

5.6 Firmware


- a. If a firmware update is available, the user will be notified when selecting this tab.



b.

6. Faults

6. Faults

Display	Causes	Solutions
	Low battery voltage, functioning is only guaranteed for a short period of time	Insert new batteries
OL -OL	Reading is significantly above or below the measuring range ≥ 5 % full scale	<p>Check: Is the pressure within the permissible measuring range of the sensor?</p> <ul style="list-style-type: none"> ■ If the pressure is outside the permissible range, remove the pressure or vacuum source immediately from the PGE20 in order to avoid damaging the internal sensor. ■ If the pressure is within the permissible range, contact the manufacturer.
No display or instrument is not responding to button press	Battery is empty	Insert new batteries
	Batteries inserted incorrectly	Ensure the correct polarity
	System error	Switch off the PGE20, wait for a short period of time, switch on again
	Defect in the PGE20	Send in for repair

FCC compliance:

FCC Compliance Statement:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

