

USER MANUAL

(UV) STROBOSCOPE

PCE-LES 30X SERIES

ENGLISH



User manuals in various languages (français, italiano, español, português, nederlands, türk, polski) can be found via our product search on:
www.pce-instruments.com

SAFETY NOTES

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. Damage or injuries caused by non-observance of the manual are excluded from our liability and not covered by our warranty.

- » The device must only be used as described in this instruction manual. If used otherwise, this can cause dangerous situations for the user and damage to the meter.
- » The instrument may only be used if the environmental conditions (temperature, relative humidity, ...) are within the ranges stated in the technical specifications. Do not expose the device to extreme temperatures, direct sunlight, extreme humidity or moisture.
- » Do not expose the device to shocks or strong vibrations.
- » The case should only be opened by qualified PCE Instruments personnel.
- » Never use the instrument when your hands are wet.
- » You must not make any technical changes to the device.
- » The appliance should only be cleaned with a damp cloth. Use only pH-neutral cleaner, no abrasives or solvents.
- » The device must only be used with accessories from PCE Instruments or equivalent.
- » Before each use, inspect the case for visible damage. If any damage is visible, do not use the device.
- » Do not use the instrument in explosive atmospheres.
- » The measurement range as stated in the specifications must not be exceeded under any circumstances.
- » Non-observance of the safety notes can cause damage to the device and injuries to the user.

We do not assume liability for printing errors or any other mistakes in this manual.
We expressly point to our general guarantee terms which can be found in our general terms of business.

Safety symbols

Safety-related instructions the non-observance of which can cause damage to the device or personal injury carry a safety symbol.



Warning: LED beam

Non-observance can cause injuries to the eyes.

SPECIFICATIONS

Technical specifications PCE-LES 303 Series

Specification	PCE-LES 303	PCE-LES 303UV-365	PCE-LES 303UV-385
Lamp technology	3 high power white LEDs	3 high power UVA LEDs	3 high power UVA LEDs
Light colour	cool white 6,200 K	UVA light 365 ... 370 nm	UVA light 380 ... 390 nm
Light power	11730 lx @ 20 cm @ 1000 Hz, 1 % 6160 lx @ 30 cm @ 1000 Hz, 1 % 2650 lx @ 50 cm @ 1000 Hz, 1 %	TBA	635 µW/cm² @ 20 cm @ 1000 Hz, 1 % 317 µW/cm² @ 30 cm @ 1000 Hz, 1 % 115 µW/cm² @ 50 cm @ 1000 Hz, 1 %
Measurement range	60 ... 300.000 FPM 1 ... 5.000 Hz		
Resolution	60 ... 9999,99 FPM: 0,01 FPM 10.000 ... 300.000 FPM: 0,1 FPM 1 ... 5000 Hz: 0,01 Hz		
Accuracy	0.003 % of setting or ± 1 LSD		
Flash duration range	0.01 % ... 1 % of total flash duration Resolution: 0.01 % 0.01 ° ... 3.60 ° of 360 ° Resolution: 0.01 °		
Phase shift	-360° ... 360° Resolution: 1°		
Slow motion Mode	selectable speed from 1 to 99 RPM		
External trigger input	permitted input: NPN signal, 24 V DC sensor supply: 24 V / 100 mA for external sensors		
External trigger output	open drain output, up to 24 V, 50 mA		
Route measurement	up to 15 routes, 10 machines per route, 5 points per machine		
Display	2.8" TFT LCD programmable auto power off		
Battery	li-ion rechargeable battery 2200 mAh, 7.4 V		
Charging time	approx. 2 h 30 min @ 5 V / 2 A		
Operating time	approx. 4 h 30 min @ flashing 100 Hz, 1 %, display brightness 70 %		
Power adaptor	input: 100 ... 240 VAC, 50/60 Hz, output: 5 V/2 A		

Environmental conditions	charging temp.: 0 ... 45 °C operating temp.: -20 ... 60 °C storage temp.: -20 ... 60 °C (1 month), -20 ... 45 °C (3 months) 35 ... 85 % RH, non-condensing
Dimensions	165 x 90 x 35 mm
Weight	284 g
Housing	IP52

Technical specifications PCE-LES 308 Series

Specification	PCE-LES 308	PCE-LES 308UV-365	PCE-LES 308UV-385
Lamp technology	8 high power white LEDs	8 high power UVA LEDs	8 high power UVA LEDs
Light colour	cool white 6,200 K	UVA light 365 ... 370 nm	UVA light 380 ... 390 nm
Light power	17670 lx @ 20 cm @ 1000 Hz, 1 % 9150 lx @ 30 cm @ 1000 Hz, 1 % 4100 lx @ 50 cm @ 1000 Hz, 1 %	2943 µW/cm² @ 20 cm @ 1000 Hz, 1 % 1731 µW/cm² @ 30 cm @ 1000 Hz, 1 % 1045 µW/cm² @ 50 cm @ 1000 Hz, 1 %	6617 µW/cm² @ 20 cm @ 1000 Hz, 1 % 4617 µW/cm² @ 30 cm @ 1000 Hz, 1 % 2022 µW/cm² @ 50 cm @ 1000 Hz, 1 %
Measurement range	60 ... 300.000 FPM 1 ... 5.000 Hz		
Resolution	60 ... 9999,99 FPM: 0,01 FPM 10.000 ... 300.000 FPM: 0,1 FPM 1 ... 5000 Hz: 0,01 Hz		
Accuracy	0.003 % of setting or ± 1 LSD		
Flash duration range	0.01 % ... 1 % of total flash duration Resolution: 0.01 % 0.01° ... 3.60° of 360° Resolution: 0.01°		
Phase shift	360° ... 360° Resolution: 1°		
Zeitlupenmodus	Wählbare Geschwindigkeit zwischen 1 und 99 U/min		
Externer Triggereingang	Zulässiger Eingang: NPN-Signal, 24 V DC Sensorversorgung: 24 V / 100 mA für externe Sensoren		
Externer Triggerausgang	Open-Drain-Ausgang, bis zu 24 V, 50 mA		
Routenmessung	Bis zu 15 Routen, 10 Maschinen pro Route, 5 Punkte pro Maschine		

Display	2,8" TFT LCD Programmable auto power off
Battery	Li-ion rechargeable battery 2200 mAh, 7.4 V
Charging time	approx. 2 h 30 min @ 5 V / 2 A
Operating time	approx. 3h Conditions: Flashing 100 Hz, 1 %, display brightness 70 %
Power adaptor	Input: 100 ... 240 VAC, 50/60 Hz, Output: 5 V/2 A
Environmental conditions	Charging temp.: 0 ... 45 °C Operating temp.: -20 ... 60 °C Storage temp.: -20 ... 60 °C (1 month), -20 ... 45 °C (3 months) 35 ... 85 % RH, non-condensing
Dimensions	165 x 90 x 35 mm
Weight	284 g
Housing	IP52

Delivery contents

1 x PCE-LES 303 handheld stroboscope

1 x USB-C cable

1 x user manual

1 x carrying bag

Optional accessories

NET-USB-EU charger

SYSTEM DESCRIPTION

Device

- 1 - LED light source
- 2 - Display
- 3 - Keypad
- 4 - USB charging connection (USB-C) and external connector (3.5 mm jack connector)

At the bottom side of the device, there is a USB-C type connector. This connector is used to charge the internal battery of the meter and can also be used to update its firmware by means of our update software which can be downloaded here:

https://www.pce-instruments.com/english/download-win_4.htm

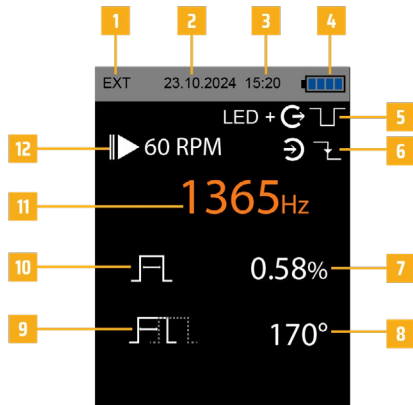
Next to the USB-C type connector there is a 3.5 mm jack connector. This connector is used for the external trigger input/output modes available in the PCE-LES 30x Series.

Note: The stroboscope can also be charged or operated via a power bank



Display

- 1 - EXT Indicates that something has been connected to the trigger input and output
- 2 - Date
- 3 - Time
- 4 - Battery level
- 5 - Trigger output indicator + NPN or PNP symbol
- 6 - Trigger input display + edge detection symbol
- 7 - Duty cycle value and unit
- 8 - Phase shift value and unit
- 9 - Phase shift symbol
- 10 - Duty cycle symbol
- 11 - Frequency value and unit
- 12 - Slow motion symbol and value



Function keys

Key	Name	Function
	POWER	Turn the device on/off
	MENU	Switch to the menu screen
	BACK	Back to the previous menu screen
	OK	Switch unit (Hz/FPM) / confirm a selection in the menu screen
	LED ON/OFF	Turn the LED lamp on/off
	UP	Increase a value / move up in the menu screen
	DOWN	Decrease a value / move down in the menu screen
	LEFT - /2	Halve the frequency value
	RIGHT - x2	Double the frequency value
	QUICK	Fine adjustment of the frequency value

GETTING STARTED

Power supply

The PCE-LES 303 / 303UV is a handheld device powered by a 7.4 V 2400 mAh Li-Ion battery that allows it to work without connecting it to any power supply when it is sufficiently charged.

When the battery is discharged, charge it by connecting the optionally available USB charger to the 240 V AC net and the USB plug to the USB connector of the device. The charger will provide a stable 5 V DC output to charge the battery inside the device. Alternatively, the meter can also be charged via the USB port of your computer.

The device can work connected to the power supply or with no external connection if the battery is charged. In both cases, the operation will be the same, as described in the next sections of this manual.

OPERATION

Power the device on/off

To turn on the device, press and hold the Power key for approx. 2 seconds. First, you will see the power on screen and after 2 seconds, the device will show the main screen and will be ready to use.

After turning it on, the device will load the last configuration values used as well as the frequency, duty cycle and phase shift values selected the last time it was used.

To turn off the device, press and hold the Power key. A countdown will be displayed as long as the Power key is pressed. When the countdown reaches 0, the device will turn off.

MEASUREMENT

Change the flash unit

From the main screen of the device, press the OK key to switch the flash unit. You can select Hertz (Hz) or flashes per minute (FPM).

Press the OK key again to switch to the previous unit.

Adjust the flash frequency

The frequency at which the device LEDs will flash can be adjusted by using one of the following keys:

Key	Action
	A single keystroke increases the flash frequency / FPM by 0.01 / press and hold to increase more quickly
	A single keystroke decreases the flash frequency / FPM by 0.01 / press and hold to decrease more quickly
	Divide frequency / FPM value by 2
	Multiply frequency / FPM value by 2

Fine parameter adjustment in quick mode

You can perform a fine frequency adjustment by pressing the Quick key. When the Quick key is pressed, fine frequency adjustment mode will be activated. You will see a digit in the frequency value highlighted in orange.

You can then press the Up / Down keys to increase / decrease that digit by 1. Press the Right or Left key to move through every digit of the value and adjust each digit. Once the desired value has been entered, press the OK key and the device will be set to the entered frequency. Once OK has been pressed, the next parameter (duty cycle) can be modified following the same procedure as with the frequency.

You can modify the duty cycle now by pressing the Up/Down keys to increase/decrease each digit and using the Right/Left keys to navigate to other digits. Press OK to confirm the entered value for the duty cycle or press Back to return to frequency modification mode. If you press OK, the next parameter (phase shift) can be modified in the same way as the two previous parameters.

Phase shift can be modified like the duty cycle and frequency. Use the Up/Down keys to increase/decrease the digit and Left/Right to navigate to other digits within the parameter. You can press OK to confirm the entered phase shift, so the device will return to the main screen or press BACK to go to duty cycle modification mode.

Switch the LEDs on/off

You can enable/disable the LEDs from any menu / screen just by pressing the LED ON/OFF key. When the device is in the main screen, the colour of the frequency reading will change from white (LEDs off) to orange (LEDs on) when the LED ON/OFF key is pressed.



Attention: Avoid direct eye contact with the LED light. Do not look into the lightemitting diodes while these are on.

FURTHER FUNCTIONS

Menu overview

You can access the main menu screen from the main screen by pressing the MENU key. The main menu screen will show the different menus to access.

- » **Duty cycle menu:** this menu allows you to change the duty cycle related parameters.
- » **Phase shift menu:** this menu allows you to change the phase shift related parameters.
- » **Settings menu:** this menu allows you to change different settings regarding device operation such as power off time, language, screen brightness, units, sound, etc.
- » **Info menu:** this menu displays information about the device version and PCE Instruments.

You can select any menu by using the Up/Down keys. The selected menu will be highlighted by an orange frame. Once the desired menu is selected, you can press OK to access it. To go back to the main screen, press the Back or the Quick key.

Duty cycle menu

The duty cycle menu can be accessed from the main menu screen by selecting it with the Up/Down keys and by pressing the OK key once **Duty Cycle** has been selected. To go back to the main menu, press Back. Press the Quick key to go back to the main screen.

The duty cycle menu allows you to adjust the duty cycle value as well as the duty cycle units. To adjust the duty cycle value, select **Pulse** by means of the Up/Down keys and press OK. Once OK has been pressed, the number can be modified digit by digit.

To increase/decrease the highlighted digit, use the Up/Down keys and to move to the next/previous digit, use the Right/Left keys. Once the desired value has been entered, press the OK key and the flashing duty cycle will be set. A longer flash duration increases the light intensity of the flash.

To modify the duty cycle unit, select **Units**, using the Up/Down keys. Once the line is highlighted, press OK and a submenu will be displayed.

An orange tick can be found next to the duty cycle unit the device is using at the moment. Use the Up/Down keys to select the desired unit (percentage, degree or time) and press OK to set the unit.

You can go back to the duty cycle menu by pressing the Back key. To go directly to the main screen, press the Quick key.

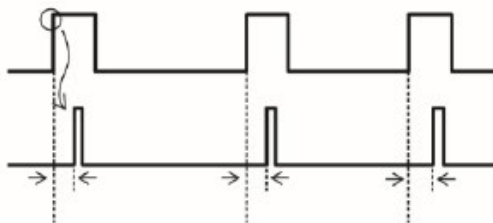
Phase shift menu

The phase shift menu can be accessed from the main menu by selecting it with Up/Down keys and by pressing the OK key once **Phase Shift** has been selected. To go back to the main menu, press the Back key. Press the Quick key to go back to the main screen.

The phase shift menu allows you to adjust the phase shift value and the phase shift unit. To adjust the phase shift value, select **Degree** using the Up/Down keys and press OK. Once the OK key has been pressed, the number can be modified digit by digit.

To increase/decrease the highlighted digit, use the Up/Down keys and to move to the next/previous digit, use the Right/Left keys. Once the desired value has been entered, press OK and the flashing phase shift value will be set.

Adjusting the phase shift allows to **move** the flash in time without changing the time between the flashes.



To modify the phase shift unit, select **Units**, using the Up/Down keys. Once the line is highlighted, press OK and a submenu will be displayed.

An orange tick can be found next to the phase shift unit the device is using at the moment. Use the Up/Down keys to select the desired unit (degree or time) and press OK to set the unit.

You can go back to the phase shift menu by pressing the Back key. To go directly to the main screen, press the Quick key.

Enabling FPM decimals

This setting inside the Measurement menu allows you to show/hide the decimal places in FPM values. The decimal places in FPM values can be enabled/shown by enabling the check mark in this menu line. They will be disabled/hidden by disabling the check mark in the menu line. When decimals are shown, the up/down keys will increase/decrease the FPM value in main screen by 0.01 (from 60 to 9999.99 FPM) or by 0.1 (from 10000 to 300000 FPM). If decimal places are disabled/hidden, the up/down keys will increase/decrease the FPM value in the main screen by 1 within the whole range.

Slow Motion Menu

Slow motion mode allows you to see the inspected object rotating/moving at a desired speed in RPM. The Slow Motion menu can be accessed from the Measurement menu by selecting it with the up/down keys and by pressing the OK key once Slow Motion has been selected. To go back to the measurement menu, press the back key. Press the quick key to go back to the main screen.

To enable/disable slow motion mode, navigate to the Enable line using the up/down keys and enable/disable the tick by pressing the OK key. To select the desired RPM value, navigate to the line RPM and press OK. The value will be highlighted. By pressing the up/down keys, the value can be changed within a range from 1 to 99 RPM. Press the OK key again to set the desired value.

Slow motion mode can be activated (if it is enabled in the corresponding menu) by pressing the back key in the main screen once the LED module has been switched on. Then the desired RPM value and the slow motion icon will be shown on the screen and the object to be inspected will start to move at the desired speed. To stop the slow motion movement, press the back key again. The image will remain in the position it was in before stopping the slow motion movement and the phase shift value in the main screen will be updated to the real phase shift currently applied.

If you press the LED ON/OFF key when slow motion mode is active, the LED will switch off and slow motion mode will be stopped. The phase shift value will still be the same as before stopping the slow motion mode.

Note 1: when slow motion mode is active, pressing the up/down or left/right keys in the main screen will have no effect on the frequency value or the LED output. Slow motion mode should be stopped by pressing the back key to allow the frequency value to be modified.

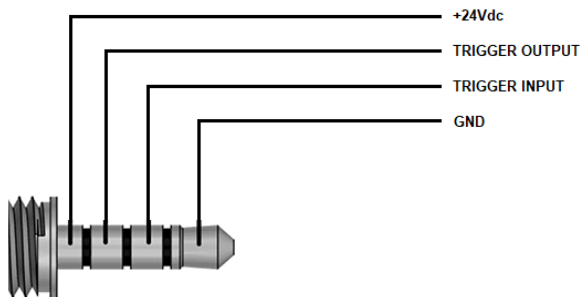
Note 2: when slow motion mode is active, pressing the quick key will only allow to modify the duty cycle value, not the frequency value or the phase shift value. Slow motion mode should be stopped by pressing the back key to enable the full capabilities of the quick mode.

Note 3: when slow motion mode is active, the main menu cannot be accessed from the main screen by pressing the MENU key. Slow motion mode should be stopped by pressing the back key to access the menu.

External Trigger menu

The External Trigger menu can be accessed from the measurement menu by selecting it with the up/down keys and pressing the OK key once "External Trigger" has been selected. To go back to the measurement menu, press the back key. Press the quick key to go back to the main screen.

The External Trigger menu allows you to configure the external trigger input/output signals. To use the external trigger feature, the device includes a 4-wire 3.5 mm jack connector (female). The connected cable should be arranged as the next figure shows:



The device will supply 24 VDC (max.100 mA) to supply external sensors. The signal at the trigger input should be an NPN-type signal of max. 24 V (10 mA). The connection has a common ground for the input and output (GND).

The input trigger signal should follow the input trigger specifications:

» Input type: NPN type max. 24 V / 10 mA

» Minimum input signal duty cycle: 10 % at 5000 Hz

The output trigger signal is an open drain output, so the connection needs to supply a pull-up resistor to a positive potential. The pull-up resistor should be configured so that the current drained to the output trigger pin does not exceed the 100 mA value.

When a valid signal is present at the 3.5 mm connection, the text **EXT** will be shown in the upper left corner of the screen. When it is disconnected, the **EXT** text will disappear.

Input menu

The Input trigger menu can be accessed from the External Trigger menu by selecting it with the up/down keys and pressing the OK key once Input has been selected. To go back to the External Trigger menu, press the back key. Press the quick key to go back to the main screen.

To enable/disable input trigger mode, navigate to the line Enable using the up/down keys and then press OK to enable/disable it (an orange tick will appear when mode is enabled and will disappear if input trigger mode is disabled).

To change the edge at which the device will synchronize the output signal, navigate to the Edge line and press OK. Then the option (rising or falling edge) will be highlighted and you can change it by using the up/down keys. Press the OK key to set the selected edge. When input trigger mode is enabled, the device will synchronize the output signal to the LEDs (or to the output trigger signal) with the input trigger signal provided. Rising or falling edge of the signal to synchronize can be selected. The device will measure the input trigger signal frequency and it will update it in the main screen every 2 seconds. At any time, you can press the LED ON/OFF key and the device will produce an output signal (at the LED module, at the output trigger pin or both, depending on the selected configuration) synchronized with the input trigger signal. When input trigger mode is enabled, the main screen will show the measured frequency (----- if no valid measurement signal is available) and will update that value every 2 seconds. The input icon will be displayed and also an icon showing the selected edge for synchronisation.



Rising edge icon



Falling edge icon

Note: In this mode, the quick key will only allow to modify the duty cycle and the phase shift value.

Output menu

The Output trigger menu can be accessed from the External Trigger menu by selecting it with the up/down keys and pressing the OK key once Output has been selected. To go back to the External Trigger menu, press the back key. Press the quick key to go back to the main screen.

Output trigger can be enabled in one of the 2 available modes.

- » Output mode will only route the output PWM signal to the external connector, so no LED light will be produced, you can adjust the frequency, duty cycle and phase shift of the output signal.
- » Out + LED: will produce the LED light and the output trigger signal in the external connector with the same settings in frequency, duty cycle and phase shift in both sides.

Additionally, you can select the polarity of the signal at the output trigger connector by navigating to the line Polarity and pressing OK. Then the polarity value will be highlighted and you can modify it by pressing the up/down keys. Once the desired polarity is selected, press OK to set it.

Note: only one output trigger mode can be enabled. If one of them is already enabled and you want to enable the other one, first the enabled one must be disabled and then the desired one can be enabled.

When the output trigger mode is enabled, the device will produce a PWM signal with the selected frequency, duty cycle and phase shift. Depending on the mode (Output or Out + LED), that signal will be available only in the output trigger connector (Output mode) or in both output trigger connector and LED module (Out + LED mode).

When the output trigger mode is enabled, the main screen will show the corresponding mode icon and an icon showing the selected polarity.



Positive polarity icon



Negative polarity icon

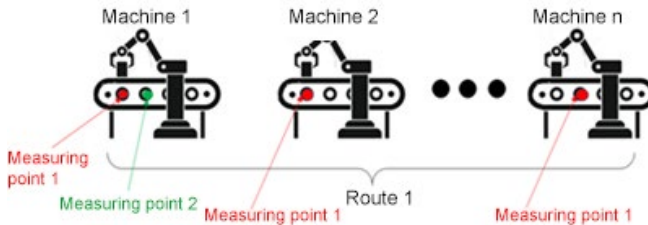
By pressing the LED ON/OFF key, the device will produce a PWM signal with the selected parameters. By pressing LED ON/OFF key again, signal generation will be stopped.

Route Measurement mode

The Route Measurement menu can be accessed from the Measurement menu by selecting it with the up/down keys and pressing the OK key once “Route Measurement” has been selected. To go back to the Measurement menu, press the back key. Press the quick key to go back to the main screen.

Route measurement mode will allow you to follow a series of pre-defined settings on frequency, duty cycle and phase shift values, navigating from one point to another without having to set the values manually in each point.

The device allows to store up to 15 routes, with a maximum of 10 machines in each route, and a maximum of 5 points in each machine.



To store the data, a PC software must be used.

In this menu, up to 15 routes are available. Navigate to the desired route using the up/down keys and press OK when the desired one is reached. The device will automatically show the main screen with the configuration selected for the current machine/point.

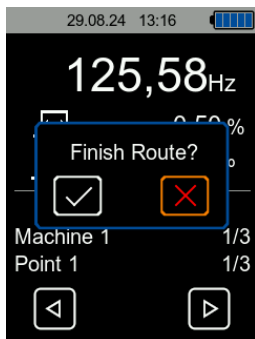
When the device is in Route Measurement mode, the main screen configuration changes and its appearance is as can be seen in the previous picture. LED output related parameters are still shown at the top of the screen but route data is also displayed at the bottom side now. The name of the route will be displayed along with the current machine name and an indication of the current machine number/ number of total machines in the route. Also, the name of the point in the machine and an indication of the current point number/number of total points in the machine are displayed.

- » By pressing the quick key, you can access quick mode to modify the pre-selected values of frequency, duty cycle and phase shift.
- » By pressing the up/down keys, the frequency value can also be modified.
- » By pressing the left/right keys, you can navigate through all the points/machines in the selected route. You can go forwards and backwards at any time from any point to the previous/next one. The only limitation occurs in the first point of the first machine of the route where you cannot go to the previous point, and also on the last point of the last machine where you cannot go to the next point.
- » By pressing the LED ON/OFF key, the LEDs will be switched on/off.

Note 1: Any new values (frequency, duty cycle, phase shift) you have set in route measurement mode will be applied to the output at that moment but the point data will not be modified, so if you navigate to the current point later, the originally stored values will be applied.

Note 2: The menu cannot be accessed from the main screen when route measurement mode is active.

To exit route measurement mode, press the back key. Then a pop-up dialogue will appear:



At this point, you can press the back key to go back to route measurement mode without making any choice and the route measurement will continue working.

You can now make a decision:

- » If you select to finish the route, no matter at which point of the route the device is, next time you start this route, it will start from the first point in the first machine.
- » If you select not to finish the route, the device will save the current route status, so you can later continue the route from the point where it is now.

Settings

The settings menu can be accessed from the main menu by selecting it with the Up/Down keys and pressing the OK key once **Settings** has been selected. To go back to the main menu, press the Back key. Press the Quick key to go back to the main screen.

Decimal separator menu

The decimal separator menu can be accessed from the settings menu screen by selecting it with the Up/Down keys and pressing the OK key once **Decimal separator** has been selected. To go back to the settings menu, press the Back key. Press Quick to go back to the main screen.

The Decimal separator menu allows you to select the decimal separator used (comma or point).

An orange tick can be found next to the separator that is currently used. To change it, select the desired separator using the Up/Down keys and press OK to confirm the selected one.

Date and time menu

The date and time menu can be accessed from the settings menu by selecting it with Up/Down keys and pressing the OK key once **Date / Time** has been selected. To go back to the settings menu, you can press the Back key. Press Quick to go back to the main screen.

The date and time menu allows you to change the date and time setting of the device and to select the format the device will use to display the date in the upper area of the screen.

To change the date and time setting, select **Date / Time**, using the Up/Down keys and press the OK key to access the sub-menu.

In this sub-menu, you can set the year, month, day, hour, minute and seconds. To select the parameter to adjust, use Up/Down keys. Once the parameter to adjust is highlighted in orange, press the OK key and the device will enter number modification mode.

Use the Up/Down keys to adjust the digit and the Right/Left keys to move to the next/previous digit of the number. Once adjusted, press OK and the value will be saved in the device. Repeat the same procedure to adjust any other of the parameters available in the Date / Time settings menu.

To go back to the Date / Time menu, press the Back key. Press the Quick key to return to the main screen.

To change the format the device will use to display the date on the upper area of the screen, select **Format** using the Up/Down keys and press OK once it is selected to access the Format settings menu.

Here, you can select one of these date formats: dd.mm.yyyy / mm.dd.yyyy / yyyy.mm.dd. An orange tick can be found next to the format currently used by the device. Use the Up/Down keys to select the desired format and press OK once the desired one is highlighted in orange. This will set the date format for the device.

To go back to the Date / Time menu, press the Back key. Press the Quick key to go back to the main screen.

Display menu

The Display menu can be accessed from the settings menu by selecting it with up/down keys and pressing the OK key once Display has been selected. To go back to the settings menu, you can press the back key. Press quick to go back to the main screen.

In this menu, you can adjust the display brightness between 50 % and 100 % and also, a screen saver mode can be enabled to decrease the battery current consumption and increase the device working time.

Brightness menu

To change the brightness, navigate to the Brightness line using up/down keys and then press the OK key. The brightness value will be highlighted in orange. Press the up/down keys to select the desired brightness and then press OK again to set it.

To change settings related to the screen saver mode, navigate to the line Screen saver using the up/down keys and press OK to enter the screen saver menu.

Screen saver menu

The Screen saver menu can be accessed from the Display menu by selecting it with the up/down keys and pressing the OK key once Screen saver has been selected. To go back to the Display menu, you can press the back key. Press quick to go back to the main screen.

In the Screen saver menu, you can select the brightness of the screen in screen saver mode (from 20% to 60%) and also select the time with no keyboard interaction after which the device will enter screen saver mode (Off, 1 minute, 3 minutes, 5 minutes).

- » To change the brightness, navigate to the Brightness line using up/down keys and then press OK. The brightness value will be highlighted in orange. Press the up/down keys to select the desired brightness and then press OK again to set it.
- » To change the time, navigate to the Time line using the up/down keys and then press OK. The selected option will be highlighted in orange. Press the up/down keys to select the desired time and then press OK again to set it.

Language menu

The Language menu can be accessed from the settings menu by selecting it with the up/down keys and pressing the OK key once Language has been selected. To go back to the settings menu, you can press the back key. Press quick to go back to the main screen.

An orange tick indicates the currently selected device language. To select the desired language, use the up/down keys to highlight it in orange. Once highlighted, press OK to change the device language to the selected one.

Auto power off menu

The Auto power off menu can be accessed from the Settings menu by selecting it with the up/down keys and pressing the OK key once "Auto power off" has been selected. To go back to the Settings menu, you can press the back key. Press quick to go back to the main screen.

In this menu, you can select to enable or disable auto power off mode. If a value apart from the Off option is selected, the device will auto-power off if no keyboard interaction is performed during the selected period of time. Available values for the auto-power off mode are Off, 1 minute, 5 minutes and 15 minutes. To select one of them, navigate to the corresponding line using the up/down keys and then press OK to set the desired value.

Enable/disable keytones

The keytones can be enabled/disabled from the Settings menu by navigating to the line Key tones using the up/down keys and then pressing OK. The currently selected option will be then highlighted, so you can use the up/down keys to select the desired option. Once selected, press OK again and the option will be set. If key tones are enabled (On), a beep sound will be produced by the device each time any key is pressed. No sound will be produced if this option is set to Off.

Factory settings menu

This menu is for use by the technical department of PCE to reset the settings and calibration settings of the menu, users have no access to it.

Manual menu

The Manual menu can be accessed from the main menu by selecting it with the up/down keys and pressing the OK key once Manual has been selected. To go back to the main menu, press the back key. Press the quick key to go back to the main screen. In this menu, the device will display a QR code via which you can get to this manual on the website.

Info menu

The Info menu can be accessed from the main menu by selecting it with the Up/Down keys and pressing the OK key once **Info** has been selected. To go back to the main menu, press the Back key. Press the Quick key to go back to the main screen.

The Info menu shows the device name, firmware version and PCE Instruments contact details.

Software

An update software is available here: https://www.pce-instruments.com/english/download-win_4.htm.

This can be used to update the firmware of the device in case a new version is released. To do that, connect the device to a PC running the software via USB, then power up the device in boot/update mode. This means when the device is powered on in common operation, press both the Power and MENU keys at the same time. Then first release the Power key and then the MENU key. The device will then be working in boot mode, so the firmware can find it and update the firmware with a .hex file supplied by us.

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.

CONTACT INFORMATION

Germany

PCE Deutschland GmbH
Im Langel 26
D-59872 Meschede
Deutschland
Tel.: +49 (0) 2903 976 99 0
Fax: +49 (0) 2903 976 99 29
info@pce-instruments.com
www.pce-instruments.com/deutsch

United Kingdom

PCE Instruments UK Ltd
Trafford House
Chester Rd, Old Trafford
Manchester M32 0RS
United Kingdom
Tel: +44 (0) 161 464902 0
Fax: +44 (0) 161 464902 9
info@pce-instruments.co.uk
www.pce-instruments.com/english

The Netherlands

PCE Brookhuis B.V.
Twentepoort West 17
7609 RD Almelo
Nederland
Telefoon: +31 (0)53 737 01 92
info@pcebenelux.nl
www.pce-instruments.com/dutch

France

PCE Instruments France EURL
2, rue Georges Kuhnmmunch
67250 Soultz-sous-Forêts
France
Tel.: +33 (0) 972 35 37 17
Fax: +33 (0) 972 35 37 18
info@pce-france.fr
www.pce-instruments.com/french

Italy

PCE Italia s.r.l.
Via Pesciatina 878 / B-Interno 6
55010 Loc. Gragnano
Capannori (Lucca)
Italia
Telefono: +39 0583 975 114
Fax: +39 0583 974 824
info@pce-italia.it
www.pce-instruments.com/italiano

United States of America

PCE Americas Inc.
1201 Jupiter Park Drive, Suite 8
Jupiter / Palm Beach
33458 FL
USA
Tel: +1 (561) 320-9162
Fax: +1 (561) 320-9176
info@pce-americas.com
www.pce-instruments.com/us

Spain

PCE Ibérica S.L.
Calle Mula, 8
02500 Tobarra (Albacete)
España
Tel. : +34 967 543 548
info@pce-iberica.es
www.pce-instruments.com/espanol

Turkey

PCE Teknik Cihazları Ltd.Şti.
Halkalı Merkez Mah.
Pehlivan Sok. No.6/C
34303 Küçükçekmece - İstanbul
Türkiye
Tel: 0212 471 11 47
Faks: 0212 705 53 93
info@pce-cihazlari.com.tr
www.pce-instruments.com/turkish

Denmark

PCE Instruments Denmark ApS
Birk Centerpark 40
7400 Herning
Denmark
Tel.: +45 70 30 53 08
kontakt@pce-instruments.com
www.pce-instruments.com/dansk



Subject to change without notice