Lactate Scout Sport

Instruction manual

EKF Diagnostics

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Lactate Scout Sport instruction manual

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0 Intended use, safety instructions and required accessories

Intended use

The Lactate Scout Sport measuring system is designed to measure lactate concentration in capillary blood in order to assess changes in physical performance and conditioning in healthy people in the field of sport.

The Lactate Scout Sport measuring system is not designed for taking quantitative lactate measurements to support clinical decisions in medical applications. No diagnosis or medical action should be taken on the basis of the values.

For use outside the body only.

Lactate Scout Sport analyzer may only be used with Lactate Scout Test Strips and check solutions..

Lactate Scout Test Strips are only for single use.

Safety instructions

PLEASE READ THE INSTRUCTION MANUAL BEFORE USE AND KEEP IT IN A SAFE PLACE!

Failure to comply with any text marked as a "**WARNING**" can result in serious damage to health.

Failure to comply with any text marked "**ATTENTION**" can lead to incorrect tests or damage to the device.

Please ensure you observe the warning and safety instructions specified on the labels of the batteries and lancets that you are using.

WARNING

There is a risk of small parts being ingested, such as batteries, test strips, screw caps or drop dispensers on Check Solution bottles.

The Lactate Scout Sport measuring device and all related accessories must be kept out of the reach of children.

WARNING

The method for obtaining samples for lactate tests involves a risk of infection. Test strips, lancets, soft lint free cloth and measuring devices contaminated with sample carry a risk of infection.

Safety gloves must be worn when performing tests for third parties.

Please make sure that lancets and test strips are intact and unused before use.

Make sure you dispose of any used test strips, lancets and soft lint free cloth safely in the household waste.

Make sure you only use the Lactate Scout Sport measuring system for the purpose specified in this instruction manual.

ATTENTION

Make sure you only use accessories that have been provided or recommended by the manufacturer.

The measuring device must not be used if it is not functioning correctly or has been damaged.

Required accessories

To carry out lactate measurements the following materials are needed:

- Sterile lancets
- Lint free paper tissues/cloths
- Clean water

Please note that sterile lancets (we recommend safety lancets), lint free cloths and water are not included and need to be provided separately.

To carry out functionality tests Lactate Scout Check Solution is required. Lactate Scout Check Solution is available in different concentrations (see chapter 10).

1 Introduction

1.1 Lactate Scout Sport measuring device 1

Opening (1A) for inserting the test strip

Display (1B)
Display screen will indicate the following: device ready, blood lactate concentration, warning messages, configuration options and status information.

Keypad for operating the measuring device

- **Arrow keys (1C)**:
  - for moving between menus, sub-menus and menu items
  - for adjusting values, e.g. time and date
- **OK button (1D)**:
  - for enabling menus, sub-menus and menu items
  - for confirming choices
  - for activating and deactivating configuration mode
- **Back button (1E)**:
  undo or cancel the last step
- **Temperature sensor (1F)**:
  for reading the ambient temperature

1.2 Lactate Scout Test Strips 2

The test strip has an opening for the blood sample **(2A)**. This opening is connected to the measuring chamber. The contacts **(2B)** connect the test strip to the measuring device.

1.3 Inserting the batteries

The Lactate Scout Sport requires two CR2450 (3V lithium button cell) batteries.

The device is supplied with batteries included. First, remove both of the battery insulating strips **3**.

The measuring device must be turned off to replace the batteries. Gently push the battery cover on the back of the instrument outwards. Remove the discharged batteries. When inserting the new batteries, ensure that the polarity is correct.

Push the battery cover back in until it completely locks into place **4**.

If the time to replace the batteries exceeds 30 seconds, the date and time setting will be lost and must be re-entered. However, stored data and settings will be retained.

3

4

PLEASE NOTE

Used batteries must not be disposed of with household waste. End users have a statutory obligation to ensure used batteries are returned for recycling. Used batteries can be returned free of charge to retailers or collection points.

1.4 Switching the device on and off

The Lactate Scout Sport has a configuration/ display mode and a measuring mode, both of which can be switched on and off independently.

Configuration and display mode can be switched on or off by holding down the OK button for two seconds.

Measuring mode is switched on or off when a test strips is inserted into the measuring device, even if the measuring device was previously switched off or is in configuration and display mode. Removing the test strips from the device will switch the measuring mode off.

The Lactate Scout Sport can be switched off by holding down the OK button for two seconds.

The device will switch itself off if it is not used for two minutes in configuration and display mode or if the device is not used for two minutes while the test strip is inserted in the measuring device.

1.5 Display

An information line will be displayed in both modes at the top of the display when the device is switched on **5**. This line provides information about the battery level, the current time and the active functions of the measuring device **(5A)**.

In configuration and display mode, a symbol line will also be displayed beneath the info line **(5B)**. This line uses corresponding symbols to indicate the configuration and display mode menu/sub-menu that the measuring device is in.

If symbols or numbers have a black background, this means they can be selected.

If symbols or numbers have a grey background, this means they cannot be selected and confirmed. The associated function needs to be activated in the main menu (chapter 3).

1.6 Code setting for Lactate Scout Test Strips

A two-digit code must be entered when setting up the measuring device or when using test strips from a new container; this code is printed on the label of the test strips container.

First, switch the configuration and display mode on by holding down the OK button for two seconds **6**. Then press the OK button again. The code setting menu will open. The symbol line will display the “CODE” symbol **7**.

Enter the two digits of the code, starting from the left. Enter the digits of the code using the two arrow keys and confirm by pressing the OK button **7** - **9**. You will then hear a signal tone to confirm that the code has been set. The measuring device is now ready to take measurements using test strips with this code **10** - **11**.

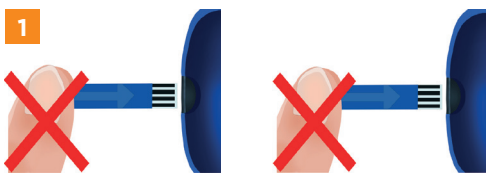
You can now either insert a test strip or switch off the device.

2 Performing a test

2.1 Preparing for a test

Remove a test strip from the container. Make sure you do not touch the opening for the sample **1**. As soon as you have removed the test strip, insert it into the measuring device opening in the direction of the arrow until you can feel resistance **2**. The contacts must be facing up.

1



2

The display will briefly show the code which is currently configured. A blinking drop symbol will then be displayed to indicate that the measuring device is ready to take a measurement. The ambient temperature of the measuring device will be displayed beneath the info line **3**.

3

ATTENTION

Before you use a test strip from a new test strip container, you must check that the code on the label is the same as the code currently configured in the device. If the code does not match, then it must be configured again in the device.

ATTENTION

The test strips and the measuring device must be at the same temperature when performing a test. If you take the test strip container out of the fridge, you must wait for at least 20 minutes until the test strip container has reached the ambient temperature before you open the container. If you take the test strip container out of the freezer, you must wait at least 2 hours until the test strips container has reached ambient temperature. Only remove test strip from test strip vial to be used immediately (within 2 minutes) for testing purposes. Close the container immediately after removing the test strip. Never leave the container open.

2.2 Sample collection and testing

Wash your fingers or earlobes with clean water at the puncture site (to remove residues of blood circulation stimulating creams, dried blood or sweat). Dry the puncture site with a lint free paper tissue/cloth to avoid dilution or "running" of the blood droplet. Puncture the washed sample site using a suitable lancet.

Waiting too long can result in new sweat.

The two steps "sweat removal" and "pricking and measuring" must not take more than 60 sec in total, as interrupting the step test beyond this time will reduce the loading conditions.

ATTENTION

Impurities such as sweat, alcohol or disinfectant on the skin may cause problems with the sampling or cause incorrect results. Ensure that the sample site is cleaned carefully with water and dried before puncturing the finger. Use only fresh blood samples for measurement. The intake of drugs such as paracetamol, antioxidants such as ascorbic acid or diseases, infections, diets, carbohydrate-rich food or stress can influence individual test results.

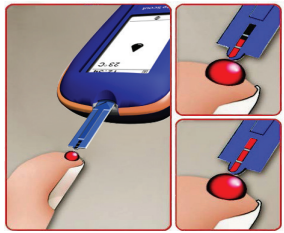
Wipe away the first droplet of blood. Apply gentle pressure to the puncture site. The second droplet must be large enough to fill the measurement chamber of the test strip in one go.

ATTENTION

Avoid pressing on the puncture site too heavily as sweat and/or tissue fluid can merge with the sample and affect the test result.

Contamination of the blood sample with sweat (lactate concentration in sweat approx. 16 - 30 mmol/L) can cause considerably higher lactate values.

The sample droplet must not run. Bring the sample site to the tip of the inserted test strip. The test strip will draw the sample into the measuring chamber **4**.



4

ATTENTION

The test strip must draw the sample in one go. Failure to do so results in the risk of insufficient filling of the test strip.

Do not touch the skin with the Test strip.

If performing lactate tests on someone else, move the measuring device with its inserted test strip to the sample site of the subject. Once the measurement chamber on the test strips tip is completely filled, an acoustic signal will sound and the test will begin. A circular symbol with a progress bar will be displayed.

5 After ten seconds, a second acoustic signal will sound and the test result will be displayed in the measurement unit “mmol/L”. The allocated memory space number will be displayed next to the memory symbol. The test result is stored along with the date and time of the test and the memory space number **6**.

5

6

WARNING

Lancets and test strips must only be used once.

Used lancets and test strips carry a risk of infection.

Ensure used lancets, test strips and other materials used for sample collection are disposed of properly.

2.3 Checking the code setting

The code is displayed briefly when you switch measuring mode on **7**. If more than 25 tests are performed with the same code, a reminder to check the code will be displayed for three seconds **8**. Pressing the OK button within three seconds will take you to the code configuration menu.

7

8

2.4 Checking the ambient temperature

To ensure consistent and reliable test results are achieved under different climatic conditions, the measuring device is equipped with a temperature sensor. The temperature sensor is located underneath the opening for the test strips **9**.

9

WARNING

Do not touch or cover the temperature sensor with your hand. Failure to do so results in the risk that the temperature sensor will read the ambient temperature incorrectly and the measuring device may record incorrect test results.

3 Settings, functions and displays

Settings can be changed in configuration and display mode. In order to go to configuration and display mode, there must not be a test strip inserted in the measuring device. The configuration and display mode can be switched on or off by holding down the OK button for two seconds. An acoustic signal will sound, and the main menu will be displayed along with its symbols. The symbols display the sub-menus **1**:

- Stored test results **(1A)**
- Device settings **(1B)**
- Functionality test **(1C)**
- Test strip code configuration **(1D)**
- Stopwatch function **(1E)**
- Heart rate **(1F)**

Choose a symbol to move to the associated sub-menu.

Navigate symbols using the up and down arrow keys. The selected symbol is displayed with a black background. Pressing the OK button takes you to the sub-menu. Once configuration is complete, confirm your selection with the OK button and you will be returned to the main menu. Pressing the Back button will also take you back to the main menu. If you use the back button, your changes will not be saved.

3.1 Device settings

If you choose the ⚙ symbol **1B** in the main menu and confirm your selection by pressing the OK button, you will be taken to the device settings **2**. The following settings are available:

- Date and time settings **(2A)**
- Search for heart rate monitor and connect **(2B)**
- Activating/deactivating the Bluetooth® function **(2C)**
- Volume control for acoustic signals **(2D)**
- Device information **(2E)**

3.1.1 Volume control

If you choose the 🔊 symbol **2D** in the "Device settings" menu and confirm your selection by pressing the OK button, you will be taken to the volume control settings **3**. The following settings are available:

- mute **(3A)**
- medium volume **(3B)**
- loud **(3C)**

Set the volume using one of the two arrow keys and confirm your selection by pressing the OK button. Once you have confirmed your selection, you will be taken directly back to the "Device settings" menu.

3.1.2 Date and time settings

If you choose the “Date and time settings” symbol  in the “Device settings” menu 2A and confirm your selection by pressing the OK button, you will then have the option to set the year. A calendar will appear in the symbol line 4.

Set the year using one of the two arrow keys and confirm your selection by pressing the OK button. Once you have confirmed your selection, you will then have the option to set the month and day. Two calendar symbols for the month and day will appear in the symbol line 5 - 6. Set the month and day using one of the two arrow keys and confirm your selection by pressing the OK button. Once you have confirmed your selection, you will then have the option to set the time. A clock will appear in the symbol line. First, choose a time display format. The following settings are available 7:

- 24-hour clock
- 12-hour clock

Once you have confirmed your selection, you can set the time. Set the hours and minutes using one of the two arrow keys 8 and confirm your selection by pressing the OK button. Once you have confirmed your selection, you will be taken back to the “Device settings” menu.

If the date and time are not (re)set when the device is configured or reset, the time will be displayed in the info line with a black background.


12:34
2A


12:34
20 23
OK
4


12:34
1 - 12
09 / 21
OK
5


12:34
1 - 30
09 / 21
OK
6


12:34
24h
12h
OK
7


12:34
16 : 20
OK
8

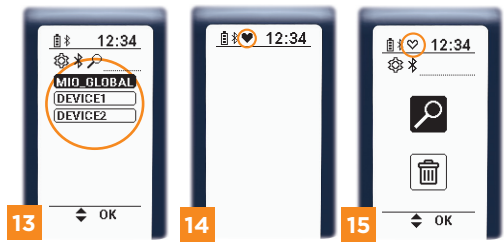
3.1.3 Activating and deactivating the Bluetooth® function

You need to activate the Bluetooth® wireless technology function if you want to connect the Lactate Scout Sport to a heart rate monitor or if you want to transfer data to a PC. When in the "Device settings" menu, select the symbol for activating and deactivating the Bluetooth® function 2C. Confirm your selection by pressing the OK button. The sub-menu will then open 9 . To activate the Bluetooth® function, use one of the two arrow keys to select the "Activation" symbol (check box with vertical stroke) [I] and confirm your selection by pressing the OK button. The Bluetooth® 10 symbol will now be displayed in the info line. The function requires additional power and should therefore only be activated when it is needed.

To deactivate the Bluetooth® function, use one of the two arrow keys to select the "Deactivation" symbol (check box with circle) [O] and confirm your selection by pressing the OK button.

3.1.4 Connecting to a heart rate monitor

Activate the Bluetooth® wireless technology function. Each heart rate monitor (chest strap, armband, ear clip) must be registered in the measuring device:
You will be taken to the sub-menu if you select the heart symbol **2B** in the "Device settings" menu by using one of the two arrow keys and confirm your selection by pressing the OK button. To search for the heart rate monitor, use the arrow keys to select the "Search" symbol **11** and confirm your selection by pressing the OK button. The measuring device will now search for all Bluetooth® Low Energy (LE) compatible heart rate monitors in the immediate vicinity **12**. If the search is successful, a list of all of the heart rate monitors found will be displayed **13**. Select the heart rate monitor using one of the two arrow keys and confirm your selection by pressing the OK button.
The heart rate monitor is now registered in the measuring device. The measuring device is automatically connected to the selected heart rate monitor. The heart symbol which is filled in will appear in the info line **14**. If it is not possible to establish a connection, then the heart symbol will remain empty **15**.



If the measuring device fails to find a heart rate monitor after a period of 10 seconds, an error message will appear ? 16.

Each time the Lactate Scout Sport is switched on, the measuring device will attempt to automatically connect to the registered heart rate monitor. A brief acoustic warning will be emitted if the existing connection is temporarily interrupted. The measuring device will then make three further attempts to restore the connection. If the connection fails due to the fact the heart rate monitor is too far away, the measuring device will not attempt to reconnect until the next time that it is activated.

If you want to delete a registered heart rate monitor, simply select the “Heart” symbol again in the “Device settings” menu 2B. Confirm your selection by pressing the OK button. To delete the heart rate monitor, use one of the two arrow keys to select the 🗑 symbol and confirm your selection by pressing the OK button 17.

3.1.5 Displaying information about the device

If you choose the ⓘ symbol in the ⚙ menu 2D by using one of the two arrow keys and confirm your selection by pressing the OK button, you will be shown device firmware and device components information. If you use the arrow keys to browse through the pages in this menu item, then the following information will be displayed:

- *Serial number of the measuring device*
- *Firmware version of the measuring device*
- *MAC address of the Bluetooth® LE module*
- *FCC ID and IC of the Bluetooth® LE module*
- *QR link to the Lactate Scout website*
- *Licensing information on the font used*

Once you have pressed the OK button again, you will be taken directly back to the “Device settings” menu.

2D

3.2 Heart rate

If the measuring device is connected to a heart rate monitor, the heart rate monitoring system automatically records the measured rate and saves it at five second intervals together with the date and time. If you select the ♥ symbol 1F in the main menu by using one of the two arrow keys and confirm your selection by pressing the OK button, you will then be shown the heart rate in beats per minute (bpm) 18. The heart rate display will remain active for two minutes before switching to standby mode to save energy 19.

1F 18 19

If you press any button, the heart rate display will be activated for another 10 seconds **20**.
If the connection (temporarily) fails, then the heart symbol will remain empty **21** .
Heart rate values can be recorded for a maximum of approximately 30 hours. After this point, the earliest recorded values will be overwritten.
The heart rate will no longer be measured if the measuring device fails to connect to the heart rate monitor after three automated attempts.

If an individual lactate test is performed while the heart rate is being recorded, or a lactate test is performed during a step test, then the heart rate recorded in the minute prior to the lactate test will be stored along with the lactate value.
If the test strip is removed in measurement mode or while the heart rate is being measured, the measuring device will switch to standby mode to save energy.

3.3 Functionality test

The functionality test is used to check the correct functioning of the Lactate Scout Sport measuring system. If there are any doubts regarding the accuracy of the test result or the correct functioning of the measuring device, you must perform a functionality test. Please use the Lactate Scout Check Solution for the functionality test. The label on the Check Solution bottle states the range of the Check Solution.

The Lactate Scout Check Solution is available in the following concentrations:

8.9 - 1 1.1 mmol/L (display: 10 mmol/L)

4.5 – 5.6 mmol/L (display: 5 mmol/L)

1.8 - 2.2 mmol/L (display: 2 mmol/L)

The Check Solution can be used for a period of three months after opening for the first time. Once opened, ensure the Check solution is stored tightly closed between 15 – 25°C.

ATTENTION

Never bring the opening of the Check Solution bottle directly into contact with the sensor. Failure to do so will contaminate the contents of the Lactate Scout Check Solution bottle and render it unusable.

Check Solution, Test Strips and measuring device must be at the same temperature performing the functionality test.

WARNING

Do not swallow the Check Solution. Avoid contact with mucous membranes.

Risk of small parts being ingested: keep the Check Solution out of the reach of children.

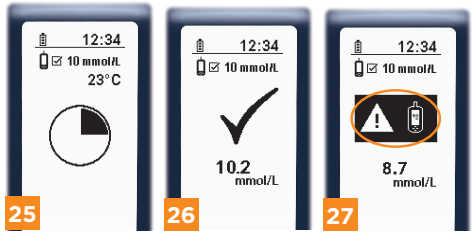
Select the “Functionality test” 1C sub-menu in configuration and display mode.
Then select the concentration of your Check Solution 22. The measuring device will then ask you to insert a test strip 23. For testing purposes, the target value will be displayed with the measurement unit (mmol/L) in the symbol line.
The configured code will be displayed briefly after you have inserted the test strip. This code must also match the code printed on the test strip container for the functionality test as well. The measuring device will then ask you to fill the test strip with Check Solution 24. Open the Check Solution bottle.
Wipe the opening to make sure it is clean.

Dispense and discard a single drop of Check Solution. Dispense a second drop of Check Solution onto a non-absorbent surface (e. g. plastic or aluminium foil) and move the measuring device with test strip inserted to the droplet. Allow the droplet to fill the measurement chamber. An acoustic signal will sound when the measurement chamber has filled sufficiently.

Avoid repeated filling of the test strips from the same drop of Check Solution, i. e. use a new drop of Check Solution for each functionality test.

You can track the progress of the functionality test on the display **25** and the lactate concentration will be displayed. If the result is within the permissible range, a tick will be shown in the centre of the display. The ✓ indicates that the measuring device and test strip are functioning correctly **26**. If the result is outside of the tolerance range, an error message (!) will be displayed **27** (see chapter 7 on page 40, “Functionality test not successful”).

The device will turn off when the test strip is removed.



3.4 Stopwatch

Select the ⏱ function using the arrow keys pressing OK 1E. Press the OK button again to start the stopwatch 29. An acoustic signal will sound after every minute that passes. The stopwatch displays the minutes on the left and the seconds on the right. A quarter of the circle will be filled in after every two-and-a-half minutes 30. After 10 minutes, the stopwatch function will automatically stop and the measuring device will switch back to the main menu.

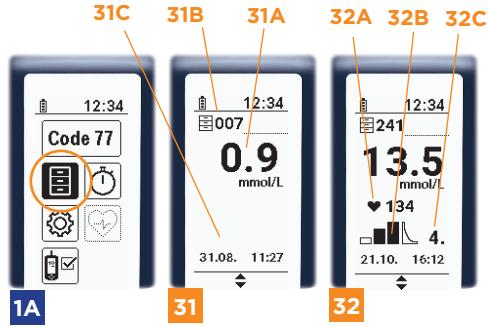
If you want to stop the stopwatch during the 10 minute interval, you can do so by briefly pressing the OK button. An acoustic signal will sound several times. You can reset the timer by pressing the OK button again. Pressing the back button will take you back to the main menu. If you use the stopwatch during a step test to record the time for a step test phase, the measured time is stored together with the next measured lactate value. The measured time can be used to evaluate the step test at a later stage.
The stopwatch function can be used in a similar manner for individual tests.

3.5 Displaying stored values

Select the symbol 1A in the main menu using the two arrow keys and confirm by pressing the OK button. The display 30 will show the most recent lactate value 31A. The memory symbol and the memory space number (in this case 007) will appear in the symbol line 31B. The date and time of this measurement will be shown in the bottom section of the display 31c.

If the measurement was taken as part of a step or endurance test, where applicable, the display will also show the following additional information 32 : heart rate 32A, step test phase 32B and the number assigned to the test in that step test phase 32C.

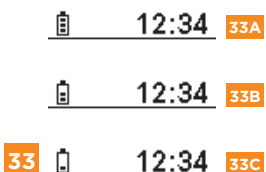
To view all of the test results, navigate using the arrow keys. To move through the items quickly, continuously press the arrow key.



3.6 Battery level indicator

The battery level is monitored by the measuring device. The battery level is shown in the info line 33. There are three different display options available:

- Batteries are full 33A
- Batteries are partially discharged 33B.
- Batteries are almost fully discharged and batteries need to be changed 33C



If the batteries are fully discharged, the measuring device will no longer turn on. An error message will be displayed 34.

4 Performing a step test

4.1 Step test mode

In addition to single lactate measurements, the Lactate Scout Sport can also be used to monitor step test performance. All of the test results recorded during a step test will be stored in memory by the Lacate Scout Sport along with the relevant configured parameters.

The general procedure for step test monitoring is the same as performing a single lacate measurement.

There are 3 step test phases:

- pre-load (for resting levels) 1
- load (for exertion values) 2
- after-load (for post-exertion values) 3

The black bar in the step test symbol indicates which step test phase is selected.

To perform a step test and monitor lactate build up and decline during exertion and cool down :

1) Insert a test strip into measuring device to activate measuring mode as indicated by the drop symbol **1**. Ensure that the code on the test strip box matches the code on the screen.

2) Use the up arrow to navigate to the pre load/resting measurement. **4**

3) Take sample as described in section 2.

4) When result is displayed, remove used test strip.

5) Perform 1st exertion phase and insert a new test strip. Press up arrow to move to 1st phase of the exertion phase and take the sample as described in section 2.

6) Remove test strip when result is displayed.

7) Repeat steps 5 to 6 during the exertion phase of the step test **5**. Note that once in the exertion phase there is no need to use the up arrow upon insertion of the test strip.

8) When the exertion phase of the step test is over, insert test strip and press up arrow to move to the cool down phase of the test **6**. Take the sample as described in section 2.

9) When result is displayed, remove test strip. To monitor lactate clearance during cool down, insert a new test strip and take samples at intervals during cool down.

10) Once cool down is finished, press the up arrow to exit the step test measurement **7**.

4.2 Heart rate during step tests

If a device is connected to an active heart rate monitor, the heart rate for each exertion level is displayed along with the lactate value 4 - 6.

The heart rate displayed is the maximum rate detected during the minute leading up to the lactate measurement. For this reason, it is important to measure the lactate level immediately after each exertion level.

ATTENTION

The two steps "sweat removal" and "pricking and measuring" must not take more than 60 sec in total, as interrupting the step test beyond this time will reduce the loading conditions.

4.3 Displaying the post-exertion phase

During the post-exertion phase, the amount of time since the last test in the exertion phase is also displayed by the measuring device in measuring mode 8.

The time display is updated every 10 seconds. The post-exertion time display is limited to 20 minutes.

5 Data Transfer

The Lactate Scout Sport comes with a Bluetooth® LE module which can be used to wirelessly transfer the data stored on the measuring device. In order to retrieve the transferred data on your PC, you must have the “Lactate Scout Assistant” software installed. This software is available for Windows and Microsoft.

Additional information is available at:

www.lactatescout.com

ATTENTION

The Bluetooth® LE module has a range of approximately 3 m. The recipient device must be within this range to ensure secure data transmission.

6 Storage, cleaning and disposal

The Lactate Scout Sport is an electronic measuring device and must be handled and stored with care.

You must ensure the measuring device is protected against liquids, moisture, prolonged solar radiation and excessive cold or heat (below -20° C and above +50°C).

Heavy mechanical loads, improper handling and contamination may impair the functionality of the device or render it completely inoperable.

Ensure that no liquid or dirt enters the inside of the device through the openings (opening for test strip and battery housing).

Any sample residue (blood), Check Solution, dust or other contaminants on the housing must be cleaned using a soft, lint-free cloth or paper towel. To do this, moisten the cloth with a mild cleaning agent. You can use water with a small amount of liquid soap. After cleaning the device, wipe it dry with a lint free cloth.

WARNING

Used measuring devices carry a risk of infection.

Make sure you wear gloves when cleaning/ disinfecting a used measuring device.

We recommend using Pursept® A Xpress as a disinfectant. Carefully spray the measuring device with disinfectant. After waiting the specified time for it to take effect, wipe the measuring device with a soft, lint-free cloth or paper towel. Please ensure you read the instructions for the disinfectant.

For disposal of the measuring device, first remove the batteries. Because of the risk of infection stated in ‘Warnings’ above and on page 8 of this manual, the device should not be disposed of as electrical and electronic waste, but should be disposed of carefully in household waste.

7 Error messages and warning indicators

Errors/warnings	Description and potential causes	Solution
	**Test strip error** Test strip damaged, improperly stored (outside of the container/in an open container, exposed to sunlight), or already used.	Use a new test strip from a correctly stored container.
	**Error when filling the test strip** Sample too small or has run, contact time of test strips with sample too short, interrupted sample absorption or test strip pressed against skin.	Repeat the test with a new test strip; to increase the blood droplet, attempt to improve capillary circulation by gently massaging the puncture site.
	**Temperature error** The temperature is outside of the operating range.	Ensure that the ambient temperature is within the specified operating range of the measuring device.

Errors/warnings	Description and potential causes	Solution
	**Battery error** The batteries are discharged or expired or there is possible corrosion of the battery contacts.	Change the batteries. If the battery contacts are corroded, please contact the Lactate Scout Sport service team.
	**Test result too low** The test result is below the test range of the Lactate Scout Sport; Water used for washing may have diluted the droplet at the puncture site.	Repeat the test with a new test strip. Check the code configuration. Follow the instructions for performing the test. Dry your hands well before collecting the sample. Use the Lactate Scout Check Solution to perform a functionality test. Please contact the Lactate Scout Sport service team if there is a persistent error message.
	**Test result too high** The test result is above the test range of the Lactate Scout Sport Perspiration on the skin containing a significant proportion of lactate may have been included in the sample.	Repeat the test with a new test strips. Check the code configuration. Follow the instructions for performing the test. Carefully wash perspiration away from the intended puncture site and dry your hands well. Please contact the Lactate Scout Sport service team if there is a persistent error message.

Errors/warnings	Description and potential causes	Solution
	**Functionality test not successful** Check Solution has been used more than three months after the bottle was opened or is past its expiry date. Check Solution not stored correctly. Test strips were not stored correctly or have exceeded their expiry date.	Repeat the functionality test with new materials after checking the code. Follow the instructions for performing the functionality test. Make sure that the target concentration you have selected in the menu matches the concentration of the Check Solution. If the problem persists, please contact the Lactate Scout service team.
	**Electronic error** Inside the device.	Turn the device off and on again. If the problem persists, please contact the Lactate Scout service team.
	**Storage error**	Please contact the Lactate Scout service team.

Errors/warnings	Description and potential causes	Solution
Code check 	**Brief code “reminder”** The “CODE” symbol with a test strip container and a question mark behind it is displayed for three seconds when you insert a test strips. You need to confirm or change the code after 25 tests.	Confirm the code if it remains the same. Alternatively, enter the code for the new test strip container.
Time display 	**Time displayed with black background** The date and time were not set when the device was configured/reset.	Set the date and time.
Device fails to turn on	**Device fails to turn on** Device fails to turn on, either in configuration and display mode or in standby mode.	Change the batteries. If the problem persists, please contact the Lactate Scout service team.
Measurement mode cannot be configured	**No droplet symbol displayed** Device is not switched on as test strips not inserted properly.	Insert test strip with the black contacts facing up until it clearly locks in place (see item 2 on page 9).

Errors/warnings	Description and potential causes	Solution
No acoustic signal	**No acoustic signal in any mode** Volume was muted in the "Configuration" menu.	Open the "Volume" menu and change the settings.
Device turns itself off	**Device turns itself off** The display shows the EKF logo on a white background. This happens automatically after two minutes of inactivity. Ambient temperature is too low or batteries are empty. Display malfunctioning. Defective electronics or mechanical damage.	Restart the measuring device. Make sure that the ambient temperature is within the operating range of the measuring device. Change the batteries. Please contact the EKF technical support team.
Defective test results	**Values seem too high/too low** For example low values after exertion or high values at rest. Perspiration, intended puncture site not washed correctly or perspiration occurred due to a delay between washing and collecting the sample. Intended puncture site was still wet after washing.	Repeat the test with a new test strip. Check the code configuration. Precisely follow the instructions for performing the test. Carefully wash perspiration away from the intended puncture site and dry your hands well. Use the Check Solution to perform a functionality test. Please contact the Lactate Scout service team if there is an error message or the problem persists.

Errors/warnings	Description and potential causes	Solution
Slow update of the screen content	**Slow update of the screen content** The Lactate Scout Sport uses an e-paper display. Please note that it may take some time for the display to update, depending on the ambient temperature. This is normal for e-paper displays.	

8 Technical specifications

Parameter	Specification
Type of device	Lactate Scout Sport - hand-held device for measuring lactate
Sample material	Fresh capillary whole blood
Sample volume	0.2 µL
Measuring range	0.5 mmol/L - 25.0 mmol/L
Lactate measurement unit	mmol/L (whole blood)
Reference system	Biosen C-Line (EKF-diagnostic GmbH)
Hematocrit range (Hct)	20 - 70%
Precision	Hct range 35 – 50 %: 0.5 – 6.7 mmol/L blood lactate ≤0.2 mmol/L, 6.8 – 25.0 mmol/L blood lactate ≤3 % At hematocrit values out of the specified range, higher deviations are possible.
Measuring principle	Enzymatic amperometric determination of lactate using lactate oxidase
Interference tolerance	Paracetamol up to 0.662 mmol/L Ascorbate up to 0.342 mmol/L Uric acid up to 0.550 mmol/L
Reagents per test strip	Lactate oxidase, electron mediator, additives.
Test duration	10 seconds
Measurement temperature range	+10 °C - +45°C
Humidity	10 - 85 % relative humidity (max. 2 minutes for test strips)
Storage temperature	-18 °C - +8 °C (test strips in container) and/or -20 °C - +50 °C (device)

Parameter	Specification
Max. elevation for use	up to 4,000 metres
Data storage	500 lactate test values with date, time, heart rate and step test allocations, heart rate memory over 30 hours
Data transfer	via Bluetooth® LE v4.1
Power supply	2 x 3 V CR2450 (3V, lithium batteries, button cell batteries)
Device dimensions	91 mm (L) x 46 mm (W) x 21 mm (H)
Weight	60 g (including batteries)
Radio system	Bluetooth®
Band	2.402 to 2.480 GHz
Transmission power	10 mW

EKF-diagnostic GmbH hereby declares that the Bluetooth® radio system type conforms with Directive 2014/53/EU. The full EU declaration of conformity text can be obtained via the following email address: support@ekf-diagnostic.de

9 Symbols

Labels on sensor containers, device labels, in accompanying documentation and on packaging

Symbol	Meaning
	Product meets the requirements of the applicable Directives
	Manufacturer
	Serial number
	Attention, consult accompanying documentation, observe safety instructions
	Biological risks
	Follow instructions for use
	Designed to be used once only
	Expiry date YYYY-MM
	Batch no.
	Storage temperature range

Symbol	Meaning
	Test strip number
	Do not expose to direct solar radiation
	Protect against liquid
	Wireless data transfer with Bluetooth® wireless technology
	Device includes RF transmitter
	Direct current
	Used batteries must not be disposed of with household waste

10 Consumables and accessories

The following consuambles can be used with the Lactate Scout Sport:

Item	Order No.
Lactate Scout Sport Test Strips (Pack of 25)	7023-3440
Lactate Scout Check Solution Low (1.8 - 2.2 mmol/L) - 1 x 2.5mL bottle	7023-6300
Lactate Scout Check Solution Mid (4.5 - 5.6 mmol/L) - 1 x 2.5mL bottle	7023-6302
Lactate Scout Check Solution High (8.9 - 11.1 mmol/L) - 1 x 2.5 mL bottle	7023-6302
Lactate Scout Check Solution multi pack 1 x 2.5mL Low (1.8 - 2.2 mmol/L), 1 x 2.5mL Mid (4.5 - 5.6 mmol/L), 1 x 2.5mL High (8.9 - 11.1 mmol/L).	7023-6303

Additional product information, literature and references can be found online at **ekfdiagnostics.com, lactatescout.info** and **lactatescout.com**

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