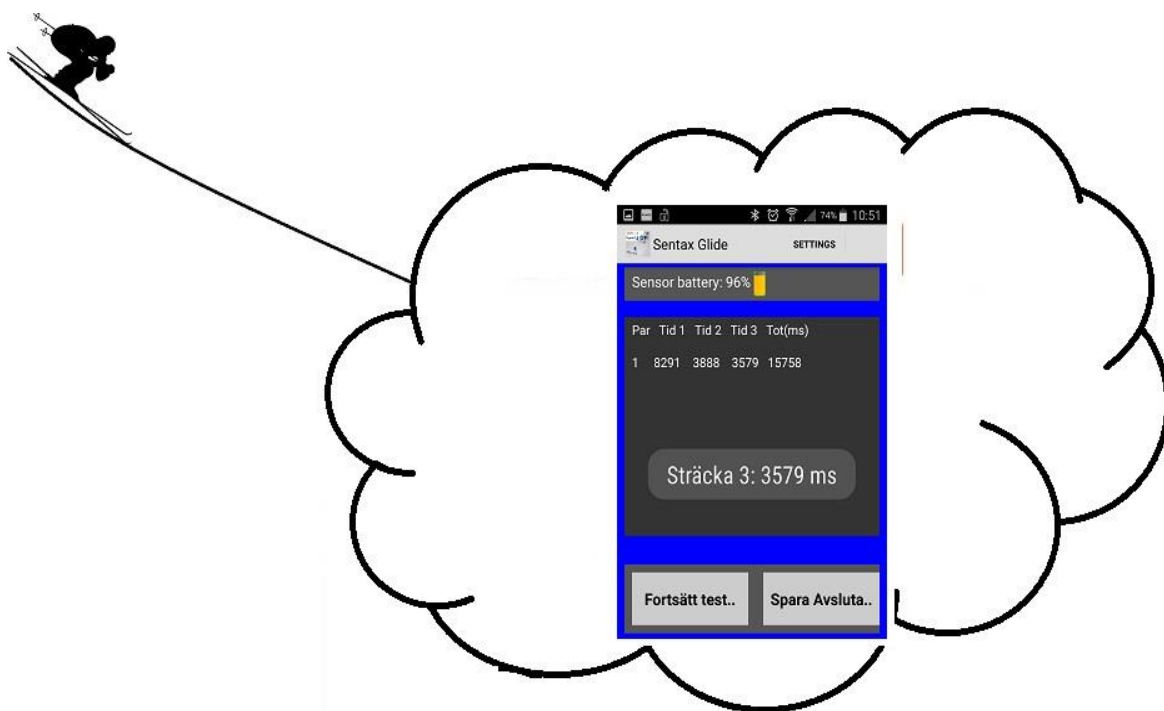


MANUAL



SENTAX GLIDE

SENTAX AB

www.sentax.se

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Sentax Glide

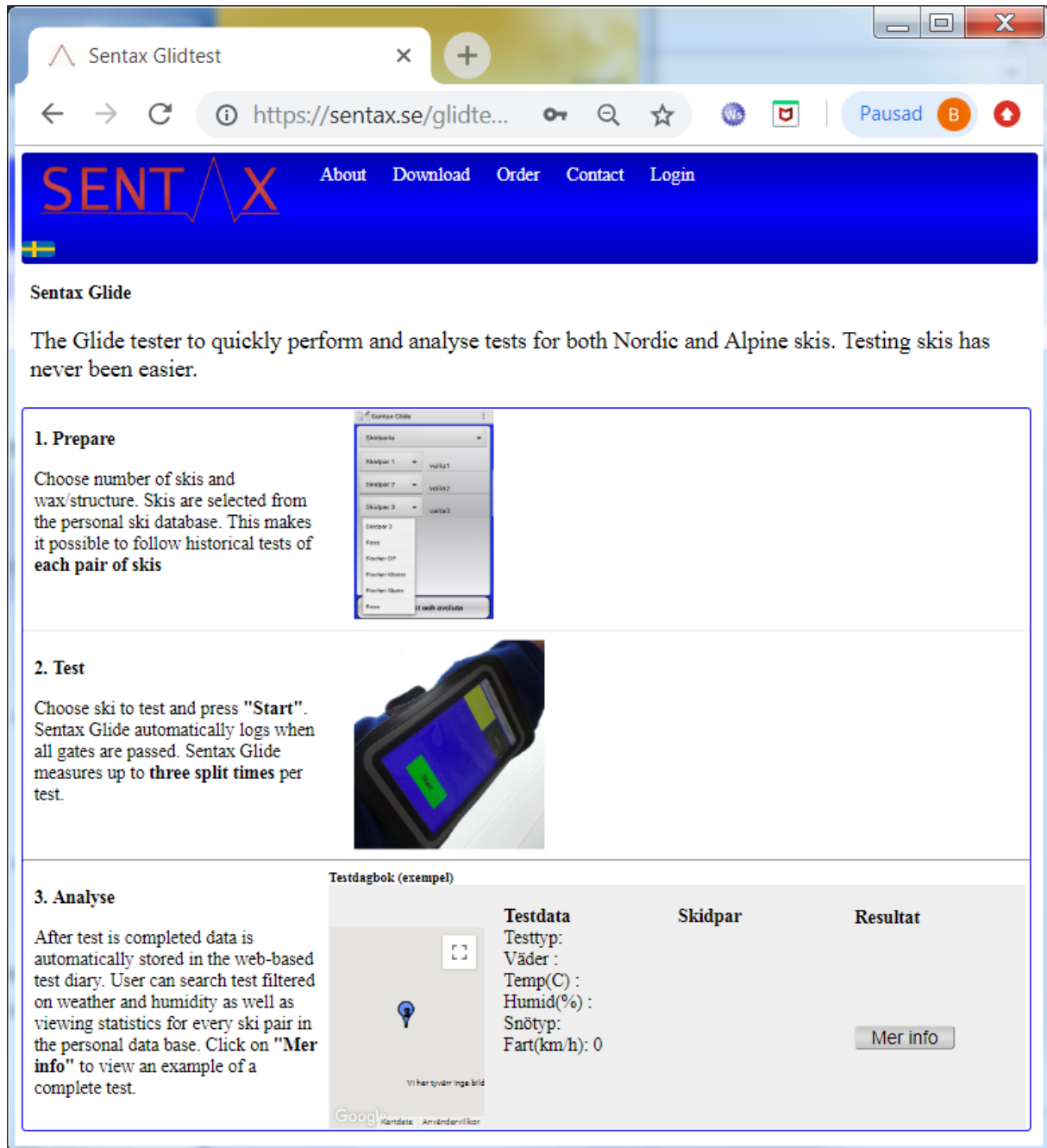
Sentax Glide is a test system for measuring and evaluating speed of Nordic- and Alpine skiing. To use the system, you need a mobile smart phone and the sensing hardware. It is an advantage but not a demand to have internet connection while testing.



One system contains one sensor and four magnetic gates. With this set up you can measure up to three split times per test run.

Homepage and Mobile application

All tests performed with Sentax Glide is collected on a webserver where test data and historical measurements can be analysed. Login to results is on the upper right corner at <https://sentax.se/glide>



The screenshot shows a web browser window with the URL <https://sentax.se/glidte...>. The page features a blue header with the 'SENTAX' logo and navigation links: 'About', 'Download', 'Order', 'Contact', and 'Login'. Below the header, the text reads 'Sentax Glide' and 'The Glide tester to quickly perform and analyse tests for both Nordic and Alpine skis. Testing skis has never been easier.'

The page is divided into three main sections:

- 1. Prepare**: Text describes choosing the number of skis and wax/structure. An inset image shows a dropdown menu for selecting skis (Skidpar 1, 2, 3) and wax (Vax 1, 2, 3).
- 2. Test**: Text describes pressing 'Start' to begin a test. An inset image shows a mobile device displaying a green 'Start' button.
- 3. Analyse**: Text describes viewing test results in a web-based diary. An inset image shows a 'Testdagbok (exempel)' table with columns for 'Testdata', 'Skidpar', and 'Resultat'. The 'Testdata' column lists: Testtyp, Väder, Temp(C), Humid(%), Snötyp, and Fart(km/h): 0. A 'Mer info' button is visible in the 'Resultat' column.

Figure shows the start page where user can login to results (upper right corner)

Mobile application can be installed from Google Play:

<https://play.google.com/store/apps/details?id=com.sentax.glide.en>

User settings

Before using Sentax Glide for testing you will need to fill in following fields:

Mail address: To get important information e.g battery status and application updates

Password: For login to view test results

Sensor: Click on button to choose your sensor

No of gates: 2-4, Depending on how many splits you are interested in.

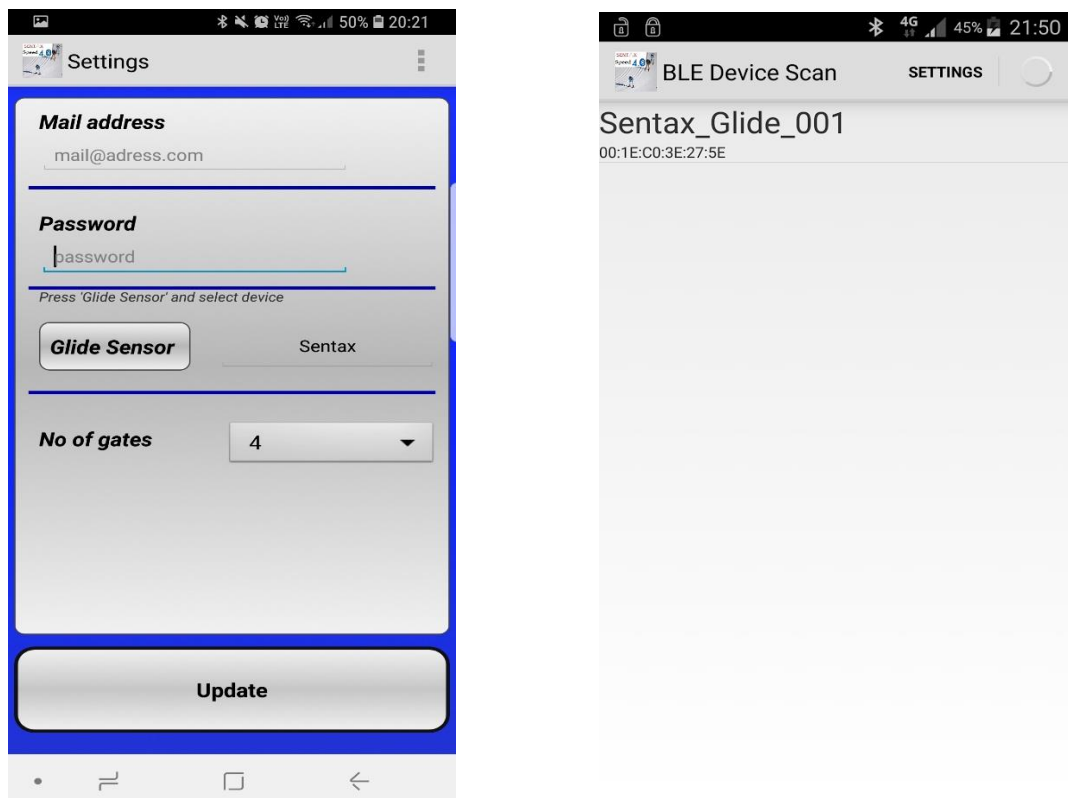



Figure shows settings on the mobile application. To connect to sensor, click the button and choose your sensor as in the right image.

These settings are only needed to perform once. **It is really important to have internet connection to send the settings to the web server.** Now it is time to start testing.

My Skis

This activity is reached by clicking the upper right corner on the application. Here you can view or create your database of skis. **Here it is important to have internet connection to update the database, both locally on mobile and on the web server.**



The screenshot shows a mobile application interface titled "Mina Skidor". At the top, there is a status bar with icons for Bluetooth, signal strength, Wi-Fi, and battery level at 51% at 16:02. Below the title bar, there is a dropdown menu currently set to "Ross". The main form contains the following fields:

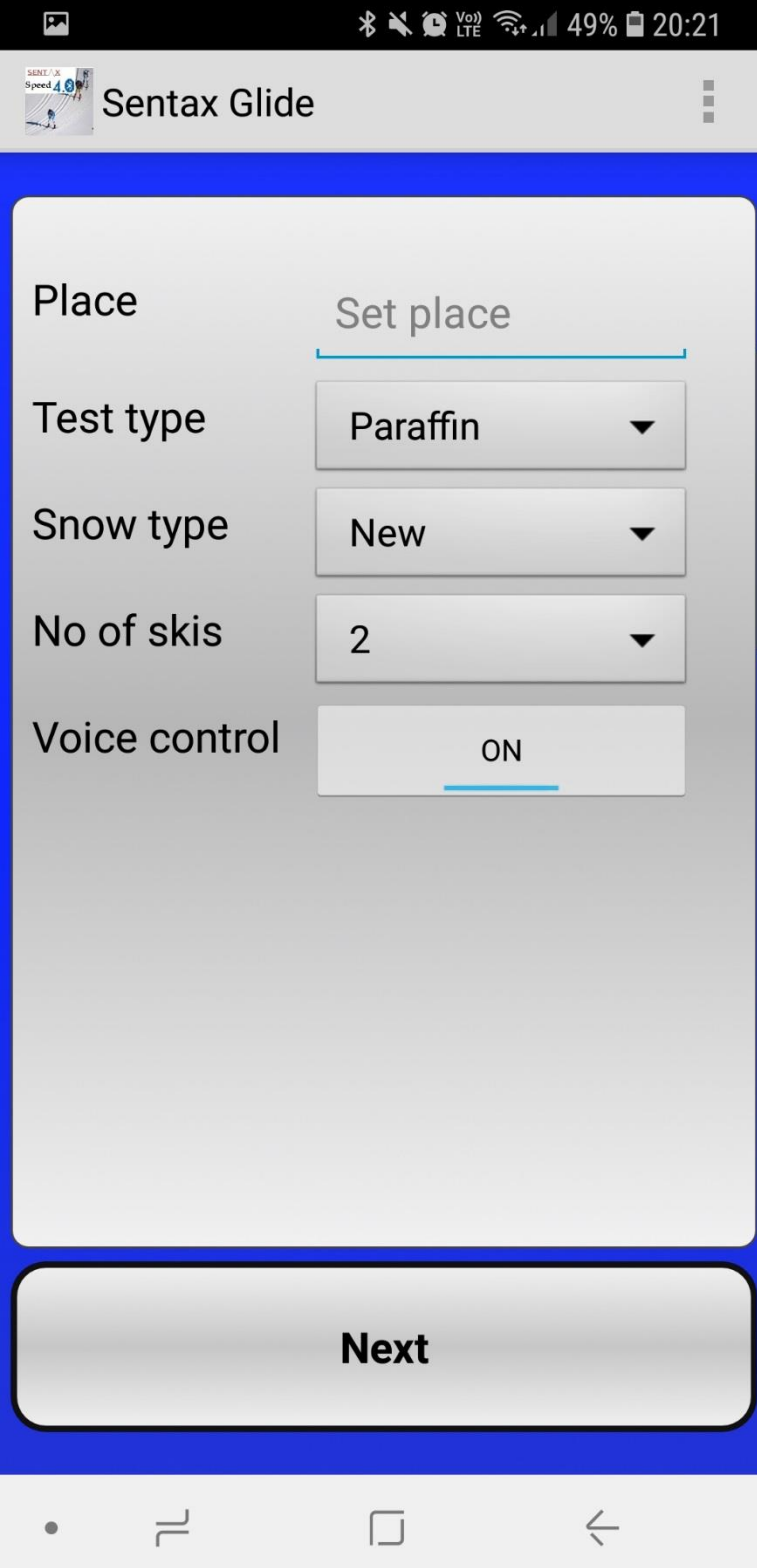
Skidnamn	Ross
Märke	Rossignol
Modell	C2
Längd	210
Spann (halv)	55
Spann (hel)	25
Skidserie	Sentax

At the bottom of the form is a large button labeled "Uppdatera".

*Image shows the menu for changing or adding skis to the user ski database. Ski serie can be useful if you have many skis and need to sort them in different test series. **Remember to have internet connection to update database***

Prepare test (Mobile application)

Start up the application "Sentax Speed". If a test is already started but not finished you have the choice to continue the test or upload it to server. If no test is started you come to the image below.



The screenshot shows the 'Sentax Glide' application interface on a mobile device. The status bar at the top indicates 49% battery and 20:21. The app title 'Sentax Glide' is displayed at the top left. The main content area is a form with the following fields:

Place	Set place
Test type	Paraffin
Snow type	New
No of skis	2
Voice control	ON

At the bottom of the form is a large 'Next' button. The Android navigation bar is visible at the very bottom.

Start of new test on application

Fill in following data:

Place: Where test is performed. This can easily be changed on the web application

Test type: Powder, grip, structure, etc. Additional test types can be added on the web application

Snow type: Droplist with different snow options

No of skis: At least 2 pair max 6 pair can be tested

Voice control: With this option you can talk to the application with commands like “one” to “six”

depending on what ski pair to test. Or “Start” to start test run.

Choose **”Next”**

Here you can define what skis to test. If you have many skis in your database you can use “Ski serie” as filter. Here it is possible to write description for each ski pair.

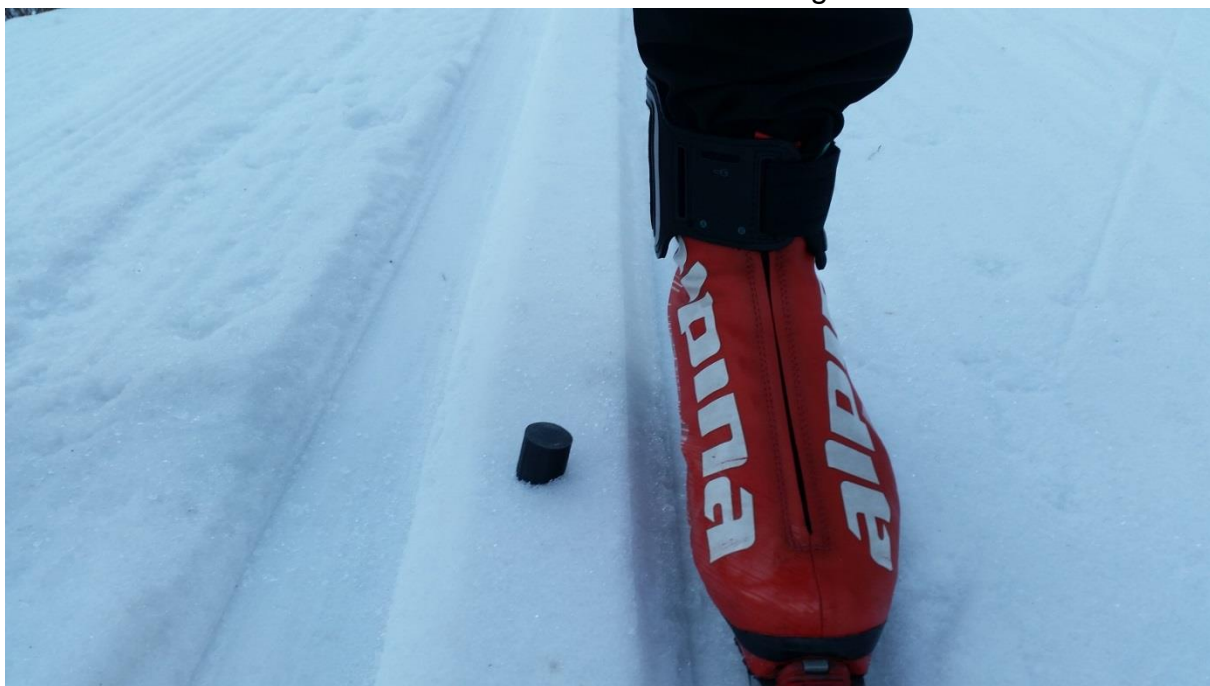


All of these settings can be edited on the web application after the test if you are in a hurry to start the test. You can also fill in these fields prior to the test. They are saved and when you enter the test area you can continue the test with the saved settings.

Prepare test (Skiing)

To ensure detection of the gates you must consider following:

- One should stand approximately in the direction of the track when pressing "Start".
- Gate must be passed within the range 30 cm. A good example is to place the gates on a classic track between the legs as shown in picture below. For skate testing it is ok to place them in hole in the snow to not be displaced from other skiers. Detection is not affected if there is snow between gates and sensor.



- It is not desirable to perform test over high voltage cables. They might disturb the sensor.
- Gates should be placed at least 1 second apart.
- Make sure LED on sensor is placed on the upper part of the sensor to improve detection range.



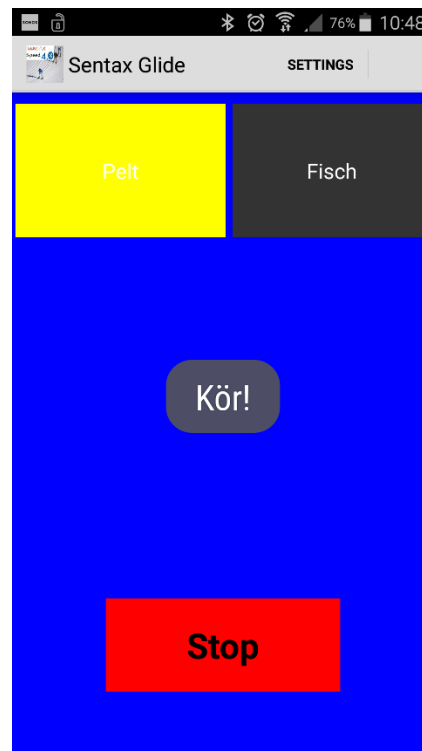
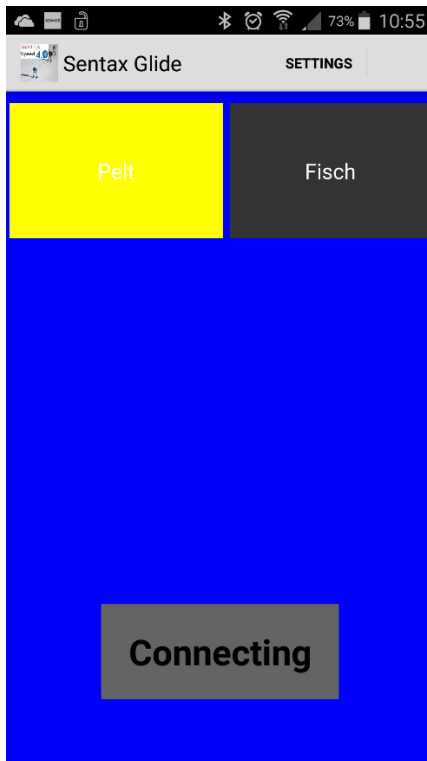
Perform test

Now we are ready to run the test. The procedure to test is simply to choose Ski pair and press **"Start"**. If Voice control was selected you can either press the buttons or speak commands like ski number "One" or "Two" etc. and "Start". It might take some repetitions to have the application to repeat the command. Tests has successfully been performed on some mobiles with wireless headsets. But it might be a conflict for some mobiles when both sensor and headset are using Bluetooth protocol.

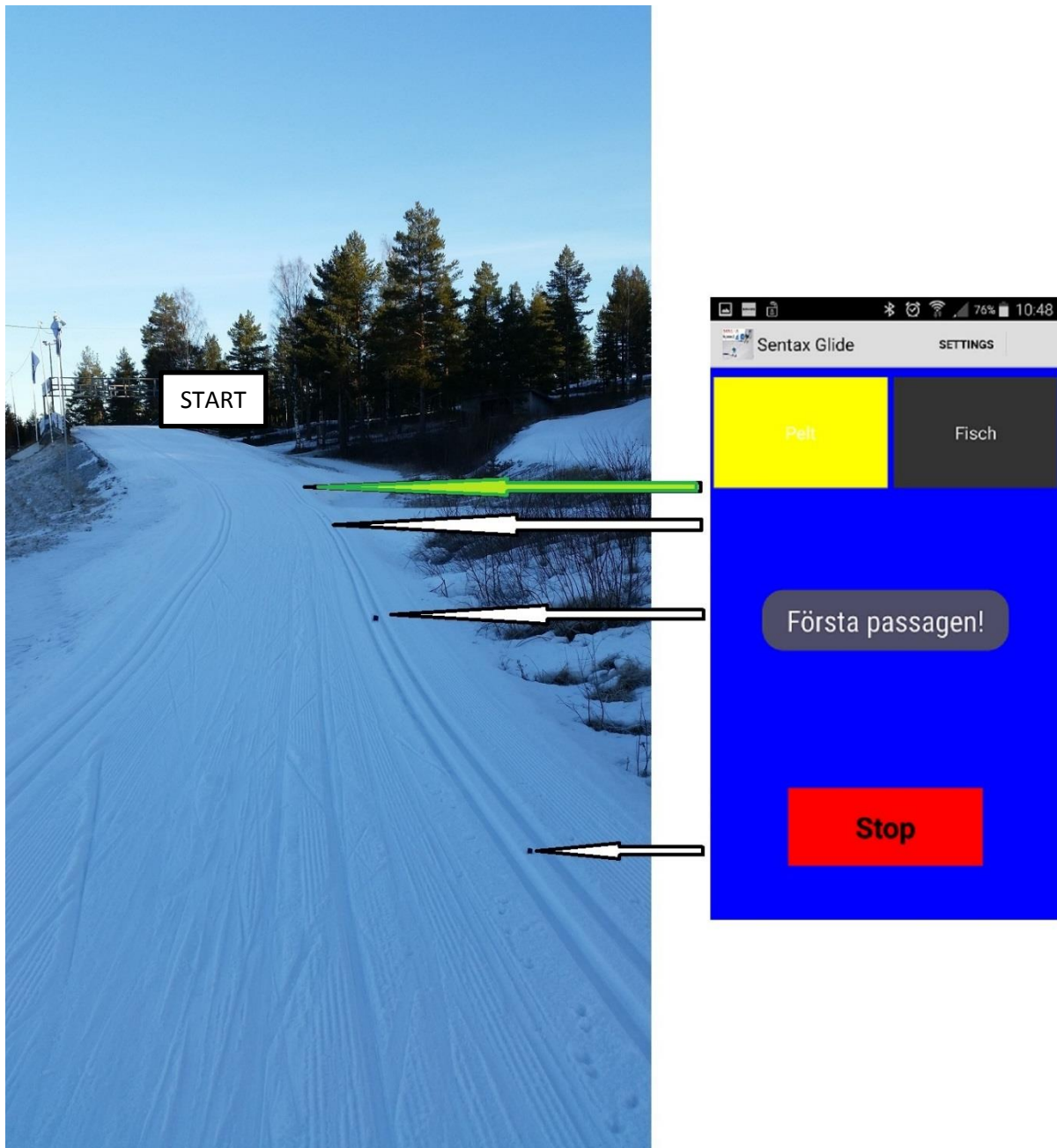


After pressing "Start" it can take up to 10 seconds to connect to sensor, first time. After one test it connects within 1-4 seconds. Application says "Connecting.. "

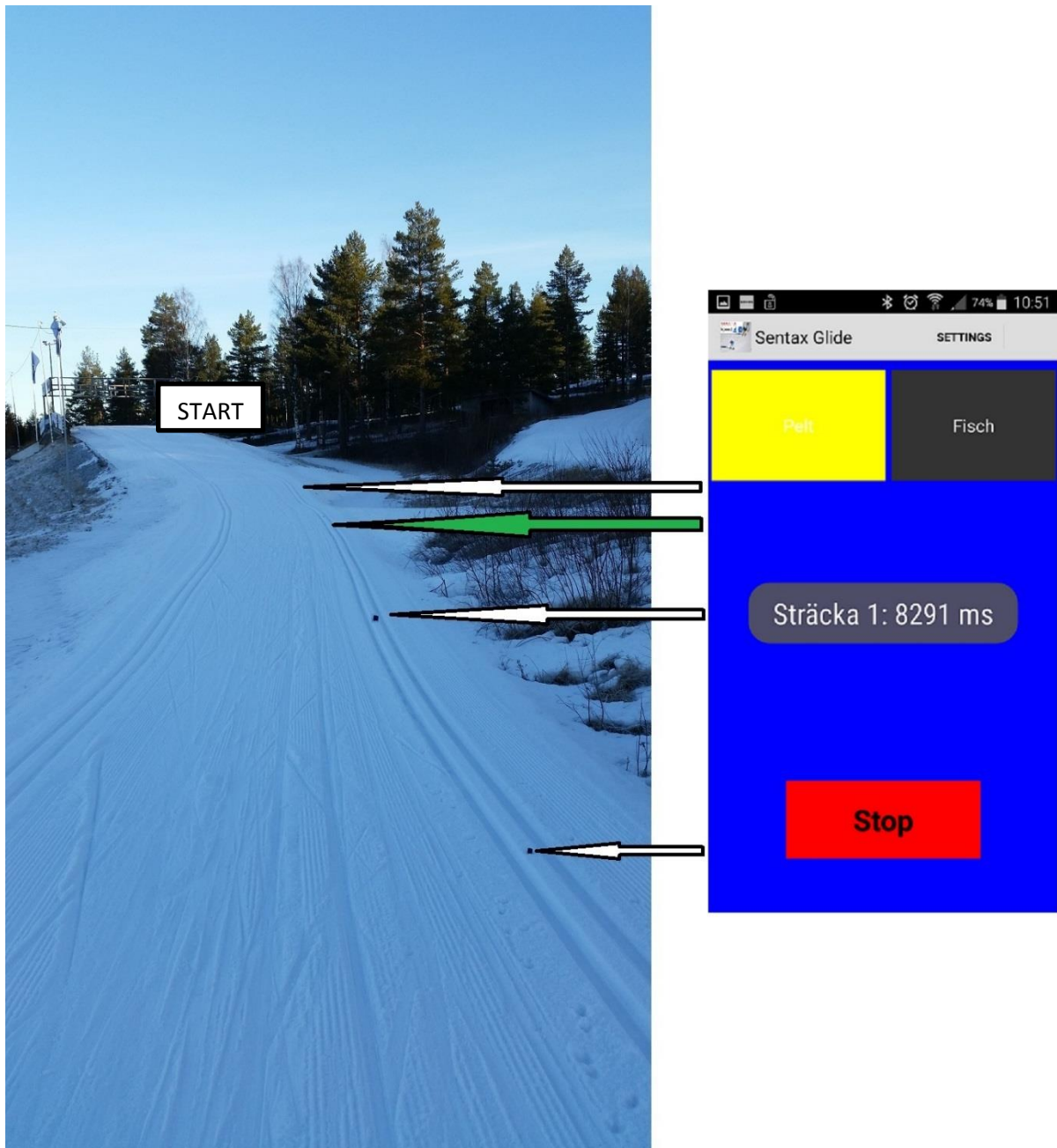
meanwhile. When device is connected to sensor you are good to go and application says "Start Run" and button changes to **"Stop"**. **Remember that sensor will start measure the time after first gate is passed.**



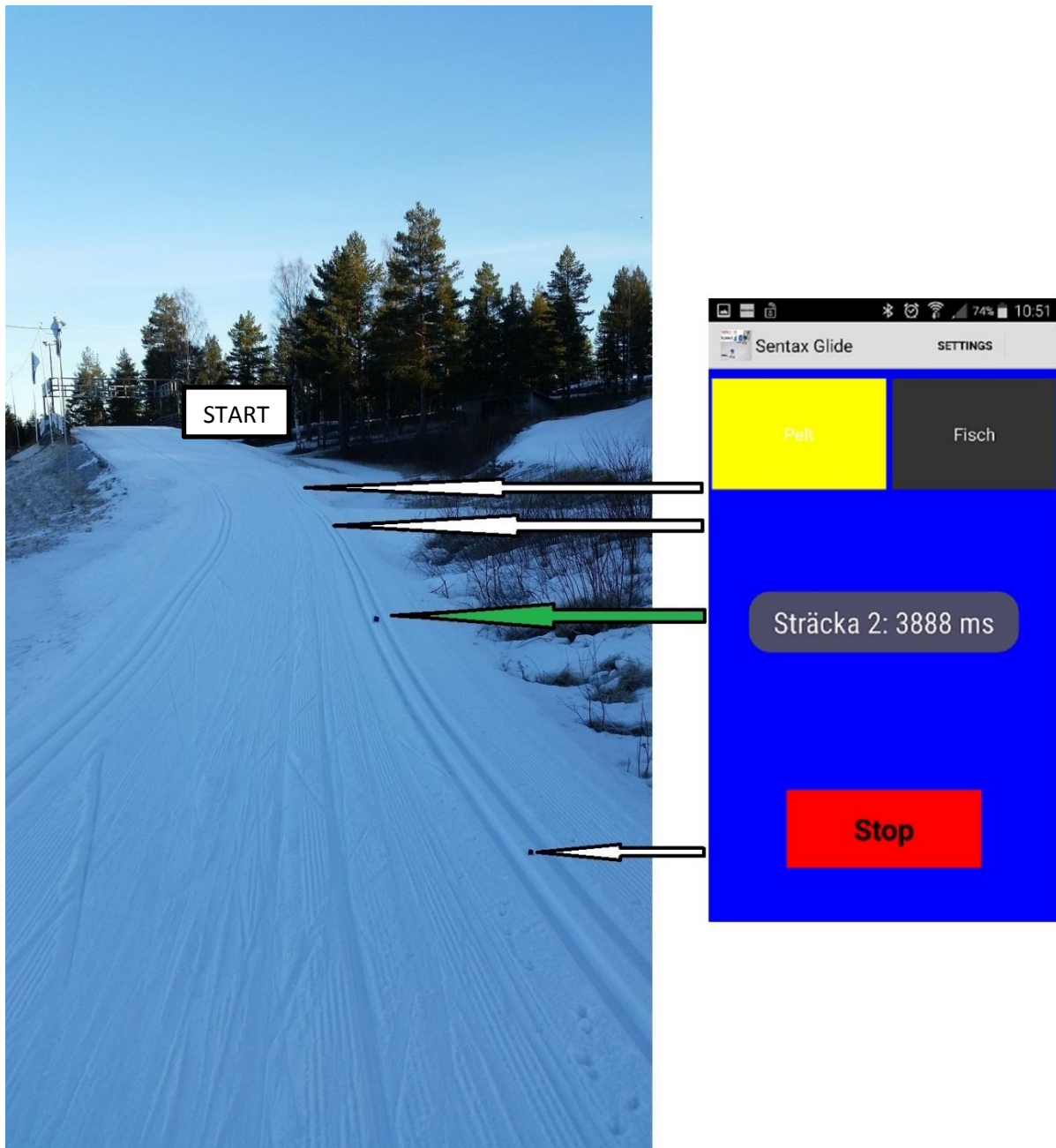
When you pass the first gate application will say "First gate". This is where the sensor starts measuring the time.



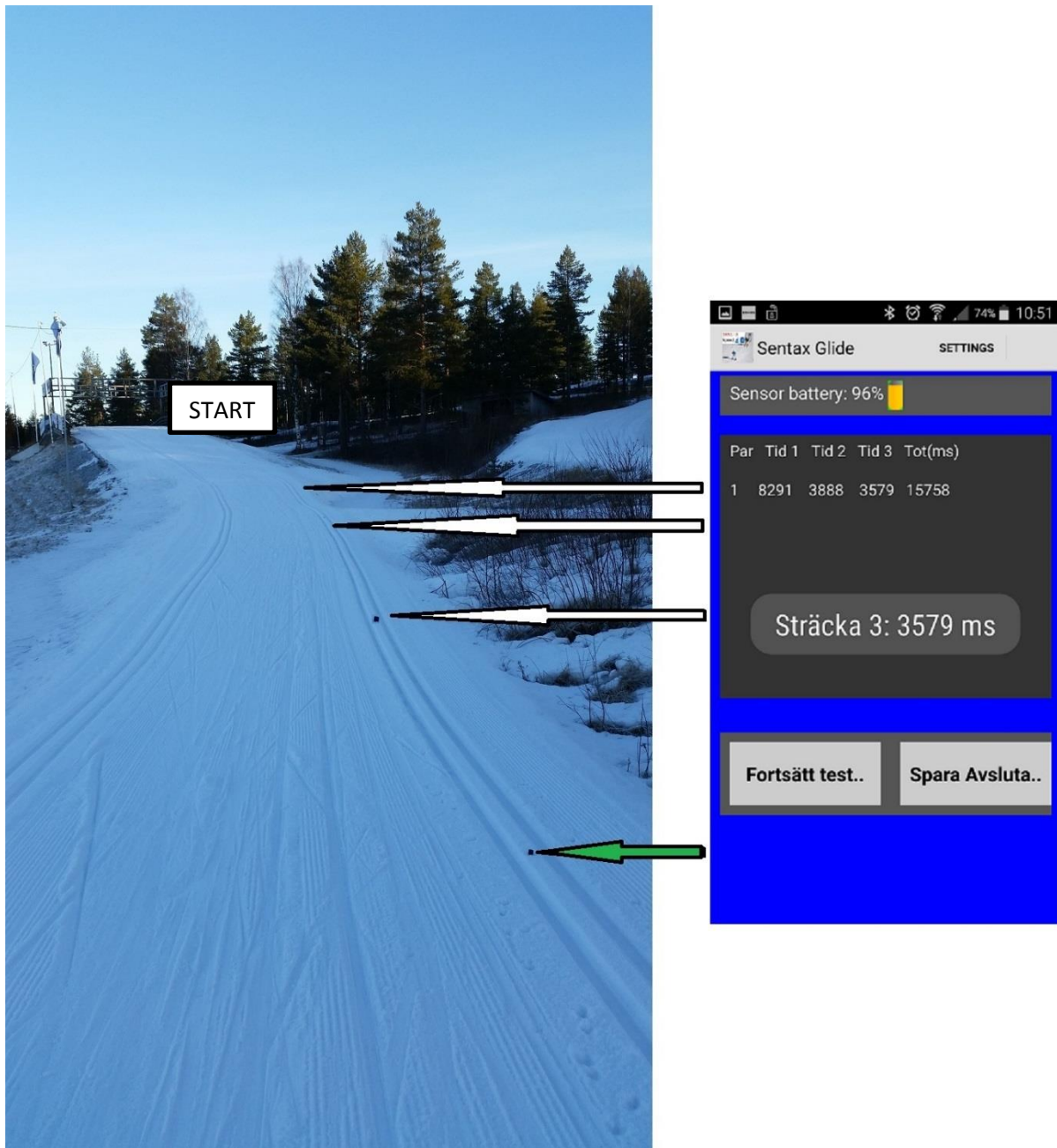
Passing the second gate will present "Split 1" plus the time in milliseconds.



Following two gates will present split times on the application.



When a test is finished result will automatically end up on a temporary table showing split times for each test. This is also where you can decide to upload test to the server or continue testing. **Remember you will need to be connected to internet to upload the result. Otherwise test will remain.**



Please observe that you need to pass the gate within 45 seconds, otherwise test will be aborted and sensor disconnects. If this happens and gates actually have been passed, please check that range between sensor and gate is ok. If the sensor does not detect all gates you can press "Stop" to abort test. You will end up on the result page with all zeros as result.

If something unexpected happens or mobile phone turns off application you can continue the latest test. Could be that the table with results is empty but results are stored on phone until "Quit" is pressed on the result page (with mobile connected to internet).

Remember to have internet connection when quitting test. Otherwise results will not be uploaded and it will not be possible to start a new test.

Analyse results

When test is finished and results are successfully uploaded to webserver you can open <https://sentax.se/glide> and login (upper right corner). User name is the name of sensor and the password is what you choose on "Settings" in the mobile application.

First page shows a summary of all tests, ordered by test date, with filter functions to search for specific temperatures or descriptions. Each test shows what ski or product performed best in terms of a relative value. E.g. 1.00 is the fastest and the reference for the test, 1.01 means 1% slower.

If the mobile was connected to internet during test it will present an estimation of the weather. If this is not good enough it can be changed on the result page after pressing "More Info".

The screenshot shows the Sentax Glide web application interface. At the top, there is a search bar and two sliders for Temperature (C) and Humidity (%). Below this, there is a list of test results for 'Skyttis' on four different dates in 2018. Each test entry includes a map, test info, ski pair details, and a result table.

Test Date	Test Info	Ski pair - Descr	Result
2018-11-30	Test type: Ski test Weather: Clouds Temp(C): 3.6 Humid(%): 93 Snow type: Artificial Speed (km/h): 10.9	Speed 812 B Speed 812 Speed DP Speed DP B	1 1.01 1.02 1.02
2018-04-13	Test type: Ski test Weather: Clear Temp(C): 7 Humid(%): 92 Snow type: Wet Speed (km/h): 26	Fisch FX02.mod Fisch FX02	1 1.01
2018-04-12	Test type: Ski test Weather: Temp(C): 7 Humid(%): 92 Snow type: Wet Speed (km/h): 26	Ski 3 Ski 2 Ski 4 Ski 1	1 1.02 1.04 1.04
2018-04-11	Test type: Ski test Weather: Temp(C): -1 Humid(%): 88 Snow type: Coarse Speed (km/h): 28.3	Fisch FX02 Pelt CD021	1 1.01

Figure shows first page with an overview of all tests performed with the sensor. To view all the test runs performed in one test you need to click on "More"

The result page holds all the details from the test what, when and in which order tests were performed. Here you have the option to change weather condition, test types and also ski name if by any chance you selected wrong ski during the test. If some tests malfunctioned or condition changed rapidly you can remove certain tests. Summary will be automatically updated thereafter. **All time splits are presented in milliseconds.**

Results Ski test 2018-04-12

Back
Export to Excel

Summary average relative results

Ski pair	Split 1 (11.7 km/h)	Split 2 (21.2 km/h)	Split 3 (26 km/h)	Total	Description	
Ski 3	1	1	1	1		Update
Ski 2	1.008	1.032	1.027	1.02		Update
Ski 4	1.011	1.051	1.045	1.04		Update
Ski 1	1.013	1.055	1.040	1.04		Update

All test results

Time	Ski pair	Split 1 (ms)	Split 2 (ms)	Split 3 (ms)	Time tot (ms)	Description	
2018-04-12 12:23.34	Ski 1	8702	9562	7861	24145		Update/Remove
2018-04-12 12:25.35	Ski 1	8861	9598	7882	24139		Update/Remove
2018-04-12 12:28.29	Ski 2	8647	9479	7748	23872		Update/Remove
2018-04-12 12:31.24	Ski 2	8641	9580	7838	24057		Update/Remove
2018-04-12 12:34.03	Ski 2	8824	9355	7598	23577		Update/Remove
2018-04-12 12:36.28	Ski 1	8742	9888	7875	24485		Update/Remove
2018-04-12 12:38.86	Ski 3	8608	9123	7472	23203		Update/Remove
2018-04-12 12:41.28	Ski 4	8682	9481	7678	23809		Update/Remove
2018-04-12 12:44.09	Ski 4	8861	9615	8044	24520		Update/Remove
2018-04-12 12:46.39	Ski 3	8557	9292	7575	23364		Update/Remove

Test information

Date: 2018-04-12
 Test type: Ski test
 Name:
 Place: Skyttis
 Weather:
 Snow type: Wet
 Snow temp: 0
 Air temp: 7
 Humidity(%): 62
 Comment:
 Update test

Figure shows the result page. Here you can analyse each test run and update weather, remove test runs and change ski pair.

Battery

Sensor is supplied by a coin cell battery size CR2450. Theoretically it lasts for 100 days depending on usage and storage. There is no problem testing in really cold conditions but storing the sensor cold will decrease lifetime. Sensors bought from Dec. 2018 have a feature that turns off the sensor when lying beside the magnets in the case. This feature provides that battery lasts up to 1 year.

Changing battery is made by removing the 2 screws on backside of the sensor and picking out the coin cell manually.



Trouble shooting

- **When you press "START" it says "Connecting.." then nothing happens.**
-Go to settings in application upper right corner and press "Sensor" button. If it does not show up in list there is no battery left.
- **Application connects to Sensor and says "Start Run" but it does not detect any gates.**
-Make sure you have the correct distance between Sensor and gates. Less than 30 cm. You can also try to sweep the gate pass the sensor on a short range to see that it detects. If it still not detects, contact bjorn@sentax.se and describe the problem.
- **Application detects gate before passing it or when starting the test run**
-This occurs if you were standing in another direction when application said "Start run". Remember to always position in the same way before starting the test.