

UniGo 3005/5005 Laptimer User Guide

Important safety instructions

PLEASE READ THE SAFETY INSTRUCTIONS CAREFULLY

- Read the instructions.
- Keep these instructions.
- Follow all instructions.
- Be careful not to drop it on the ground.
- Do not leave it under heavy objects.
- Be careful not to cut the cables with sharp objects.
- Clean only with a dry cloth.
- Refer all servicing to approved service personnel.

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Copyright and acknowledgements

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DESIGN AND PRODUCTION

Designed and manufactured in Denmark by Unipro ApS.

The UniGo Laptimer series was designed by Palle Schultz, Denmark:
www.Palleschultz.dk

Unipro reserves the right to make changes and improvements to any of the products described in this document without prior notice.

Part numbers:
01-03-001 UniGo 3005 basic kit (black)
01-03-001 UniGo 5005 basic kit (black)

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ABOUT THIS USER GUIDE

This guide was produced by Unipro ApS.

UniGo 3005/5005 User Guide version 1.00

Made for UniGo firmware version 1.0x.xxx

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Introduction

This User Guide contains all relevant information about your new UniGo Laptimer.

Get started with the UniGo in 5 minutes with the Quick Guide.
Read all about the advanced features and functions in the Reference Guide.

Before you start, please check that your UniGo package contains the accessories described below.

CONTENT OF PACKAGE

The UniGo package contains the following:

- UniGo Laptimer.
- RPM wire.
- Power cable.
- Battery pack for 6 x AA cells.
- This User Guide.

If any of these items are missing please contact your dealer.

Note: You should retain the packaging in case you need to transport the unit.

UNIQUE UNIGO IDEAS

UniGo combines many new ideas not seen before in an Unipro Laptimer:

- High resolution display with gray tones. Providing more than 40000 pixels with 16 gray levels makes text and graphs easy to read.
- High-speed USB connector for fast and easy upload of data to a PC or MAC.
- Standard file system means no driver needed on the PC or MAC. Looks like a standard Flash drive.
- Very high brightness, fully programmable warning LEDs. Clearly visible in full daylight.
- Enough buttons will make it easy to op-

erate. Each menu line is explained with a help text at the bottom of the display.

EASY TO USE

Even with all the advanced features, the Laptimer is very easy to use.

The graphical display makes it effortless to see and analyze the lap times and data values saved in the Laptimer. Data analysis can be done directly on the Laptimer without the need to transfer the data to a PC.

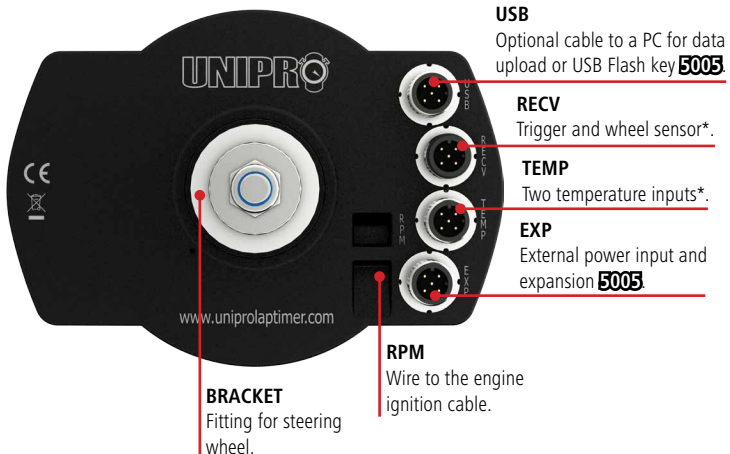
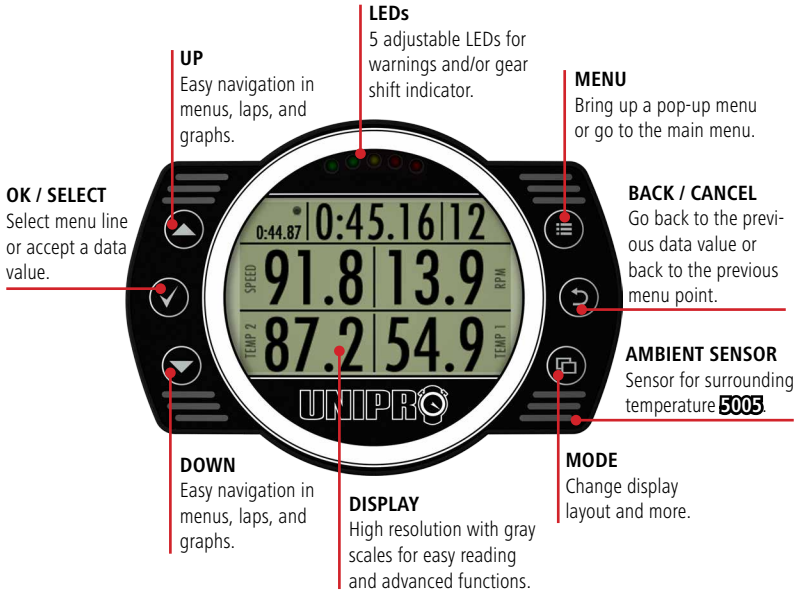
The high resolution display with 16 gray tones is easy to read, and supports different sizes of text and numbers. Even icons are much nicer to look at.

The feedback we get from drivers and teams about UniGo tells us that we have succeeded in making the UniGo easy to use.

Overview

Please note that this user guide is intended for both UniGo 3005 and UniGo 5005. It is clearly stated throughout the manual when the function is different on the two Laptimers.

To identify if the function is for 3005 only, a small **3005** icon is shown and for 5005 only it is **5005**.



Actual size
1:2

* Cable splitter needed

Specifications

Lap memory	200 3005 Unlimited 5005
Log memory	120 minutes 3005 Unlimited 5005
Channels logged	Lap time, position, RPM, 2 x temperature, speed, gear, voltage. Max. 128 channels with expansion boxes 5005
Resolution	1/10000 sec, 1 mm, 1 RPM, 0.01 °C, 0.01 km/h, 0.01 V
Logging frequency	10 Hz (fixed)* 3005 1 - 60 Hz (programmable) 5005
Sensor inputs	RPM, 2 x temperature**, speed**, trigger
GPS	No
Trigger	Magnet, infrared, active loop
Split times	Magnet 3005 Magnet, wheel sensor 5005
Real-time-clock	No 3005 Yes 5005
Power supply	4.5 - 18V DC***. Programmable low-battery warning
Expandable	No 3005 Yes 5005
Display	256 x 160 pixels, 16 gray tones, top view
Backlight	No
LED warnings	5 high-brightness, fully programmable
CPU	32-bit low-power
Data upload	USB high-speed via optional USB cable or Unipro Flash key 5005
Buttons	Up, down, ok, back, menu, mode
Software included	Basic 3005 / full 5005 edition of Off Camber Data analyze software. Both Windows and MAC version
Casing	Lightweight plastic
Waterproof	Yes
Dimensions	131.5 x 94.0 x 18.0 mm (5.18" x 3.70" x 0.71")
Weight	300 g (10.58 ounces)****

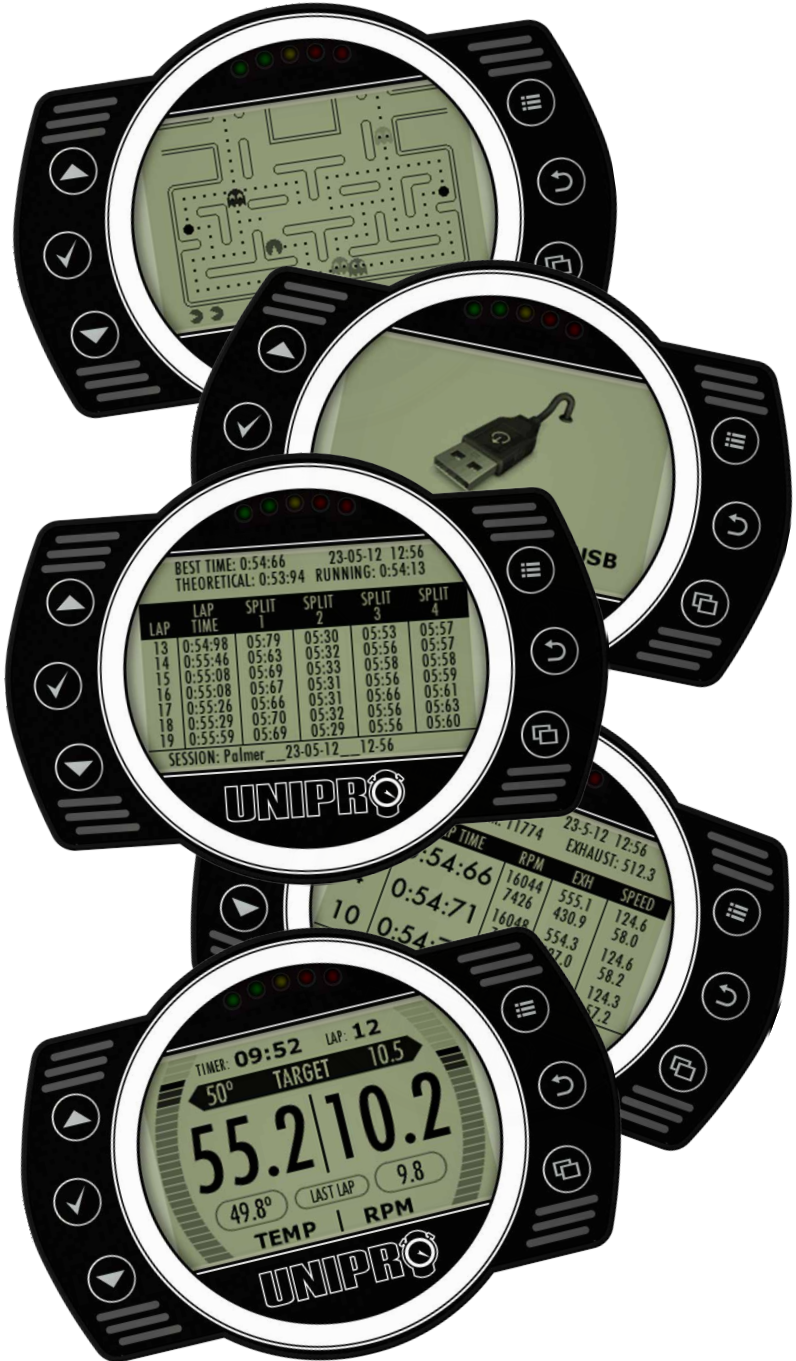
* **Frequency:** Voltage logged at 1 Hz.

** **Shared connector:** Optional cable splitter needed.

*** **Direct supply:** From kart battery through optional DC/DC converter the range is 8-14 V DC.

**** **Weight:** Includes Laptimer, power cable, RPM cable and fittings.

Examples



Installing the Laptimer

A good installation is key to get good and reliable operation of UniGo. Read this installation guide and learn how to:

Install the Laptimer, attach cables and sensors and see how to mount it all on the go-kart.

You will be ready to go in 20 minutes...

MOUNTING ON STEERING WHEEL

The first step of the installation is the mounting of the Laptimer on the steering wheel. The Laptimer should be mounted at the top of the steering wheel to make it easy to read during driving and to operate it in the pit.



UniGo mounted at the top of the steering wheel for easy reading and operation.

The Laptimer is mounted using the included bracket and you need to be carefully to mount all the hard and soft discs in the right order to avoid vibrations and to ensure the correct distance from the steering wheel.



Start the installation with a soft disc.



Finish with a soft disc, hard disc, washer and the nut.

Installation



UniGo mounted at the correct distance to the steering wheel.

Before tightening the nut, make sure that all the cables can be connected without conflicting with the steering wheel or other obstacles.

CONNECTING POWER

UniGo is supplied with a battery holder with room for six AA batteries. You can use standard AA Alkaline batteries or rechargeable types like NiMH. Make sure the battery holder is securely attached to the frame. If any of the batteries are allowed to move and loose contact, the Laptimer will not functioning properly.



Battery holder with six AA Alkaline batteries powering UniGo. Rechargeable can be used.

Another alternative is to power UniGo from a standard rechargeable battery pack or from the go-kart battery through the optional DC/DC converter.



Rechargeable battery pack powering UniGo.

A rechargeable battery pack will give a lot of power with a low weight. It can be recharge using the same connector as used for the go-kart's battery.

With the DC/DC converter you can power the Laptimer directly from the go-kart's battery.

CONNECTING RPM WIRE

The RPM wire is used to pick up the engine's revolution count by sensing the pulses on the ignition cable going from the ignition coil to the spark plug.

The ignition is a very noisy signal and extra care should be paid on installing the RPM wire. The wire can be removed from the Laptimer and attached again if needed. It is simply a wire going through two holes with a loop.



Run the RPM wire away from other cables.

To make the best possible installation, keep the RPM wire away from all other cables.

Installation



RPM wire attached with cable ties.

The RPM wire needs to run all the way from the Laptimer to the engine on the back. Secure the wire all the way with cable ties.



The RPM wire is running alone all the way to the ignition.



RPM wire mounted to pick up the ignition signal from the ignition wire.

The RPM wire is attached to the ignition cable in a way that gives a good pick up of the signal. Twist the wire around the cable and make a loop at the end like shown on the picture.

RUNNING CABLES

The installation of the Laptimer should be seen

as a permanent installation on the go-kart and the time to run the cable in a nice way is time well spend.



Cable fixed to frame. Run RPM wire separately.

Use plenty of cable ties and make sure to use nice soft bends on the cable. When tightening the cable ties, make sure not to tightening them too hard to avoid squeeze the cable.



Cable fixed to the frame with cable ties.

Running the cables from the Laptimer on the steering wheel is the biggest challenge. The cable need to be mounted in a way that the steering wheel can be moved freely.

Installation



Cable fixed to the frame with cable ties.

Attach the cables together with a cable tie and attach the bundle to the steering column. Make a soft bend with a suitable length and check the steering wheel have total freedom in turning. The cables should not pull at the connectors when turning and no sharp bend should be allowed.



Professional installation will ensure professional results.

SPLITTERS

Cable splitters are used to increase the number of sensor that can be connected to the Laptimer.



Gray splitter for temperature and black for receiver and speed.



Two splitters mounted to increase number of sensors.

Two different cable splitters are used. A gray version is used for temperature and a black version for everything else.



The splitters reduce the number of cables to the steering wheel.

The splitters reduces the number of cables to the steering wheel and is part of the permanently installation. Make sure that splitters are securely fasten to the frame.

Installation

MAGNET RECEIVER

The magnet receiver uses permanently magnets placed in the asphalt to trigger the Laptimer. There is typically between 1 and 3 magnets on a track. If there are more than one, the rest is used for split points.



Magnet receiver mounted at the lowest point on the go-kart.

The magnet receiver need to be mounted as close to the asphalt as possible, typically on the bottom plate at the front. Use the included bracket and drill a hole in the plate. The receiver need to be facing either against the front or the rear. Do not mount it facing left or right.

IR RECEIVER

The IR receiver use infrared light to trigger the Laptimer. A Unipro IR transmitter is placed at the finish line and the infrared light goes across the track. The infrared receiver placed on the kart will receive the infrared beam and trigger the Laptimer.



IR receiver mounter at the front, facing the right way at the finish line!

The IR receiver is installed on the front of the kart. It should be pointing to the left or right depending on the placement of the transmitter.

SPEED KIT FRONT

The speed kit for the front wheel is used if the kart do not use brakes at the front wheels. Start by mounting the centering bush the bearing. This will be used to ensure a perfect centered sensor disc.



The centering bush is placed in the bearing.



Sensor disc is fixed using the three screws and centered using the centering bush.

Then place the sensor disc and fasten the three screws. Make sure to tighten them equally.

Installation



T-junction mounted in the cooling water



T-junction mounted in the cooling water hose with a temperature sensor.

SPEED KIT REAR

The speed kit for the rear axle is available in different sizes to match the axle used. Mount the sensor disc and tighten the screw to secure it. The sensor disc has six magnets to give a good resolution on speed and distance.



Speed kit mounted on rear axle. Notice the nice bend on the wheel sensor cable.

The wheel sensor is mounted using the included fitting. The important part is to get the distance between the sensor and the magnets 3 - 10 mm and to make a soft bend on the cable as seen on the picture.

WATER TEMPERATURE

The water temperature sensor is typically mounted in the T-junction that goes into the cooling water hose. First mount the sensor in the T-junction and then mount the T-junction the hole. Make sure the hose is waterproof by tightening the clamps.

CYLINDER TEMPERATURE

The cylinder head temperature is measured just below the spark plug. The cylinder temperature sensor is available in two different sizes and it is important to order the right one.



Sensor mounted instead of the washer on the spark plug.



Cylinder head temperature sensor mounted below the spark plug.

Before mounting the cylinder sensor, remove the washer from the spark plug.

Installation

EXHAUST TEMPERATURE

The exhaust sensor is mounted in the exhaust pipe. The fitting for the exhaust sensor is welded to the exhaust 12 cm (4.7 inch) from the backside of the piston. That way the sensor measures the temperature of the gas and not the flames.

Start by welding the exhaust fitting to the exhaust pipe and then drill a $\varnothing 4.5$ mm hole through the fitting for the sensor.

Always check if local regulation might prevent you from using an exhaust temperature sensor in the race.

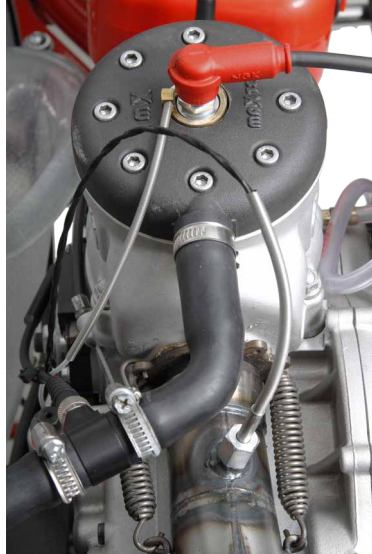


Drill a $\varnothing 4.5$ mm hole for the sensor through the exhaust fitting.



Exhaust fitting welded on the exhaust pipe.

Place the exhaust sensor in the fitting and fasten the nut. Do not tightening it too much.



Exhaust sensor mounted with a big soft bend on the cable.

Make sure the cable is not touching the exhaust pipe and make a soft bend on the cable like shown on the picture.

Installation

Quick Guide

Read the Quick Guide and learn how to use the basic functions of the UniGo:

Turn UniGo on and off, start logging data, analyze them on UniGo and transfer them to a computer with the optional USB cable.

You will be ready to go in 5 minutes...

SIX BUTTONS

For easy operation we made six buttons on UniGo. They are clearly marked with a small icon, but here is the basic description of each button.

- ▲ The **up** button is used to move up in menus and for increasing values.
- ▼ The **down** button is used to move down in menus and for decreasing values.
- ✓ The **ok** button is used to go to the next menu, open up a setting for changing and for accepting the changes made.
- ≡ The **menu** button is used to go to the main menu and to bring up the pop-up menu.
- ↶ The **back** button is used to go back to the previous menu and to cancel any changes made.
- ⊞ The **mode** button is used to change between different modes. That could be different run mode screens, analyze screens etc.

2 WAYS TO PRESS BUTTONS

To use UniGo, you need to know how to press the buttons in 2 different ways:

1. A short press - ▲ ✓ ▼ ≡ ↶ ⊞
2. A long press - ▲¹ ✓¹ ▼¹ ≡¹ ↶¹ ⊞¹

For the general use of UniGo, it is only necessary to use the short press.

When changing values, it is possible to keep pressing a button to speed up the change. After a short while, the key will start to repeat and after a little while more, it will start to accelerate in the change.

TURN UNIGO ON

There are 2 different ways to turn UniGo on:

1. Press the **mode** button (⊞) shortly to start the Laptimer manually.
2. Start the engine and UniGo will start when it detects the RPM signal.

UniGo starts by showing the startup screen including information about firmware version number, battery voltage, memory used and the environment temperature. It will also show the temperature sensors connected and what type they are.

The startup screen will show an animated Unipro logo and the owners name. If no owner name is programmed, it will show the Laptimer's serial number.

All this information can also be found in the Info menu.

Quick guide



Startup screen with information about UniGo and temperature sensors.

When UniGo is starting up you can press different buttons to go directly to different screens. Pressing a button will also skip the startup screen.

- Press the **mode** button (⏏) to go directly to run mode.
- Press the **back** button (⏪) to go directly to analyze mode with the latest session selected.
- Press the **menu** button (≡) to go directly to the main menu.

If you do not press any buttons, UniGo will start up in analyze mode.

You can add your own startup picture. Just copy a 4 bpp bitmap files called "startup.bmp" into the /Pictures folder. The size should be 135 x 160 pixels.

SCREENSAVER

The purpose of the screensaver is actually not to save the screen, but to tell you that UniGo has been doing nothing for quite some time. The time before the screensaver screen is shown is programmable from the UniGo setup menu. Please see "SCREENSAVER TIME" on page 32. It is however possible to enter the screensaver manually.



Start the screensaver from the popup menu.

Either press the **menu** button (≡) from the main menu and select "START SCREENSAVER" or press the **menu** button (≡) until the screensaver screen is shown.



Screensaver ready for adjusting the countdown timer value.

The screensaver provides one very useful feature. A countdown timer (and for UniGo 5005 also the clock). A small help text is displayed at the bottom of the display to remind you about this feature. Simply press the **up** button (▲) to adjust the timer. Each press will adjust the timer one minute. When finished adjusting the timer, it will start counting down to zero for every second.



Screensaver with the countdown timer activated. **3005**

Quick guide



Screensaver with the countdown timer activated including time and date. **5005**

When the timer reach zero a alarm icon is shown in the display and the yellow LED is flashing.



Screensaver after count down to zero. The yellow LED will be flashing. **3005**

You can use this countdown timer to make sure you are in time for the next race. Just remember that the automatic power off might turn UniGo off, before the countdown timer reaches zero! To adjust the power off time see "AUTO POWER OFF TIME" on page 33.

If you want to stop the countdown timer, use the down button (▼) to adjust it to zero.

TURN UNIGO OFF

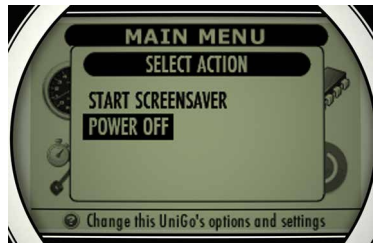
There are a lot of different ways to turn UniGo off.

Press and hold it down to turn UniGo off. When you see "POWER OFF" in the display, you can release the button again.



Power off screen when holding down the **mode** (⏻).

UniGo will also turn itself off if no button is pressed and no RPM, speed or trigger is detected after a preselected time. Please see "AUTO POWER OFF TIME" on page 33. You can also turn it off from the main menu by pressing the **power** (⏻) icon. Or finally you can press the **menu** button (≡) to bring up the popup menu like shown here and select "POWER OFF".



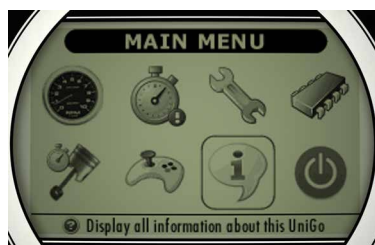
Power UniGo off from the popup menu.

It is important not to turn UniGo off by removing the power. Important information might be stored when UniGo powers down. Worst case, the file system might be affected like your computer if you just remove the power.

BUILT-IN HELP

When you move around in menus, UniGo will display one line of help text at the bottom of the display. Use this line to get familiar with the different settings in UniGo.

Quick guide



Example on the help text describing the current selection.

DRIVING

When UniGo detects a RPM signal from the engine, it will automatically go to run mode. It will automatically start to log all data from sensors and measure lap and split times. Before you can start driving there are just a few settings you need to do. If you use a magnet trigger, you need to set the following settings:

- Magnet count: See "MAGNET COUNT" on page 26
- Magnet delay: See "MAGNET DELAY" on page 26
- Wheel size: See "WHEEL SIZE" on page 27



Typically run mode 1 when driving.

There is not much you can do in run mode except concentrating on driving! You will be able to change between three predefined layouts by pressing the **mode** button (⏏). This will toggle through the different run modes. UniGo will remember the one you prefer and it will start in the same mode as the last time.

- Run mode 1 is for four data fields.
- Run mode 2 is for gear karts with two data fields and last lap data.
- Run mode 3 is for two data fields with best lap information and last lap data.

ANALYZING

When analyzing you will typically start with the overview screen. This screen will give you the quick overview of the three best laps with the minimum and maximum values for the most important sensors.

THEORETICAL: 0:53:94		23-5-12 12:56		
LAPS: 21	RPM: 11774	EXHAUST: 512.3		
LAP	LAP TIME	RPM	EXH	SPEED
6	0:54:66	16044 7426	555.1 430.9	124.6 58.0
4	0:54:71	16048 7458	554.3 427.0	124.6 58.2
10	0:54:74	15986 7315	555.7 432.1	124.3 57.2
SESSION: Palmer		23-05-12 12:56		

Quick overview of three best laps in analyse mode.

You can toggle around different analyze screens by pressing the **mode** button (⏏). Another important screen is the lap and split times screen.

BEST TIME: 0:54:66		23-05-12 12:56			
THEORETICAL: 0:53:94		RUNNING: 0:54:13			
LAP	LAP TIME	SPLIT 1	SPLIT 2	SPLIT 3	SPLIT 4
13	0:54:98	05:79	05:30	05:53	05:57
14	0:55:46	05:63	05:32	05:56	05:57
15	0:55:08	05:69	05:33	05:58	05:58
16	0:55:08	05:67	05:31	05:56	05:59
17	0:55:26	05:66	05:31	05:66	05:61
18	0:55:29	05:70	05:32	05:56	05:63
19	0:55:59	05:69	05:29	05:56	05:60
SESSION: Palmer		23-05-12 12:56			

Overview of split and lap times.

You can scroll the screen by using the **up** (▲) and **down** (▼) buttons.

TRANSFER TO A COMPUTER

It is very easy to transfer data to the Off

Quick guide

Camber Data program. Just go to the main menu and insert the optional USB cable in the top connector.



USB mode when connected to a computer.

When the cable is attached, UniGo cannot be operated because the computer use the Flash drive. The Off Camber Data program can then transfer the data files.

Like any other Flash drive you need to eject the drive safely before removing the cable from the computer.

TRANSFER TO AN UNIPRO USB FLASH KEY **5005**

It is very easy to transfer data to the Off Camber Data program using the optimal Unipro flash key. Just go to the main menu and insert the flash key in the top connector as shown on the next picture.



Unipro USB flash key mounted in the USB connector.

When the flash key is inserted, the usb menu will appear.



USB menu when flash key is inserted.

Simple press "COPY NEW SESSIONS" and all new sessions will copied to the USB flash key. Depending on the "AUTOCLEAR AFTER TRANSFER" on page 34 the sessions will automatically be deleted after the transfer. When the sessions are transferred, you can disconnect the flash key and connect it to your computer using the small USB cable supplied

That's how easy it is! If you are ready for some more advanced features, then read the Reference Guide later in this manual.

Also check www.uniproaptimer.com for news and updates.

Quick guide

Configuring the Laptimer

This chapter will learn you all about the configuration of UniGo.

Entering setup, most often settings, and every single setting.
A correct setup is essential for the maximum performance of
your Laptimer so make sure to read this chapter carefully.

You will be ready to go in 5 minutes...

ENTER SETUP MODE

 You enter the Setup menu directly from the main menu.



Entering setup mode is from the main menu.

When entering setup you will see the setup menu as shown below. Here you will find all settings divided into different submenus. These submenus are explained in this chapter.



The setup menu contains the icons for the different settings.

GENERAL SETUP FEATURES

In Setup mode you use the **up** (\blacktriangle) and **down** (\blacktriangledown) buttons to move around in the menu and press the **ok** button (\checkmark) on the relevant line to change the value. To accept the changes press the **ok** button (\checkmark) again or press **back** (\leftarrow) to cancel the changes and revert to the original value.

If a menu line is ending with ":" it means the value can be changed directly by pressing the **ok** button (\checkmark). If the line is ending with "..." it will go into another submenu.

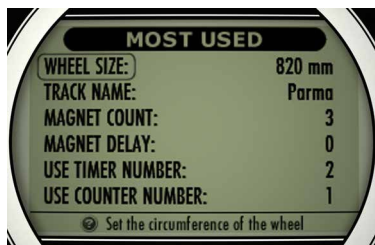
All settings are stored in two different files. The first file contains all the local settings and it is called "LocalSetup.bin" located in the \Setup folder. The other file is called "GlobalSetup.bin" and located in the same folder. The global setup file can be copied from one UniGo to another. It contains all the settings that makes sense to copy from one UniGo to another.

All settings are stored and will not be cleared, even if you remove the power from UniGo.

MOST USED MENU

$\overset{1}{\underset{2}{\underset{3}{\leftarrow}}}$ The most used menu contains all the settings you use very often. You will find the same settings in other submenus, but to make it easy, they are also located here.

Setup mode



All settings you use all the time are located in the most used menu.

Use the **up** (▲) and **down** (▼) buttons to move around in the menu and press the **ok** button (✓) on the relevant line to change the value. To accept the changes press the **ok** button (✓) again or press **back** (⏪) to cancel the changes and revert to the original value.

TRACK MENU

🔑 The track menu contains all the settings related to the track.



All settings related to the track are on the track menu screens. Please notice the difference between 3005 and 5005.

Use the **up** (▲) and **down** (▼) buttons to move around in the menu and press the **ok**

button (✓) on the relevant line to change the value. To accept the changes press the **ok** button (✓) again or press **back** (⏪) to cancel the changes and revert to the original value.

TRACK NAME

It is much easier to identify data if you enter for instance the track name. The track name is simply a text used to identify the track. Enter it as described here: "ENTERING TEXT" on page 35.

RECEIVER

The receiver is used to trigger the Laptimer at the finish line. The Laptimer can use all types of receivers. Chose between IR (infrared), Loop (AMB active loop) and magnet (magnet stripe in the track). Each receiver is a different kind of hardware and the setting need to match the physical receiver connected to the Laptimer.

If the receiver is connected through the black cable splitter, it should be connected to input 1.

MAGNET COUNT

If the receiver is set to magnet, the Laptimer need to know the number of magnets on the track. This is the total number of magnets the kart will pass on one lap.

MAGNET DELAY

This is the number of magnets you need to skip when going from the pit to the finish line. If the delay is set to 2, it means that on the out lap (or first lap) the Laptimer ignores the first two magnets and then start the Laptimer when passing the third one.

IR OR LOOP DELAY TIME

If the receiver is set to infrared or loop, you can chose a minimum delay from one trig to the next. This is the minimum time allowed between two trigs. This is primarily used if an infrared transmitter can reach across the track

Setup mode

and then trigger the Laptimer more than once on the same lap.

SPLIT TYPE **5005**

The typically split type is using several magnets per lap. Sometimes it a better option to use the wheel sensor for setting your own splits.

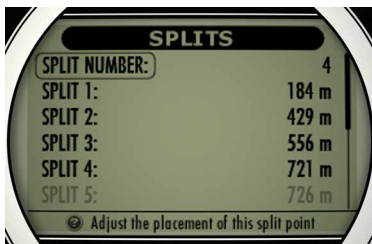
To get reliable splits, make sure the sensor is mounted on a wheel without brakes.

SPLITS **5005**

The splits menu is a submenu where all the individual split points are set. It is possible to set up to 8 split points per lap. The 8 split points will give you 10 times per lap. You will get 8 split times, and then an extra time from the last split point to the finish line. And then of course the lap time.

SPLITS MENU **5005**


The first thing to set is the number of splits per lap. This can be between 1 and 8. When the split count is changed, the correct number of split points are enabled for editing. Set each point as you like and enter the number in either meters or feet.



Splits from wheel sensor with 4 splits programmed.






Notice that the split points are part of the global setup and they can easily be moved from one Laptimer to another.

KART MENU

 The kart menu contains all the settings related to the kart.



All settings related to the kart are on the kart menu screen.

Use the **up** () and **down** () buttons to move around in the menu and press the **ok** button () on the relevant line to change the value. To accept the changes press the **ok** button () again or press **back** () to cancel the changes and revert to the original value.

WHEEL SIZE

The wheel circumference is entered in either millimeters or inches and you need to measure this quite often to keep the system accurate. The best is to use a soft tape measure and do it every time you go out from the pit. It will have influence on the speed and the tire wear counters.

Remember to measure the wheel where the speed sensor is mounted!

TIRE WEAR MENU

The tire wear menu contains all the settings related to the tire wear counters.

Setup mode



Tire wear menu with counter no. 2 active.

Use the **up** (▲) and **down** (▼) buttons to move around in the menu and press

USE COUNTER NUMBER

UniGo have five independent tire wear counters. Each counter can keep track of the distance each set of tires has driven. Only one of the wire wear counters are used at a time.

COUNTER no

The counter number 1 - 5 menu contains each of the tire wear counters. Here you can see the counter, adjust it and reset it.

COUNTER no MENU

There is one counter menu for each tire wear counter.



Screen showing menu for tire wear counter number 2.

The line with the tire wear counter is used to see the counter value and manually adjust it. If you forget to change the tire wear counter number when changing the tires, you can add the distance to the correct counter manually.

RESET COUNTER

If the tires are changed you can reset the tire wear counter here. Change the value to Yes and press the **ok** button (✓).

NAME / TYPE

It is possible to enter a text describing the kart or its type. Please enter the text as described under "ENTERING TEXT" on page 35.

WHEEL MAGNETS

The standard wheel sensor disc for karting includes 6 magnets per revolution. But if you use UniGo on other racing machines, you might use less magnets per revolution. An example could be a motorbike with only one magnet mounted on the wheel. The number of magnets can be adjusted from 1 to 6.


NUMBER OF GEARS

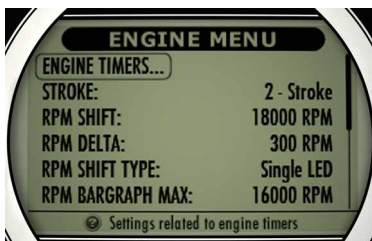
When driving a gear kart, you need to enter the correct number of gears and then learn them afterwards.

LEARN GEARS MENU

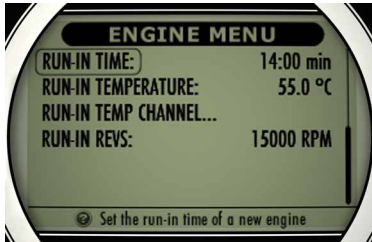
UniGo use the relation between the speed and the RPM to calculate the current gear number.

ENGINE MENU

 The engine menu contains all the settings related to the engine.



Setup mode

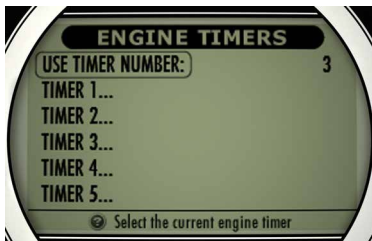


All settings related to the engine are on these two engine menu screens.

Use the **up** (▲) and **down** (▼) buttons to move around in the menu and press the **ok** button (✓) on the relevant line to change the value. To accept the changes press the **ok** button (✓) again or press **back** (↵) to cancel the changes and revert to the original value.

ENGINE TIMERS MENU

The engine timer menu contains all the settings related to the five engine timers.



Engine timers menu with timer no. 3 active.

Use the **up** (▲) and **down** (▼) buttons to move around in the menu and press **ok** button (✓) on the relevant line to change the value. To accept the changes press the **ok** button (✓) again or press **back** (↵) to cancel the changes and revert to the original value.

USE TIMER NUMBER

UniGo have five engine timers, but only one of them is active at a time. You can use one timer for each of your engines to keep track of the number of hours used. Remember to change the timer number when changing engine.

TIMER no MENU

The timer number 1 - 5 menu contains each of the engine timers.



Engine number 3 is used for 5 hours and 26 minutes.

Here you can see the timer value, manually adjust it and reset it.

TIMER no

The line with the engine timer is used to see the timer value and manually adjust it. If you forget to change the engine timer number when changing the engine, you can add the time to the correct timer manually.

RESET COUNTER

If the engine is rebuild or a new engine is used, you can reset the engine timer here. Change the value to Yes and press the **ok** button (✓).

STROKE

The engine stroke is typically only set once. Adjust it to the stroke of the engine. It can be set between 1- and 6-stroke. Please notice that some engines works differently than expected, so if you see the RPM showing incorrect values, try to adjust the stroke setting.

RPM SHIFT

When using gears the RPM shift setting is important. The gear shift indicator is depending on two settings. The RPM shift value and the RPM delta value. The RPM shift value is set to

Setup mode

the engine revolution you want to shift gear at. If you want to shift at 12500 RPM, you need to set this value at 12500.

All five LEDs are used for gear shift indicator, but they have higher priority than normal LED warnings. This means, that even if the warning LEDs might be turned on or are blinking, the shift lift overrules this and turn all the LEDs into a shift light indicator when needed.

RPM DELTA

The RPM delta value is the "distance" between the LEDs when used as a shift light indicator. If you for example want to shift at 12500 RPM and set the RPM delta value to 300, the shift light will turn on at 11900, 12200, 12500, 12800 and 13100 RPM. The smaller delta value, the faster reacts the shift light.

RPM SHIFT TYPE

The RPM shift lights always blinks in a flashy way, but with this setting you can select if the indicator uses the LEDs as single LEDs or all at once. If set to all at once, all LEDs will flash when the RPM shift point is reached and the RPM delta value will not be used.

RPM BARGRAPH MAX

When using the RPM bargraph on the run mode 2 screen, you need to set the maximum RPM value that could be shown. The bargraph covers from 0 to 10000 RPMs. If you set the maximum value to 13000, the RPM bargraph will show values from 3000 to 13000 RPMs.

RUN-IN TIME

When breaking in a new engine you have to set the time the driver should run before returning to the pit. In engine run-in mode, the lap time is not shown, but instead a count down timer. This value is the starting value of this counter.

RUN-IN TEMPERATURE

The temperature is typically very important

when breaking in a new engine and here the target value is set. The target temperature is the temperature you want to aim at, and do not want to exceed too much.


RUN-IN TEMP CHANNEL

Depending on temperature is connected to either the temp 1 or temp 2 input, you can select the temperature channel used when breaking in a new engine here.

RUN-IN REVS

The most important parameter when breaking in a new engine is the target RPM value. Here you set the RPM value the driver should aim at, but not exceed too much.

UNIGO MENU

 The UniGo menu contains all the settings related to the UniGo.



Setup mode



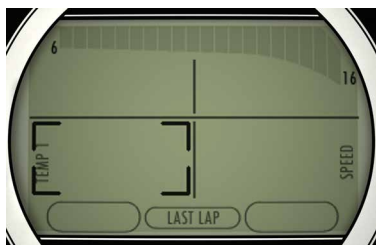
Use the **up** (▲) and **down** (▼) buttons to move around in the menu and press the **ok** button (✓) on the relevant line to change the value. To accept the changes press the **ok** button (✓) again or press **back** (⬅) to cancel the changes and revert to the original value.

LANGUAGE

UniGo can speak several different languages. Here you can choose between the available languages. All text is changed to the new language as soon as it is selected. The name of the language is always a three letter abbreviation. Even if you select a language you cannot read, you can still see the names of the languages.

SET UP SCREENS

The different run modes have different number of data fields. All of them are configurable. This is done from the screen setup screen.



Setup run mode screens. Run mode 2 shown here.

Move around between the different channel fields with the **up** (▲) and **down** (▼) buttons. The active channel field is clearly marked with a rectangle around it. To change

the channel, simply press the **ok** button (✓) to bring up the channel select popup.



Select the channel from the popup window.

All available channels are listed including the not so typical ones like "engine timer" and "none". Accept the new channel by pressing the **ok** button (✓).

WARNING LED SETUP

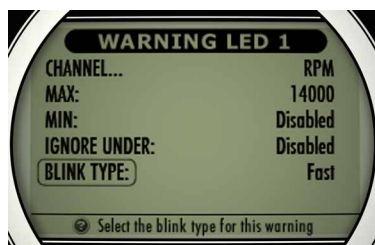
The 5 LEDs are all programmable. This is done from the warning LED setup menu. There is one menu for each warning LED.



Warning LED menu. LED blinking at the same time.

When moving around in the setup menu, the corresponding LED will blink to make it easy to identify each LED. When selecting a LED you will get to the submenu with all the settings for that specific LED.

Setup mode



Simple setup of one warning LED.

The setup of a warning LED consist of several settings. Here is a short explanation of each setting.

Channel: The channel is the most important setting. A popup lets you select the channel you want.

Max: The maximum value of the channel before the warning LED is active. When the channel gets above this value, it will warn you.

Min: The minimum value of the channel before the warning LED is active. When the channels gets below this value, it will warn you.

Ignore under: If the minimum value is set, the ignore under value can be used too. To avoid a constant warning when the channel value is below the minimum warning, this setting will ignore the warning below a certain value. This is typically used for engine water temperature warning.

Blink type: The blink types are "constant", "slow" and "fast". Fast is typically used by the shift light, so if that is enabled, try to avoid it for the warnings.



Example on a more complex warning LED setup. Here all the settings are used.

In the example above, all the settings are used for the temperature 1 channel. Here we can see that this channel is used for the cylinder temperature. Programmeng the warning like this will give the following warning. The LED will blink slowly when the temperature is between 45 and 70 °C and then again if the temperature is above 85 °C.

Please notice that the same channel can be used for more warning LEDs.

LCD CONTRAST

Here you can set the screen contrast - that is the contrast between the screen and the text / numbers on the screen.

The contrast can be set to a value between -15 and +15. You will see the contrast change when adjusting the value.

LED BRIGHTNESS

The LEDs' brightness can be adjusted from 0% to 100%.

The LEDs are very powerfull and running them at high brightness can be dangerous for your eyes. Always keep them at the lowest brightness level, but still visible at full sunlight. Do never look directly into them!

SCREENSAVER TIME

When UniGo is not used for a certain time it will enter in the screensaver mode. This time can be set from 1 minute to 30 minutes in steps of 1 minute.

Setup mode

AUTO POWER OFF TIME

When no buttons are pressed and the Laptimer is not detecting any signals from RPM, speed and the trigger it will automatically power off to save the battery. This time can be set between "always on" and 30 minutes in steps of 30 seconds. If set to "always on" it will never turn off.

TEMPERATURE

UniGo might be used with temperature displayed in either Celsius or Fahrenheit. With this setting you can chose between the two.

UNIT

When using UniGo in different countries, it might be necessary to change the different units between Metric and Imperial. Metric will set speed to kmh, length to meters, sizes to mm. Imperial set speed to mph, length to yards and sizes to inches.

LAST LAP DATA

When the finish line is passed, the Laptimer can show different information on the last lap. The different settings are "Off", "Max. values", "Delta time", and "Both". Here is a short explanation on what the settings does.

Off: No special data values are shown when passing the finish line. Everything working like normal.

Max. values: The maximum values from the previous lap are shown when passing the finish line. Please notice that not all channels have maximum values. An example is the gear channel.

Delta time: When passing the finish line the delta time is shown. That is the time from the lap just finished to the best lap time.

Both: Both "max. values" and "delta time" is shown when passing the finish line.

MYLAPS: With a MYLAPS receiver mounted, the Laptimer can show two-way information on the screen when passing a X2 Loop. This is only for tracks equipped with a MYLAPS X2 system. Please see the separate documentation supplied with the MYLAPS adaptor.

FREEZE TIME

When the last lap data is used, the display will show the selected values for a certain time. This time can be set from 3 to 20 seconds.

SPLIT OPTION

When splits are being used the Laptimer can do different things when passing a split point. The options are "None", "Light", "Split time", "Light & split time", "Delta split time" and "Light & delta split". Here is a short explanation on what the settings does.

None: Nothing special is done when passing a split point.

Light: When a split point is passed, the split time is compared to the best split time and if the new split is better, the green LED is turned on, otherwise the red LED is turned on. The LED is only turned on for 2 seconds.

Split time: When a split point is passed, the split time and the split number is shown in the display. The time and number is shown until the next trigger is passed. When passing the finish line, the Laptimer will show the lap time and lap number instead.

Light + split time: Both split light and split time is active when passing split points.

Delta split time: When a split point is passed, the delta split time and the split number is shown in the display. The delta split time is the difference between the current split time and the best split time. If the number is negative the split time is better. The time and number is shown until the next trigger is passed. When passing the finish line, the Laptimer will

Setup mode

show the lap time and lap number instead.

Light + delta split: Both split light and delta split time is active when passing split points.

BATTERY WARNING

Typically UniGo is powered from a battery. To show a low battery warning in the display you need to set the battery warning to the right value. It totally depends on the battery used. The value set is the value when the battery is considered empty. The first warnings displayed in the display is like this:

100%: battery warning value + 0.60 V

75%: battery warning value + 0.45 V

50%: battery warning value + 0.30 V

25%: battery warning value + 0.15 V

0%: battery warning value

The battery warning can be set between 4.0 and 18 volts in steps of 0.1 V. If you never want any low battery warnings, set the value to 4.0 V.

When using a LiPo battery, it is very important to set the correct battery warning. The LiPo battery has a very steep discharge curve and the voltage drops fast when the battery is almost empty. **We would recommend setting the warning to 9.0V.**

AUTOCLEAR AFTER TRANSFER

When sessions are uploaded to a computer the Off Camber Data program can clear the archive bit on the sessions. When the USB cable is removed from the Laptimer, it can automatically delete the transferred files. If you want that, set this setting to "Yes".

5005 On UniGo 5005 this setting is also used to delete the sessions after they have been transferred to the optional Unipro Flash key.

Be careful with this setting. Deleted sessions cannot be restored again!


USB PASSWORD

When the USB cable is connected, the computer is normally connected to the Laptimer right away. But if you want to protect the data you can set a password that needs to be entered before the USB connection is established. The password can be set between "off" and 999.

RESTORE FACTORY SETTINGS

If you want to go back to the default settings select "Yes" and accept the warning popup by selecting "Yes" again. This will set all the settings back to the default factory settings.

DRIVER MENU

 The driver menu contains all the settings related to the driver.



All settings related to the driver are on the driver menu screen.

Use the **up** (▲) and **down** (▼) buttons to move around in the menu and press the **ok** button (✓) on the relevant line to change the value. To accept the changes press the **ok** button (✓) again or press **back** (⏪) to cancel the changes and revert to the original value.

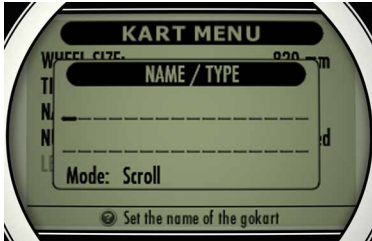
NAME

To ease the identification of the files it is a very good idea to enter the driver's name. Please enter the name as a normal text like described next.

Setup mode

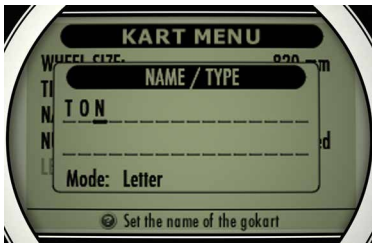
ENTERING TEXT

You always use the same way to enter text in UniGo. When starting, it is in "scroll" mode. Use the **up** (▲) and **down** (▼) buttons to move around in the text.



Entering text starts in scroll mode. Press OK to start entering text.

When pressing the **mode** button (⊞) the mode is changed to "letter". This mode is used to change each character at the cursor. Use the **up** (▲) and **down** (▼) buttons to change the character. You will be able to select both lower case and upper case, numbers and a lot of special characters.



Enter text using the UP and DOWN button in letter mode.



When finished with the text, press the **menu** button (≡) to save it.

When you are finished editing the text press the **menu** button (≡) to save the new text and exit the text entry screen. It is also possible to exit without saving the text or clearing the line.

Setup mode

Reference Guide

In the reference guide you can find detailed information about all features and functions of the UniGo.

To get the most from your UniGo, we recommend that you read this guide in full.

The UniGo is optimized for ease of use, while also incorporating many useful, advanced features.

BASIC INFORMATION

Batteries

When we designed UniGo, we decided not to make any internal battery compartment. Sta

UniTire uses two standard AAA cell batteries. The software is optimized to be energy-efficient for long battery life (typically more than 100 hours).

Please help us in our effort to protect the environment:

1. Do not change the batteries before UniTire tells you to do so.
2. Always turn in your used batteries for recycling.

Low battery symbol

When the batteries reach 2.2 V, the low battery symbol will be shown at the bottom of the display:

You can continue to use the UniTire until the last of the 4 'cells' in the battery symbol has disappeared. At 1.5 V UniTire will turn off automatically.

Pressure handle

The pressure handle is equipped with two air valve buttons. Use one of the buttons to let out air, or both buttons to let out more air.

Communication and power cable

The EXP connector on UniGo is used for external power, but on UniGo 5005 this connector both carries power and communication. This communication is made to expand UniGo. This form for communication is called "daisy chaining" and several external products can be connected together. The first product in the chain will be connected with power.

Display, casing and buttons

The UniGo has a custom made, 256 x 160 pixel graphical display with 16 gray tones and adjustable contrast.

The casing is made of plastic with laser engraved text.

Operating UniGo

SIX BUTTONS

For easy operation we made six buttons on UniGo. They are clearly marked with a small icon, but here is the basic description of each button.

▲ The **up** button is used to move up in menus and for increasing values.

▼ The **down** button is used to move down in menus and for decreasing values.

✓ The **ok** button is used to go to the next menu, open up a setting for changing and for accepting the changes made.

≡ The **menu** button is used to go to the main menu and to bring up the pop-up menu.

↶ The **back** button is used to go back to the previous menu and to cancel any changes made.

⊞ The **mode** button is used to change between different modes. That could be different run mode screens, analyze screens etc.

2 WAYS TO PRESS BUTTONS

To use UniGo, you need to know how to press the buttons in 2 different ways:

1. A short press - ▲ ✓ ▼ ≡ ↶ ⊞
2. A long press - ▲¹ ✓¹ ▼¹ ≡¹ ↶¹ ⊞¹

For the general use of UniGo, it is only necessary to use the short press.

When changing values, it is possible to keep pressing a button to speed up the change.

After a short while, the key will start to repeat and after a little while more, it will start to accelerate in the change.

TURN UNIGO ON

There are 2 different ways to turn UniGo on:

1. Press the **mode** button (⊞) shortly to start the Laptimer manually.

2. Start the engine and UniGo will start when it detects the RPM signal.

UniGo starts by showing the startup screen including information about firmware version number, battery voltage, memory used and the environment temperature. It will also show the temperature sensors connected and what type they are.

The startup screen will show an animated Unipro logo and the owners name. It is possible to add your own logo instead of the Unipro version.



Startup screen with information about UniGo and temperature sensors.

When UniGo is starting up you can press different buttons to go directly to different screens. Pressing a button will also skip the startup screen.

- Press the **mode** button (⊞) to go directly to run mode.
- Press the **back** button (↶) to go directly to analyze mode with the latest session selected.
- Press the **menu** button (≡) to go directly to the main menu.

You can add your own startup picture. Just copy a 4 bpp bitmap files called "startup.bmp" into the /Pictures folder. The size should be 135 x 160 pixels.

TURN UNIGO OFF

- ⏻ Press the **mode** button (⊞) and hold it down to turn UniGo off. When you see

Operating UniGo

"POWER OFF" in the display, you can release the button again.



Power off screen when holding down the **mode** button (⏻).

UniGo will also turn itself off if no button is pressed and no RPM, speed or trigger is detected after a preselected time. Please see "AUTO POWER OFF TIME" on page 33.

BUILT-IN HELP

When you move around in menus, UniGo will display one line of help text at the bottom of the display. Use this line to get familiar with the different settings in UniGo.



Example on the help text describing the current selection.

MAIN MENU

The regular tire pressure gauge simply shows the current tire pressure and continuously updates when air is released by pressing one or both of the valves on the pressure handle.



Main menu with icons for all functions.

Keep pressing the **right** button (➡) at startup to go directly to Pressure mode.

SHIFT LIGHT

UniGo can use the five LEDs as gear shift light. Even if warning lights are active, the shift light have priority and will take control of the LEDs.

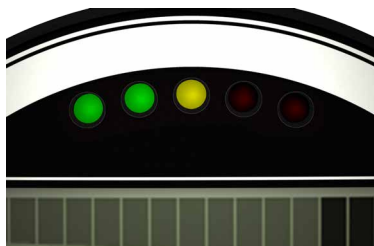


First LED turned on in the shift light.

If RPM Shift Type is set to "single LED" (see "RPM SHIFT TYPE" on page 30) each LED will turn on individually. Two different settings are needed. The first is the optimal engine revolution at which gear should be shifted. This will be indicated with the yellow LED. The second is the distance between the LEDs. If you set the RPM shift point at 12000 RPM, and the RPM delta value to 200 RPM, the first LED will turn on at 11600 RPM. Then 11800 RPM, 12000 RPM etc.

Please see "RPM SHIFT" on page 29 and "RPM DELTA" on page 30 for more information.

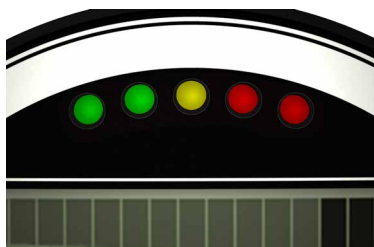
Operating UniGo



Yellow LED means optimal gear shift point.



Warning LEDs 1 and 5 are active.



Shift light when all LEDs are flashing.

If “RPM SHIFT TYPE” on page 30 is set to “All LEDs”, all five LEDs will flash rapidly when the RPM shift point is exceeded. The RPM delta value will not be used.

WARNING. Do not look directly into the LEDs when they are set to high brightness. They are very bright!

WARNING LEDs

The warning LEDs are an important features of the Laptimer. A total of five LEDs are located at the top, and the idea is to warn the driver about something that needs attention. Each LED is totally programmable and flexible. Please see how to do it under “WARNING LED SETUP” on page 31.

The LEDs can either be constant on, blink slowly or blink fast. If the RPM shift light is used, it will use the fast blink, and the warning LEDs should use constant or slow to avoid any confusions. The warning LEDs do have the lowest priority and if shift lights are used, the warnings are not active until gear is shifted.

showing which buttons to press to use the different functions.

WARNING. Do not look directly into the LEDs when they are set to high brightness. They are very bright!

LOW BATTERY

When the battery voltage get too low, a warning icon will be show in the headline and in the help text. The icon in the headline is showing how close to empty the battery is. To see more about the warning levels, please look at “BATTERY WARNING” on page 34.



Low battery warning in headline and in the help text.

RUN MODE

UniGo logs data into sessions. Each session contains all the information about the race and each time the engine is started, a new session is made.

A session can be automatically deleted. That happens if the sessions is less than 2 minutes long. This is to prevent a lot of sessions being

Operating UniGo

generated if the go-kart is warmed up on the pit trolley.

RUN MODE 1

This run mode is used to show the maximum number of data channels. The lap time and lap number will always be shown on the top line. You will also find information about the recording status and the best lap time. If the current lap time is the best, it will be highlighted with inverted text.



Run mode 1 provides four different data channel values at the same time.

The four data channel fields are programmable. Please see "SET UP SCREENS" on page 31.

A small text will help you identify which channel is shown in each location. The data fields are updated twice per second.

If the last lap data is enabled (see "LAST LAP DATA" on page 33) the screen will show the maximum values for the last lap. This is shown for some seconds, but at the same time, the current values are updated just above them.

RUN MODE 2

This run mode is primarily used for gear karts. It will include a gear indicator and a RPM bargraph. The bargraph shown at the top will be updated 10 times per second.

You will also find the lap time, the lap number and the best lap time in the top row. The typical icons are used to show the recording status.



Run mode 2 is used for gear kart and it includes the gear number and bargraph.

Two big data channel values are shown on the display. The two channels are configured under "SET UP SCREENS" on page 31. A small text next to the value will help you identify the channel.

The bottom line will show the last lap maximum value for the two channels. This is updated every time the finish line is passed.

RUN MODE 3

The last run mode is used to show only two data channel values on a kart without gears.



Run mode 3 will show two channel values and best and max values.


Above the lap time, the lap number and the recording icon, the best lap time and the best lap number are shown permanently.

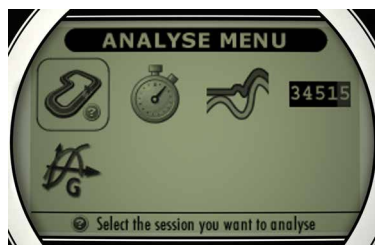
Two big data channel values are shown on the display. The two channels are configured under "SET UP SCREENS" on page 31. A small text next to the value will help you identify the channel.

The bottom line will show the last lap maximum value for the two channels. This is updated every time the finish line is passed.

Operating UniGo

ANALYSE MODE


 The analyse menu contains everything needed to analyse the data directly on UniGo. Analyzing data will always be faster and better using a computer though!




Analyse menu for looking at sessions, times, data values and graphs.

Use the **up** (▲) and **down** (▼) buttons to move around in the menu and press **ok** button (✓) on the icon to go to that menu.

SESSION SELECT

 UniGo logs data into sessions. Each session contains all the information about the race and each time the engine is started, a new session is made.

TIME ANALYSIS

 Several screens can be used to analyse the timing of the race. These screen are listed in the following section. To change between the different screen, simply press the **mode** button (⏏) until you get to the screen you want. Press the **back** button (⏪) to go back to the analyse menu again. Different people have different preferences. Therefore the time analysis screen is remembered so it will start on the same screen each time.

OVERVIEW

When starting analysing a new session, the overview screen is a good place to start. This screen will show the three best laps including the minimum and maximum of three data

channels. It also provides information about the theoretical best lap time, number of laps and the average RPM for the whole session. On an UniGo 5005, the starting time and date is also shown.

LAP	LAP TIME	RPM	EXH	SPEED
6	0:54:66	16044 7426	555.1 430.9	124.6 58.0
4	0:54:71	16048 7458	554.3 427.0	124.6 58.2
10	0:54:74	15986 7315	555.7 432.1	124.3 57.2

THEORETICAL: 0:53:94 23-5-12 12:56
LAPS: 21 RPM: 11774 EXHAUST: 512.3
SESSION: Palmer_23-05-12_12-56

Overview screen with the most important information for the 3 best laps. 5005 version shown.

Use the **mode** button (⏏) to change to the next analyze screen.

LAP AND SPLIT TIMES

The lap and split times screen will provide all the details about the lap and split times including the theoretical best lap time and the best running lap time.

LAP	LAP TIME	SPLIT 1	SPLIT 2	SPLIT 3	SPLIT 4
13	0:54:98	05:79	05:30	05:53	05:57
14	0:55:46	05:63	05:32	05:56	05:57
15	0:55:08	05:69	05:33	05:58	05:58
16	0:55:08	05:67	05:31	05:56	05:59
17	0:55:26	05:66	05:31	05:66	05:61
18	0:55:29	05:70	05:32	05:56	05:63
19	0:55:59	05:69	05:29	05:56	05:60

BEST TIME: 0:54:66 23-05-12 12:56
THEORETICAL: 0:53:94 RUNNING: 0:54:13
SESSION: Palmer_23-05-12_12-56

Lap and split times screen. Including theoretical best lap and best running lap.

Use the **up** (▲) and **down** (▼) buttons to change the laps visible on the screen. The **up** (▲) button will increase the lap number, e.g. scroll the screen up.

Use the **mode** button (⏏) to change to the next analyze screen.

Operating UniGo

RUN MODE VIEW

If you want to analyse the data on a screen that looks like run mode 1, this is the way to do it. This screen will show the same channels as shown in run mode 1 and you can see either the minimum or maximum values for that lap. To toggle between minimum and maximum values, just press the **menu** (≡) button. The text at the top left corner will toggle between MIN and MAX to indicate the selection.

The delta time compared to the best lap time will be shown all the time.



Analyse data with a screen like run mode 1.

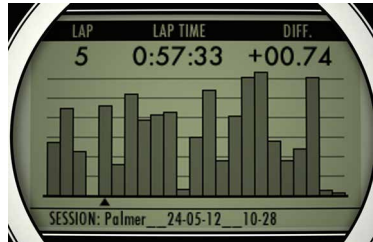
Run mode view will automatically start with the best lap selected.

Use the **up** (▲) and **down** (▼) buttons to change the lap number shown on the screen.

Use the **mode** (☰) button to change to the next analyze screen.

LAP TIME GRAPH

To get a graphic overview of the lap times, the lap time graph can be used. It will show the lap times as bars with the height indicating the difference compared to the best lap. The best lap time will not show any bars. The graph do automatically scale so very slow laps will have a bar that is cut off at the top.




Lap time graph with all lap times shown graphically.

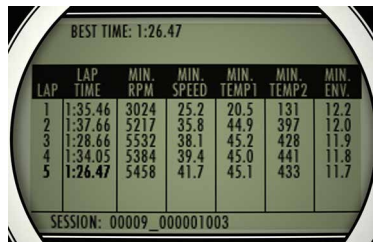
The lap number, the lap time and the difference to the best lap time is clearly shown at the top of the screen.

Use the **up** (▲) and **down** (▼) buttons to change the lap highlighted on the screen with the small triangle below it.

Use the **mode** (☰) button to change back to the first analyze screen.

MIN/MAX ANALYSIS


 UniTire has a built-in help feature, with pages showing which buttons to press to use the different functions.



graphically.

The lap number, the lap time and the differ

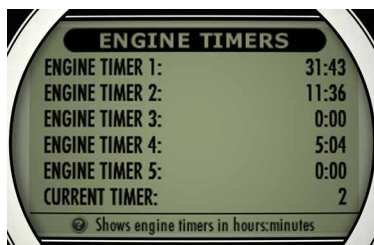
COUNTERS AND TIMERS

 The counters and timers do include information about the engine timer, tire wear counters, and the lap lengths.

Operating UniGo

ENGINE TIMERS

All the engine timers are shown on one single screen. This is a overview of all the timers's value and the current selected engine timer. Please notice that this is for analyze only. The engine timers cannot be changed from here. To change the timers, please see "ENGINE TIMERS MENU" on page 29.



A list of all engine timer values.

Use the **mode** button (⏏) to change to the next analyze screen.

TIRE WEAR COUNTERS

All the tire wear counters are shown on one single screen. This is a overview of all the counters's value and the current selected tire wear counter.

Please notice that this is for analyze only. The tire wear counters cannot be changed from here. To change the counters, please see "TIRE WEAR MENU" on page 27.

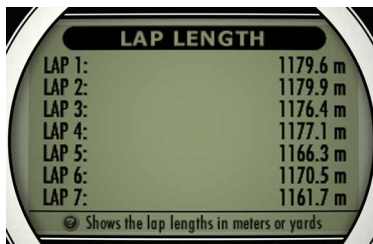


A list of all tire wear counter values.

Use the **mode** button (⏏) to change to the next analyze screen.

LAP LENGTH

When a speed sensor is attached to UniGo, this sensor is used to measure the length of each lap.



A list of the lap length for each lap.

Use the **up** (▲) and **down** (▼) buttons to scroll through the laps.

Use the **mode** button (⏏) to change back to the first analyze screen.

GRAPHS

 UniTire has a built-in help feature, with pages

USB MODE (CABLE)

UniGo is using a high-speed USB connection to either a PC or a MAC computer. The good thing is, that you do **not** need to install any driver to communicate with UniGo. When the USB cable is connected, UniGo will show the following screen.



USB screen when the USB cable is connected.

Operating UniGo

When UniGo is connected with USB, it cannot be operated anymore.

USB mode cannot be entered from all modes. If not, go to the main menu.

To leave USB mode again, just unplug the USB cable. Please remember to safely eject UniGo on the computer before removing the cable like any other USB flash drives. This will prevent the flash from being corrupted. The Off Camber Data program do have an eject button to make this easy.

USB MENU (FLASH KEY) **5005**

The Unipro USB Flash key can be attached to the top connector when UniGo is in the main menu.



When the key is attached, then UniGo will show the USB MENU screen.



USB menu when flash key is inserted.

Use the **up** (▲) and **down** (▼) buttons to move around in the menu and press **ok** button (✓) on the relevant line to execute that function.

COPY NEW SESSIONS **5005**

Sessions in UniGo is made as new or old. They become old when they have been transferred to the USB flash key. It is also possible to automatically delete the sessions after they are copied to the flash key. To do that, see "AUTOCLEAR AFTER TRANSFER" on page 34.

STORE GLOBAL SETUP **5005**

All the sessions related to the track is stored in a separate setup file. If several karts in a team is used on the same track, they will often use the same setup to enable easy comparison later. This will copy the current setup from UniGo to the Unipro flash key. The flash key can then be used to transfer the setting to another UniGo.

RESTORE GLOBAL SETUP **5005**

If you want to restore a setting from the Unipro flash key, use the this. The global setting file will be read and the global setting in the Laptimer will be overwritten.

FIRMWARE UPDATE **5005**

If a firmware file is found on the Unipro flash key, it can be copied to the Laptimer from here. To update the firmware, please see "FIRMWARE UPDATE" on page 48.

USB PASSWORD

With UniGo it is possible to protect the data with a password. If this password is used, the USB connection to either a PC with the USB cable or to a Unipro USB flash key (**5005**) will not be possible before the correct USB password is entered. The password is set in the UniGo setup menu, see "USB PASSWORD" on page 34.

Operating UniGo



USB password screen when then 2nd number is being entered.

The password is entered one digit at a time. Use the **up** (▲) and **down** (▼) buttons to change the digit shown. When the digit is correct, press the **ok** button (✓). Only the active digit is visible to avoid others from seeing your password. If the password is entered correctly, the USB will be enabled.

ENGINE RUN-IN MODE

UniGo provide a special new engine run-in mode. This is very useful when a new engine is mounted and it is run for the first time.



Engine run-in screen. No lap times, but other useful information.

When the setup is done, three difference parameters are set. The target for the temperature, the target for the engine revolutions and last the running time.

The target values are the values that are optional, but that should not be exceeded. The big black target bar is pointing to the bargraphs at the right level. If the target values are exceeded, the LEDs will turn on to warn you. The timer is a countdown timer. It will start at the value set in the setup and then count down

to zero. When it reaches zero, the yellow LED is turned on, and the engine run-in is done.

Press the **menu** button (≡) to leave engine run-in mode again and return to the main menu.

MEMORY MENU

When using UniGo, its memory will be filled with data. Sometimes you will need to delete the memory to make room for new data. From the memory menu, you can delete sessions and get more information about the current use of the memory.



Memory menu. Used to clear laps etc.

Use the **up** (▲) and **down** (▼) buttons to move around in the menu and press **ok** button (✓) on the relevant line to execute that function.

DELETE LAST SESSION

If the session just recorded was not one you want to keep, you can use this command to delete the newest session from the memory. You will have to confirm this before the session is deleted.

DELETE ALL SESSIONS

If all the sessions in memory are already transferred to a PC, you might want to delete them all at once. You will have to confirm this before the session is deleted.

Operating UniGo

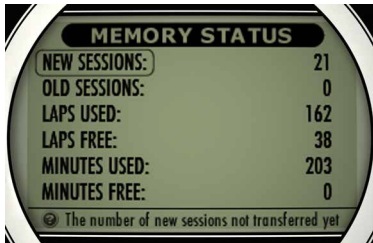
DELETE DOWNLOADED SESSIONS

UniGo uses the archive bit to indicate if the session is new or old. If the sessions are already transferred to a PC, they are marked as old and you might want to delete them. This command will delete all the old sessions, eg. the sessions that are already transferred. You will have to confirm this before the session is deleted.

MEMORY STATUS

The memory on UniGo 3005 is smaller than the other models. It is important that you keep room enough to log new sessions. The memory menu gives the complete overview on what is in memory.

Please notice the difference between UniGo 3005 and 5005 explained below.



Memory status screen with information on the sessions and memory. 3005 shown.

NEW SESSIONS

Sessions are marked as new if they have not been transferred to either a computer or the flash key. This line is showing the number of sessions waiting to be transferred.

OLD SESSIONS

When the sessions have been transferred to the computer or the flash key they are marked as old. This means they have already been transferred, but not deleted. They are still available for analysis on the UniGo, but at the same time, they do take some of the available memory space.

LAPS USED 3005

This is the number of laps already logged into memory. Because the memory is limited, you need to delete some sessions once in a while.

LAPS FREE 3005

If this shows a number different from 0, you do have memory space to log a new session. Please be aware that you need both laps free and minutes free for logging a new session though!

MINUTES USED 3005

This is the number of minutes used for logging data. There is a total of 120 minutes available. If you delete all sessions, this number will be zero.

MINUTES FREE 3005

If this is more than 0 minutes, you should be able to log a new session. Please be aware that you need both laps free and minutes free for logging a new session though!


MEMORY USED 5005

This shows the memory used for both laps and logged data in megabytes. It includes both old and new sessions.

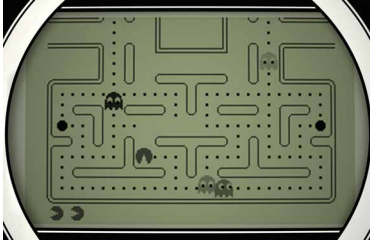
MEMORY FREE 5005

The memory free is shown in megabytes. It is hard to calculate the remaining logging time from this because it depends on the number of channels enabled and the logging frequency. If this number gets too small, please delete some old sessions.

UNIMAN GAME

 UniGo includes a simple game - just for fun.

Operating UniGo



UniMan in action. Just a small game for fun.

When the game is started, you can use the buttons shown on the into screen to control the game.

Press the **back** button (⏪) to go back to the main menu again.

FIRMWARE UPDATE

Updating the firmware is very easy on UniGo. You will not need any special software except the new firmware file from our homepage. The firmware file is called something similar to "Update_UniGo_3005_XXXXXX.bin" where the XXXXXX is the version number of the firmware. Simply copy this file into the folder called "Firmware" on UniGo when it is attached to the computer and it will start the update process when you unplug the cable again. When UniGo detects this file in the firmware folder, it will show the following screen.



Update screen when new firmware is found.

If you want to upgrade (or downgrade) the firmware to the version shown on the screen, simply press the **ok** button (✓). If you want to keep the current firmware, press any other button will skip the firmware update process.

This screen will only be shown for 20 seconds. If you do not push any buttons it will skip the update automatically.

If you chose to upgrade the firmware, UniGo will check the file and unpack all the files.

When this is done the update of the firmware itself starts. When it is done UniGo turns off.




Update screen when new firmware is being programmed into the flash.

The next time you turn it on, you should see the new firmware version displayed on the startup screen.

Please do not disconnect the power to UniGo while the update is in progress.

INFO MENU

 For more information about your UniGo, press the information ikon on the main menu. This will bring the information screens shown next.



Operating UniGo



Info screens showing all information about this UniGo. Please notice the difference between 3005 and 5005 explained next.

The information is divided into two different screens. This is a short description on each line of information.

UNIGO MODEL

In the UniGo series, there are four different models. This number will be on the top edge of the Laptimer box too. It should show either 3005 or 5005.

SERIAL NUMBER

The serial number is an important piece of information. It is unique for each UniGo and it will be used to identify sessions and for licensing of Off Camber Data software.

SOFTWARE VERSION

The software version is also shown at the startup screen. The number is build up like this: major.minor.build. The example shows a version number of V1.00.000.

SOFTWARE RELEASED

The build date for the software is shown on this line. It makes it easy to see in plain text when Unipro made this firmware release.

LAPS USED 3005

UniGo 3005 is limited to minimum 200 laps. On this line you can see the number of laps used out of the 200 laps in total. Please notice, that eventhough it might shown 198 / 200 you will still be able to log the next session, even if it might have 50 laps! Only when it shows 200 or more laps, the memory is full.

MINUTES USED 3005

UniGo 3005 is limited to minimum 120 minutes of data. This line shows the logging space used out of the 120 minutes. Even if it shows 119 / 120 you are still able to make a new session with another 120 minutes of data! Only when all 120 or more minutes are used, the memory is full.

FLASH USED 5005

The memory in UniGo 5005 almost unlimited. The flash used is shown in how many megabytes are used out of the total available memory.

BATTERY VOLTAGE

This is the input voltage the Laptimer sees. If you are running on a rechargeable battery, you can use this to see what the current voltage is and the decide if it is time to charge it. It is important to program the battery warning level correctly. Please see "BATTERY WARNING" on page 34.

INTERNAL TEMP 5005

To be able to calculate the temperature from the external temperature sensors, the internal temperature is needed. This internal temperature is a good indication of the environment temperature and it will be logged together with the session. The current temperature will be shown here.

TEMPERATURE SENSORS

The temperature sensors connected to UniGo will be detected at startup and shown on the startup screen. If you later want to see what temperature sensors are connected, this is the place.

Operating UniGo

USB ACCESSORY 5005

The USB connector can be used for other accessories like a voice module, BlueTooth interface, printer interface etc. If there is any accessories connected, it will be listed here.

EXTERNAL BOXES ATTACHED 5005

The UniGo 5005 can be expanded with external boxes like the UniBox. The number of boxes will be shown on the startup screen, but this will make it possible to verify the correct number of expansion boxes are attached at a later time. To see more information, like the serial number and software version for the boxes, press the **ok** button (✓). This will bring you to a separate screen with all the available information. Please see the separate documentation supplied with the box.

OWNER

The owner name is not the same as the driver's name. The owner name could for instance be the team name. If you want to change this name, you need to make a new text file on UniGo called "ownername.txt". Just write the name on a single line in the file and save it in the root folder. When the USB cable is removed, the name is programmed into UniGo. This is typically only done once.

If no owner name is programmed, the startup screen will show the serial number instead.

MANUFACTURE DATE

This is the date this UniGo was manufactured at the Unipro production. It is a good indication on how old the Laptimer is.

TOTAL LAPS

UniGo counts all the laps driven. This number is never cleared so the number is the total number of laps measured since the Laptimer was made.

TOTAL HOURS

UniGo measures the total time the Laptimer has been turned on. This number is never cleared so the time is the total since the Laptimer was made.

Troubleshooting

We expect a smooth and pleasurable experience when using UniGo.

If you have any problems, either with the setup or with daily use, please check the following pages for suggested solutions.

If you don't find the answer to the problem here, please contact your Unipro dealer for further assistance.

Weak and hard to read text

The contrast is set too low.

- Adjust the contrast to a higher value.

The Laptimer turns off when using a LiPo battery

The discharge curve for a LiPo battery is very steep. The battery warning level is not set correctly.

- Set the battery warning high enough to be warned in time. For a LiPo battery we recommend a setting of x.x Volt.Pl+ease see "BATTERY WARNING" on page 34.

Water entered the UniGo

The two buttons are not water tight.

- Unscrew the two screws and remove the rear part of the box. Place it with the opening facing upwards to dry.

One of the temperatures do not show up in run mode

The sensors are not detected at startup.

- Contact your dealer to order a new button as a spare part.

The value is not zero after power on

UniTire calibrates the pressure after power on.

- and on again to re-calibrate.

Pressure value is showing "---"

The handle is not detected.

- Make sure the handle is correctly attached.
- Turn UniTire off and on again.

UniGo is not turning on

Batteries might be empty.

- Press and hold the **mode** button (⏻) for at least 10 seconds. Then try to turn UniGo on again.
- Change or recharge the batteries.

The gear indicator is not working in run mode 2

The number of gears is not set correctly.

- Set the correct number of gears and then go through the learning process.

No temperature shown when using a splitter

A wrong splitter is used.

- You need to use the **gray** splitter. A black splitter cannot be used for the temperature sensors.

UniGo shows an error message

Something went wrong!

- Please contact Unipro at support@unipro-laptime.com

Maintenance

Cleaning

To clean the case, display, and buttons

The exterior surfaces of UniGo products are made from plastic box with a plastic overlay.

They are designed to be easily wiped clean with a dry, lint free cloth.

Greasy marks should be removed by light rubbing with a slightly damp cloth and a trace of proprietary glass cleaner.

Do not use any other solvent or abrasive based cleaners.

with regular intervals when not used.

If the normal battery holder is used, please remove the batteries to avoid leaking when not used for a long time.

It is also a good idea to dismount the UniGo and store it in the supplied box at room temperature during the winter period.

Sensors and cables

Special care on cable and sensors

The cables and connectors used are of high quality, but you still need to handle them with care.

- Never tighten the connectors using any tools. Only tighten them with you fingers.
- Do not tighten cable ties too hard. You do not want them to destroy the cable.
- Do not bend the cables too hard. A too hard bend might destroy a cable.
- Make sure not to pull the cable during driving. When the the steering wheel is turning, it might pull the cable. Make a loop on the cable to avoid this and make the steering wheel move freely.
- If the wire shield is damaged the cable or sensor needs to be replace. A destroyed shield is the same as letting a lot of electrical noise into the Laptimer, and that can affect its performed.

Winter storage

Special care of batteries

The batteries need special care if not used for a long time.

A LiPo battery need to be charged regulaty. If it is allowed to discharge completely it might get damaged. Please discharge the LiPo battery

Service and guarantee

Service

The UniGo Laptimer has been carefully designed to give you many years of untroubled use. There are no parts inside the case which need service, nor do the units require any form of maintenance besides cleaning.

In the unlikely event that your product fails to function correctly, it should be returned in its original packaging to your Unipro dealer.

You can always find the updated list of worldwide dealers on www.uniproLaptimer.com.

No responsibility can be accepted for the product whilst in transport to the factory or dealer. Customers are therefore advised to insure the unit during transport.

When seeking service under guarantee, proof of the date of purchase will be required.

Guarantee

The product is guaranteed against defects in material and workmanship for two years from the date of purchase.

The guarantee is void if the product has been subject to misuse, accident, or negligence, or has been tampered with or modified in any way without the written authorisation of Unipro ApS.

Attempted servicing by unauthorized people may also invalidate this guarantee. Labor and carriage charges are not covered unless by local agreement.

Outside Denmark, local warranty liability is restricted to equipment purchased within the territory.

Our agents outside Denmark are only under contractual obligation to service under guarantee equipment sold through them.

Our agents are entitled to make a non-refundable charge for any service carried out on other equipment.

This guarantee does not limit your statutory rights within the country of purchase.

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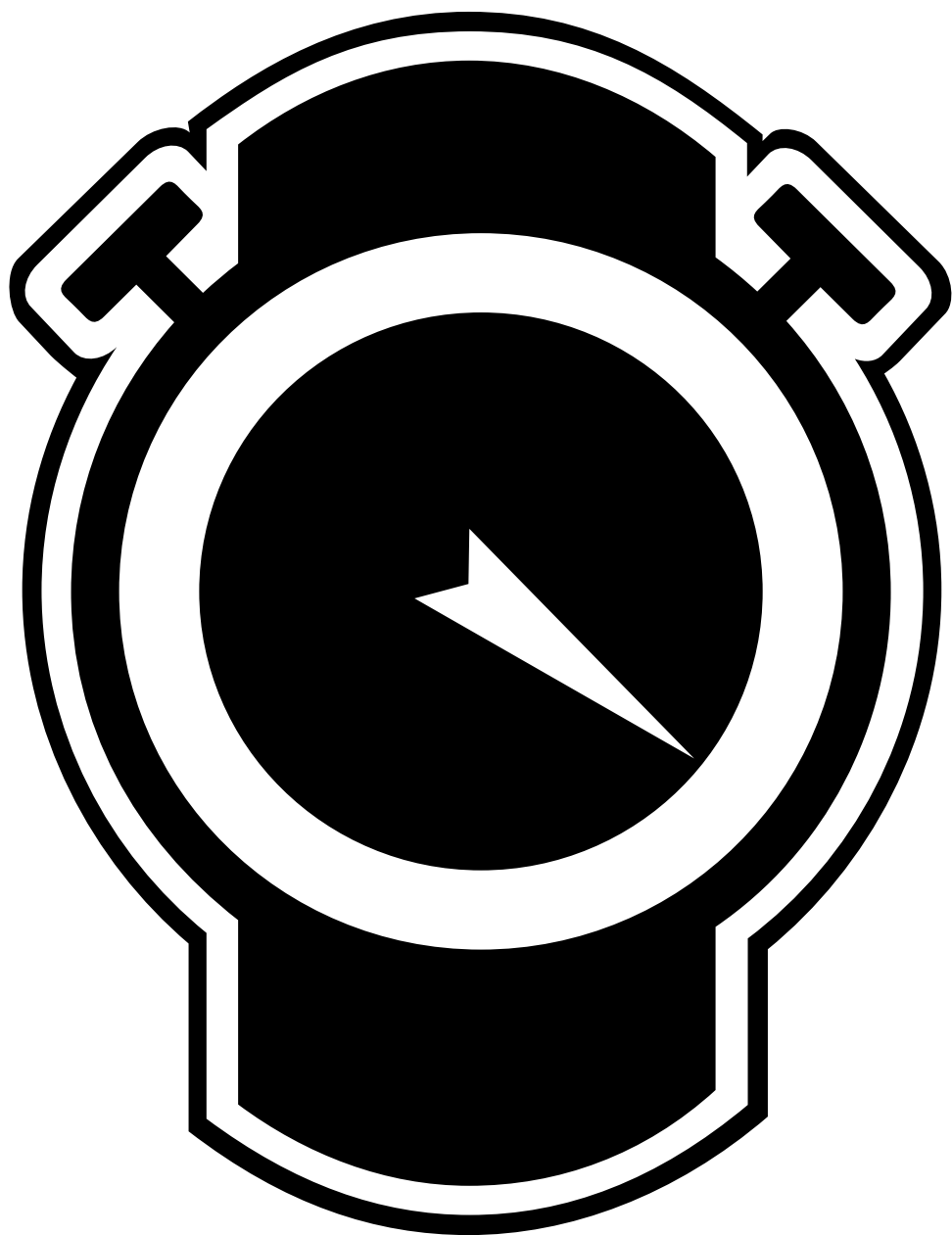
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