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Instruction WP Timer (English version)

Congratulations on purchasing the WP Timer. With the following instructions we would like to familiarize you with the functions of your WP Timer.



Table of contents

- 1. Advantages and novelties**
- 2. Technical data / description**
- 3. Overview of device functions**
- 4. Assembly**
- 5 Commissioning**
- 6. Description displays**
- 7 Optional connections**
 - 7.1 Hand control or foot switch**
 - 7.2 Headphones or speakers**
- 8. Modes for time measurement**
 - 8.1 Modes 1 The circuit mode.**
 - 8.2 Modes 2 The Nuvolari mode.**
 - 8.3 Modes 3 The nested mode.**
 - 8.4 Modes 3rd Count up mode.**
- 9. Care and maintenance**
- 10. Available accessories**

1. Advantages and novelties:

- Highest measuring accuracy
- Very simple and intuitive operation
- Entry of times within seconds
- 4 time indications simultaneously in the display with 1/100 second
- Can be operated in 3 different modes
- Sound signal for the active time for the last 10 seconds, becoming brighter from second 3 to the end signal at >zero<.
- Robust metal housing with compact housing dimensions
- Headphone jack for headphones with volume control
- Connection socket for external hand or foot switch
- display with filter for better readability in case of sunlight
- All controls are ergonomic and easily accessible
- Cable connection on the housing for easy electrical decoupling or removal of the device.

This new electronic precision stopwatch has been specially developed for the timing of historic regularity rallies, historical and modern motorsport.

With the single-button operation for round courses and chained time trials, the logical structure of the multi-taster operation for measuring nested time trials, it has been possible for the first time to implement all test variants in one device with a view to highest accuracy and simple operation.

The innovative technology of the WP Timer makes the electronically programmable stopwatch a precise and reliable companion for time measurement in motorsport.

For the WP Timer an EMC test according to EN 50498:2010 was carried out on 12.04.2017 to obtain the CE certificate, which was successfully completed.

This ensures that the WP-Timer neither disturbs the vehicle electrics nor the vehicle electronics, nor that the WP-Timer itself is disturbed by voltage fluctuations or interferences in the vehicle.

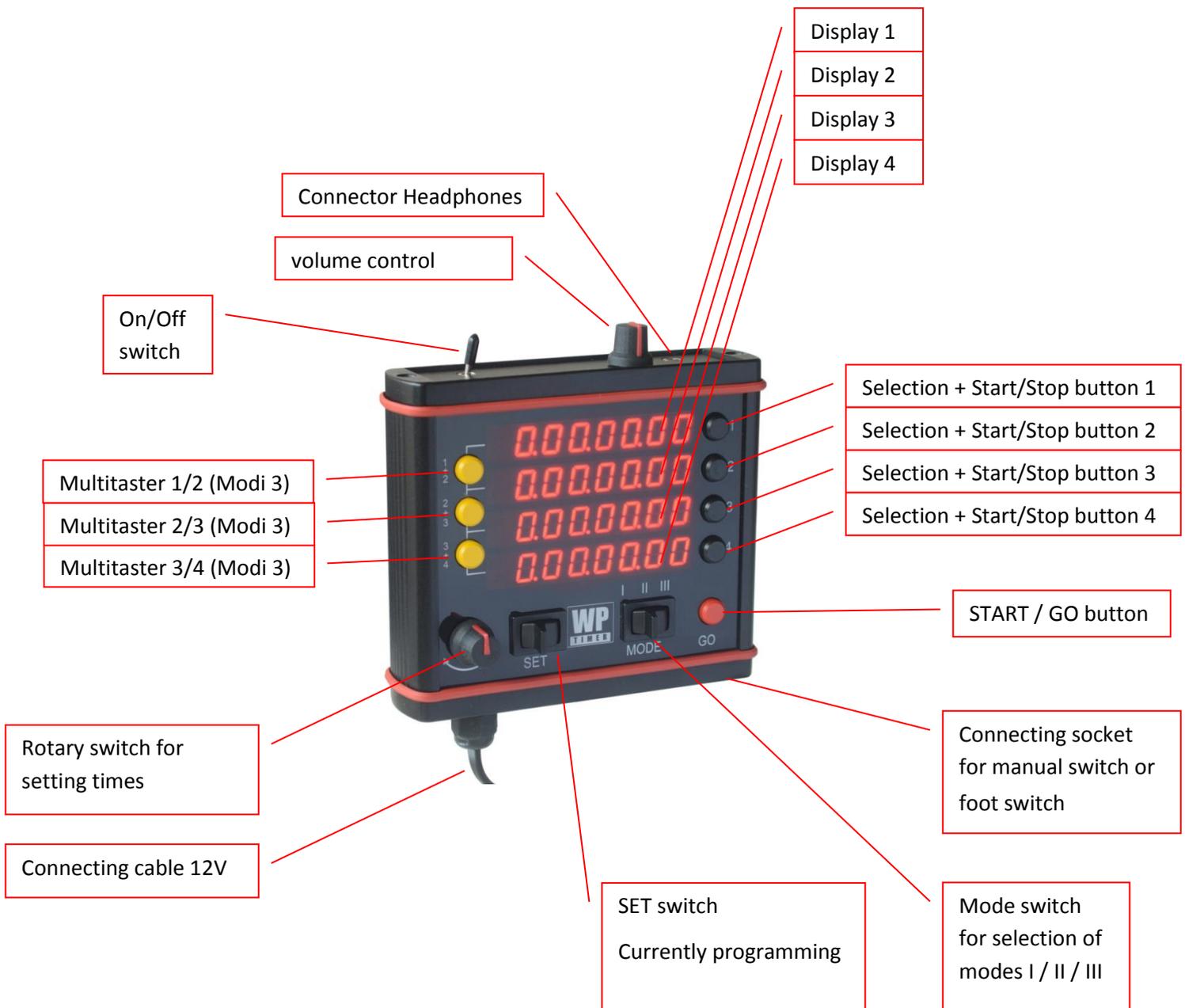
2. Technical data / Description:

The WP Timer is connected to a 12V power supply. The power supply can be connected to the vehicle electrical system or an external power source.

Accuracy:	Temperature compensated timer (TCXO) with an accuracy of 4 minutes/year at -40° to +85° Centigrade (+/- 0.000008 seconds) 1 minute/year at 0° to 40° C (+/- 0.000002 seconds)
Approval:	according to the specifications of the respective organisers
Functionality:	electronic
Display:	Hour: Minute: Second: 1/100 second
Display maximum per display:	9 hours, 59 min., 59 sec., 99 1/100 sec.
Minimum display per display:	1/100 second
Number of displays:	4 pieces
Lighting:	Internal, permanent, by means of LED displays
Running direction stopwatch:	forward / count up & backward / count down
Programming times:	Via pushbuttons and knobs
Storage duration times:	unlimited storage time of the entered data Times also without power supply
Electrical connection:	12V, with voltage transformer also 6V
Connection cable:	2-wire plus/minus, length approx. 700mm
Protection:	1A of the current-carrying cable
Power consumption:	0,3A at 12V = 0,36Watt
Housing size W x H x D:	approx. 140 x 120 x 40mm
Housing:	Metal, black
Weight:	approx. 520g
Front display:	Plexiglass, printed inside
Connection of additional switch:	Hand/Foot switch, DC plug 6mm/2.1mm
Headphone connection:	Jack plug 3,5mm stereo
Acoustic signal:	Via headphones with volume control
Technical inspection:	According to EN 50498:2010

The WP Timer has been developed in Germany and is manufactured in Germany.

3. Overview of the device functions:



4. Mounting

Install the WP Timer in the vehicle only in such a way that no occupant of the device can injure himself/herself in the event of an accident. The WP Timer should be stored in a position where a passenger can easily operate the unit.

For easy and retrofit-able mounting of the WP Timer you can use the mounting kit available for the WP Timer, which consists of a base plate equipped with 3M Velcro straps. Alternatively, you can attach your own Velcro tape to the back of the housing. Under no circumstances should the housing of the device be drilled, as otherwise the electronics may be damaged.



Important notice:

In the case of vehicles with positive to ground, the device must not have any metallic contact with the vehicle due to the metal housing. Failure to observe these instructions may result in serious damage to the device due to a short circuit.

5. commissioning



Connection cable for connection to 12V

Red cable = 12V PLUS + 1 A fuse

Black cable = 12V MINUS

Connect the WP timer to a 12V power source. Connect the red line to your 12V power supply and secure it with 1A.

Connect the black cable to the minus of your 12V power supply.

A wiring diagram is also included in this manual (yellow paper).

A fuse holder with 1A fuse is available as an accessory for the WP Timer. You can power the 12V vehicle electrical system by connecting it to the on-board electrical system or by means of an external battery. An external 12V battery is also available as an accessory. For easy electrical decoupling (plug and play) from the vehicle, we recommend the coupling plug or connector plug for a 12V on-board socket, which is available as an accessory. For 6V on-board power supply the voltage transformer available for the WP timer is recommended.

The optional accessories for the WP Timer are listed under item 10.





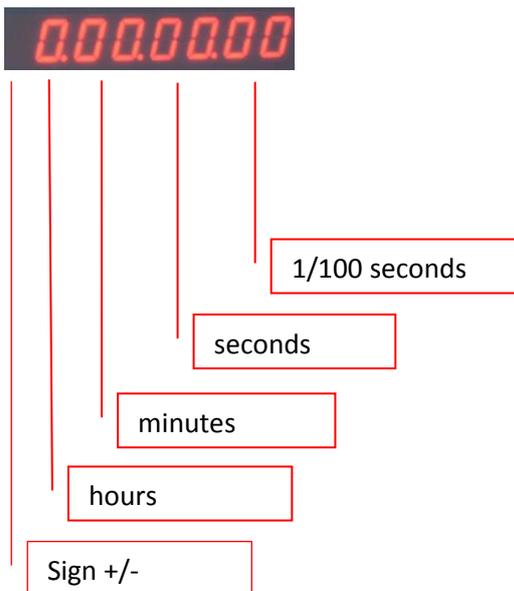
Switch the unit on at the left 2-step switch. The unit is now switched on, recognisable by the red lit digits of the 4 displays.

6. Description Displays:



Minimum display value: +/- 1 1/100 second
+/- (0.00.00.01)

Maximum display value: +/- 9 hours, 59 minutes, 59 seconds, 99 1/100 seconds
+/- (9.59.59.99)



7. Optional connections:

You can connect a hand switch or foot switch to the WP Timer for more convenient operation.

For acoustic support, headphones or an active loudspeaker can be connected to the WP Timer.

The optional accessories for the WP Timer are listed under item 10.

7.1 Hand switch or foot switch



Connection socket for hand switch or foot switch

The hand or footswitch, available as an accessory for the WP Timer, is suitable for starting and stopping times. Especially for Modes 1 and 2, external switches are a convenient aid.

7.2 Headphones or speakers

Headphones or Speakers for acoustic support, you can connect headphones or external active speakers to the WP Timer. A headphone is available as an accessory for the WP Timer. The volume can be adjusted by means of an integrated knob.



Volume control knob / jack for headphones or speakers

With headphones/speakers connected, you will have an acoustic support for counting down by means of a sound signal. The WP Timer gives an acoustic signal for the last 10 seconds per second for the active time measurement. From second 3 onwards, the tone becomes brighter with an end signal at zero.

Example Count Down:

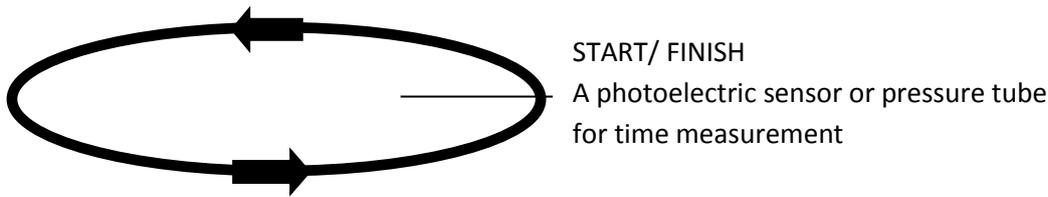
12 seconds	no sound
11 seconds	no sound
10 seconds	Sound signal 1 short (brightness level 1)
9 seconds	Sound signal 1 short (brightness level 1)
8 seconds	Sound signal 1 short (brightness level 1)
7 seconds	Sound signal 1 short (brightness level 1)
6 seconds	Sound signal 1 short (brightness level 1)
5 seconds	Sound signal 1 short (brightness level 1)
4 seconds	Sound signal 1 short (brightness level 1)
3 seconds	Sound signal 2 short (brightness level 2)
2 seconds	Sound signal 3 short (brightness level 3)
1 seconds	Sound signal 4 short (brightness level 4)
0 seconds	Sound signal 5 long (brightness level 5)

8. Timing modes

The WP Timer can be used in 3 different modes for measuring times according to the most different tasks. Modes 1-3 cover all known tasks in historic regularity rallies, GLP hill climbs and GLP circuit runs.

With the WP Timer, special attention has been paid to the simplest operation and easiest handling.

8.1 Mode 1. The circuit mode.

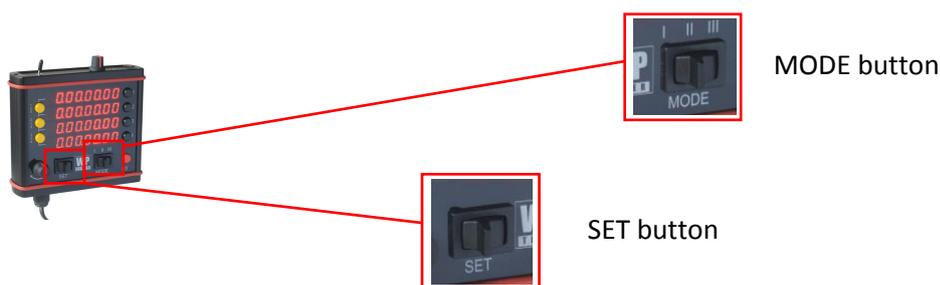


The circuit mode is designed for the following tasks:
You have to set yourself a time in a circuit with the first lap and reproduce this time (set target time) in the following 1-X laps.

With the WP Timer you can solve this easily!

Preparation:

1. Set the MODE switch to mode 1.
2. Set the SET switch to the right position.
3. The WP Timer is ready for circuit mode operation



Time measurement in mode 1:

To start the timing, press the GO button. No other keys are required for this mode.

1. To start timing, press the GO button
2. The time in display 1 starts and runs forward (target time)
now the target time for your first round is running, the time you set for the subsequent rounds
3. When the GO button is pressed for the second time, the time in display 1 stops and this time (your target time), automatically jumps to display 2 and runs in Count Down
now is running for your first real round with ACTUAL time, the time you get from the first round. (preliminary round) must be reproduced.
4. When the GO button is pressed for the third time, the time in display 2 stops and your target time (from display 1), jumps automatically to display 3 again and runs in Count Down
now is running for your second real round with ACTUAL time, the time you left the first round. (preliminary round) must be reproduced.

5. When the GO button is pressed for the fourth time, the time in display 3 stops and your target time (from display 1), jumps automatically to display 4 again and runs in Count Down

now runs for your third real round with ACTUAL time, the time you have taken from the first round (preliminary round) must be reproduced.

6. When the GO button is pressed for the fifth time, the time in display 4 and your target time (from display 1), jumps automatically to display 2 again and runs in Count Down

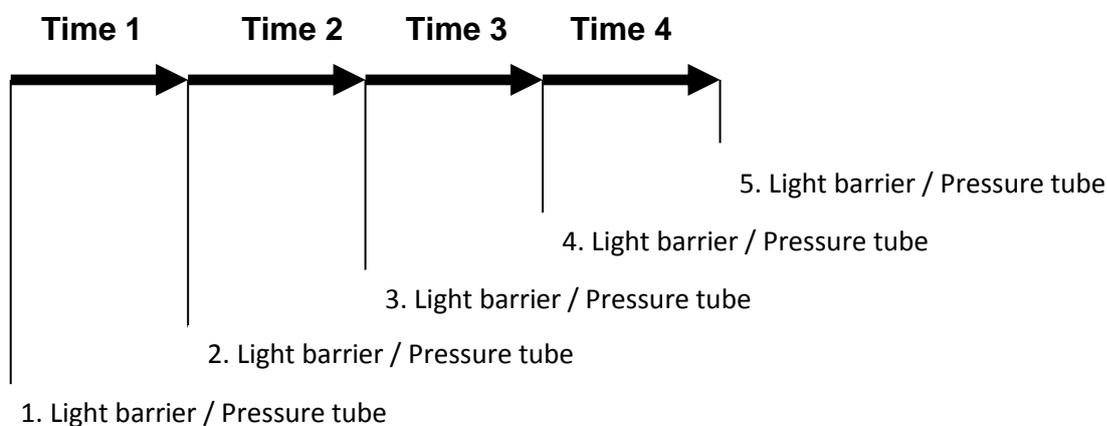
now runs for your third real round with ACTUAL time, the time you have taken from the first round (preliminary round) must be reproduced.

By pressing the GO button again, you can drive as many laps as you like. Each time your target time jumps step by step into a new display and your actual time runs in the count down. You can see at any time how much time you have left to cross the start/finish line again. And this at the push of a button!

After each lap, you can read off your previous deviation. By the sign display, you can see whether you crossed the finishing/start line too early or too late. The sign - (minus) is displayed if you were late.

TIP: For easier operation, use a hand or foot switch for this mode. A headphone helps you to precisely target the last 10 seconds of your journey by means of an acoustic signal.

8.2 Mode 2. The Nuvolari mode.



The Nuvolari mode are designed for the following tasks:

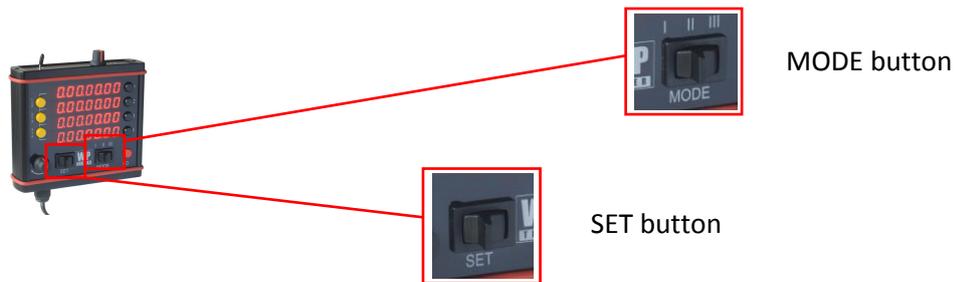
You will find a special stage with chained photocells/pressure tubes. I. e. With the 1st light barrier/tube starts the timekeeping, the 2nd light barrier/tube is the target of the first time and at the same time start of the second time, the 3rd light barrier/tube is the target of the second time and start of the third time, etc.

With the WP Timer you can solve this easily!

Preparation:

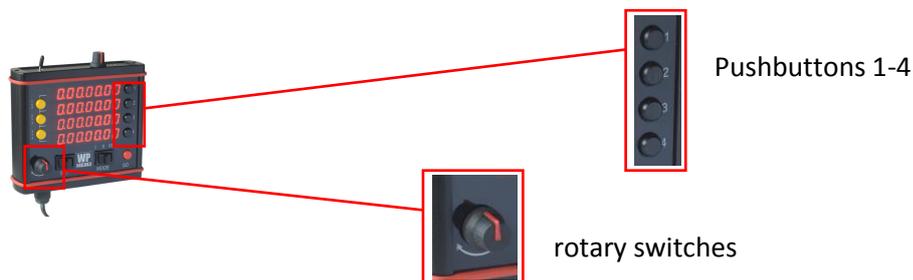
1. Set the MODE switch to Mode 2.
2. Set the SET switch to the left position.

3. The WP Timer is ready to enter your target times.



Enter your target times in mode 2:

Entering the target times is child's play. Use the black pushbuttons 1-4 to select the respective time and use the rotary switch to enter the times.



Setting 1. Time:

Enter the hours:

1. Choose the first time to set with the black pushbutton 1
2. For the 1st time in display 1, the hour display flashes
3. Turn the rotary switch and set the desired hours.
4. Confirm the hours you have entered by pressing the rotary switch.

Enter the minutes:

1. For the 1st time in display 1, the minute display flashes
2. Turn the rotary switch and set the desired hours.
3. Confirm your input of the minutes by pressing the rotary switch.

Enter the seconds:

1. For the 1st time in Display 1, the seconds display flashes.
2. Turn the rotary switch and set the desired seconds
3. Confirm your input of seconds by pressing the rotary switch.

Enter the 1/100 seconds:

1. For the 1st time in display 1, the 1/100 seconds display flashes
2. Turn the rotary switch and set the desired 1/100 seconds
3. Confirm your input by pressing the rotary switch button d. 1/100 seconds

Set 2. Time:

Enter the hours:

1. Use the black pushbutton 2 to select the second setting time
2. For the 2nd time in display 2, the hour display flashes
3. Turn the rotary switch and set the desired hours
4. Confirm the hours you have entered by pressing the rotary switch

etc. Please proceed as described above for the following times.

Time measurement in mode 2:

Exit the SET mode and move the SET button to the right.
The WP Timer is ready for Nuvolari mode.

To start the entered timings, press the GO button. No other keys are required for this mode.

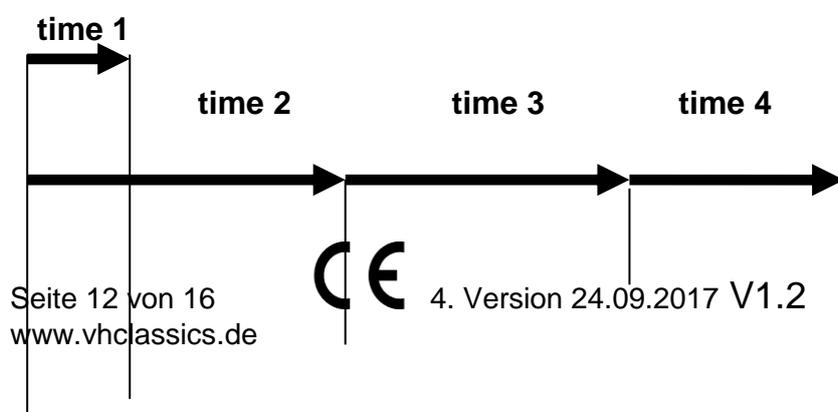
1. To start the time recording, press the GO button
2. The entered time in display 1 runs backwards (Count Down)
Now your entered time is running 1, you can see how much time you have until the 2nd light barrier / Hose remains.
3. When the GO button is pressed for the second time, the time in display 1 and the Entered time in display 2 runs backwards (Count Down)
Now your entered time is running 2, you can see how much time you have until the 3rd light barrier / Hose remains.
4. When the GO button is pressed for the third time, the time in display 2 and the Entered time in display 3 runs backwards (Count Down)
Now your entered time is running 3, you can see how much time you have until the 4th light barrier / Hose remains.
5. When the GO button is pressed for the fourth time, the time in display 3 and the Entered time in display 4 runs backwards (Count Down)
your entered time is now running 4, you can see how much time you have left until the 5th light barrier / Hose remains.
6. When the GO button is pressed for the fifth time, the time in the display stops 4. has been completed.

For each time completed, you can read off your previous deviation. By the sign display, you can see whether you have passed the photocell/pressure hose too early or too late. The sign - (minus) is displayed if you were late.

TIP: Use a hand or foot switch for easier operation in this mode. A headphones helps with the last 10 seconds by means of acoustic sound signal support to the exact passage.

TIP: If you would like to cover more than four times, we recommend the use of a second WP timer for easier handling. to handle 8 times at the same time.

8.3 Mode 3. Nested mode.



3. Light barrier / Press

4. Light barrier / Pressure tube

2. Light barrier / Pressure tube

1. Light barrier / Pressure tube

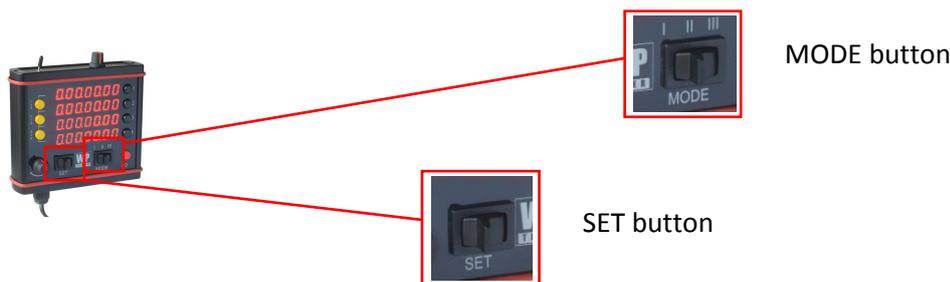
The nested modes are designed for the following tasks:

You will find a special stage with nested light barriers/pressure hoses. This means that with the first light barrier/tube, e. g. time measurement 1 and 2 starts simultaneously, the second light barrier/tube is the target of the first time. The 3rd light barrier/hose is the target of the 2nd time. This is followed by further nesting or, as shown in the example below, chained timings.

With the WP Timer you can solve this easily!

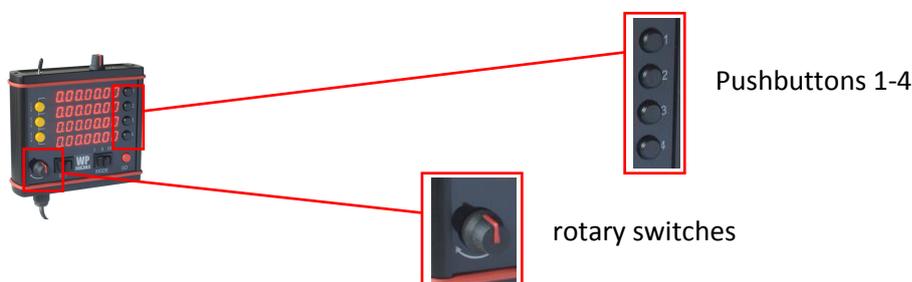
Preparation:

1. Set the MODE switch to Mode 3
2. Set the SET switch to the left position
3. The WP Timer is ready to enter your target times



Entering your target times in mode 3: (analogous to the input of your target times for modes 2)

Entering the target times is child's play. Use the black pushbuttons 1-4 to select the respective time and use the rotary switch to enter the times.



Setting 1. Time:

Enter the hours:

1. Choose the first time to set with the black pushbutton 1
2. For the 1st time in display 1, the hour display flashes
3. Turn the rotary switch and set the desired hours
4. Confirm your input of hours by pressing the rotary switch

Enter the minutes:

1. For the 1st time in Display 1, the minute display flashes
2. Turn the rotary switch and set the desired hours
3. Confirm your input of the minutes by pressing the rotary switch

Enter the seconds:

1. For the 1st time in Display 1, the seconds display flashes
2. Turn the rotary switch and set the desired seconds
3. Confirm your input of seconds by pressing the rotary switch

Enter the 1/100 seconds:

1. For the 1st time in display 1, the 1/100 seconds display flashes
2. Turn the rotary switch and set the desired 1/100 seconds
3. Confirm your entry of the 1/100 seconds by pressing the rotary switch

Set 2nd time:

Enter the hours:

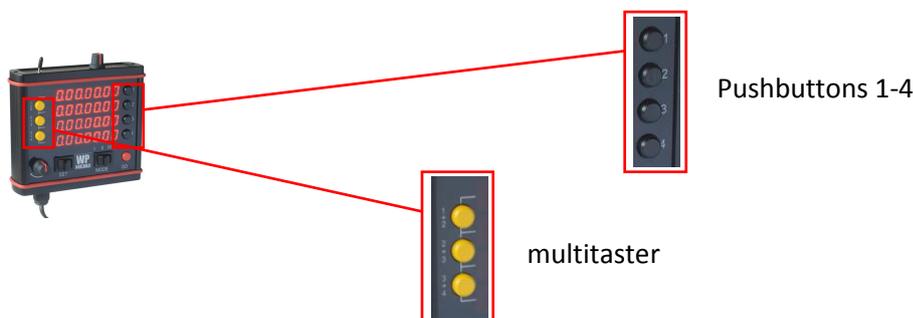
1. Select the second time for setting with the black pushbutton 2
2. For the 2nd time in display 2, the hour display flashes
3. Turn the rotary switch and set the desired hours
4. Confirm your input of hours by pressing the rotary switch.

etc. Please proceed as described above for the following times.

Time measurement in mode 3:

Exit the SET mode and move the SET button to the right.
The WP Timer is ready for nested modes.

To start the timekeeping, press either the yellow multi-buttons (start/stop of two times) or the black push-buttons (start/stop of one time).



1. To start the time taking of time 1 and time 2, press the multi-button 1/2
2. The times entered in display 1 and 2 run backwards (Count Down)
Now your entered time 1 and time 2 is running, you can see how much time you have until the second light barrier/ tube and up to the 3rd light barrier tube remains.
3. To stop time 1, press pushbutton 1
Now your time 1 stops, time 2 continues to run, you can still see how much time you have left until you reach the 3rd barrier/tube.
4. To stop the timing of time 2 and start time 3, press the multi button 2/3

Now your time 2 in display 2 stops and time 3 in display 3 starts, you can see how much time you have left until you reach the 4th light barrier/tube.

5. To stop the time taking of time 3 and start time 4, press the multi button 3/4
Now your time 3 in display 3 stops and time 4 in display starts, you can see how much time you have left until you reach the 5th photocell/hose.
6. To stop the time recording of time 4, press the pushbutton 4 and the time recording is completed.

For each time completed, you can read off your previous deviation. By the sign display, you can see whether you have passed the photocell/pressure hose too early or too late. The sign - (minus) is displayed if you were late.

Depending on the task, you can use the multitouch keys and pushbuttons according to the required constellation. Pressing these keys again will stop the time/times and can be restarted by pressing them again (addition times).

TIP: A headphones helps with the last 10 seconds by means of acoustic sound signal support to the exact passage.

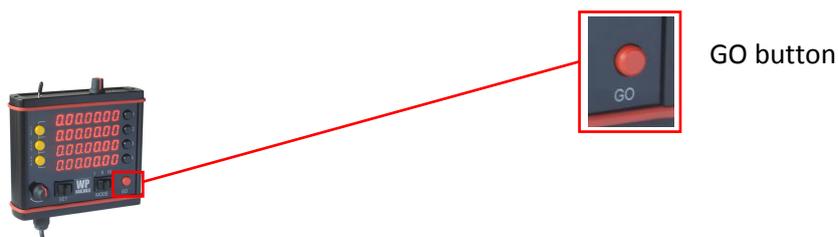
TIP: If you want to cover more than four times, we recommend to use a second WP Timer to handle 8 times at the same time.

8.4 Mode 3. Count up mode

Used as a stopwatch in count up mode:

The WP Timer can also be used as a forward running stopwatch in mode 3. All times are set to zero for this purpose.

With the Go button all 4 times can be started and stopped together.



With the multi-buttons 2 times can be started and stopped together.



You can use the individual pushbuttons to start and stop a time period.



9. Care and maintenance

The WP Timer is maintenance-free. Avoid the WP Timer from the rain. The WP Timer is not waterproof.

To maintain the WP Timer, you can use a cloth moistened with water to clean the case, the display and the switches. Do not use any detergents that are harmful to the unit.

10. Accessories for the WP Timer

Mounting kit	Mounting kit for easy and retrofittable mounting of the WP Timer consisting of mounting plate and 3M Velcro straps.
Coupling plug	For easy electrical decoupling from the vehicle
Board connector	Plug as plug and play assembly for cigarette lighter socket or 12 V on-board socket.
12 V on-board socket Outlet	Socket for WP Timer or other devices with 12 V connection
Fuse	Fuse holder with 1A glass fuse to protect the WP Timer
External power source	12V lead-acid battery for external power supply. 12V, 7,2AH.
Hand switch	Hand switch with ergonomic handle and push-button with noticeable pressure point. Connector plug suitable for WP Timer
Foot switch	Foot switch made of metal with anti-slip pad and noticeable pressure point. Connector plug suitable for WP Timer
Headphones	Lightweight and comfortable headphones. Connector plug suitable for WP Timer

