

ALGE-TIMING

WTN-Set



Short - Manual

Important Information

General

Before using your **ALGE-TIMING** device read the complete manual carefully. It is part of the device and contains important information about installation, safety and its intended use. This manual cannot cover all conceivable applications. For further information or in case of problems that are mentioned not at all or not sufficiently detailed, please contact your **ALGE-TIMING** representative. You can find contact details on our homepage www.alge-timing.com

Safety

Apart from the information of this manual all general safety and accident prevention regulations of the legislator must be taken into account.

The device must only be used by trained persons. The setting-up and installation must only be executed according to the manufacturer's data.

Intended Use

The device must only be used for its intended applications. Technical modifications and any misuse are prohibited because of the risks involved! **ALGE-TIMING** is not liable for damages that are caused by improper use or incorrect operation.

Power supply

The stated voltage on the type plate must correspond to voltage of the power source. Check all connections and plugs before usage. Damaged connection wires must be replaced immediately by an authorized electrician. The device must only be connected to an electric supply that has been installed by an electrician according to IEC 60364-1. Never touch the mains plug with wet hands! Never touch live parts!

Cleaning

Please clean the outside of the device only with a smooth cloth. Detergents can cause damage. Never submerge in water, never open or clean with wet cloth. The cleaning must not be carried out by hose or high-pressure (risk of short circuits or other damage).

Liability Limitations

All technical information, data and information for installation and operation correspond to the latest status at time of printing and are made in all conscience considering our past experience and knowledge. Information, pictures and description do not entitle to base any claims. The manufacturer is not liable for damage due to failure to observe the manual, improper use, incorrect repairs, technical modifications, use of unauthorized spare parts. Translations are made in all conscience. We assume no liability for translation mistakes, even if the translation is carried out by us or on our behalf.

Disposal

If a label is placed on the device showing a crossed-out dustbin on wheels (see drawing), the European directive 2002/96/EG applies for this device.

Please get informed about the applicable regulations for separate collection of electrical and electronical waste in your country and do not dispose of the old devices as household waste. Correct disposal of old equipment protects the environment and humans against negative consequences!

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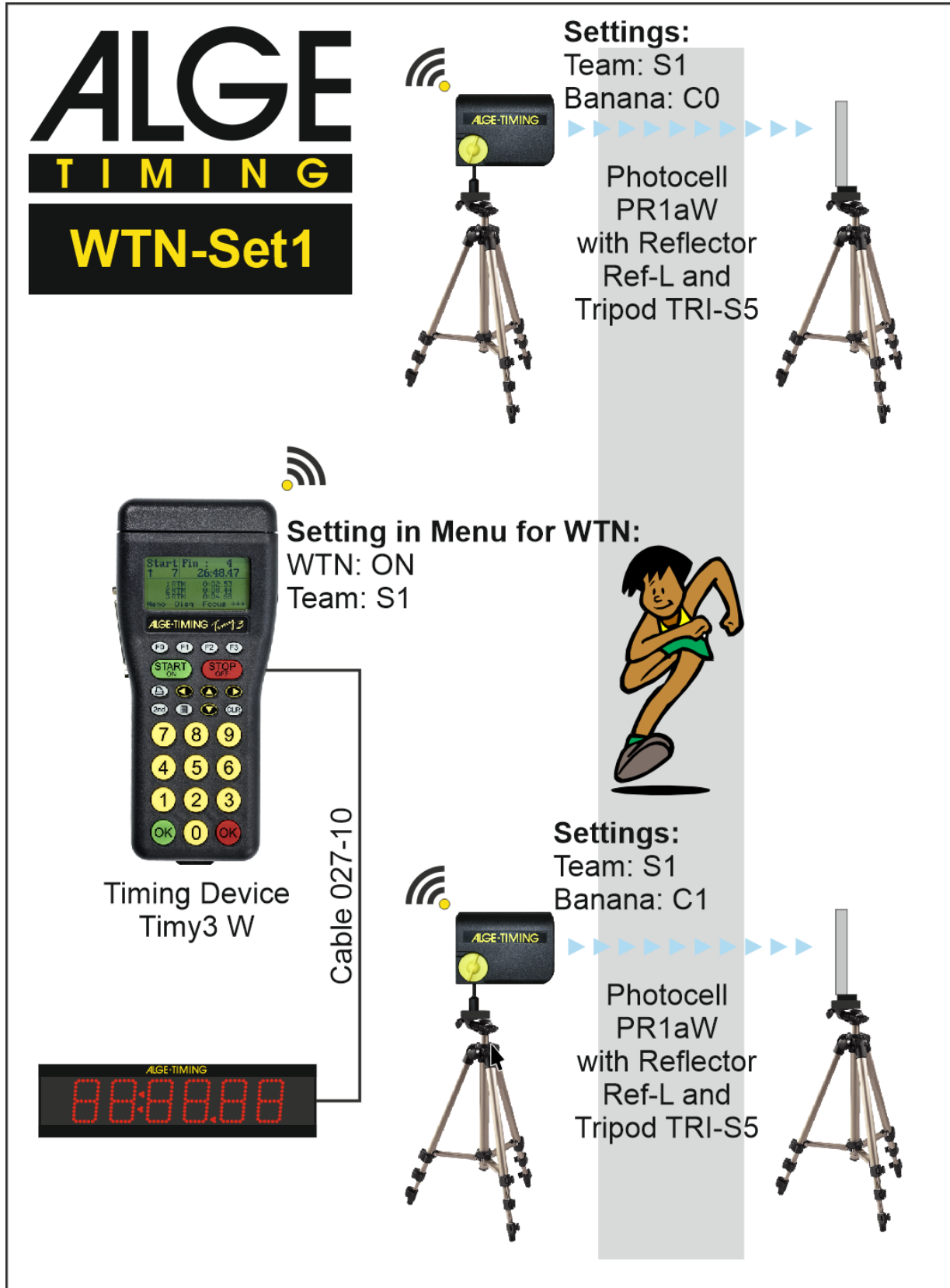
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1 System Setup



2 Components of the WTN-Set

2.1 WTN-Set1

- 1 x Timy3 W
- 4 x Alkaline Batteries for Timy3 W
- 1 x USB-Cable USB-AB
- 2 x Photocell PR1aW
- 4 x Alkaline Batteries for Two Photocells
- 2 x Photocell Reflector REF-L
- 4 x Tripod TRI-S5
- ALGE-TIMING USB-Stick
- Case to pack the complete system

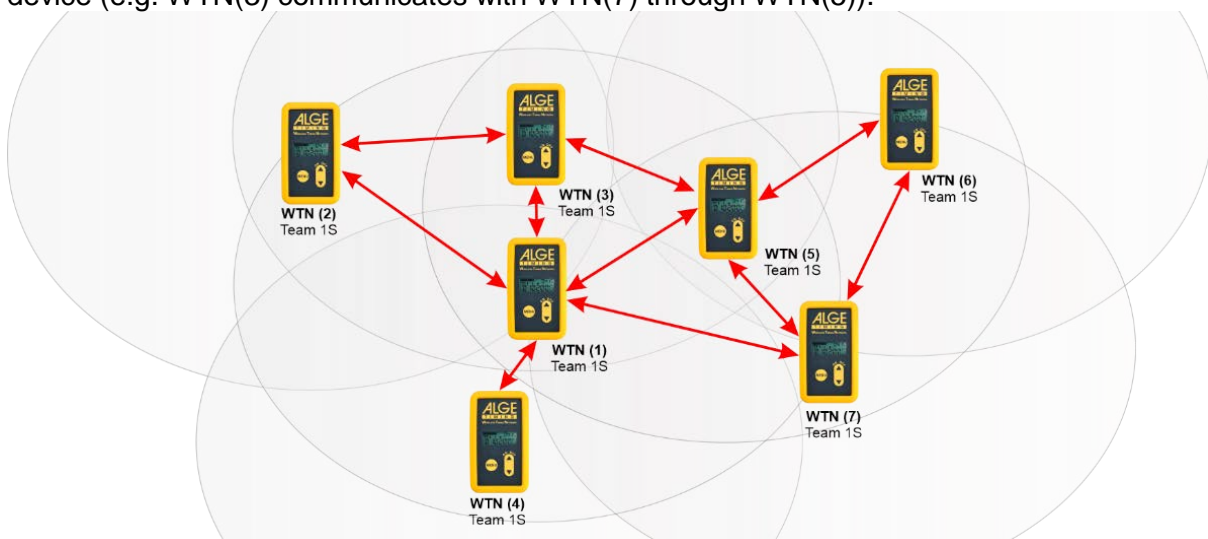
2.2 WTN-Set2

- 1 x Timy3 WP
- 1 x Battery Pack NM-Timy2 built into Timy3 W
- 1 x Power Supply PS12a
- 1 x USB-Cable USB-AB
- 2 x Photocell PR1aW
- 4 x Alkaline Batteries for Two Photocells
- 2 x Photocell Reflector REF-L
- 4 x Tripod TRI-S5
- ALGE-TIMING USB-Stick
- Case to pack the complete system

3 System Description

The **ALGE** WTN is a compact radio system for timing and is equipped with the most updated technology.

A radio network consists of two or more devices of the WTN series (a max. amount of 60 WTN devices in a network allowed). In such a network every device communicates with every other device inside the network. This means there are devices that communicate through a third device (e.g. WTN(3) communicates with WTN(7) through WTN(5)).



The network is designed in such a way that you can transmit data to a display board (e.g. ALGE GAZ or D-LINE), serial RS232 data (e.g. to a PC) and timing impulses at the same time. When designing the Wireless Timing Network the ALGE development team concentrated on features that make ALGE devices unique, but also on features that stand for ALGE products: easy operation, highest reliability, rugged casing. Up-to-date technology, integrated in a solid case, results in exceptional features.

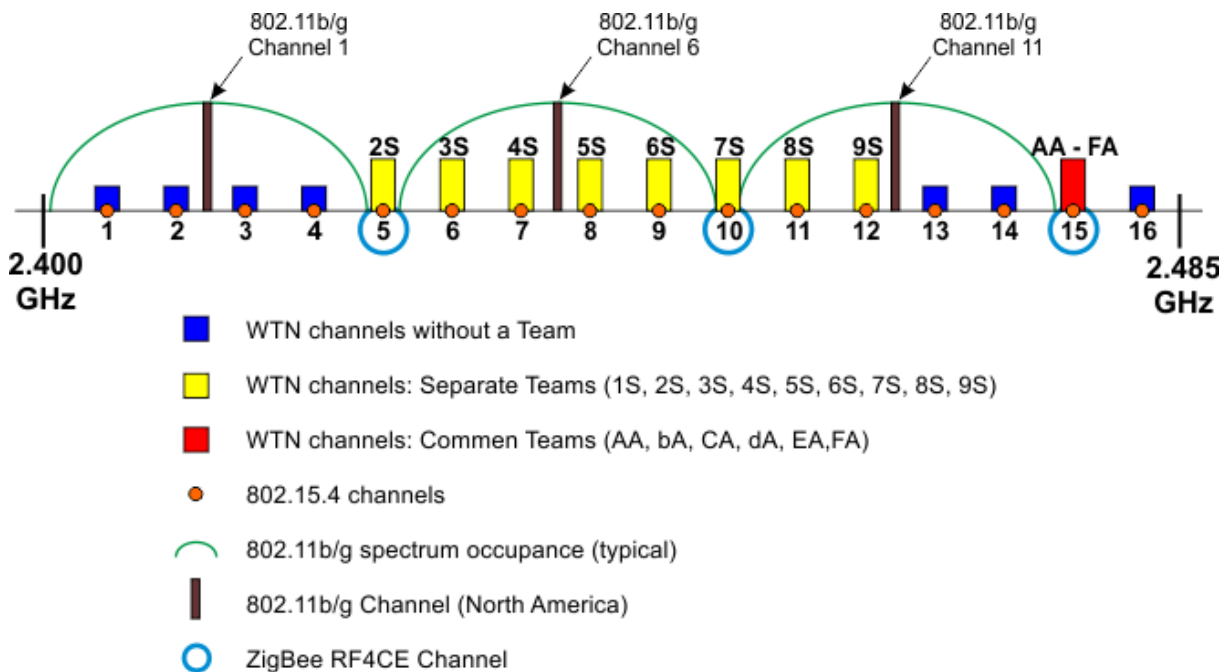
Attention: Before using the device make sure that you are allowed to operate it in your country. The radio power output must be adjusted so that it is legal to use it in the country you operate it in.

- EU: max. 10 mW is allowed
- USA: max. 100 mW is allowed

Radio Connection (A)

The quality of the network status for a WTN system is crucial.

The selected team is important for the connection quality. In case several teams are operated next to each other (spatial proximity) the selected teams (frequencies) should not be side by side within the frequency band (see picture below). For example using teams 1S and 2S should be avoided as frequencies situated next to each other could influence one another in a negative way.



The picture above shows the frequencies of the WTN (yellow and red bars) and of other users in the same frequency band. The more users operate the same frequency or a similar frequency the more difficult it is to guarantee a stable connection.

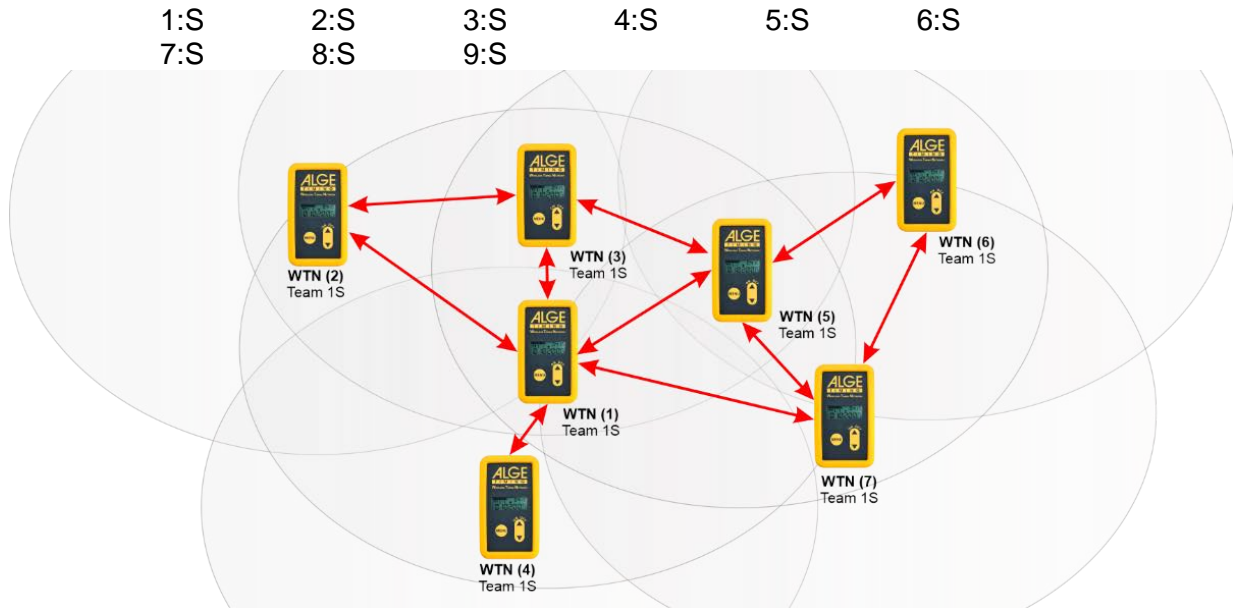
4 Important Menu Functions

4.1.1 Team Number <TEAM>

This function is to select the team number of a WTN system. You can select between 15 team numbers. There are 9 single teams (S) and 6 common teams (A).

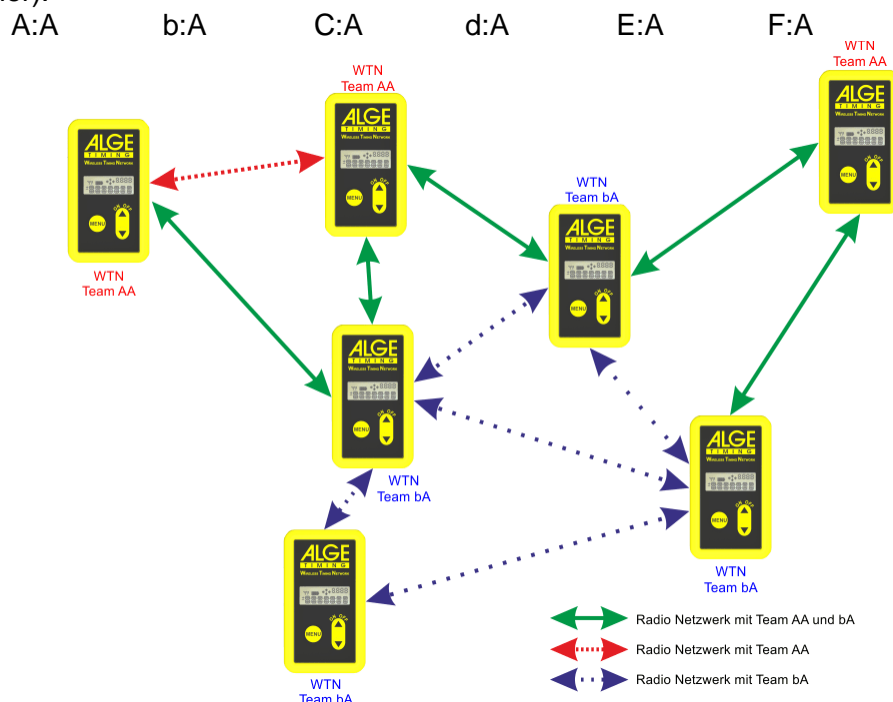
Separate Teams <S> = SINGLE

Used for completely independent networks. If you operate two networks next to each other both networks work in this mode on different frequencies and do not communicate among each other.



Joint Teams <A> = ALL

Used for networks that work independently next to each other. If different A teams with the same radio channel are operated, the other A teams can be used for data transmission. The data of the other team however is not used (e.g. for two show jumping grounds that are next to each other).



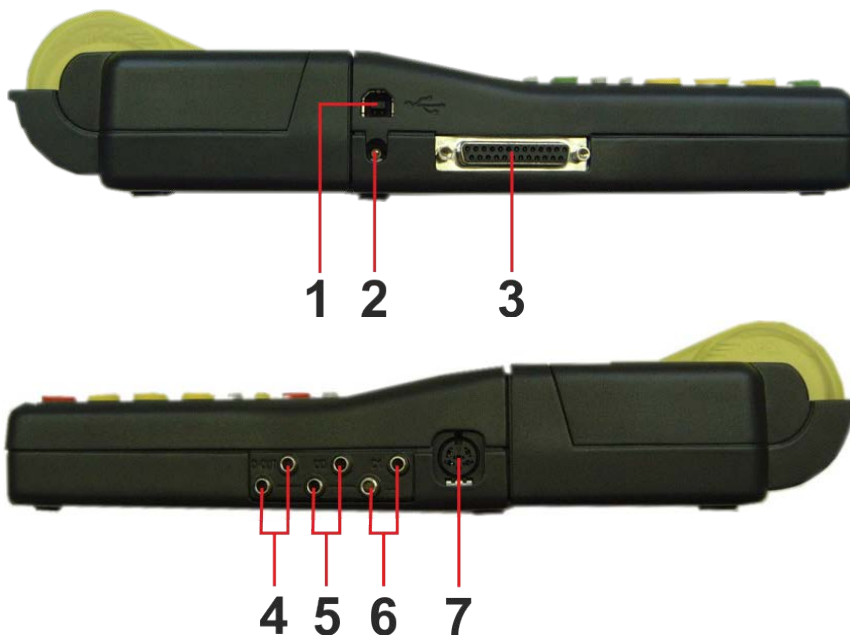
5 Timy3

Control elements



- A paper roll
- B thermal printer
- C printer hood
- D printer hood opener
- E LCD graphic display
- F silicon keyboard
- G carrying band eyelet

- 1 USB interface
- 2 charging socket
- 3 ALGE-TIMING multiport
- 4 connection for display board
- 5 connection for start impulse
- 6 connection for finish impulse
- 7 standard ALGE-TIMING photocell socket



5.1 TIMY3 Models

Both TIMY3 models are equipped with a temperature compensated quartz-oscillator and therefore suited for highest accuracy. The extended temperature range allows operating the TIMY3 from +50°C until -20°C (for summer and winter sports).

TIMY3 W:

TIMY3 W is a timing device without printer.



TIMY3 WP:

TIMY3 WP is a timing device with integrated printer.



5.2 TIMY3 Software

Available programs for the TIMY3:

Available programs for the Timy3:

- Stopwatch:** universal timing program which is suitable for several heats (run/total time)
- Backup:** to measure time of day times (e. g. as backup-system or as time reference for the computer)
- PC-Timer:** to measure time of day times with simultaneous output of the running time in 1/10 seconds via the RS232 interface; ideal as an accurate timing device for the computer
- LapTimer:** timing program with run times and lap times (e. g. for motor sport)
- TrackTimer:** timing program for events with several lanes, e. g. athletics and swimming
- Training Lite:** universal training software (several intermediate times are possible)
- Training REF:** training software with reference run (several competitors on course)
- Speed:** speed measurement
- Commander:** terminal for diverse subprograms (see manual)
- CycleStart:** program for track cycling with countdown and lap counter
- Terminal:** terminal for judges (e. g. gymnastics)
- Track + Field:** for measuring the wind speed with anemometer WS2, to control a concentration clock and infield display board
- Parallel-Diff:** timing for parallel slalom (difference time of both slopes)
- Dual Timer:** timing of two separate courses
- Timeout:** timing with timeout, also applicable for show jumping (with start countdown)
- Swim Trainer:** training program for swimming
- Jumping:** training program for jump trials, measures jumping height on the basis of time between jump and landing on a contact mat (several subprograms)
- Speed-Climbing:** timing for parallel competitions at speed climbing with false start
- Start-Liner:** to control Startclocks ASC3 or display boards D-LINE when using individual start time (e.g. Gundersen start)
- Parallel-Start:** to control and input start doors for opening with a different time delay
- TV-Timer:** simple timing program for controlling a display board or TV time flashes
- Voting:** radio judging console (WTN) for judges, voting, etc. (e.g. ski jumping)
- Safe Driving 2:** to control a display board and speed measurement for driver training
- CC False Start:** false start detection for cross country skiing sprint events

5.3 Driver Installation

For installation of drivers, separate manuals are available. You can download them on our homepage www.alge-timing.com or contact your ALGE representative.

5.4 Keypad

The TIMY3 has a weather-proof (water-proof) silicone keypad. The keypad is ideal for outdoor use. The keys are raised and have ideal pressure points. Although the TIMY3 is small in dimensions, they are easy to operate.



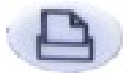
Control keys: all-purpose keys; the function of each one is always visible in the display.





START/ON: Key for manual start impulse and to switch on the TIMY3.



STOP/OFF: Key for manual stop impulse and to switch off the TIMY3.



Printer: Key for paper output. If you press the combination  and , you open the printer menu.



2nd: This key is always used in combination with a second key (additional function).

Menu: Key to enter the device menu.



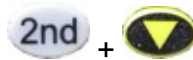
CLR: Key to clear the marked times or to clear the memory.



Cursor: Keys to move the cursor in the display.



Beginning of a list



End of a list



OK green: Switch on, confirm commands or start inputs



OK red: Switch off, confirm commands or finish inputs

5.5 Display of TIMY3

The TIMY3 has a display with backlight. The backlight makes reading of the display at bad light conditions easier. As the backlight consumes energy it is only switched on automatically when the TIMY3 is connected with an external power supply (e. g. PS12A). If you use the TIMY3 in battery mode you can switch on the backlight in the menu.

- Press menu key
- Select <DISPLAY> with arrow down key
- Press OK key (red or green)
- Select <Back Light> with arrow down key
- Press OK key (red or green)



- The display shows:



ENERGY-SAVE:	External Supply:	Display Back Light on (100% brightness)
	Battery Operation:	Display Back Light off
ON:	External Supply:	Display Back Light on (100% brightness)
	Battery Operation:	Display Back Light on (50% brightness)
AUTOMATIC:	after each key stroke or timing impulse the back light is on for 5 seconds	

- Choose desired light function with arrow down key
- Press OK key (green or red)
- Exit menu by pressing menu key



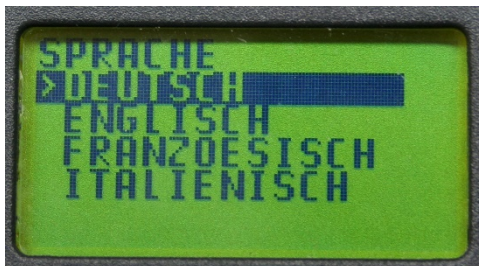
5.6 Choose Language

Currently, you can choose between the following languages: German, English, French and Italian.

- Press menu key
- Select <GENERAL> or <ALLGEMEIN> with arrow down key
- Press OK-key (red or green)
- Select <LANGUAGE> or <SPRACHE> with arrow down key
- Press OK-key (red or green)



- The display shows:



Display in German



Display in English

- Select desired language with arrow down key
- Press OK key (green or red)
- Exit the menu by pressing menu-key



5.7 Start Up

5.7.1 Switch On

- Press „START/ON“ key
- Display shows:
“Really switch-on? Press the green OK button!”
- If you press the green OK key within 10 seconds, the TIMY3 switches on, otherwise it automatically switches off.



5.7.2 Switch Off

You have got two possibilities to switch off the TIMY3:

Method 1:

- Press „STOP/OFF“ key for 3 seconds
- Display shows:
“Really switch-off? Press the red OK button!”
- If you press the red OK key within 10 seconds, the TIMY3 switches off, otherwise it returns to the program.



Method 2:

- Press „2nd“ and „STOP/OFF“ keys
- Display shows:
“Really switch-off? Press the red OK button!”
- If you press the red OK key within 10 seconds, the TIMY3 switches off, otherwise it returns to the program.



5.8 Power Supply

The TIMY3 has several possibilities for power supply:

External supply +8 to 24 VDC:

- Power supply unit PS12
- Power supply unit PS12A, ideal as the Deltron socket remains free
- External battery e. g. 12V plumb rechargeable battery
- ALGE Display Board (e. g. GAZ4 or D-LINE)

NLG4 and **NLG8** must NOT be used as the off-load voltage is too high (TIMY3 might be destroyed!).

With external supply of at least 11.0 VDC, the internal rechargeable batteries are charged.

Internal supply:

The battery compartment has space for 6 batteries type AA or rechargeable batteries. For TIMY3 WP you have to use the heat-sealed rechargeable battery-packs ONLY!

Timy3	Timy3 W		Timy3 WP	
	-20°C / -4F	20°C / 68F	-20°C / -4F	20°C / 68F
Alkaline Batteries		about 100 hours	not possible	not possible
NiMH Rechargeable NM-TIMY2	about 50 hours	about 60 hours	about 31 hours	about 47 hours

This measurement took place without the TIMY3 supplying external devices (e. g. no supply of photocells) and for the WP with 3 printed lines per minute.

Battery types:

Alkaline batteries: These batteries must never be used in a TIMY3 with integrated printer. Alkaline batteries can only supply about 10 % of their original capacity at temperatures of 20°C. Thus, they are only recommendable for warm weather. On environmental reasons it is also recommendable that rechargeable batteries are used.

NiMH battery pack NM-TIMY2: The NiMH rechargeable battery pack is recommended for every TIMY3. These newly developed batteries dispose of an enormous persistence even at very low temperatures and can supply a high current for the printer.

Charging:

The rechargeable batteries are charged inside the TIMY3 with charger PS12 or PS12A, no matter if the TIMY3 is switched on or off. The charging period with NiMH batteries (NM-TIMY2) takes with 1.5 Ah approx. 14 hours.

Charging Switch:

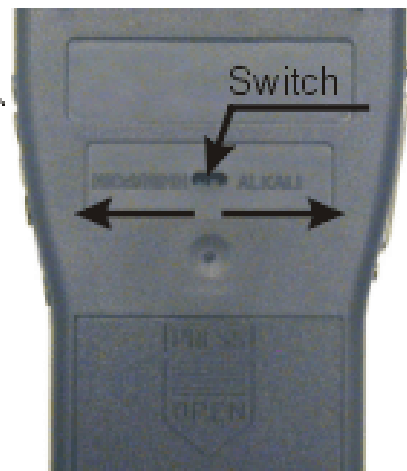
The TIMY3 has got a switch (hidden behind the battery label) for switching on or off the rechargeable battery charging.

Using alkaline batteries, the charging must be switched off -position ALKALI-, as otherwise the batteries may leak.

During the operation with rechargeable batteries, the switch should be on position NiCd/NiMH so that the rechargeable batteries are charged.

Attention: Never use alkaline batteries in a TIMY3 when the charging switch is set on NiCd/NiMH and a charger is connected.

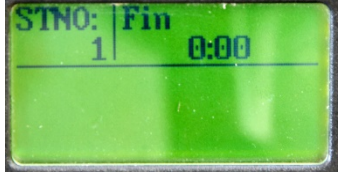
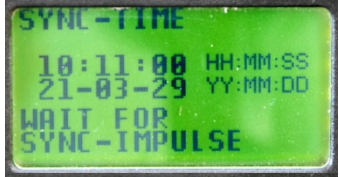
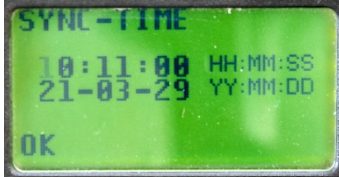
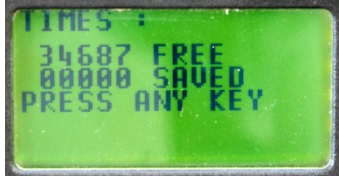
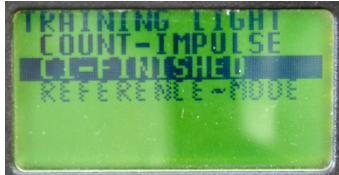
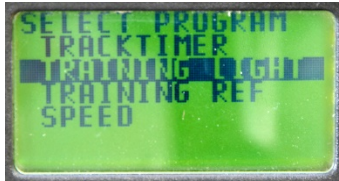
NiCd-Battery
or
NiMH-Battery



Operating period:

The operating period depends on the TIMY3 model, the batteries utilized and the ambient temperature.

6 Setup of the Timy3 (example: Program Training Light)



- Switch the Timy3 on (press **START ON** and **OK**)
- Select the program <Training Light> using the keys **▼** and **▲** and confirm with **OK**
- Select <C1-FINISHED> using the keys **▼** and **▲** confirm with **OK**
- If there are data in the memory you should to clear them by pressing **CLR**
- If there are no data in the memory or after clearing the memory press **OK**
- Input the time of day and date for the synchronisation
- Use the keyboard to input the time of day of the next full minute and confirm with **OK**
- Use the keyboard to input the date and confirm with **OK**
- Start the internal time of day by pressing the button **START ON**
- Now you are ready for timing

For more information about operating the program Training Light check the manual Training of the Timy.

Link: <https://alge-timing.com/downloads/userGuides/Timy-Training-BE.pdf>

7 Photocell

- Move the rain protection cover to the front
- Set the Team that you want to use (e.g. Team 1)
- Set the channel that you need for this photocell
Start: Channel 0
Finish Channel 1
- Mount the photocell on the tripod
- Turn the photocell on
- Adjust the photocell with the reflector



Further information you will find on in the manual

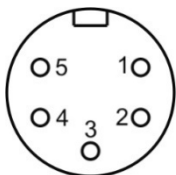
Link: <https://alge-timing.com/downloads/userGuides/PR1aW-BE.pdf>

7.1 Power Supply

In radio mode the photocell must be supplied with batteries (2 x AA battery in photocell).

Current consumption with battery: battery with 2,5 VDC: 40 - 90 mA
timing devices 5 Vstab:18 - 40 mA

Connector pin assignment DIN socket:



- 1..... signal output
- 2..... signal output
- 3..... ground
- 4..... external supply (input 4 - 18 VDC)
- 5..... external supply (+5VDC stabilized – e.g. from ALGE timing devices)

7.1.1 External Supply

The photocell can be supplied by pin 4 (4 – 18 VDC) and pin 3 (ground). This is primarily of advantage when several photocells have to be supplied by cable over large distance.

7.1.2 Internal Battery

The photocell can also be supplied by internal batteries (2 x AA battery).

The following types of batteries can be used:

- Alkaline battery:** Ideal in case the photocell is not used very often.
- NiMH rechargeable batteries:** Rechargeable batteries that is optimal in case the photocell is used daily. These batteries have a long operating time with very low temperatures.
- NiCd rechargeable batteries:** Not recommended for use in photocell.

Switch on internal battery

The battery in the photocell is switched on with switch (on/off).

7.1.3 Insert Batteries

The battery cover is underneath the photocell

Press cover slightly inside and pull forward

Attention:
Mind the polarity of the batteries! (sticker inside)



7.1.4 Operating Time of Batteries

The operating time of the photocell depends on different factors. Most importantly is what kind of battery is used. The operating time becomes less with each additional photocell pulse. Also important is whether the photocell is used as reflection photocell (transmitter and receiver) and/or as transmitter or receiver.

Battery Type	Photocell without Radio		Photocell with Radio	
	1 impulse per minute		1 impulse per minute	
	-20°C	20°C	-20°C	20°C
Alkaline Battery - 2,8 Ah	apporx. 17 h	apporx. 77 h	apporx. 9 h	apporx. 30 h
NiCd rechargeable - 1,1 Ah	apporx. 11 h	apporx. 28. h	apporx. 6 h	apporx. 14 h
NiMH rechargeable - 2,7 Ah	apporx. 57 h	apporx. 70 h	apporx. 28 h	apporx. 35 h

If the photocell PR1aW is used as a transmitter it almost has the same operating time as in reflection photocell mode; for a receiver it is three times higher as for the reflection photocell.

7.2 LED-Operating Mode Indication

The LED of the photocell indicates several operating modes:

LED	Operating mode NORM	Operating mode RX	Operating mode TX
permanently red	Photocell misaligned	Photocell misaligned	No indication
permanently yellow	Photocell not optimally aligned	Photocell not optimally aligned	No indication
permanently green	Photocell optimally aligned	Photocell optimally aligned	No indication
blinking red	Battery empty – replace	Battery empty – replace	Battery empty – replace
blinking yellow	Battery near empty replace soon	Battery near empty – replace soon	Battery near empty replace soon
blinking green	Battery full	Battery full	Battery full

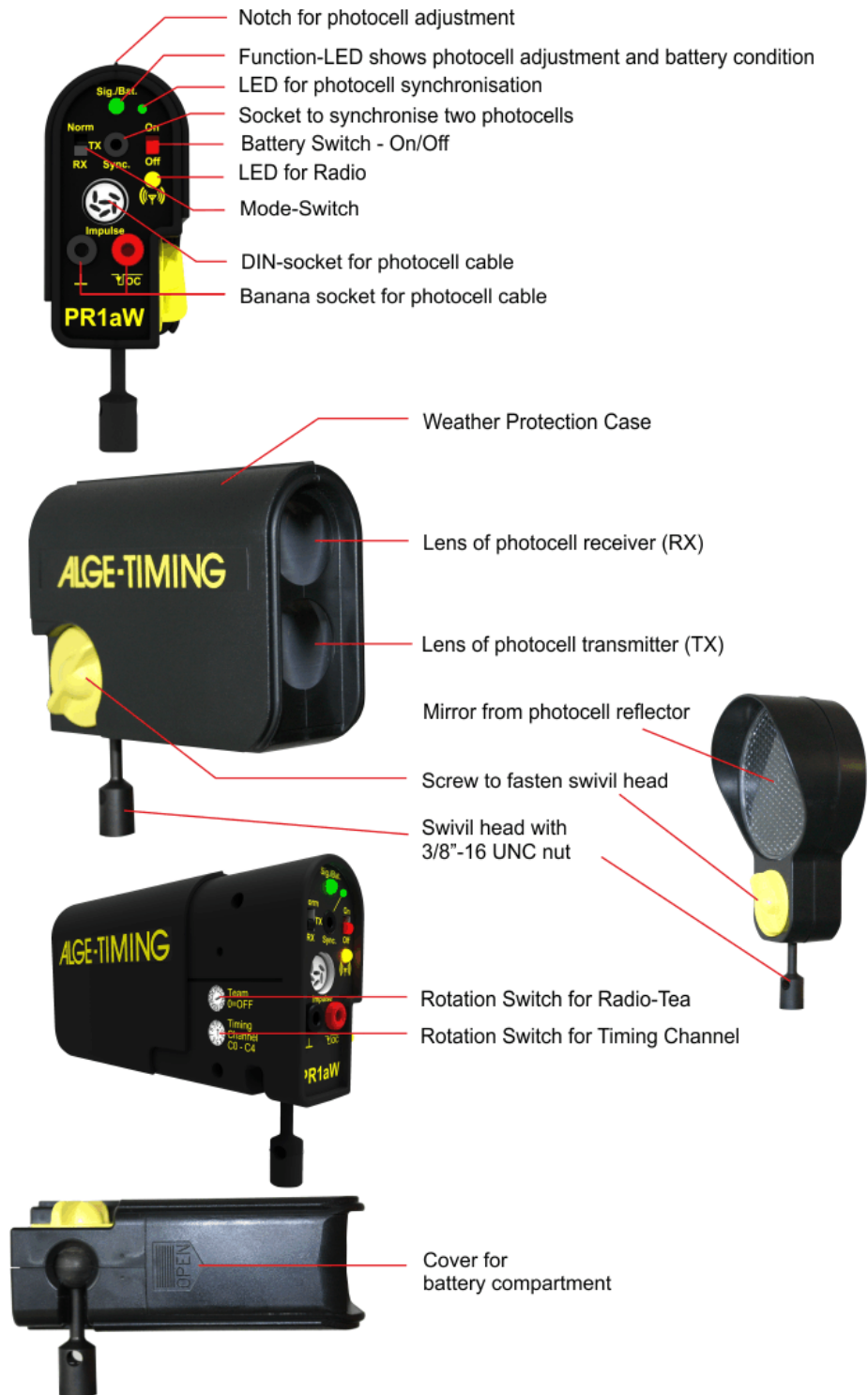
7.3 Alignment of Photocell

7.3.1 Reflection Photocell

- If you use the photocell in the radio mode please check if you have full batteries in the battery compartment.
- Adjust with rotation switch used Radio Team (same radio team as other network members).
- Adjust with rotation switch the timing channel (e.g. start impulse = 0, finish impulse = 1).
- Screw mounting brackets BBG to wooden pole and/or position tripods TRI128
- Screw photocell and reflector on mounting brackets or tripods
- Align mirror of reflector straight to photocell
- Switch operating mode to <NORM>
- Switch on photocell:
 - Batteries: Switch to <On>
 - Supply from timing device: connect cable of timing device with photocell (red cable 001-xx or green cable 002-xx), switch on timing device
 - External supply: connect external supply to photocell
- Operating mode LED must flash red
- Locate the reflector with the alignment notch
- Align the photocell until the operating mode LED flashes green
- After 5 seconds the operating mode LED has to blink green (indicates that the battery and/or supply is okay). In case the LED blinks orange or red the battery should be replaced or the supply must be checked.
- After each photocell pulse the operating mode LED flashes green for several seconds (indication for good photocell reception) before the battery condition is indicated again.

7.3.2 One-way Photocell

- If you use the photocell in the radio mode please check if you have full batteries in the battery compartment.
- Photocell Receiver: Adjust with rotation switch used Radio Team (same radio team as other network members).
- Photocell Receiver: Adjust with rotation switch the timing channel (e.g. start impulse = 0, finish impulse = 1).
- Screw mounting brackets BBG to wooden pole and/or position tripods TRI128
- Screw photocells on mounting brackets or tripods
- Align photocells to each other
- Check if the operating mode is <NORM>. If not, switch to this position.
- Switch on photocells:
 - Batteries: Switch to <On>
 - Supply from timing device: connect cable of timing device with photocells (red cable 001-xx or green cable 002-xx), switch on timing device
 - External supply: connect external supply to photocells
- Operating mode LED must flash red
- Locate the other photocell with the alignment notch
- Align the photocell until the operating mode LED flashes green
- After 5 seconds the operating mode LED has to blink green (indicates that the battery and/or supply is okay). In case the LED blinks orange or red the battery should be replaced or the supply must be checked.
- Switch operating mode of transmitter photocell to TX - LED has to blink green, if supply is okay.
- Switch operating mode of receiver photocell to RX – LED works like the one of the reflection photocells.
- After each photocell pulse the operating mode LED of the receiver photocell flashes green for several seconds (indication for good photocell reception) before the battery condition is indicated again.
- **Attention:** The timing device has to be connected to the receiver photocell.



Subject to changes and misprints

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