ALGE-TIMING

Timy 3

**Manual
General**

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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Declaration of Conformity

We declare that the following products comply with the requirements of the listed standards.

We,   **ALGE-TIMING GmbH**
      Rotkreuzstrasse 39
      A-6890 Lustenau

declare under our sole responsibility, that the timing device

Timy3 W-F and Timy3 WP-F

complies with the following standards/normative documents and in case of intended use complies with the basic requirements of R&TTE 1999/5/EC:

   Telecommunication (TC)terminal device
   Short Range Device

When used as intended complies with the basic requirements of §3 and the other relevant Provisions of the FTEG (article 3 R&TTE 1999/5/EC).

Health and safety according to §3(1)1. (Article 3(1)a))

Applied harmonized standards…
            EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013

Protection requirements with regard to electromagnetic compatibility §3 (1) 2, (article 3 (1) b).
Applied harmonized standards
EMC: EN301 489-17 v2.1.1. (2009-05) v2.2.1 (2012-09)
            EN 300 328 v1.7.1 (2006-10) v1.9.1 (2015-02)
            EN 55022 : 2010 / AC : 2011
            EN 55024 : 2010 / A1: 2015
            EN 61000 3-2:2014
            EN 61000 3-3:2013

Additional Information:
The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC, also the EMC Directive 2004/108EG and accordingly carries the CE-marking.

Lustenau, 2017-03-22   **ALGE-TIMING GmbH**

                                                 Albert Vetter
                                                (General Manager)

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
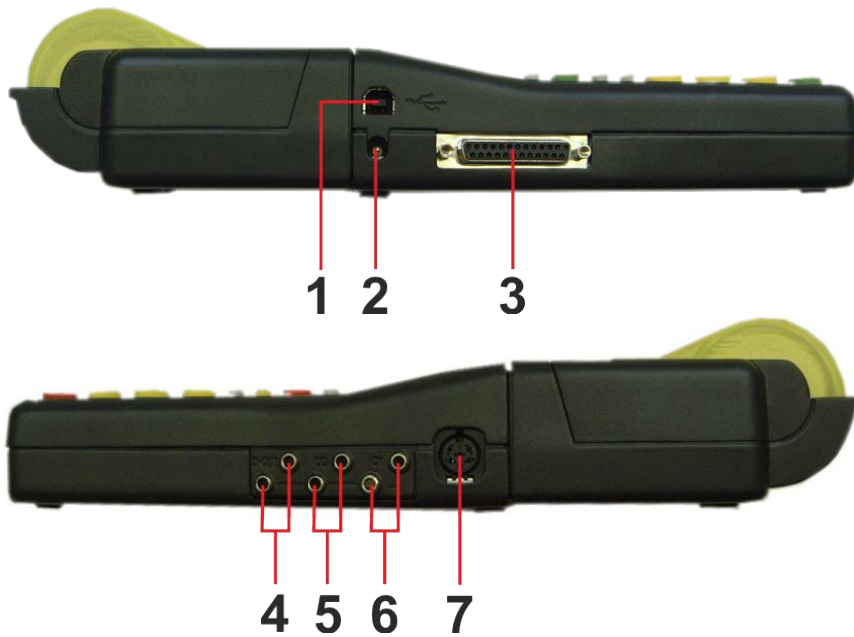
Table of contents

1 Device Description

The *ALGE-TIMING* Timy3 is a handy device, equipped with high-quality technology.
In spite of the handy dimensions, the Timy3 provides a large and easy-to-use silicone keypad.
The model Timy3 WP has an integrated printer that records the entire competition.
The Timy3 is also equipped with the necessary interfaces for communication with external devices: interface for display boards, RS232 interface for communication with a computer, RS485 interface to establish a network of timing devices and future-proof USB interface.
The memory of the Timy3 can store up to 30,000 times which can be shown on the display or transmitted to a computer by RS232 or USB interface at any time.
The integrated radio modem WTN allows linking the Timy3 via radio with all devices of the WTN series.
For operating the Timy3 with the internal radio module please also refer to the WTN manual.

1.1 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 (Design2):

Timy3 WP is a timing device with integrated printer.

1.2 Timy3 Software

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 a Startclock 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

1.3 Driver Installation

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

1.4 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, the keys are easy to operate.

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

FO F1 F2 F3

START/ON: manual start impulse and switch on the Timy3

STOP/OFF: manual stop impulse and switch off the Timy3

Printer: paper output; combination 2nd and 🖶 , opens printer menu

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

Menu: enter the device menu

CLR: clear the marked times or memory

Cursor: move the cursor in the display

2nd + ▲   beginning of a list

2nd + ▼   end of a list

OK green: switch on, confirm commands or start inputs

OK red: switch off, confirm commands or finish inputs

1.5 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:
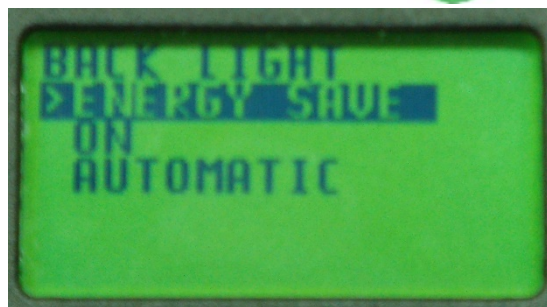
ENERGY-SAVE:	external supply:	display back light on (100 % brightness)
	battery operation:	display back light off
ON:	external supply:	display back light on (100 % brightness)
	battery operation:	display back light on (50 % brightness)
AUTOMATIC:	After each key stroke or timing impulse the back light 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.

1.6 Choose Language

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

- 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.

2 Start Up

2.1 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 again.

2.2 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.

2.3 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-TIMING display board (e. g. GAZ4 or D-LINE)

NLG4 and **NLG8** must NOT be used as the off-load voltage is too high. The 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 six batteries type AA or rechargeable batteries. For Timy3 WP you have to use the heat-sealed rechargeable battery-packs ONLY!

Timy3 (Design 2)	Timy3 W		Timy3 WP	
	-20°C / -4F	20°C / 68F	-20°C / -4F	20°C / 68F
Alkaline Batteries	about 50 h	about 100 h	not possible	not possible
NiMH Rechargeables NM-Timy2	about 50 h	about 60 h	about 25 h	about 60 h

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 <u>never</u> 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. For 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.
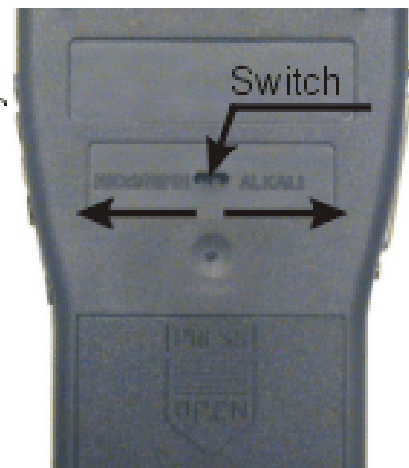
Attention: Never use alkaline batteries in a Timy3 when the charging switch is set to NiCd/NiMH and a charger is connected.

Operating period:

The operating period depends on the Timy3 model, the batteries utilized and the ambient temperature.

3 Printer

The Timy3 WP has an integrated thermal printer. We recommend using our **ALGE-TIMING** paper as it is best suited. You can recognize it by the **ALGE-TIMING** logo print on the reverse side, available with your **ALGE-TIMING** representative.

3.1 Change of Paper for Timy3 WP (Design 2)

- press printer hood opener (see picture on the right)
- lift printer hood
- take out paper axis
- place the axis inside a new paper roll
- insert paper roll with axis into Timy3
- thread paper through tear-off edge
- close printer hood

3.2 Change of Paper for Timy3 WP (old Design)

- open printer hood
- take out paper axis
- place the axis inside the new paper roll
- insert paper roll with axis into Timy3
- thread paper through tear-off edge
- close printer hood

printer hood release button
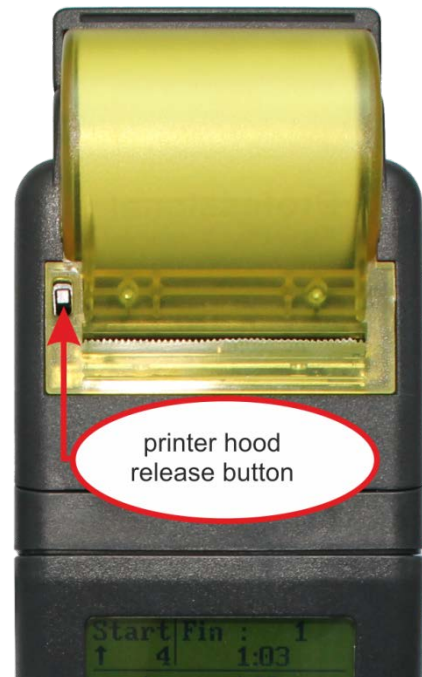
4   Synchronizing

The Timy3 can be synchronized with an ALGE·TIMING GPS-receiver GPS-A with the exact time of day. It is also possible to synchronize the Timy3 with other Timy3 or other timing devices (e.g., TdC8001).

4.1   Manual Synchronisation

In most cases the Timy3 is the only timing device. Therefore, synchronization with other timing devices is not necessary. However, it is important for the later overview of the timing impulses, that the time of day and date is correct. The Timy3 has an internal timing chip that keeps going as well when the Timy3 is shoot off, but during each new start it loses a few seconds and therefore the actual time of day should be adjusted.

- Turn the Timy3 on as described in chapter „2.1 Switch-On ".
- Select the program that you want to use with the keys ⬆ ⬇ and confirm the selection with the key <OK> (OK or OK).
- Select if you want to keep or delate the stored times in the memory.
- Input the time of day and date:

```
SYNC-TIME

08:47:00  HH:MM:SS
21-02-16  YY:MM:DD

OK
```
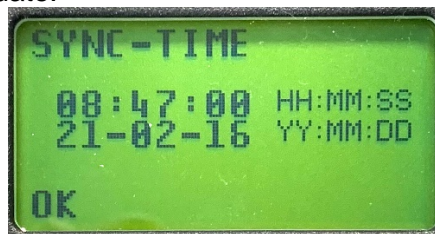
  o Input the time of day in hours, minutes and seconds (HH:MM:SS) and confirm with <OK> (OK or OK).
  o Input the date with years (2-digit), month and day (YY:MM:DD) and confirm with <OK> (OK or OK).

```
SYNC-TIME

08:47:00  HH:MM:SS
21-02-16  YY:MM:DD
WAIT FOR
SYNC-IMPULSE
```
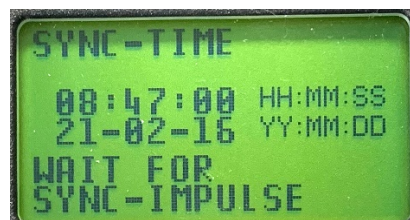
- Start the time of day by pressing the key START ON or by an impulse through the external timing channel C0 (start channel).
- The Timy3 is now ready for timing.

4.2 GPS Synchronization

It is possible to synchronize the Timy3 with a GPS mouse (GPS-TY). The synchronization can be carried out in all Timy programs and is accurate to a 1/10,000 second.

- The GPS mouse (picture: GPS 18LVC) needs no external power supply.
- The RS232 baud rate of the Timy3 has to be set to 9600 baud.
- In the menu <channels> the item <TED-RX> has to be deactivated.
- The GPS synchronizes the Timy3. After this the Timy3 runs with its own precision quartz and the GPS can be disconnected. The GPS mouse can now be used to synchronize further devices.

Instead of the time-of-day setting, the display shows as indicated on the right. As long as it says "NO SIGNAL", the GPS receiver is searching for satellites.
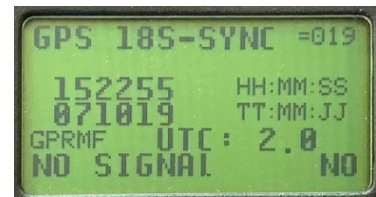
When **"OK -UTC +UTC NO"** is displayed in the bottom line, the time for your region can be adjusted with keys (F1) and (F2). As soon as the correct time is shown, press (OK).
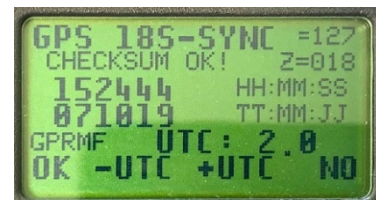
Attention!
After receipt of a valid GPS signal, the Timy3 verifies the checksum and measures the duration of the sync signal. If the sync signal is erroneous, the Timy3 carries out a reset. Thus, it is impossible to generate an invalid sync time. If the Timy3 is supplied by external power, it automatically restarts. In case of operation with internal power, the Timy3 turns off and has to be restarted.

Remove the GPS receiver from the Timy3. Press (OK) to start the selected program.

4.3   Synchronization of Timy3 from another Timing Device

The Timy3 can be synchronized via your start channel C0 from any ALGE-TIMING timing device. You can also synchronize multiple timing devices at the same time.

- connect Timy3 with cable 000-xx or 004-xx to other timing device(s)
- switch on Timy3
- clear or save memory
- set the time of day at which the synchronization takes place and confirm with <OK>
- set the date and confirm with <OK>
- trigger start (can be with the <START> key of the Timy3 or by short-outing the start line, e.g., with push button or start gate)
- check if all timing devices started
- trigger the start again and check if the start time is the same for all devices
- disconnect the sync cable if the start times were the same
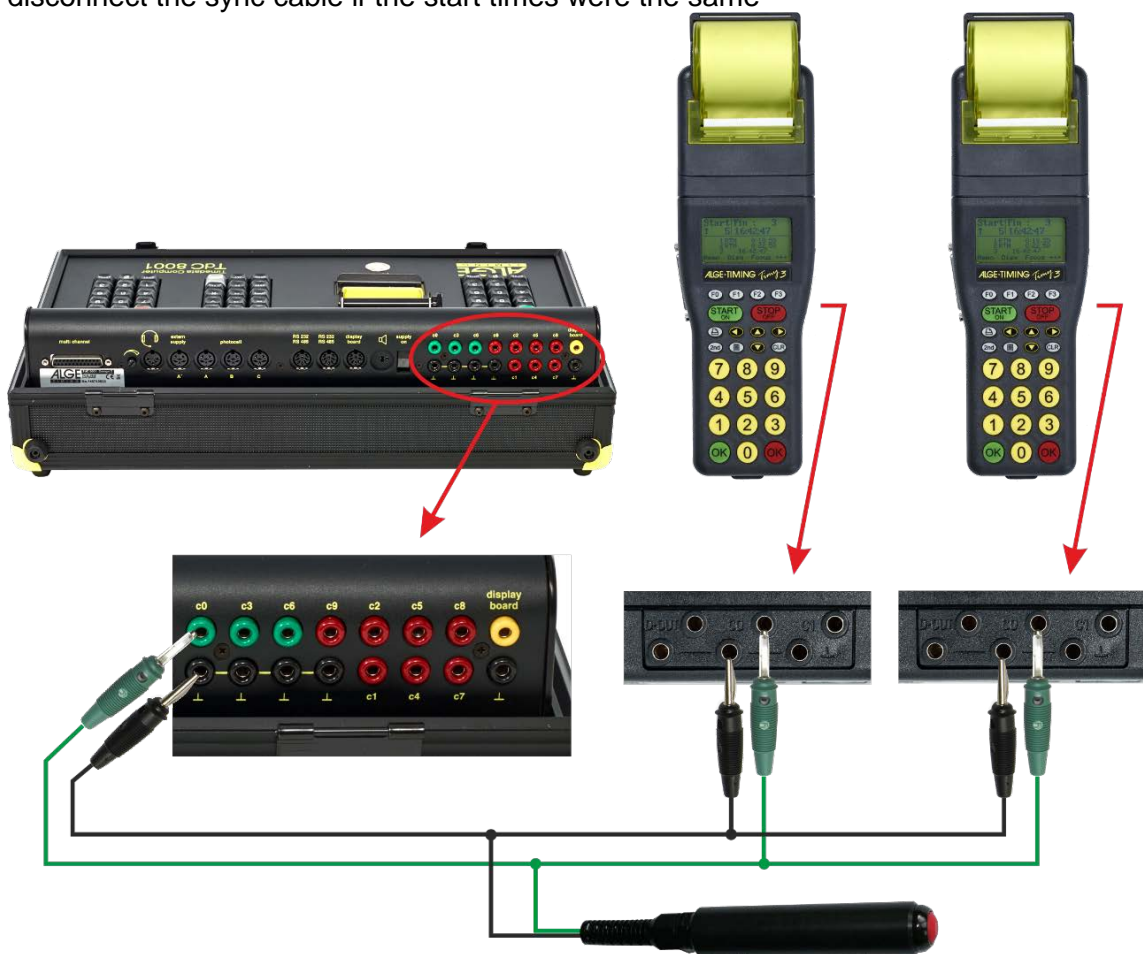
4.4 Synchronization of other Devices with Timy3 by Cable

The Timy3 can send a synchronization signal via channel 0 every full minute when using the programs BACKUP or PC-TIMER.

- Connect the Timy3 with the device to be synchronized.
- Enter the time of day (next full minute) to be synchronized at the device.
- Press and hold both keys, the green and red OK key of the Timy3. On the full minute the Timy3 sends a synchronization impulse. The time of day of the other timing device must now run.

4.5 Synchronization of Timy3 to Timy3 by WTN

It is possible to synchronize the Timy3 from another Timy3 via WTN. For this, the devices must be set to WTN mode and within radio range. There are two ways for synchronization.

Adjustment:
- press button
- move cursor with ⬇ to <GENERAL>
- enter menu <GENERAL> by pressing ➡
- move cursor with ⬇ to <SYNC>
- enter menu <SYNC> by pressing ➡
- move cursor with ⬇ to <OVER WTN>
- enter menu <OVER WTN> by pressing ➡
- select with key ⬇:
  <SYNC OFF>
  <PASSIVE> (factory setting)
  <ACTIVE>
  <ACTIVE PER MIN.>
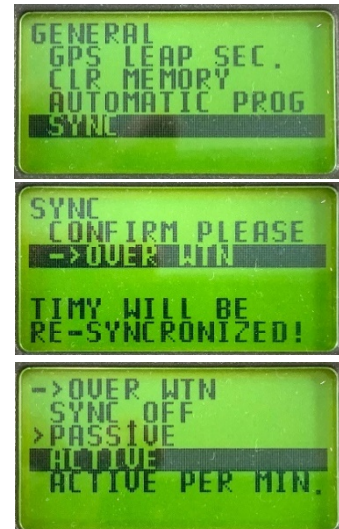
4.5.1 WTN Synchronization Switched Off <SYNC OFF>

Timy3 does not output or read a synchronization time.

4.5.2 Passive Synchronization by WTN <PASSIVE>

The Timy3 can read and resume synchronization times from other Timy3. If the time deviation is more than 0.0005 seconds, the new time of day must be confirmed or rejected at the passive Timy3.

4.5.3 Single Synchronization Output <ACTIVE>

The active Timy3 that executes the synchronization outputs the time of day to all passive Timy3 once.

4.5.4 Synchronization Output every Minute <ACTIVE PER MIN.>

The active Timy3 that executes the synchronization outputs the time of day to all passive Timy3 every minute.

5   Connection of Auxiliary Devices

A wide range of devices can be operated with the Timy3. Please ask your ALGE-TIMING representative for the possibilities.

5.1   Channels

The Timy3 has nine independent timing channels. The max. loop resistance of a timing channel can be up to 2000 Ohm.

Attention: Channels 0 to 5 have a maximum precision of 1/10,000 seconds but channel 6 to 8 only 1/100 seconds.

5.2   Delay and Block Times

The variable delay and block times prevent generating double impulses and loosing impulses. The delay and block times can be changed in the menu.

5.2.1   Delay Time

After triggering an impulse, further impulses of the same impulse channel are disabled for the duration of the delay time.

Default settings:	start channel	C0	1.0 s
	stop channel	C1 to C9	0.3 s

5.2.2   Block Time

The block time is the theoretic minimum interval between two valid impulses of the same channel. Impulses within the block time are saved as invalid. The block time is only supported by certain programs.

That is to say, for an interval start of 30 seconds the minimum clearance is approx. 20 seconds. Thus, the block time is 20 seconds, too.

5.3   Diagram of Delay and Block Time
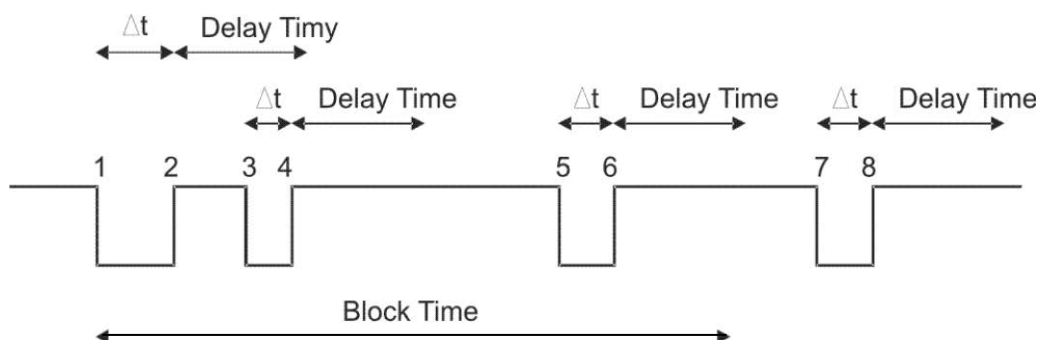
Δt	timing channel triggered
1	timing channel is triggered – valid time is saved – block time starts
2	end of impulse – delay time starts
3	timing channel is triggered within the delay time – no impulse triggering
4	end of impulse – delay time restarts
5	timing channel is triggered within the block time – invalid time is saved but not printed
6	end of impulse – delay time starts
7	timing channel is triggered – valid time is saved – block time starts

6   Timy3 Update

Please visit our website www.alge-timing.com for a free update for your Timy3 software.

6.1   Update Firmware with USB cable

- If not done yet, the Timy3 USB driver has to be installed. An instruction for this can be found on our website
- https://alge-timing.com/alge/download/driver/TimyUSBDriver.exe
- log into the internet
- start your web browser
- input the following link: https://alge-timing.com/alge/download/software/IM.exe
- download the file and start the install manager "IM.exe"
- click on the folder "Timy USB"
- connect Timy3 with the USB cable to the PC
- start Timy3 – the program automatically searches for the Timy3
- As soon as the firmware recognizes the Timy3, the following is displayed

- Choose a method of updating the Timy3. Recommendable is an internet update as the latest version is always available

-

7   Memory

The memory of the Timy3 can store approx. 30,000 times. When switching on, the memory can either be saved or deleted. The free and saved space is indicated.
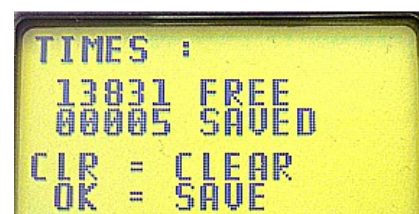
8   Info Menu

Pressing the buttons **2nd** 🔲 opens the info mode. Important data is displayed.

- INFO = TIMY
- INFO2 = Timy2
- INFO3 = Timy3 / INFO3W – WTN module activated
- EXP = operation with external supply
- cts = RS232 cable on channel 1
- VERS = downloaded software version
- BOOT = boot version
- LEVEL = shows from which level the battery voltage is too low to operate the printer; below this level, the printer is automatically switched off in order to save battery
- USB = PC is connected via USB-cable with Timy
- Ubatt = current battery voltage
- Ua = current output voltage
- Ser-Nr = device serial number – alternating every second with HW_SN
- HW_SN = hardware serial number
- C0 – C3 = channel number is here if the channel is not triggered. When the channel is triggered, the channel number and a black bar appear alternately.
- PRI INT = Timy with printer
- PRI EXT = Timy without printer
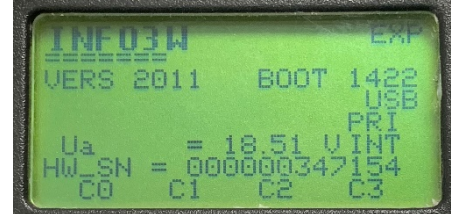
with external supply
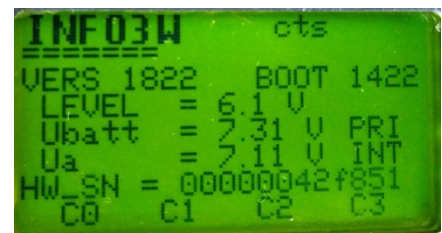
without external supply

By pressing the left or right arrow buttons, the calibration date is shown. You return to the info menu with the same buttons.

9   Menu

The Timy3 menu allows you to adjust individual settings. Push 🔲 to access the main menu. With the cursor buttons you can navigate through the menu.

🔲   enter or exit the menu

🔼🔽   navigate up or down

▶   next submenu

◀   previous menu

OK OK   confirm input or choice

On the following pages the different menu items are described. The program specific menu settings are described in the separately available manuals for each program. Settings printed bold are the **ALGE-TIMING** factory settings.

9.1 CLASSEMENT

The 'classement' menu offers different options to print results.

9.1.1 ALL

Prints an overall ranking of different saved times. According to each program the following options are available:

- **<RUNTIME>**   ranking sorted according to run time
- **<TOTALTIME>**   ranking sorted according to total time
- **<PRINT MEMORY>** prints the memory of Timy3
- **<MEMORYTIME>**   prints times of previous heat
- **<PROTOCOL>**   prints a protocol of all times

9.1.2 CLASS

This prints a ranking list of one class. Subsequently, the bibs belonging to this class have to be chosen. Only one class can be printed at a time.

9.1.3 START LIST

This function prints the start list of the second heat (only if a heat was finished before).

9.2 GENERAL

In this menu item general settings regarding the timing can be made.

9.2.1 PREC-ROUNDING

Choose precision and mode for calculation of times. The bold printed setting is the factory setting.

9.2.1.1 PRECISION

This is for setting the calculation precision. Only for net times!

- <1s>   calculated times in seconds
- <1/10>   calculated times in 1/10 seconds
- **<1/100>   calculated times in 1/100 seconds**
- <1/1000>   calculated times in 1/1 000 seconds
- <1/10000>   calculated times in 1/10 000 seconds

9.2.1.2 ROUNDING

All times are always calculated in day times in 1/10 000 seconds. For conversion to the runtime at the required precision, one of the following three methods can be chosen:

- **<CUT>   cuts off the figures not displayed**
- <UP>   rounds up the last displayed figure
- <ROUND>   mathematical rounding of last displayed figure

9.2.2 CHANGE HEAT

Depending on the active program, this item enables moving on to the next heat.

9.2.3 STN-AUTOMATIC

The Timy3 supports different types of automatic start number continuation for the competitors at start and finish.

9.2.3.1 START

This controls the start number continuation for competitors at the start.

- **<MANUALLY>**
- <UP>
- <DOWN>

9.2.3.2   FINISH

This controls the start number continuation for competitors reaching the finish.

- **<MANUALLY>**   **no automatic continuation**
- <START>   only 1 competitor on track from start to finish
- <FINISH**>**   several competitors on track, according to starting order

9.2.3.3   AUTOMATIC-TIME

Set a minimum and maximum runtime. If an impulse is received before the minimum time has expired, an invalid time is registered. If the maximum time has expired the finish start number is automatically forwarded to the next started competitor.

- <AUTOTIME-MIN>   Standard: **00:00:00** = function disabled
- <AUTOTIME-MAX>   Standard: **00:00:00** = function disabled

9.2.4   SEC-MODE

This function sets if runtime is displayed in min/sec or just sec. Not available in all programs

- **<NO>   Runtime in hh:mm:ss.th**
- <YES> Runtime in ssss:th

9.2.5   LANGUAGE

You can adjust the following languages as defaults for the Timy3

- <GERMAN>
- <ENGLISH>
- <FRENCH>
- <ITALIAN>
- <SPANISH>
- <FINNISH>
- <DUTCH>
- <SWEDISH>

9.2.6   STANDARD

Reset the Timy3 to the factory defaults.

- <STANDARD-SETT>

9.2.7   HARDWARE

This menu is only available for our service technicians.

9.2.8   HARDWARE 2

This menu is only available for our service technicians.

9.2.9   PROGS ON OFF

As standard all programs are activated. The programs that are not used can be hidden to reduce the select list. Hidden programs can be activated any time in this menu again.

9.2.10   GPS LEP SEC.

The earth rotates a little slower than what was the basis of the second's definition. As a result, an actual day lasts a fraction of a second longer than 86400 seconds. This effect adds up. Therefore, an additional leap second is inserted from time to time. If the Timy3 is always updated with the latest firmware, the leap second is automatically updated with the new firmware. Alternatively, you can enter the leap second manually.

9.2.11   CLR MEMORY

You can clear the memory of the Timy3 in this menu at any time.

9.2.12 AUTOMATIC PROG

If <ON> is selected in the automatic program, the Timy3 always starts with the program currently in use (for example Stopwatch).
This feature is recommended if the user always uses the same program.

9.2.13 SYNC

You can re-synchronize the Timy3 in this menu (enter new time of day).

9.3 CHANNELS

Configuration of the timing channels:

9.3.1 INTERNAL

9.3.1.1 DELAY

The delay time of the internal timing channels c0, c1, c2, c3, c4, c5, c6, c7 and c8 can be set. Delay time is the time after which the channel is blocked after an impulse, to prevent multiple impulses (see point 5.2).

- <DELAY START C0>   **standard is 1.00 second**
- <DELAY C1-C8>   **standard is 0.30 second**
- <DELAY C1>   not always available!
- <DELAY C2>
- <DELAY C3>
- <DELAY C4>
- <DELAY C5>
- <DELAY C6>
- <DELAY C7<
- <DELAY C8>

9.3.1.2 0.1s-CORRECTION

If impulses are transmitted by the TED or an external WTN, the 0.1 seconds delay can automatically be corrected for every channel.

All times which are received by the internal WTN are corrected automatically.

IMPORTANT! If you need to output any time received by the internal WTN you have to adjust this channel to be E-START W.

All times received then on this channel, no matter if they come from an ESTART W, PR1aW or another WTN are then corrected according to the E-START W rules. This enables then also the output of these times as an Impulse on the Timy channels.

9.3.1.3 EDGE

This is for setting of triggering the impulses either on closing and/or opening. Standard for all channels is on closing (falling edge).

For channel C0, C1, C2, C3, C4 and C5 the edge is adjustable. You can either set each of these 6 channels individual or all together.

C0 – C5:

↓	impulse when contact is closing (factory setting)
↑	impulse when contact is opening
↓ + ↑	impulse when contact is closing and opening
↓ AS TRIGGER	When an impulse comes from the WTN (radio), it is processed via the edge in Timy3 and not as a data packet. This is important for synchronization. This setting is only available if you adjust C0 - C5 (not for a single channel). The output is only enabled if the 0,1s correction is set on the particular channel to E-START W!

You can adjust at the WTN if a timing impulse has an output of the falling edge <EDGE1> or of both edges <EDGE2>.

Example for falling edge EDGE1:
In the following diagram is dt↓ the delay time for the falling edge (blue).
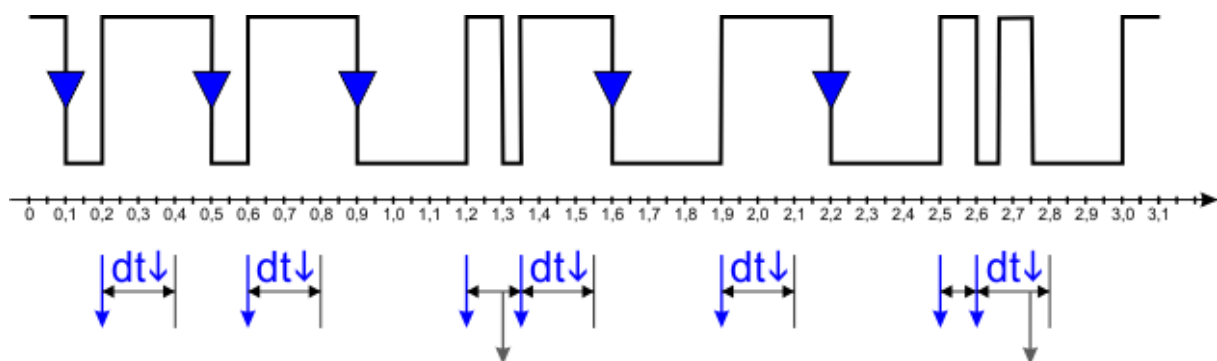
Example for rising EDGE2:
In the following diagram is dt↓ the delay time of the falling edge (blue) and dt↑ the delay time of the rising edge (red).
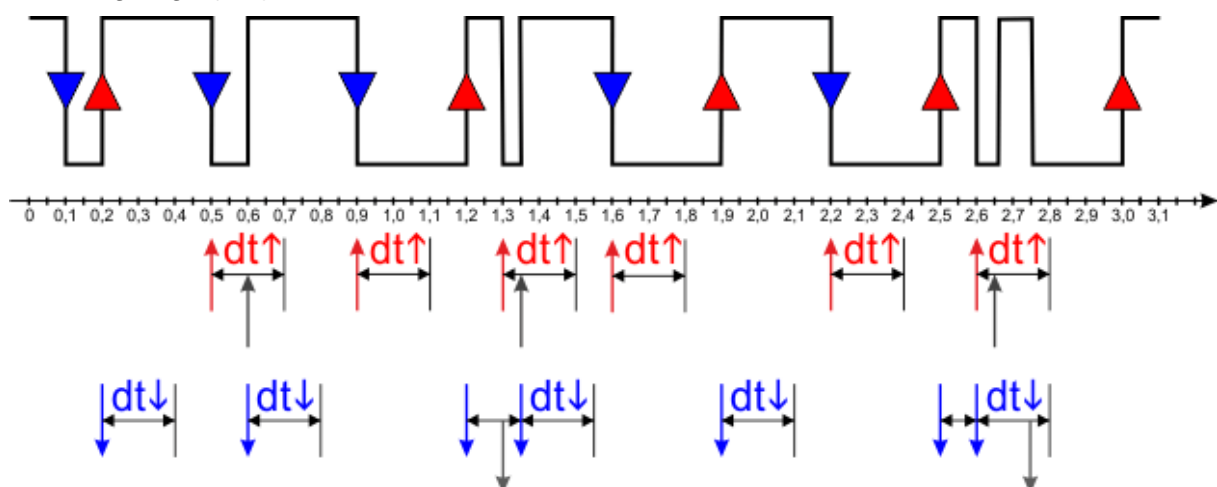
9.3.2   BEEP

This switches the channel beep on or off.

- <OFF>
- **<ON>**   Factory default

9.3.3   TED-RX

This activates the multichannel reception by the TED-RX.

- **<OFF>**   Factory default
- <ON>

ATTENTION! If this function is activated the serial interface is occupied by the TED.

9.3.4   CHANNEL-PATTERN

In this menu each single channel can be permanently activated or deactivated. This is affected by selecting the channels with the arrow buttons.

At the bottom of the display, the function keys are labelled as follows:

- F0 „ON "
    - activates the selected channel
    - If a second Timy is connected via RS232, WTN or GSM, the channel of the other Timy is activated.
- F1 „OFF "
    - deactivates the selected channel
    - If a second Timy is connected via RS232, WTN or GSM, the channel of the other Timy is deactivated.
- F2 „XXX "
    - The status of the channel is not changed. This is only of importance for an RS232, WTN or GSM connection with a second Timy. The channel of the other Timy is not changed.
- F3 „OK "
    - Current settings are saved.

9.3.5   WTN Delay

This function is only activated when the internal WTN is deactivated; i. e. if an external WTN is connected.

9.3.6   ENABLE DISABLE

In this menu you can change from SENSITIVE (factory default) to PERMANENT.

- When set to sensitive:
  When pressing the 2nd button during timing operation, the bottom line of the display shows "C0   C1   C2   C3 ". This vanishes as soon as the 2nd button is released. When the 2nd button is kept pressed, the channels can be blocked by keeping pressed the function keys F0 to F3 of the respective channel.
  Example C1:   • 2nd and F1 pressed: display „- ", the channel is blocked
                    • release F1: display „C1", the channel is active
  This function is only available for channel 0 to 3 and only works if the respective channel has not been deactivated in the menu CHANNEL-PATTERN (see 10.3.4).

- When set to permanent:
  When pressing the 2nd button during timing operation, the bottom line of the display shows "C0   C1   C2   FIX ". With pressed 2nd button and F3 the display can be changed in order to permanently show the channels. With the arrow buttons you can now also access the channels C4 to C8. With UNFIX the permanent display of the channels can be cancelled. There are three different settings for each channel.

Example C1: • „C1": the channel is active
• "-1- ": the channel is permanently blocked
• "?1? ": the channel is active but treated as invalid; the print-out shows a "? "For this channel

As long as the channels are displayed permanently, the menu ENABLE DISABLE is not active, i. e. it cannot be set from permanent to sensitive. After resetting the display with UNFIX, the menu ENABLE DISABLE can once again be accessed.

9.3.7 CHANNEL-USAGE

This is only relevant in case WTN devices (e. g. PR1aW) are used in socket mode. You can set which socket (numbered as T1, T2, etc.) is treated as which channel. At the top right of the display the number of sockets is shown.

9.3.8 PULSE HOLD

You can set the interval for the falling and rising edge of each channel. The interval determines at what moment a pulse hold is shown in the display. Depending on the set edged, the interval for the idle signal or triggered signal of the timing channel can be set.

9.4 DISPLAY

This is for setting the Timy3 display and scoreboard.

9.4.1 RUNNING TENTH

In the display and via interface the running time is issued in 1/10. Function is not available for all programs. Factory setting: OFF

9.4.2 DELAYTIME 1

The delay time determines for how long the intermediate times are shown on display and scoreboard. The display time can be set e.g., for intermediate times of the running time in seconds. Moreover, this time is also applied for the automatic start number continuation at the finish. Factory default is **03** seconds.

9.4.3 DELAYTIME 2

This is for setting the display time for total time. Factory default is **03** seconds.

9.4.4 BACK LIGHT

This is to adjust the backlight of the display. Factory default is <ENERGY SAVE>.

9.4.4.1 ENERGY SAVE

Backlight is switched on during external power supply, switched off during battery supply.

9.4.4.2 ON

Backlight is always switched on.

9.4.4.3 AUTOMATIC

Backlight is switched on for 5 seconds with each keystroke and timing impulse.

9.5   INTERFACE

Settings for the RS232 and scoreboard interface. Some settings are only available in certain programs.

9.5.1   DISPLAYBOARD

These are settings for ALGE·TIMING displays of the type D-LINE or GAZ.

- <**BRIGHTNESS**>   adjusts the brightness (0 – 9) of the LED display board
- <**TIME + DATE**>   internal time and date of scoreboard is synchronized
- **<DISPLAY MODE>**   without function
- **<BAUDRATE>**   standard is **2400,** the baud rate of the Timy3 and also of the scoreboard is set
- **<TIMEOUT>**   period after which the display switches to time of day
- **<ADRESS>**   address for LED display board
- **<SAFETY CAR>**   display mode permanent or flashing
- **<LAPS>**   number of laps
- **<CTD→LAP>**   manual or automatic
- **<FORMAT>**   output of time of day or match time
- **<BOARD ON OFF>**   *OFF:* no display board data output
  ON + WTN OFF: display board data output via interface (banana socket), but not via WTN (radio)
  ON + WTN ON: display board data output via interface (banana socket) and WTN (radio)
- **<STANDING TIMES>**   adjustment in program LapTimer between running time (factory setting) and standing time (only stop times)

9.5.2   RS232

These are settings of the RS232 of the Timy3.

- **<MODE>**   adjustment for output of net time (calculated run time) and time of day or only time of day
- **<BAUDRATE>**   adjustable is 2400, 4800, **9600** or 19200 Baud
- **<SEND MEMORY>**   sends the memory contents of the Timy3
- **<HANDSHAKE>**   with or without RTS-CTS handshake adjustment
- **<TRACK-MODE>**   norm or ident: change output format of TrackTimer
- **<TIMY<->TIMY>**   communication between two Timy3 (program Stopwatch)

9.5.3   GSM-MODEM

These are settings for a GSM-modem communication. GSM-modems are no longer available!

- **<ENTER NR>**   enter the number to dial
- **<SEARCH MODEM >**   search a connected modem
- **<PIN CODE>**   enter the SIM card pin code
- **<STOP GSM-MODEM>**   disconnect the connection
- **<MEMORY → SMS**   send the memory by SMS

9.5.4   GSM-SETTINGS

These are settings for a GSM modem connection. GSM-modems are no longer available!

- **<TEL-NR 1>**   input of the phone number that it dials
- **<TEL-NR 2>**   input of the 2nd phone number that it dials
- **<SMS MAX PAK>**
- **<CONFIG>**

9.6   PRINTER

This menu is for setting the printer parameters.

9.6.1   PRINTER-MODE

- **<PRINTER OFF>**   printer is switched off
- **<PRINTER ON >**   printer is switched on (factory setting)
- **<PAUSE>**   printer stops and times will be saved and printed when printer is switched on again

9.6.2   PRINT STARTTIME

Adjustment if start time is printed immediately after the start.
- **< PRI START OFF>**   prints no start time (factory setting)
- **< PRI START ON>**   prints start time

9.6.3   AUTO LINE FEED

Adjustment of line feeds after printing a data package. It is adjustable between 0 and 9.
- **<0>**   factory setting is zero

9.6.4   START-LOGO

Adjustment whether the ALGE·TIMING logo is printed when switching on the Timy3.
- **<OFF>**   no logo is printed
- **<ON>**   logo is printed (factory setting)

9.6.5   PRINT DAYTIME

Adjustment whether the time of day is printed.
- **<OFF>**   no time of day is printed, only net times (run times)
- **<ON>**   time of day is printed (factory setting)

9.7   PROGRAM

This function allows switching to another Timy3-program.
ATTENTION: When changing the program all saved times must be deleted!

9.8   Program Specific Settings

Depending on active program this menu item is different.

9.9 WTN

The **ALGE·TIMING** WTN is a radio network consisting of several devices of the WTN-series. Within the network, devices can communicate with each other using other devices; i.e., the communication is carried out from one device to another through a third one. The network is intended for simultaneously transmitting display data (e.g., for **ALGE·TIMING** GAZ or D-LINE), serial RS232 data (e.g., to a PC) and timing impulses.

The system is designed in such a way that the Timy3 is at the same time master and time server. Therefore, you should pay attention to the following facts:
1. The Timy3 should always be switched on as first device so that all participants can synchronize with it.
2. During operation, the Timy3 should not be switched off and on. This would require a resynchronization which could lead to the loss of timing impulses during the first 5 minutes.

In this menu item, the WTN specific settings can be executed (further explanations see also Manual WTN).

A Timy2 with an external WTN can be operated in nearly an identical way as a Timy3. However, there are two essential differences:
- The Timy3 can switch off the WTN module in order to save energy.
- The channels of the Timy2 with external WTN module are physically triggered. This means that triggering the channels also exists on the banana sockets. This is not the case for the Timy3.

9.9.1 WTN POWER

This is for switching on and off the internal WTN module. For energy saving reasons, the module is deactivated by default. For using the functions of the WTN, it must be turned on.
- **<OFF> Standard**
- **<ON>**

9.9.2 STATE

1 ...... switch to screen 2 by pressing key **2nd** and **▶** at the same time
2 ...... number of direct neighbours (also other teams on the same frequency)
3 ...... number of devices in same team
4 ...... teams on same frequency
5 ...... transmission power: (10 – 100 mW)
6 ...... link quality indicator
7 ...... receive signal strength indicator
8 ...... firmware version of WTN
9 ...... adjusted team
10 .... adjusted channel
11 .... adjusted edge mode
12 .... adjusted Baud rate for display board
13 .... adjusted Baud rate for RS232
14 .... transmission status
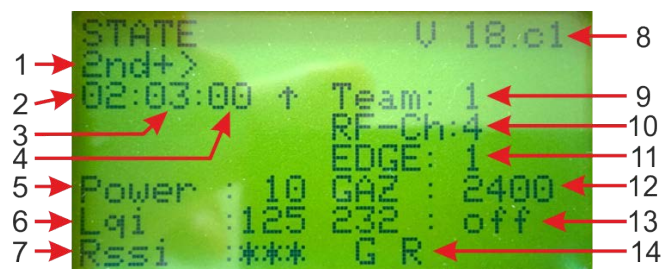
Link Quality Indicator (Lqi):
  * .... poor link quality
  ** .... medium link quality
  *** .... good link quality

Receive Signal Strength Indicator (Rssi):
  -127 ..... no connection
  -65 .... worst receive signal strength quality
  +20 ...... best receive signal strength quality

Transmission Status:

0 to 4 ....impulse on channel
C...............delayed channel times by RS485
G...............data for display board
S...............serial data
V ....version conflict within the network
P...............pulse hold message
M ....update or settings package
R...............RS485 command

9.9.3   SETTINGS

- **<RADIO POWER>**   10 (standard), 25, 50 100 mW
- **<RS232>**   OFF, ON (standard)
- **<EDGE>**   ↑ only rising, ↑+↓ rising and falling
- **<RF-UPDATE>**   ON, OFF (start with F0 and cancel with F1); at least one participant must be connected
- **<ADVANCED SETT.>**   menu is blocked (only for ALGE factory settings)

9.9.4   TEAM

Settings of the team (1-9 A-F) – see also Manual for WTN

9.9.5   SOCKET

It is possible to configure nine timing channels in this mode for the WTN. Impulses taken in the socket mode are marked with 't' in the front (e.g., t0124 ST 10:12:34.0384)

- Start the external WTN impulse devices and adjust them to the same team as the Timy3 (e.g., photocell PR1aW, push button WTN-PB).
- Make sure that the WTN is activated in the Timy3.
- Press the menu button 📋.
- Select <WTN> and press OK.
- Select <SOCKET> and press OK.
- Under "Neighbours" it must now show the number of impulse devices that you have activated.
- Select with the F-keys the device that you want to read (e.g., F3 = all WTN-devices).
- Initiate an impulse on the start impulse device (C0).
- 1 SOCKETS is displayed.
- Initiate an impulse on the next impulse device (C1).
- "2 SOCKETS" is displayed.
- etc.
- When you are finished press the menu button 📋.
- Start your timing.
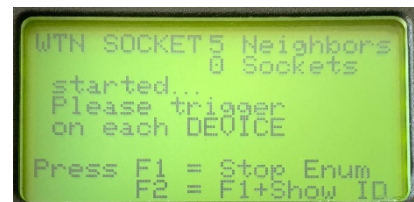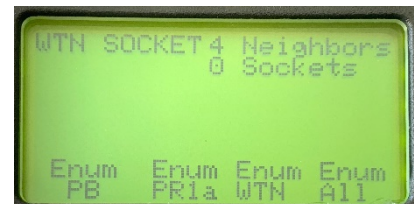
9.9.6   STATISTICS

It shows the number of data strings that did not reach the Timy3. The data is displayed per team.

9.9.7   BROADCAST PARM

It is adjustable if you want to send the adjusted WTN parameter of this Timy3 to other WTN devices in the team or not.

- **<DO NOT SEND>**   WTN parameter are only valid for this Timy3
- **<SEND PARAMETER>** adjusted WTN parameter are broadcasted to all other WTN devices in the team

9.10 KEYBOARD-LOCK

This activates the keypad lock in order to prevent accidental entries. All keys of the Timy3 are disabled. Disable the keyboard lock by entering 1 2 3 4 5 6.

10 Timy Messages

When using the Timy3 it might occur that messages show up on the display. These messages inform the operator about problems or unusual operating conditions.

10.1 Long Time Timing Impulse

If the Timy3 receives a very long or endless timing impulse one channel, this message is shown. The operator can now check the reason for this and might fix a problem.
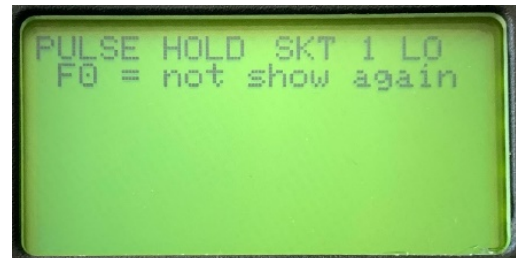
The duration after which the Timy3 reports a "Pulse Hold" is adjustable in the menu under <CHANNELS> and <PULSE HOLD>.

10.2 WTN: Old Version

An old WTN firmware version has been recognized in the network. Please update your WTN devices: Menu-> WTN-> Settings-> Radio Update. This process can take 15 - 45 minutes. Do not switch off the devices during this time.
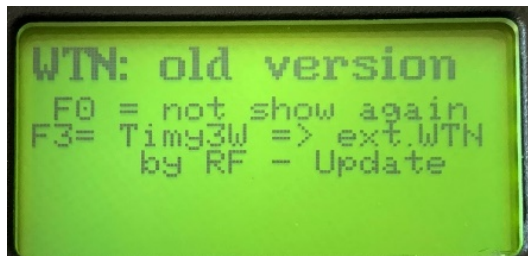
10.3 Delay Time for Radio Impulses

The time correction for the channel was set to 0.0 and a delayed packet was received by radio. Please setup the time correction of the channel to -0.1s.

<mark>Check 0.1sec correction</mark>

11 Technical data

Processor:	Siemens C161 with 3.3 V technology
Time reference:	12.8 MHz TCXO or standard quartz
Time resolution:	1/10,000 seconds
Running precision:	**Temperature compensated quartz oscillator TCXO:** temperature range -25 to 50 °C:........+/- 2.5 ppm (+/- 0.009 sec/h) at aging:...max. +/- 1 ppm per year at 25 °C, calibrated ....+/- 0.3 ppm
Program memory:	FLASH memory with 16 MBit
Data memory:	RAM with 4 MBit, approx. 30,000 times
Display:	monochrome LCD graphic display 128 x 64 pixels with extended temperature range and backlight
Keypad:	silicone keypad, 26 buttons

Connections:	DIN-plug for photocell (7)
	banana plug pair – start input (5)
	banana plug pair – finish input (6)
	banana plug pair – display board (4)
	D-sub-25 pin (3)
	    • 9 timing channels
	    • RS232 (PC-connection)
	    • display board
	    • RS485 (network)
	    • power supply (8 - 22 VDC in / 7.5 - 21 VDC out)
	USB (1)
	power supply 8 - 22 VDC in (2)

Radio module WTN:	2.4 GHz band, integrated with 16 adjustable frequencies, adjustable output 10 to 100 mW, 5 different timing channels, range approx. 350 m at free sight
Timing Channels:	9 independent timing channels (normally open contact) C0 to C5 with 1/10,000th seconds precision C6 to C8 with 1/100th seconds precision max. loop resistance per channel is 2000 Ohm
Channel extension:	5 channels per extension, max. 99 channels
Power supply:	**Internal:** NM-TIMY2 battery pack or 6 x AA-Alkaline 2 Ah (only for Timy3 W) **External:** with charger PS12A, 12 V battery or 8 -24 VDC
Operating time (20 °C):	Alkaline: without printer about 50 hours NM-TIMY2: without printer about 60 hours NM-TIMY2: with printer (3 printed lines per minute) about 47 hours
Charging:	approx. 14 hours
Printer:	graphic thermal printer, max. 5 lines per second
Temperature range:	Timy3 W and WP: -20 to 60°C
Dimensions:	Timy3 W: 204 x 91 x 50 mm Timy3 WP: 307 x 91 x 65 mm
Weight:	Timy3 W: 450 g (without battery) Timy3 WP: 650 g (without battery and paper)

11.1 Pin Assignment

USB Interface (1):

The USB interface is used as interface between Timy3 and computer. Via this interface the Timy3 can be controlled completely and all data can be recalled.
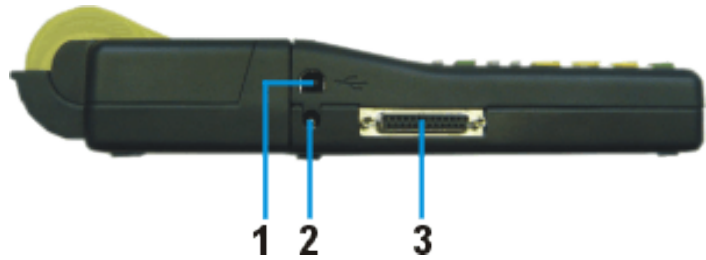
Charger Connection (2):

Ground

8 to 22 VDC
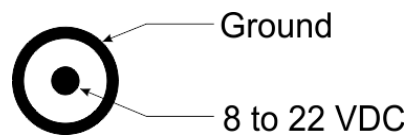
ALGE-TIMING Multiport (3):

Pin assignment:

1 .... terminal numbering connection
2 .... c0 .... start channel (precision 1/10,000 s)
3 .... c2 .... timing channel 2 (precision 1/10,000 s)
4 .... c3 .... timing channel 3 (precision 1/10,000 s)
5 .... c7 .... timing channel 7 (precision 1/100 s)
6 .... data output for display board
7 .... RS485B
8 .... RS485A
9 .... clock for terminals CLK
10 .... RS232 TX
11 .... RS232 RX
12 .... common ground GND
13 .... stabilized power out (+5 V 100 mA limited, short circuit proof)
14 .... c1 .... stop channel (precision 1/10,000 s)
15 .... c5 .... timing channel 5 (precision 1/10,000 s)
16 .... c8 .... timing channel 8 (precision 1/100 s)
17 .... c6 .... timing channel 6 (precision 1/100 s)
18 .... c4 .... timing channel 4 (precision 1/10,000 s)
19 .... RS232 RTS
20 .... printer data out
21 .... horn output 8 Ω
22 .... RS232 CTS
23 .... power supply out: 7.5 - 21 VDC 2A max.
24 .... common ground GND
25 .... power supply in: 8 - 22 VDC

ALGE
TIMING

Manual
Timy3 - General

ALGE
TIMING
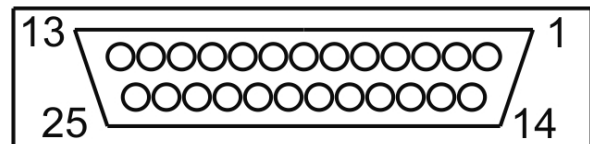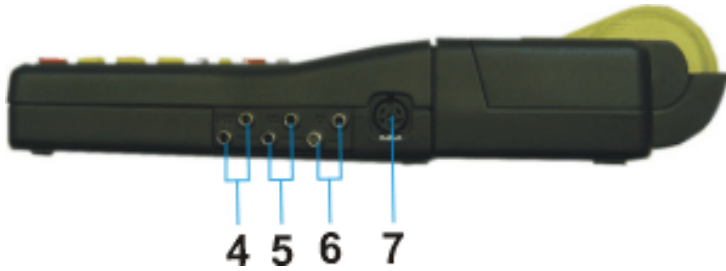
banana plugs for display board   (4)
banana plugs for start channel C0   (5)
banana plugs for stop channel C1   (6)

Photocell socket (7)
Pin assignment:
1 .... c0 .... start channel
2 .... c1 .... stop channel
3 .... GND ...... common ground
4 .... +Ua ...... power supply out 8-22 VDC (only on external supply)
5 .... +5V ...... stabilized voltage out (+5 VDC 100 mA limited)
6 .... c2 .... intermediate time channel
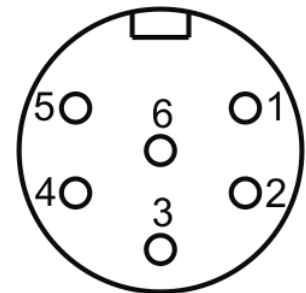
12 Interfaces

12.1 RS232 Interface

Output format: 1 start bit, 8 data bit, no parity bit, 1 stop bit
Bit rate: 9600 baud factory setting
                                   adjustable: 2400, 4800, 9600, 19200, 28800, 38400
Transmission protocol: ASCII

yNNNN_CCC_HH:MM:SS.zhtq_GGRRRR(CR)

y ....first figure is blank or info (see below)
_ ....blank
NNNN........................start number, max. 4-digit, any pre-zero is not shown
CCC ....channels of timing device
c0 ....channel 0 ....start channel
c0M ....channel 0 ....triggered by keypad <START>
c1 ....channel 1 ....finish channel
c1M ....channel 1 ....triggered by keypad <STOP>
c2 ....channel 2
c3 ....channel 3
c4 ....channel 4
c5 ....channel 5
c6 ....channel 6
c7 ....channel 7
c8 ....channel 8
RT ....run time
TT ....total time
SQ.............................sequential time (lap time)
kmh ....speed measurement (possible displays: km/h, m/s, mph)
HH:MM:SS.zhtq.........time in hours, minutes, seconds and 1/10,000 seconds
GG ....group, lap or blank
RRRR.......................rank (only available in 'classement' menu)
(CR) ....carriage return

Info – the following figures may be in first position:

_ ....blank (valid time)
?................................time without valid start number
m...............................time from memory (no bib)
c ....times deleted (e.g., with CLEAR button)
C ....memory time deleted (e.g., with CLEAR button)
d................................times deleted due to disqualification
i.................................manually entered valid time with <INPUT>
n................................changed to new ID- number
x................................valid time of day received from other Timy (e.g. by WTN communication)
t................................valid time with radio correction received via TED RX or WTN

Example of an RS232 interface output (e.g., program backup)

```
  0001 c0  15:43:49.8863 00          m0008 c1  15:44:00.2849 00
  0002 c0  15:43:50.1647 00          m0009 c0  15:44:00.5499 00
  0005 c1  15:43:51.6464 00          m0010 c1  15:44:00.8182 00
  0006 c0  15:43:51.9669 00          m0011 c0  15:44:01.0366 00
  0007 c1  15:43:52.2467 00          C0011 c0  15:44:01.0366 00
  0008 c0  15:43:52.4579 00          n0014 c0  15:44:01.0366 00
  0009 c1  15:43:52.6941 00           0020 c0  15:44:15.0077 00
  0015 c0M 15:43:55.6200 00           0022 c0  15:44:15.5165 00
  0016 c1M 15:43:55.8800 00           0023 c1  15:44:15.7847 00
  0019 c0M 15:43:57.020  00          c0023 c1  15:44:15.7847 00
 m0007 c0  15:43:59.9927 00          i0023 c1  15:44:15.7847 00
```

Description	Command	Parameter	Example	Explanation
running tenth	RT	0 or 1	RT0 RT1 RT?	request, on off
stn automatic for finish	SAF	0,1 or 2	SAF0 SAF1 SAF2	request, 0 = off,1=start,2=finish
stn automatic for start	SAS	0,1 or 2	SAS0 SAS1 SAS2	request 0 = off,1=Up,2=Down
START_LOGO	SL	0 or 1	SL0 SL1 SL2	request, on off
second mode	SM	0 or 1	SM0 SM1 SM?	request, set
Speed distance in meters	SPDI	0000.1 to 9999.9 or 0001 to 9999 or ?	SPDI0100<cr> SPDI0100.5<cr>	request, set
Speed direction	SPDR	0,1 or 2	SPDR0,SPDR1	request,0=both,1=C0->C1, 2=C1->C0
Speed Unit	SPU	0,1 or 2	SPU0, SPU1, SPU2	request,0=km/h, 1=mi/h, 2=m/s
Speed minimum	SPMI	0000.1 to 9999.9 or 0001 to 9999 or ?	SPMI0000.1	set, request = SPMI0000.1 always XXXX.X
Speed maximum	SPMX	0001.0 to 9999.9 or 0001 to 9999 or ?	SPMX0200.0	set, request = SPMX0200.0 always XXXX.X
Speed Print Times	SPTI	0 or 1	SPTI1, SPTI0	request, set
Only for the communication with the OPTIC and the Timy.	SP2			Only for the communication between the OPTIC and the Timy.
Advanced subset of data-chain	TER		TERFFER	
initialize the timy, gets HW-ID	TIMYINIT		TIMYINIT	gets the hardware-id of the Timy
Delaytime for a specific channel	DTC	? Or #12.34 (while # = 0 to 8)	DTC401.78	request, set
Direct transmission to printer	DTP	max. 24 characters	DTPHelloWorld	LOOK FURTHER BELOW
cleares the memory	CLR		CLR	
enables or disables the checksum	CHK	?,0 or 1	CHK?,CHK1,CHK0	request, set
send time every s or tenths or not	EMU	?,0,1 or 2	EMU?,EMU0,EMU2	request, set
send memory from pos. a to b	RSP	aaaaabbbb	RSP0001000500	gets the memory from pos 10 to 500
send memory from STN a to b	RSS	aaaaabbbb	RSS0002000020	gets the memory form stn 20 (to 20)
Send memory universal A	RSUA	Caaaabbbb	RSUA100109999	C=0..9 or A,aaaa=stnfrom,bbbb=stn_end. All times, having channel 1 and stn >= 10 and stn <=9999 are sent.
			RSUAA00000020	All times having stn <= 20 are sent.
Send memory universal B	RSUB	Caaaaaaaabbbbbbbbbb	RSUBA0000000000230000000	daytime_from until daytime_end. All times, having daytime <= 23:00:00.0000 are sent
Special command	SPEC		SPEC?	request, set SPEC:STOPWATCH:$A0$B05C0
			SPEC:STOPWATCH:$A1	start-bib will be sent to rs232/usb; "s1234cr>"
			SPEC:STOPWATCH:$A0	start-bib will not be sent, default after an update
	This command should be sent over usb		SPEC:STOPWATCH:$B0	0 == default:no bib is accepted, in the case over an TIMY2TIMY-connection
	This command should be sent over usb		SPEC:STOPWATCH:$B1	1 == START-BIB is accepted, in the format "#1234C0v"
	This command should be sent over usb		SPEC:STOPWATCH:$B2	2 == FINISH-BIB is accepted, in the format "#1234C1v"
	This command should be sent over usb		SPEC:STOPWATCH:$B3	3 == START+FINISH BIB both are accepted
	This command should be sent over usb		SPEC:STOPWATCH:$C0	0 == default:no bib will be sent
	This command should be sent over usb		SPEC:STOPWATCH:$C1	1 == START-BIB will be sent
	This command should be sent over usb		SPEC:STOPWATCH:$C2	2 == FINISH-BIB will be sent
	This command should be sent over usb		SPEC:STOPWATCH:$C3	3 == START+FINISH BIB both will be sent
			But the start-bib will only be sent, if the command was sent to the Timy once in advance "SPEC:STOPWATCH:$A1<cr>"	
synchronize the Timy	SYNA	hh:mm:ss.zhtZ	SYNA12:00:00.0000	automatically sync
	SYNM	hh:mm:ss.zhtZ	SYNM00:30:00.0000	manually sync, waits for sync-impulse
	SYND	YY:MM:DD	SYND04-10-31	enter the sync date, takes only effect when SYNM is followed
Send start time	SST	NNNN C0 hh:mm:ss.zhtZ RR	SST 1234 C0 12:34:56.7890 00	NNNN=Startnumber, hh=hour,mm=minutes, ss=seconds, zhtZ=4 digits of second's fraction, RR = always 00
Direct transmission to printer	DTP	max. 100 characters	DTPHelloWorld	send back nothing
Show the list of the commands	HELP		HELP	Timy shows the list of the supported commands
	HELP		If the StatusValue is 0 or 0x0000 then the command is currently not supported	

standard baudrate	9600 baud
syntax for command and parameter	ASCII
Hardware-Handshake	not built in , later possible (RTS/CTS)
Software-Handshake	not built in , later possible (XON/XOFF)
command not supported	send back NOT
command understood	send back the command without parameter
command with ?	send back the command with parameter
command not understood	send back nothing
command with unvalid parameters	send back nothing

safe communication

If the pc has sent a command to the Timy, the pc has to wait for the acknowledge, before sending the next command.

Acknowledge means that the sent command must be returned from the Timy.

Each command can be sent by rs232 or USB.

For programming the usb-interface, use only the Alge-OCX-File.

Note: If you see <cr> at an example, please be aware that this is only one character not 4 characters.

12.2 RS485 Interface

This interface is only used for special applications such as wind speed measurement, Timy3 Terminal etc.

12.3 Interface for Display Board

Output format: 1 start bit, 8 data bits, no parity bit, 1 stop bit
Bit rate: factory setting: 2400 baud (for ALGE-TIMING GAZ display board)
                                     2400, 4800, 9600, 19200, 28800, 38400
Transmission protocol: ASCII

```
NNN.xxxxxxxxM:SSxxxx(CR) .............. running time (without 1/10 seconds)
NNN.xxxxHH:MM:SSxxxx(CR) .............. running time (without 1/10 seconds)
NNN.xxxxHH:MM:SS.zxx(CR) .............. running time (with 1/10 seconds)
NNNCxxxxHH:MM:SS.zhtRR(CR) ........... channel C1    finish time with rank
NNNCxxxxHH:MM:SS.zhtxx(CR) ........... channel C1    finish time without rank
NNNDxxxxHH:MM:SS.zhtRR(CR) ........... channel C1    total time with rank
NNNDxxxxHH:MM:SS.zhtxx(CR) ........... channel C1    total time without rank
NNNAxxxxHH:MM:SS.zhtRR(CR) ........... channel C2    1. intermediate time
NNNBxxxxHH:MM:SS.zhtRR(CR) ........... channel C3    2. intermediate time
NNNExxxxHH:MM:SS.zhtRR(CR) ........... channel C4    3. intermediate time
NNNFxxxxHH:MM:SS.zhtRR(CR) ........... channel C5    4. intermediate time
NNNGxxxxHH:MM:SS.zhtRR(CR) ........... channel C6    5. intermediate time
NNNHxxxxHH:MM:SS.zhtRR(CR) ........... channel C7    6. intermediate time
NNNIxxxxHH:MM:SS.zhtRR(CR) ........... channel C8    7. intermediate time
NNNSxxx©xxxxsxss.ssxRR(CR) ........... speed
```

NNN .... start number (hundreds, tens, ones - digit 1 to 3)
. ... point on the fourth digit is the identification for a running time
HH:MM:SS.zht .... time in hours, minutes, seconds and 1/1000 seconds
© .... speed measurement: output of following ASCII signs: 01 hex for km/h, 02 hex for m/s, 03 hex for mph
RR .... rank
x .... blank
(CR) .... carriage return

13 USB Interface

Currently possible applications for USB interface:
- update the Timy3 software with installation manager or Timy3 USB program
- query and change of settings (as RS232)
- recording of times with program ComtoFile
- evaluation with program Time.NET
- evaluation with program Excel Writer

Subject to changes and misprints