

Startclock ASC3



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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Declaration of Conformity

We declare that the following products comply with the requirements of the listed standards. Parts that we use in the product are CE certificated by the manufacturers and ALGE-TIMING GmbH does not change them.

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

Declare under our sole responsibility, that the display board:

ASC3

is in conformity with the following standard(s) or other normative documents(s):

Safety: IEC 60950:1999 / EN 60950:2000
EN 60335-1:2002 + A11:2004 + A1:2004 + A12:2006 + A2:2006

EMC: EN55022:2006+A1:2007
EN55024:1998+A1:2001+A2:2003
EN61000 3-2:2006
EN61000 3-3:1995+A1:2001+A2:2005

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, 30.04.2014

ALGE-TIMING GmbH



Albert Vetter
(General Manager)

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Subject to changes

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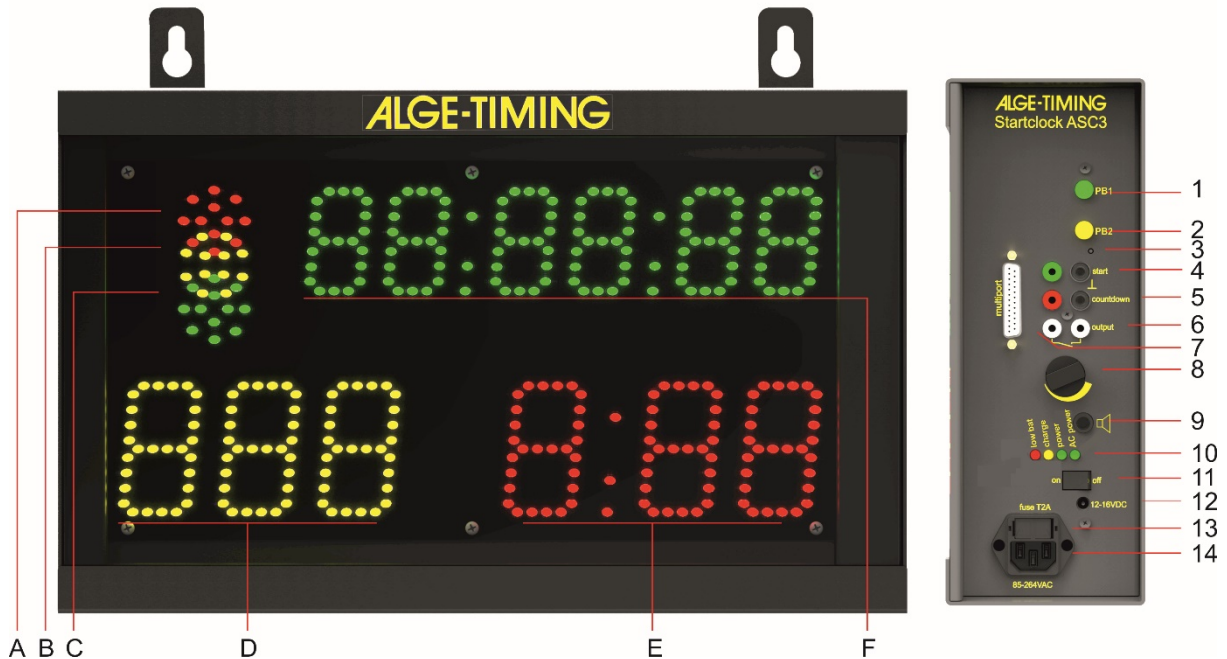
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1 General

The startclock ASC3 is a device for sports with individual start and fixed countdown time. It helps the athletes and starters to organize the start procedure. There are several programs available to cover different sports. Each program has 9 different start interval times. An acoustic countdown, a start light and a visible countdown help you to organize the start procedure.



- A-C..... Start lights (red, yellow and green)
- DBib (Start Number) - yellow
- ECountdown Time - red
- F..... Time of day with hours, minutes and seconds - green

- 1 Green push button
- 2 Yellow push button
- 3 Program push button
- 4 Start input (e.g. startgate for skiing) with green and black banana socket
- 5 Connector for push button for start interval setting and countdown start
- 6 Start output with banana sockets
- 7 Multiport
- 8 Volume for speaker
- 9 Socket to connect an external speaker
- 10 Battery condition and charging LEDs
- 11 On / Off – switch
- 12 External 12V power connection (12 – 15 VDC)
- 13 Fuse 1.0 A for power supply
- 14 Mains connector to recharge internal battery of built in power pack (100-240VAC)

1.1 Connections and Devices

1.1.1 Green Push Button PB1 (1)

The green push button (1) is a manual start button. If you press this button it triggers a start impulse (same as getting a start impulse from start input (4)). Furthermore, the green push button is used for settings. You can change the blinking parameters.

1.1.2 Yellow Push Button PB2 (2)

The yellow push button (2) is to select the countdown time. If you press the yellow push button during the standard operation it allows you to change the interval time. Furthermore, the yellow push button is used to confirm parameters and move to other parameters.

1.1.3 Program Push Button (3)

If you press this push button (3) and keep it pressed when switching the ASC3 on (on-off switch 11), the ASC3 switches to programming mode so you can upload new software via RS232 interface. The switch is hidden inside the case and you will need a tool to press it (e.g. use a pen).

1.1.4 Start Input (4) - Green-Black Banana Socket

You can connect a start device at this input channel (e.g. startgate or photocell). It stores the start time and the led/leg time for the start. This time can be shown on the time of day display, printed on a printer or sent to a PC via RS232.

Furthermore, this input channel is used for the synchronization with another device. It receives an external impulse for synchronization or, if you press the green push button for synchronization, it also outputs an impulse via this socket to another device.

1.1.5 Contact for Countdown Interval Setting (5)

At this red and black banana socket (5), you can connect a push button. With this push button you can change the countdown interval. If you use the manual countdown, this push button starts the manual countdown.

Countdown Interval Setting:

- Press the push button for 3 seconds - the time of day disappears from display (F).
- Cd# (# = number from 0 to 9) is shown. The number is blinking.
- In the countdown display (D) the set countdown time is shown.
- Press the push button (short) to change the selected countdown time.
- To confirm the new countdown time, press the push button for 3 seconds and the start-clock returns to countdown mode with the new start interval.

1.1.6 Start Output (6)

This connection sends an output impulse at the zero signal of the start interval. This impulse can be used e.g. to start or synchronize another timing device (start impulse).

1.1.7 Power LED (10)

The power LEDs are red, yellow, green and green. The LEDs show the following status

- Red low battery, device will switch off soon
- Yellow charging (external supply is connected)
- Green (left)..... power is on
- Green (right)..... AC-power supply

1.1.8 ON-OFF Switch (11)

This switch is to turn the startclock on or off.

1.2 Power Supply (12+14)

The power supply is integrated in the startclock. It has an input for 100-240V AC or 12 – 15 VDC. The start clock has an internal battery. If the startclock is connected to the mains supply, the battery charges.

Working Time: approximately for 18 hours at 20°C or 5 hours at –20°C

Charging Time: about 12 hours with empty battery

1.3 Display

1.3.1 Time of Day (F)

- Figure height is 55 mm, separated by colons
- The display shows hours, minutes, and seconds (2 digits for seconds)



1.3.2 Start Number (Bib) (D)

- Figure height is 80 mm
- 3 yellow LED numbers
- 3 digits to show the start number (bib)



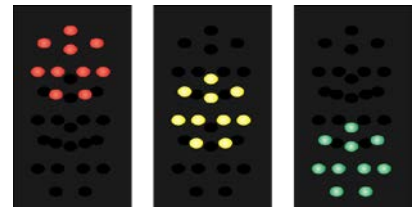
1.3.3 Countdown Time (E)

- Figure height is 80 mm
- 3 red LED numbers, separated by a colon
- 3 digits for countdown



1.4 Start Light (A, B and C)

The start light has a red, yellow, and green LED cluster. The start light looks like a traffic light for the starter.



1.5 Horn (8 + 9)

The horn is used to release an acoustic signal of the countdown. This acoustic countdown is normally in use during the final 5 seconds. If the countdown takes longer than 10 seconds a warning tone can be released at 10 seconds. There are two frequencies for the countdown. The lower frequency is for warnings and the higher frequency for the start signal. You can adjust the volume of the horn with the lever (8). Alternatively, it is possible to connect an external horn at socket (9).

1.6 Mounting of the Startclock

The startclock has two possibilities for mounting:

- 3/8 inch screw for tripod in the center of bottom side
- two straps to hang it on a wall

2 Operation

2.1 Parameters

diSStt.....display start times and led/leg-times
 PrInt.....print memory
 StorE.....select if you want to clear the memory
 PrOGrA.....select the program (from 00 to 99)
 LIgHt.....start light adjustment
 Horn##.....speaker tone (# = Lo for low tone or Hi for high tone)
 SETUP.....to clear the adjusted setup and reset to the standard parameters
 gPS.....when using GPS - offset of UTC (Coordinated Universal Time)
 bIb.....switch bib (start number) on or off

2.2 Starting up the Startclock

Switch the startclock on with the On/Off-Switch (11).

2.2.1 Memory

After the startclock is switched on you have the possibility to clear the memory.

- It shows <StorE> in the time of day display (F) and <YES> in the countdown display (E).
- With the green push button (1) you switch between <YES> and <nO>
 - YES save memory
 - nO clear memory
- With the yellow push button PB2 (2) you confirm the selection to clear or save the memory.



2.2.2 Scanning GPS device

After the memory is cleared or saved, the message <SCAN gPS> is shown. The next 10 seconds the ASC3 scans the serial port to receive the time of day from the GPS device. The baud rate is 9600. If the GPS device is connected, the ASC3 waits as long as it needs to receive a proper time packet from the GPS. After the time is received the ASC3 is ready to select the program.



In order to stop the GPS scan press the yellow button PB2 (2). Now you can set the time of day manually.

Attention: If the wrong time of day is shown (e.g. 2 hours late), you have to adjust the offset to the UTC (Coordinated Universal Time). This is done in the parameter setup <gPS>.

2.2.3 Setting Time of Day

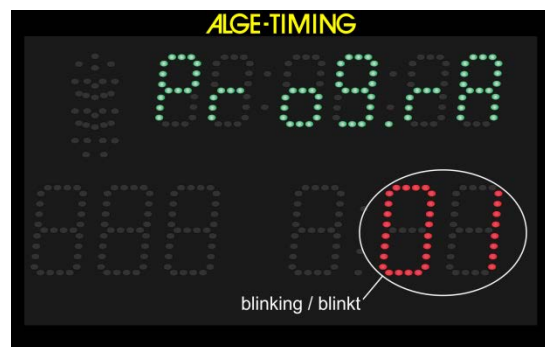
When not finding any GPS, the ASC3 switches to the manual setup for time of day. It shows the time of day in hours, minutes and seconds. The first digit blinks. Now you can set the time of day (see below).

- You can set the time of day only after you switch the startclock on.
- When the startclock is switched on, it first scans for a GPS receiver and if it does not find any it shows the time of day after 10 seconds.
- The hours are blinking.
- With the green push button PB1 (1) you can set the hours (0 to 23 hours).
- With the yellow push button PB2 (2), you can switch to each following digit.
- You use the green button PB1 (1) to also set the further digits (minutes and seconds).
- If you keep the yellow push button PB2 (2) pressed for about 3 seconds, the time of day is set and ready for synchronization. In the countdown clock field SnC is shown.
- You synchronize with an impulse on the start input banana sockets (4) or by pressing the green push button PB1 (1).
- When the time of day is started you can set the program you want to use.



2.2.4 Setting the Program

- After the synchronization, the time of day display (F) shows the running time of day for five seconds.
- After five seconds the time of day disappears and <ProgrA> is shown in the time of day display (F).
- The countdown display (E) shows the last used program number.
- With the green push button PB1 (1) you can select the program number.
- With the yellow push button PB2 (2) you can confirm the selected program number.
- The startclock is now running in the selected program with the corresponding countdown interval 1.



2.2.5 Select the Countdown Interval

As soon as the program is selected, you can change the countdown time at any time. When changing the countdown time the new countdown time is calculated. Zero point for the new countdown is always the zero tone of the last finished countdown.

If you select the countdown interval and do not change the interval time, the active countdown continues without showing in the display. The previous countdown only stops, when you select a new countdown.




The countdown interval can be selected in two different ways:

a) Internal yellow push button (2):

- Press the yellow push button PB2 (2) and Cd# (# = number from 0 to 9) is shown in display (F). The number is blinking.
- In display (E) the set countdown time is shown.
- With the green push button (1) you can select between 9 different pre-programmed countdown times.
- When the desired countdown time is shown in display (E) confirm with the yellow push button PB2 (2).
- Display (F) shows the time of day and display (E) the countdown time. Zero of the new countdown time is the last finished zero time.



b) Remote Control ASC3-RC:

- Press the button <SET> for 3 seconds and Cd# (# = number from 0 to 9) is shown in display (F). The number is blinking.
- In display (E) the set countdown time is shown.
- Press the button  to move from one countdown interval to the next countdown interval.
- When the desired countdown time is shown in display (E) wait for about 4 seconds and the standard ASC3 program continues.



c) External push button connected at red/black banana socket (5):

- Press the push button for 3 seconds until display (F) shows Cd# (# = number from 0 to 9). The number is blinking.
- Display (E) shows the set countdown time.
- Press the push button for changing the selected countdown time. You can select between 9 pre-programmed countdown times.
- When display (E) shows the countdown time you want to set do not press the push button. After 3 seconds it is saved automatically.
- Time of day and running countdown are displayed. Zero of the new countdown time is the last finished zero time.



d) Manual Countdown:

- If you select the manual countdown (e.g. program 06 and 00) you need an external push button to start each countdown as shown in the picture on the right.

2.2.6 Input the Start Order List

It is possible to input the start order (bib list) from an external device to the Startclock ASC3 (e.g. for the second run of an alpine ski race from TdC8001 or Timy). If you do not download a start order list, the ASC3 starts with bib 1 and increases by one bib after each start (1, 2, 3, etc.). For downloading start lists you can use the **ALGE-TIMING** startclock software. This is available as download at our webpage www.alge-timing.com.

a) Manual Bib Counter:

If you connect the remote control ASC3-RC you can count the bib up with the push button ▲ and you can count it down with button ▼. If you press the button ▲ and ▼ at the same time for 4 seconds it resets the start list and switches to the first start number of the start list.

b) Bib-Automatic:

At the end of a countdown interval (including the shown negative time) it automatically moves to the next start number.



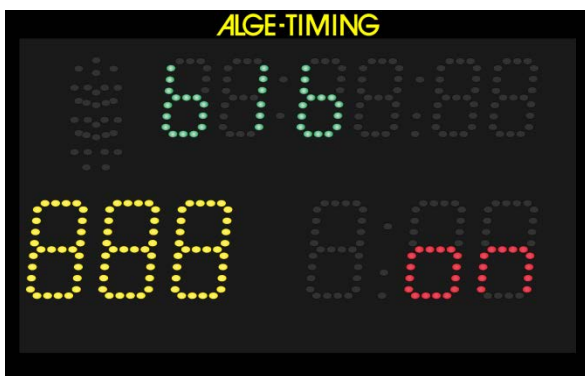
No Bib on Display:

If the ASC3 should not show a bib number on the display you can switch the bib off by pressing the remote control button ▼ for about 6 seconds. To switch it on, press the button ▲ for six seconds.

Alternatively, you can also set the program parameter < bib > on < on > or < OFF > so it shows the bib or not.

on..... bib is shown in display (D)

OFF..... display (D) is blank



2.2.7 Select the Brightness of the LED <brlGHt>

The startclock has 10 brightness levels for the LED. During breaks (e.g. between two runs for alpine skiing) you should save battery power by setting level off.

- offLED off (power saving)
- 0LED lowest level
- 5LED medium level
- 9LED highest level



If you select level off (power saving), the startclock does not show anything on the front face and also stops the acoustic output (sound off).

a) Internal push buttons:

- Press the yellow push button PB2 (2) for 6 seconds until the display (F) shows <brlGHt>.
- Set the brightness with the green push button PB1 (1).
- Confirm the selected value with the yellow push button PB2 (2).



b) Remote Control ASC3-RC:

- Press the button **SET** for about 7 seconds until it shows <brlGHt>
- Select the brightness level by pressing the button **SET** until it shows the correct brightness.
- Wait for four seconds and it changes

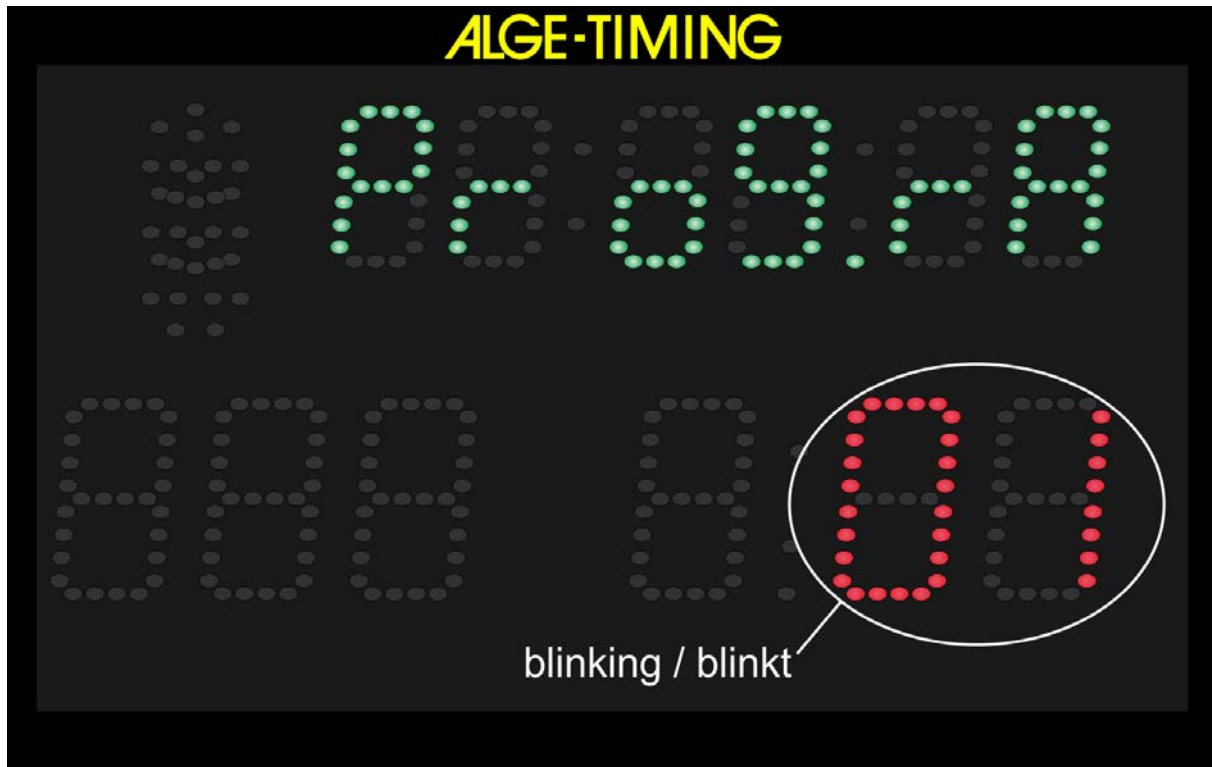


c) External push button connected at red/black banana socket (4):

- Press the push button for six seconds until display (F) shows <brlGHt>.
- Set the brightness by pushing the button.
- Confirm the selected brightness by pressing the button until the display (F) shows the time of day.



2.3 Programs



There are several programs available:

- Program 1 01 automatic countdown – alpine skiing – min. 30 sec. interval
- Program 2 02 automatic countdown – cross country skiing – min. 30 sec. interval
- Program 3 03 automatic countdown – car racing
- Program 4 04 automatic countdown – rally
- Program 5 05 automatic countdown – individual start with short countdown times
- Program 60 ... 61 manual countdown – countdown reset possible
- Program 61 ... 61 manual countdown – countdown timeout possible
- Program 62 ... 62 manual countdown – countdown stopping possible
- Program 63 ... 63 manual countdown – before start with time of day, after start run time
- Program 64 ... 64 manual countdown – before start with 00:00:00, after start run time
- Program 7 07 automatic countdown – alpine skiing – min 15 sec. interval
- Program 8 08 automatic countdown – cross country skiing – min. 15 sec. interval
- Program 9 09 automatic countdown – start interval input for each ID-number (e.g.
- Program 0 00 manual horn

2.3.1 Program P01

The countdown starts to automatically count a new interval after the zero tone. The allowed start time is 5 seconds before or after the zero tone.

Sports:	alpine skiing
Green/Black Banana Socket (4):	start input by external start trigger device (e.g. startgate, photocell)
Red/Black Banana Socket (5):	to connect a push button for set countdown time
White Banana Socket (6):	output of start impulse (zero impulse)
Multiport:	remote control for bib and countdown/brightness
Countdown Intervals:	CD1 = 0:30 min CD2 = 0:40 min CD3 = 0:45 min CD4 = 1:00 min CD5 = 1:15 min CD6 = 1:30 min CD7 = 1:40 min CD8 = 2:00 min CD9 = 2:30 min CD0 = Break

Countdown	Display	Start Light	Horn
10	10	Red	low
9	9	Red	off
8	8	Red	off
7	7	Red	off
6	6	Red	off
5	5	Green	low
4	4	Green	low
3	3	Green	low
2	2	Green	low
1	1	Green	low
0	0	Green	high
-1	-1	Green	off
-2	-2	Green	off
-3	-3	Green	off
-4	-4	Green	off
-5	-5	Red	off
-6	-6	Red	off
-7	-7	Red	off
-8	-8	Red	off
-9	-9	Red	off
-10	-10	Red	off

2.3.2 Program P02

The countdown starts to automatically count a new interval after the zero tone. The allowed start time is 3 seconds before or after the zero tone.

Sports:	nordic skiing – cross country
Green/Black Banana Socket (4):	start input by external start trigger device (e.g. startgate, photocell)
Red/Black Banana Socket (5):	to connect a push button for setting countdown time
White Banana Socket (6):	output of start impulse (zero impulse)
Multiport:	remote control for bib and countdown/brightness
Countdown Intervals:	CD1 = 0:30 min
	CD2 = 0:40 min
	CD3 = 0:45 min
	CD4 = 1:00 min
	CD5 = 1:15 min
	CD6 = 1:30 min
	CD7 = 1:40 min
	CD8 = 2:00 min
	CD9 = 2:30 min
	CD0 = Break

Countdown	Display (E)	Start Light	Horn
10	10	Red	low
9	9	Red	off
8	8	Red	off
7	7	Red	off
6	6	Red	off
5	5	Red	low
4	4	Red	low
3	3	Green	low
2	2	Green	low
1	1	Green	low
0	0	Green	high
-1	-1	Green	off
-2	-2	Green	off
-3	-3	Red	off
-4	-4	Red	off
-5	-5	Red	off
-6	-6	Red	off
-7	-7	Red	off
-8	-8	Red	off
-9	-9	Red	off
-10	-10	Red	off

2.3.3 Program P03

The countdown starts to automatically count a new interval after the zero tone. The start light switches to green when the countdown reaches zero.

- Sports:** car racing
- Green/Black Banana Socket (4):** start input by external start trigger device (e.g. startgate, photocell)
- Red/Black Banana Socket (5):** to connect a push button for setting countdown time
- White Banana Socket (6):** output of start impulse (zero impulse)
- Multiport:** remote control for bib and countdown/brightness
- Countdown Intervals:**
- CD1 = 0:30 min
 - CD2 = 0:40 min
 - CD3 = 0:45 min
 - CD4 = 1:00 min
 - CD5 = 1:15 min
 - CD6 = 1:30 min
 - CD7 = 1:40 min
 - CD8 = 2:00 min
 - CD9 = 2:30 min
 - CD0 = Break

Countdown	Display (E)	Start Light	Horn
10	10	Red	low
9	9	Red	off
8	8	Red	off
7	7	Red	off
6	6	Red	off
5	5	Red	low
4	4	Red	low
3	3	Yellow	low
2	2	Yellow	low
1	1	Yellow	low
0	0	Green	high
-1	-1	Green	off
-2	-2	Green	off
-3	-3	Green	off
-4	-4	Green	off
-5	-5	Green	off
-6	-6	Green	off
-7	-7	Green	off
-8	-8	Green	off
-9	-9	Green	off
-10	-10	Red	off

2.3.4 Program P04

The countdown starts to automatically count a new interval after the zero tone. The start light switches to green when the countdown reaches zero. The countdown counts as far as -20 seconds.

- Sports:** rally
- Green/Black Banana Socket (4):** start input from external start trigger device (e.g. start-gate, photocell)
- Red/Black Banana Socket (5):** to connect a push button for setting countdown time
- White Banana Socket (6):** output of start impulse (zero impulse)
- Multiport:** remote control for bib and countdown/brightness
- Countdown Intervals:**
- | | |
|----------------|----------------|
| CD1 = 0:30 min | CD6 = 1:15 min |
| CD2 = 0:40 min | CD7 = 1:30 min |
| CD3 = 0:45 min | CD8 = 1:45 min |
| CD4 = 0:50 min | CD9 = 2:00 min |
| CD5 = 1:00 min | CD0 = Break |

Countdown	Display (E)	Start Light	Horn
10	10	Red	low
9	9	Red	off
8	8	Red	off
7	7	Red	off
6	6	Red	off
5	5	Yellow	low
4	4	Yellow	low
3	3	Yellow	low
2	2	Yellow	low
1	1	Yellow	low
0	0	Green	high
-1	-1	Green	off
-2	-2	Green	off
-3	-3	Green	off
-4	-4	Green	off
-5	-5	Green	off
-6	-6	Green	off
-7	-7	Green	off
-8	-8	Green	off
-9	-9	Green	off
-10	-10	Green	off
-11	-11	Green	off
-12	-12	Green	off
-13	-13	Green	off
-14	-14	Green	off
-15	-15	Green	off
-16	-16	Green	off
-17	-17	Green	off
-18	-18	Green	off
-19	-19	Green	off
-20	-20	Red	off

2.3.5 Program P05

This is a simple repeatable countdown program that shows red before the zero tone and green for two seconds after the zero tone. The minimum countdown time is 3 seconds.

- Sports:** individual start with short countdown times
- Green/Black Banana Socket (4):** start input from external start trigger device (e.g. start-gate, photocell)
- Red/Black Banana Socket (5):** to connect a push button for setting countdown time
- White Banana Socket (6):** output of start impulse (zero impulse)
- Multiport:** remote control for bib and countdown/brightness
standard: Bib = OFF
- Countdown Intervals:**
- | | |
|----------------|----------------|
| CD1 = 0:05 min | CD6 = 0:40 min |
| CD2 = 0:10 min | CD7 = 0:45 min |
| CD3 = 0:15 min | CD8 = 1:00 min |
| CD4 = 0:20 min | CD9 = 1:30 min |
| CD5 = 0:30 min | CD0 = Break |

Intervals of 3 and 6 seconds:

Countdown	Display (E)	Start Light	Horn
3	3	Red	off
2	2	Red	off
1	1	Red	off
0	0	Green	high
next interval	next interval	Green	off

Intervals between 7 and 11 seconds:

Countdown	Display (E)	Start Light	Horn
5	5	Red	low
4	4	Red	low
3	3	Red	low
2	2	Red	low
1	1	Red	low
0	0	Green	high
next interval	next interval	Green	off

Intervals over 12 seconds:

Countdown	Display (E)	Start Light	Horn
10	10	Red	low
9	9	Red	off
8	8	Red	off
7	7	Red	off
6	6	Red	off
5	5	Red	low
4	4	Red	low
3	3	Red	low
2	2	Red	low
1	1	Red	low
0	0	Green	high
next interval	next interval	Green	off

2.3.6 Program P60

The countdown starts to count down from an adjustable interval time after pressing the push button (externally connected to red/black banana socket (5)). The start light switches to green when the countdown reaches zero. After the countdown reaching -10, no light and no countdown time is displayed (only time of day).

If you press the external push button again during the countdown it resets the countdown.

- Sports:** mass start with countdown for any sport
- Green/Black Banana Socket (4):** start input from external start trigger device (e.g. start-gate, photocell)
- Red/Black Banana Socket (5):** to connect push button for activating start
- White Banana Socket (6):** output of start impulse (zero impulse)
- Multiport:** remote control for bib and countdown/brightness
standard: Bib = OFF
- Countdown Intervals:**
 - CD1 = 0:10 min CD6 = 0:40 min
 - CD2 = 0:15 min CD7 = 0:45 min
 - CD3 = 0:20 min CD8 = 1:00 min
 - CD4 = 0:25 min CD9 = 1:30 min
 - CD5 = 0:30 min CD0 = Break

Countdown	Display	Start Light	Horn
10	10	Red	low
9	9	Red	off
8	8	Red	off
7	7	Red	off
6	6	Red	off
5	5	Red	low
4	4	Red	low
3	3	Yellow	low
2	2	Yellow	low
1	1	Yellow	low
0	0	Green	high
-1	-1	Green	off
-2	-2	Green	off
-3	-3	Green	off
-4	-4	Green	off
-5	-5	Green	off
-6	-6	Green	off
-7	-7	Green	off
-8	-8	Green	off
-9	-9	Green	off
-10	-10	Red	off

2.3.7 Program P61

The countdown starts to count down from an adjustable interval time after pressing the push button (externally connected to red/black banana socket (5)). The start light switches to green when the countdown reaches zero. After the countdown reaching -10, no light and no countdown time is displayed (only time of day).

If you press the external push button again during the countdown, it stops the countdown (timeout). Push the button again and the countdown continues.

Sports:	mass start with countdown for any sport										
Green/Black Banana Socket (4):	start input from external start trigger device (e.g. start-gate, photocell)										
Red/Black Banana Socket (5):	to connect push button for activating start										
White Banana Socket (6):	output of start impulse (zero impulse)										
Multiport:	remote control for bib and countdown/brightness standard: Bib = OFF										
Countdown Intervals:	<table border="0" style="width: 100%;"> <tr> <td>CD1 = 0:10 min</td> <td>CD6 = 0:40 min</td> </tr> <tr> <td>CD2 = 0:15 min</td> <td>CD7 = 0:45 min</td> </tr> <tr> <td>CD3 = 0:20 min</td> <td>CD8 = 1:00 min</td> </tr> <tr> <td>CD4 = 0:25 min</td> <td>CD9 = 1:30 min</td> </tr> <tr> <td>CD5 = 0:30 min</td> <td>CD0 = Break</td> </tr> </table>	CD1 = 0:10 min	CD6 = 0:40 min	CD2 = 0:15 min	CD7 = 0:45 min	CD3 = 0:20 min	CD8 = 1:00 min	CD4 = 0:25 min	CD9 = 1:30 min	CD5 = 0:30 min	CD0 = Break
CD1 = 0:10 min	CD6 = 0:40 min										
CD2 = 0:15 min	CD7 = 0:45 min										
CD3 = 0:20 min	CD8 = 1:00 min										
CD4 = 0:25 min	CD9 = 1:30 min										
CD5 = 0:30 min	CD0 = Break										

Countdown	Display	Start Light	Horn
10	10	Red	low
9	9	Red	off
8	8	Red	off
7	7	Red	off
6	6	Red	off
5	5	Red	low
4	4	Red	low
3	3	Yellow	low
2	2	Yellow	low
1	1	Yellow	low
0	0	Green	high
-1	-1	Green	off
-2	-2	Green	off
-3	-3	Green	off
-4	-4	Green	off
-5	-5	Green	off
-6	-6	Green	off
-7	-7	Green	off
-8	-8	Green	off
-9	-9	Green	off
-10	-10	Red	off

2.3.8 Program P62

The countdown starts to count down from an adjustable interval time after pressing the push button (externally connected to red/black banana socket (5)). The start light switches to green when the countdown reaches zero. After the countdown reaching -10, no light and no countdown time is displayed (only time of day).

If you press the external push button again during the countdown it stops the countdown and shows the time of day only. If you press the external push button again it starts a new countdown.

- Sports:** mass start with countdown for any sport
- Green/Black Banana Socket (4):** start input from external start trigger device (e.g. start-gate, photocell)
- Red/Black Banana Socket (5):** to connect push button for activating start
- White Banana Socket (6):** output of start impulse (zero impulse)
- Multiport:** remote control for bib and countdown/brightness
standard: Bib = OFF
- Countdown Intervals:**
 - CD1 = 0:10 min CD6 = 0:40 min
 - CD2 = 0:15 min CD7 = 0:45 min
 - CD3 = 0:20 min CD8 = 1:00 min
 - CD4 = 0:25 min CD9 = 1:30 min
 - CD5 = 0:30 min CD0 = Break

Countdown	Display	Start Light	Horn
10	10	Red	low
9	9	Red	off
8	8	Red	off
7	7	Red	off
6	6	Red	off
5	5	Red	low
4	4	Red	low
3	3	Yellow	low
2	2	Yellow	low
1	1	Yellow	low
0	0	Green	high
-1	-1	Green	off
-2	-2	Green	off
-3	-3	Green	off
-4	-4	Green	off
-5	-5	Green	off
-6	-6	Green	off
-7	-7	Green	off
-8	-8	Green	off
-9	-9	Green	off
-10	-10	Red	off

2.3.9 Program P63

After the synchronization the display (F) shows the time of day. The countdown starts to count down from an adjustable interval time after pressing the push button (externally connected to red/black banana socket (5)). At zero the display (F) shows the run time instead of the time of day. The start light switches to green when the countdown reaches zero. After the countdown reaching -10, no light and no countdown time is displayed (only time of day).

If you press the external push button again during the countdown it stops the countdown and starts a new countdown.

- Sports:** mass start with countdown for any sport
- Green/Black Banana Socket (4):** start input from external start trigger device (e.g. start-gate, photocell)
- Red/Black Banana Socket (5):** to connect push button for activating start
- White Banana Socket (6):** output of start impulse (zero impulse)
- Multiport:** remote control for bib and countdown/brightness
standard: Bib = OFF
- Countdown Intervals:**
- | | |
|----------------|----------------|
| CD1 = 0:10 min | CD6 = 0:40 min |
| CD2 = 0:15 min | CD7 = 0:45 min |
| CD3 = 0:20 min | CD8 = 1:00 min |
| CD4 = 0:25 min | CD9 = 1:30 min |
| CD5 = 0:30 min | CD0 = Break |

Countdown	Display	Start Light	Horn
10	10	Red	low
9	9	Red	off
8	8	Red	off
7	7	Red	off
6	6	Red	off
5	5	Red	low
4	4	Red	low
3	3	Yellow	low
2	2	Yellow	low
1	1	Yellow	low
0	0	Green	high
-1	-1	Green	off
-2	-2	Green	off
-3	-3	Green	off
-4	-4	Green	off
-5	-5	Green	off
-6	-6	Green	off
-7	-7	Green	off
-8	-8	Green	off
-9	-9	Green	off
-10	-10	Red	off

2.3.10 Program P64

After the synchronization the display (F) shows 00:00:00. The countdown starts to count down from an adjustable interval time after pressing the push button (externally connected to red/black banana socket (5)). At zero the display (F) shows the run time. The start light switches to green when the countdown reaches zero. After the countdown reaching -10 no light and no countdown time is displayed (only time of day).

If you press the external push button again during the countdown it stops the countdown and starts a new countdown.

Sports:	mass start with countdown for any sport
Green/Black Banana Socket (4):	start input from external start trigger device (e.g. start-gate, photocell)
Red/Black Banana Socket (5):	to connect push button for activating start
White Banana Socket (6):	output of start impulse (zero impulse)
Multiport:	remote control for bib and countdown/brightness standard: Bib = OFF
Countdown Intervals:	CD1 = 0:10 min CD6 = 0:40 min CD2 = 0:15 min CD7 = 0:45 min CD3 = 0:20 min CD8 = 1:00 min CD4 = 0:25 min CD9 = 1:30 min CD5 = 0:30 min CD0 = Break

Countdown	Display	Start Light	Horn
10	10	Red	low
9	9	Red	off
8	8	Red	off
7	7	Red	off
6	6	Red	off
5	5	Red	low
4	4	Red	low
3	3	Yellow	low
2	2	Yellow	low
1	1	Yellow	low
0	0	Green	high
-1	-1	Green	off
-2	-2	Green	off
-3	-3	Green	off
-4	-4	Green	off
-5	-5	Green	off
-6	-6	Green	off
-7	-7	Green	off
-8	-8	Green	off
-9	-9	Green	off
-10	-10	Red	off

2.3.11 Program P07

The countdown starts to automatically count a new interval after the zero tone. The allowed start time is 5 seconds before or after the zero tone.

In this program you can set the start light and the horn from 10 seconds to – 5 seconds (altogether 15 seconds). This allows shorter start intervals (shortest interval time is 15 sec.)

- Sports:** alpine skiing
- Green/Black Banana Socket (4):** start input from external start trigger device (e.g. start-gate, photocell)
- Red/Black Banana Socket (5):** to connect a push button for setting countdown time
- White Banana Socket (6):** output of start impulse (zero impulse)
- Multiport:** remote control for bib and countdown/brightness
- Countdown Intervals:**
 - CD1 = 0:15 min
 - CD2 = 0:20 min
 - CD3 = 0:30 min
 - CD4 = 0:40 min
 - CD5 = 0:45 min
 - CD6 = 1:00 min
 - CD7 = 1:15 min
 - CD8 = 1:20 min
 - CD9 = 1:30 min
 - CD0 = Break

The table below shows the ASC3 at a 15 second interval:

Countdown	Display (D)	Start Light	Horn
10	10	Red	low
9	9	Red	off
8	8	Red	off
7	7	Red	off
6	6	Red	off
5	5	Green	low
4	4	Green	low
3	3	Green	low
2	2	Green	low
1	1	Green	low
0	0	Green	high
-1	14	Green	off
-2	13	Green	off
-3	12	Green	off
-4	11	Green	off
-5	10	Red	off

2.3.12 Program P08

The countdown starts to automatically count a new interval after the zero tone. The allowed start time is 3 seconds before or after the zero tone.

In this program you can set the start light and the horn from 10 seconds to – 5 seconds (altogether 15 seconds). This allows shorter start intervals (shortest interval time is 15 sec.)

- Sports:** nordic skiing – cross country
- Green/Black Banana Socket (4):** start input from external start trigger device (e.g. start-gate, photocell)
- Red/Black Banana Socket (5):** to connect a push button for setting countdown time
- White Banana Socket (6):** output of start impulse (zero impulse)
- Multiport:** remote control for bib and countdown/brightness
- Countdown Intervals:**
 - CD1 = 0:15 min
 - CD2 = 0:20 min
 - CD3 = 0:30 min
 - CD4 = 0:40 min
 - CD5 = 0:45 min
 - CD6 = 1:00 min
 - CD7 = 1:15 min
 - CD8 = 1:20 min
 - CD9 = 1:30 min
 - CD0 = Break

The table below shows the ASC3 at a 15 second interval:

Countdown	Display (D)	Start Light	Horn
10	10	Red	low
9	9	Red	off
8	8	Red	off
7	7	Red	off
6	6	Red	off
5	5	Red	low
4	4	Red	low
3	3	Green	low
2	2	Green	low
1	1	Green	low
0	0	Green	high
-1	14	Green	off
-2	13	Green	off
-3	12	Red	off
-4	11	Red	off
-5	10	Red	off

2.3.13 Program P09

This program works with individual countdown for each starter. This means you have to download a start time (time of day) and a start list to the ASC3 that includes the ID-number (bib) of each starter and the delay to the previous starter.

Prepare a start list in Excel: The interval of the first ID-number (bib) is 0:00. You can input intervals in minutes and seconds.

To download the start list to the Startclock ASC3 use the PC-software "ALGE-TIMING Start Clock". Please note that you need version 1.6. or higher. This software is available as download free of charge from the **ALGE-TIMING** webpage www.alge-timing.com.

Direct Link:

<http://www.alge-timing.com/alge/download/software/Setup%20ALGE-TIMING%20Start%20Clock.exe>

BIB	Delay
20	00:00
344	00:10
5	00:20
6	00:30
8	00:40
1	00:50
12	00:55
44	01:00
4	01:05
7	01:10
9	01:15
10	01:20

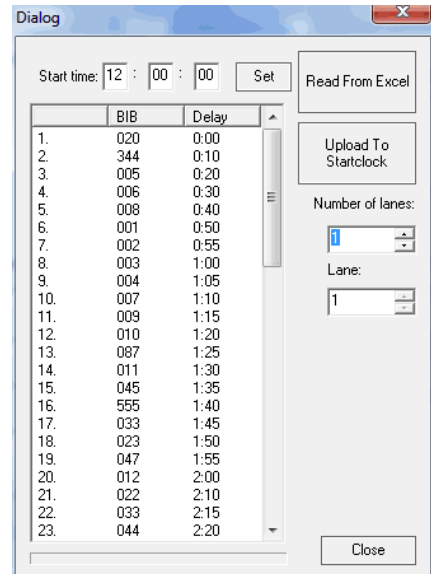
After installing the software on your PC, start the software and set the correct <Port Settings>. You need a RS232 cable 205-02. If your PC does not have an RS232 interface you also need an RS232-USB adapter (e.g. from **ALGE-TIMING** with code USB-RS232).

When you have a connection between the PC-software and the ASC3, please click on <Write BIB and Delays (P9)>.

Input now the start time of the race (e.g. in the example to the left it is 12:00:00).

Now click the button <Read From Excel>. At this time you have to read the prepared excel-start list. After the list is imported it will look like shown in the picture to the left.

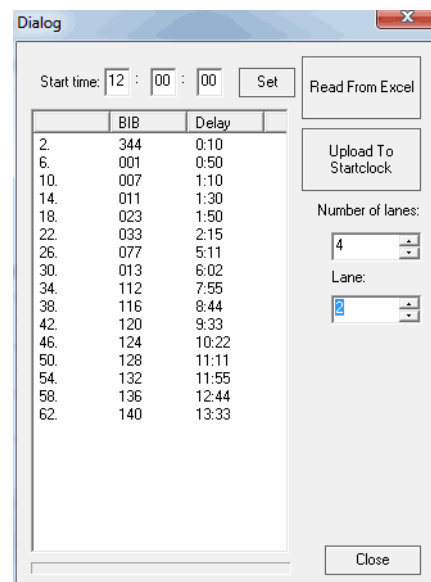
Now click the button <Upload To Startclock> to load the start list from the PC to the Startclock ASC3.



If you have a race that uses more start lanes you have to adjust the number of lanes that you use and the lane of the startclock that you want to program next (e.g. Gunderson start or for pursuit races for cross country or biathlon). Now only the ID numbers of this start lane are shown in the list.

The countdown starts to automatically count a new interval after the zero tone. The allowed start time is 3 seconds before or after the zero tone.

In this program you can set the start light and the horn from 10 seconds to - 5 seconds (altogether 15 seconds). This allows shorter start intervals (shortest interval time is 15 sec.)



- Sports:** nordic skiing – cross country / biathlon
- Green/Black Banana Socket (4):** start input from external start trigger device (e.g. start-gate, photocell)
- Red/Black Banana Socket (5):** to connect a push button for setting countdown time
- White Banana Socket (6):** output of start impulse (zero impulse)
- Multiport:** remote control for bib and countdown/brightness
- Countdown Intervals:** you have to program the individual countdown intervals

The table below shows the ASC3 at a 15 second interval:

Countdown	Display (E)	Start Light	Horn
10	10	Red	low
9	9	Red	off
8	8	Red	off
7	7	Red	off
6	6	Red	off
5	5	Green	low
4	4	Green	low
3	3	Green	low
2	2	Green	low
1	1	Green	low
0	0	Green	high
-1	14	Green	off
-2	13	Green	off
-3	12	Green	off
-4	11	Green	off
-5	10	Red	off

2.3.14 Program P00

The countdown starts showing the time of day, start light red. When you press the push button (externally connected to red/black banana socket (5)), it switches to green for 5 seconds and a high tone sounds (for one second).

- Sports:** mass start for any sport
- Green/Black Banana Socket (4):** start input from external start trigger device (e.g. start-gate, photocell)
- Red/Black Banana Socket (5):** to connect push button for activating start
- Multiport:** remote control for bib and countdown/brightness
standard: Bib = OFF
- Countdown Intervals:** manual mode

Push Button	Display	Start Light	Horn
off	---	Red	off
on	GO	Green	high
off	GO	Green	off
off	GO	Green	off
off	GO	Green	off
off	GO	Green	off
off	---	Red	off

3 Parameter setting

To set the parameters you have two possibilities:

- Parameter setting in the startclock
- Parameter setting from a PC

3.1 Parameter Setting in the Startclock

To enter the parameter setting menu press yellow push button PB2 (2) for about 9 seconds until the time of day display (F) shows <dISSTF>.

You can choose the parameters you want to change with the green push button PB1 (1). Confirm with the yellow button PB2 (2). You can change the parameter with the green push button PB1 (1). With the yellow button PB2 (2) the change is confirmed.

You can proceed to another parameter with green button PB1 (1). If no button is pressed for the next 3 seconds you automatically exit the parameter mode.

dISStt.....display start time of first competitor
 PrInt.....print memory
 StOrE.....select if you want to clear the memory
 PrOGrA.....select the program (from 00 to 99)
 Cd#.....countdown time #
 LIgHtstart light adjustment
 tOnE#speaker tone (# = L for low tone or H for high tone)
 SEtUP.....to reset all parameters to standard (company setup)
 01:00 gPS....GPS offset of correction time
 16 LEA.....
 bib.....show the ID-number (bib) on the display (on or off)

3.1.1 Display the Start Times <dISStt>

The display (F) shows blinking <dISStt> (**Display Start Time**).

- Press the green push button PB1 (1) and display (F) shows the start time of the previous competitor
- On display (E) you see the lead/leg time.
- If the start light is yellow, the start was after the zero impulse.
- If the start light shows green, the start tolerance was okay.
- If the start light shows red, the start was outside the start tolerance
- If you press the green button PB1 (1) the start time of the starter before is shown, etc.
- Press the yellow button PB2 (2) and the previous time is displayed once again.
- To leave the menu you keep yellow push button PB2 (2) pressed until display (F) shows blinking <PrInt > again.

If you want the first time to be shown, press the yellow push button PB2 (2) when the display shows the last start number.

3.1.2 Print the Memory <PrInt>

Display (F) shows <PrInt> and display (E) shows <oFF>. If you activate the print mode, it outputs the consecutive number, start time and led/leg time for each start.

```
0001 ST 10:00:00.1431
          +0.1431
0002 ST 10:00:59.3844
          -0.6156
0003 ST 10:02:01.3217
          +1.3217
```

- Press the green push button (1) and display (E) shows <onL>. The startclock now prints every zero time, the official start time and the led/leg time online.
- For activating the online mode press the yellow button PB2 (2).
- For deactivating the online mode press the green button (1) again. The display (E) shows <ALL>.
- If you confirm with the yellow button PB2 (2), the complete memory is printed.
- On display (E) you see the led/leg time
- If the yellow light shines, the start was carried out after the zero impulse
- If the green light shines, the start tolerance was okay
- If the red light shines, the start was carried out outside the start tolerance
- To exit the printer menu press the yellow button PB2 (2) until display (F) shows <PrOGrA>

3.1.3 Delete the Memory <StorE>

The display (F) shows <StorE>. Now you can delete the memory.

- It shows <StorE> in the time of day display (F) and in display (E) <YES>.
- With the green push button PB1 (1) you switch between <YES> and <nO>
 - YES..... save memory
 - nO..... clear memory
- With yellow push button PB2 (2) you confirm the selection to clear or save the memory.

3.1.4 Select the Program <ProgrA>

The display (F) shows <ProgrA> and the display (E) shows the currently selected program number. Here, you can move to another program.

- The countdown display (E) shows the current program number (0 to 5).
- With the green push button PB1 (1) you can select the program number.
- With the yellow push button PB2 (2) you can confirm the selected program number.
- The startclock now runs in selected program with countdown interval 1 of this program.

3.1.5 Set the Countdown Time <Cd#>

For each program you have 9 different countdown times (Cd1 to Cd9). Additionally, you have Cd0 that is always the break (no countdown) if the time of day display (F) shows <Cd#>

When you select the menu to set the countdown times, you set the countdown times of the current program.

- **The shortest allowed countdown time is 20 seconds, the longest 9:59 minutes.**
- **You cannot change a countdown in program 5 and 0.**
- **You can never change the set countdown time and the Cd0 (manual countdown time or break).**

- The display (F) shows <Cd#> (# = number of 0 to 9) and the countdown display (E) shows the set countdown time.
- Press the yellow push button PB2 (2) to select the countdown time that you change.
- Now, the first digit of the countdown times blinks.
- Press the green push button PB1 (1) to change a digit and the yellow button PB2 (2) to move from one digit to the next.
- To exit the selected countdown press yellow push button PB2 (2) until display (F) shows again <Cd#>. No digit blinks any more.
- To exit the countdown menu press yellow push button PB2 (2) until display (F) shows <LIGth>.

3.1.6 Set the Start Light <LIGht>

The start light has three colors – red, yellow and green. You can set the start light for a certain time. In case the selected times are beyond the time of the start interval, the countdown of the start interval shows the current color of light. The set values always apply to all countdowns in this program (except Cd0). Display (F) shows <LigHt> (light) and display (E) shows the selected time. The start light shows the set color for this time.

Display (F) shows <LigHt> and the countdown display (E) the time. The start light shows red, yellow, green or all colors (light is switched off). When pressing the yellow button PB2 (2) the light blinks.

- Press the green button PB1 (1) to change the light color
- Press the yellow button PB2 (2) to save the light color and to move to time.
- The first digit of the time blinks (display D)
- Press the green push button PB1 (1) to set the digits of the time and the yellow button PB2 (2) to move from one digit to the next.
- To exit the start light menu press yellow button PB2 (2) until display (F) show <tOnE#>

Example:

Start Light = red	Countdown Time = 10
Start Light = yellow	Countdown Time = 5
Start Light = green	Countdown Time = 3
Start Light = red	Countdown Time = -3
Start Light = black	Countdown Time = -10

Countdown	Display	Traffic Light
11	11	no
10	10	Red
9	9	Red
8	8	Red
7	7	Red
6	6	Red
5	5	Yellow
4	4	Yellow
3	3	Green
2	2	Green
1	1	Green
0	0	Green
-1	-1	Green
-2	-2	Green
-3	-3	Red
-4	-4	Red
-5	-5	Red
-6	-6	Red
-7	-7	Red
-8	-8	Red
-9	-9	Red
-10	-10	Red
-11	-11	no

3.1.7 Set the Tone of the Speaker <tOnE>

The tone of the speaker can be switched off or can sound with a high or low tone. Most sports require a pre-warning at 10 seconds and a countdown from 5 seconds to 0. The set values always apply for all countdowns in this program (not Cd 0).

- The display (F) shows blinking <tOnE#> (# = L [low] or H [high])
- Press the green button PB1 (1) to switch between L and H (low or high signal tone)
- Press the yellow button PB2 (2) to confirm moving on to countdown time and saving signal tone
- The first digit of the time blinks (display E)
- Press the green button PB1 (1) to change the digits of signal tone time and the yellow button PB2 (2) to move from one digit to the next.
- To exit the signal tone menu press yellow button PB2 (2) until display (F) shows <StOrE>

Example:

Horn Low	Countdown Time = 10
Horn Low	Countdown Time = 5
Horn Low	Countdown Time = 4
Horn Low	Countdown Time = 3
Horn Low	Countdown Time = 2
Horn Low	Countdown Time = 1
Horn High	Countdown Time = 0

Countdown	Horn
10	low
9	off
8	off
7	off
6	off
5	low
4	low
3	low
2	low
1	low
0	high
-1	off
-2	off
-3	off
-4	off
-5	off
-6	off
-7	off
-8	off
-9	off
-10	off

3.1.8 Factory Settings <SEtUP>

It is possible to change many parameters of the ASC3. If you have troubles with the changes you made, we recommend resetting the ASC3 to factory settings. This means all the settings you changed are reset to factory values.

- The display (F) shows blinking <SEtUP> (SETUP).
- Display (E) shows <CUS>. This means customer settings are saved after switching on and off.
- Press the yellow push button PB2 (2) and display (E) blinks.
- Press the green push button PB1 (1) and you can change between <CUS> (= customer) and <STA> (= standard).
- If the display shows <STA> and you press the yellow push button PB2 (2), all parameters are reset to the factory values (original setting).

Attention: The startclock automatically keeps the customer values that you set. To reset these values to the factory values you have to proceed as described above.

3.1.9 GPS Offset <gPS>

It is possible to synchronize the ASC3 from a GPS-receiver (ALGE-code GPS-TY).

GPS-receiver gets the time per satellite and must have a free sight to the sky to read at least 3 satellites. The GPS-time is always the Coordinated Universal Time (UTC). Therefore you must adjust in which time zone you are (e.g. the Middle European Time Zone is 1 (01:00)

- The display (F) shows blinking a value of e.g. <01:00> (correction of 1 hour).
- Display (E) shows <gPS>.
- Press the yellow push button PB2 (2) and the first digit of the value in display (F) blinks.
- With the green push button PB1 (1) you can change this value.
- With the yellow push button PB2 (2) you move to the next digit.
- Exit by pressing the yellow push button PB2 until all four digits in display (F) are blinking.

3.1.10 GPS Leap Time <LEA>

It is possible to synchronize the ASC3 from a GPS-receiver (ALGE-code GPS-TY).

While most clocks derive their time from Coordinated Universal Time (UTC), the atomic clocks on the satellites are set to GPS time. The difference is that GPS time is not corrected to match the rotation of the earth, so it does not contain leap seconds or other corrections that are periodically added to UTC. GPS time was set to match UTC in 1980, but has since diverged.

When you buy the GPS, the time is set correctly (in May 2014 the leap is 16 seconds). In average every second year another leap second is added here. These changes can be corrected manually here.

- The display (F) shows a blinking value of e.g. <16> (correction of 16 sec).
- Display (E) shows <LEA> for Leap Time.
- Press the yellow push button PB2 (2) and the first digit of the value in display (F) blinks.
- With the green push button PB1 (1) you can change this value.
- With the yellow push button PB2 (2) you move to the next digit.
- Exit by pressing the yellow push button PB2 until both digits in display (F) are blinking.

3.1.11 ID-Number <bib>

Here, you can select if you want to show ID-numbers with the countdown. If you want ID-numbers (bib) select 'on'.



ID-number on



ID-number off

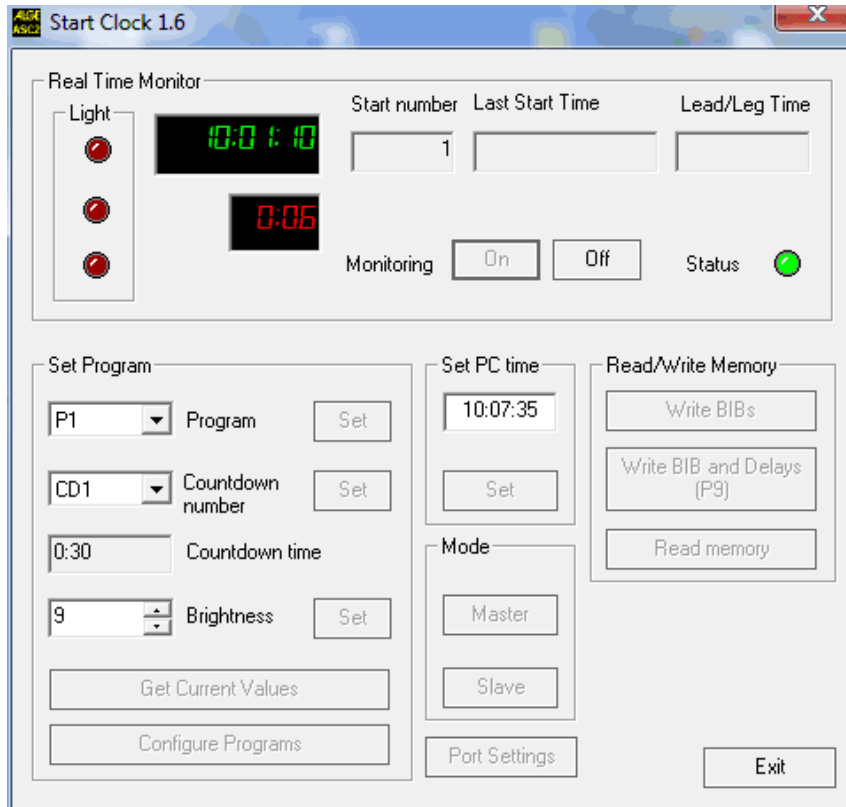
- The display (F) shows blinking <bib>, display (E) shows <on> or <OFF>
- Press the yellow push button PB2 (2) and display (E) blinks
- Press the green push button PB1 (1) and you can change between <on> (showing ID-number) and <oFF> (no ID-number shown)
- To exit press yellow push button PB2 (2)

3.2 Parameter setting by PC

We can offer software to effect the parameter settings by PC. This is much faster and easier. You can download software from our homepage www.alge-timing.com free of charge.

Direct link to download the software:

<http://www.alge-timing.com/alge/download/software/Setup%20ALGE-TIMING%20Start%20Clock.exe>



4 Multiport

The Multiport has several functions. This port includes the RS232 interface, the GPS input signal for time synchronization and the input for the remote control.

4.1 RS232 Interface

The RS232 interface has different functions:





- Output of time difference of all start times: times from start input (4) (green and black banana socket) and lead/leg times
- RS232 interface to control the startclock from a PC (time of day display, countdown display, horn, start light, speaker)
- Connection for the printer P5 to print all times online or offline.

Interface parameter:

- RS232
- 1 start bit, 8 data bit, 1 stop bit, no parity bit
- 2400 baud rate (for printer 2400)
- All data are in ASCII format
- PC have to wait until ASC3 replies before sending next packet

4.2 Remote Control ASC3-RC

The remote control ASC3-RC is used to set up the bib (start number), to change the count-down interval, and to set the brightness. The ASC3-RC is connected at the socket (7) that says "multiport"

- | | |
|---------------------------------|---|
| Next Bib: | press button  |
| Previous Bib: | press button  |
| Reset Bib to First Bib in List: | press button  and  simultaneously |
| Select Countdown: | press button  |
| Select Brightness: | press button  for six seconds |
| Function as PB1 of ASC3: | press button  |
| Function as PB2 of ASC3: | press button  |

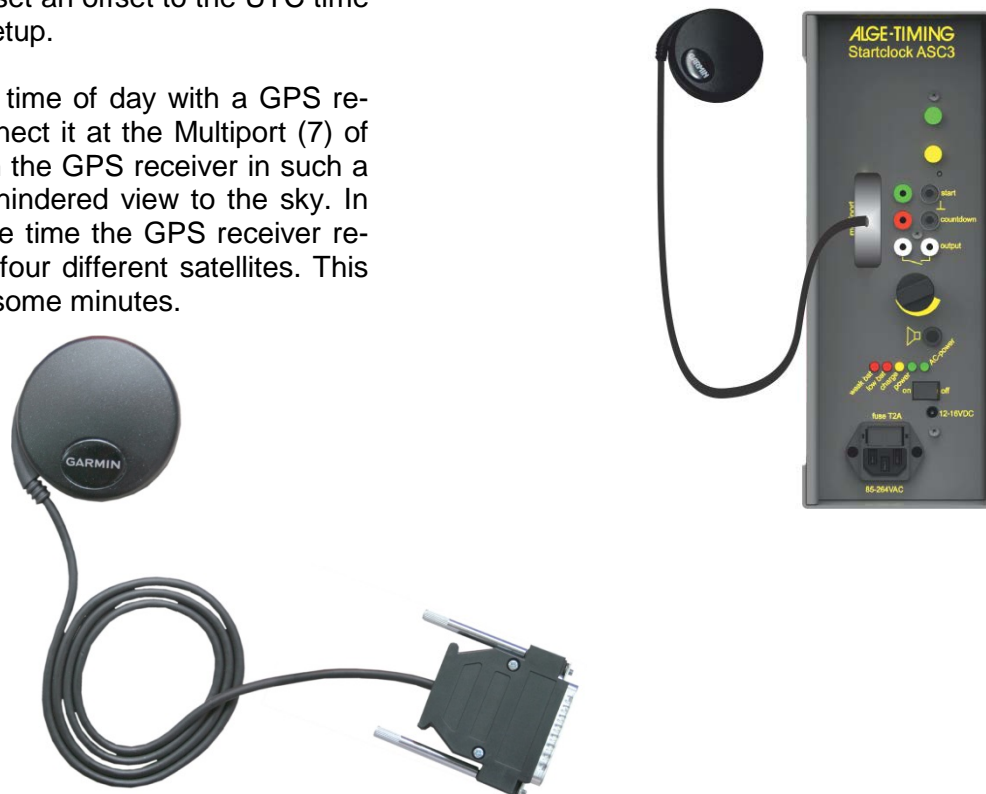
The ASC3-RC is always delivered together with the startclock ASC3.



4.3 GPS Receiver

The startclock ASC3 always shows the time of day. It is possible to set the time of day manually or automatically by a GPS receiver (optional). The GPS receiver is connected at the multiport (7). Using the GPS receiver the ASC3 reaches an accuracy of up to 1/1000 seconds. The time that the GPS receiver obtains is always the UTC (Coordinated Universal Time). In order to display the correct time of your time zone, you have to set an offset to the UTC time in the parameter setup.

In order to set the time of day with a GPS receiver, please connect it at the Multiport (7) of the ASC3. Position the GPS receiver in such a way that it has unhindered view to the sky. In order to receive the time the GPS receiver requires the data of four different satellites. This process may take some minutes.



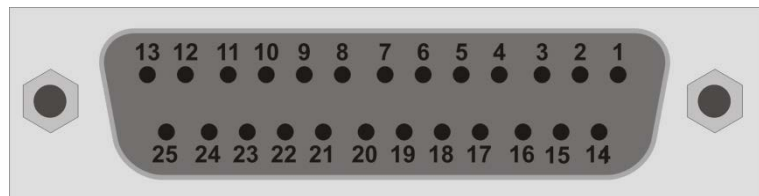
Leap Seconds:

A leap second is a one-second adjustment that is occasionally applied to Coordinated Universal Time (UTC) in order to keep its time of day close to the mean solar time. Without such a correction, time reckoned by Earth's rotation drifts away from atomic time because of irregularities in the Earth's rate of rotation. Since this system of correction was implemented in 1972, 26 leap seconds have been inserted, the most recent on June 30, 2015 at 23:59:60 UTC.

The GPS receiver has the leap seconds fix programmed. This means after some time the internal leap seconds will not be accurate any more. If you connect the GPS receiver for more than have an hour it will read the leap seconds from the GPS transmitter and store it in the ASC3 memory. It is also possible to adjust the leap seconds manually. The actual value is now 17 leap seconds (July 2015).

5 Technical Data

<i>Timing range:</i>	23 hours, 59 minutes, 59.999 seconds
<i>Accuracy:</i>	+/- 0.0002 sec/h at 20°C (68 K) +/- 0.009 sec/h at -15 to 50 °C (5 to 122 K)
<i>Precision:</i>	1/1000 seconds
<i>Quartz frequency:</i>	TCXO 32.754 kHz (temperature compensated crystal oscillator)
<i>Time of Day LED-Field:</i>	Six 7-segment LED figures with a figure height of 55 mm, separated after every second figure by three dots
<i>Bib LED-Field:</i>	Three 7-segment LED figures with a figure height of 80 mm
<i>Countdown LED-Field:</i>	Three 7-segment LED figures with a figure height of 80 mm, separated between the first and second figure by three dots
<i>Start Light:</i>	Start light consisting of 3 LED clusters (red, yellow, green)
<i>External Speaker:</i>	4 Ohm
<i>Operative temperature range:</i>	-25 to 60°C (-13 to 140 F)
<i>Memory:</i>	about 2000 start times
<i>Multiport:</i>	PC: 2400 Baud, 1 start bit, 8 data bit, 1 stop bit, no parity bit Printer: 2400 Baud, 1 start bit, 8 data bit, 1 stop bit, no parity bit



- 1.....empty
- 2.....Channel 0 (Start) and GPS sync.
- 3.....Remote Control Up
- 4.....Remote Control Down
- 5 to 9.....empty
- 10.....RS232 – TX
- 11.....RS232 - RX
- 12.....Ground
- 13.....+5 VDC
- 14.....Remote Control Countdown/Brightness/Countdown Start
- 15.....Yellow Push Button (2)
- 16 and 17....empty
- 18.....Green Push Button (1)
- 19 to 22.....empty
- 23.....+12 VDC
- 24.....Ground

<i>Battery:</i>	12 VDC, 12 Ah	
<i>Ext. Power Supply:</i>	AC-Power: 85 – 264 VAC DC-Power: 12 – 16 VDC	
<i>Case:</i>	Aluminum case for outdoor use	
<i>Measurements:</i>	445 x 280 x 115 mm / 17.52" x 11.02 x 4.53" (without handle) 445 x 316 x 115 mm / 17.52" x 12.44 x 4.53" (with handle)	
<i>Weight:</i>	8.4 kg / 17.6 lbs	

5.1 RS232 Interface

- 1 start bit, 8 data bit, 1 stop bit, no parity bit
- 2400 baud rate (for printer 2400)
- Data are in ASCII format
- PC must wait for the answer of the ASC3 reply before sending the next package

5.1.1 Commands for reading data from device:

5.1.1.1 Read memory:

PC to ASC3: ?MCR
ASC3 to PC: M? XXXX ST HH:MM:SS:zht LT -SS.zhtCR
M? EMPTYCR

XXXX start number
 ST fix code for "start number"
 HH:MM:SS.zht start time
 L T fix code for "lead-/leg time"
 - sign
 SS.zht lead or leg time
 EMPTY memory is empty

5.1.1.2 Clear memory:

PC to ASC3: ?ECR
ASC3 to PC: E?CR

5.1.1.3 Get current values on-line:

PC to ASC3 to start: ?DCR
PC to ASC3 to stop and send again: ?DCR
ASC3 to PC: D? HH:MM:SS m:ss C HCR

HH hours
 MM minutes
 SS seconds
 m current countdown time minutes
 ss current countdown time seconds
 C color (Black=0, Red=1, Yellow=2, Green=3)

5.1.1.4 Get current values:

PC to ASC3: ?SCR one time
ASC3 to PC: S? HH:MM:SS m:ss C XX m:ss bCR

HH hours
 MM- minutes
 SS seconds
 m current countdown time minutes
 ss current countdown time seconds
 C color (Black=0, Red=1, Yellow=2, Green=3)
 XX program
 m CDT minutes
 ss CDT seconds
 b brightness

5.1.2 Commands for setting data

5.1.2.1 SET PROGRAM

PC to ASC3: =PXYCR
 X program (0-9)
 Y if X=6, Y=0,1,2 or 3
ASC3 to PC: P=CR

5.1.2.2 SET COUNTDOWN TIME

PC to ASC3: =**CSCR**
 S..... countdown time (0-9)
ASC3 to PC: **C=CR**

5.1.2.3 SET CLOCK TIME

PC to ASC3: =**THHMMSS CR**
ASC3 to PC: **T=CR**

5.1.2.4 SET START LIGHT

PC to ASC3: =**LXSSTHCR**
 X..... program (0-9)
 SS seconds (0-20, 0=-10, 20=10)
 T color (0-off, 1-red, 2-yellow, 3-green)
 H..... sound (0-off, 1-high, 2-low)
ASC3 to PC: **L=CR**

5.1.2.5 SET DISPLAY

Has effect only if device is in slave mode

PC to ASC3: =**DHH:MMm:ssTHbbbRCR**
=D12:010:3011231
 HH..... hours
 MM..... minutes
 SS..... seconds
 m..... countdown time minutes
 ss countdown time seconds
 T color (0-off, 1-red, 2-yellow, 3-green)
 H sound (0-off, 1-high, 2-low)
 Bbb bib number (ID)
 R Relais (0 = off, 1 = on)
ASC3 to PC: **D=CR**

5.1.2.6 GOTO SLAVE MODE

PC to ASC3: =**SLAVECR**
ASC3 to PC: **S=CR**

5.1.2.7 GOTO MASTER MODE

PC to ASC3: =**MASTERC**
ASC3 to PC: **S=CR**

5.1.2.8 SET BRIGHTNESS

PC to ASC3: =**BXCR**
 X..... brightness (0-9)
ASC3 to PC: **B=CR**

5.1.2.9 SET BIB NUMBERS

BIB numbers should be sent in blocks. One block consists of 16 BIBs. One BIB consists of 3 ASCII numbers. It's possible to set 64 blocks with 16 BIBs, summary 1024 BIBs.

PC to ASC3: =**HBBAaabbccddd...oooppCR**
 BB block (0-63)
 aaa BIB number for competitor (BBx16+1)
 bbb BIB number for competitor (BBx16+2)
 etc.
 ppp BIB number for competitor (BBx16+16)
ASC3 to PC: **H=CR**

Examples: =**H00001002003004...015016CR** will set first BIB to 001, second to 002...
 =**H010017018019020...031032CR** will set 17th BIB to 017, 18th to 018...

5.1.2.10 SET DELAY TIMES (only for program 9)

DELAY_TIME should be sent in blocks. One block consists of 8 DELAY_TIMES. One DELAY_TIME consists of 5 ASCII numbers. It's possible to set 128 blocks with 8 DELAY_TIMES, summary 1024 DELAY_TIMES.

DELAY_TIME is difference in seconds between first and next competitor start time, max value is 65535 seconds.

* DELAY_TIME for first competitor must be 0.

PC to ASC3: **=VBBaaaaabbbbccccc...ggggghhhhCR**

BB block (0-127)
 aaaaa DELAY_TIME in seconds for competitor (BBx8+1)
 bbbbb DELAY_TIME in seconds for competitor (BBx8+2)
 etc.
 hhhh DELAY_TIME in seconds for competitor (BBx8+8)

ASC3 to PC: **V=CR**

Example: =V000000000010...0007000080CR will write delay_time for first competitor is 0, for second is 10 seconds...

5.1.2.11 SET START TIME (only for program 9)

After DELAY_TIME settings, it is necessary to set race START_TIME. After this settings, ASC3 will recalculate start times for all competitors. Without this data it is not possible to synchronize several ASC3 devices.

PC to ASC3: **=KHHMMSS CR**

ASC3 to PC: **K=CR**

5.1.2.12 SETUP BAUDRATE

PC to ASC3: **=RxCR**

x Baud rate in ASCII (2, 4, 9 or 1)
 2 2400 Baud
 4 4800 Baud
 9 9600 Baud
 1 19200 Baud

This command is answered by the ASC3 with
 R=CR

It uses already the new adjusted Baud rate!

5.1.2.13 GET SOFTWARE VERSION

PC to ASC3: **?VCR**

ASC3 to PC: **V?xxxxCR**

xxxx Version Number of ASC3

5.1.2.14 GET GPS ZONE

PC to ASC3: **?GCR**

ASC3 to PC: **G?HH:MMCR**

HH hours
 MM minutes

5.1.2.15 GET LEAP SECONDS

PC to ASC3: **?UCR**

ASC3 to PC: **U?SSCR**

SS seconds

5.1.2.16 SET DISPLAY IN SLAVE MODE

PC to ASC3: =EHH:MM:SSAm:ssTHbbbCR

HH..... hours
 MM..... minutes
 SS..... seconds
 A address for ASC3 (A to J or 0 to 9, depending on ASC3 version)
 m..... countdown time minutes
 ss countdown time seconds
 T..... color (0-off, 1-red, 2-yellow, 3-green)
 H..... sound (0-off, 1-high, 2-low)
 bbb..... bib number (ID)
 R Relais (0 = off, 1 = on)

It is possible to send for more ASC3 the string. The first part with the time of day is always the same for all of the ASC3. After the address each ASC3 is controlled separate.

Example: =E10:30:28A0:0031012B0:1210025C0:1510063CR

5.1.2.17 GET ADDRESS OF ASC3

PC to ASC3: ?ACR

ASC3 to PC: A?xCR

x adjusted address (0 – 9 or A – J, depending on ASC3 version)

5.1.2.18 SET ADDRESS OF ASC3

PC to ASC3: = AxCR

x address (0 – 9 or A – J, depending on the ASC3 version)

ASC3 to PC: A=CR

5.1.2.19 SET GPS ZONE

PC to ASC3: ?GHHMMCR

ASC3 to PC: G=HHMMCR

HH..... hours
 MM..... minutes

5.1.2.20 SET GPS LEAP SECONDS

PC to ASC3: ?USSCR

ASC3 to PC: U=SSCR

SS leap seconds

5.1.2.21 BIB – ON/OFF

PC to ASC3: =IxCR

ASC3 to PC: I=CR

x 0 = bib off, 1 = bib on

5.1.2.22 SET TO FACTORY ADJUSTMENT

PC to ASC3: =FCR

No replay, ASC3 will reset and set parameters to factory setup

5.1.2.23 Set ASC3 on Slave-Mode

PC to ASC3: =IxCR

ASC3 to PC: I=CR

A..... Address (depending on the ASC3 version 0 – 9 or A - J)

5.1.2.24 Set ASC3 in Slave-Mode with Address**PC to ASC3: =EHH:MM:SSAm:ssTHbbbR CR**

A..... Address (A, B, C, D, E, F, G, etc.)

bbb Bib number

Using this command ASC3 does not reply.

Example for controlling three ASC3**=EHH:MM:SS1m:ssTHbbbR2m:ssTHbbbR3m:ssTHbbbR CR**

Time of day is the same for all boards, 1 = Address A with parameter for this ASC3, 2 = Address B with parameter for this ASC3, 3 = Address C with parameter for this ASC3. R is relay state, 0=off, 1=on;

5.1.2.25 Set ASC3 in Slave-Mode without Address**PC to ASC3: ==DHH:MM:SSm:ssTHbbbR CR**

Using this command ASC3 does not reply.

This is the broadcast command, all ASC3 will accept and show data. Could be used to clear all ASC3 in a network, to show the same data.

6 Firmware Update

The owner of a ALGE-startclock ASC3 is able to update the firmware in order to get the latest features. The update is free of charge, but for the update the cable 205-02 is necessary.

The simplest way to update the ASC3 is to use the ALGE-TIMING USB-Stick that was delivered with the ASC3



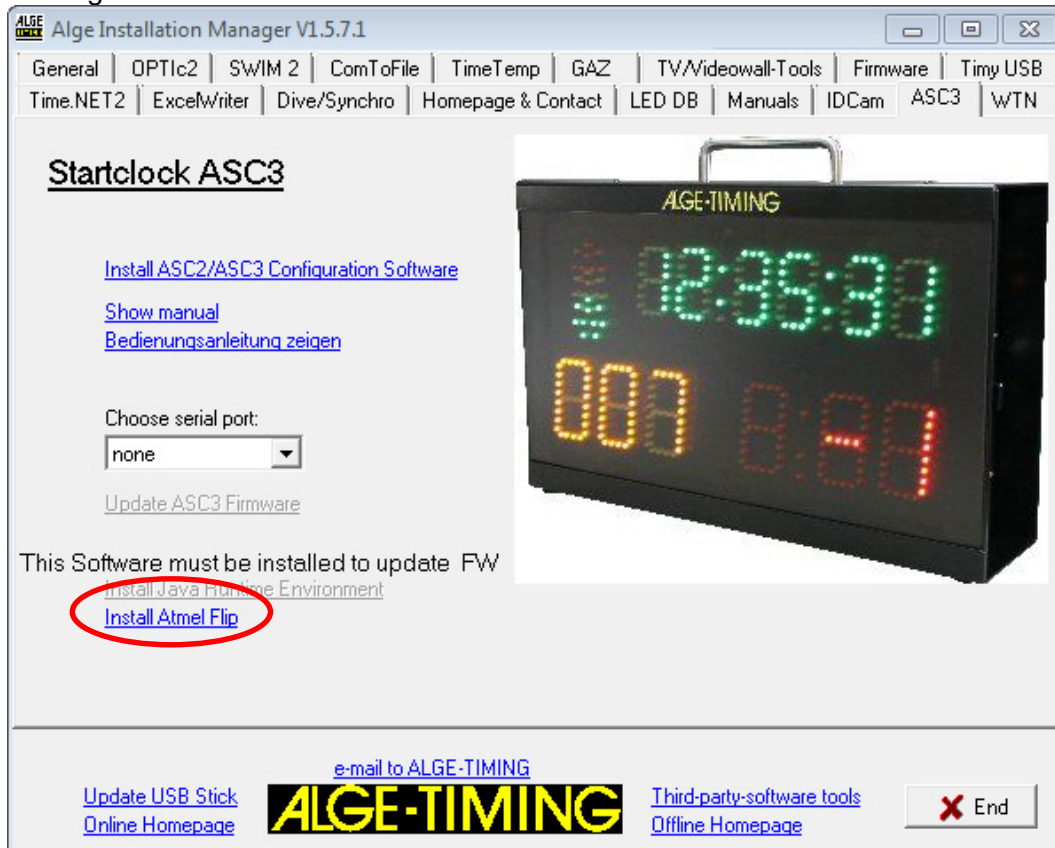
- Plug the USB-Stick at the PC
- The PC needs internet access
- Open the ALGE-Stick e.g. with Windows Explorer
- Double click on „Please start me.cmd“
- It starts the Install-Manager on your PC



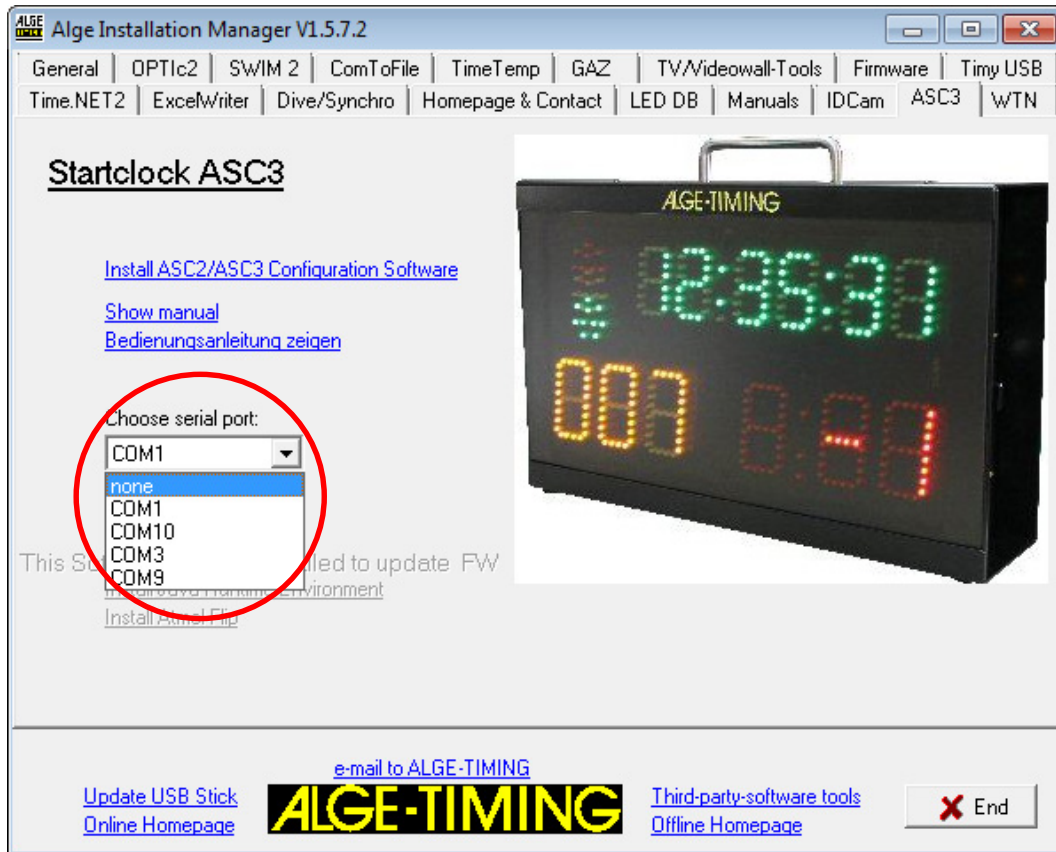
- If the USB-Stick is not new you should first update the content and click on „Update USB Stick“
- The USB-Stick will download from the ALGE-Webpage the latest software and firmware.
- When it shows “Install Java Runtime Environment“ in blue (with a link) it is necessary to install the Java program by clicking on it



- When it shows „Install Atmel Flip“ in blue (with link) it is necessary to install it by clicking on it



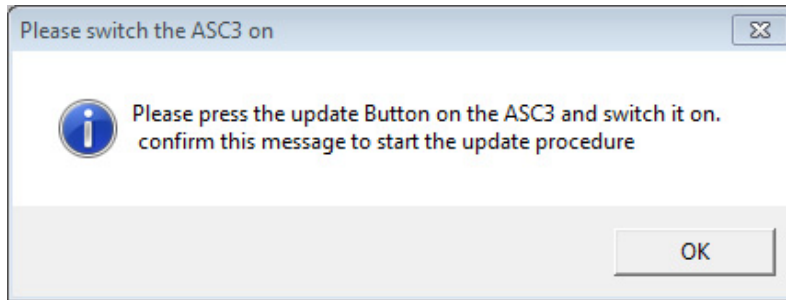
- Connect cable 205-02 at the Startclock ASC3 (multport 7) and PC (RS232-interface)
- Select serial interface that is used on the PC (e.g. COM1)



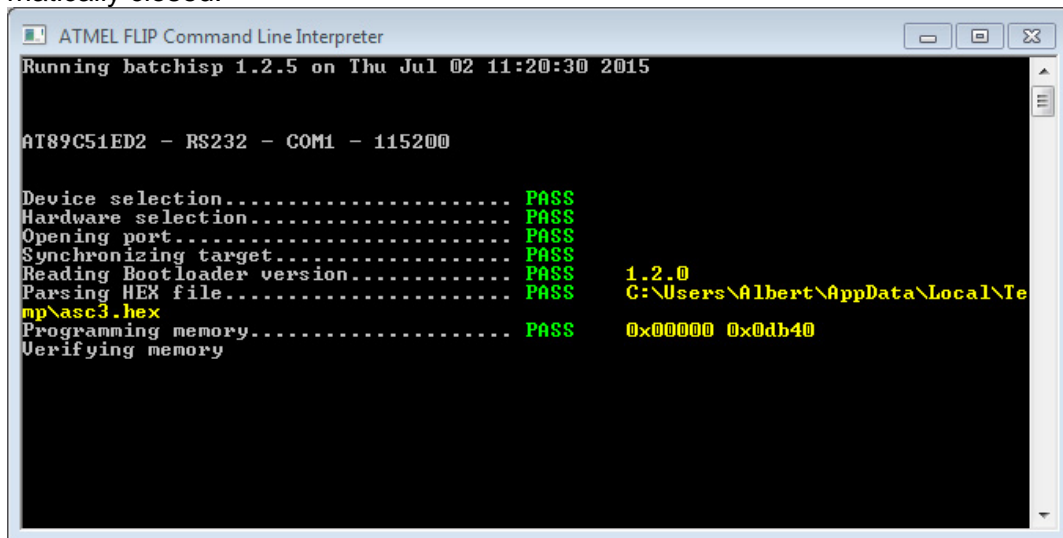
- Turn ASC3 off
- Press program push button (3) with e.g. a pen and keep it pressed
- Switch ASC3 on
- Release program push button (3)
- Display of ASC3 is bank and ASC3 is ready for firmware update
Click on „Update ASC3 Software“



- It shows a warning message that the ASC3 must be switched in the update mode. This was done already above.



- Click on OK
- The new programming of the ASC3 starts. It opens a window on the PC that shows you the programming progress. After the update is finished this window will be automatically closed.



- Switch Startclock ASC3 off
- Switch Startclock ASC3 on (it must show the new firmware version)
- Operate the ASC3 as usual

If you do not have an ALGE-TIMING USB-Stick:

Link to download the Install-Manager from the ALGE webpage www.alge-timing.com:
<http://www.alge-timing.com/alge/download/software/IM.exe>

The version of the Install-Manager must be V1.5.7.1 or newer.

Link to download the latest ASC3 firmware:

<http://www.alge-timing.com/alge/download/uC/asc3.exe>

Link to download FLIP (Programmer Applikation für Atmel Prozessoren):

<http://www.atmel.com/tools/flip.aspx>

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