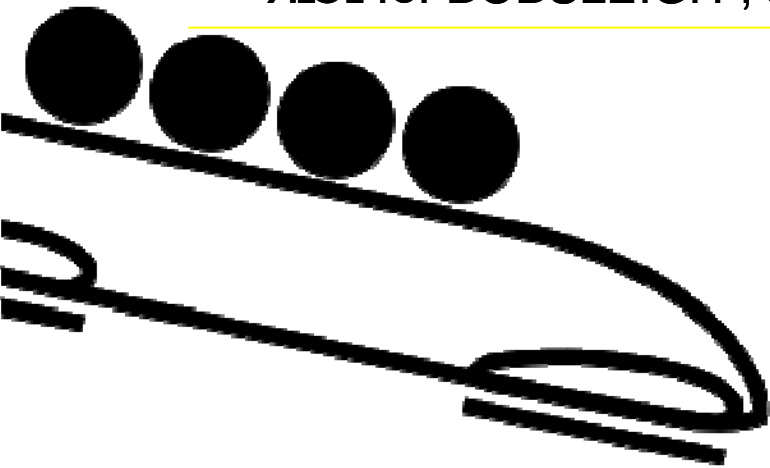


ALGE for BOBSLEIGH-, and SKELETON - TRACK

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**ALGE-TIMING**

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## 1 General

### 1.1 *Who is ALGE-TIMING ?*

**ALGE TIMING** is international known for electronic timing since many years. This is a huge success for a small electronic specialized company, located in the west of Austria at the border to Switzerland and only a few miles from the German border.

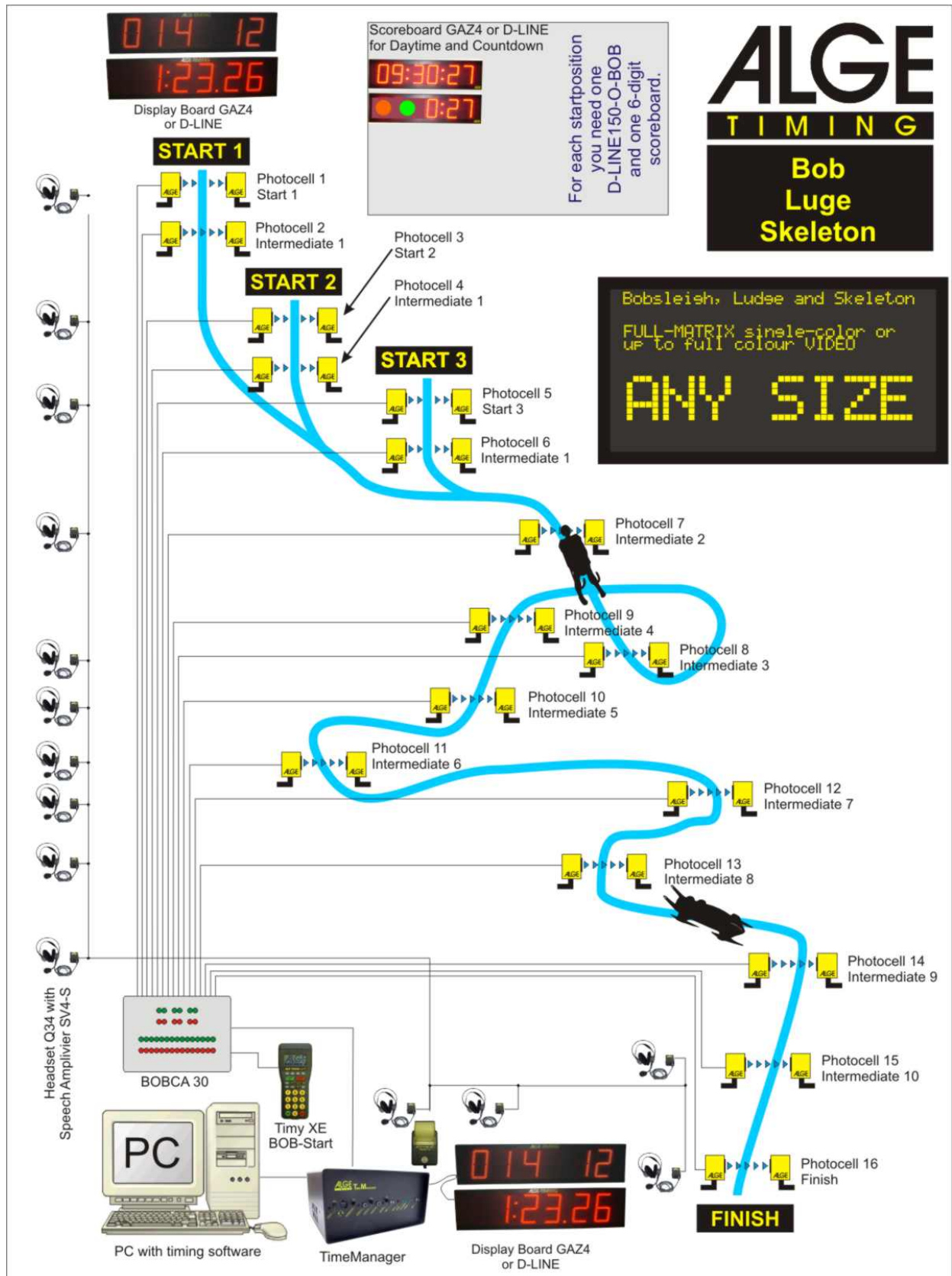
A permanent staff of 30 people is developing and producing continuously new devices and systems. The products are sold over a net of independent representatives in all 5 continents and more than 40 countries.

ALGE got into the timing business at the point, when the mechanic clocks were replaced. Since there were only mechanic clocks, and because of the fact that ALGE is located in the middle of the Alps, there was a demand for electronic timing devices, that could measure more than one competitor on the slope for skiing. After ALGE had developed a device of this kind the big success in timing began.

Nowadays ALGE has probably the widest range of timing systems, from small training systems up to the high end competition system used in real big events like World-Championships.

ALGE is not very well known by the public as the key-business of ALGE is the development and selling of perfectly designed timing systems for customers and service-companies. Several service-companies doing Timing and Scoring at highest competition levels are using ALGE-TIMING equipment as there preferred system in many different sports. But of course the TV-Insert will show the company that is sponsoring these competitions.

## 2 System drawing



## 3 Hardware

### 3.1 *TM Time Manager*

The SWC was developed by ALGE-TIMING in the year 1999 especially for aquatic sports. It combines the most powerful electronic with the rugged design of ALGE.

The built-in amplifier and the built-in rechargeable battery make this device untouchable.

The TM is the most modern timing-device; the Computer that is connected through RS232 is only the display and the keyboard of this device.

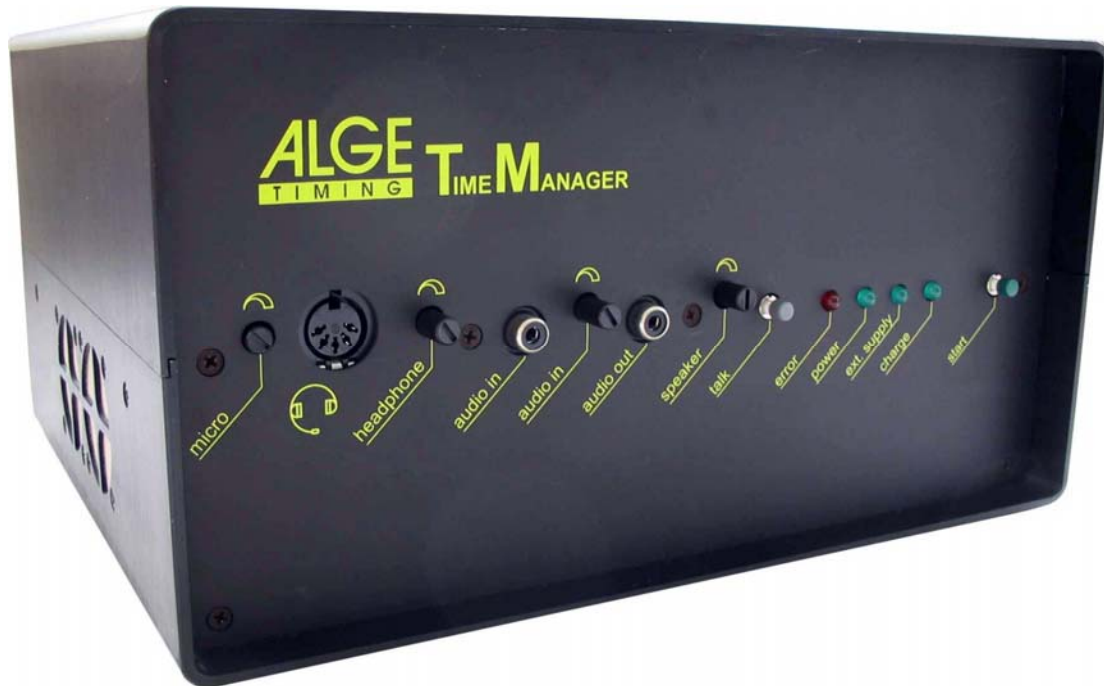
In case of a computer-breakdown the TM can store up to 10.000 times in the internally memory. These times can be restored at any time on the Computer or they can be printed directly on the P5-5 Online-Printer.

#### 3.1.1 Technical characteristic

<b>Measuring range:</b>	23 hours, 59 minutes, 59,9999 seconds
<b>Time reference:</b>	TCXO 10 MHz (temperature compensated quartz oscillator)
<b>Timing-Channels:</b>	1 internal and up to 100external channels
<b>Frequency deviation:</b>	temperature range -25 to 50°C: +/- 2,5ppm (+/- 0,009s/h) with aging: +/- 1 ppm per year at 25 degree Celsius adjusted to +/- 0.1 ppm
<b>Power supply:</b>	internal: 12V gel cell battery external: 100-240 V 50/60Hz or 12-18 V DC
<b>Dimensions:</b>	256 x 215 x 136mm
<b>Weight:</b>	4kg

### 3.1.2 Connections and Interfaces

The TM has several interfaces and connections for peripheral devices.  
All interfaces and connections are fully protected against electrostatic damage!



**Control elements and Connections at the front side:**

start	Internal Start button for testing and emergency-functions
line test	Button to test the connection between SWC and SU
charge	LED shows if the rechargeable batteries are charging
ext. Supply	LED signalize external supply
power	LED shows the state of the internally battery
error	normally off, shows several error codes
talk	button to make an announcement by the operator
speaker	volume for the speakers
audio out	Chinch connection for external amplifiers
audio in	Regulator for audio in level
audio in	Chinch connection for line in
headphone	volume of headset
	connection for headset
micro	adjustment of the feedback for the microphone
Instrument	shows the capacity of the internal battery

**Control elements and Connections at the back side:**

printer1	RS232 interface for P5-5 online printer
printer2	full RS232 interface for 3rd party meet management software
TV/PC	full RS232 interface for PC or TV, depending on usage
PC/TV	USB-Interface for PC or Video depending on usage
display board	galvanic separated RS232 and RS485 data handling interface especially numeric scoreboards
power	ON-OFF switch
mains	mains-supply, 100-240V 50/60Hz
2 x SPA	connection for start speakers SPA
SWT line1	ALGE-Timing bus 1
SWT line2	ALGE-Timing bus 2
start	connection to synchronize with other timing devices
display-board	RS232 interface for numeric scoreboard
SU/FLASH	connection for SU -Start Unit or Flash

### 3.2 P5-5 Online Protocol printer

The Printer P5-5 is directly supplied by the TM.

#### 3.2.1 Technical Data

<b>Printing system:</b>	Thermal Printer
<b>Paper:</b>	Thermo paper, 57 mm (2.24 in) wide, diameter 49 mm (1, 97 in), Length of a roll about 23 m (75 feet)
<b>Printer Speed:</b>	Up to 5 lines per second
<b>Interface:</b>	RS 232
<b>Baud Rate:</b>	2400 Baud
<b>Protocol:</b>	ASCII, 2400, N, 8, 1
<b>Operation Elements:</b>	key for paper feed
<b>Connection Sockets:</b>	power supply (5 to 15 VDC)
<b>Connection Plugs:</b>	depending on type, cable length about 1 m / 39 in
<b>External Supply:</b>	from timer or external (5 to 15 VDC)
<b>Temperature Range:</b>	-20 to 55°C / -4 to 131 F
<b>Measurements:</b>	157 x 94 x 64 mm / 6.18 x 3.7 x 2, 52 in
<b>Weight:</b>	350 g / 0, 8 lb (without paper)



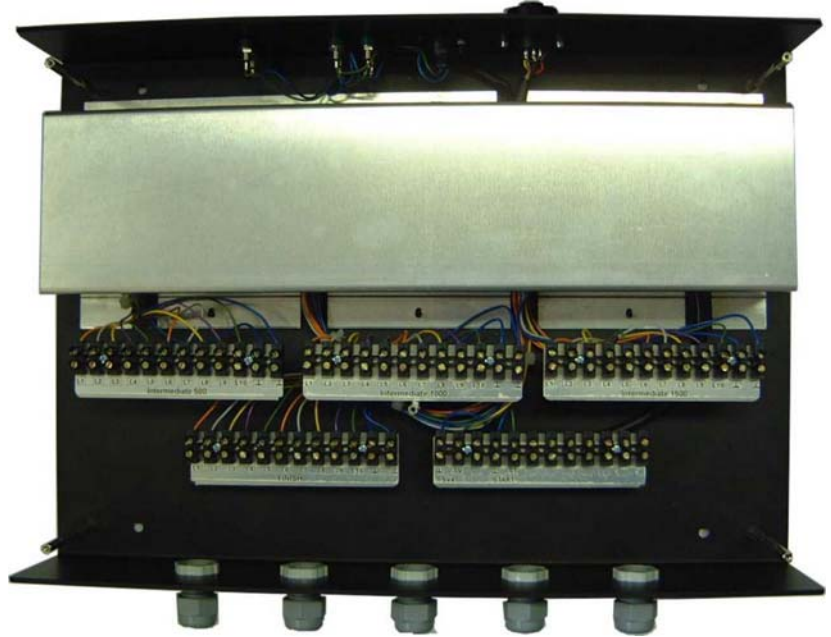
### 3.3 BOBCAxx

The BOBCAxx is the channel-extension for the TM with the ability to control 20 independent timing-channels. It is available as 19" rack-mountable or as a standalone-version.

The timing-channels can be connected inside the device by professional terminal-blocks.

The state of each channel can be seen directly on the front via super bright LEDs.

If a photocell gives a permanent impulse an internal beeper will inform the user to have a look on the photocell-adjustment.



#### 3.3.1 Technical Data

<b>Timing-Channels:</b>	10-140 independent channels
<b>Resolution:</b>	0,0001 second
<b>Time reference:</b>	triggered from TM (TCXO 10 MHz)
<b>Operation Elements:</b>	none
<b>Connection Plugs:</b>	ALGE Timing-Bus
<b>Supply:</b>	directly from TM
<b>Temperature Range:</b>	-40 to 60°C
<b>Measurements:</b>	300 x 200 x 100 mm
<b>Weight:</b>	2.8kg

### 3.4 Photocell S-WL12

This is a very rugged photocell which is especially designed for the permanent installation in tracks

#### 3.4.1 Technical Data

<b>Operating-Distance:</b>	0 ... 7 m
<b>Reflector:</b>	Yes
<b>Light emitter:</b>	LED
<b>Type of light:</b>	Red-light (Infrared)
<b>Spot-dimension:</b>	ca. 80 mm in 3 m distance
<b>Dimensions:</b>	15 x 49 x 41, 5 mm (W x H x D)
<b>Output:</b>	normally open
<b>Delay:</b>	<=330µs
<b>Temperature Range:</b>	-40 °C ... +60 °C



## 4 Starting devices

Depending on the level of competition you can operate the start from the central Timing-Software or independently front the Timy.

### 4.1 *Timy XE*

The TIMY S is not only a Start-Terminal; furthermore it is also a highly accurate Timing-Device which can be used beside the race-start also for any kind of your training-sessions. It is easy to use; battery operated and contains several programs especially for training.

#### 4.1.1 Timy Software

- Backup:** timer to measure time of day (e.g. backup or reference timer for PC)
- Stopwatch L:** simple timing program total ranking list
- Stopwatch:** universal timing program that is able to time more than one run (net time/total time). Group start and ranking is also possible.
- MultiTimer:\*** timing program with the possibility to link more Timy together (separate Timy for start, intermediate time(s), and finish)
- TrackTimer:** Timing for events with has lanes (e.g. athletic, swimming)
- Training:** universal trainings software (many intermediate times are possible)
- Speed:** speed measurement in km/h, m/s, or mph
- Terminal:** terminal for judges, e.g. ski jumping, figure skating, diving, synchronized swimming
- Commander:** terminal to control a display board
- Calculator:** to calculate net times and total times
- Cycle-Start:** for the Start in Track cycling



#### 4.1.2 Timy Models



##### Timy S

The Timy S is a timer or terminal without printer. It has standard quartz that does the timing with quartz accuracy. The display works down to about  $-5^{\circ}\text{C}$  (23 F) and we do not recommend this model for winter outdoor use.

##### Timy XE

The Timy XE is a timer without printer. It has a temperature compensated quartz oscillator for time measurement with the highest precision and an extended temperature range for operational use down to  $-20^{\circ}\text{C}$  (-4 F).



##### Timy P

The Timy P is a timer or terminal with integrated printer. It has standard quartz that does the timing with quartz accuracy. The display works down to about  $-5^{\circ}\text{C}$  (23 F) and we do not recommend this model for winter outdoor use.

##### Timy PXE

The Timy PXE is a timer with integrated printer. It has a temperature compensated quartz oscillator for time measurement with the highest precision and an extended temperature range for operational use down to  $-20^{\circ}\text{C}$  (-4 F).

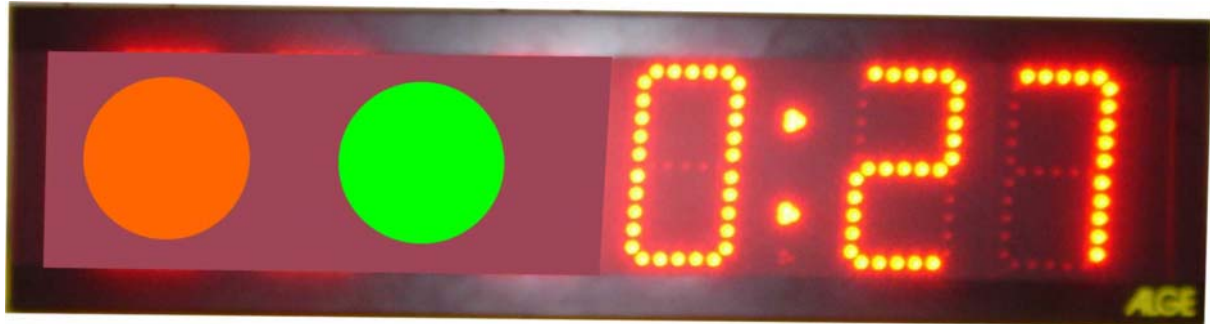
### 4.1.3 Technical Data

<b>Processor:</b>	Siemens C161 with 3, 3 V technology
<b>Crystal Frequency:</b>	12.8 MHz with TCXO or standard quartz
<b>Time Resolution:</b>	1/10,000 s
<b>Program Memory:</b>	FLASH Memory with 8 MBit
<b>Data Memory:</b>	RAM with 2 MBit (about 13,000 times)
<b>Display:</b>	monochrome LCD graphic display 128 x 64 pixel, available with standard- or with extended temperature range
<b>Keyboard:</b>	silicon keyboard, 26 keys
<b>Connections:</b>	1 x DIN-socket for photocell (7) 1 x banana socket pair – start input (5) 1 x banana socket pair - finish input (6) 1 x banana socket pair – display board (4) 1 x D-Sub 25-pin (3) <ul style="list-style-type: none"><li>• 9 timing channels<ul style="list-style-type: none"><li>• RS 232 (PC-connection)</li><li>• display board</li><li>• RS 485 (network)</li><li>• power supply (7–15 VDC out)</li></ul></li></ul> 1 x USB (1) 1 x power supply (7 - 15 VDC in) (2)
<b>Channel Extension:</b>	per extension 8 channels, max. 99 channels
<b>Power Supply:</b>	<b>Internal:</b> 6 x AA-Alkaline 6 x 2 Ah or 6 x AA-NiCad 6 x 1 Ah or 6 x AA-NiMH 6 x 1, 5 Ah <b>External:</b> Power Supply PS12, 12 V battery, or 7-15 VDC
<b>Power Consumption:</b>	data given at 20°C (68 F) Alkali: without printer about 50 hours NiCad: without printer about 25 hours NiMH: without printer about 38 hours Alkali: not possible with printer NiCad: about 3000 lines NiMH: about 4500 lines
<b>Charging Duration:</b>	about 14 hours
<b>Printer:</b>	graphic thermo printer, max. 5 lines per sec.
<b>Temperature Range:</b>	Timy S and P: -5 to 60°C (23 to 140 F) Timy XE and PXE: -20 to 60°C (-4 to 140 F)
<b>Measurements:</b>	Timy S and XE: 204 x 91 x 50 mm Timy P and PXE: 307 x 91 x 65 mm
<b>Weight:</b>	Timy S and XE: 450 g (no battery) Timy P and PXE: 650 g (no battery and paper)

#### 4.1.4 D-LINE-150-O-BOB

Especially for the countdown in different sports we developed this countdown clock with integrated traffic light, green and red and a hornspeaker.

This Scoreboard is operated directly from the Timy.



## 5 Cabling

The cabling for such a system should be done as a permanent installation.

ALGE-TIMING supplies all the connection boxes which are required to connect the photocells, scoreboards and the timing-systems.

For the different locations you need different connection boxes.

T	Timing-Room, outlet Timing		
T1	Timing-Room, outlet Full matrix		
P1-P11	Photocells		
C1	Concentration clock Start 1		
S1	Photocell Start 1		
C2	Concentration clock Start 2		
S2	Photocell Start 2		
H1-H13	Headset		
D-LINE	Numeric Scoreboard		
U32A1	Full-Matrix-Board		
Cable-List Bob, Skeleton			
		from	to
4 x 1,0		T	S1
4 x 1,0		T	P2
4 x 1,0		T	P3
4 x 1,0		T	S2
4 x 1,0		T	P5
4 x 1,0		T	P6
4 x 1,0		T	P7
4 x 1,0		T	P8
4 x 1,0		T	P9
4 x 1,0		T	P10
4 x 1,0		T	P11
8 x 0,25 shielded, twisted pair		T	C1
8 x 0,25 shielded, twisted pair		T	C2

Technical Description  
ALGE BOBSLEIGH and SKELETON



		from	to
4 x 0, 16, shielded, twisted pair 100-240V Mains must be available for the Scoreboards!		T	D-LINE
6 x 50μ Fiber-optic, SC-Connectors 400V Mains with a capacity for the scoreboard must be installed!		T1	U32A1
4 x 1,0		T1	U32A1
8 x 0,25 shielded twisted pair		T1	U32A1
4 x 0,16, shielded, twisted pair		H1	H2
5 x 0,16, shielded, twisted pair		H2	H3
6 x 0,16, shielded, twisted pair		H3	H4
7 x 0,16, shielded, twisted pair		H4	H5
8 x 0,16, shielded, twisted pair		H5	H6
9 x 0,16, shielded, twisted pair		H6	H7
10 x 0,16, shielded, twisted pair		H7	H8
11 x 0,16, shielded, twisted pair		H8	H9
12 x 0,16, shielded, twisted pair		H9	H10
13 x 0,16, shielded, twisted pair		H10	H11
14 x 0,16, shielded, twisted pair		H11	H12
15 x 0,16, shielded, twisted pair		H12	H13

## **6 Software**

Depending on the needs of the client we can deliver any kind of Software which is required for small events up to events of the highest level.

### **6.1 *Timing-Software S-Bobsleigh***

This Software is absolutely required for the Timing with the TM.

The Software controls all the timing-channels and has all functions for time-keeping integrated. It can also manage the Names of the competitors and is able to print statistics and simple Results. An export to excel enables you to make all your special ratings manually or use this export directly in the Evaluation-Software of your national Federation.

## 7 Scoreboards

The Scoreboard is the interface between the public and your sport-event and on tracks it is also used to give the start commands to the athletes.

ALGE-TIMING has probably the widest range of different scoreboards.

From bistable electromagnetic technology, this is very rugged and could be operated with battery to numeric LED-Scoreboards and true color Video walls.

ALGE-TIMING can deliver the perfect solution for your sport venue.

### 7.1 *Bistable Electromagnetic Scoreboards*



These scoreboards are extremely rugged and have a superior readability in direct sunlight. These scoreboards are also available with integrated Battery, which can supply the scoreboard for a whole day.

These scoreboards are available in 150 and 250 mm and 450mm number height. Different shapes and colors are also available.

### 7.2 *Numeric LED-Scoreboards*

The perfectly assembled scoreboards in LED-technology have a very good solution for a numeric scoreboard. We manufacture numeric LED-Scoreboards with number heights of 100, 150, 250, 450 and 600mm. Where the 10cm Version is produced only for indoors we have all other sizes available as indoor and outdoor models. For outdoors a higher brightness is required.

All numeric Scoreboards can be delivered in different shapes and colors.

Additionally we offer Text-Fields, which can be added on top of the numeric scoreboards to show event-information or advertisings.



### 7.3 Video-Walls and Full Matrix LED Scoreboards

ALGE-TIMING can provide you with a large-scale scoreboard from single-color up to full color video-wall. All these scoreboards are customized to the client's location.





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