



## TIMING SYSTEM FOR BOBSLEIGH, LUGE & SKELETON

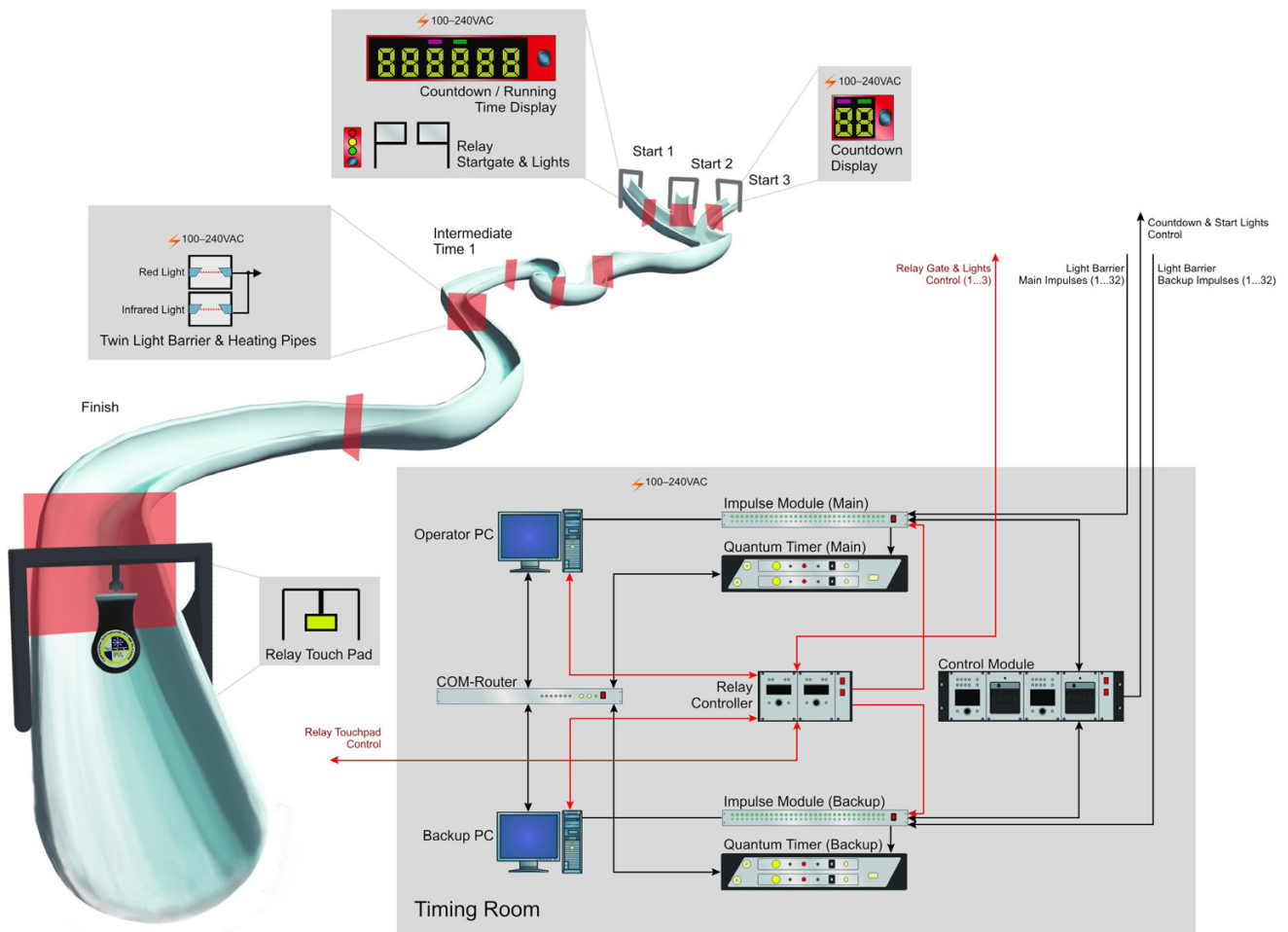
### Overview

Since the first Olympic Winter Games in 1936, Bobsleigh has been one of our key sports. Even back then, Omega served as official timekeeper and also provides reliable and top-level services for both the FIBT World Cup and World Championships.

Our brand new Timing System TIM021 is a component-based turnkey solution for high-precision time measuring, starting control and event management. Delivering state-of-the-art measurement and control equipment combined with dedicated software components, our timing system ensures smooth competitions assisted by automatic control features and hassle-free timing data acquisition. It is not without reason that we are the exclusive supplier of timing components for any of the Olympic bobsleigh tracks.



## SYSTEM SCHEME



## STANDARD SCOPE OF DELIVERY

### Timing Components:

- Two Impulse Modules (main and backup) to process and distribute simultaneous signals from up to 32 light barriers
- Two Quantum Timer (main and backup) for high-precision timing data acquisition and output
- Control Module with integrated light modules (main and backup) to control up to eight lights and a time-stamp printer
- COM Router to quickly switch between main and backup system.
- Twin Light Barrier system with photocell heating

### Display Components:

- Coupled Countdown & Running Time Display
- Countdown Display including a starting light

### Software Components:

- A user application (main and backup) for controlling the entire system, including competition and results management

### Optional Relay Equipment:

- Relay Controller
- Relay Start Gate & Starting Lights
- Relay Touch Pad

The individual components of the Luge Timing System are described on the following pages of this document.

## HARDWARE COMPONENTS

### Quantum Timer

Our Quantum timer device with its resolution of approx. 0.000.001 seconds represents the latest precision timer device by Swiss Timing. Featuring an extra backup measuring circuit, a full set of state-of-the-art connectors and the ability to synchronize the daytime via GPS or impulse, the Quantum timer provides highest reliability and flexibility.



To ensure the security of the results, the main Quantum Timer is always backed up by a second unit. Thus, a second operator PC running the software application is required

### Impulse Module

The Impulse Module acts as an interface between the Quantum Timer and a maximum of 32 individual light barrier inputs. A user-friendly control panel allows a quick activation of the desired light barriers as needed for different events.



### Control Module

The control module is a combined module that consists of two sub modules: light module and the printer module.



The light sub module controls up to 8 lights and the corresponding countdown displays. In addition, it indicates the rolling time (race time) as well as intermediate times.



The printer sub module prints a time stamp for each light barrier trigger on continuous paper. The printout can be used as a fail-save proof, or just for the filing of any intermediate times.

### Coupled Countdown and Running Time Display

The 6-digit LED display with integrated starting light and acoustic horn serves as a countdown indicator and running time display. The luminous LED digits are 10cm high and easily readable.



### Countdown Indicator

Our 2-digit LED countdown indicator is a compact-sized countdown display featuring an additional starting light as well as an acoustic horn.



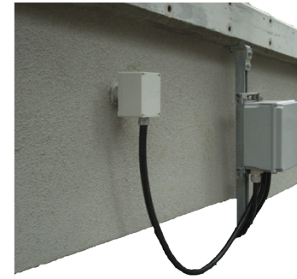
### COM Router

The COM Router serves as the communication interface between the timer components and the operator PCs connected. It additionally allows the quick switching between the main and the backup timer and thus switching the operator PC function as control and monitoring system.



## Twin Light Barriers

A twin light barrier is set up for each intermediate measuring point on the track, providing an independent impulse output for the main and the backup measuring system. Each light barrier can also distribute a warning signal to the operator for indicating a pollution or malfunction of the sensor. Additional heating pipes are used to maintain the optimal working temperature for the photocells and thus additionally lowering the risk of failures.



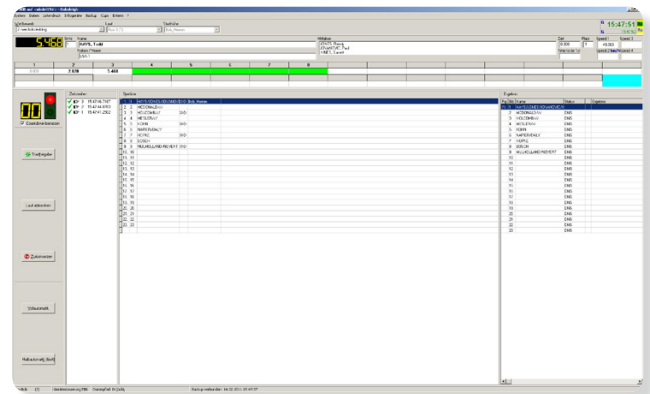
Light Barrier

## TIMING SOFTWARE COMPONENT

Our proven measuring software acts both as an interface for the hardware timing components and as an application for planning and managing competitions.

### Application Features:

- Creation of multiple tracks and courses
- Comprehensive management of participants and competitions
- Creation and output of various lists
- Start lights and scoreboard control
- Extensive time measuring and sensor monitoring
- Smart main/backup switch mechanism



Timing Software Screenshot

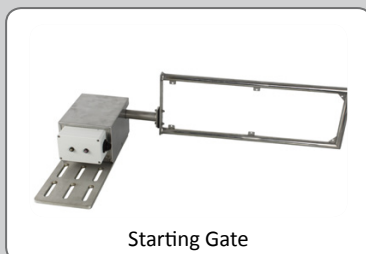
## LUGE RELAY SYSTEM

**The Luge Relay System is a standalone solution which can be independently added to any existing timing systems and tracks. The relay system basically consists of a starting gate which is triggered by a remote touchpad at the finishing line.**

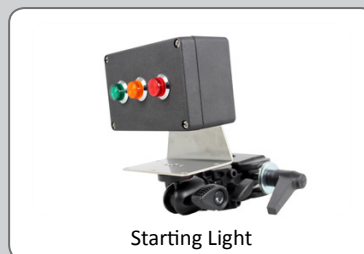
Basic configuration and adjustments of the relay system can be made using an independent control unit (PC). By using up to two light barrier signals close to the finishing line, the system can also generate optical and acoustic signals, thus calling the next athlete's attention to the imminent starting. Apart from being an excellent choice for upcoming relay events, the Luge Relay System is also a perfect option for just practicing sprint and reaction starts.



Relay Controller Interface



Starting Gate



Starting Light



Touchpad

Individual components of the Relay System are all controlled by the Relay Controller. The unit's integrated display and user interface allow practising and even small relay competitions, independently from an operator PC.

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