

In the interest  
of work safety.

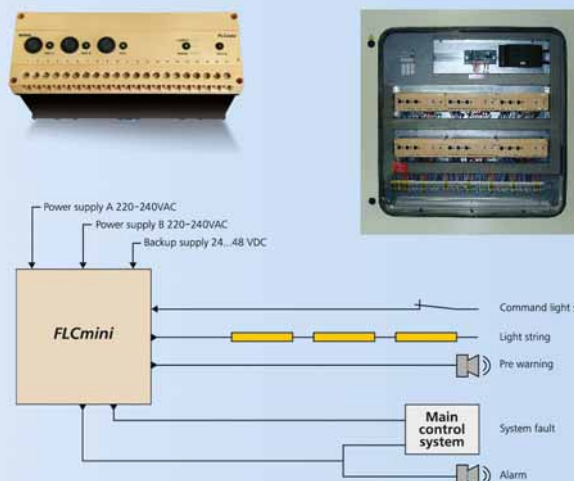


Visual signaling systems for personnel protection.

**telma**  
electronics

# Signaling danger

# with light strings



## Improving work safety

The need for high productivity, short maintenance intervals and optimized operating processes are placing ever increased demands on personnel protection. Live overhead lines in workshops servicing trains, trams and trolley buses create a significant potential hazard to maintenance personnel. An increased number of specialists from third-party companies, who are unfamiliar with local site hazards, also participate in maintenance and repair work. Workshop operators must therefore provide suitable safety systems in order to maintain adequate protection to all personnel.

## Running light directly above the overhead contact lines

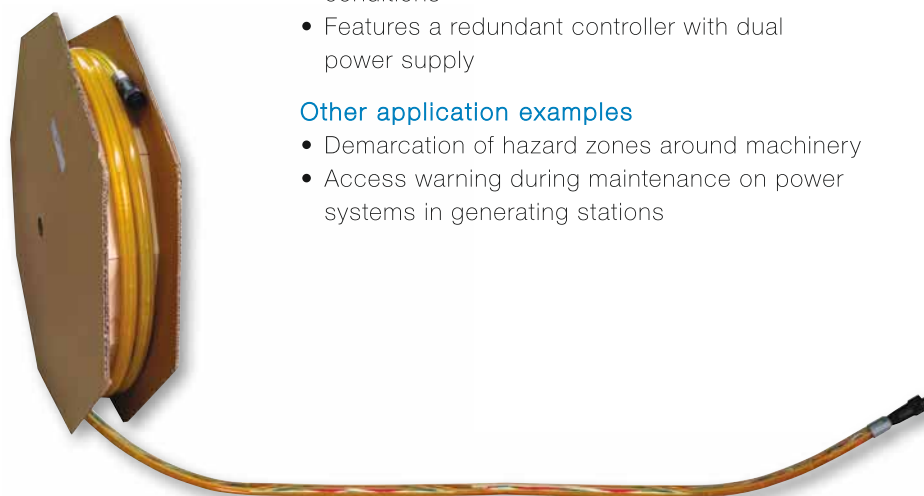
Light strings signal the operating state of overhead contact line sections. A running light effectively signals the danger along the entire overhead contact line section. The two-color option makes it possible to signal two operating states (live / grounded overhead contact line). The FLC-Controller is specifically designed with safety technology and can easily be integrated into a higher level safety system.

### Features and benefits

- A warning signal is provided precisely there where the hazard exists
- Light string segments are easy to connect to provide any required length.
- LEDs ensure a long service life
- Applicable in environments with harsh ambient conditions
- Features a redundant controller with dual power supply

### Other application examples

- Demarcation of hazard zones around machinery
- Access warning during maintenance on power systems in generating stations



with LED warning beacons

with mobile warning light columns



## Warning beacon powered by dc-overhead contact line

Warning beacons provide a simple method of signaling live overhead contact lines in transportation company workshops. The system is very reliable, thanks to redundant indicators and power supplies. No external controls are required for this intrinsically safe product.

### Features and benefits

- An operating voltage of up to 900 V, fed directly from the overhead contact line
- Excellent visibility, even in a brightly lit environment
- LEDs ensure a long service life
- Easy to mount on a ceiling or wall

### Other application examples

- Car transport, combined road / rail carriage
- Train warnings in subway / light-rail stations
- Energized machinery, robots, etc.



## Versatile warning indicator

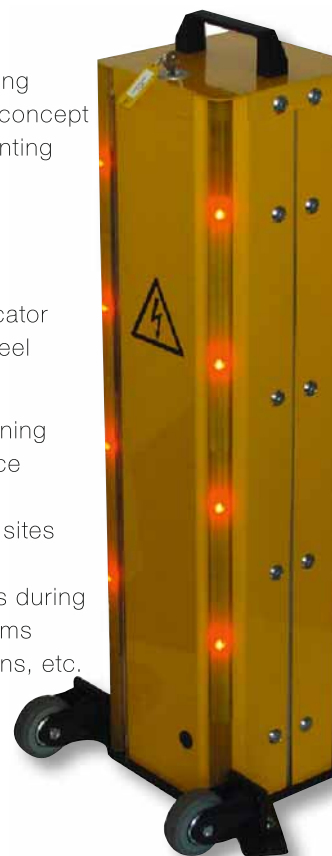
Warning light columns are used to provide a visual indication and demarcation of danger zones. Signaling is provided by flashing LED strings placed along the column's four side corners. The mobile version with rollers is convenient and easy to position. Several light columns can easily be interconnected to form a master / slave system.

### Features and benefits

- Forced energization of the warning system, based on key-interlock concept
- No extensive installation or mounting requirements
- Supplied from the power line and / or battery, backup rated for several hours
- Audible low battery voltage indicator
- Built-in automatic roll-up cable reel

### Other application examples

- High-voltage hazard danger warning for railway workshop maintenance stations
- Access warning at construction sites and production plants
- Demarcation of dangerous areas during the maintenance of power systems in generating stations, substations, etc.



# Partnership practiced for over 30 years.



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## History

- 1975 telma ag founded in Bern
- 1981 Relocated to Ittigen / Bern
- 1991 Moved into own office building in Seftigen
- 2009 New building planned

## Business

- Custom electronics
- Contract production
- Own products

## Core competencies

Focusing on customer needs is one of telma's great strengths. We are close to our customers and speak the same language; this saves them valuable time and shortens their time to market. With our in-house development and manufacturing, we are able to offer total solutions in the form of complete electronic control systems. We are allied with specialist partners, enabling us to handle even complex requirements. Our high degree of automation and twenty-five highly skilled employees enable us to keep the total cost surprisingly attractive.

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