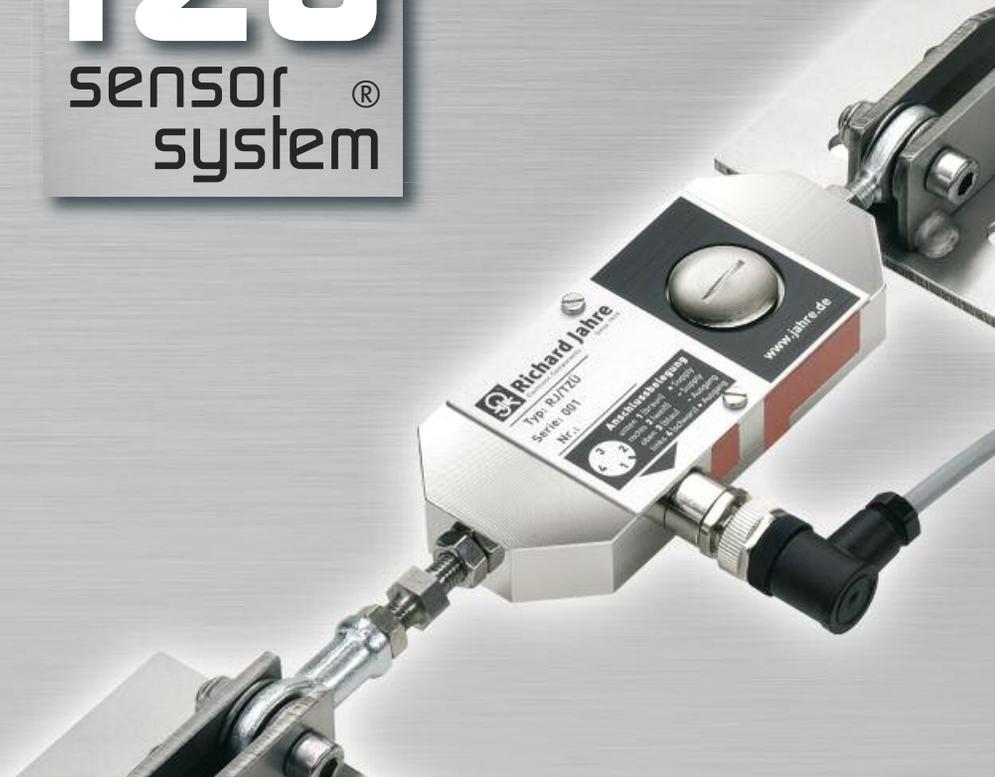


*A Richard Jahre world premier:
a sensor system for monitoring
hall roofs!*



Why is permanent monitoring of hall roofs absolutely necessary?



The balance is tragic, the prognosis worrying: Hall roofs pose a serious and still underestimated risk. The tragedy of Bad Reichenhall, the ice rink that was a death trap for 15 people, is not an isolated case. The disastrous series of hall roof collapses continues to this day.

A study of the TÜV SÜD (Technical Inspection Association) has shown that about half of the buildings inspected had relevant defects. Another result also gives rise to concern: The independent experts state that the risk of collapse generally remains the same over the entire service life of a hall.

The real trigger for the collapse of a roof is usually environmental influence - design flaws, construction defects, material weakness and lack of maintenance further complicates the situation.

Source: May 2006 TÜV SÜD AG Press Release

Possible causes include compressed snow, clogged rain drains, frozen drain pipes, etc.. This can cause a static overload that can overwhelm even the most stable hall roof.

The failure probability is high. He who plans ahead acts now. **With the proven preventive concept: the innovative TZÜ® Sensor System from Richard Jahre GmbH.**

The TZÜ® Sensor System from Richard Jahre can be used for:

- **production and storage halls**
- **sport, gymnastics and swimming halls**
- **sports stadiums and concert halls**
- **trade fair and market halls**
- **shopping centres and supermarkets**
- **historic buildings and halls**
- **airports, hangars and railway stations**

A material fatigue of the roof timbers and the accumulation of water were the cause of the roof collapse during this tragedy.



Richard Jahre GmbH provides the technology that can protect life and property!



Where as targeted visual inspection was the rule up to now, for the first time the Richard Jahre early warning system provides a permanent status check of hall roofs. With the development of this unique solution and its totally new approach, the engineers from Richard Jahre have made a breakthrough in terms of structural stability.

The patented "Made in Germany" global innovation is a TZÜ® Sensor System (girder status monitoring), that continuously and independently monitors the deformation of roofs made from wood, steel, prestressed and reinforced concrete.

The sensitive sensor system converts mechanical stress into electrical signals and immediately raises an alert when critical measured values are reached e.g. due to weather conditions or material weakness.

Risk warnings are reported visually and acoustically as well as transmitted electronically (e-mail, SMS). The hall display unit was developed in collaboration with Siemens AG. Action can be immediately taken in cases of overloading.



The TZÜ® Sensor System operates with 100% reliability:

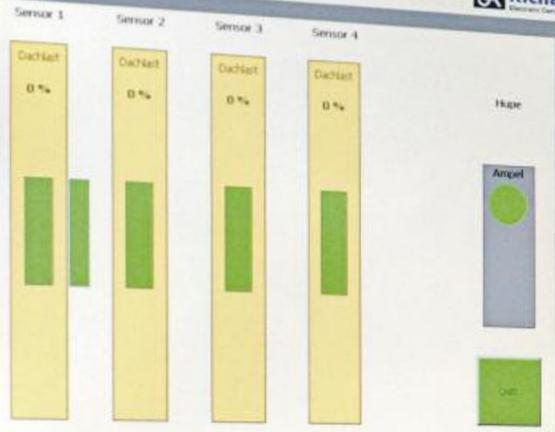
- **wood construction**
- **steel construction**
- **prestressed and reinforced concrete construction**

The highly sensitive TZÜ-Sensorsystem® forwards all data to the processing plant. In case of danger takes place an audible alarm.

SIEMENS

SIMATIC FLAT PANEL

TZO Träger-Zustands Überwachung



- Bedienwahl
- Starten
- Sensoren Grafik
- Service

Alarm



Richard Jahre offers the safest and most efficient solution!



The installation of the TZÜ® Sensor System provides a decisive contribution to hall quality assurance which the authorities as well as the public urgently demand. Even in times of scarce resources, hall operators bear the full responsibility for the safety of visitors as well as for the value retention of the building. With the tried and tested Richard Jahre GmbH early warning system it is now possible to monitor the risk of a hall roof collapse within a manageable budget. This entirely new one-of-a-kind technological approach ensures low maintenance and reduces the overall operating costs.



This innovative solution is compact and can also be easily retrofitted. At the same time it offers significant economic advantages: The cost of regular official inspections by structural engineers, surveyors and assessors is significantly reduced because the inspection intervals can be extended. In addition, thanks to the real-time measurement data, scheduled renovation work can be much more targeted.

Inadequate maintenance, servicing and hidden construction defects can lead to overloading of the roof structure.

Further danger points are:

- 1 - clogged run-offs**
- 2 - lack of emergency overflows**
- 3 - snow and snow build-up**
- 4 - unaccounted loads (e.g. solar panels)**
- 5 - too much gravel**
- 6 - corrosion and material fatigue**

The
TZÜ-Sensorsystem®
works absolutely
precisely and
unobtrusively.



We offer you consultation from the start of construction or for retroactive installation!



We do not see ourselves as merely a technology supplier. Rather, we develop and implement complete solutions - with the advantage that you receive components and engineering services from a single source.

Our experienced specialists are pleased to advise you and show you what a sensor alert system tailored to your specific requirements can look like. During the planning stage we take into account the complex factors that are required for a safe as well as economically viable solution. No other company in this field possesses such comprehensive technological know-how by virtue of so many successful installations.

It does not matter whether it is a new construction or retrofitting an existing building, the TZÜ® Sensor System with its compact, modular design is ideally suited for all installations.

With our knowledge and our quality products, we support you from the planning stage through installation up to maintenance.

You can count on us for answers to risk-related issues. Play it safe with solutions from Richard Jahre GmbH!



A retrofitting of
TZÜ-Sensorsystem®
is straightforward
and does not
require much
effort.



High-Tech tradition brings with it an obligation: for nearly 100 years "Made in Germany" ...



The history of the company is also a piece of technology history.

Company founder Richard Jahre is one of the pioneers of radio technology and previously built an empire based on capacitors.

The quality standard of Richard Jahre capacitors has gained international recognition. In the era of electronic components the company changed its orientation and continued to expand. In the 90s, the focus was on traditional product groups - mica capacitors, mica plates and inductors. Beginning with the new millennium a new speciality area was added - sensing elements.

The first halls were equipped with the TZÜ® Sensor System in 2010.

**Deutschland
Land der Ideen**



*Preisträger und Publikumssieger
im deutschlandweiten
Wettbewerb für Innovationen
„Land der Ideen“ 2011.*

The breakthrough solution not only received wide recognition in the professional world.

In 2011 Richard Jahre GmbH was a prize-winner and audience favourite at the prestigious "365 Landmarks in the Land of Ideas" innovation competition.

The additional award as audience favourite shows the importance the public places on hall safety issues.

With the use of the TZÜ® Sensor System hall operators achieve the necessary safety as well as a considerable image boost!



Richard Jahre GmbH has production sites in Wilhelmshaven and Berlin:

- TZÜ® Sensor System
- sensing elements
- mica capacitors
- inductors
- mica plates

Electronic high-tech components by Richard Jahre are used in many technologically sophisticated systems and products worldwide.





www.tzue.de

Richard Jahre GmbH

Founded 1919 in Berlin.

Krabbenweg 14, D-26388 Wilhelmshaven

Telefon: +49 (0) 44 21-5 28 40

E-Mail: info@jahre.de

www.jahre.de