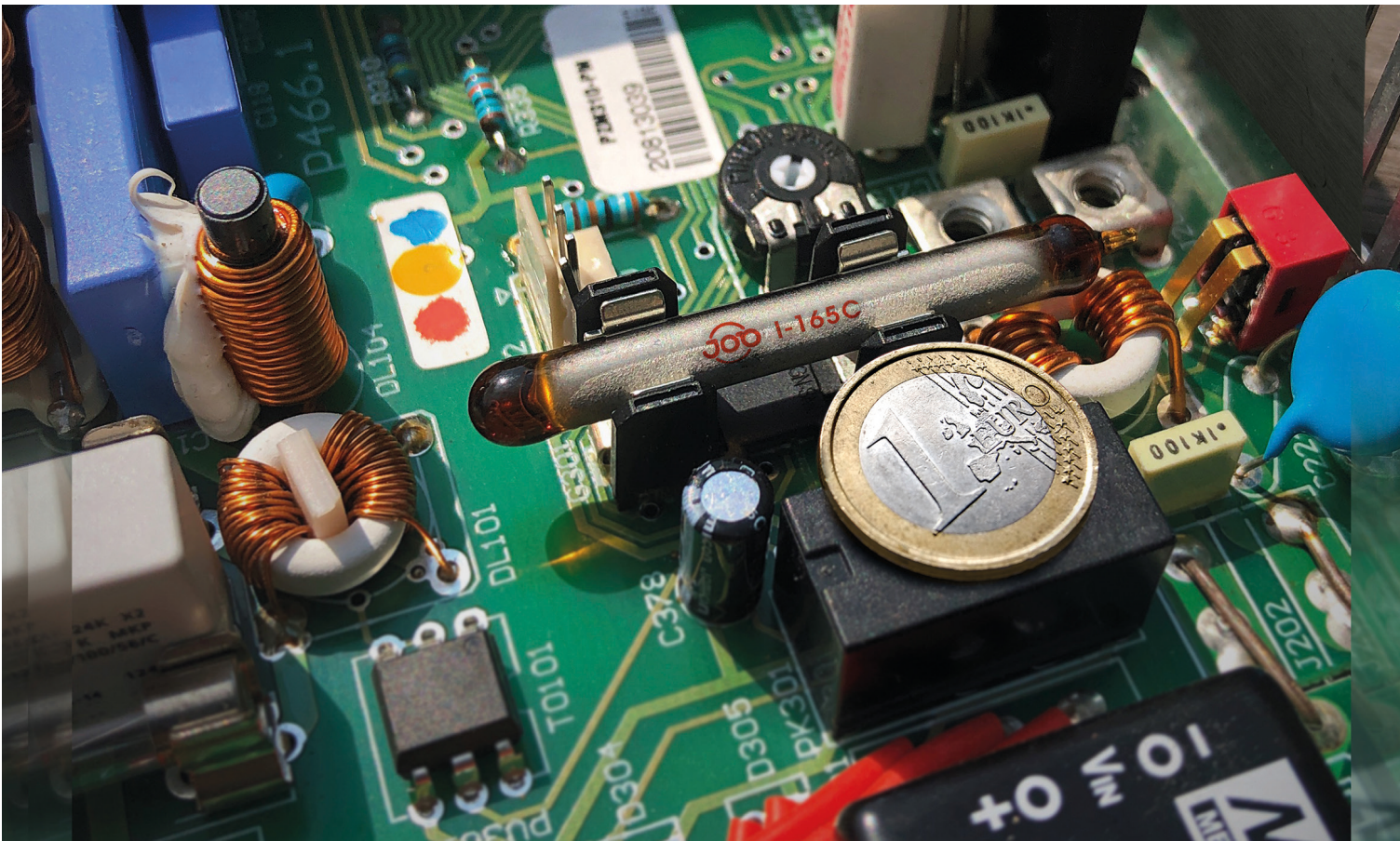




E-BULB EXTINGUISHING BULB

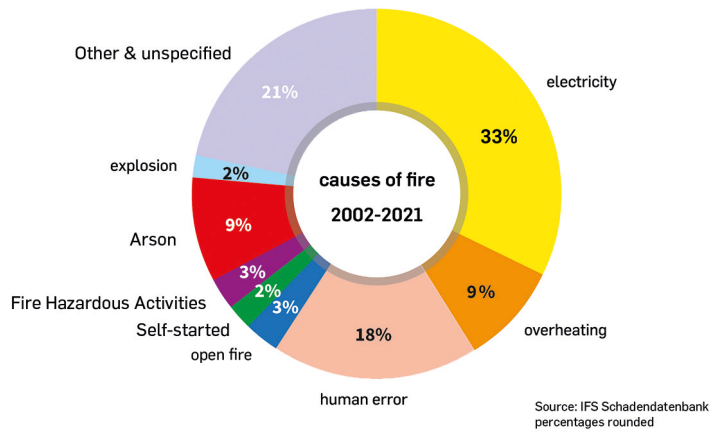


Simply. More. Safety.

THE CHALLENGE

It is impossible to imagine life without technical devices and systems. They can be found everywhere. At home, as household appliances, in industry, as circuit boards and electronic hardware, but also in our everyday lives as medical equipment, and advertising and media technology.

They help to simplify our everyday lives, but are also pose an invisible danger. Even a simple technical defect can cause a fire in the devices. If this is not detected at an early stage, it can lead to serious damage to property and personal injury. But how can this be prevented?



According to the IFS, one in three fires is caused by electricity, making it the most common cause of fire. With the inherent risk of fire from electrical equipment, the danger to life and loss of property or material assets increases. Furthermore, this risk grows with the number of devices around us. In line with our vision of „A world where everyone is protected against the dangers of fire, everywhere and anytime,“ JOB has developed solutions to

detect and extinguish electrical fires while they are still small and in their early stages.

With the internationally trademarked E-Bulb, JOB has developed a reliable system that detects the heat inside an electrical device (e.g. caused by fire), extinguishes the fire and, most importantly, prevents the fire from reigniting by interrupting the power supply.



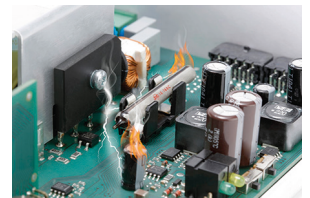
Media technology



Home appliances



Medical technology



Power electronics

THE SOLUTION

For the protection of life and property, thermally activated glass bulbs have been successfully proven over a billion times in the global sprinkler industry. The glass bulb breaks at a defined temperature; the sprinkler opens and releases water onto the fire to effectively extinguish it.

The JOB E-Bulb is the next evolutionary product development step, building upon the proven technology of JOB’s outstanding quality sprinkler bulbs.



THE FUNCTION

JOB's E-Bulb uses an engineered fire suppression agent (FK-5-1-12). This non-toxic and non-conductive extinguishing liquid is released into the device when the defined temperature is reached and the E-Bulb bursts. After being initiated, it extinguishes the fire, and interrupts the electric current. Transition-free, the liquid immediately converts into gas. As a result of cooling and (partly) by oxygen reduction, a fire on a PCB will be extinguished within seconds. And, because the current electronic flow over the E-Bulb is interrupted, the electric fire cannot re-ignite!



Fire starts due to electrical failure.
E-Bulb automatically detects and extinguishes the fire.

THE ADVANTAGES AT A GLANCE

- Extinguishes electrical fires
- Irreversible power cut
- In the smallest versions as small as a 1€ coin
- 24/7 automatic fire protection inside electronics (on pcb)
- Directly at hotspot - fast response
- Prevents re-ignition
- JOB Thermo Bulbs are billion-fold proved safety components
- Operating temperatures can be customized
- Maintenance free
- Retrofittable in existing designs
- Easy to install
- Can be used as a passive fire detection and extinguishing device (no power interruption)
- Clean extinguishing agent
- Non-corrosive extinguishing agent
- Zero ODP / non-ozone hazard
- Non-reactive with other materials
- Non-conductive extinguishing agent

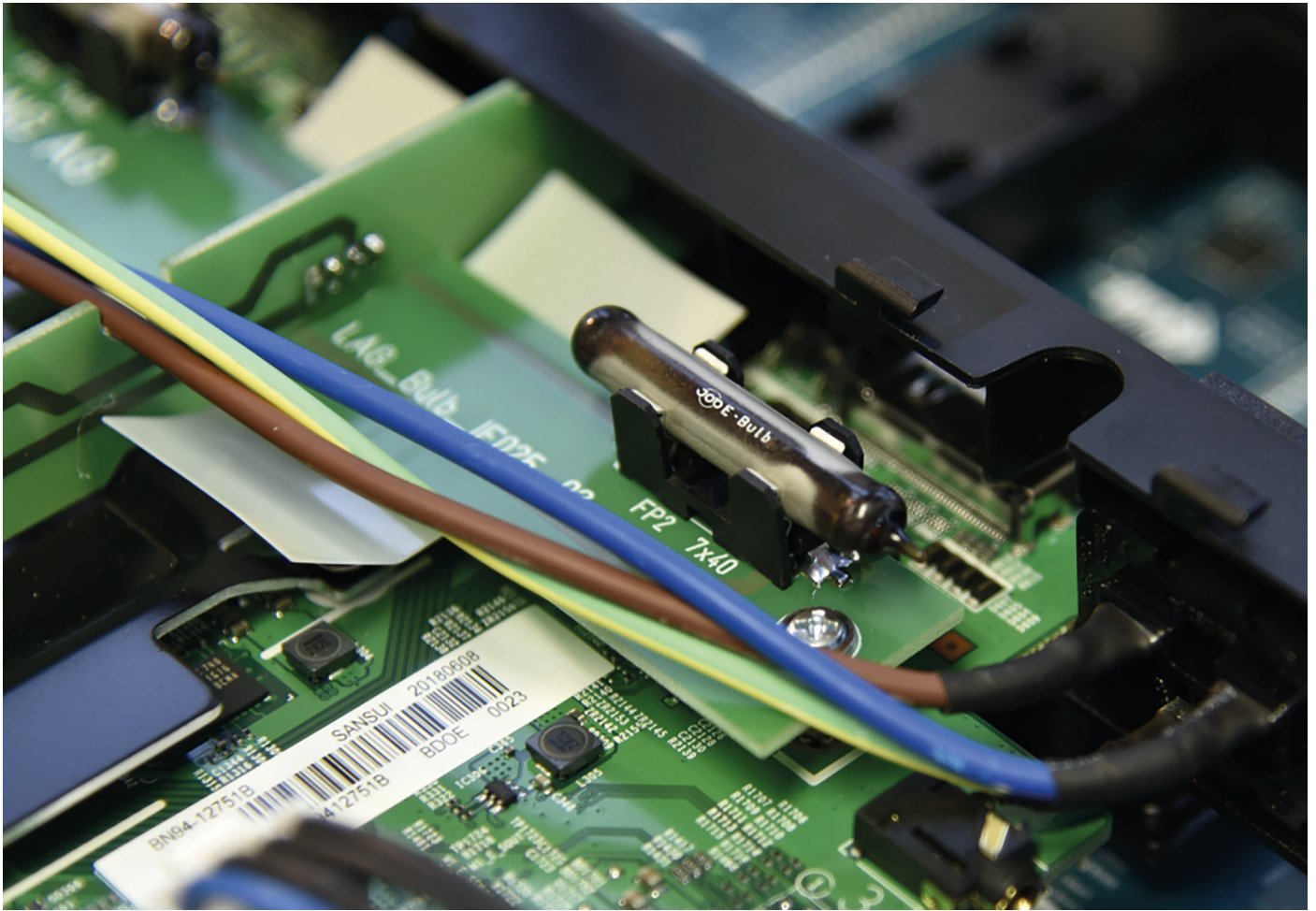
CASE STUDY - GEKARTEL AG



DIGITAL BULLETIN BOARD:

- Increasing demand for Digital Signage in escape routes
- Requirements for fire protection in sensitive areas are extensive
- Integrated fire protection can help to make safe electronics safer and receive building permits easier and faster
- Projects include: GEWOBAU Rüsselsheim, Wohnungsgenossenschaft München-West eG, Kindergarten Essen, ...

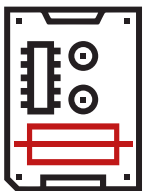
Simply. More. Safety.



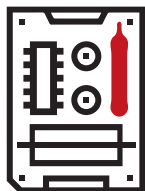
THE **INTEGRATION** IN ELECTRONICS

Due to its small size, the E-Bulb can be placed directly in the electronics within the circuit to protect electronics against the outbreak of fire. Fires are extinguished as early as possible at the point of origin so that they cannot cause further damage.

However, in order for them to achieve their maximum extinguishing power, and the associated safety, a few steps must be taken.



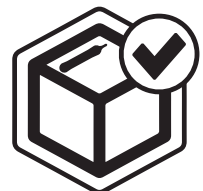
Step 1:
Identifying Hotspots



Step 2:
Positioning the E-Bulb
in the Design



Step 3:
Confirmation of the
position through
simulation & fire tests



Step 4:
E-Bulb protects
the device from within

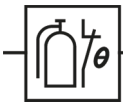
THE SPECIFICATIONS

Dimensions*	Small	Medium	Large
Protected Volume ¹	416ml	1049ml	2212ml
Activating Temperature (Tf)	135°-165°C		
Holding Temperature (Th)	85°C		
Current load per version	<1A	<5A	<16A
Voltage	250V AC/DC		
Min. operating/ storage temperature	-40°C		

* other sizes and volumes are customizable

¹ In accordance with NFPA 2001

“Clean Agent Extinguishing Systems”



Electrical Symbol for CIFEA (Circuit Interrupters with Fire Extinguishing Agent)

THE PRODUCT RANGE

Article no	Product name
5x20	
100721	E-Bulb 5x20 1A-085-165
100722	E-Bulb 5x20 5A-085-165
100719	E-Bulb 5x20 10A-085-165
100720	E-Bulb 5x20 16A-085-165

5x40	
100726	E-Bulb 5x40 1A-085-165
100727	E-Bulb 5x40 5A-085-165
100724	E-Bulb 5x40 10A-085-165
100725	E-Bulb 5x40 16A-085-165

7x40	
100731	E-Bulb 7x40 1A-085-165
100732	E-Bulb 7x40 5A-085-165
100729	E-Bulb 7x40 10A-085-165
100730	E-Bulb 7x40 16A-085-165

Non-Coated (extinguishing capability only)

100723	E-Bulb 5x20 NC-085-165
100728	E-Bulb 5x40 NC-085-165
100733	E-Bulb 7x40 NC-085-165

Holder

301550	Holder E-Bulb 5x20 SMD
301551	Holder E-Bulb 5x20 THT
301547	Holder E-Bulb 5x40 SMD
301546	Holder E-Bulb 5x40 THT
301552	Holder E-Bulb 7x40 THT

APPROVALS & AWARDS



UL listed (UL 60692)
 VdS approved
 VDE information testing
 successfully accomplished
 Effectiveness verification
 by MPA Institute Dresden

Larger volumes can be protected with the automatic mini fire extinguisher AMFE.





e-bulb.com/en/business



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