

MANUAL & SAFETY INSTRUCTIONS

E-BULB

EXTINGUISHING BULB



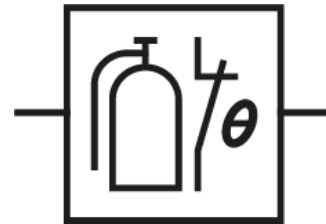
E-Bulb Manual and Safety Instructions

1. Description

JOB's E-Bulb (**Extinguishing Bulb**) is a glass bulb (as typically being used in sprinkler applications) filled with a non-conductive extinguishing agent. The glass bulb is coated with conductive, non-corrosive, layers of metals and can carry an electrical current. When the glass bulb bursts at a defined temperature (e.g. through fire on a PCB), the extinguishing liquid will be released from the inside of the bulb. Transition-phase-free, the liquid immediately converts into a gas. Resulting in cooling and partly by displacing oxygen, a starting local fire will be extinguished within seconds. As the bulb bursts into very small pieces when activated, the current flow over the bulb is permanently interrupted (interrupting power to the circuits behind the E-Bulb, thus preventing a fire from electrically re-igniting).



Picture 1: E-Bulb in SMD fuse holder



Electrical symbol circuit interrupter with fire extinguishing agent (CIFEA, UL 60692)

2. General Safety Instructions



At normal ambient conditions, E-Bulb is not pressurized.

It is, however, recommended to wear safety glasses when handling E-Bulb to prevent, in case of an unlikely but possible bursting of the glass bulb, damage to the eyes by scattered glass.

E-Bulb is a glass product and should be handled with care. It must not be dropped or stacked. E-Bulb can be gently pressed into a fuse holder without danger of damaging the bulb. It has to be placed in a way that the metal layers are in full contact with the fuse holder clamping/holding sections.



If exceeding 40°C / 104°F ambient temperature, E-Bulb becomes pressurized requiring specific care and personal safety devices (like glasses/gloves etc.) to prevent possible injuries in case the glass bulb bursts.

It is recommended to let the E-Bulb cool down to standard ambient temperature (below 40°C/104°F) before handling.

3. Assembly and installation

The E-Bulb shall only be used in fuse holders recommended by JOB.

JOB recommends using UL certified fuse holders made by SCHURTER, Switzerland (type OGN, UL listing IZLT2.E39328 and IZLT8.E39328) for the 5 diameter versions (5x20, 5x40) and a THT fuse holder made by StelvioKontek (BLH_1THR) for the 7 diameter version (7x40).

E-Bulb can be assembled into a fuse holder by gently pressing the bulb into the brackets of the holder. It has to make sure that the conductive stripes on the bulb are in full contact with the holder brackets to allow the transition of the maximum rated current.

4. Storage

E-Bulb shall be stored in the packaging it came with from the manufacturer. The maximum permanent storage temperatures must not exceed 40°C/104°F. Maximum permanent storage humidity is <85% (non-condensing).

5. Operation and maintenance

E-Bulb does not require maintenance, regular checking or control. Standard lifetime is usually 15 years after production.

The rated maximum current shall not be exceeded during operation to prevent over-heating and unintended activation of the E-Bulb.

After the E-Bulb has been initiated, E-Bulb is destroyed and cannot be reused.
For further use of the equipment, a new E-Bulb has to be placed.

E-Bulb is REACH-conform.
The SDS for FK-5-1-12 applies.

6. Technical Data

a. Sizes

	Dimensions (standard)*		
	Ø 5 x 20 mm	Ø 5 x 40 mm	Ø 7 x 40 mm
Sensitivity [s] ¹	48	48	48
Gasvolume V _{Gas} [ml]	16,6	42,0	88,5
Protected Volume V _{4%} [ml] ²	416	1,049	2,212
Protected Volume V _{4%} [fl oz] ²	14	35 ½	75

E-Bulb is available in a variety of electrical specifications

Currents	Class 1: <1A	Class 2: <5A	Class 3: <10A	Class 4: < 16A**
Voltages:	0..250V AC/DC	0..250V AC/DC	0..250V AC/DC	0..250V AC/DC

¹ Tested in the wind tunnel at 2,54 m/s and 290°C air temperature

² In accordance with NFPA 2001 "Clean Agent Extinguishing Systems"

* other sizes and volumes are available **available soon

b. Technical data

T _h	85°C / 185°F	(rated holding temperature*)**
T _f	165°C / 330°F	(rated functioning temperature*)**
Humidity:	<85% during operation and storage	

*) The temperatures shown above are standard temperatures only. As per customer request, other temperatures are possible.

***) for UL conform use of E-Bulb (CIFE) T_h and T_f are 185°F and 330°F respectively

c. Bill of materials

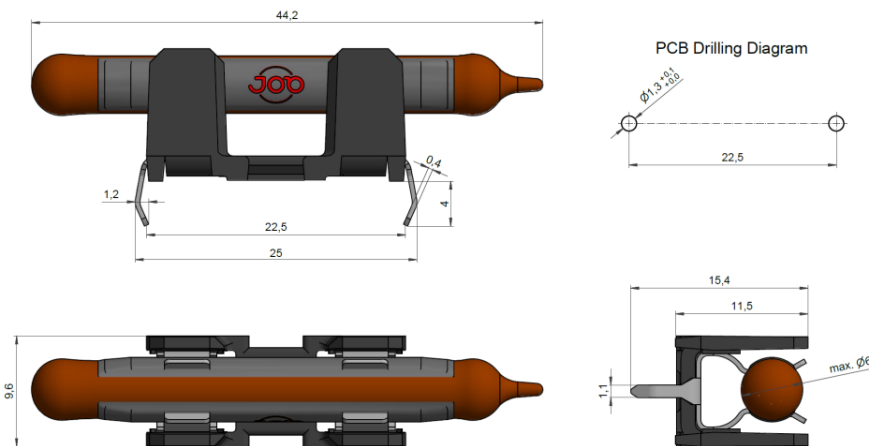
- Glass (bulb): Borosilicate glass
- Metal (conductive layers): Cu, Sn
- Extinguishing liquid: FK-5-1-12, CAS number is 756-13-8
(The chemical composition is in accordance with NFPA 2001, FK-5-1-12)

d. approvals and conformities

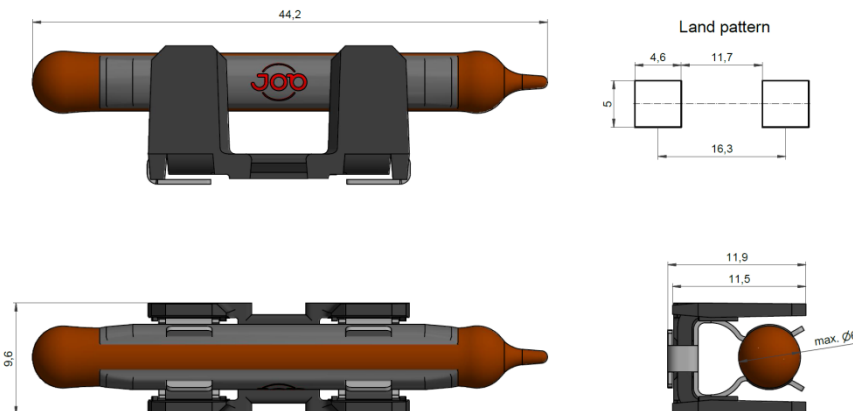
- VDE tested
- UL (for 5x20 and 5x40)
- MPA effectiveness test
- REACH conform
- VdS approved

e. Exemplarily dimensions

- 5x40 Bulb in THT holder



- E-Bulb 5x40 in SMD holder



For more detailed information check individual datasheet.

7. Disclaimer

Manufacturer and owner of rights: JOB GmbH, Kurt-Fischer-Straße 30, 22926 Ahrensburg

Additional information can be found on www.job-group.com or by contacting JOB at sales@job-group.com