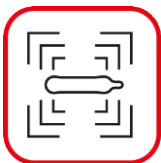


## E-Bulb Design-In Guide

The following notes serve to improve the installation position and the operation of the E-Bulb in the electronic component. The positioning can generally take place in the housing or directly on the printed circuit board. Versatile customer testing and internal fire testing contributed to the collection of the following findings.

Only the E-Bulb holders recommended by JOB GmbH for each size are to be used for safe operation. In addition, the E-Bulb UL approval (UL 60691 & 60692. certificate number: 20180807-E484622) only applies in conjunction with these holders.

### Basic recommendations:



The maximum free extinguishing volumes per E-Bulb version (400 ml, 1.0 liter, 2.2 liters) and thus the design concentration specifications (applicable regulations) must be observed.



In the best case, the housing is completely closed. If, due to ventilation slits or design requirements, there is no completely enclosed room available, the more closed the electronic housing the better and more likely it is to be able to extinguish the fire.



To increase the extinguishing effectiveness, it helps to identify the possible hotspots in order to place the E-Bulb optimally. The closer the E-Bulb is placed to the potential source of fire, the better. However, make sure that in case of a fire the convection of the air reaches the E-Bulb. Attention is especially required in "corners".



In principal the E-Bulb should be placed as high as possible in the housing. The extinguishing medium FK-5-1-12 is heavier than air and thus automatically sinks to the bottom of the housing. In addition, the warm air rises in a fire. The E-Bulb should therefore be placed in thermals created by the hot air flow. This allows a faster activation.



For a quick release of the E-Bulb, the placement of the bulb should be located in the potentially resulting airflow of the convection.

## E-Bulb Design-In Guide



To activate the E-Bulb it requires a complete warming of the E-Bulb. A horizontal installation position is often recommended.



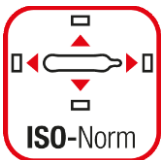
A free air flow of the E-Bulb should be ensured. We recommend an as little as possible shielding and freestanding installation position.



Subsections or walls may be useful to place in the housing to actively guide the thermals to the E-Bulb and provoke a triggering as soon as possible.



If the goal is to achieve power cut-offs in the device, it is often advisable to position the E-Bulb as close as possible to the current lead in the L (not in N) conductor.



The distance / air distances of the E-Bulb to other components must be complied in accordance to VDE 60691.



The maximum continuous current must not exceed the rated current (see data sheet).



The E-Bulb is not a micro-fuse in the usual sense. Shorter overcurrent situations can be tolerated by the E-Bulb. Compare VDE functional test of E-Bulb (according to 60691 Annex 1, Thermal Links 2016)

*Note: Further information is available in the latest manual. The manufacturers themselves are responsible for the installation position and functionality of the E-Bulb in their application.*