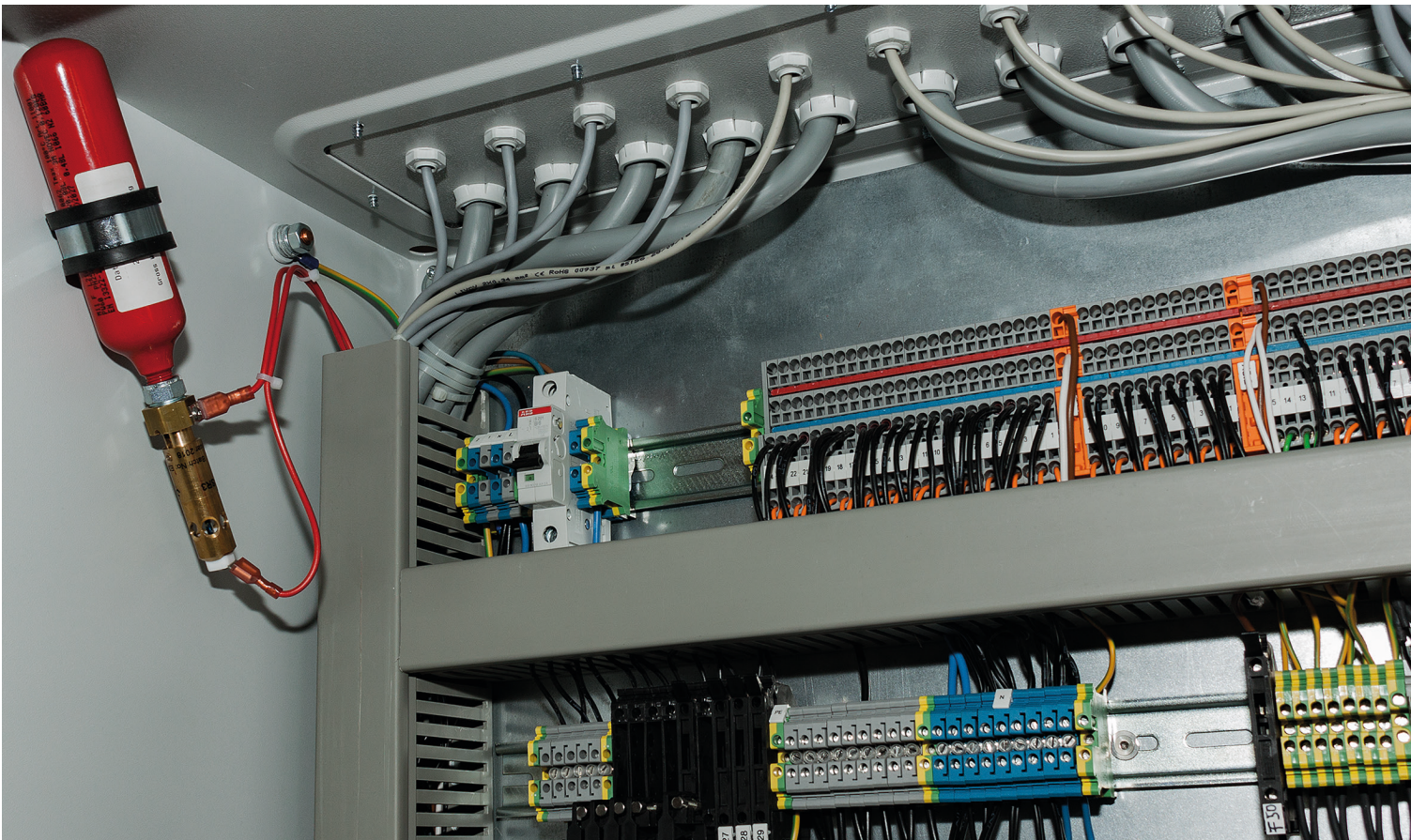




AMFE AUTOMATIC MINIATURE FIRE EXTINGUISHER



Simply. More. Safety.

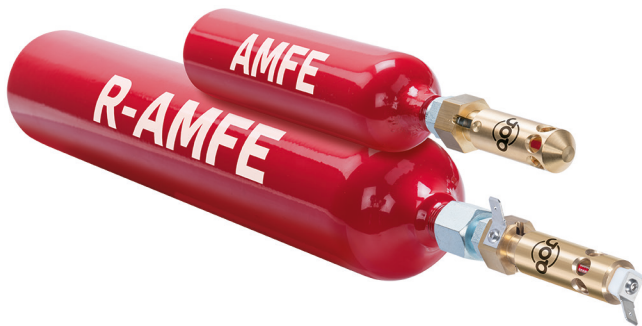
THE CHALLENGE

Electricity is dangerous. Statistically, fire fighters are called out to a fire in Europe and North America every two minutes. Electricity, electrical systems and electronic devices cause one in three of these fires (Source: Institut für Schadenverhütung und Schadenforschung, Kiel, 2022).

In reality the number is likely to be much higher, as not all fires are reported. This may be due to fear of potential consequences, such as investigations or higher insurance premiums. It may also be that more serious damage was avoided due to prompt and competent human intervention, particularly in an industrial setting.

Fire damage can be devastating, not only for the people affected, but also for the companies who are commercially linked to the incident. The cost of repair or replacement of damaged equipment, vehicles, or devices is often insignificant in comparison to the cost of the ensuing business interruption.

In 2022, the well-known Allianz risk barometer listed "business interruptions" as the second largest risk for companies world-wide. In the last years only cyber security threats rank higher.

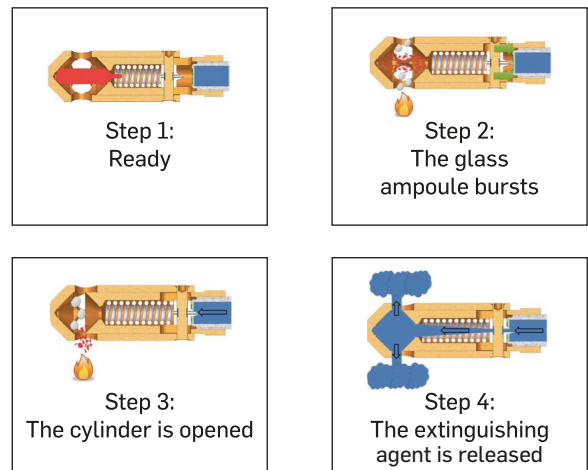


THE SOLUTION – AMFE

Integrated fire protection systems fight fires at their source, when the fires are still small. The JOB AMFE systems are not only very small, but also work reliably and automatically 24/7. They are used to extinguish fires inside electrical cabinets and other small electrical equipment, which are normally inaccessible to people.

THE FUNCTION

The sprinkler glass bulb by JOB, proven over a billion times, is also used with the AMFE. As with sprinkler systems, the extinguishing process is initiated by the glass bulb bursting due to heat. Because of its size, the AMFE can be placed directly at the point of highest risk inside a protected space. Maximum reliability, no interruptions and no need for a power supply, that sets the AMFE apart. Glass bulb, spring, needle, extinguishing cylinder – simple. GENIUS! The AMFE is robust and versatile. It has been extensively stress-tested to certify it can withstand vibrations and environmental influences, such as salt, temperature fluctuations, and humidity, over the long term, with minimal maintenance required.



THE SPRINKLER BULB

Alongside choosing the suitable trigger head, the correct activation temperature must be selected. This is the temperature at which the bulb bursts and the extinguishing agent is released. It is recommended to consider a reserve of 20 Kelvin over the maximum temperature in the installation location. For example, if in Summer it can reach 70°C in the electrical cabinet, an activation temperature of 93°C should be chosen, to avoid unintended activation.

68°C / 155 F



93°C / 200 F



79°C / 175 F



141°C / 286 F



THE PORTFOLIO

AMFE:

Automatic thermal activation

The AMFE can be installed passively directly inside an electrical cabinet that needs protection. It is installed in the enclosed area, reliably detecting a rise in temperature, triggered by an incipient fire and starting the extinguishing process when the selected triggering temperature is exceeded, thus allowing the non-conductive, non-toxic and residue-free extinguishing agent to be released.

S-AMFE:

Monitoring of thermal activation

In case of thermal activation, an external signal current, running over the S-AMFE, will be interrupted by the bursting glass bulb and the tripping can be monitored. A connected relay or controller recognizes this and opens the power contacts, for example. Consequently, the current into the device is shut off and re-ignition can be prevented.

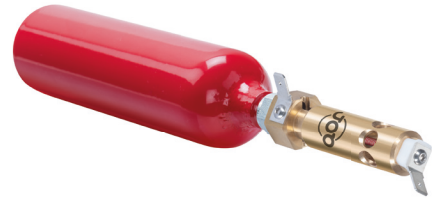
R-AMFE:

Monitoring and remote activation

The R-AMFE can be triggered using an external activation current. Using an external sensor like a smoke detector allows for even faster fire detection. The glass bulb is overheated intentionally and bursts when the activation temperature is reached. In addition to this electrical tripping, the R-AMFE will also release through thermal activation alone.

AMFE CYLINDER TYPES

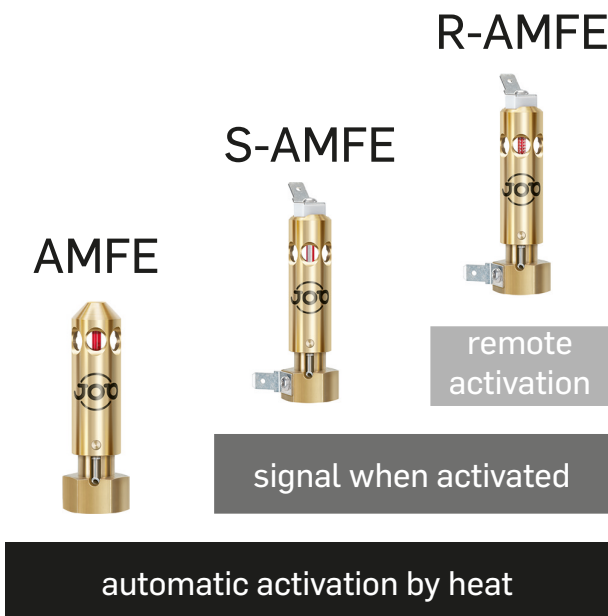
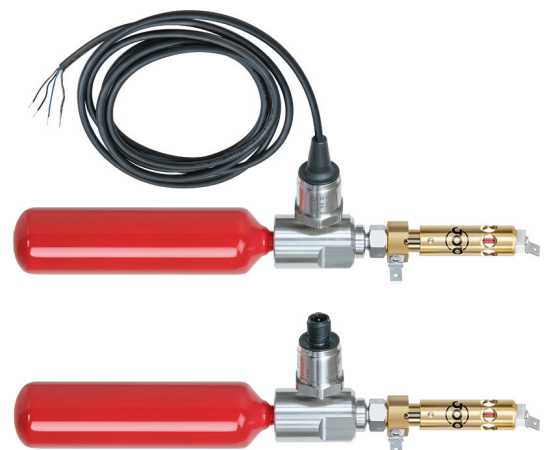
The AMFE series comprises 6 different sizes of extinguishing agent cylinders in four variants. Each activation head can be mounted on each cylinder type.



One variant comes with a permanent pressure gauge which is factory-fitted, leak-tested and certified. It indicates the internal pressure of the cartridge. The nominal range (marked in green) for the internal pressure is around 34bar (T=20°C). This variant enables visual inspection of the AMFE extinguishing system by the user, directly at the extinguishing unit.



If a pressure gauge cannot be used (e.g. due to an inaccessible installation position for the AMFE), the version with an electronic pressure sensor is used. The 4-20mA sensor signal represents the actual pressure in the cylinder and can be consistently read, for example, via an analogue input on a PLC or controller (not provided by JOB). This allows for remote monitoring of both, activation, when the internal pressure falls to 4mA, as well as for maintenance, when checking if the internal pressure falls below a certain threshold value. This version can be fully operated remotely.



Simply. More. Safety.

HOW TO CHOOSE THE RIGHT SYSTEM

To ensure optimal fire protection for all kinds of equipment, there are two steps to consider when choosing the right system. In essence this involves choosing the appropriate extinguishing agent cylinders and release heads.

Step 1: How big is the volume to be protected? The general rule to choose a suitable extinguishing cylinder is: object volume - volume of installed components = free volume.

Select the appropriate cylinder size that is able to protect the free volume.

Step 2: Which AMFE release head is the right one and when should it release? Choose the right AMFE release head based on your needs and requirements.

THE SPECIFICATIONS

				FK-5-1-12 as fire extinguishing agent			
Physical Dimensions Cylinder		Mounting Brackets	FK-5-1-12 Content	Protected volume (m ³)*			
Size	Size Diameter x Length (mm)	Size Diameter x Length (inch)	Recommended brackets	FK-5-1-12 Volume (ml)	Class A fire VdS 2381 (5,8%)	Class A fire EN15004-2 (5,3%)	Class A fire NFPA 2001 (4,5%)
#0	22x128	7/8 x 5.04	RGSS 22	24	0,046	0,050	0,060
#1	35x154	1 3/8 x 6,06	RGSS 35	72	0,137	0,151	0,179
#2	40x186	1 9/16 x 7,32	RGSS 40	120	0,229	0,251	0,299
#3	51x251	2 x 9,88	2x RSGU 56	241	0,459	0,505	0,600
#4	51x356	2 x 14,02	2x RSGU 56	360	0,686	0,754	0,896
#5	60x380	2 3/8 x 14,96	2x RSGU 63	603	1,149	1,264	1,501

* JOB GmbH cannot be held responsible for dimensioning and selecting the right cylinder size

**VdS certification G 622002 - for S-AMFE & R-AMFE with gauge or pressure sensor



Small dimensions, big effect. The freely selectable bottle sizes enable safe and effective extinguishing at the earliest possible point in time, directly at the origin of a fire, with minimal use of extinguishing agents. Extinguish the fire before it causes major damage! This not only saves money, but also time.

THE EXTINGUISHING AGENT NON-CONDUCTIVE AND CLEAN

The AMFE uses the extinguishing liquid FK-5-1-12. It is liquid at room temperature and boiling at 49°C. When released, it becomes gaseous and cools below the ignition point. FK-5-1-12 is non-toxic and non-corrosive, is non-conductive and leaves no residue. It has little ozone depletion potential. This avoids additional damage caused by extinguishing.

- Non-toxic
- Non-conductive
- Non-corrosive
- No residue after initiation
- Zero ozone depletion potential (0 ODP)
- Very little global warming potential

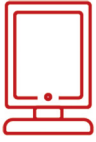
KEY USAGE SECTORS



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