FireDos® admixing systems for fire-fighters

Mobile units

Fire trucks

Roll-on/roll-off containers

Special applications

www.firedos.com
FireDos® GmbH

We are a dynamic, medium-sized company, and have been engaged for over 25 years in the special field of dosing technology which works without external energy.

For around 15 years, we have been supplying specially developed product variants under the brand name FireDos for fire-fighting applications. Because of its special advantages, FireDos quickly aroused great interest, with the result that today, several thousand admixing systems are in service throughout the world to the satisfaction of our customers. Due to this outstanding success, this area of business has developed into a separate company with the name of FireDos GmbH.

We place great value on providing all services to do with our product ourselves: Design and development, handling of approval procedures, production including comprehensive parts manufacture, sales, service, quality and environmental management all remain in our hands.

We will be happy to work with you!

The power lies in the water

FireDos admixing systems work without external energy, and even under changing pressure conditions reliably and at a constant admixture rate. They are suitable for the admixture of fluids.

Water motor (1): The drive is provided completely by the extinguishing water flow. The water flows through the water motor (1), which is installed direct in the extinguishing water line. The speed of the water motor therefore is proportional to the volume flow rate of the extinguishing water.
Intelligent admixing with FireDos®

Admixture pump (2): The water motor (1) and admixture pump (2) are connected with each other via a coupling (3), and therefore operate at the same speed. A purely mechanical system, which regulates itself automatically: The more extinguishing water that flows through the water motor, the more extinguishing agent is added, and vice versa. The admixture rate selected by the user always remains constant.

Ball valve Flushing/Suction (4): The ball valve can be used to change from admixture to flushing operation. This directs water from the extinguishing water line at over-pressure through the admixture pump, and switches off the admixture.

FireDos admixing systems draw the energy required for the admixture process from the extinguishing water. This results in a low pressure loss, which can be minimised by the optimum dimensioning of the FireDos admixing system.

All components of the FireDos admixing system are assembled as a fixed unit, and tested in the factory for function and leaks. Commissioning can take place directly following the installation. Adjustment or setting is neither necessary nor possible.

Pressure loss

FireDos draws the energy needed for the admixture process from the flow of extinguishing water. This results in a pressure loss of around 1.8 bar maximum.

This figure only applies if the FireDos is working with the maximum volume flow rate allowed and thus at maximum speed. If the volume flow rate is at 75% of the maximum flow capacity the particular FireDos allows, the pressure loss is already less than 1 bar.
FireDos® in fire trucks

FireDos is used by fire brigades all over the world. They particularly value the simple mechanical system, because personnel require little training in their use and the units are extremely reliable in operation.

Another advantage: FireDos works without an external power supply and does not use the vehicles’ electrical systems. Their simple, rugged design limits the amount of maintenance required, thus keeping costs to an absolute minimum.

Fluctuating back-pressures caused by different working heights or hose lengths have no effect on admixture rates or the quality of the admixture.

This means foam or wetting agent of the same consistent quality is supplied to the jetting devices under all operating conditions. Best pre-conditions for a successful mission!

A wide range of FireDos admixing systems and installation variants is used in fire fighting vehicles. If required, the system can be switched to draw from different extinguishing agent tanks. The many variants and the broad operating range of the FireDos admixing systems mean that they can also work with quick-intervention or high-pressure devices. Appropriately installed, FireDos can be used to feed water or premix individually to each outlet.

If high-pressure, quick-intervention and premix outlets are all used when fighting a fire, it is easy to change between water and another fire-fighting liquid without time-consuming hose changing. Fire-fighters can switch between different extinguishing agents without interrupting the flow of extinguishing water. The unit can also be switched for use with a tank outside the vehicle through a connection for external priming.

FireDos admixing systems are often installed in aerial ladder platforms since back-pressure is unimportant.

Delivering AFFF foam using a cannon at a working height of 54 m – without any influence on the foam quality.

FireDos installed in the compartment „G6“, rear right.

FireDos can also be switched for use with an extinguishing agent tank outside the vehicle through a connection for external priming.
The use of FireDos admixing systems is particularly valuable in large fire trucks and airport fire trucks. Since FireDos is driven exclusively by the flow of extinguishing water, there is no need for expensive and complex electrical drives and installation work.

Large ranges of volume flow rates of the extinguishing water can be covered by the working range. FireDos admixing systems can be retrofitted to existing vehicles without a great deal of effort and at comparably low costs.
**FireDos® in roll-on/roll-off containers**

Roll-on/roll-off containers for foam agent or special extinguishing agents are usually used in the case of larger-scale incidents. But it is especially important in just such situations that everything is on hand for the fire-fighters.

Thanks to their very simple operation, FireDos admixing systems meet this requirement. Only a minimum amount of training is required.

In certain circumstances, mobile FireDos admixing systems can be used in place of a fixed version. In these cases the mobile FireDos is screwed to a carrier frame and can be supplemented by a trolley if required. This makes an even more flexible range of applications possible. The use of a FireDos then does not necessarily have to bind the whole roll-on/roll-off container.

Roll-on/roll-off containers with diesel powered pumps are often equipped with FireDos admixing systems as well. For installations of this kind we can supply versions for volume flow rates of the extinguishing water of up to 20,000 l/min. If necessary, several FireDos admixing systems can be installed in parallel to cover even higher volume flow rates.

If several different extinguishing agents are to be admixed in a roll-on/roll-off container, the FireDos admixing system can be installed in such a way that switchover can take place without the water flow having to be interrupted.
FireDos® in roll-on/roll-off containers

Different working heights, fluctuating back-pressures, manifolds or the lengths of hoses present no problems to the safe operation of a FireDos admixing system.

Hoses can be attached and removed during the firefighting operation. Almost all types of jetting devices can be used and combined (hollow jet nozzles, cannons, etc).

FD20000/3(1)% in a container with a diesel powered pump
FD2500/0,6–6% installed in a carrying frame, removable from the container if required
FD4000/0,3–3% in a „special extinguishing agents“ container
FD4000/0,3–3% in a „special extinguishing agents“ container
Mobile versions of the FireDos admixing systems provide fire-fighters with maximum flexibility because they can be used at any point in the hose layout.

Fluctuating pressures or back-pressures or changing volume flow rates of the extinguishing water – all these factors have no effect. The same applies for different viscosities of the extinguishing agents. This means that even some alcohol-resistant foaming agents can be admixed precisely without difficulty.

The innovative alternative to conventional foam inductors

No installation required for inclusion in vehicle equipment

Mobile FireDos pressure proportioner systems can be set to work and operated by one person. Water is supplied by a fire truck, portable water supply or a hydrant. Mobile FireDos pressure proportioners are the convincing alternative to replace conventional foam inductors and can be included in the fire truck standard equipment without any installation being required.

Little training required and easy to use

FireDos pressure proportioners FD-DZ require only little space and they can be used directly from the pull-out tray.
Mobile pressure proportioner systems

Practice makes perfect!

We are dedicated to supporting fire-fighting training institutions. We are always happy to demonstrate our experience in seminars, practical exercises or by lending out FireDos admixing systems.

We are also available for tests and practical demonstrations. Please contact us and arrange an appointment.

Possible uses for mobile FireDos admixing systems

The mobile FireDos FD-DZ pressure proportioner systems allow to add or remove hoses during operation. Different hose lengths or working heights have no effect on the quality of the admixture.

Mobile FireDos admixing system on a trolley

Practical demonstration of foam production
Special applications

Special applications demand special admixing systems with powerful performance. FireDos admixing systems are also used for a wide range of special applications. In the suitable version they can also admix:

- Decontamination additives
- Liquid oil binding additives
- Disinfection and cleaning additives
- Gel-forming additives for fire fighting

Gel-forming additives are mainly used for fighting Class A fires. Houses and woods can be protected from flames by the gel. Before use, gel concentrate, colorant and extinguishing water are mixed to the prescribed ratio. The special version of a FireDos admixing system does this in one action. The colorant allows the pilot to see easily which areas have already been covered with gel.

Optional extras for your FireDos®

- Reduction of the minimum volume flow rate of the extinguishing water
- Water drain valves for water motor, admixture pump and pipework
- Motorised, stepless adjustment of the admixture rates
- Electro-pneumatic actuation for all ball valves

- Connection for a second extinguishing agent tank
- Strainer for the extinguishing water supply

Various other options are available. Please ask us, we will be happy to advise you.
FireDos® mobile pressure proportioner systems

<table>
<thead>
<tr>
<th>Water motor</th>
<th>Volume flow rates</th>
<th>Operating pressure</th>
<th>Admixture rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>FD DZ 5</td>
<td>ca. 60–500 l/min</td>
<td>up to 16 bar</td>
<td>0.3% / 0.7% / 1% / 1% / 2% / 3%</td>
</tr>
<tr>
<td>FD DZ 10</td>
<td>ca. 100–1,000 l/min</td>
<td>up to 16 bar</td>
<td>0.3% / 0.7% / 1% / 1% / 2% / 3%</td>
</tr>
<tr>
<td>FD500</td>
<td>ca. 80–500 l/min</td>
<td>up to 16 bar</td>
<td>Fixed admixture rates: 1% / 3% / 6%</td>
</tr>
<tr>
<td>FD1000</td>
<td>ca. 100–1,000 l/min</td>
<td>up to 16 bar</td>
<td>stepwise adjustable admixture rates: 0.3% / 0.7% / 1% / 1% / 2% / 3%</td>
</tr>
<tr>
<td>FD1600</td>
<td>ca. 200–1,600 l/min</td>
<td>up to 16 bar</td>
<td>Continuously adjustable admixture rates: 0.1–1%</td>
</tr>
<tr>
<td>FD2500</td>
<td>ca. 250–2,500 l/min</td>
<td>up to 16 bar</td>
<td>0.3–3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.6–6%</td>
</tr>
</tbody>
</table>

Stepwise adjustable admixture rates e.g. from 3% to 1%. Please contact us for information.

FireDos® admixing systems for fire trucks and roll-on/roll-off containers

<table>
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<th>Water motor</th>
<th>Volume flow rates*</th>
<th>Operating pressure</th>
<th>Admixture rates</th>
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<tbody>
<tr>
<td>FD130</td>
<td>ca. 10–130 l/min</td>
<td>up to 10 / 16 bar</td>
<td>Fixed admixture rates: 1% / 3% / 6%</td>
</tr>
<tr>
<td>FD200</td>
<td>ca. 15–200 l/min</td>
<td>up to 16 / 25 / 40 bar</td>
<td>stepwise adjustable admixture rates: 0.3% / 0.7% / 1% / 1% / 2% / 3%</td>
</tr>
<tr>
<td>FD500</td>
<td>ca. 80–500 l/min</td>
<td>up to 16 / 25 bar</td>
<td>1% / 2% / 3%</td>
</tr>
<tr>
<td>FD1000</td>
<td>ca. 100–1,000 l/min</td>
<td>up to 25 bar</td>
<td>Continuously adjustable admixture rates: 0.1–1% up to FD10000</td>
</tr>
<tr>
<td>FD1600</td>
<td>ca. 200–1,600 l/min</td>
<td>up to 25 bar</td>
<td>0.3–3% up to FD4000</td>
</tr>
<tr>
<td>FD2500</td>
<td>ca. 250–2,500 l/min</td>
<td>up to 25 bar</td>
<td>0.6–6% up to FD2500</td>
</tr>
<tr>
<td>FD4000</td>
<td>ca. 400–4,000 l/min</td>
<td>up to 25 bar</td>
<td>1% / 2% / 3%</td>
</tr>
<tr>
<td>FD6000</td>
<td>ca. 500–6,000 l/min</td>
<td>up to 25 bar</td>
<td>1% / 2% / 3%</td>
</tr>
<tr>
<td>FD8000</td>
<td>ca. 500–8,000 l/min</td>
<td>up to 25 bar</td>
<td>1% / 2% / 3%</td>
</tr>
<tr>
<td>FD10000</td>
<td>ca. 500–10,000 l/min</td>
<td>up to 25 bar</td>
<td>1% / 2% / 3%</td>
</tr>
<tr>
<td>FD15000</td>
<td>ca. 600–15,000 l/min</td>
<td>up to 25 bar</td>
<td>1% / 2% / 3%</td>
</tr>
<tr>
<td>FD20000</td>
<td>ca. 800–20,000 l/min</td>
<td>up to 25 bar</td>
<td>1% / 2% / 3%</td>
</tr>
</tbody>
</table>

* Without reduction of the minimum volume flow rate.
Further admixture rates and ranges on request.
The most important FireDos® advantages for your successful application:

- **FireDos** is only driven by the extinguishing water.
- **FireDos** works on a flow-proportional basis.
- **FireDos** works independently of fluctuations in pressure or back-pressure. Lengths and diameters of hoses and the jetting devices used have no effect.
- **FireDos** is a modular admixing system with fixed or adjustable admixture rates (stepwise or continuously adjustable).
- **FireDos** is an almost maintenance-free system. Installation and operation are simple.
- **FireDos** admixes all common foaming agents and other additives over a wide range of viscosities.
- **FireDos** covers wide ranges of volume flow rates of the extinguishing water and admixture rates with its various equipment variants; volume flow rates of 10–20,000 l/min and admixture rates of 0.1–6%.
- **FireDos** is available for maximum operating pressures of 10 bar, 16 bar, 25 bar or 40 bar and for maximum operating temperatures of 50 °C or 80 °C.
- **FireDos** enables to replace an empty additive tank without interrupting the flow of extinguishing water.
- **FireDos** enables to change from one type of additive to another or even to admix two different additives simultaneously (special variant).
- **FireDos** enables the admixing point to be located at a great distance from the admixing system (remote admixture).
- **FireDos** is used in stationary extinguishing systems, fire trucks, roll-on/roll-off containers and as mobile admixing systems.
- **FireDos** with special materials can also be used with seawater in offshore applications.
- **FireDos** is in successful service in thousands of extinguishing systems throughout the world. For many years now, users have placed their confidence in the quality and durability of our products.