

■ **PROPORTIONERS AND MONITORS
FOR MOBILE FIREFIGHTING**

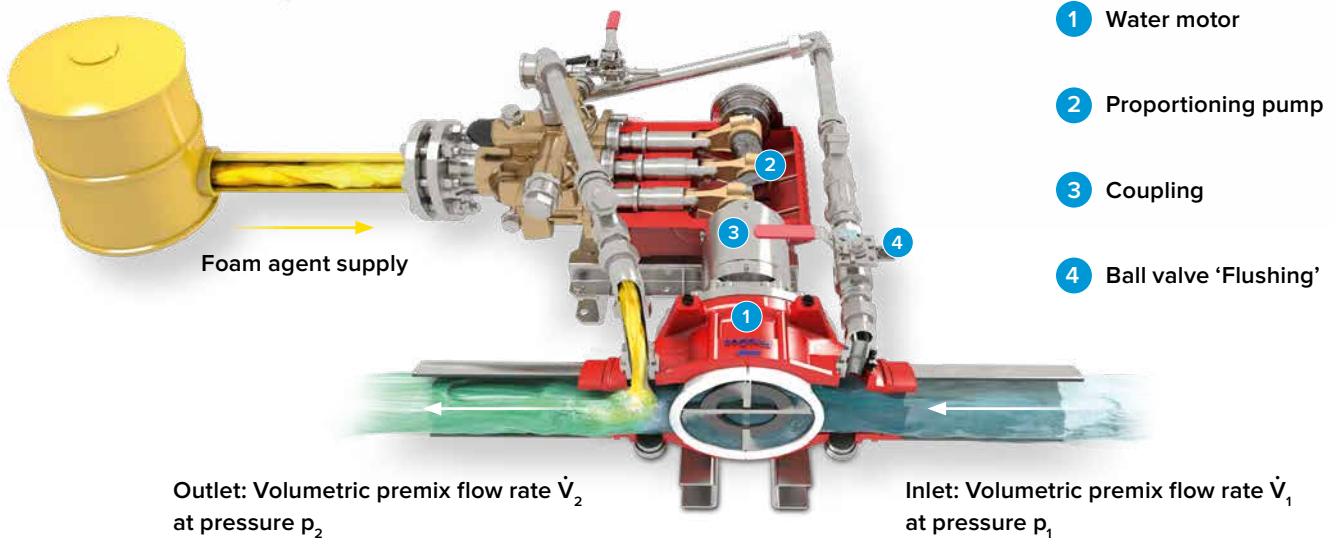


■ PROPORTIONERS: SAFE AND WELL-EQUIPPED FIT TO BE INSTALLED IN ALL TYPES OF FIRE TRUCKS

The emergency personnel of municipal fire services, factory or voluntary fire brigades need equipment they can rely on at 100%.

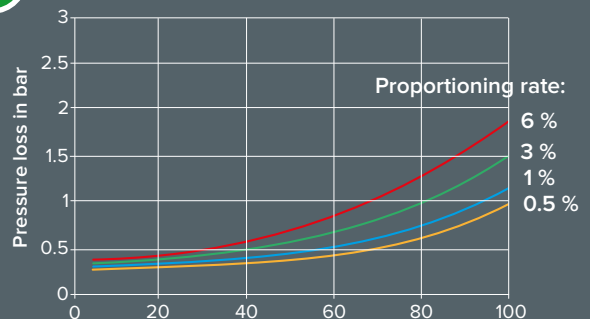
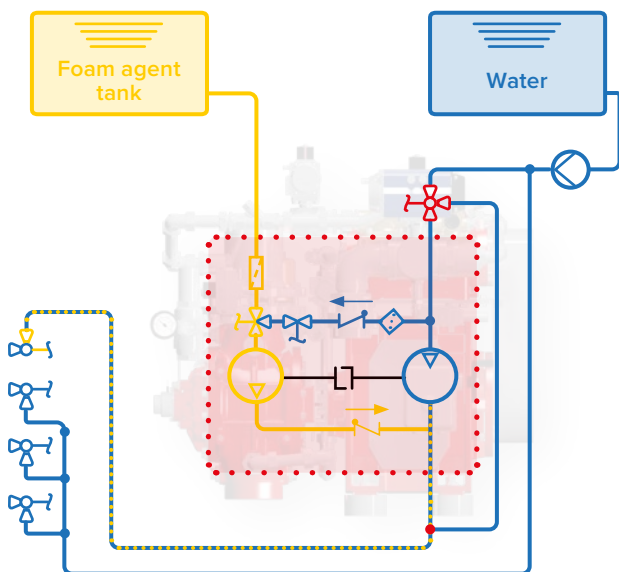
Our proportioners were developed specifically for use by fire brigades and convince by their easy operation, reliability and flexibility in use.

The purely mechanical systems feature a constant proportioning rate across a wide extinguishing water flow rate and pressure range; and they are suitable for the production of wetting agent. These units are fit for installation in all types of vehicles, such as crew cab or tanker fire trucks, roll-off containers and aerial ladder or special purpose fire trucks.



- 1 Water motor
- 2 Proportioning pump
- 3 Coupling
- 4 Ball valve 'Flushing'

Flow diagram



Extinguishing water flow rate in % at full capacity of the relevant *FireDos* proportioner

One more advantage of the FireDos product concept is the low pressure loss p_2-p_1 . The graph displays a pressure loss example at an extinguishing water inlet pressure p_1 of 10 bar and at various proportioning rates.

■ INDEPENDENT OF THE ON-BOARD POWER SUPPLY

Due to the purely mechanical operating principle, the drive takes place without external energy, and is independent of the on-board power supply.

■ OPTIMUM EXTINGUISHING EFFECT THANKS TO CONSTANT PROPORTIONING RATE

Here is the functioning principle:

- The water motor drives a specially developed proportioning pump, which delivers the foam agent into the extinguishing water flow.
- A direct linear ratio exists between the water flow rate and the water motor's number of revolutions.

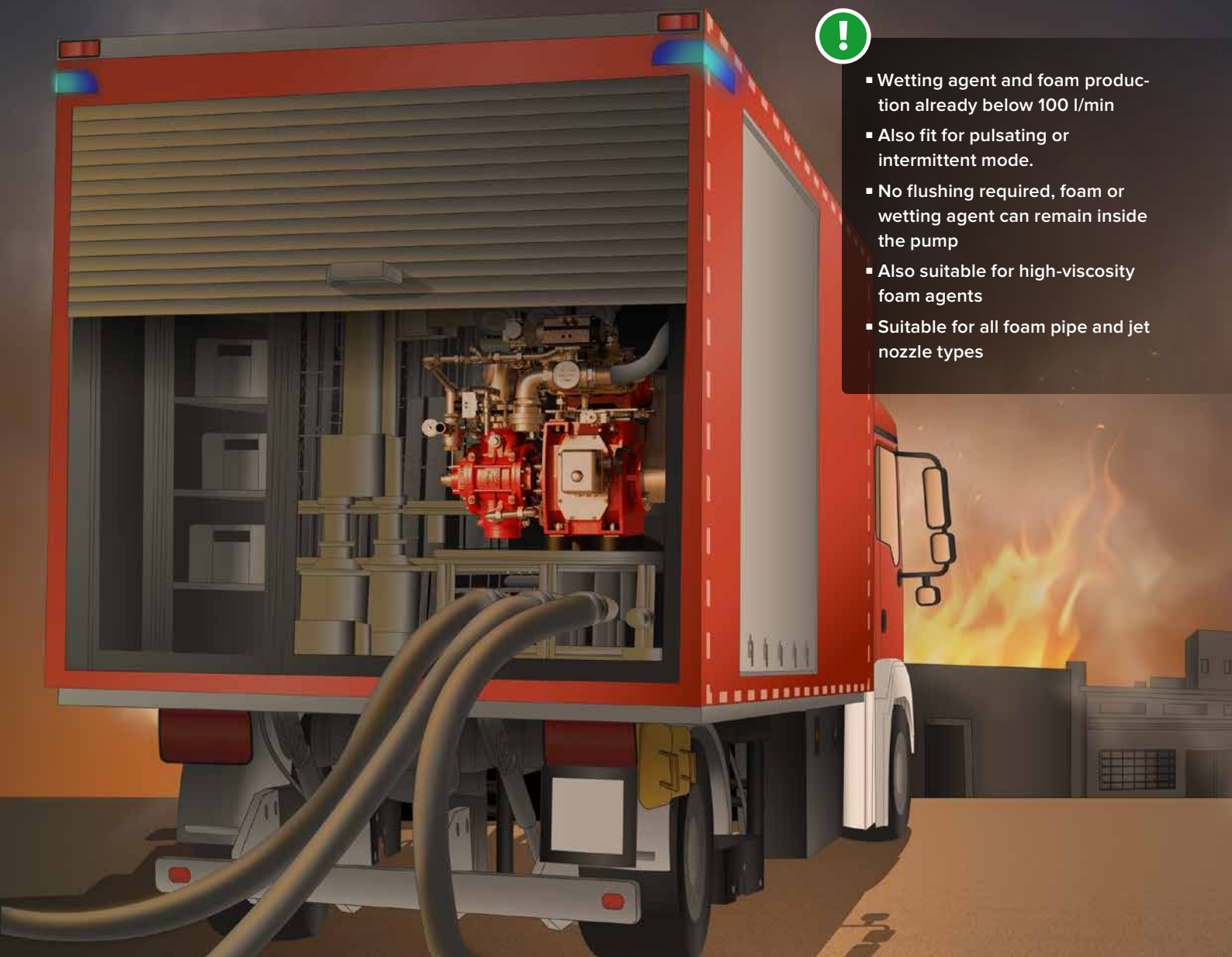
The more water flows through the water motor, the more foam agent is mixed into it. This keeps the 'proportioning rate', i.e., the volume ratio, constant at all times. This, in turn, ensures optimum proportioning even at abruptly changing flow rates which may occur in intermittent/pulsating extinguishing mode.

Another advantage: Only a small portion of the pressure inside the extinguishing water line is required as an energy source to drive the water motor and proportioning pump.

This allows a long reach, no matter if using manually controlled jet nozzles or water discharge via aerial ladders and telescopic masts.

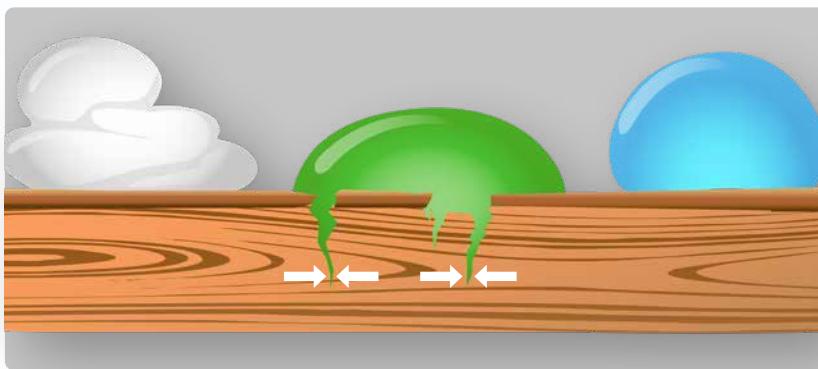


- Wetting agent and foam production already below 100 l/min
- Also fit for pulsating or intermittent mode.
- No flushing required, foam or wetting agent can remain inside the pump
- Also suitable for high-viscosity foam agents
- Suitable for all foam pipe and jet nozzle types



■ PORTABLE PROPORTIONERS: MAXIMUM FLEXIBILITY FOR ALL RESCUE SCENARIOS

The portable proportioners ensure maximum flexibility in mobile use and guarantee precise dosing of the foam agent across the entire operating range. Doing so, it takes just a few turns to switch proportioning rates during operation easily. Beyond this, the units are available with and without support frame and are fit to produce foam or wetting agent.



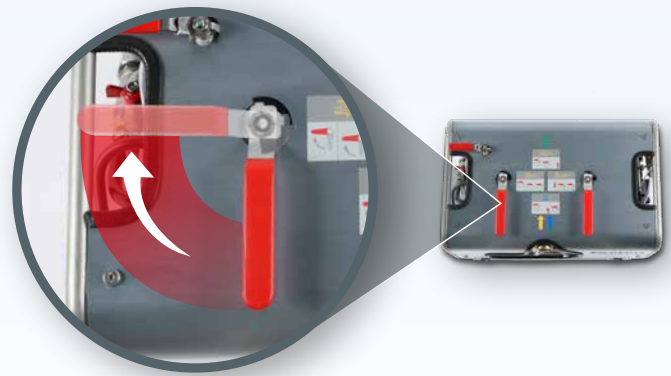
- For all types of nozzles
- Ideal for pulsating/ intermittent extinguishing mode
- For the production of foam and wetting agent

The portable proportioners are also suitable to produce wetting agent. The reduced surface tension allows the wetting agent to soak deeply into the substance on fire.



■ **PORTABLE PROPORTIONER DZ1000 FOR WILDFIRE AND FOREST FIRE SUPPRESSION**

The DZ1000 portable proportioner has been developed especially for varying firefighting scenarios like wildfire or forest fire suppression. Highly versatile for mobile use, the DZ1000 offers maximum flexibility and guarantees precise foam concentrate proportioning across the entire operating range, from 140 l/min to 1000 l/min. The proportioning rates of 3%, 1% and 0.3% can be switched during operation. The DZ1000 already enables wetting agent production at a flow rate of 90 l/min.



Switching the proportioning rate during operation allows optimum adjustment of the extinguishing agent to varying firefighting scenarios, like changing the foam agent.

■ **PROPORTIONERS FOR ROLL-OFF CONTAINERS - READY ON CALL WHEN IT COMES TO THE POINT**

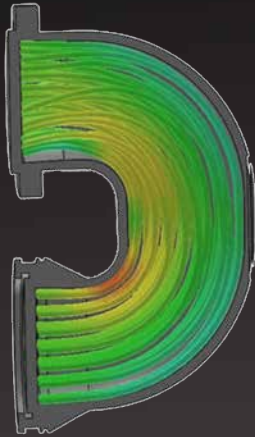
Our proportioners are also fit for installation in roll-off containers. Together with the customer, we develop a tailored solution for the unit's best integration into the roll-off container. Various sizes and options are available for this. Fighting large-scale/industrial fires is one typical field of application. The proportioning rates of 1% to 3%, depending on the type series, can

be switched during operation. In addition, our proportioners are perfectly suited to deliver high-viscosity foam agents. As they are driven by the extinguishing water flow, these units are independent of a physical place and can be located anywhere on the site and at high flexibility.

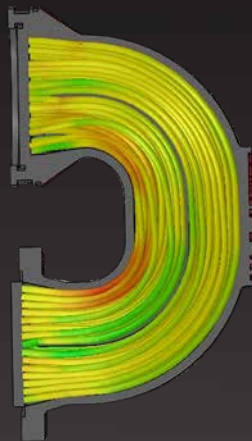


■ FIREFIGHTING MONITORS: MORE POWER ON TOP OPTIMIZED FLOW PATTERN, MAXIMUM REACH

Standard shape:



'Oval Flat Design':



Low flow velocity



High flow velocity

Comparison makes it clear: The 'Oval Flat Design' optimizes the flow characteristics notably, resulting in a more even flow pattern.

FireDos monitors are fit for firefighting with water or foam and deliver thousands of liters of water per minute, reaching 150 meters and more. The innovative, flow-optimized 'Oval Flat Design' ensures minimum pressure loss, enabling maximum throw & reach for the monitors.

Our firefighting monitors are designed to handle extinguishing agent flow rates from 500 l/min up to 60 000 l/min and can be controlled either manually or electrically. Depending on the type of application, numerous sizes are available – always at compact dimensions and low design height.



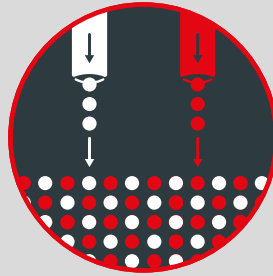
■ WELCOME TO THE TEAM: TECHNOLOGY TO RELY ON.

No matter if firefighting monitor or proportioner: you can rely on our technology. Our units have been developed specially for the needs of fire brigades and thousands of them are in use worldwide. Make your team perfect and welcome top performers that adapt to their area of operation at great flexibility.



Sturdy and flexible in use

Our proportioners were developed specially for installation in fire trucks.



Precise dosing - efficient extinguishing

The proportioning rate stays constant even at high backpressures, guaranteeing an optimum ratio of water and foam agent.



For the production of wetting agent and foam

Depending on the type of fire, our proportioners can be used to produce extinguishing foam or wetting agent.

■ ALWAYS READY TO RUN

When seconds matter in a rescue operation, the equipment has to work smoothly. After one-time venting of the proportioning pump, the mobile FireDos proportioners are ready to go and the set proportioning rate is always available, without any limitations of flow rates or pressure changes.

■ COMPATIBLE WITH ALL NOZZLE TYPES

For maximum flexibility during operation, the proportioners are compatible with all nozzles or discharge devices.

■ EASY OPERATION

FireDos proportioners are extremely user-friendly. Operating the equipment intuitively is no problem even in stressful situations.

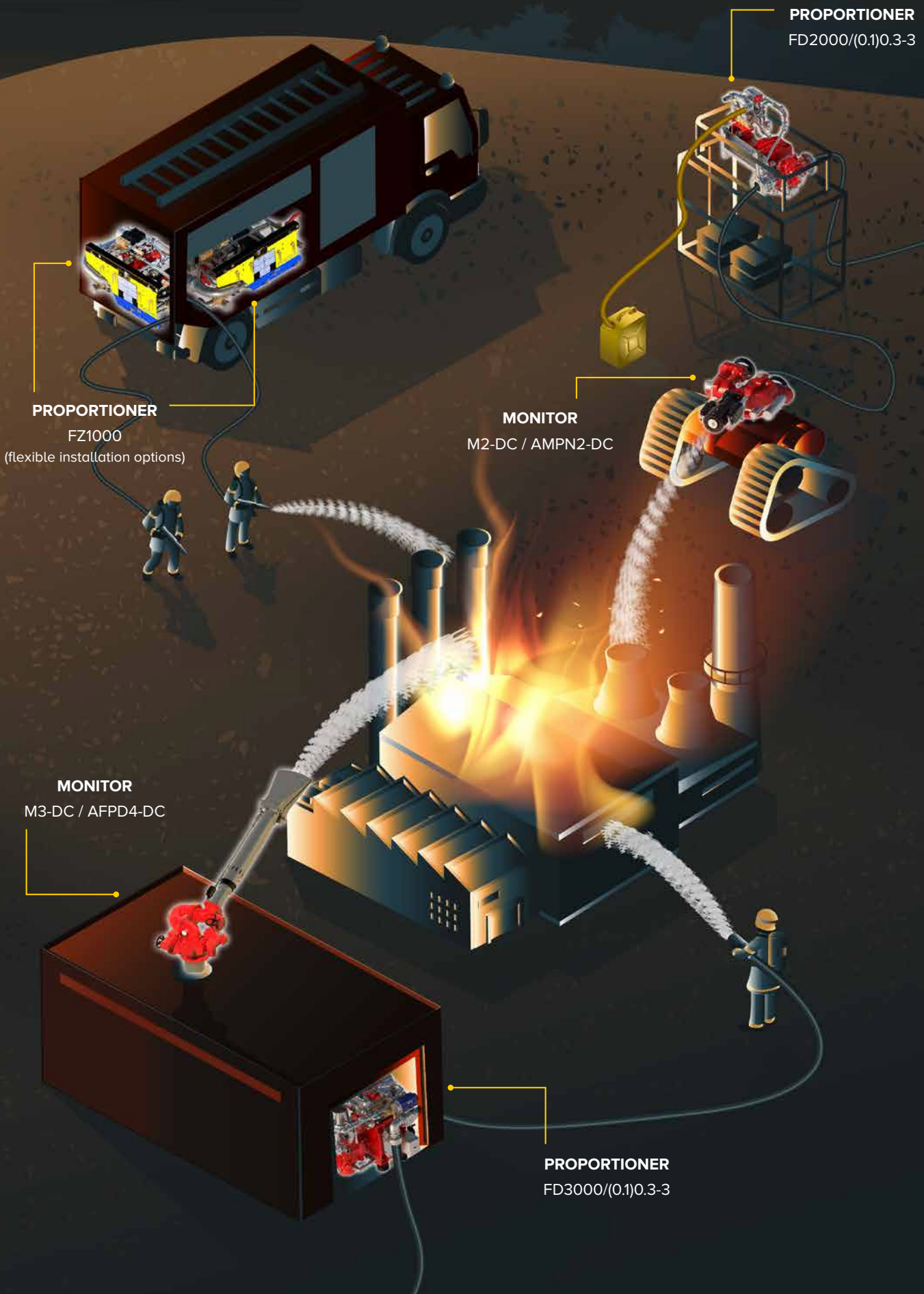
■ OUR FIREFIGHTING TECHNOLOGY IN ACTION

When the emergency lights and the sirens are on, our equipment is close to the action. Our mobile and portable proportioners and monitors have been proven in thousands of operations. Firefighters worldwide trust them so that in emergencies, every move is just right and nothing is left to chance.



PORTABLE
PROPORTIONER
DZ1000

MONITOR
M3-DC / AFPD4-DC



■ INSTALLED PROPORTIONERS

Unit type	Water flow rate	Proportioning rates	Operating pressure
FZ1000	60–1000 l/min	stepwise adjustable proportioning rates 0.1 / 0.3 / 1 / 3 %	Up to 16 bar
FZ2000	100–2000 l/min		
FD2000	200*–2000 l/min	stepless (0.1) 0.3 - 3 %	
FD3000	400*–3000 l/min 250*–3000 l/min	fixed proportioning rates 3 %, 6 % stepless (0.1) 0.3 - 3 %	
FD4000**	500*–4000 l/min	fixed proportioning rates 3 %, 6 %	

* without the optional flow reduction, depending on operating pressure and proportioning rate

** adjustable only in steps

For larger types, please contact us.

■ PORTABLE PROPORTIONERS

Unit type	Water flow rate	Proportioning rates	Operating pressure
DZ1000	140–1000 l/min	stepwise adjustable proportioning rates 0.3 / 1 / 3 %	Up to 16 bar
FD500	80*–500 l/min	fixed proportioning rates 1 %, 3 %	
FD1000	120*–1000 l/min		
FD2000**	200*–2000 l/min	stepless adjustable proportioning rates (0.1) 0.3 - 3 %	
FD3000**	250*–3000 l/min		

* without the optional flow reduction, depending on operating pressure and proportioning rate

** installed on a cart



MANUALLY CONTROLLED MONITORS

Type series	Water flow rate	Operating pressure	Pre-set flow rate (MPN nozzle)	Adjustable flow rate (AMPN nozzle)	Adjustable flow rate with dry chemical duct (AMPN NDCX nozzle)	Foam pipe with deflector (FPD)	Foam pipe with deflector (AFPD)
M2	500–2500 l/min	16 bar	✓	✓	x	✓	✓
M3	1000–4000 l/min		✓	✓	✓ (7 kg/s)	✓	✓
M4	2000–8000 l/min		✓	✓	✓ (15 kg/s)	✓	✓
M5	4000–12000 l/min		✓	✓	x	✓	✓
M7	5000–24000 l/min		✓	✓	x	✓	✓
M9	10000–40000 l/min		x	✓	x	x	x
M12	20000–60000 l/min		x	✓	x	x	x

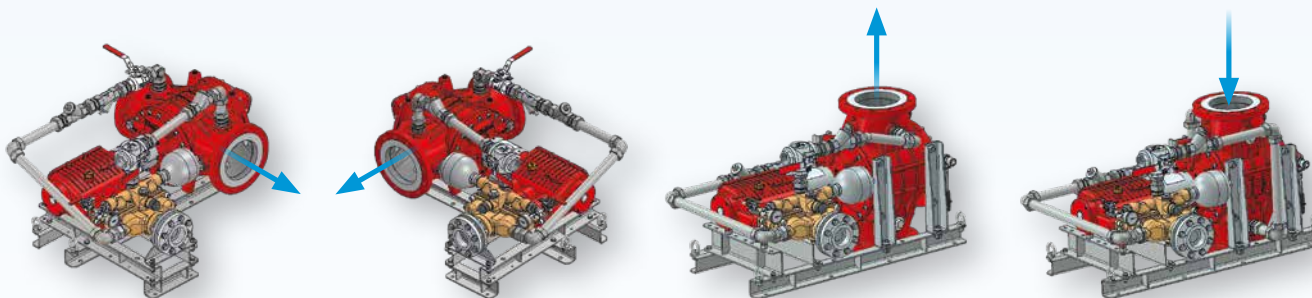
ELECTRICALLY CONTROLLED MONITORS

Type series	Water flow rate	Operating pressure	Pre-set flow rate (MPN nozzle)	Adjustable flow rate (AMPN nozzle)	Adjustable flow rate with dry chemical duct (AMPN NDCX nozzle)	Foam pipe with deflector (FPD)	Foam pipe with deflector (AFPD)
M1	250–2000 l/min	16 bar	✓	x	x	✓	✓
M2	500–2500 l/min		✓	✓	x	✓	✓
M3	1000–4000 l/min		✓	✓	✓ (7 kg/s)	✓	✓
M4	2000–8000 l/min		✓	✓	✓ (15 kg/s)	✓	✓
M5	4000–12000 l/min		✓	✓	x	✓	✓
M7	5000–20000 l/min		✓	✓	x	✓	✓
M9	10000–40000 l/min		x	✓	x	x	x

■ SELECT YOUR SUITABLE ACCESSORIES

■ FLOW DIRECTIONS OF THE WATER MOTOR

FireDos proportioners are available in four different flow directions to suit the corresponding installation situations on site.

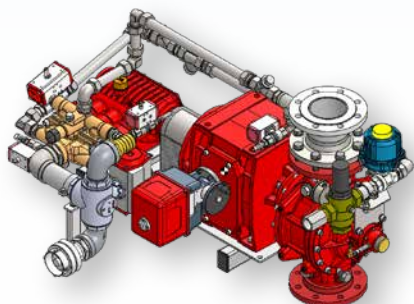


1 horizontal from left to right

2 horizontal from right to left

3 vertical from bottom to top

4 vertical from top to bottom

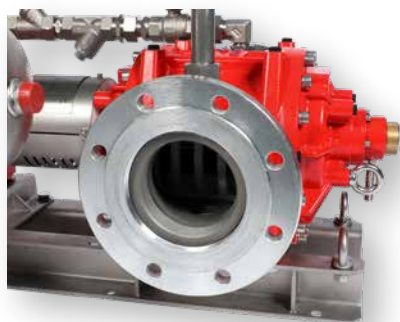


■ VOLUMETRIC SENSOR (WITHOUT HOUSING)

The number of revolutions of the water motor is measured by a proximity switch that is attached to the FireDos proportioner. The extinguishing water flow rate is calculated from this.

■ SHAFT EXTENSION FOR THE HAND WHEEL

The shaft between the control gear and the adjusting wheel that is used for setting the proportioning rate can be extended. This extension allows placing the adjusting wheel more conveniently and reachably.



■ FLANGES ON THE WATER MOTOR

Screwed flanges for water motors with male threaded connections, which is the standard up to the type series FD3000. If required, the flanges can be fully fitted and sealed. As from the FD4000 range, the flanges are provided as an integral part of the cast water motor housing.

■ ADDITIONAL PUMP FOR 6% (3+3)

To reach a 6% proportioning rate, the standard pump can be converted into a 3%+3% double head pump.

■ VARIANT FOR OPERATING TEMPERATURES OVER 50 °C

Using a special variant of rotor vanes in the water motor allows operating the unit at ambient temperatures of up to 80 °C.



■ ADD-ON KIT “SECOND FOAM AGENT TANK”

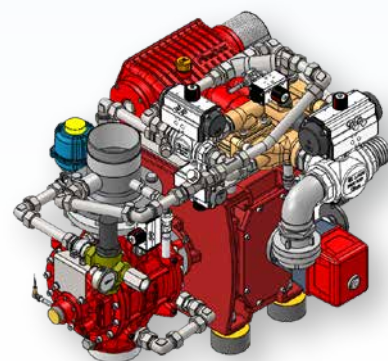
This add-on kit allows connecting the FireDos proportioner to a second foam agent tank that is permanently installed in the vehicle.

■ FLOW REDUCTION

The start-up flow reduction allows reducing the minimum water flow rate from which the FireDos proportioner can be operated to approx. 1/3 of the amount without a flow reduction, by feeding back the water motor's leakage flow. As it is necessary only at low flow rates, it switches on and off automatically. The valve for activation can be controlled electrically.

■ COMPACT VERSION

In the compact version, the proportioning pump is fitted on top of the control gear, instead of beside, and is driven by a toothed belt. This makes the FireDos proportioner shorter and higher than in the standard stretched version.



■ PNEUMATIC BALL VALVES

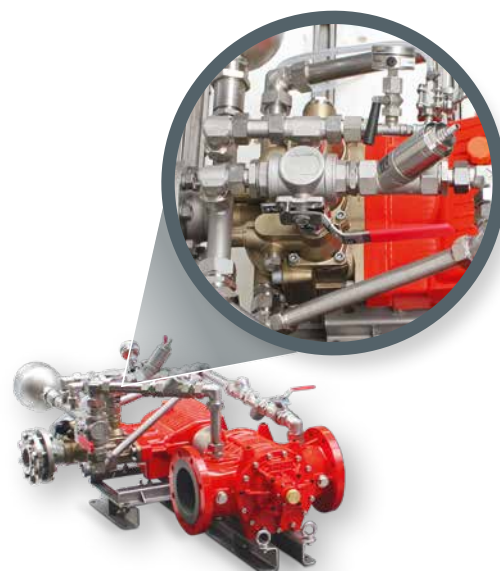
For remote-controlled operation, all ball valves on the proportioner can be fitted with pneumatic drives and integrated into a vehicle-mounted control system.

■ ELECTRIC OPERATION OF THE CONTROL GEAR

The stepless proportioning rate adjustment can be made by use of a 24V DC electric drive instead of the manual variant and be integrated into a vehicle-mounted control system.

■ CYLINDER CUT-OFF

The proportioning pumps usually have three cylinders. One or two of these cylinders can be cut off to reduce the proportioning rate or to extend the proportioning rate range. This enables the following additional proportioning rates: instead of 0.3 – 3% → 0.1 – 1%.



■ PERFECTLY TAILORED FOR YOUR APPLICATION

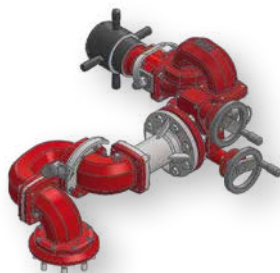
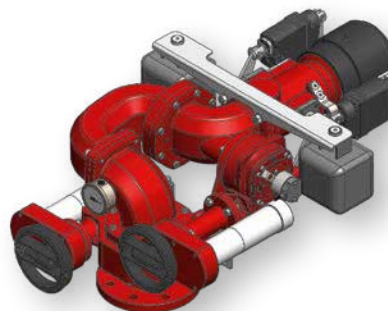
■ REMOVABLE FOAM PIPE (RFP)

The removable foam pipe (RFP) is available as an addition to the multi-purpose nozzle (with or without adjustable extinguishing agent flow rate). The removable foam pipe is fitted with sturdy handles and can be attached and locked on the multi-purpose nozzle for temporary foam applications. Due to the shorter construction length, slightly lower foam expansion rates are reached than would be with a fixed FP foam pipe.



■ HEADLIGHTS

Every FireDos monitor can be added one or two headlight(s) upon request. Fastening is done by a sturdy stainless steel mounting.



Park position



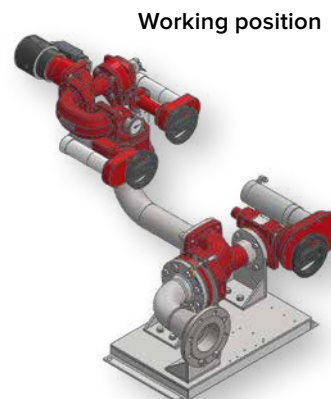
Working position

■ FOLDING SWIVEL

The folding swivel is used to carry a manually operated M2 monitor. In the working position, the operating height is increased by approx. 500 mm by the folding swivel. In its park position, the monitor is folded down and thus stows away more compactly (e.g., on a vehicle roof). Both the park and working position can be locked reliably.



Park position



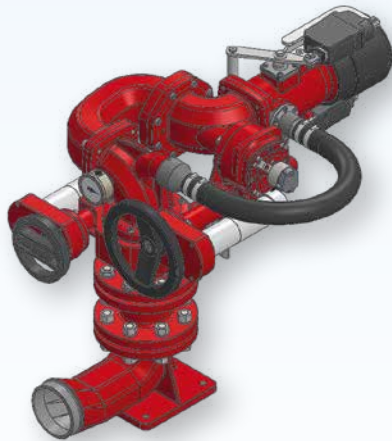
Working position

■ SWIVELLING UNIT

The swivelling unit allows remote-controlled swivelling of an M2 monitor from park to working position and vice versa. The swivelling unit can be controlled by use of a 24 V DC drive. The hand wheels also allow a manual emergency swivelling of the monitor.

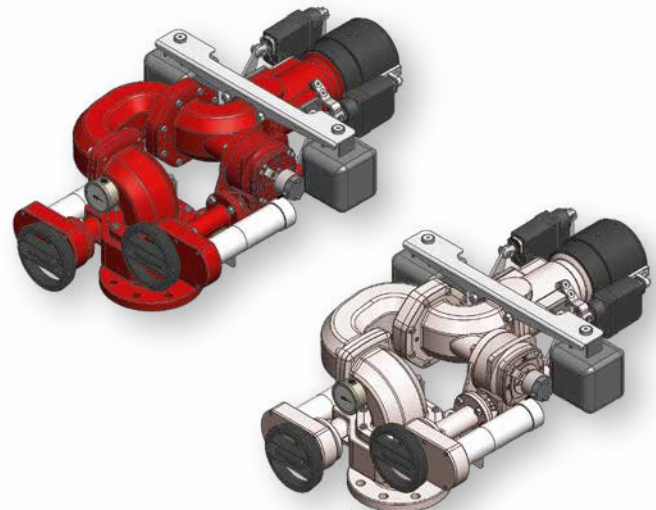
■ ALTERNATIVE INLET FLANGE

By default, the monitor's inlet flange is available in accordance with the DIN standard. You are welcome to have the flange in accordance with ANSI.



■ ELBOW

The water side inlet of the M2 and M3 series can be added a 90° elbow, allowing the connection to a horizontally laid extinguishing agent line instead of a vertical one. The elbow generally has a male thread.



■ SPECIAL COLORS

Besides the standard RAL3020 Traffic Red, the FireDos monitors are also available in other RAL colors.

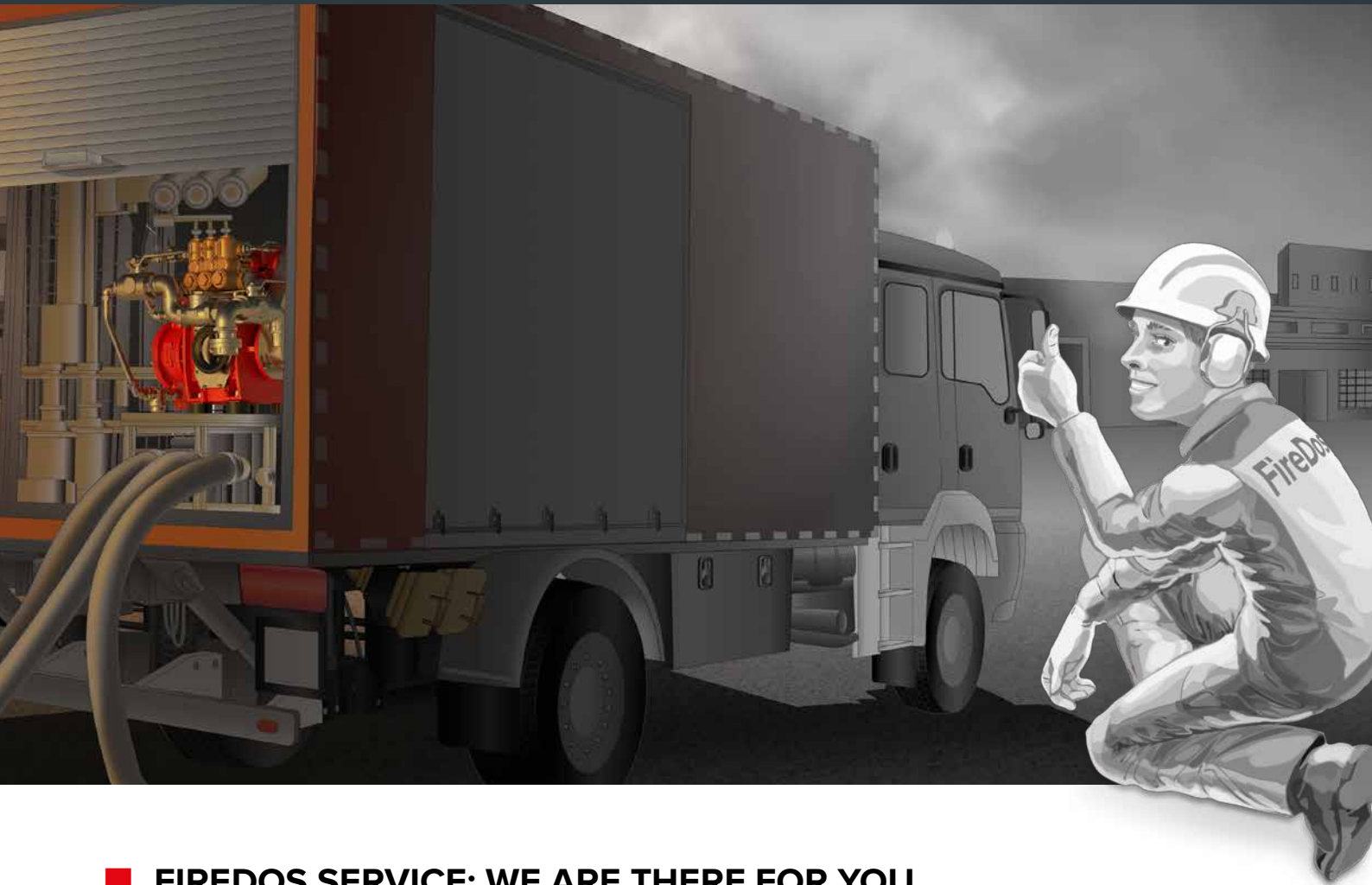


■ CAN CONTROLS FOR MONITORS WITH DC DRIVES

Display control panel including power electronics and PWM actuation.

The following control options are available:

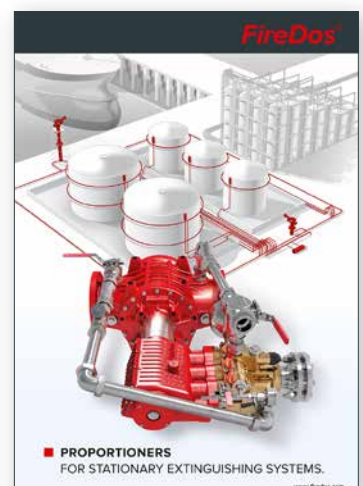
- Display controls with HMI operation and CAN bus joystick
- Portable, wired control panel
- Joystick radio remote control



■ FIREDOS SERVICE: WE ARE THERE FOR YOU.

From bidding texts through commissioning to maintenance: our service team will assist you during all project phases. We are at your service to keep you going. Contact us. We will be happy to help you along.

Further brochures:



FireDos GmbH
Auf der Kaulbahn 6
61200 Woelfersheim, Deutschland
Phone +49 (0) 6036 9796-0
Email: info@firedos.de
www.firedos.com