



CATALOGUE 2015 >



ALCO POWERFIGHTER

AWG



LANCIER
rescue systems



FIRE & RESCUE



YOU CAN RELY ON US.

Emergency services worldwide are uncompromising when it concerns success of deployments, protecting people and their own safety. Choose Alco monitors and you are equipped with the right equipment, no matter whether for extinguishing fires, cooling and cleaning, danger prevention, or quelling gases, whether they are used stationary or mobile on vehicles, ships and industrial plants.

Alco customers benefit from the option of configuring their own desired system from a comprehensive modular product portfolio. And, thanks to flexibility, able to receive individual designs according to thier own specific requirements.

You, too, can profit from ...

- **Experience since 1871**
- **Top quality Made in Germany**
- **First-class cost/performance ratio**
- **The result of many decades of development work**
- **Countless practice tests**
- **permanent exchange of experience with users all over the world**



FIRE & RESCUE



OUTSTANDING PERFORMANCE. IN DEVELOPMENT, QUALITY AND SERVICE.

Globally and universally in use

Manufacturers of fire engines and emergency services around the globe work with Alco monitors: in industrial plants, refineries, airports, armed forces, police, works fire brigades, professional fire brigades and voluntary fire brigades. We consider your experiences with Alco products continuously in our further development.

Maximum load is standard at Alco

Alco products can handle rough jobs. They withstand extreme stresses, such as stone impact, sea water, chemicals or temperature fluctuations without any problems. The following product properties also ensure this:

A sophisticated design extinguishing agent guidance minimises wear and enables large throw distances.

High-grade materials, such as anodised or hard-anodised aluminium alloys, as well as copper alloys, provide unparalleled resilience.

Careful and high-quality lacquer coating provides an additional level of robustness.

Independently verified quality

Note the CE mark on all Alco products. It confirms to you that your equipment has been manufactured to the relevant EC directives. All major certification authorities, such as DNV - GL, ABS, Bureau Veritas, Rina and Lloyd's Register of Shipping carry out in-house acceptance in our company.

The right equipment for every application

The Alco monitor range builds on countless practical experiences and technical innovations. The monitors are suitable in the popular operating modes for water, foam and/or powder. So you get a suitable monitor for every field of application: permanently mounted on vehicles, ships or in plants, as well as for mobile fire brigade operation. Our experienced engineering team helps you to customise your desired equipment. And if necessary, we will work with you on an individual solution.

Your equipment grows proportionally

Challenges change, just like budgets, risks and legal requirements. Alco enables you to retrofit your monitor system and upgrade it. Thus, you can adapt operating mode and branch pipe equipment as required or complete your equipment configuration with control systems, fittings and admixing systems.

We are at your service over the entire product life

We commission your monitor on site, and we will only leave when everything is functioning the way you envisaged. The documentation prepared for us for each device informs you about all technical details and functions. Our worldwide service will gladly be at your service when you need further support.

The following pages will tell you everything you need to know about the Alco PowerFighter System. Configure your monitor to meet your precise requirements or choose a model that is already preconfigured and can be ordered instantly (starting on page 10). We offer solutions for all requirements in connection with a comprehensive range of accessories.



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IN JUST A FEW STEPS TO THE RIGHT MONITOR.

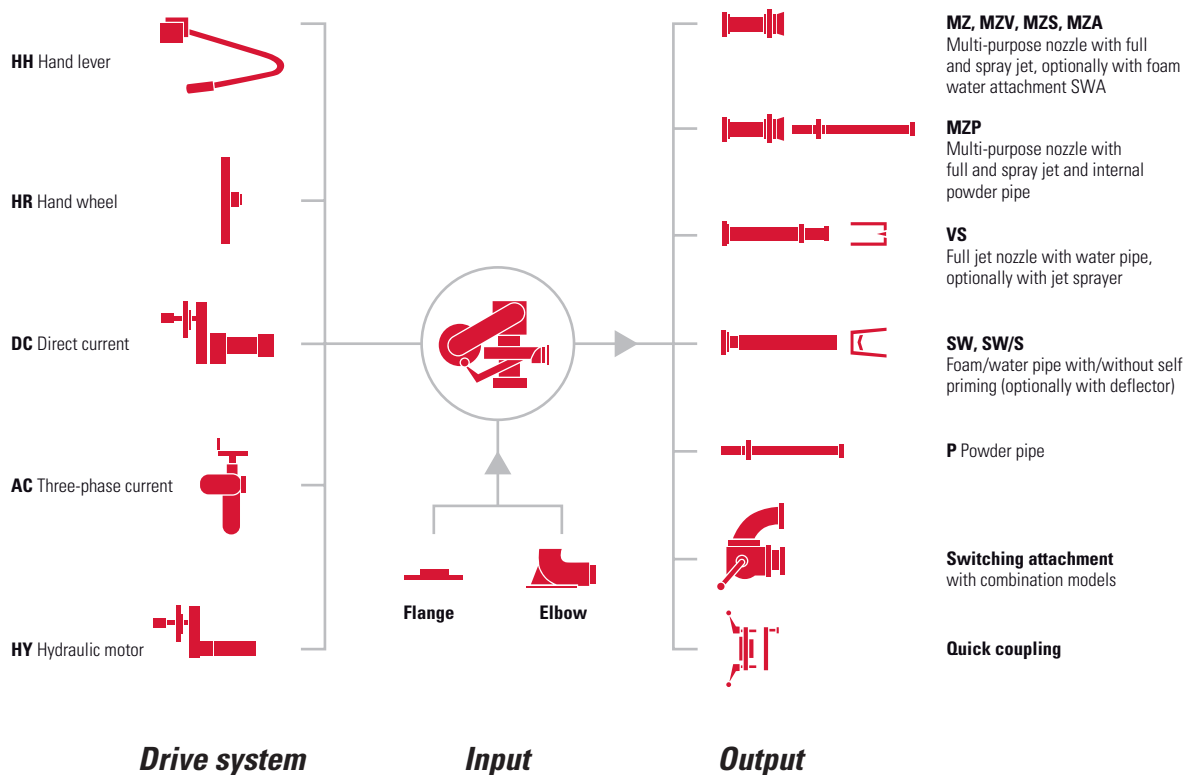
■ Designation of the **installation sizes** results from the nominal monitor size (in inches):

APF 2 The flow rate is decisive for selecting a monitor. We offer monitors with a flow capacity up to 60,000 l/min, corresponding to nominal sizes from 2 to 12 inches. Hence, the nominal size shown in the example is 2 inches.

APF 2 = Alco Power Fighter 2 inch Ø flow

■ Within an installation size, choose among various **configurations**:

- P** Portable monitors for mobile use
- C** Permanently mounted monitors of highly compact design
- U** Permanently mounted monitors of extra low-profile design
- Z** Provided with central lead-through for foam agent admixture, powder or electric cable



■ Decide on the suitable **drive system**:

HH – Hand lever for turning and swivelling the monitor. The angle of the hand lever can be adjusted to the optimum working position. Clamping screws keep the monitor safely in the chosen position.

HR – Hand wheels for turning and swivelling the monitor. The hand wheels are arranged logically in relation to the axes of movement to facilitate operation. Encapsulated, self-locking worm gear units lock the monitor in the chosen position.

DC/AC – Electric motors with 24 V/12 V DC or three-phase/ AC for vertical and horizontal adjustment. The monitors are supplied ready for connection and fully wired to a terminal box or connector. On request we can also supply you with control systems and control elements. Monitors with electric drive are equipped with hand wheels for manual emergency operation. On request we can fit the device with limit switches, potentiometers or electric position sensors.

HY – Hydraulic motors for remote operation of the monitor, e.g. with risk of explosion. The monitor is supplied complete with piping to the selector unit for switching between manual and hydraulic operation. The closed hydraulic system and a short-circuit valve ensure switching to emergency manual operation. We complete the hydraulic unit and the associated electric control on request.

■ A large number of options for the **monitor outlet** are available for you:

MZ – Multi-purpose nozzles

... excel at possible change between full and spray jet, manually or electrically. Equipped with foam attachment, they are also suitable to deliver foam.

MZ	fixed flow rate
MZV	manually/electrically adjustable flow rate corresponding to preset pattern
MZS	integrated self priming for foam agents
MZP	integrated powder nozzle
MZA	automatic nozzle adaptation to operating pressure and quantity of extinguishing agent
SWA	optional foam water attachment

SW – Foam branch pipe

... produce foam by mixing extinguishing agent and air. An optional deflector gives the foam jet the best shape.

SW/S	self-priming low expansion foam pipes, a combination of inductor and foam producer
SW .../...	manual or electrical in the flow (.../...) switchable low expansion foam pipes
SW .../...-el	

VS – Full jet nozzles

... produce a compact jet of high throw distance. Additional spray attachments enhance shielding heat radiation.

P – Powder pipes

... to deliver particularly large quantities of powder

Switching attachments

... to switch between two different monitor outlets.

Quick couplings

... enable quick exchange of various nozzles and pipes.

■ The right **lacquer coating** protects your monitor and gives it the finishing touch:

All monitors are primed with a poly-acrylic-based two-component lacquer coating. Up to two further spraying operations are applied over the coating using a two-component, high-acrylic based top coat.

Your monitor is optimally protected with additional **KTL coating** (catalytic plastic-based dip coating).

The respective protection period is designed for 5-15 years.

Please indicate the desired **RAL colour** with your order as well as the **corrosion category C**, for example, RAL3000-C2/C3.

RAL 3000	flame red
RAL 9010	pure white
RAL 9006	white aluminium

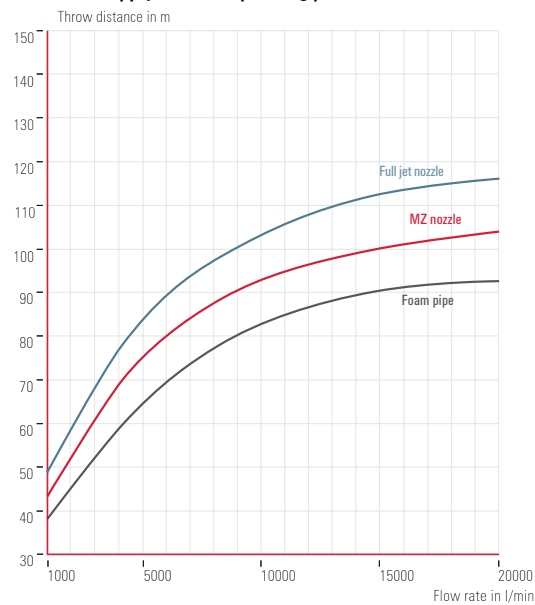
C2/C3	low/moderate stress
C4	high stress, e.g. from sea water on ships or chemicals in industrial plants

Your special colour requests are part of our service.

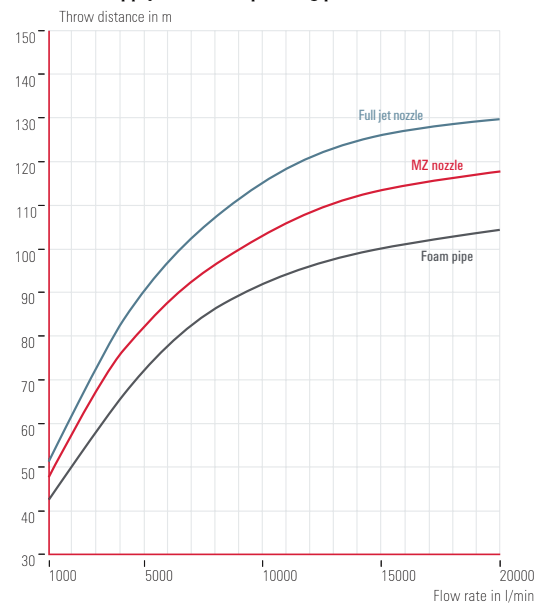
THROW DISTANCE OF THE ALCO POWERFIGHTERS.

Refer to the diagrams for throw distances of the Alco PowerFighters, which are equipped with jet/spray nozzles, full jet nozzles or foam pipes, depending on the capacity/flow rate.

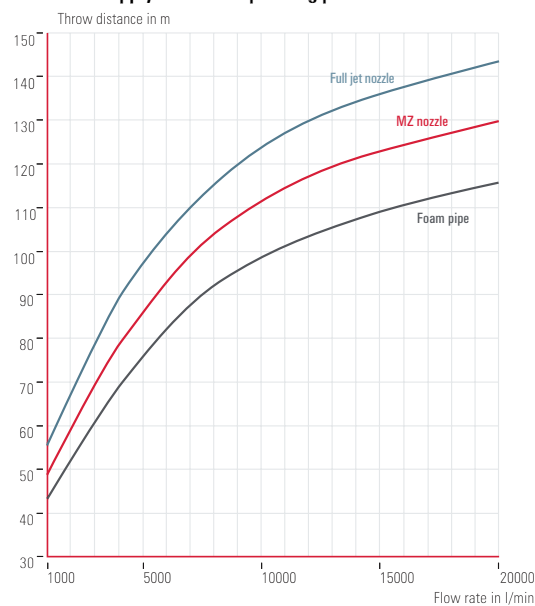
Values apply for 8 bar operating pressure



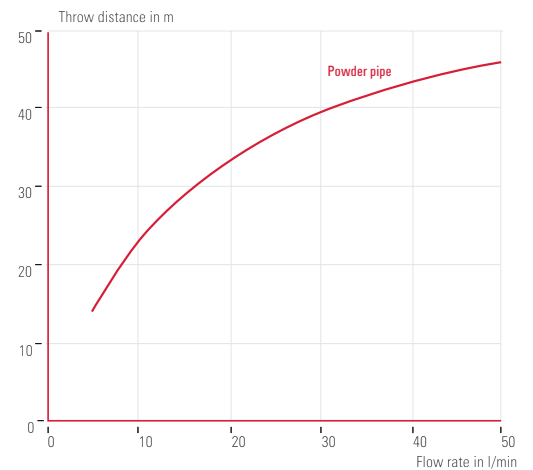
Values apply for 10 bar operating pressure



Values apply for 12 bar operating pressure



Values apply when using BC powder and at 12 bar medium vessel pressure

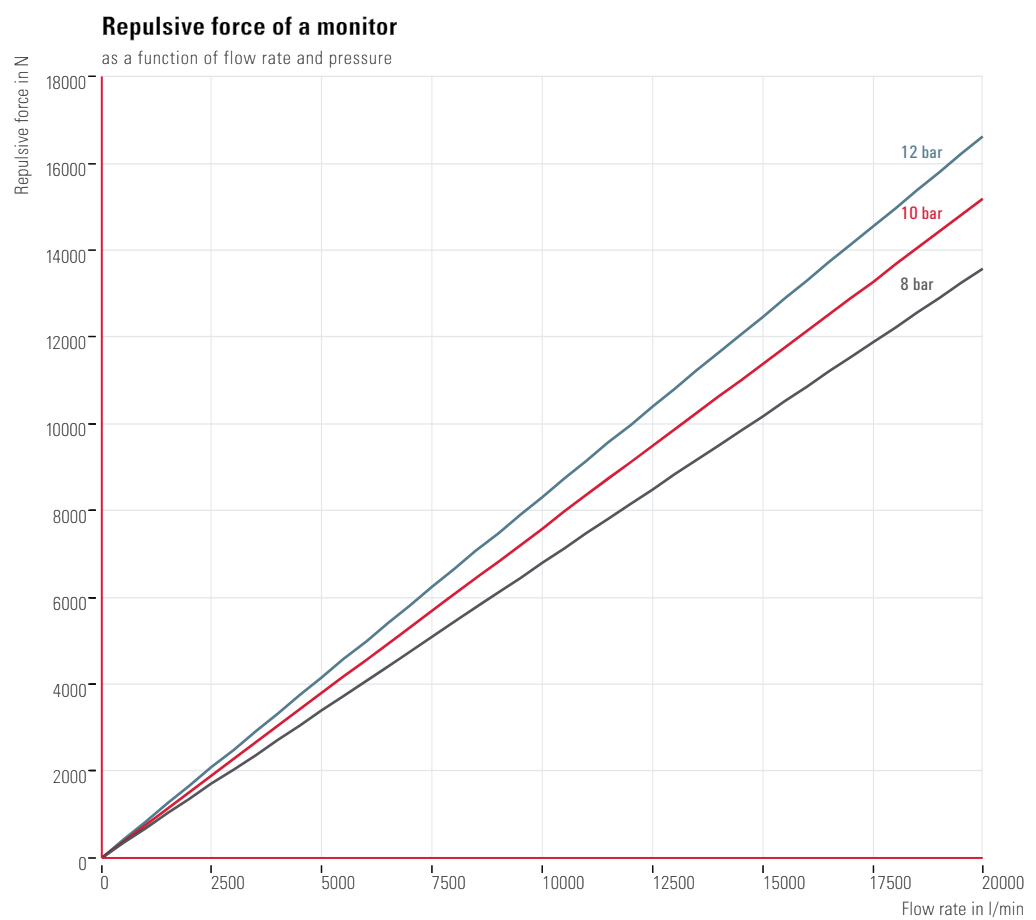


All values apply in still air conditions and at a pipe work angle of approx. 25° to 30° values for MZ nozzles in full jet position
Values for foam pipes at flow rate of water, at flow rate of foam all values less 8 %

All values apply in still air conditions

REPULSIVE FORCE OF THE ALCO POWERFIGHTERS.

You require the repulsive force of your Alco PowerFighter depending on pressure and flow rate to correctly dimension the monitor feed pipes and flange connections.





MONITOR CONFIGURATOR.

Special customer requirements on request

Simply configure your desired monitor or choose a monitor from our standard products.

You could not find the right solution for your requirement in our catalogue? Then please contact us directly. We design and manufacture monitors with extinguishing agent flow rates of 200 to 60,000 l/min, including matched pipe and nozzle equipment, hand-wheel or hand-lever controlled up to electrically remote-controlled models.

We look forward to receiving your feedback.

Information and technical support under:

Phone +49 7340 918898-0
Fax +49 7340 918898-699
Email info@awg-fittings.com

More about us on the Internet:
www.awg-fittings.com

		APF 2-HH 1260	APF 2-Turbofighter	APF 2-P osz.	APF 2-DC	APF 2,5-C
Max. flow rate (l/min) at 8 bar		1200	2000	2000	2000	2000
Max. pressure (bar)		10	16	16	16	16

Operating modes

Hand lever	HH					
Hand valve	HR					
Direct current	DC					
Three-phase current	AC					
Hydraulics	HY					

Outlets

Jet/spray nozzle	MZ					
... with flow rate selection	MZV					
... with integrated self priming	MZS					
... with integrated powder nozzle	MZP					
... with automatic flow rate adjustment	MZA					
Low expansion foam pipe	SW					
... with integrated self priming	SW/S					
... with flow rate selection	SW .../...					
... with deflector						
Full jet nozzle	VS					
... with spray attachment						
Powder pipe	P					

Areas of application:



Catalogue page		10	12	16	18	22
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This symbol indicates portable monitors that are suitable for mobile use.



Models marked with a vehicle are suitable for use as bumper monitor and/or roof monitor on vehicles.



This ship symbol indicates whether a monitor can be used on ships.



The industry symbol indicates monitors and trailers which are suitable for use in industrial installations or refineries.

APF 3-P	APF 3-C	APF 3-U / UZ	APF 4-U	APF 5	APF 6	APF 7	APF 8	APF 12
4000	4000	4000	6000	8000	15000	20000	40000	60000
16	16	16	16	16	16	16	16	16
24	26	30/34	36	38	40	44	46	48



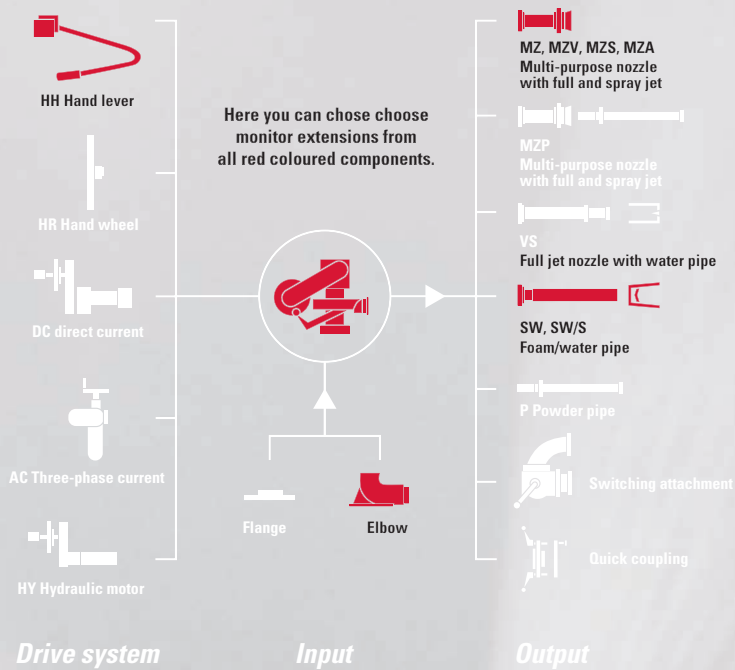
Up to 1,200 l/min at 8 bar
max. 10 bar



APF 2-HH (HH1260)

A wide variety of application options make the proven APF 2-HH an all-rounder. It can be used permanently mounted as a roof monitor or in the portable design for mobile applications. The continuously adjustable hand lever, as well as the simple push-in connection, which connects the basic unit and the base frame are designed for simple handling. Both the basic unit and the base frame can be folded up with one hand for saving space. The APF 2-HH is ready for use with only a short set-up time despite the compact transport position. Special supporting feet on the base frame provide additional stability in use.

2



APF 2-HH (HH 1260) - MZ 1200



Type	APF 2 HH
Inlet	Storz 75 (B) fixed coupling with ball valve
Outlet	Multi-purpose nozzle MZ 1200
Equipment (optionally available)	Base frame (AWG ID no. 104 593 45) Roof flange (AWG ID no. 800 625 34)
Swivelling range	Horizontal $\pm 60^\circ$ (released $\pm 360^\circ$) Vertical $+25^\circ$ to $+90^\circ$ (released -30° to $+90^\circ$)
Flow rate	1200 l/min at 8 bar
Maximum pressure	10 bar
Length / Width / Height	200 / 430 / 870 mm
Weight	approx. 22 kg
Paint finish	Iron shimmer dark grey (similar to RAL 7011)
AWG ID no.	104 598 38 Basic unit 303 231 35 MZ 1200

APF 2-HH (HH 1260) - SW 12/S



Type	APF 2 HH
Inlet	Storz 75 (B) fixed coupling with ball valve
Outlet	self-priming foam pipe SW12/S
Equipment	Base frame and suction hose with pipe
Swivelling range	Horizontal $\pm 60^\circ$ (released $\pm 360^\circ$) Vertical $+25^\circ$ to $+90^\circ$ (released -30° to $+90^\circ$)
Flow rate	1200 l/min at 8 bar
Maximum pressure	10 bar
Length / Width / Height	200 / 430 / 1870 mm
Weight	approx. 25 kg
Paint finish	Iron shimmer dark grey (similar to RAL 7011)
AWG ID no.	313 926 38

! **Special customer requirements on request**

- STORZ
- BSP
- BI
- DSP/AR
- GUI
- NH
- SMS
- NOR
- FIN
- GOST
- UN
- BAR

! **Other connection systems on request**

- Roof monitor for vehicles
- Portable monitor for mobile use
- Rotary/swivel movement via height-adjustable hand lever
- No gear unit for fast movability
- Change of jet shape during operation
- Collapsible for transport and storage
- Vertical limit for stability

- Portable monitor for mobile use
- Rotary/swivel movement via height-adjustable hand lever
- No gear unit for fast movability
- Foam agent admixture directly in the nozzle
- Collapsible for transport and storage
- Vertical limit for stability



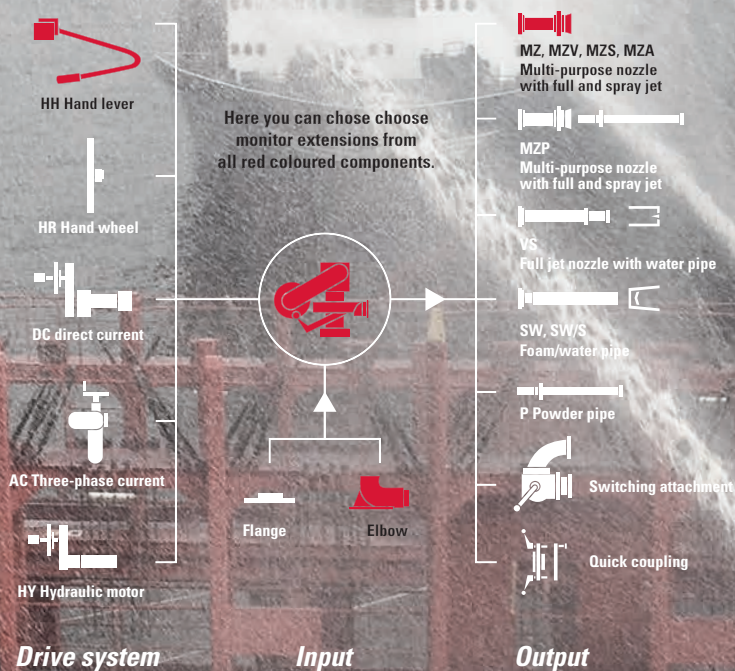
Up to 2,000 l/min at 8 bar
max. 16 bar



APF 2-TURBOFIGHTER

The APF 2-TurboFighter, weighing only 10 kg, is a genuine lightweight among portable monitors. It offers the option of attaching a jet spray nozzle. Both the vertical and horizontal swivel movement allow continuous adjustment. The TurboFighter has an integrated ball valve for shut-off. It is comfortably compact and lightweight on the vehicle and holding in your hand. The special supporting legs provide stability in use and can be folded in for transport; the monitor transport position additionally minimises space requirements.

2



APF 2-TURBOFIGHTER - MZ 2000



- STORZ
- BSP
- BI
- DSP/AR
- GUI
- NH
- SMS
- NOR
- FIN
- GOST
- UN
- BAR

Type	TurboFighter
Input	Storz 75 (B) adapter
Outlet	Multi-purpose nozzle MZ 2000
Equipment	-
Swivelling range	Horizontal $\pm 40^\circ$ Vertical $+20^\circ$ to $+60^\circ$
Flow rate	2000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	630 / 200 / 287 mm
Weight	approx. 10 kg
Paint finish	Powder-coated RAL 3000
AWG ID no.	312 834 34

- Portable monitor for mobile use
- Horizontal adjustment with handle
- Vertical adjustment on nozzle
- Change of jet shape during operation
- Collapsible for transport and storage
- Safety rope

APF 2-TURBOFIGHTER - MZV 2000



Type	TurboFighter
Input	Storz 75 (B) adapter
Outlet	Multi-purpose nozzle MZV 2000
Equipment	-
Swivelling range	Horizontal $\pm 40^\circ$ Vertical $+20^\circ$ to $+60^\circ$
Flow rate	2000 l/min at 8 bar adjustable from 600 - 2000 l/min in steps of 200 each
Maximum pressure	16 bar
Length / Width / Height	630 / 200 / 287 mm
Weight	approx. 10 kg
Paint finish	Powder-coated RAL 3000
AWG ID no.	607 963 34

- Portable monitor for mobile use
- Horizontal adjustment with handle
- Vertical adjustment on nozzle
- Change of jet shape during operation
- Collapsible for transport and storage
- Safety rope



Other connection systems on request

APF 2-TURBOFIGHTER-osz. - MZ 2000



- STORZ
- BSP
- BI
- DSP/AR
- GUI
- NH
- SMS
- NOR
- FIN
- GOST
- UN
- BAR

Type	TurboFighter
Input	Storz 75 (B) adapter
Outlet	Multi-purpose nozzle MZ 2000
Equipment	Horizontal oscillating unit (symmetrical ±30°)
Swivelling range	Horizontal ±30° Vertical +20° to +60°
Flow rate	1500 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	820 / 287 / 300 mm
Weight	approx. 15 kg
Paint finish	Powder-coated RAL 3000
AWG ID no.	300 833 34

!
 Other connection systems on request

- Portable monitor for mobile use
- Horizontal adjustment with handle
- Vertical adjustment on nozzle
- Change of jet shape during operation
- Connectible, horizontally oscillating unit
- Collapsible for transport and storage
- Safety rope



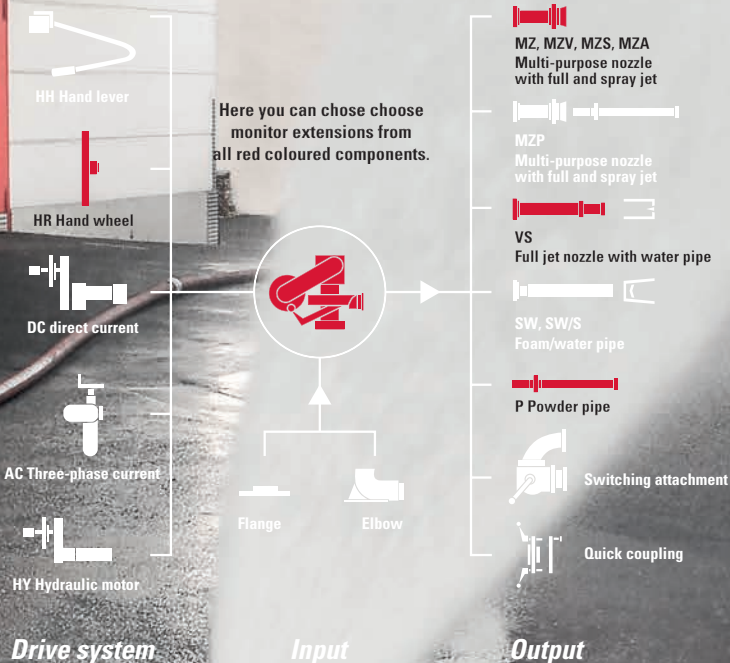


Up to 2,000 l/min at 8 bar
max. 16 bar

APF 2-P oscillating

Monitors of size APF 2-P are portable and designed for mobile use. A jet/spray nozzle can be installed which makes the devices suitable to deliver water and foam (AFFF). Special supporting legs provide for stability in use and are collapsible to save space for transport.

2



APF 2-P-osc. - MZ 2000



Special customer requirements on request

- **STORZ**
- **BSP**
- **BI**
- **DSP/AR**
- **GUI**
- **NH**
- **SMS**
- **NOR**
- **FIN**
- **GOST**
- **UN**
- **BAR**

Type	APF 2-P-osc.
Input	Storz 75 (B) adapter
Outlet	Multi-purpose nozzle MZ 2000
Equipment	Horizontal oscillating unit ($\pm 5^\circ$ to $\pm 30^\circ$)
Swivelling range	Horizontal: $\pm 75^\circ$ Vertical: $+30^\circ$ to 60° (released 0° up to $+60^\circ$)
Flow rate	2000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	800 / 300 / 370 mm
Weight	approx. 22 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	313 927 34



Other connection systems on request

- **Portable monitor for mobile use**
- **Horizontal adjustment with handle**
- **Vertical adjustment with hand wheel**
- **Change of jet shape during operation**
- **Vertical limit for stability**
- **Connectible, horizontally oscillating unit**
- **Swivel joints with maintenance-free ball bearings**
- **Safety rope**

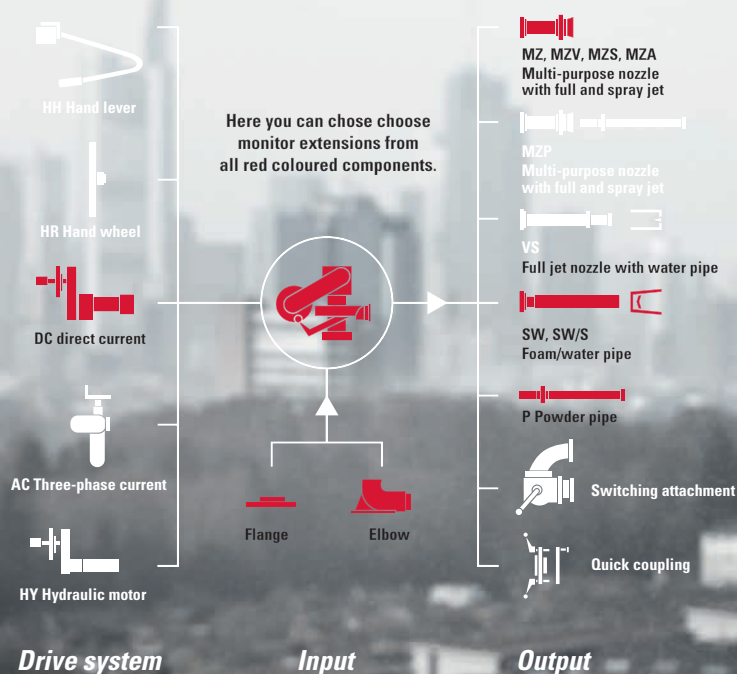


Up to 2,000 l/min at 8 bar
max. 16 bar



APF 2-DC

Models of size APF 2-DC can be used as bumper or roof monitor, as well as on airfields. They are suitable to deliver water, foam (AFFF) or powder, with the maximum flow capacity being around 2,000 l/min (extinguishing powder up to 25 kg/s). The base body installation size excels in very low installation space. It is entirely designed for reliability and a long service life thanks to its protected gear unit and its encased motors.



2



APF 2-DC - MZ 2000



! *Special customer requirements on request*

Type	APF 2-DC
Input	Flange DN 50 PN 16
Outlet	Multi-purpose nozzle MZ 2000
Equipment	-
Swivelling range	Horizontal $\pm 165^\circ$ (12°/s) Vertical $\pm 90^\circ$ (7°/s)
Flow rate	2000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	530 / 300 / 270 mm
Weight	approx. 14 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	120 887 38

Electrical data:	
Operating voltage	24V DC
Protection class	IP65
Horizontal	18 W / 1.1 A potentiometer 5 k Ω
Vertical	18 W / 1.1 A potentiometer 5 k Ω
Flow rate adjustment	-
Spray jet/full jet	17 W / 2 A limit switch
Deflector adjustment	-
Electric Connection	Connection cable 2.5 m

APF 2-DC - MZ 2000
+ SWA WITH DEFLECTOR

Type	APF 2-DC
Input	Flange DN 50 PN 16
Outlet	Multi-purpose nozzle MZ 2000
Equipment	Detachable foam water attachment SWA with electric deflector
Swivelling range	Horizontal $\pm 165^\circ$ (12°/s) Vertical $\pm 90^\circ$ (7°/s)
Flow rate	2000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	1000 / 300 / 320 mm
Weight	approx. 22 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	814 699 38

Electrical data:	
Operating voltage	24V DC
Protection class	IP65
Horizontal	18 W / 1.1 A potentiometer 5 k Ω
Vertical	18 W / 1.1 A potentiometer 5 k Ω
Flow rate adjustment	-
Spray jet/full jet	17 W / 2 A
Deflector adjustment	17 W / 2 A
Electric Connection	Harting connector

! *Control systems available as an option (see page 66)*

- Roof or bumper monitor for vehicles
- Monitor for helicopter landing decks
- Rotary/swivel movement through DC motors
- Encased motors and gear units
- Change of jet shape during operation
- Swivel joints with maintenance-free ball bearings

- Roof or bumper monitor for vehicles
- Monitor for helicopter landing decks
- Rotary/swivel movement through DC motors
- Encased motors and gear units
- Change of jet shape during operation
- Swivel joints with maintenance-free ball bearings

APF 2-DC - MZV 2000



Special customer requirements on request

Type	APF 2-DC
Input	Flange DN 50 PN 16
Outlet	Multi-purpose nozzle MZV 2000
Equipment	-
Swivelling range	Horizontal $\pm 165^\circ$ (12°/s) Vertical $\pm 90^\circ$ (7°/s)
Flow rate	2000 l/min at 8 bar electrically reducible to 1000 l/min
Maximum pressure	16 bar
Length / Width / Height	670 / 300 / 320 mm
Weight	approx. 18 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	814 654 38

Electrical data:	
Operating voltage	24V DC
Protection class	IP65
Horizontal	18 W / 1.1 A potentiometer 5 k Ω
Vertical	18 W / 1.1 A potentiometer 5 k Ω
Flow rate adjustment	17 W / 2 A potentiometer 10 k Ω
Spray jet/full jet	17 W / 2 A
Deflector adjustment	-
Electric Connection	Harting connector

APF 2-DC - MZV 2000 + SWA



Type	APF 2-DC
Input	Flange DN 50 PN 16
Outlet	Multi-purpose nozzle MZV 2000
Equipment	Detachable foam water attachment SWA
Swivelling range	Horizontal $\pm 165^\circ$ (12°/s) Vertical $\pm 90^\circ$ (7°/s)
Flow rate	2000 l/min at 8 bar electrically reducible to 1000 l/min
Maximum pressure	16 bar
Length / Width / Height	1005 / 300 / 320 mm
Weight	approx. 20 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	814 698 38

Electrical data:	
Operating voltage	24V DC
Protection class	IP65
Horizontal	18 W / 1.1 A potentiometer 5 k Ω
Vertical	18 W / 1.1 A potentiometer 5 k Ω
Flow rate adjustment	17 W / 2 A potentiometer 10 k Ω
Spray jet/full jet	17 W / 2 A
Deflector adjustment	-
Electric connection	Harting connector



Control systems available as an option (see page 66)

- Roof or bumper monitor for vehicles
- Monitor for helicopter landing decks
- Rotary/swivel movement through DC motors
- Encased motors and gear units
- Change of jet shape/flow rate during operation
- Swivel joints with maintenance-free ball bearings

- Roof or bumper monitor for vehicles
- Monitor for helicopter landing decks
- Rotary/swivel movement through DC motors
- Encased motors and gear units
- Change of jet shape/flow rate during operation
- Swivel joints with maintenance-free ball bearings





Up to 2,000 l/min at 8 bar
max. 16 bar

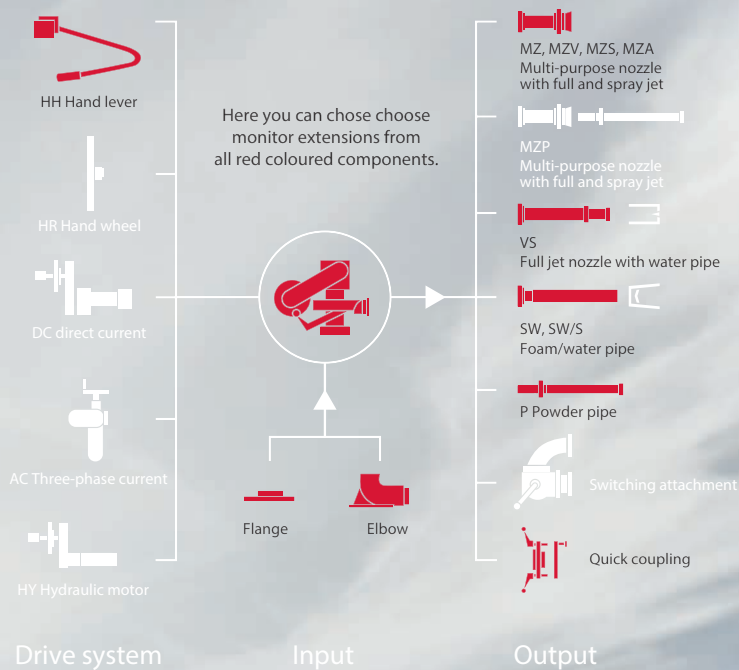


APF 2.5-C

Models of size APF 2.5-C are suitable for use as roof monitor on vehicles, as fixed unit in industrial installations or as portable monitor for mobile use. The APF 2.5-C base body excels in very low installation space when in deployment position. It is suitable as water, foam and powder monitor having a throughput rate of up to 2,000 l/min at 8 bar (extinguishing powder 25 kg/s).

The APF 2.5-C units are equipped with regreasable swivel joints. Simple and ergonomic operation is ensured by an adjustable hand lever. In addition, clamping screws allow monitor interlocking in a certain position.

In mobile use, the device can be mounted without tools onto a base support in no time. The monitor can be brought into a stretched position allowing space-saving accommodation in the vehicle.



APF 2,5-C-HH - MZ 2000



Type	APF 2,5-C-HH
Input	Flange DN 80 PN 16
Outlet	Multi-purpose nozzle MZ 2000
Equipment	-
Swivelling range	Horizontal 360° Vertical -75° up to +90°
Flow rate	2000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	240 / 475 / 610 mm
Weight	approx. 13 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	105 433 38

APF 2,5-C-HH - STORZ 75



Type	APF 2,5-C-HH
Input	Storz 75 (B) fixed coupling
Outlet	Storz 75 (B) fixed coupling with safety device
Equipment	Base support
Swivelling range	Horizontal 360° Vertical +30 bis +90° (released -75° up to +90°)
Flow rate	2000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	300 / 480 / 870 mm
Weight	approx. 23 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	313 928 38

! *Special customer requirements on request*

- STORZ
- BSP
- BI
- DSP/AR
- GUI
- NH
- SMS
- NOR
- FIN
- GOST
- UN
- BAR

! *Other connection systems on request*

- Roof monitor for vehicles
- Rotary/swivel movement via height-adjustable hand lever
- Change of jet shape during operation

- Portable monitor for mobile use
- Rotary/swivel movement via height-adjustable hand lever
- Coupling at outlet allows simple change of nozzle depending on specific application
- Collapsible for transport and storage
- Vertical limit for stability
- Coupling connection between monitor and base support



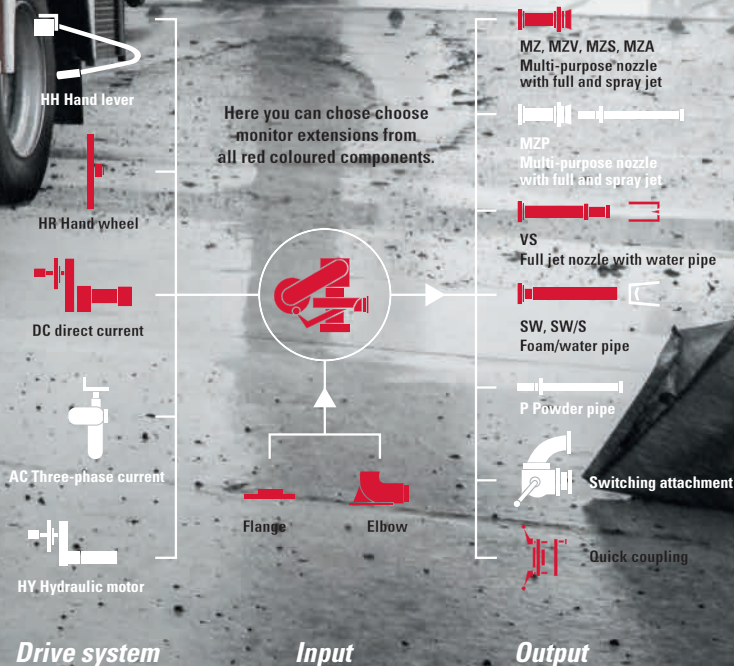
Up to 4,000 l/min at 8 bar
max. 16 bar



APF 3-P

The APF 3-P is designed as portable monitor for mobile use. The device equipped with nozzle or foam pipe is suitable for delivering water and any type of foam. The monitor resilient supporting legs have low-wear carbide stand tips and collapse for transport in just one action. Vertical adjustment is carried out via a self-locking spindle with hand wheel. Moreover, a built-in swivel range limit ensures stability at all times of use.

The top and bottom sections of the monitor can be quickly and simply separated from each other without tools. On the one hand, this provides convenient handling combined with handles integrated in the top and bottom section. On the other hand, the modular design allows the use of the top section as a roof monitor by mounting it onto a suitable folding joint or roof flange. Furthermore, it can be operated using a single hose line thanks to the integrated collecting breeching with non-return valves at the monitor input.



APF 3-P - MZV 3000



Type	APF 3-P
Input	Collecting breeching with 2x Storz 75 (B)
Outlet	Adjustable multi-purpose nozzle MZV3000
Equipment	-
Swivelling range	Horizontal: $\pm 180^\circ$ Vertical: 35° to 90° (released -15° up to $+90^\circ$)
Flow rate	3000 l/min at 8 bar adjustable from 200 - 3000 l/min in steps of 200 each
Maximum pressure	16 bar
Length / Width / Height	760 / 370 / 480 mm
Weight	approx. 23 kg
Paint finish	RAL 3000
AWG ID no.	207 352 34

APF 3-P-DC - MZA 4000



Type	APF 3-P-DC
Input	Collecting breeching with 2x Storz 75 (B)
Outlet	Automatic multi-purpose nozzle MZA 4000
Equipment	Battery
Swivelling range	Horizontal: $\pm 105^\circ$ Vertical: 35° to 90° (electrically) (released -15° to $+35^\circ$ manually)
Flow rate	4000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	856 / 365 / 471 mm
Weight	approx. 31 kg (approx. 32.8 kg with battery)
Paint finish	RAL 3000
AWG ID no.	207 680 34

Electrical data:

Operating voltage	24V DC
Protection class	IP65
Electric Connection	CEE connector 16A 2-pole 24 V



Special customer requirements on request (oscillating)

- STORZ
- BSP
- BI
- DSP/AR
- GUI
- NH
- SMS
- NOR
- FIN
- GOST
- UN
- BAR



Other connection systems on request

- Portable monitor for mobile use
- Horizontal adjustment with handle
- Vertical adjustment with hand wheel
- Protected gear unit
- Can be used as roof monitor in combination with roof flange
- Change of jet shape/flow rate during operation
- Separable for transport and storage
- Vertical limit for stability
- Swivel joints with maintenance-free ball bearings

- Portable monitor for mobile use
- Rotary/swivel movement through DC motors
- Protected gear unit
- Can be used as roof monitor in combination with roof flange
- Automatic nozzle adaptation to operating pressure and quantity of extinguishing agent
- Change of jet shape during operation
- Separable for transport and storage
- Vertical limit for stability
- Swivel joints with maintenance-free ball bearings



Up to 4,000 l/min at 8 bar
max. 16 bar



APF 3-C

3

The APC 3-C size captivates by its flexibility both in regards to the drive systems and the pipe/ nozzle equipment. The models of this size can be used as water, foam and powder monitor with a throughput capacity of up to 4,000 l/min at 8 bar (extinguishing powder 50 kg/s). Due to the compact design of the base body in relation to the water guide inner diameter, they are especially suitable for tight application areas.



HH Hand lever



HR Hand wheel



DC direct current



AC Three-phase current



HY Hydraulic motor

Drive system

Here you can choose choose
monitor extensions from
all red coloured components.



Flange



Elbow

Input



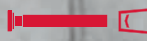
MZ, MZV, MZS, MZA
Multi-purpose nozzle
with full and spray jet



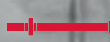
MZP
Multi-purpose nozzle
with full and spray jet



VS
Full jet nozzle with water pipe



SW, SW/S
Foam/water pipe



P Powder pipe



Switching attachment



Quick coupling

Output

APF 3-C-HH - VS Ø40



Type	APF 3-C-HH
Input	Flange DN 100 PN 16
Outlet	Full jet nozzle 40 mm dia.
Equipment	Water pipe
Swivelling range	Horizontal: 360° Vertical: -75° to 90°
Flow rate	3000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	1670 / 390 / 350 mm
Weight	approx. 20 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.:	313 929 35

- Roof monitor for vehicles
- Rotary/swivel movement via height-adjustable hand lever
- No gear unit for fast maneuverability

APF 3-C-HR - MZV 3000



Type	APF 3-C-HR
Input	Flange DN 100 PN 16
Outlet	Adjustable multi-purpose nozzle MZV 3000
Equipment	-
Swivelling range	Horizontal: 360° Vertical: -75° to 90°
Flow rate	3000 l/min at 8 bar adjustable from 200 - 3000 l/min in steps of 200 each
Maximum pressure	16 bar
Length / Width / Height	700 / 305 / 440 mm
Weight	approx. 16 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	312 523 35

- Roof monitor for vehicles
- Rotary/swivel movement by hand wheel
- Protected gear units
- Change of jet shape/flow rate during operation



Special customer requirements on request

APF 3-C-DC - MZA 4000

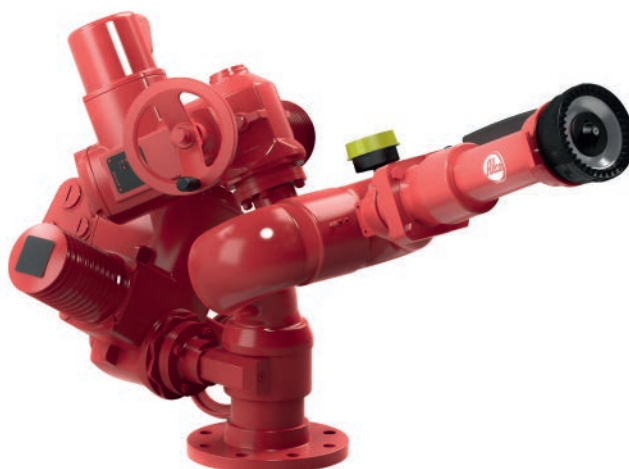


Type	APF 3-C-DC
Input	Flange DN 100 PN 16
Outlet	Automatic multi-purpose nozzle MZA 4000
Equipment	-
Swivelling range	Horizontal $\pm 165^\circ$ (8°/s) Vertical: -55° to 70° (8°/s)
Flow rate	4000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	680 / 300 / 430 mm
Weight	approx. 27 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.:	313 930 35

Electrical data:	
Supply voltage:	24V DC
Protection class:	IP65
Horizontal:	55 W / 3.1 A transducer 4-20 mA
Vertical:	55 W / 3.1 A transducer 4-20 mA
Spray jet/full jet:	17 W / 2 A limit switch
Connection cable set:	2.5 m

- Roof monitor for vehicles
- Rotary/swivel movement through DC motors
- Protected gear units
- Automatic nozzle adaptation to operating pressure and quantity of extinguishing agent
- Change of jet shape during operation

APF 3-C-AC - MZ 3000



Type	APF 3-C-AC
Input	Flange DN 100 PN 16
Outlet	Multi-purpose nozzle MZ 3000
Equipment	Water pipe
Swivelling range	Horizontal $\pm 165^\circ$ (8°/s) Vertical: -75° to 90° (8°/s)
Flow rate	3000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	1060 / 520 / 590 mm
Weight	approx. 52 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.:	207 261 35

Electrical data:	
Supply voltage:	400 V / 50 Hz
Protection class:	IP66
Horizontal:	400 W / 1.6 A potentiometer 5 k Ω
Vertical:	400 W / 1.6 A potentiometer 5 k Ω
Spray jet/full jet:	24 V DC / 2 A limit switch
Connection cable:	2.5 m

- Monitor for industrial installations and thermal power plants
- Rotary/swivel movement via AC motors
- Protected gear units
- Change of jet shape during operation



Special customer requirements on request



Control systems available as an option (see page 66)





Up to 4,000 l/min
at 8 bar
max. 16 bar

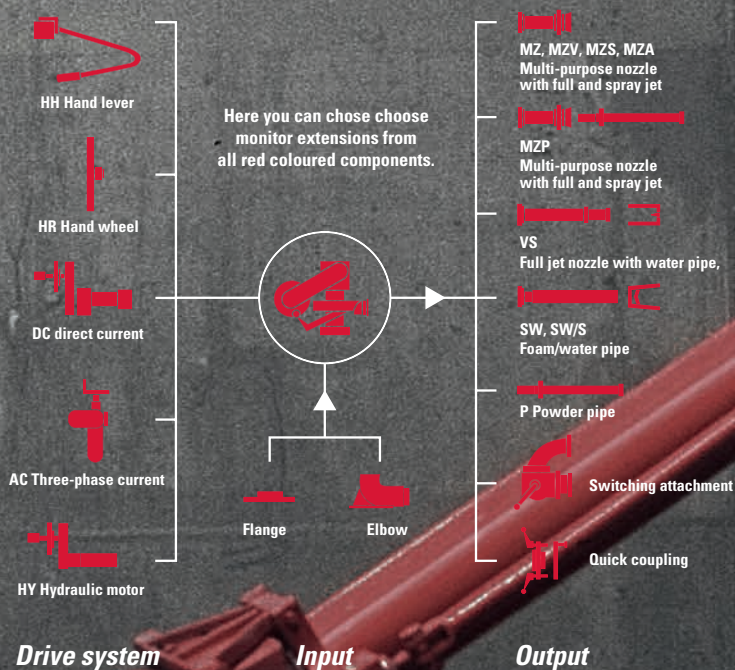


APF 3-U

3

The models of size APF 3-U are genuine all-rounders, both in regards to the operating options as well as the equipment with tubes/nozzles. These monitors excel in the especially low overall height of the basic unit relative to the water guide inner diameter and can be used as water, foam and powder monitor with a throughput capacity of up to 4,000 l/min at 8 bar (extinguishing powder 50 kg/s) depending on equipment. They are equipped with ball bearing mounted swivel joints that can be greased via lubricating nipples.

An integrated weight compensation provides effortless operation of the vertical swivelling movement on manually operated models. Electric models can be optionally equipped with continuously adjustable limit switches, potentiometers or position sensors. The standard vertical swivelling angle can be adapted to your actual requirements whilst maintaining the entire swivelling range.



APF 3-U-HR - SW 40



Special customer requirements on request

Type	APF 3-U-HR
Input	Flange DN 100 PN 16
Outlet	Foam pipe SW40
Equipment	Deflector with hand wheel
Swivelling range	Horizontal: 360° Vertical: -40° to 70°
Flow rate	4000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	1950 / 520 / 360 mm
Weight	approx. 45 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.:	313 931 34

- **Roof monitor for vehicles**
- **Monitor for industrial installations and thermal power plants**
- **Rotary/swivel movement by hand wheel**
- **Protected gear units**
- **Change of jet shape during operation**

APF 3-U-DC - SW 30/15

APF 3-U-DC - SW 30



Type	APF 3-U-DC
Input	Flange DN 100 PN 16
Outlet	Foam pipe SW30/15
Equipment	Electric deflector 2x halogen lights
Swivelling range	Horizontal: $\pm 165^\circ$ (10°/s) Vertical: -15° to 70° (6°/s) (without stop -40° to 70°)
Flow rate	3000 l/min at 10 bar elect. reduction to 1500 l/min
Maximum pressure	16 bar
Length / Width / Height	1800 / 570 / 420 mm
Weight	approx. 67 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.:	207 209 34

Electrical data:	
Supply voltage:	24V DC
Protection class:	IP65
Horizontal:	70 W / 4.3 A potentiometer 5 k Ω
Vertical:	180 W / 10.9 A potentiometer 5 k Ω
Flow rate adjustment	7 A potentiometer 5 k Ω
Deflector adjustment	7 A limit switch
Halogen lights	H3 - 24 V - 70 W
Connection cable	2.5 m

- Roof monitor for vehicles and airfield extinguishers
- Rotary/swivel movement via DC motors
- Protected gear units
- Change of jet shape/flow rate during operation



Type	APF 3-U-DC
Input	Flange DN 100 PN 16
Outlet	Foam pipe SW30
Equipment	Electric deflector
Swivelling range	Horizontal: $\pm 165^\circ$ (10°/s) Vertical: -15° to 70° (6°/s) (without stop -40° to 70°)
Flow rate	3,000 l/min at 10 bar
Maximum pressure	16 bar
Length / Width / Height	1,890 / 570 / 365 mm
Weight	approx. 65 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.:	207 379 34

Electrical data:	
Supply voltage:	24V DC
Protection class:	IP65
Horizontal:	70 W / 4.3 A transducer 4-20 mA
Vertical:	180 W / 10.9 A transducer 4-20 mA
Deflector adjustment	7 A limit switch
Connection cable	2.5 m

- Roof monitor for vehicles
- Rotary/swivel movement through DC motors
- Protected gear units
- Change of jet shape during operation

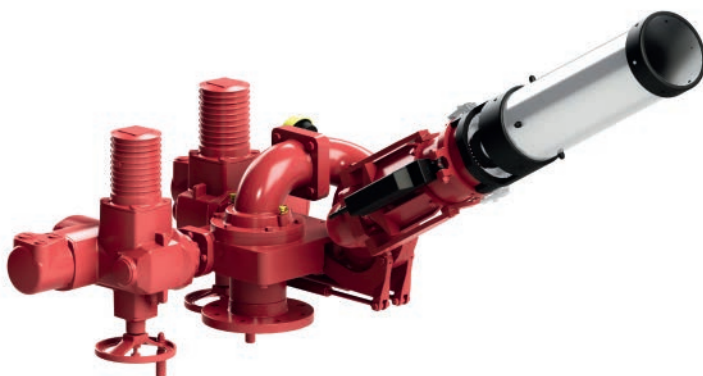


Special customer requirements on request



Control systems available as an option (see page 66)

APF 3-U-AC - MZV 4000



Special customer requirements on request



Control systems available as an option (see page 66)

Type	APF 3-U-AC
Input	Flange DN 100 PN 16
Outlet	Multi-purpose nozzle MZV 4000
Equipment	Detachable foam water attachment SWA
Swivelling range	Horizontal $\pm 165^\circ$ (10°/s) Vertical -40° to 70° (7°/s)
Flow rate	4000 l/min at 10 bar elect. reduction to 2000 l/min
Maximum pressure	16 bar
Length / Width / Height	1750 / 790 / 410 mm
Weight	approx. 82 kg
Paint finish	RAL 3000 - C4
AWG ID no.:	111 711 34

Electrical data:	
Supply voltage:	400 V / 50 Hz
Protection class:	IP 66
Horizontal:	400 W / 1.6 A limit switch
Vertical:	400 W / 1.6 A limit switch
Flow rate adjustment	24 V DC - 7A, potentiometer 5 k Ω
Spray jet/full jet	24 V DC / 2.2 A, limit switch
Connection cable	2.5 m

- **Monitor for ships**
- **Monitor for industrial installations and thermal power plants**
- **Rotary/swivel movement via AC motors**
- **Protected gear units**
- **Change of jet shape/flow rate during operation**



Up to 3,500 l/min at 8 bar
max. 16 bar

APF 3-UZ

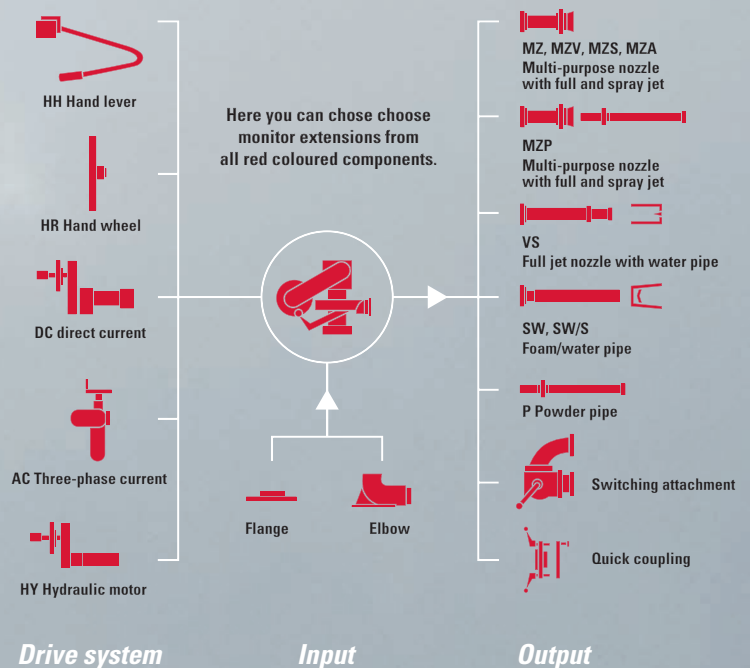
Size APF 3-UZ has the same technical characteristics as size APF 3-U. However, size APF 3-UZ models have a lead-through that is centrally run through the monitor. This reduces the flow capacity to max. 3,500 l/min at 8 bar. In case of non-centred lead-through, the suction line restricts the horizontal swivelling when working with self-priming foam pipes and MZ nozzles.

Size APF 3-UZ allows the suction line to be permanently laid on the stationary lower part of the monitor up to the foam agent inlet. The suction line is run from there through the pivot axle and ends with an outlet elbow at the swivelling upper part.

A short, flexible hose connects the admixing unit on the foam pipe or nozzle from here. The injector supply on the pipe or nozzle is done from there via a permanently connected hose line.

This connecting hose is part of the basic unit and pivots with rotating, lifting and lowering the monitor. Hence, the suction line between monitor and foam agent does not have to absorb any movements whilst the monitor is being used.

A central lead-through is also practical for nozzles with integrated powder pipe.



APF 3-UZ-HR - SW 30/S

APF 3-UZ-DC - SW 30/S



! *Special customer requirements on request*

Type	APF 3-UZ-HR
Inlet	Flange DN 100 PN 16
Outlet	Self-priming foam pipe SW30/S
Equipment	Deflector with hand wheel
Swivelling range	Horizontal: 360° Vertical: -40° to 70°
Flow rate	3000 l/min at 10 bar
Maximum pressure	16 bar
Length / Width / Height	2010 / 650 / 550 mm
Weight	approx. 47 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.:	313 932 34

- Roof monitor for vehicles
- Monitor for industrial installations
- Rotary/swivel movement by hand wheel
- Protected gear units
- Change of jet shape during operation
- Central lead-through for foam agents
- Foam agent admixture directly in the nozzle



! *Control systems for APF 3-UZ-DC are available as an option (see page 66)*

Type	APF 3-UZ-DC
Inlet	Flange DN 100 PN 16
Outlet	Self-priming foam pipe SW30/S
Equipment	Electric deflector
Swivelling range	Horizontal: $\pm 165^\circ$ (10°/s) Vertical: -15° to 65° (6°/s) (without stop -40° to 70°)
Flow rate	3000 l/min at 10 bar
Maximum pressure	16 bar
Length / Width / Height	1770 / 650 / 570 mm
Weight	approx. 68 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.:	313 933 34

Electrical data:	
Supply voltage:	24V DC
Protection class:	IP65
Horizontal:	70 W / 4.3 A transducer 4-20 mA
Vertical:	180 W / 10.9 A transducer 4-20 mA
Inductor adjustment	24 V / 1 A potentiometer 5 k Ω
Deflector adjustment	7 A limit switch
Connection cable	2.5 m

- Roof monitor for vehicles
- Rotary/swivel movement through DC motors
- Protected gear units
- Change of jet shape during operation
- Central lead-through for foam agents
- Foam agent admixture directly in the nozzle



Up to 6,000 l/min at 8 bar
max. 16 bar



APF 4-U

Size APF 4-U models are the continuation of the APF 3-U series and thus the all-rounder of size APF 4. This applies for the operation options, the pipe / nozzle equipment, as well as the specific applications. They can be used on vehicles or ships, as well as in industrial installations, even by remote control from control centres.

They excel in particularly low overall height of the basic unit relative to the water guide inner diameter and can be used as a water or foam monitor with a throughput capacity of up to 6,000 l/min at 8 bar depending on the equipment. They are equipped with ball bearing mounted swivel joints that can be greased via lubricating nipples.

An integrated weight compensation provides effortless operation of vertical swivelling movement on manually operated models. The electric models can be optionally equipped with continuously adjustable limit switches, potentiometers or position sensors. The standard vertical swivelling angle can be adapted to your actual requirements whilst maintaining the whole swivelling range.



HH Hand lever



HR Hand wheel



DC direct current



AC Three-phase current



HY Hydraulic motor

Drive system

Here you can choose choose
monitor extensions from
all red coloured components.



Flange



Elbow



MZ, MZV, MZS, MZA
Multi-purpose nozzle
with full and spray jet



MZP
Multi-purpose nozzle
with full and spray jet



VS
Full jet nozzle with water pipe



SW, SW/S
Foam/water pipe



P Powder pipe



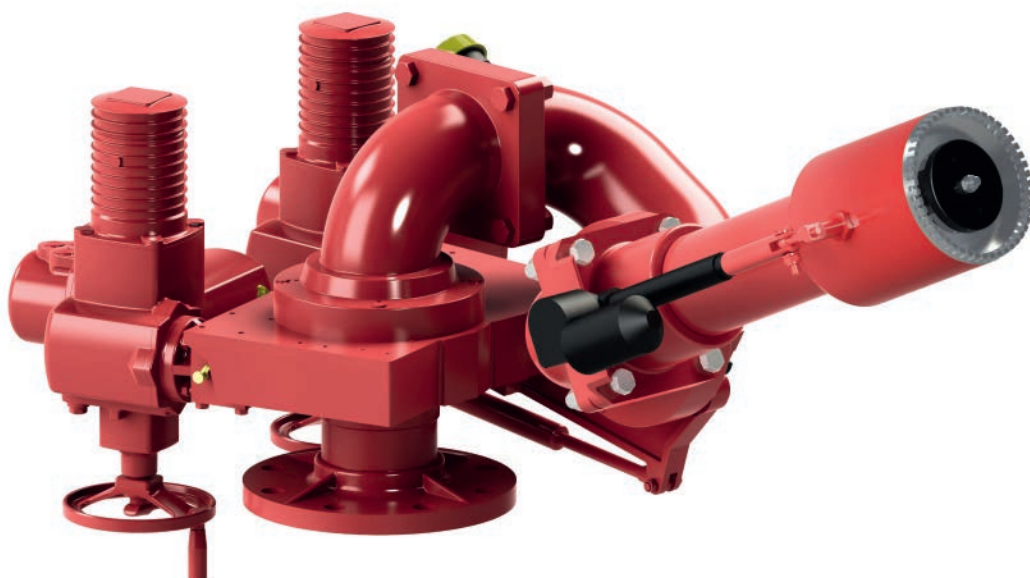
Switching attachment



Quick coupling

Output

APF 4-U-AC - MZ 6000



Special customer requirements on request



Control systems available as an option (see page 66)

Type	APF 4-U-AC
Inlet	Flange DN 150 PN 16
Outlet	Electric multi-purpose nozzle MZ 6000
Equipment	-
Swivelling range	Horizontal $\pm 165^\circ$ (11°/s) Vertical -40° to $+70^\circ$ (7°/s)
Flow rate	6000 l/min at 10 bar
Maximum pressure	16 bar
Length / Width / Height	1430 / 660 / 480 mm
Weight	approx. 85 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	313 934 34

Electrical data:

Operating voltage	400 V / 50 Hz
Protection class	IP 66
Horizontal	400 W / 1.6 A limit switch
Vertical	400 W / 1.6 A limit switch
Spray jet/full jet	24 V DC - 7 A, potentiometer 5 k Ω
Connection cable	2.5 m

- Monitor for industrial installations
- Rotary/swivel movement via AC motors
- Protected gear units
- Change of jet shape during operation



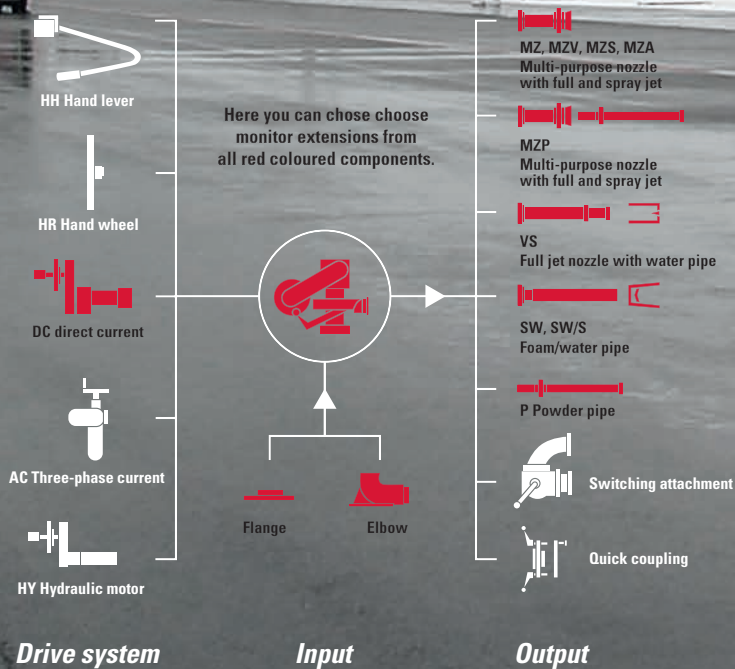
Up to 8,000 l/min at 8 bar
max. 16 bar



APF 5

Size APF 5 monitors were specially developed for use as roof monitors on vehicles. Some models can also be used on airfield extinguishers depending on pipe / nozzle equipment. The monitors are used as water or foam monitors with a throughput capacity of up to 8,000 l/min at 8 bar. Attention was paid to using permanently lubricated and particularly stable four point bearings for the swivel joints.

5



APF 5-DC - SW 60/30

APF 5-Z-DC - MZVP 5000



Type	APF 5-DC
Inlet	Flange DN 150 PN 16
Outlet	Foam pipe SW60/30
Equipment	Electric deflector, 2x halogen lights
Swivelling range	Horizontal $\pm 165^\circ$ (20°/s) Vertical -15° to $+90^\circ$ (10°/s)
Flow rate	6000 l/min at 10 bar electrically reducible to 3000 l/min
Maximum pressure	16 bar
Length / Width / Height	2070 / 850 / 410 mm
Weight	approx. 130 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	207 514 39

Electrical data:	
Operating voltage	24V DC
Protection class	IP65
Horizontal	180 W / 10.9 A transducer 4-20 mA
Vertical	180 W / 10.9 A transducer 4-20 mA
Flow rate adjustment	7A potentiometer 1 k Ω
Deflector adjustment	7A limit switch
Halogen lights	H3 - 24V - 70W
Connection cable:	2.5 m

- Roof monitor for vehicles
- Rotary/swivel movement through DC motors
- Protected gear units
- Change of jet shape/flow rate during operation



Type	APF 5-Z-DC
Inlet	DN 150
Outlet	MZVP 5000
Equipment	2x halogen lights
Swivelling range	Horizontal $\pm 165^\circ$ (20°/s) Vertical -15° to $+90^\circ$ (10°/s)
Flow rate	5000 l/min at 10 bar electrically reducible to 2500 l/min Powder throughput 9 kg/s
Maximum pressure	16 bar
Length / Width / Height	1330 / 760 / 490 mm
Weight	approx. 130 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	207 515 39

Electrical data:	
Operating voltage	24V DC
Protection class	IP65
Horizontal	180 W / 10.9 A transducer 4-20 mA
Vertical	180 W / 10.9 A transducer 4-20 mA
Flow rate adjustment	7 A potentiometer 1 k Ω
Spray jet/full jet	2.2 A limit switch
Halogen lights	H3 - 24 V - 70 W
Connection cable	2.5 m

- Roof monitor for airfield extinguishers
- Rotary/swivel movement through DC motors
- Protected gear units
- Change of jet shape/flow rate during operation
- Central lead-through for powder



Special customer requirements on request



Control systems available as an option (see page 66)

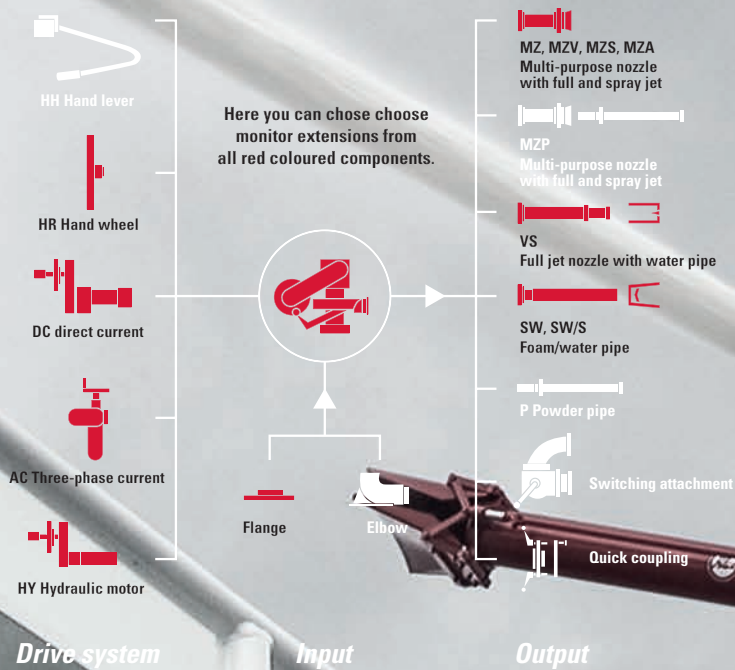


Up to 15,000 l/min at 8 bar
max. 16 bar

APF 6

Size APF 6 models can be used on vehicles and in industrial installations depending on material, operating mode and nozzle. The monitors can be used as a water or foam monitor having a throughput capacity of up to 15,000 l/min at 8 bar. Despite the variety, the essential properties remain the same for all models. For example, ball bearing mounted swivel joints are used exclusively. Worm gears, spindles and gear units are covered and thus impervious to dirt.

Moreover, the manually operated models contain integrated weight compensation that provides for effortless operation of vertical swivelling.



APF 6-U-HR - SW 100



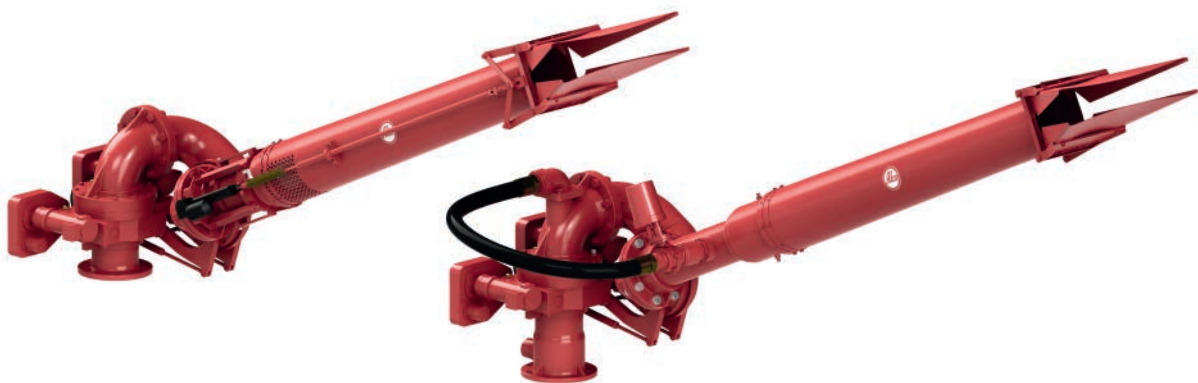
Special customer requirements on request

Type	APF 6-U-HR
Inlet	Flange DN 150 PN 16
Outlet	Foam pipe SW100
Equipment	Deflector with hand wheel
Swivelling range	Horizontal 360° Vertical -45° up to +75°
Flow rate	10000 l/min at 10 bar
Maximum pressure	16 bar
Length / Width / Height	3670 / 830 / 620 mm
Weight	approx. 145 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	313 917 34

- **Roof monitor for vehicles**
- **Monitor for industrial installations**
- **Rotary/swivel movement by hand wheel**
- **Protected gear units**
- **Change of jet shape during operation**

APF 6-U-DC - SW 100/50

APF 6-UZ-DC - SW 100/S



Type	APF 6-U-DC
Inlet	Flange DN 150 PN 16
Outlet	Adjustable foam pipe SW100/50
Equipment	Electric deflector
Swivelling range	Horizontal $\pm 165^\circ$ (10°/s) Vertical -45° to $+75^\circ$ (6°/s)
Flow rate	10000 l/min at 10 bar electrically reducible to 5000 l/min
Maximum pressure	16 bar
Length / Width / Height	3300 / 800 / 620 mm
Weight	approx. 190 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	111 295 34

Electrical data:	
Operating voltage	24 V DC
Protection class	IP65
Horizontal	180 W / 10.9 A potentiometer 5 k Ω
Vertical	180 W / 10.9 A potentiometer 5 k Ω
Flow rate adjustment	7 A potentiometer 5 k Ω
Deflector adjustment:	9.3 A limit switch
Connection cable	2.5 m

- Roof monitor for vehicles
- Rotary/swivel movement via DC motors
- Protected gear units
- Change of jet shape/flow rate during operation



Type	APF 6-UZ-DC
Inlet	Flange DN 150 PN 16
Outlet	Self-priming foam pipe SW100/S
Equipment	Electric deflector
Swivelling range	Horizontal $\pm 165^\circ$ (10°/s) Vertical -45° to $+75^\circ$ (6°/s)
Flow rate	10000 l/min at 10 bar
Maximum pressure	16 bar
Length / Width / Height	3620 / 1290 / 810 mm
Weight	approx. 190 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	111 646 34

Electrical data:	
Operating voltage	24V DC
Protection class	IP65
Horizontal	180 W / 10.9 A potentiometer 5 k Ω
Vertical:	180 W / 10.9 A potentiometer 5 k Ω
Inductor adjustment	38 W / 1.5 A limit switch
Deflector adjustment	9.3 A limit switch
Connection cable	2.5 m

- Roof monitor for vehicles
- Rotary/swivel movement through DC motors
- Protected gear units
- Change of jet shape during operation
- Central lead-through for foam agents
- Foam agent admixture directly in the nozzle



Special customer requirements on request



Control systems available as an option (see page 66)





Up to 20,000 l/min at 8 bar
max. 16 bar

APF 7

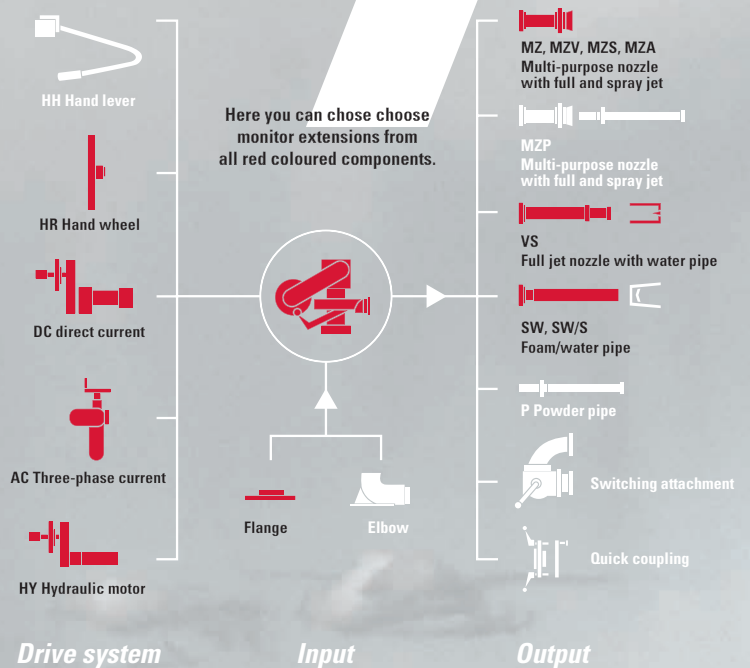
Size APF 7 monitors are specially designed for use on ships and in industrial installations, also in combination with remote control from monitoring centres.

Size APF 7 monitors can be used as a water or foam monitor with a throughput capacity up to 20,000 l/min at 8 bar.

All APF 7 swivel joints are equipped standard with permanently lubricated and particularly stable four point bearings. Unintentional horizontal and vertical swivel movements are prevented through encapsulated, self-locking worm gear units without the need for additional locking measures.

The monitors can optionally be equipped with potentiometers and electric position sensors. Swivelling angles can be factory adapted to your actual requirements while maintaining the maximum swivel range.

Size APF 7 models are suitable for use in connection with FiFi-1 systems.



APF 7-AC - MZ 20000 AF



Special customer requirements on request



Control systems available as an option (see page 66)

Type	APF 7-AC
Inlet	Flange DN 200 PN 16
Outlet	Automatic multi-purpose nozzle MZ 20000 AF
Equipment	In-line inductor
Swivelling range	Horizontal $\pm 170^\circ$ (7°/s) Vertical -60° to +90° (6°/s)
Flow rate	20,000 l/min at 12 bar
Maximum pressure	16 bar
Length / Width / Height	1840 / 1000 / 650 mm
Weight	approx. 250 kg
Paint finish	RAL 3000 - C4
AWG ID no.	313 971 39

Electrical data:	
Operating voltage	440 V / 60 Hz
Protection class	IP 66
Horizontal	400 W / 1.7 A limit switch
Vertical:	400 W / 1.7 A limit switch
Spray jet/full jet:	24 V DC - 9 A, limit switch
Connection cable:	2.5 m

- Monitor for ships
- Monitor for industrial installations
- Rotary/swivel movement via AC motors
- Protected gear units
- Change of jet shape during operation
- Suitable for FIFI 1 systems



Up to 40,000 l/min at 8 bar
max. 16 bar

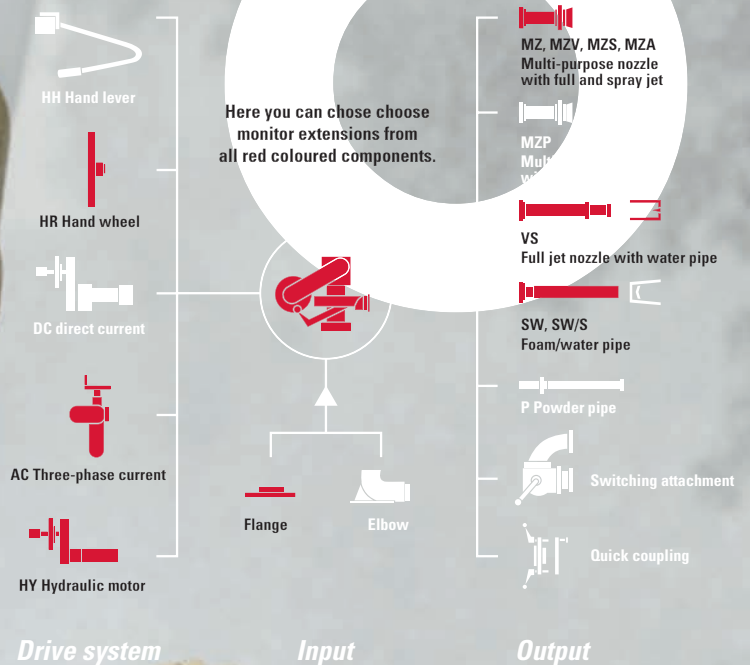
APF 8

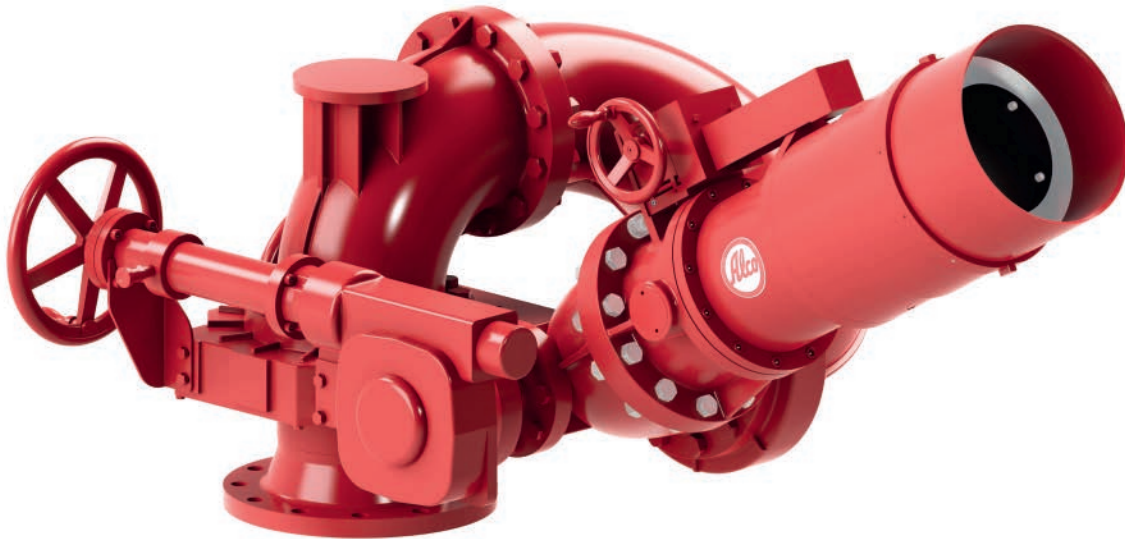
Size APF 8 monitors are specially designed for use on ships and in industrial installations, also combined with remote control from monitoring centres.

This size is mainly used in fighting tank fires. Size APF 8 monitors can be used as a water or foam monitor with a throughput capacity of up to 40,000 l/min at 8 bar.

All APF 8 swivel joints are equipped standard with permanently lubricated and particularly stable four point bearings. Unintentional horizontal and vertical swivel movements are prevented through encapsulated, self-locking worm gear units without the need for additional locking measures.

Size APF 8 models are suitable for use in connection with FiFi-2 systems.



APF 8-HR - MZV 30000

**Special customer
requirements on
request**

Type	APF 8-HR
Inlet	Flange DN 250 PN 16
Outlet	Adjustable multi-purpose nozzle MZV30000
Equipment	-
Swivelling range	Horizontal 360° Vertical -15° to 70° (released +30° to +70°)
Flow rate	8000 - 30000 l/min at 10 bar
Maximum pressure	16 bar
Length / Width / Height	2000 / 1200 / 720 mm
Weight	approx. 320 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	111 590 34

- Monitor for industrial installations
(Tank fire fighting)
- Rotary/swivel movement with hand wheel
- Protected gear units
- Change of jet shape/flow rate during operation
- Vertical limit for stability



Up to 60,000 l/min at 8 bar
max. 16 bar

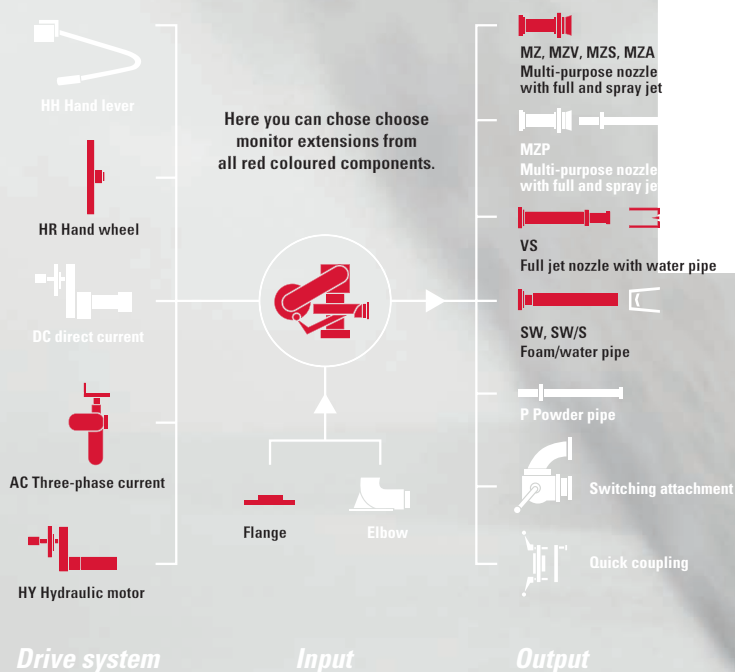
APF 12

Size APF 12 monitors are specially designed for use on ships and in industrial installations, also combined with remote control from monitoring centres.

This size is mainly used in fighting tank fires. Size APF 12 monitors can be used as a water or foam monitor with a throughput capacity of up to 60,000 l/min at 8 bar.

All APF 12 swivel joints are equipped standard with permanently lubricated and particularly stable four point bearings. Unintentional horizontal and vertical swivel movements are prevented through encapsulated, self-locking worm gear units without the need for additional locking measures.

The APF 12 size models are suitable for use in connection with FiFi-3 systems.



APF 12-HR - MZV 50000



Special customer requirements on request

Type	APF 12-HR
Inlet	Flange DN 300 PN 16
Outlet	Adjustable multi-purpose nozzle MZV50000
Equipment	-
Swivelling range	Horizontal 360° Vertical -15° to 70° (released +30° to +70°)
Flow rate	8000 - 50000 l/min at 10 bar
Maximum pressure	16 bar
Length / Width / Height	2800 / 1620 / 950 mm
Weight	approx. 400 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	121 181 34

- Monitor for industrial installations (Tank fire fighting)
- Rotary/swivel movement with hand wheel
- Protected gear units
- Change of jet shape/flow rate during operation
- Vertical limit for stability



TRAILER SYSTEMS/TRAILERS

Alco trailer systems with installed monitors, so-called trailers, are completely mobile fire-fighting units which provide a stable, transportable basis for deployments requiring large volumes of extinguishing agent. It is possible to use either water or a water-foaming agent mixture (AFFF, FFFP) with these trailers.

Equipped with four lowerable supports or, for larger units, a lowerable axle operated by a manual hydraulic pump, the vehicles can be lowered onto their spring-loaded outriggers with wear-resistant carbide tips. These ensure that the trailer stands securely on both hard and soft ground. By filling the amply dimensioned water guides additionally increases the stability for the trailer during operation. Depending on the design, the water guide is equipped with an automatic drainage valve or emptied via a manual water tap.

Our trailer systems are equipped standard with a 24 V lighting installation with 13-pole connector and connector holder, as well as with a number plate and light carrier rail. All Alco trailer systems will be subjected to TÜV acceptance in accordance with the German StVZO regulations authorising the use of vehicles for road traffic at any time.

All units are single axle trailers and have the following equipment characteristics:

- Galvanised steel frame
- Cross arms for fastening the water guide below the platform are welded to the steel frame
- Aluminium nipple plate on the platform
- Height-adjustable drawbar with trailer coupling ring (as per DIN), galvanised, with support wheel
- Breakaway cable, 2200 mm
- Service brake
- Parking brake



TRAILER SYSTEM 30



Suitable for APF 3-U
Up to 3,000 l/min
max. 16 bar



Design example

Type	APF 3-U-HH
Inlet	Collecting breeching with non-return valves two Storz 75 (B) adapters
Outlet top:	Switching attachment VS1
bottom:	Self-priming foam pipe SW 30/S with deflector Full jet nozzle 40 dia.
Equipment	Suction hose
Swivelling range	Horizontal 360° Vertical 30° - 75° (releasable lock)
Flow rate	3000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	3600 / 2000 / 1500 mm
permissible total weight	750 kg
Paint finish	RAL 3000 - C4

- Trailer for industrial installations
- APF 3-U with hand lever (HH)
- Flow up to 3,000 l/min
- Switching attachment
- Self-priming foam pipe with deflector and suction hose
- Full jet nozzle

TRAILER SYSTEM 60



Suitable for APF 4-U
Up to 6,000 l/min
max. 16 bar



Design example

Type	APF 4-U-HR
Inlet	2 collecting breechings 6 Storz 75 (B) adapters
Outlet	Self-priming adjustable foam pipe SW 60/30/S with deflector MZV 6000
Equipment	Storz fixed coupling with locking for quick pipe change, suction hose
Swivelling range	Horizontal 360° Vertical 30° - 75° (releasable lock)
Flow rate	Up to 6000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	3600 / 2000 / 1300 mm
permissible total weight	1200 kg
Paint finish	RAL 3000 - C4

- Trailer for industrial installations
- APF 4-U with hand wheel (HR)
- Flow up to 6,000 l/min
- Self-priming foam pipe with power reductions, deflector and suction hose
- Adjustable jet/spray nozzle



We gladly offer you other models/designs of the **trailer systems 30 and 60** on request.

Any Alco monitor can be installed on a trailer. You can configure your monitor to your individual requirements using the **monitor configurator on page 8-9**.

TRAILER SYSTEM 150



Suitable for APF 6-U
Up to 15.000 l/min
max. 16 bar



Design example

Type	APF 6-U-HR
Inlet	1 adapter Multilug 12" with butterfly valve
Outlet	MZV 16000
Equipment	-
Swivelling range	Horizontal 360° Vertical 30° - 75° (releasable lock)
Flow rate	Up to 15000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	3600 / 2000 / 1550 mm
permissible total weight	1400 kg
Paint finish	RAL 3000 - C4

- Trailer for industrial installations
- APF 6-U with hand wheel (HR)
- Flow up to 15,000 l/min
- Nozzle support for safe transport
- Adjustable jet/spray nozzle

TRAILER SYSTEM 180



Suitable for APF 7
Up to 18.000 l/min
max. 16 bar



Design example

Type	APF 7-HR
Inlet	4 Storz 150 adapters (3 lugs) with butterfly valves
Outlet	MZV 18000
Equipment	Foam attachment for MZV 18000 for use of protein and multi-application foam
Swivelling range	Horizontal 360° Vertical 30° - 75° (releasable lock)
Flow rate	Up to 18000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	4680 / 2200 / 2100 mm
permissible total weight	1600 kg
Paint finish	RAL 3000 - C4

- Trailer for industrial installations
- APF 7 with hand wheel (HR)
- Flow up to 18,000 l/min
- Removable foam attachment for MZV 18000 for use in protein and multi-application foam
- Adjustable jet/spray nozzle



We gladly offer you other models/designs of the **trailer systems 150, 180, 300 and 500** on request.

Any Alco monitor can be installed on a trailer. You can configure your monitor to your individual requirements using the **monitor configurator on page 8-9**.

TRAILER SYSTEM 300



Suitable for APF 8
Up to 30.000 l/min
max. 16 bar



Design example

Type	APF 8-HR
Inlet	4 Storz 150 adapters (3 lugs) with butterfly valves
Outlet	MZV 30000 MZVP 30000
Equipment	Pressure foam inductors for the operation of a foam agent pump
Swivelling range	Horizontal 360° Vertical 30° - 75° (releasable lock)
Flow rate	Up to 30000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	5860 / 2480 / 1850 mm
permissible total weight	2500 kg
Paint finish	RAL 1018 - C4

- Trailer for industrial installations
- APF 8 with hand wheel (HR)
- Suction foam inductors
- Flow up to 30,000 l/min
- Stability through lowerable axle (manual hydraulic pump) and spring-loaded outriggers
- Adjustable jet/spray nozzle
- Adjustable jet/spray nozzle with internally positioned powder pipe

TRAILER SYSTEM 500



Suitable for APF 12
Up to 50.000 l/min
max. 16 bar



Design example

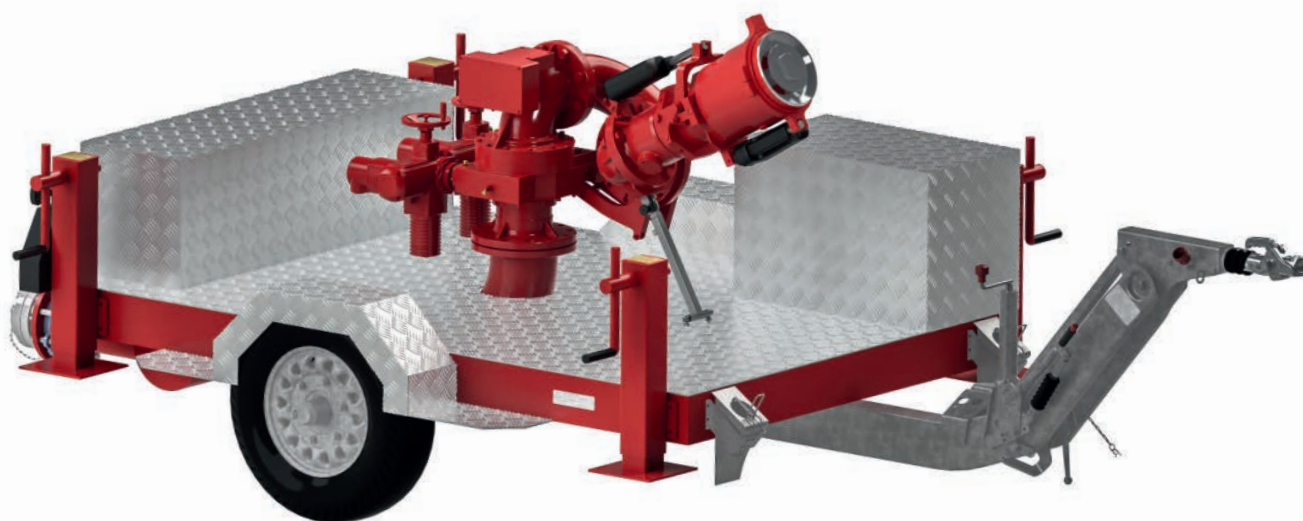
Type	APF 12-HR
Inlet	4 adapter Multilug 10° with butterfly valves DN 250
Outlet	MZV 50000
Equipment	Foam attachment for MZV 50000 for use in protein and multi-application foam
Swivelling range	Horizontal 360° Vertical 30° - 75° (releasable lock)
Flow rate	Up to 50000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	6240 / 2430 / 2230 mm
permissible total weight	3500 kg
Paint finish	RAL 3000 - C4

- Trailer for industrial installations
- APF 12 with hand wheel (HR)
- Pressure foam inductors for operation with a foam agent pump
- Flow up to 50,000 l/min
- Stability through lowerable axle (manual hydraulic pump) and spring-loaded outriggers
- Adjustable jet/spray nozzle
- Removable foam water attachment for MZV 50000 for use in protein and multi-application foam

TRAILER SYSTEM 150 WITH ELECTRIC MONITOR AND RADIO REMOTE CONTROL



Suitable for APF 6-U
Up to 15.000 l/min
max. 16 bar



Design example



We gladly offer you other models/designs of the **trailer systems 150** on request.

Any Alco monitor can be installed on a trailer. You can configure your monitor to your individual requirements using the **monitor configurator on page 8-9**.

Type	APF 6-UZ-AC
Inlet	4 Storz 150 adapters (3 lugs) with butterfly valves
Outlet	MZV 20000
Equipment	Power unit with accessories Radio remote control
Swivelling range	Horizontal $\pm 1165^\circ$ Vertical $30^\circ - 75^\circ$ (releasable lock)
Flow rate	Up to 15000 l/min at 8 bar
Maximum pressure	16 bar
Length / Width / Height	4640 / 2200 / 1630 mm
permissible total weight	1500 kg
Paint finish	RAL 3000 - C4

- Trailer for industrial installations
- APF 6-UZ electrically radio remote controlled
- Flow up to 15,000 l/min
- Nozzle support for safe transport
- Electrically adjustable jet/spray nozzle



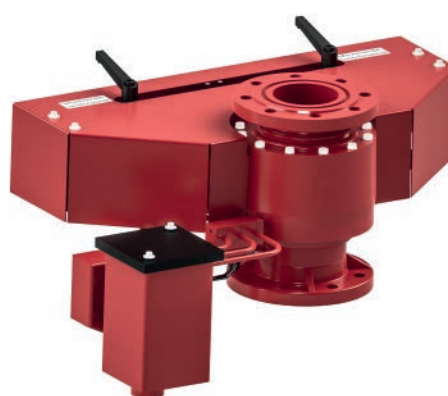


ACCESSORIES

A fire hose nozzle, mounted on a metal scaffold, is spraying a powerful jet of water against a dark, textured wall. The nozzle is red and the water is white and foamy. The background is a dark, mottled grey wall. In the foreground, there are several diagonal white and red stripes.

FIRE & RESCUE

OSCILLATING UNITS



Monitors with an oscillating unit are designed to make the attached monitor oscillate horizontally. For this purpose, the monitor is mounted onto the oscillating unit. It can be operated with both water and a mixture of water and foaming agent.

During operation a small portion of the extinguishing water flow is drawn off and redirected through a turbine in the oscillating unit, which drives a hydraulic pump. This supplies a working cylinder using a closed oil circuit, which in turn sets the oscillating unit in motion. The durable, closed system prevents the control valve from seizing up by dirt, frost and corrosion. The direction of motion is reversed by a pilot-controlled 4/2-directional valve.

The lines for supplying the water to the turbine and leading it off again are fixed piping. The water supply line from the extinguishing water flow has a dirt filter which can be flushed and an additional ball valve with an open inlet (G3/8) to which a supply line can be connected. This means that it is also possible to check the oscillating unit without the monitor running.

The swivel range of the oscillating unit can be continuously adjusted within the range of $\pm 90^\circ$. The swivel speed can be reduced to a complete stop by means of a 3-way ball valve in the oil circuit. To guarantee maximum work safety, all moving parts in the oscillating unit are covered by a hood.

Type	Oscillating unit DN 80
Inlet	Flange DN 80 PN 16
Outlet	Flange DN 80 PN 16
Swivel range	Minimal 10° Maximum $\pm 90^\circ$ Continuously adjustable swivel angle via clamping lever
Speeds	Minimum 4.5°/s Maximum 20°/s
Flow rate	3200 l/min
Water consumption	approx. 65 l/min at 8 bar
Required operating pressure	> 4 bar
Maximum pressure	16 bar
Length / Width / Height	820 / 300 / 250 mm
Weight	approx. 23 kg
Paint finish	RAL 3000 - C2
AWG ID no.	105 258 34

Type	Oscillating unit DN 100
Inlet	Flange DN 100 PN 16
Outlet	Flange DN 100 PN 16
Swivel range	Minimal 10° Maximum $\pm 90^\circ$ Continuously adjustable swivel angle via clamping lever
Speeds	Minimum 4.5°/s Maximum 20°/s
Flow rate	6000 l/min
Water consumption	approx. 65 l/min at 8 bar
Required operating pressure	> 4 bar
Maximum pressure	16 bar
Length / Width / Height	820 / 470 / 300 mm
Weight	approx. 60 kg
Paint finish	RAL 3000 - C2
AWG ID no.	105 261 34



INDUCTORS

During deployment it is often necessary for the foam agent to be admixed with the extinguishing water. Depending on the admixing rate, either the surface tension of the water is changed (wetting agent) or foam is produced for smothering or cooling liquid-based fires.

The wide variety of foam agents requires fittings for helping admix these foaming agents with the

extinguishing water in preset dosages and with sufficient accuracy.

Admixing rates for the generation of foam are generally 3 % and 6 %. An admixing rate of 1 % is used in order to reduce water surface tension and wet the object on fire more effectively with the extinguishing agent.

PRESSURE FOAM INDUCTORS

Fire-fighting facilities used in industry often have the foam supplied through pressure lines due to the size of the plants involved. The pressure in the foam lines is maintained by foam pumps.

Pressure foam inductors



The **pressure foam inductor** is used to admix the pressurised foam agent in a pressurised water line. It has a mechanism which allows foam agent and/ or water pressure to be supplied at a constant rate, as long as there is a minimum pressure difference of 2 bar between the foaming agent line and the water line. It is also possible to switch between several different admixing rates during operation.

The admixing regulator supplies the same amount of foam agent to the water at all times at practically any pressure level, even when the pressure fluctuates. If more water is supplied when the pressure is higher, which is the case with most foam generators, the resultant foam-to-water mix is 'leaner'. Conversely, if the amount of water drops in response to lower pressure, the mix is 'richer'. The admixing rate only remains constant if the flow rate also does not change when the foam is being generated. Where there is a strong increase in pressure with a low flow rate, a gradual shut-off valve should be used to maintain the nominal flow rate.

Bypass inductor



Nominal width	1"	
Nominal pressure	PN16	
Materials	Bronze BzN7	
Admixing rate	3 %	
Designation* / AWG ID no.	ZR 16 > 1600 l/min ZR 22 > 2200 l/min ZR 25 > 2500 l/min ZR 28 > 2800 l/min ZR 30 > 3000 l/min ZR 32 > 3200 l/min	011 747 94 011 811 94 011 651 94 011 652 94 011 858 94 013 794 94

* The admixing regulator designation depends on the flow rate of the connected foam generator

SUCTION FOAM INDUCTORS

Suction foam inductors function similar to water jet pumps. Depending on the type installation in the overall system, they are referred to as **inline inductors** or **bypass inductors**.

In **bypass admixing**, only a portion of the flow of the extinguishing water is used for drawing up the foam agent. Downstream of the pump (at the discharge port), a partial-flow to draw up the foam agent is taken from the pressurised water flow. The foam agent-water mixture is then fed back into the main flow on the pump suction side. This installation of a bypass inductor as pump pre-mixer is also called **'Around the Pump' (RP)**.

Type	RP100	RP200
Water inlet	G 1 1/2" A	G 2" A
Foam inlet	G 1 1/2" A	G 1 1/2" A
Mixture inlet	G 1 1/2" A	G 2" A
Volume drawn up	100 l/min	200 l/min
Maximum pressure	16 bar	16 bar
Length / Width / Height mm	275 / 130 / 240	320 / 130 / 240
Weight	approx. 6.6 kg	approx. 9.5 kg
Paint finish	RAL 3000 - C4	RAL 3000 - C4
AWG ID no.	312 041 95	205 753 95

Type	RP400	RP600
Water inlet	Flange DN 65 PN 16	Flange DN 80 PN 16
Foam inlet	Flange DN 65 PN 16	Flange DN 80 PN 16
Mixture inlet	Flange DN 65 PN 16	Flange DN 80 PN 16
Volume drawn up	400 l/min	600 l/min
Maximum pressure	16 bar	16 bar
Length / Width / Height mm	395 / 210 / 480	455 / 220 / 550
Weight	approx. 15 kg	approx. 20 kg
Paint finish	RAL 3000 - C4	RAL 3000 - C4
AWG ID no.	205 808 95	205 742 95



PNEUMATIC EXTENSIONS



Pneumatic extensions are installed into fire-fighting vehicles in order to lift monitors from a low standby position to a raised work position. Thus, the vehicle overall height can be kept low with the monitor retracted. The vertical monitor swivel range will extend considerably at the raised work position and the operator's work



position is optimised. The extension consists of a telescopic tube extension and two pneumatic cylinders arranged to the left and right sides. These cylinders are supplied with compressed air between 5 bar and 8 bar. Delay elements dampen the extension and retraction movement



Further lifting heights on request.

We also offer pneumatic extensions in combination with a 5/2-directional solenoid valve, electromagnetically operated on both sides, with manual override, for direct current 24 V

Type	Pneumatic extension DN 80
Inlet	Flange Hole circle 165 mm dia. Holes 6 x 8.5 mm dia.
Outlet	Flange DN 100 PN 16
Lifting height	550 mm
Lifting speed	approx. 25 s at 6 bar air pressure 2 air connections 1/4" required control pressure 5-8 bar
Max. flow rate	4000 l/min
Maximum pressure	16 bar
Length / Width / Height	820 / 340 / 1000 mm
Weight	approx. 44 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	121 190 34

- Anti-rotation device when extended
- Limit switches in the end positions of the working cylinders
- Automatically latching lock prevents the extension from lowering if the compressed air fails
- Releases automatically on retraction

Type	Pneumatic extension DN 150
Inlet	Flange DN 150 PN 16
Outlet	Flange DN 150 PN 16
Lifting height	450 mm
Lifting speed	approx. 22 s at 6 bar air pressure 2 air connections 1/4" required control pressure 5-8 bar
Max. flow rate	8000 l/min
Maximum pressure	16 bar
Length / Width / Height	450 / 340 / 860 mm
Weight	approx. 66 kg
Paint finish	RAL 3000 - C2/C3
AWG ID no.	121 146 34

- Anti-rotation device when extended
- Limit switches in the end positions of the working cylinders
- Automatically latching lock prevents the extension from lowering if the compressed air fails
- Releases automatically on retraction



FOLDING JOINTS



Other designs on request.

Folding joints are designed to fold down monitors from the fire-fighting position to an idle position to enable them to be transported or stored away. Although they are used primarily on vehicles, they are also used in industrial facilities such as waste incineration plants.

Used on vehicles they allow monitors to be permanently installed without increasing the overall height of the vehicle. When swung out during assignments, the raised position of the monitor provides a much greater vertical swivel range downwards while also making it possible to operate effortlessly. The joint is secured, with positive locking and vibration resistance, by a spring-loaded lock in both the set up position and the folded down position.

Folding joints are used in industrial facilities for moving monitors from their working positions to an idle position. This is particularly important in incineration plants, because monitors are then protected from the grippers on the waste crane, from projecting objects and also from heavy pollution. Depending on monitor weight or application, the folding motion takes place either manually or using motor power.

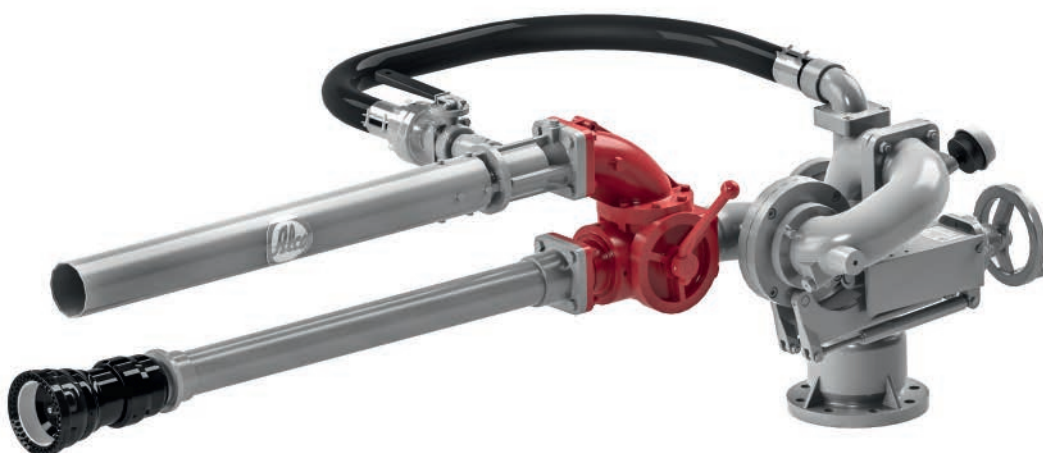
Type	Folding joint DN 80
Inlet	Flange DN 80 PN 16
Outlet	Flange DN 80 PN 16
Flow rate	3200 l/min
Maximum pressure	16 bar
Length / Width / Height upright	200 / 330 / 790 mm
folded down	685 / 330 / 300 mm
Weight	approx. 23 kg
Paint finish	RAL 3000 - C2
AWG ID no.	105 220 34

SWITCHING ATTACHMENTS



Switching attachments are three-way ball valves which are attached to the outlet flange of a monitor to allow two different branch pipes (foam pipe / water pipe) to be fitted to it. This means that when different extinguishing agents are being used it is always possible to select the branch pipe which is most suitable for the specific extinguishing agent or job at hand. Due to the eccentrically acting repulsive force of the upper branch pipe, it is always advisable to install the branch pipe with the lower capacity in the upper position.

Type	Switching attachment VS1
Inlet	Flange VK 110
Outlet 1	Flange VK 110
Outlet 2	Flange VK 110
Max. flow rate	3000 l/min
Maximum pressure	16 bar
Length / Width / Height	250 / 280 / 350 mm
Weight	approx. 8.5 kg
Paint finish	RAL 3000 - C2
AWG ID no.	210 064 34



Example of installation



JET/SPRAY NOZZLE (MZ NOZZLES)



MZ nozzles (multi-purpose nozzles) are equipped with a baffle which deflects the flow of extinguishing agent at the nozzle outlet so that it comes out through a ring-shaped slit. The resultant full jet is then deflected again at the so-called jet forming sleeve to be bundled into a compact jet. It has a shorter range than a full jet. However, by pulling back the jet forming sleeve it is possible to continuously adjust the opening angle of the jet up to a conical spray. A spray jet of this kind can absorb large amounts of energy and heat radiation. Moreover, the fine drops which make up the spray are also ideally suited for washing noxious substances out of the air.

MZ nozzles create up to triple expansion of type AFFF foam agents without any additional auxiliaries.

MZ nozzles with foam attachment can be deployed with all types of foam agents and provide foaming results which are comparable to those achieved with low expansion foam pipes.

The following versions are available:

- **MZ** Manual change between full and spray jet
- **MZV** Manual change between full and spray jet and manual change of the flow rate according to the preset pattern
- **MZV-el** Manual change between full and spray jet and change of the flow rate according to the preset pattern possible electrically
- **MZS** Manual change between full jet and spray jet and integrated self priming for foam agents
- **MZP** Manual change between full and spray jet with integrated powder nozzle
- **MZA** Automatic nozzle adaptation to operating pressure and quantity of extinguishing agent, manual change between full jet and spray jet

FOAM ATTACHMENTS

Jet/spray nozzles (MZ nozzles) can be used to produce foam in connection with foam attachments and using conventional foam agents. Foaming with MZ nozzles and foam attachments can be compared with foaming using low expansion foam pipes.

MZ nozzles and foam attachments are adjusted to each other at the factory. Foam attachments for other MZ nozzles on request

SWA	suitable for	AWG ID no.
SWA 2000-3000	MZ 2000, MZV 2000, MZV 2400, MZV 3000	206 335 40
SWA 4000	MZ 4000, MZV 4000, MZA 4000	206 679 40
SWA 6000	MZ 6000	206 506 45

MZ nozzles: Continuous change of jet shape possible

MZ nozzle¹	<i>Capacity in l/min</i>	<i>Inlet</i>	<i>AWG ID no.</i>
MZ 1600	500-1600	G 2 1/2" A	303 179 40
MZ 2000	800-3000	G 2 1/2" A	300 101 40
MZ 4000	3000-5000	G 2 1/2" A	110 794 34
MZ 6000	5000-8000	VK 180	105 285 34
MZ 10000	8000-12000	Flange DN 150 PN 16	110 285 34
MZ 20000	15000-20000	Flange DN 150 PN 16	206 646 35

Adjustable MZ nozzle
Change of jet shape and change of flow rate possible according to the preset pattern or continuously.

MZV nozzle	<i>Capacity in l/min</i>	<i>Inlet</i>	<i>AWG ID no.</i>
MZV 1200	600 / 800 / 1200	G 2 1/2" A	206 989 40
MZV 2000	600-2000 (increments of 200)	G 2 1/2" A	300 351 40
MZV 2400	200-2400 (increments of 200)	G 2 1/2" A	312 508 40
MZV 3000	200-3000 (increments of 200)	G 2 1/2" A	300 111 40
MZV 4000	1000/2000/3000/4000	G 2 1/2" A	111 291 40
MZV 6000 ²	800-6000	VK 180	111 596 34
MZV 8000	4000/8000	Flange DN 150 PN 16	207 195 34
MZV 9000	4000 / 6000 / 9000	Flange DN 150 PN 16	206 134 34
MZV 10000	6000 / 8000 / 10000	Flange DN 150 PN 16	206 305 34
MZV 16000 ²	6000-16000	Flange DN 150 PN 16	120 738 34
MZV 30000 ²	8000-30000	Flange DN 200 PN 16	121 003 34
MZV 40000	12500/18750/24000/30000/37500	Flange DN 300 PN 16	120 646 34
MZV 50000 ²	15000-50000	Flange DN 300 PN 16	121 180 34



Other nozzles on request.

Electrically adjustable MZ nozzles

Electric MZV nozzle^{3,4}	<i>Capacity in l/min</i>	<i>Inlet</i>	<i>AWG ID no.</i>
MZV 2000/1000-el	1000/2000	VK 110	814 704 38
MZV 3000/1500-el	1500/3000	VK 110	111 637 34
MZV 4000-el	1000/2000/3000/4000	VK 110	121 051 34
MZV 6000/3000-el	3000/6000	VK 180	120 740 34
MZV 8000/2000-el	2000/8000	VK 180	121 043 34

MZ nozzles with integrated self priming for foam agents

MZS nozzle ¹	<i>Capacity in l/min</i>	<i>Inlet</i>	<i>AWG ID no.</i>
MZS 2000	800-3000	VK 110	111 490 34
MZS 6000	5000-8000	VK 180	120 994 34

¹ The MZ nozzle is factory set for fixed flow

Electric MZ nozzles with integrated powder nozzle

MZP nozzle^{3,4}	<i>Capacity in l/min</i>	<i>(kg/s)</i>	<i>Inlet</i>	<i>AWG ID no.</i>
MZP 1000	1000	5.5	VK 110	111 265 34
MZP 2200	2200	10	VK 110	111 585 34
MZP 5000/2500	2500/5000	9	VK 180	111 257 34
MZP 5000/2500	2500/5000	15	VK 180	111 730 34
MZP 8000/2000	2000/8000	9	Flange DN 150 PN 16	121 182 34

² The change of flow rates can be continuously carried out between the limits stated

³ Using a potentiometer, the change of flow rates on electric MZV nozzles can be carried out continuously between the stated limits

MZ nozzles with automatic adaptation to operating pressure and quantity of extinguishing agent

MZA nozzle	<i>Capacity in l/min</i>	<i>Inlet</i>	<i>AWG ID no.</i>
MZA 1500	up to 1500; optimal gap adaptation to flow rate	G 2"	201 855 35
MZA 4000	up to 4000; optimal gap adaptation to flow rate	G 2 1/2" A	110 699 34

⁴ Using limit switches, two flow rates can be fixed within the two limits stated



FOAM BRANCH PIPES



Foam branch pipes (SW) consist of a nozzle with attached throw pipe. Air is being drawn up from the environment due to the aerosol effect. Foam will then develop when this air is mixed with the extinguishing agent in the throw pipe. Expansion ratios of the foam up to 15 are reached depending on the foam agent. Reach of the jet is a bit shorter than with a full jet or MZ nozzle. Foam pipes can also be exclusively operated with water which would extend the throw distance.

Self-priming foam branch pipes (SW/S) are a combination of inductor and foam producer. Admixing rates of max. 6 % can be set via a control device on the inductor.

Switchable foam branch pipes (e.g. SW 30/15) allow adjustment of their flow. In the process, the size of the nozzle opening is changed by a switch-over mechanism. Switch-over can be performed both manually and using an electric drive.

All foam pipes can also be equipped with **deflectors**. These shape the jet into a wide, horizontal fan that allows coverage of large areas.

The foam branch pipe is factory set to a fixed flow and adapted customer-specific.

Foam branch pipes

	Capacity in l/min	Inlet
SW 10	800-1200	VK 110
SW 16	1200-1800	VK 110
SW 20	1800-3000	VK 110
SW 30	3000 - 4000	VK 110
SW 50	4000 - 6000	VK 180
SW 60	6000 - 10000	VK 180
SW 100	10000 - 12000	Flange DN 150 PN 16
SW 200	> 12000	Flange DN 150 PN 16

Further variants with deflector, self priming or flow rate adjustment on request.

Electrically switchable foam branch pipes

	Capacity in l/min	Inlet
SW 30/15-el	1000 - 4000	VK 110
SW 60/30-el	2000 - 8000	VK 180
SW 100/50-el	4000 - 12000	Flange DN 150 PN 16

Using potentiometers, the change of flow rates can be made continuously between the stated limits.

Using limit switches, two flow rates can be preset within the two limits stated.



POWDER PIPES



Extinguishing powder has a wide range of applications and can enhance their effect, in combination with other extinguishing agents. Hence, powder pipes are not only built as independent units, but also combined with other nozzles on the monitor or integrated into foam pipe or jet/spray nozzles. The latter provides the option of directing a combined powder-fluid jet at the fire source.

In order to select the appropriate powder pipe for your application we require the desired powder throughput in kg/s.

FULL JET NOZZLES



Full jet nozzles with conical starting section and cylindrical end piece produce a compact jet with long throwing range and high penetration capacity. They are particularly suited for concentrating large volumes of water onto a small area over long distances. Full jet nozzles are unsuitable for use with foam agents.

Full jet nozzles with jet interrupters

Full jet nozzles can be additionally equipped with a jet sprayer (jet interrupter) which rips up the jet. On the one hand, this reduces the throwing range, but at the same time the surface of the water jet increases and thus its heat absorption capacity and shielding effect against heat radiation.

If you decide for a full jet nozzle, simply inform us about your parameters (pressure and flow rate) and we select the nozzle suitable for your application.



CONTROLS UNITS

Remote control of monitors offers many advantages in fire-fighting. Among others, it enables the operator a safe position outside of the danger zone or to choose a position with optimal overview.

The type of control depends on the kind of deployment. For **stationary deployments** we offer control units from the **AlcoTronic** series.

For **mobile deployments** we developed the control system **AlcoMobil**.



ALCOTRONIC – CONTROL UNITS FOR STATIONARY USE.

AlcoTronicR

The AlcoTronicR control is a cost-efficient solution for less complex application fields. This individually designed relay control is suitable for sending simple commands (horizontal / vertical swivel, change of jet shape) to one monitor from a max. of two operator's units.

- **Use in stationary installations with 230 V/400 V AC (other electrical power systems possible)**
- **Use in mobile installations with 24 V DC**
- **Interface to monitor the installation status on the external control**
- **Control of further functions via floating contacts**
- **Operation via control console, corded hand console or radio console possible**
- **Maximum two control sections possible**

AlcoTronicH

The AlcoTronicH standard control is especially adapted to the requirements **on heliports**. This allows control of up to three fire fighting monitors as well as their shut-off devices. The simple and intuitive operation is performed via corded hand or radio consoles.

- **Use in stationary installations with 400 V DC (other electrical power systems possible)**
- **Interfaces to control / transfer to external controls**
- **Automatic operation**
- **Operation via control console, corded hand console or radio console possible**
- **Several control-sections possible**

AlcoTronicS

The AlcoTronicS control system is suitable to operate one or several fire fighting monitors in **industrial plants, refineries, offshore installations, waste incineration plants or tank farms**. The name of AlcoTronicS means using proven and reliable PLC components. Operation in manual mode is performed via control consoles, corded hand consoles or radio consoles.

The AlcoTronicS control concept is possible for automatic operation, in this case the fire alarm system or thermal imaging camera deliver the corresponding control commands. Positioning of the monitors can be identified via a display installed in the switch cabinet. All functions can be individually controlled and give optical feedback.

The AlcoTronicS control system is available for all prevailing local electrical power systems, also as an explosion-proof version. There are suitable interfaces for communication with fire alarm systems or system controls in industrial installations.

- **Use in stationary installations with 400 V DC (other electrical power systems possible)**
- **Ex-proof design possible**
- **Interfaces to control / transfer to external controls**
- **Display to represent the monitor position**
- **Automatic operation**
- **Operation via control console, corded hand console or radio console possible**
- **Several control-sections possible**

ALCOMOBIL – CONTROLS FOR MOBILE USE



ALCOMobilC – Controller MC210



Alco built-in display TC210 ALCO-mobilC



Alco cable console KP297 (for ALCO-mobilC)



Alco radio console

AlcoMobilL

AlcoMobilL is the solution of a cost-efficient, simple and space-saving monitor control without radio control and special functions. It covers standard functions, such as horizontal / vertical swivel as well as change of jet shape.

- Use in installations with 24 V DC
- Interfaces for control
- Operation via corded hand console

AlcoMobilS

The AlcoMobilS control system is suitable for use on ships, in vehicles or portable systems. Proven and reliable PLC components with the appropriate approvals assume the control tasks.

- Use in installations with 24 V DC
- Ex-proof design possible
- Interfaces to control / transfer to external controls
- Operation via control console, corded hand console or radio console possible
- Several control-sections possible

AlcoMobilC

The AlcoMobilC CAN bus control system offers a full scope of functions with compact design and low cabling effort. This makes it the first choice in the vehicle sector. The operation is done using displays installed in the vehicle featuring particularly user-friendly, self-explanatory symbols in combination with a joystick. The AlcoMobilC control system can alternatively be operated via cable or radio console.

- Use in installations with 24 V DC
- Interfaces to control / transfer to external controls
- Operation via built-in console, corded hand console or radio console possible
- Several control-sections possible
- CE and e1 certified



**AWG Fittings GmbH**Bergstraße 25
D-89177 Ballendorf**Fax +49 (0) 7340/91 88 98-699**

REQUEST MONITOR

You need one or several monitors or technical consult? Use this questionnaire and a technician will contact you immediately.

Area of application☐ **Vehicle**☐ **Industry**☐ **Ship**☐ **Transportable****Flow rate**☐ **Water**

Flow rate _____ l/min

Working pressure (water/foam) _____ bar

☐ **Foam**

Type (AFFF, Protein etc.) _____

☐ **Powder**

Output rate powder _____ kg/s

Working pressure (powder) _____ bar

Outlet☐ **VS Full jet nozzle**☐ **MZ Multi-purpose nozzle**☐ adjustable☐ automatic☐ **SW Foam branch pipe**☐ adjustable☐ **P Powder pipe****Inlet**☐ **Flange** _____☐ **Adapter** _____☐ **Elbow** _____☐ **Others** _____*(please indicate size and type)***Actuator**☐ **Manual**☐ Hand lever☐ Hand wheel☐ **Electrical** _____

Voltage

☐ **Ex-Zone** (explosion protection) _____☐ **Hydraulic****Material**☐ **Aluminium**☐ **Copper alloy****Lacquer coating**☐ **C2**☐ **C4**☐ Colour RAL _____**Notes**

Sender/Stamp



AWG Fittings GmbH
Bergstraße 25
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REQUEST CONTROL UNIT

You need a control unit for your monitor or technical consult? Use this questionnaire and a technician will contact you immediately.

Area of application

- ☐ **Vehicle** ☐ **Ship** ☐ **Aviation** (Helidecks, Hangars)
☐ **Industry** ☐ Petrochemical industry ☐ Recycling industry

Voltage supply _____ V_{DC} _____ V_{AC} Power supply frequency _____ Hz

Location for installation of control cabinet

- ☐ **In the vehicle** ☐ Roof monitor ☐ Front monitor ☐ Others

- ☐ **Outdoor** ☐ **Indoor**

- ☐ **Ex-Zone** ☐ Zone 1 ☐ Zone 2 requested ex-proof protection _____

Regulations and specifications relating to the design of the control cabinet

Operating panel industry & ship

- ☐ **Outdoor** ☐ **Indoor**
☐ **Ex-Zone** ☐ Zone 1 ☐ Zone 2 requested ex-proof protection _____

Operating panel vehicle

- ☐ **Permanently installed** ____ ☐ **Radio controlled** _____ *(please indicate quantity)*
☐ **Portable with cable** ☐ **CAN** _____ Length cable _____ m ☐ **Connection plug** _____
☐ **Connection to vehicle control system**

Operation/ambient temperature min/max _____ °C

Description of ambient conditions

Number and description of components to be controlled (monitors, shut-off units etc.)

Description of functions to be controlled

Control type

- ☐ **Relais** ☐ **PLC** ☐ **CAN**

Notes

Sender/Stamp

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FIRE & RESCUE



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For an overview please visit our websites at

www.awg-fittings.com

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assets need tools to rely on. Lots of them decide to take
tools made by AWG, Alco or LANCIER.*

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