VARIO CARBON

1.76 KG* 2.81

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THE ULTRALIGHT WAY OF FIREFIGHTING

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VERSATILE – LIGHT – POWERFUL

The VARIO Carbon is a portable high-performance firefighting system that can be used in multiple areas.

FIRST ATTACK

When a fire breaks out, you can be on-site in no time with the VARIO Carbon – fast and mobile. The perfect system to contain and put out incipient fires.

AFTER FIRES

When the flames are under control and only glow nests are left, you can prevent smoke and reignition of the fire with the spray function. The large-surface water mist soaks and cools down the burning material.

CARFIRES

When a carfire happens you can begin fighting the fire right away! You can start extinguishing with the **VARIO Carbon** before the big fire trucks are even ready.

With the high amount of extinguishing agent the carfire can often be put out before any big vehicle even arrives at the scene.





THE ULTRALIGHT WAY OF FIREFIGHTING

EXTREMELY MOBILE - IN EVERY SITUATION

- · only 20 kg (VARIO 9) when filled
- · better movement for the carrier
- · with optional backpack for even higher mobility

LIGHT BODY, HIGH PERFORMANCE

- · constant working pressure of 38 bar (!)
- · throwing distances of up to 21 m
- · stainless CFRP vessel for maximum lifespan

FLEXIBLE, VERSATILE, EFFECTIVE

- \cdot variable uses with the three modes: HiPRESS, HiCAFS and Spray
- · steplessly controllable jet
- · available as a 9-litre or 13-litre device



PERFECT FOAM FOR EVERY SITUATION

HiPRESS - fluid heavy foam

The powerful jet of the HiPRESS mode has a very high pressure and thereby an enormous throwing range. The rather fluid foam enters the surfaces and gaps of the burning material and soaks it, thereby reducing the surface tension to a minimum.

HiCAFS - dry adhesive foam

The HiCAFS mode creates a dry adhesive foam by enriching the foam with compressed air. The foam adheres to walls and even ceilings very well. The HiCAFS foam separates the burning material from oxygen and thereby prevents smoke and reignition.

SPRAY - area effect

By turning the swivel gun's head you switch to spray mode. The spray mode covers a larger area, consumes less extinguishing agent and is ideal for preventive soaking and for extinguishing small after fires and glow nests.





CARRY HANDLE

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Hinged

COMPRESSED AIR BOTTLE 2 litres, 300 bar; CFRP **CARBON VESSEL**

Extinguishing medium tank made of carbon fiber reinforced polymer. Enhanced lifetime and safety; lower weight compared to aluminium or steel vessels

BOTTLE HOLDER

Optionally available with a second bottle holder; e.g. for attaching a compressed air breathing bottle MODE SWITCH Rotary switch on the backside, for fast changing between HiPRESS and HiCAFS mode

SWIVEL GUN For switching between normal jet mode and spray mode quickly with just a turn of the swivel head

CARBON VESSEL

Pressure vessels made of CFRP (carbon fiber reinforced polymer) are much lighter than metal vessels – while offering the same amount of pressure resistance!

Our firefighting systems show high performance at a small weight. In spite of its 13 litres of volume the VARIO 13 Carbon weighs only 25 kg when filled and ready to use! With 20 kg the VARIO 9 Carbon is even lighter than that!

Besides their high stability carbon vessels – unlike traditional materials – also have the advantage of resisting corrosion!

Pressure Vessels made of CFRP are

- · unbeatably lightweight
- · easy to process
- · extremely elastic
- more durable
- corrosion resistant



First Prototype of the VARIO 9 Carbon (2015)



Final Version of the VARIO 13 Carbon (2019)

TECHNICAL SPECIFICATIONS

TECHNICAL SPECS	VARIO 9 Carbon	VARIO 13 Carbon
Filling Volume	9 Litres	13 Litres
Propellant	Air, 300 bar/ 2 l	Air, 300 bar/ 2 l
Working Pressure	38 bar, constantly	38 bar, constantly
Throwing Range (water)	up to 21 m	up to 21 m
Duration HiPRESS	app. 18 s / Spray : 46 s	app. 26 s / Spray : 66 s
Duration HiCAFS	app. 30 s / Spray : 56 s	app. 42 s / Spray : 80 s
Flow Rate HiPRESS	app. 30 l/min	app. 30 l/min
Flow Rate HiCAFS	app. 18 l/min	app. 18 l/min
Performance	55 A + 13 A; 233 B; 25 F**	2 x 55A; IV B; 25 F**
Range of Temperature*	-25°C to 60°C	-25°C to 60°C
Distance to Electricity	min. 2 m / max. 1000 V	min. 2 m / max. 1000 V
Weight (empty) ***	app. 10,8 kg	app. 12,5 kg
Weight (filled)***	app. 19,8 kg	app. 25,5 kg
Height	670 mm	670 mm
Diameter	180 mm	210 mm
Certification	SQ 62/17	SQ 289/16
* with frost-proof foam agent	*** incl. s	swivel gun, compressed air



VARIO 13 Carbon full setup with backpack and swivel gun

bottle and handle; no backpack







** Class F only with pure water in spray-mode!

TECHNOLOGIE AG





INTEGRATED Modular, Variable Fire Protection System

MOTORIZED Water, Foam and CAFS Units





HiGUARD SERIES For Police & Task Forces

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FIREFIGHTING SYSTEM FOR POLICE



The HiGUARD is a portable firefighting system based on permanent pressure technology. It is designed for police and task forces.

MOLOTOV COCKTAILS

When demonstrations and protests turn into riots and molotov cocktails are thrown at policemen, the **HiGUARD** is powerful enough to extinguish burning people in a matter of seconds. Thanks to its low weight, a user remains mobile while being on duty.

PYROTECHNICS

Bengal flares and other pyrotechnics are a permanent threat in sports stadiums and at festivals. The optional pyro nozzle makes the **HiGUARD** the perfect device for putting out flares with a single well-aimed shot. One filling of the **HiGUARD 2** should suffice to extinguish twelve bengal flares without refilling!

SMALL FIRES

When there is a small fire, a user can start fighting it right away! Larger systems need a while to be set up, while the **HiGUARD** works straightaway after you grab it.



THE ULTRALIGHT WAY OF FIREFIGHTING

EXTREMELY MOBILE - IN ANY SITUATION

- · only 10 kg (HiGUARD 4) when filled
- · high agility for the user
- with backpack for maximum mobility

LIGHT VESSEL, HIGH PERFORMANCE

- · 38 bar working pressure
- throw range of up to 13,5 metres
- · stainless CFRP vessel for maximum stability

ENORMOUS VERSATILITY

- · ideal for police or special forces
- · exchange nozzles that give more options
- · available as HiGUARD 2, HiGUARD 4 or HiGUARD 6







The **HiGUARD 2** has a filling volume of two litres and weighs only 6 kg!

This compact model of the **HiGUARD** series is an extremely powerful system for fighting pyrotechnics.

With such a low weight, police keep their mobility and still can extinguish twelve flares with one filling!

You can refill the device in a few minutes and continue fighting the fire!





The **HiGUARD 6** has a filling volume of six litres and weighs only 12 kg!

The higher volume and slightly longer throwing range make it more fit for fighting small fires and burning caused by molotov cocktails!

One filling is more than enough to extinguish a person on fire.

Just like the **HiGUARD 2** it can easily be refilled on site!

The third available model is the **HiGUARD 4** which uses the same vessel as the **HiGUARD 6**. With a filling volume of four litres the weight of the **HiGUARD 4** goes down to only 10 kg!

EXCHANGE NOZZLES

The HiGUARD system is equipped with our most recent technology.

The multifunctional pistol has a quick exchange nozzle system, which allows you to exchange the nozzles in mere seconds.

Besides the standard jet nozzle, there is an optional pyro nozzle designed for fighting pyrotechnics such as bengal flares. With a nozzle extension it is even easier to put out flares on the ground.

Charging the **HiGUARD** with compressed air works via the pistol! To reload the device you just attach the compressed air bottle to the coupling of the pistol via the refill adapter.



CARBON VESSELS

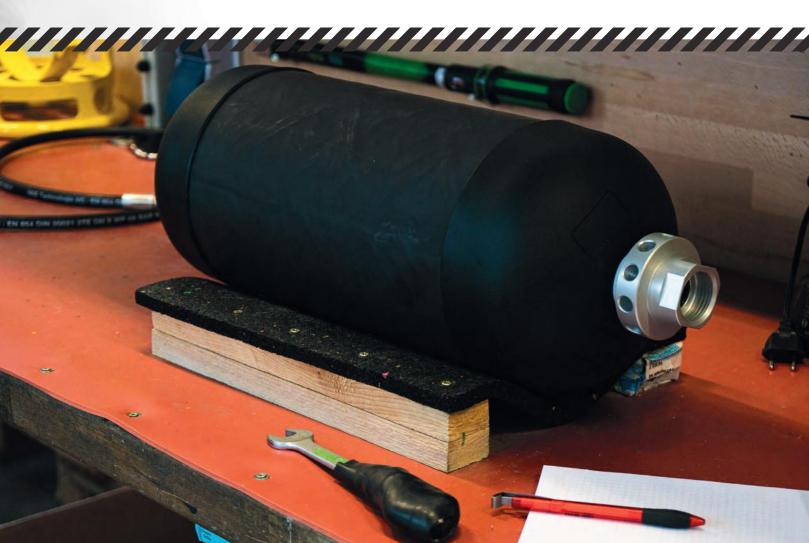
Vessels made of CFRP (carbon fibre reinforced polymer) are way lighter than metal ones, but they are resistant to the same amount of pressure!

Therefore, **HiGUARD** systems bring high-performance while being ultralight. Our **HiGUARD 6** has a volume of six litres, but weighs only 12 kg when filled! The **HiGUARD 2** only 6 kg!

Apart from high stability, the carbon vessels have further advantages: being corrosion-free and having near unlimited lifespan!

Pressure Vessels made of CFRP

- · ultralight and high-pressure resistant
- · extremely elastic
- more safety reserves
- · near unlimited lifespan, corrosion-free



TECHNICAL SPECIFICATIONS

TECHNICAL SPECS	HiGUARD 2	HiGUARD 4	HiGUARD 6
Vessel Volume	3 litres	9 litres	9 litres
Filling Volume	2 litres	4 litres	6 litres
Propellant	compressed air	compressed air	compressed air
Working Pressure	38 bar	38 bar	38 bar
Throwing Range (water)	app 12,5 m	app. 13,5 m	app. 13,5 m
Performance Rating	in progress	in progress	in progress
Range of Temperature*	-25°C to 60°C	-25°C to 60°C	-25°C to 60°C
Weight (empty)	app. 3,8 kg	app. 6 kg	app. 6 kg
Weight (filled)	app. 5,8 kg	app. 10 kg	app. 12 kg
Height	470 mm	670 mm	670 mm
Diameter	120 mm	180 mm	180 mm
Certification	in progress	in progress	in progress

* with frost-proof foam agent











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MOTORIZED FIREFIGHTING

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MOTORIZED TOP PERFORMANCE

Full speed ahead with motorized power! The Mobile Foam Unit for installation on vehicles

The HNE Mobile Foam Unit **MFU 50-150** is fast and powerful. It's just a matter of minutes until this motorized firefighting system is on-site ready to put out big fires.

When installed on a van or a pickup truck, the **MFU 50-150** can be on the spot faster than bigger, less flexible fire trucks. Also, it offers the extinguishing power of a bigger fire engine!

Since the system can be configured to fit the users' needs, it can also be installed on even smaller vehicles or be used stationary if needed.



MOTORIZED FIREFIGHTING UNIT

WATER OR FOAM

- · fast switching between water and foam mode
- · variable foam admixture
- · adding up to 6% foam

ENORMOUS PERFORMANCE

- · 50 bar working pressure enables up to 35 m in water mode
- · flow rate of up to 130 l/min
- · in foam mode up to 480 l/min

OPERABLE BY A SINGLE PERSON

- · straightforward layout of the control panel
- · variable foam admixture steplessly adjustable with a single knob
- · auto wind hose reel

WIDE FIELD OF APPLICATION

- · ideal for installation on pickup trucks or similar small vehicles
- \cdot with a weight of app. 240 kg it fits many means of transport
- · very flexible due to various tank sizes





JET – high-pressure jet

The powerful jet enables an enormous throwing range – up to 35 metres! The high-pressure jet gets through every flame wall and allows the extinguishing agent to enter surfaces and gaps of the burning material and soaks it to lower the temperature and put out the fire.

SPRAY – area effect

By turning the jet gun's head, you switch to spray mode. The spray mode covers a larger area, consumes less extinguishing agent and is ideal for preventive soaking and for extinguishing small after fires and glow nests.

FOAM - dry adhesive foam

The foam mode creates a thick layer of foam by adding more air to the extinguishing mix. This high-volume foam can cover large areas with a foam blanket and thereby prevent smoke generation and reignition of the fire.



Control Panel with Simple Layout





APPLICATIONS

Thanks to its variability in construction and size the **MFU 50–150** offers a wide field of application.



A compact version for water tenders. Hose reel is not attached to the main module.

Here: with connection to the main water tank of the vehicle.

Installation on the cargo space of a light commercial vehicle. Version with an attached tank (here: 500 litres)





Version for decontamination purposes. On a decon vehicle with larger hose reel (100m) directly under the main module. Here: with connection to the main water tank of the vehicle.

CONFIGURATIONS

ALL-IN-ONE TRANSPORT FRAME

The MFU can be delivered in combination with a 500-litre water tank on a sturdy universal mounting frame.

- · fits light vehicles, boats, trucks, etc.
- · quickly movable with a forklift
- · customizable to fit your specific needs

OPTIONAL ACCESSORIES

- · hose reel up to 100 m length
- · remote control
- · monitor for installation on vehicle roof
- · available in different colours
- customization for aviation, naval or military purposes
- adapter for suction from an external water source (i.e. lakes, rivers, etc.)

HIGH-PRESSURE GUN

Switchable between jet mode and spray mode

With the attachable foam adapter (see picture below) you can create big foam blankets in a very short period of time.

WATER TANKS

- · different sizes and shapes
- · custom size upon request
- · optional connector kit
- built onto mounting frame with the MFU or directly onto the vehicle



TECHNICAL SPECIFICATIONS

TECHNICAL SPECS	MFU 50-150
Throwing Range	up to 32 m
Spray Range	up to 10 m
Flow Rate (Water)	40–130 l/min
Max. Performance (Pump)	150 l/min at 50 bar
Foam Admixture	up to 6%
Fuel Engine	2-cylinders / 4-stroke, 627 ccm
Engine Performance	23 PS (hp) at 3600 rpm
Gas Tank Volume	7,5
Foam Tank Volume	25 I
Max. Suction Height	app. 2,5 m
Range of Temperature	5°C to 50°C
Weight (empty)	app. 240 kg
Height	68 cm
Width	120 cm
Length	103 cm
Hose Length	30 m



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MOTORIZED Water, Foam and CAFS Units





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HEARTH MARKET MARK MARK Barracuda

HIGH-PERFORMANCE CAFS SYSTEM



Highest mobility at maximum power! The fastest way to reach the fire and act without any loss of time.

INSTALLATION ON SMALL VEHICLES

The compact, self-sufficient Mobile Foam Unit **MFU Barracuda** (combined with a water tank) is installed onto small, agile vehicles such as: Quads, ATVs, ultralight transporters or trailers.

The unit is started in seconds and can generate up to 12 litres of foam out of one litre of water.

With a high flow rate and high pressure jet you can stay at a safe distance from the fire. The 30 m hose on the built-in reel gives you an extra high radius of action.

The compact HNE **MFU Barracuda** is based on a patented high-pressure mixing technology and can create either wet spray foam or dry adhesive CAFS foam.



MFU Barracuda (2018 Version) on a pickup truck

MOTORIZED CAF-SYSTEM

WATER OR FOAM

- · fast switching between water and foam mode
- · variable foam admixture
- water-to-foam ratio of up to 1:12

ENORMOUS PERFORMANCE

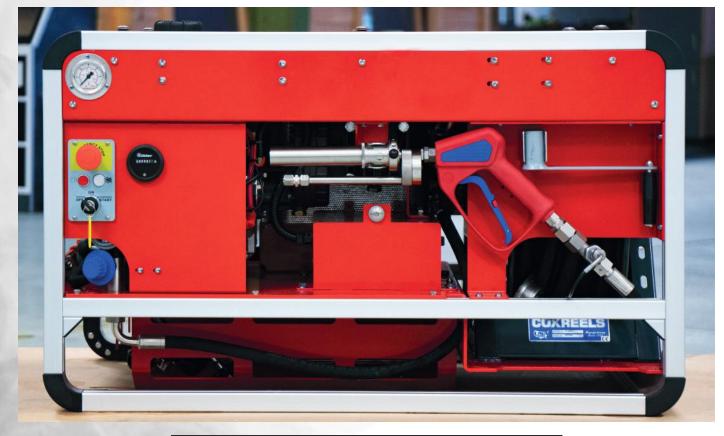
- · 40 bar working pressure enables up to 19 m of throwing distance in water mode
- · in CAFS foam mode up to 300 litres per minute
- · in water mode up to 50 litres per minute

OPERABLE BY A SINGLE PERSON

- · straightforward layout of the controls
- · CAFS function can be activated with a single touch
- \cdot no tools required to refill and maintain the system

WIDE FIELD OF APPLICATION

- · space-saving with compact dimensions even for small vehicles
- · low weight (ca. 120 kg) doesn't require additional upweighting
- · various sizes of water tanks make it highly flexible



MFU Barracuda (2020 Version)

PERFECT MODE FOR EVERY SITUATION

WATER - powerful water jet

The powerful jet in water mode has a very high pressure and thereby an enormous throwing range. The powerful water jet enters the surfaces and gaps of the burning material and soaks it, thereby reducing the temperature extremely efficiently.

HiCAFS - dry adhesive foam

The HiCAFS mode creates a dry adhesive foam by enriching the foam with compressed air. The foam adheres to walls and even ceilings very well. The HiCAFS foam separates the burning material from oxygen and thereby prevents smoke and reignition.

SPRAY - area effect

By turning the swivel gun's head you switch to spray mode. The spray mode covers a larger area, consumes less extinguishing agent and is ideal for preventive soaking and for extinguishing small after fires and glow nests.







APPLICATIONS

The compact design and low weight of the MFU Barracuda offer a whole range of applications.



Installation on water tender, as a space-saving CAFS device. The MFU Barracuda doesn't require an external generator.



Installation on an amphibious vehicle for heavy terrain such as forests, mud flats, swamps or coastal areas. Here: construction with 210 litres tank



Installation on a small trailer with a built-in tank. Compatible with a quad or similarly small vehicles.

CONFIGURATIONS

ALL-IN-ONE TRANSPORT FRAME	WATER TANKS
The MFU can be delivered in combina- tion with a 210-litres water tank on a sturdy universal mounting frame. • fits almost any vehicle • quickly moveable with a forklift • customer sizes upon request	 various sizes and shapes custom sizes upon request optionally with connection kit built onto a mounting frame with the MFU or directly onto the vehicle
SWIVEL GUN	COMPRESSED AIR BOTTLES
Additional spray mode with area effect.	Bottles made of steel or CFRP.
Ideal for • preventive wetting • fighting small flames • preventing smoke • extinguishing glow nests	Optimal size is 6.8 litres/300 bar, valves with standard thread (G 5/8"). Other connectors available upon request.



TECHNICHAL SPECIFICATIONS

TECHNICHAL SPECS	MFU Barracuda		
Hose Length	30 m (optional 60 m)	The MFU Barracuda	
CAFS Propellant	Air, 300 bar/ 6.8 l	can be combined with different tank	
Max. Performance (Pump)	50 l/min at 40 bar	sizes.	
Throwing Range (water)	up to 19 m	With a tank volume of 200 litres of water,	
Throwing Range (CAFS)	up to 15 m	you can achieve a maximum of 2400	
Max. Suction Height	app. 2 m	litres of foam (wa- ter-to-foam ratio of	
Flow Rate (water)	app. 48 l/min	1:12).	
Flow Rate (CAFS)	up to 300 l/min (CAFS foam)		
Foam Tank Volume	10 I		
Range of Temperature*	-25°C to 60°C	If you only use the CAFS mode, the	
Water-to-Foam Ratio	up to 1:12	compressed air bott- les are sufficient for	
Starter	Electrical and Starter Rope	a tank size of 210 litres.	
Weight (empty)	app. 110 kg	After they are empty you can still use the	
Engine	4-stroke engine	water mode and foam mode (no CAFS	
Starter Battery	12 V (maintenance-free)	foam).	
Gas Tank Volume	4.1		
Length/Width/Height	980/565/590 mm		

* with frost-proof foam agent







Class F only with pure water in spray mode!

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MODULAR FIRE PROTECTION

MAXIMUM FLEXIBILITY FOR ANY FIELD OF USE

The Vario Protection System (VPS) is a modular firefighting system for various fields of use – customisable for your specific needs!

The **VPS** consists of various modules, such as vessels for the extinguishing agent, air pressure cylinders, triggering sensors and extinguishing nozzels. These can be selected individually, depending on the field of use, so, your **VPS** is perfectly customised to your needs and potential fire sources.

The **VPS** is useful in different fields and can be installed in various types of buildings, machines and vehicles.

Some examples of industries and sectors where it can be used

ENGINE TEST STANDS	CONSTRUCTION	WORKSHOPS
AUTOMOBILES	FREIGHT TRAFFIC	AVIATION



CUSTOMISABLE SYSTEM

VARIABLE - FOR EVERY FIELD OF USE

- · freely customisable for various applications
- \cdot can be installed in vehicles, production halls, workshops, etc.
- · depending on configuration, the number of nozzles, the extinguis-

hing agent and the number of tanks can be varied

COMPACT AND POWERFUL

- · fits small spaces due to its compact design
- · up to 40 bar working pressure
- well-fit for areas that are difficult to access or for unattended technical systems of all kinds

EASILY REFILLABLE AND ECONOMICAL

- · containers are refillable without special tools
- · ideal for regular system tests
- high economical value thanks to long lifetime and easy maintenance

INDIVIDUAL POWER SUPPLY

- internal or external
- · 12V or 24V
- can be supplied with thermomechanical trigger instead of an electronic one





THE IDEAL SYSTEM FOR EVERY SITUATION

Overview of options and variants

POWER SUPPLY

- · internal/external
- · autarkic, redundant
- · 12V or 24V
- · automatic charging

EXTINGUISHING AGENT TANK

- 9 to 100 litres
- · aluminium, coated
- · steel, coated
- · CFRP, ultralight

EXTINGUISHING AGENT

- water
- \cdot foam
- · metal extinguishing agent
- · other chemicals

JET TYPE

- \cdot focused
- spray
- \cdot sprinkler
- \cdot mixed forms

TRIGGERING

- · sensors (smoke/gas/etc.)
- manual triggering
- remote control

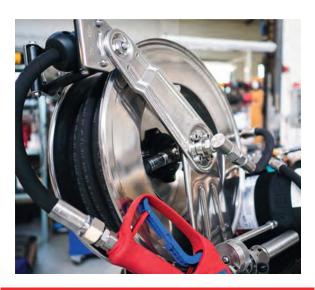
PROPELLANT

- \cdot compressed air
- \cdot 300 bar bottles
- · external supply

WORKING PRESSURE

- \cdot 22 bar (usually)
- \cdot 8 to 40 bar (variable)





Optionally the VPS can be equipped with a hose reel and jet gun, enabling manual use.

HEAVY INDUSTRY

When working with metals, ordinary water-based extinguishing agents cannot be used.

In those cases the **VPS** can be filled with our water-free extinguishing agent **Cold Metal**.

This special liquid has enormous cooling qualities and stops combustion by extracting the heat. In addition, it reliably prevents reignition and extinguishes surrounding fires.

Therefore the **VPS** is well fit for use in the metal processing industry.

MILITARY VEHICLES

To keep mobility and functionality up, especially the compartment and the tires need effective protection from fire. The increasing heat of the vehicle shell after impact of incendiary material poses another lethal threat to occupants and danger to technology.

The modular **VPS** consists of separate pressure lines connected to different areas of the vehicle. You can activate them by the push of a button: single ones, groups or all of them.

Automatic triggering by sensors is also possible. The high capacity of the extinguishing agent tanks allows for multiple or long-time activation.

- · active fire protection for the whole vehicle body
- high capacity for multiple activation
- · individually selectable nozzle groups
- \cdot simple installation and retrofitting
- redundant power supply
- · quick and cheap refilling

POWER PLANTS

Fires in solar and wind plants are best fought at key positions in the moment of breakout. Since staff cannot watch all danger zones, an automated extinguishing system is the best solution.

The **VPS** can secure danger zones reliably with low expense and little operational cost.

All the system's parameters such as extinguishing agent, capacity, sensor technology and triggering are designed especially for the customer's needs at the place of installation.

After the first installation the system can always be adjusted, extended or enhanced.

AVIATION & SEAFARING

Engine rooms of ships and airplanes are often regarded as sources of danger because of overheating or technical malfunctions.

The **VPS** can also be installed in those small spaces and be triggered at the ignition of a fire by smoke or fire sensors and stop the flames before they can spread.

Moreover the nozzles can be triggered and activated separately. Thereby you can only extinguish selected areas and prevent sensitive technical parts from being covered by foam unnecessarily.

TECHNICAL SPECIFICATIONS

Compressed Air, 300 bar

9 to 100 litres

8 to 40 bar

TECHNICAL DETAILS VPS

Filling Volume

Propellant

ropoliant

Working Pressure

Range of Temperature -25°C to 60°C

Distance to Electricity min. 2 m / max. 1000 V

Since the **VPS** offers varying fields of use and configurations, most of the technical specifications are adjustable, too.



Optional VPS

Control Panel

Possible Fire Types (depending on configuration)



By default, the **VPS** is filled with foam extinguishing agentto put out class A and class B fires.



Depending on the potential burning material the vessels can be filled with alternative extinguishing agents. Thereby other fire types can be put out as well.

We will gladly help to find the perfect configuration to secure your property!



PORTABLE Firefighting Systems 9 to 13 litres





MOTORIZED Water-, Foam- and CAFS-Units







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