Gewässer
Umwelt
Schutz
GmbH

GUS

Product catalogue

- SAW collection basins
- AUW oil protector
- CUW oil protector
- GGW / AGW glycol protector
- Accessories
- Flat roof ducts
- Legal requirements

Water - our most precious resource

Since 2005, GUS Gewässer Umwelt Schutz has been a trusted partner of customers all throughout Germany for the provision of catchment systems that prevent toxic and harmful substances from contaminating water sources, thereby enabling these substances to be rendered harmless and recycled or disposed of safely.

Contents

The challange

Environmental damage is often caused by operational accidents, but even during normal operation, emissions of water-polluting substances cannot be entirely avoided.

The legal regulations for the handling of water-polluting substances are extremely rigorous.

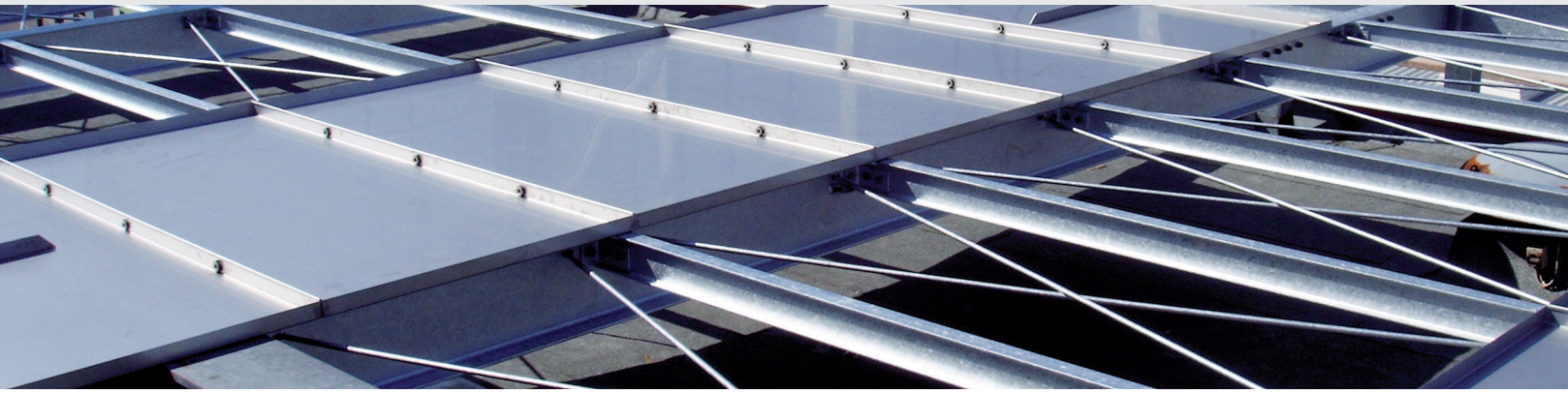
They primarily concern the operator, who is responsible for ensuring that facilities are constructed and operated in accordance with the latest technological standards (§62 Water Resources Act).

In addition, the basic requirements of the Water Resources and Waste Management Regulations (AwSV) also have to be met. These state:

„Leaking water-polluting substances must be recognized, retained and harmlessly recycled or disposed of quickly and reliably.“

Facilities must therefore be equipped with a robust and watertight collection chamber.

Planning and build teams have the obligation to provide information during facilities construction.



SAW collection basins

SAW collection basins are used for aggregates that are used indoors and which contain water-polluting substances.

Chillers are often installed in areas that have a floor drain or are not water-tight.

In order to prevent water-polluting substances draining into the sewage system or into adjacent areas in the event of leakage, a collection basin can be placed under the chiller.

Material: stainless steel grade 1.4301 (V2A) or aluminium AlMg3.

The basin is compliant with § 62 Water Resources Act. Each basin is individually adapted to the requirements of the location.

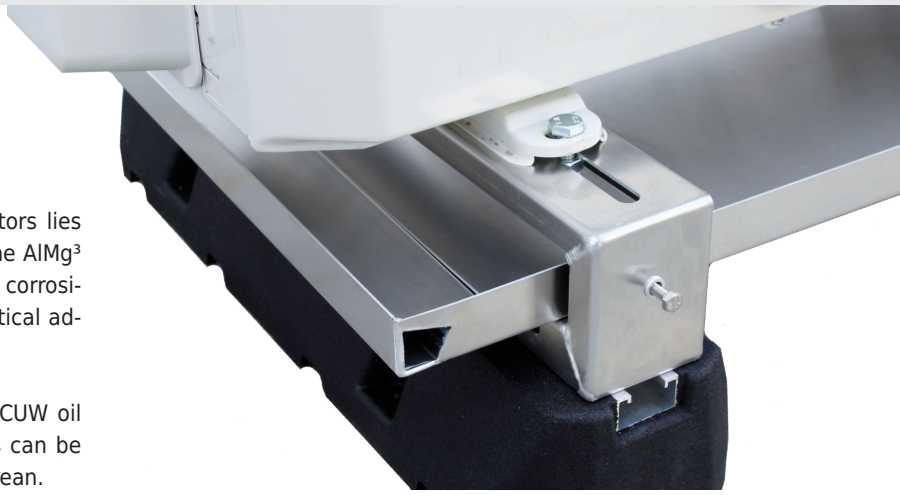
The manufacturing standards are designed to meet technical requirements.

AUW oil protector

The difference between the AUW and CUW oil protectors lies in the material. The AUW is made of aluminium, and the AlMg³ is made of stainless steel. This inexpensive material is corrosion-resistant but much lighter. This also creates a logistical advantage.

The separator works on the same principle as in the CUW oil protector. Due to the outlets on both sides, impurities can be detected immediately. The separator is also easier to clean.

The AUW oil protector is available in several sizes. With its extra-wide holders, it can be installed on beams, vibration dampers or wall units.



AUW oil protector with separator

CUW oil protector with separator

CUW oil protector

The CUW oil protector consists of a stainless steel collection basin with integrated oil separator.

Leaking chiller oil is collected by the oil protector.

In the event of rain, the chiller oil is retained by a patented oil separation system in accordance with legal requirements, leaving rainwater to drain off.

The CUW oil protector is available in ten sizes.

With its adjustable mounts, it can be installed on beams, vibration dampers or wall units.

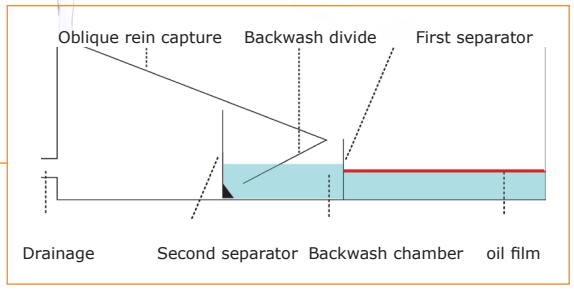
Special sizes for chillers and air conditioners can be made to order.

CUW oil protector

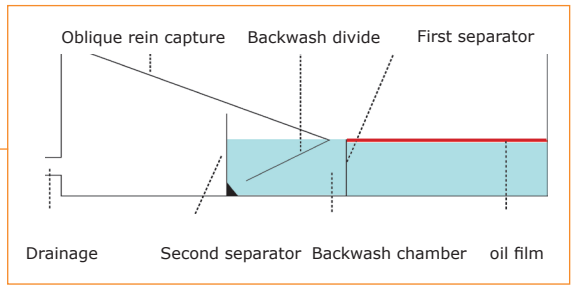
CUW oil protector

How it works

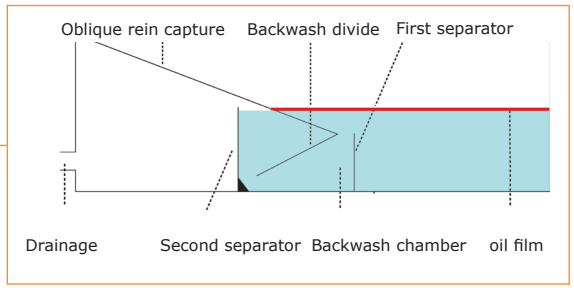
1 When it rains, released oil rises in the form of a film on the water in the collection basin. The backwash chamber is filled three times as fast by the rainfall as the collection tray.



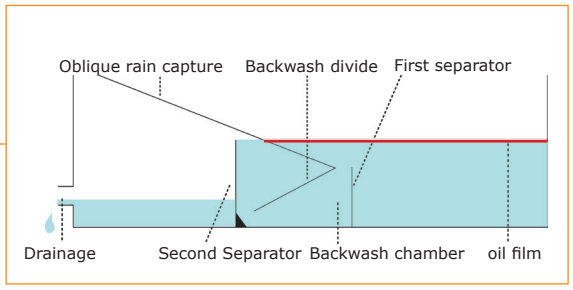
2 When the level of the first partition wall is reached, the incoming water is flushed from the backwash chamber into the collection basin



3 The water level continues to rise up to the level of the second separation wall.

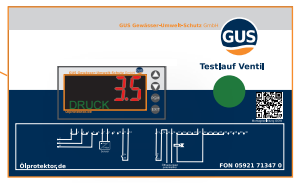


4 If the level continues to rise, the water, now separated from the oil, will continue to the drain.



GGW/AGW glykolprotector

pressure sensor
-as required-



switch box
(control module)

Base

Weather protection housing

Safety valve

Die Eignung des System wurde durch den TÜV Rheinland nachgewiesen.
www.tuv.com
TÜVRheinland
ID:0000028841

The GGW/AGW glycol protector (see picture above) is an extension of the CUW oil protector. In addition to preventing the escape of light liquids (e.g. oils), it also, in accordance with legal requirements, prevents the escape of water-glycol mixtures and other water-soluble substances.

The system uses a digital pressure sensor to monitor water-glycol circulation. The information supplied is processed by the control unit, whereby a distinction is made between emergency leakage and system-related pressure fluctuations.

In an emergency, the safety valves are closed immediately.

Escaping water pollutants are retained in the GGW/AGW glycol protector and the operator is alerted. The legal requirements of the Water Supply Act (WHG) and Water Pollution Regulations IV (WasgefStAnlV) are thereby fulfilled.

How it works

Leakages in the unit are detected by the pressure sensor and evaluated by the microprocessor. The drain valves then close and an alarm (potential-free) is activated. This safely retains the leaking water-glycol mixture. The alarm output can be read as plain text in the microprocessor display.

A special switch prevents the valves from opening again without the operator‘s permission.

Up to two fluid circuits can be monitored with one microprocessor.

In the event of a power failure, microprocessor fault, cable break, defective valve or sensor failure, and in order to meet safety system requirements, the drain valves are automatically closed and locked and the alarm activated.

The drain valves are protected from the elements by a stainless steel housing and equipped with potential-free contacts for alarm purposes and operational messages. For year-round operation of the valves, no additional defrost heater is required.

Even the largest possible amount of rainfall in Germany will be safely collected and drained off.
The glycol protector meets the legal requirements of § 62 et seq. Water Resources Act (WHG) and the Facilities Regulations (AwSV). The strict guidelines of the Water Pollutant Regulations IV (WasgefStAnlV) are also met.

The intelligent pressure monitoring system can also be accessed online at any time.

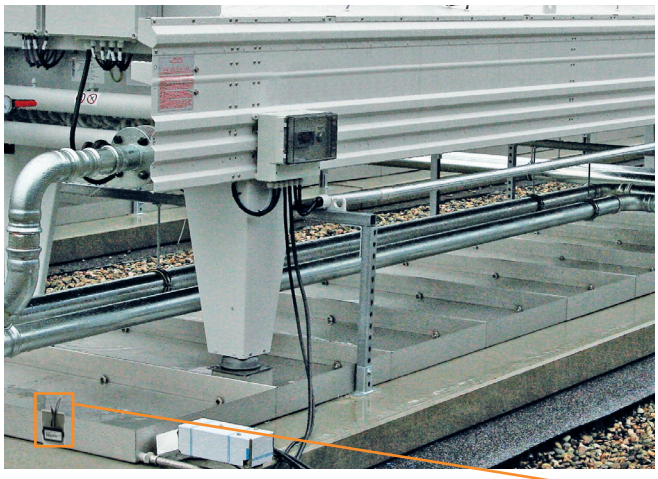
GlyTron Multi

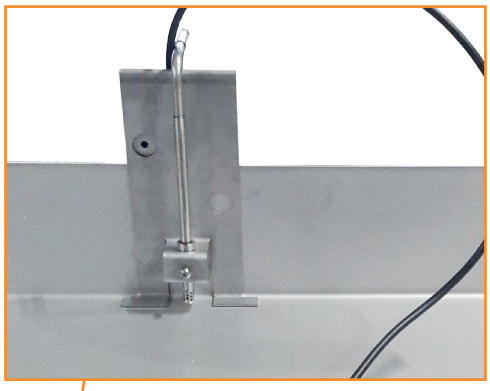
The GlyTron Multi is an intelligent monitoring system based on the GGW glycol protector. It can be used to monitor and protect up to four or eight pressure circuits.

The GlyTron Multi can either be integrated into a monitoring system or pre-wired in its own control box.

GlyTron Multi

GES glykolprotector





GES-Sensor
As per requirements. Above: mounted on inside wall. Below: plan view

The GES (glycol detection system) is a new type of sensor that detects and differentiates unwanted contaminants such as glycols in draining water. It differentiates between carbon compounds frequently caused by road traffic, organic rotting processes and the glycols to be detected. Three sensors in one housing are used to monitor both the quality of the liquid and the gases it gives off. This sensor automatically detects escaping substances and is not dependent on interaction with pressure sensors to ensure detection. This makes this new glycol recognition system the first of its kind.

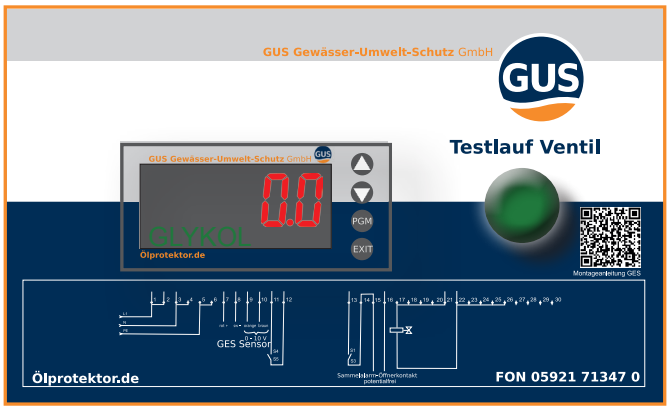
The GES detects even the smallest quantities of escaped glycol and thus meets legal requirements under § 62g ff. WHG (Water Resources Act) and under the Facilities Regulations (AwSV). It therefore provides the greatest possible safety for your facilities

How it works

The glycol content measured by the sensor is displayed on the switch box (1 - 10%) to an accuracy of one decimal place.

The control module evaluates the data and, in the event of a significant measurement, triggers the alarm. The quick-acting shut-off valves downstream in the drain are locked and at the same time an alarm message or SMS is sent via the potential-free contact.

This technology can be combined with a stainless steel drip basin similar to the oil protector or integrated into a roof outlet, the outflow of which is held back in separate drip trays in the event of an alarm.



switch box
(control module)

GHS valve
Glykol-highspeed-valve

Compact. Easy to install. Universal. Safe.

Electric rotary actuator with ball valve open-close control,
24..240 VAC/DC, 95° angle of rotation incl. 5° preload
8 Nm, 15 Nm with emergency setting function:
fast spring return < 1 s

Description

The GHS actuator generation is a revolution in safety and shut-off dampers for building equipment.

IP66 protection, small dimensions, a weight of only 3.5 kg, universal technical characteristics, integrated heating and optional stainless steel housing ensure safe operation even under difficult environmental conditions. Brushless motors ensure a long service life.

All drives can be programmed and adjusted on site without additional electronic aids. Motor running times can be selected on site. The universal power supply is self-adaptive for input voltages of 24...240 VAC/DC. The drives are 100% blocking-resistant and self-locking.

The GHS actuators are equipped with an integrated spring return function to implement fail-safe positions. In addition, the actuators each have two integrated, permanently set, floating auxiliary switches with changeover contacts.

The standard axis connection is via an interlocking double square hollow axis (12 × 12 mm). The modular concept allows for the retrofitting of adjustable auxiliary contacts and other accessories.

Credentials

EMC labeling 2004/108/EC Electrical safety 2006/95/EC Low voltage directive
IP66 protection as per EN 60529

Special edition and accessories

- Types with aluminium housing and C5-M paintwork, nickel-plated parts
- Types with stainless steel housing, parts nickel-plated
- Terminal boxes

GEO geoprotector

Creasing groundwater protection in heat pump systems

Although heat pumps reduce CO2 emissions and save on heating costs, they are sometimes at risk of leakage.

Brine-to-water heat pump systems consist of a brine-to-water heat pump in addition to the heating units and a brine system. The brine system consists of PE pipes that are installed in the ground either vertically (geothermal probes) or horizontally (geothermal collectors). The brine system is at risk of leakage at joints or the PE pipes themselves due to damage or aging. Glycol belongs to Water Hazard Class 1 and must not enter the ground or groundwater. This can be safely avoided using the geoprotector, as confirmed by expert opinion from the Ruhr University Bochum.

How it works

If a pressure drop is detected via the digital pressure sensor, a pre-alarm is triggered. The heat pump then switches off (DIN 8901 and VDI 4640). There are two possible causes for a pressure drop: insufficient filling, or a reduction in volume due to the cooling of the brine or a leakage.

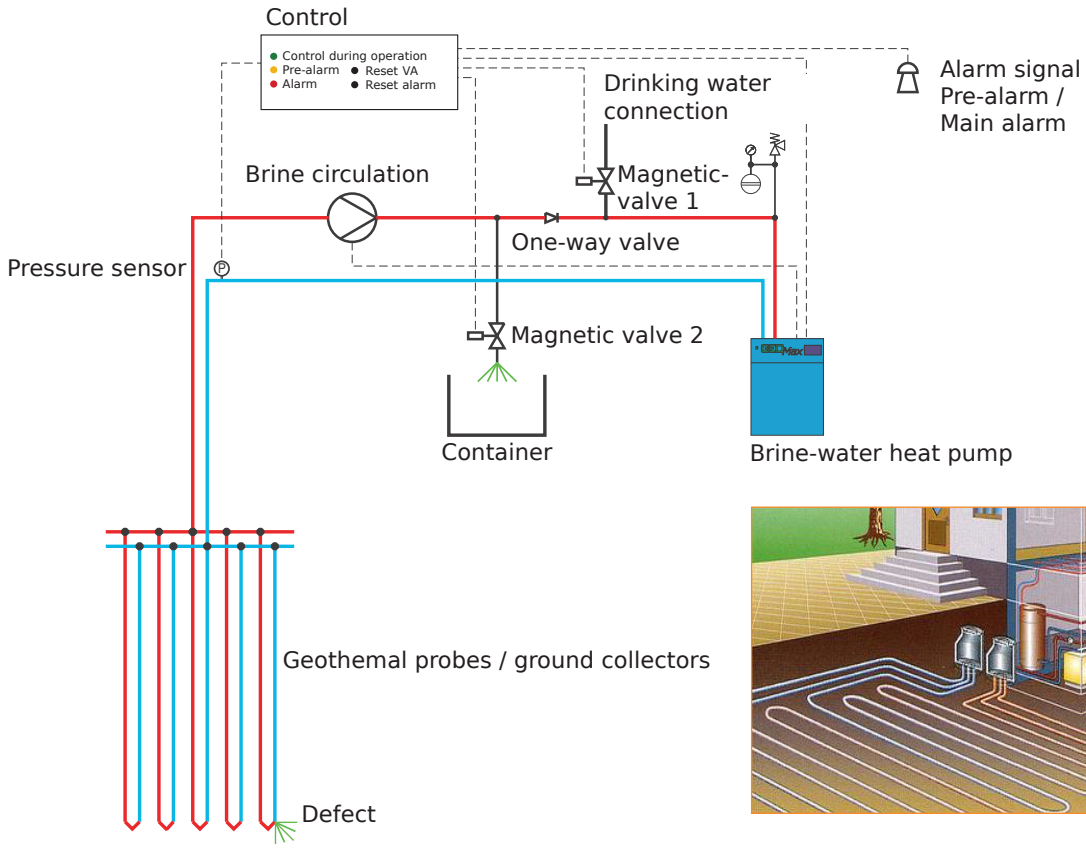
If the heat pump switches off, the operator should consult a suitably qualified engineer. If the geoprotector detects a leak, it is flushed with drinking water. A collection basin contains the flushed brine.

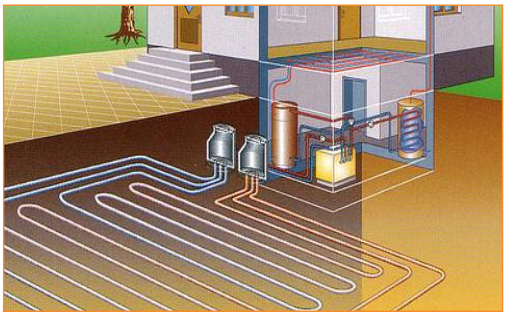
Benefits

The geoprotector has multiple benefits:

1. **Prevents loss of brine to the soil.**
2. **Rinsed-out brine can be re-used.**
3. **Contamination of soil with glycol is avoided.**

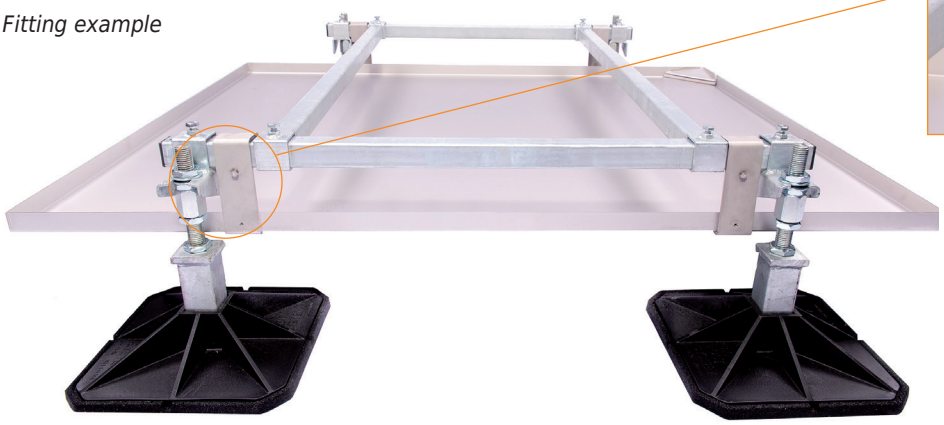
GEO geoprotector

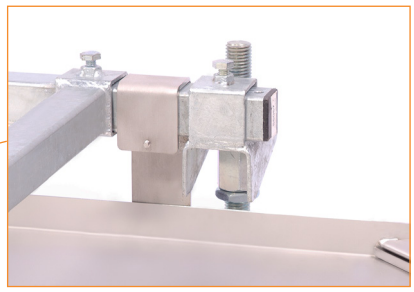




Accessories

Fitting example





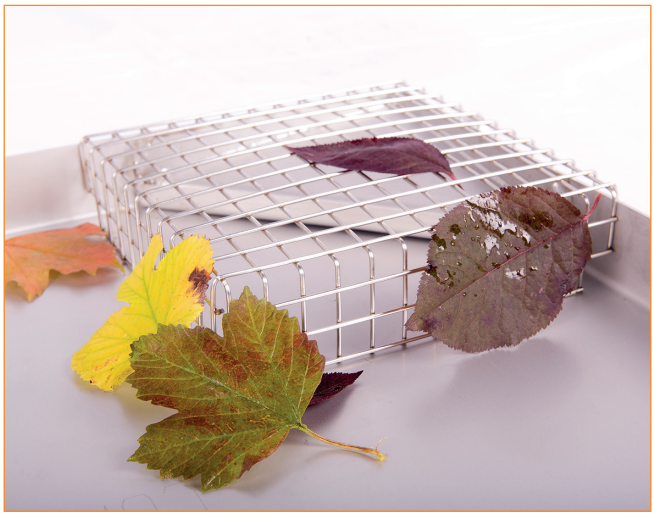
Fastening claw for mounting

Protector fastener

This protector fastener has been developed for the mounting of a protector underneath an installation system.

The fastening claws are put on the longitudinal struts and secured with screws. The brackets are available in two versions for 40 mm and 50 mm longitudinal struts. The matching protector is manufactured according to the requirements and inserted laterally below the installation level.

This system allows refrigeration and air conditioning systems to be screwed directly onto the installation system. The protector can be retrofitted at any time.



Leaf guard grill version

Leaf guard grill

Certain usage areas require a modification of the protectors. If the installation site is located in an area overshadowed by trees, we recommend our leaf protection grid.

This keeps leaves away from the drain in autumn and maintains functionality. We are happy to advise you on individual projects and accessories.

Leaf guard grill
example for AUW oil protector

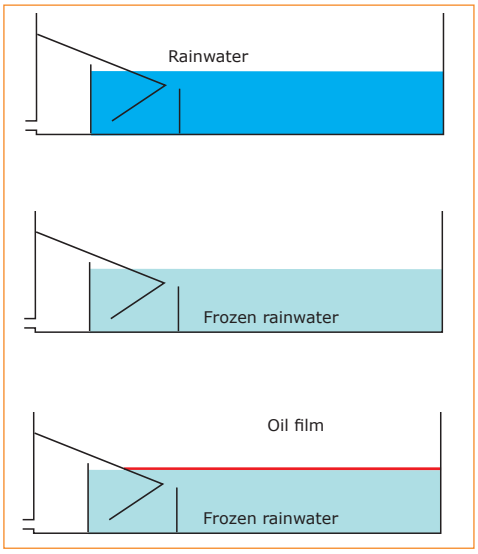
HEITHER 2.0 - our heating kit for year-round operation

A protector can withstand temperatures below zero. The material can also withstand ice formation in the separator. If the water contained in the protector freezes during normal operation, it will not impair the functioning of the protector. Even without heating, the collection volume required, and thus the function of the protector, is guaranteed in freezing rainwater and snow.

Freezing rainwater

The valve of the GGW / AGW glycol protector closes and the drain is blocked by ice so that oil and glycol are retained even in thaw. The functioning of the AUW and CUW oil protector and the GGW / AGW glycol protector is still guaranteed as the collection volume is still available.

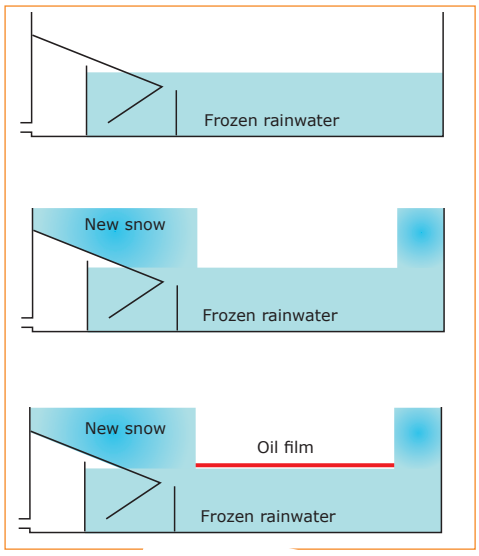
Example of freezing rainwater

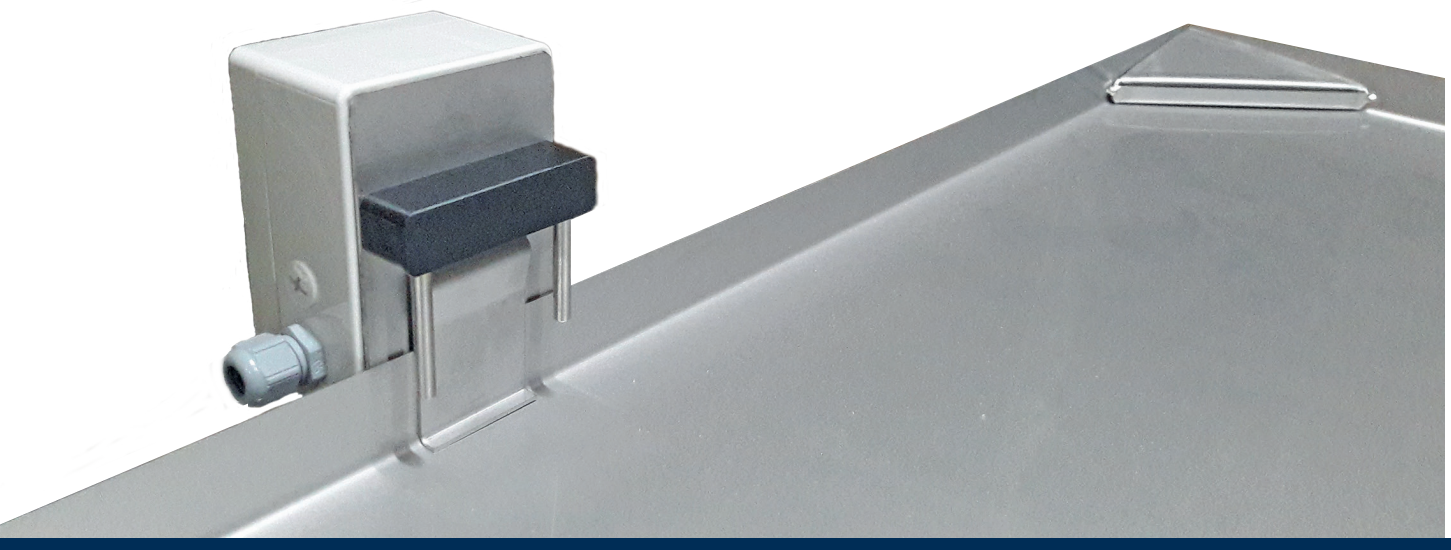


Snowfall

Snow falls only in the area of the overhang, not under the unit. The protector volume allows for a certain amount of precipitation without restricting the safety device. The functioning of the AUW/CUW oil protector and GGW / AGW glycol protector is still guaranteed, as the necessary collection volume is still available.

Snowfall





What happens with a heat pump?

At temperatures just below freezing, humidity is high and water condenses and freezes on the lamellas of the air conditioning system.

During defrosting cycles this is flushed into the protector, where it freezes again.

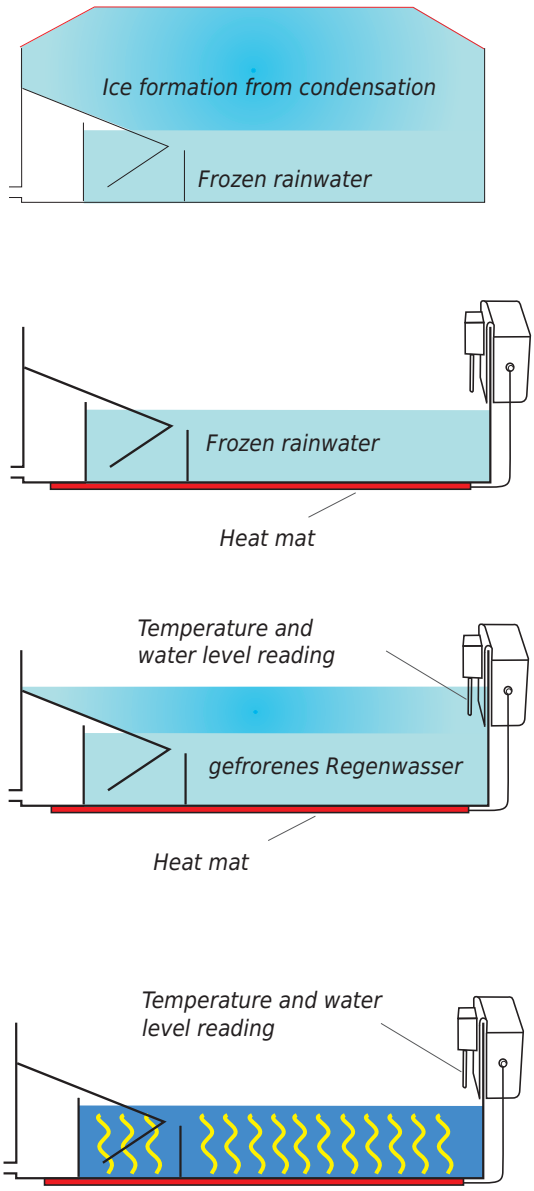
Without heating, a layer of ice builds up which can massively restrict the collection volume of the protector.

This is where full-area heating helps. In order to meet these requirements, we provide a system that records the temperature and water level in the protector in order to start heating in a targeted and efficient manner.

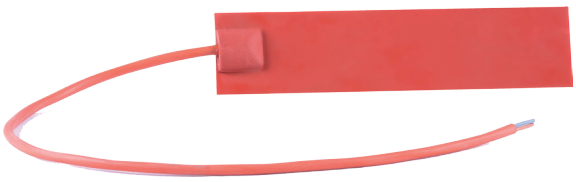
Modern defrost protectors

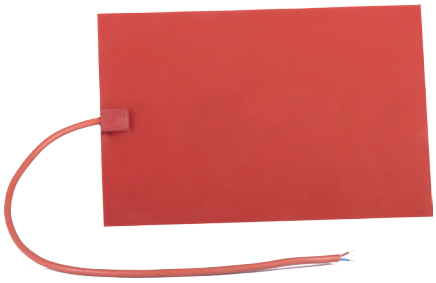
The heating is only activated when the ice layer has built up to such an extent through additional condensation that it could affect the functioning of the actuator. The ice thaws and the excess water flows off. Then the heating switches itself off. In addition, in the event of backwater from the water or the ice, the control provides a fault alarm to warn the operator in the event of malfunction. The heating mats are mounted on a smooth surface underneath the protectors. This ensures even heat distribution. Alternatively, placement on outer walls is also possible.

Particularly with heat pumps, efficiency is of paramount importance. Therefore the targeted and efficient use of electrical energy is extremely important.

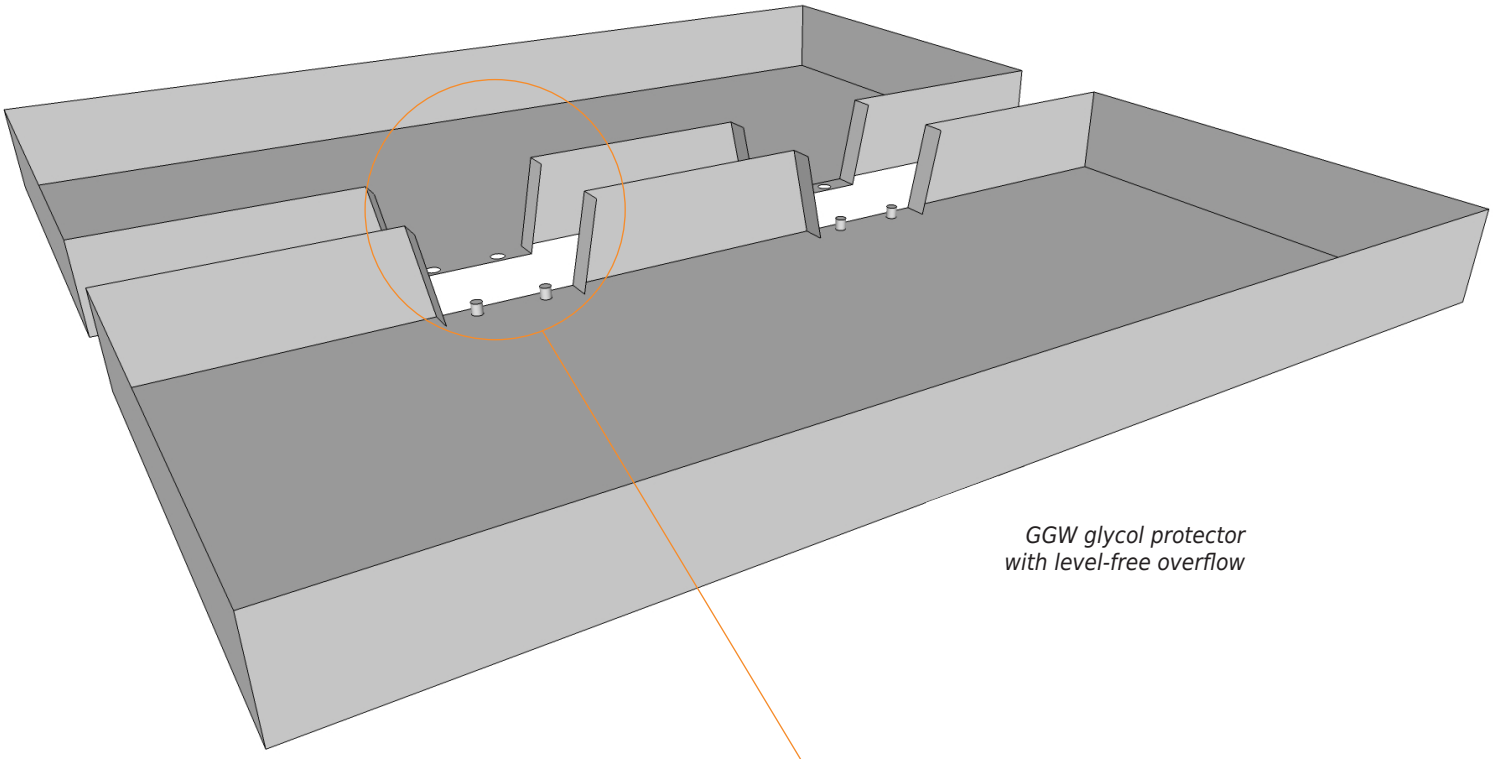


Targeted use of whole-area heating





Heating mats - as required



GGW glycol protector with level-free overflow

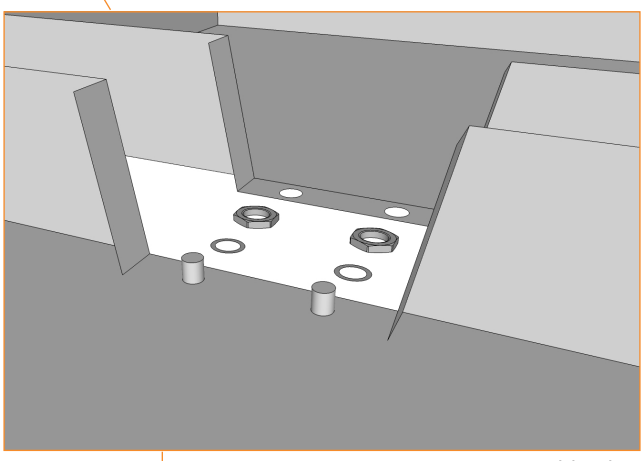
Level-free overflow

The level-free basin connection is best used without a light liquid separator in the protector and, due to an almost level overflow, prevents backwater at the overflows between two basin elements.

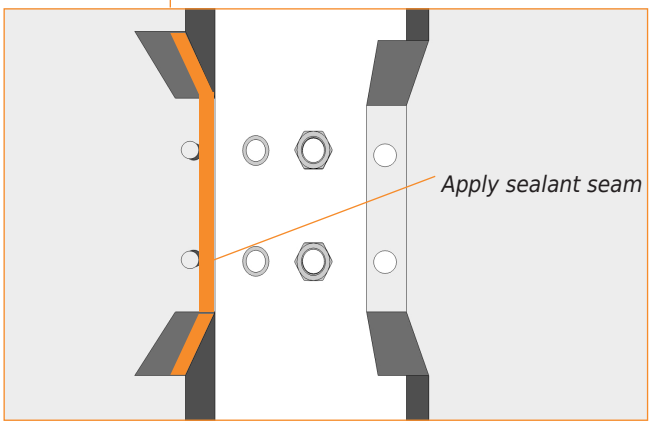
The layered material creates an ideal sealing surface with minimal gradation in material thickness.

The level-free overflow consists of two level-free overflows with a width of 150 mm per tank connection and is fixed with two welding bolts with washers and nuts.

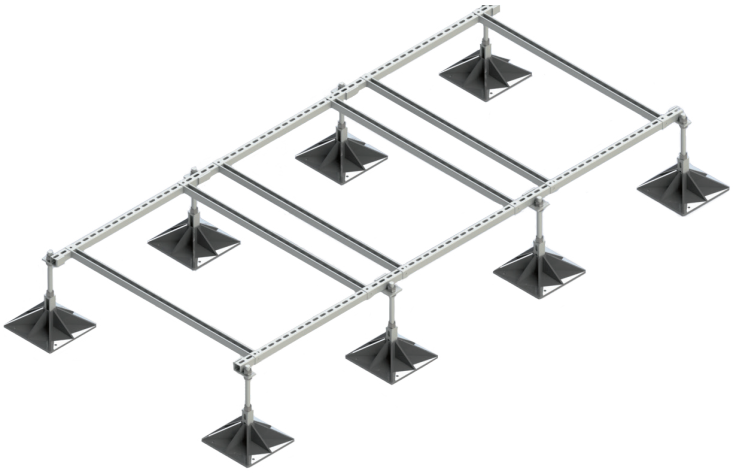
The shape of the connection ensures even and flat contact pressure of the sealant and a positive and reliable connection, which is guaranteed even with high temperature fluctuation.



Side view



Plan view



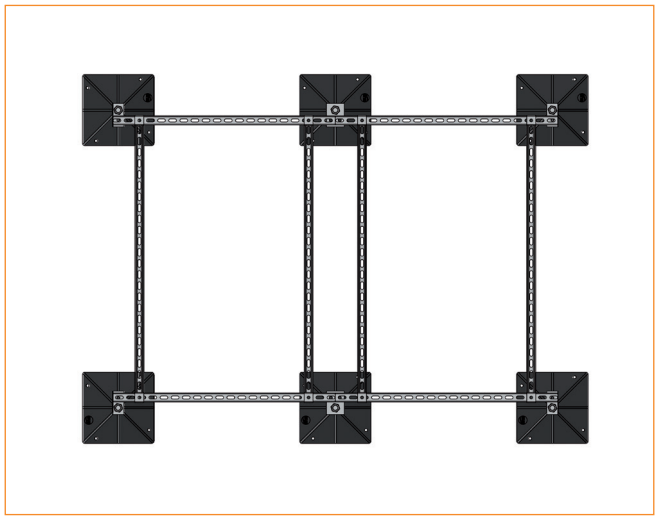
GUS Foot installation system

Our GUS Foot installation systems ensure fast, flexible and cost-effective solutions for the installation of building facilities. Functional and robustly constructed from completely hot-dip galvanized steel, they have been developed to simplify and speed up installation.

By using our GUS Foot installation systems, whether basic module, extension or custom-made, you can plan and implement projects effectively and flexibly without a roofing or steel construction specialist.

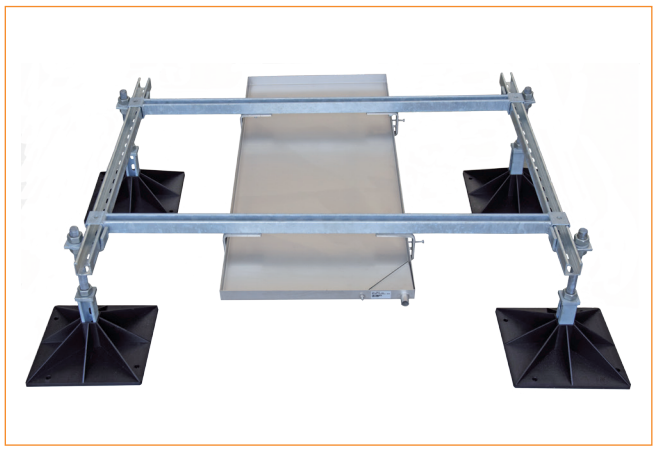
Versatile and adaptable, GUS Foot systems can be adapted to conditions on site. On flat roofs, they can be installed without damaging the roof (optional angle of 2.5° for pitched roofs) due to their feet being underlaid with PVC foam.

In addition to products for the installation of building facilities, we also offer a range of installation systems for cable trays, ventilation ducts, pipes and high-quality damping bases made of SBR-recycled rubber in various sizes.

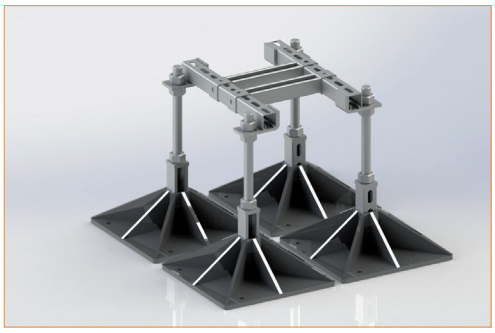


GUS Foot Base + Plus

GT 320 track beam
with installation example



GUS Foot installation system
Fitting example



Installation block GAB 800

Damping base

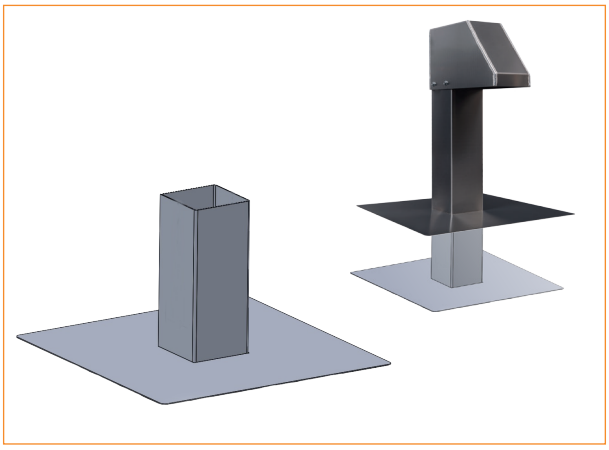
Flat roof installation

Changes to a flat roof will usually damage the roof cladding and risk penetrating moisture and cold bridges. It is therefore of great importance when planning a flat roof to allow for roof ducts, especially with regard to future installations of facilities such as solar or PV systems. We recommend that you always install sufficient roof ducts when building a flat roof.

The flat roof foot for diffusion-resistant use...

...is made of aluminium, completely welded, with simple integration and with a large base plate, a supplement to the flat roof duct and the service port. It consists of an additional roof base. The additional in-roof element protects the roof insulation against condensation.

The flat roof foot prevents the penetration of condensation water into the insulation level. This ensures that the roof skin is impermeable to vapour and diffusion.



FDF flaat roof

FDS service port

Today's industrial and commercial spaces are becoming ever larger. The associated service work often makes the supply of electricity and water difficult. Access points must be created and remain open during roof work, which brings with it risk: risk of stumbling, risk of water damage, potential damage to the access lines, etc.

Our solution is the service port. This is a roof duct with integrated electricity (230 and 380 V) and water connection. It guarantees a clean seal of the building envelope. In combination with the flat roof foot, the insulation is sealed against diffusion. The service port provides integrated connections and the foldable lid provides rain and UV protection.

FDS service port

The legal situation

Section 62, paragraph 1 of the Water Resources Act (WHG) states that „installations for the storage, drainage, production and treatment of water pollutants, as well as installations for the use of such pollutants in the commercial sector and in public facilities, must be designed, constructed, maintained, operated and decommissioned in such a way as to preclude adverse change in water bodies.“

The new Water Polluting Substances Regulations (AwSV) have been in force since 1 August 2017. With regard to water protection in the refrigeration and air conditioning industry, the following must be observed:

„Where lower filling volumes are concerned, as in the example of commercially available split systems, including VRF systems, the principle of concern as provided for in WHG still applies. This stipulates that the highest level of safety must be guaranteed in order to prevent water pollution.“

Special measures for compliance are not required under WHG, which means safety measures are left to the trade supervisory authorities or case law.

An essential innovation can be found in the basic requirements under §17. Where in the previous regulations only construction, condition and operation were subject to basic requirements, planning is now also affected. This means that the planner must take the basic requirements of AwSV into account when project planning and is therefore increasingly responsible for compliance.

„Facilities must be planned, erected, constructed and operated in such a way that

1. Water pollutants cannot escape,
2. Leaks in all parts of the equipment that are in contact with water pollutants are quickly and reliably detectable,
3. Leaking pollutants are quickly and reliably detected and contained and properly disposed of. This also applies to splashing and dripping during operation; and
4. Any mixtures arising in the event of a malfunction in the normal operation of the plant and that may contain leaked pollutants are retained and properly disposed of as waste or waste water.“

The ester oils used in air-conditioning systems correspond in their original state to WGK 1 or WGK 2. However, according to the Administrative Regulations for Water Pollutants (VwVwS), the lubricants or waste oils used must be classified as WGK 3 and thus correspond to the highest hazard level.

As soon as a refrigeration or air conditioning system is put into operation, the water hazard class increases accordingly.

In cold water chillers or re-coolers, a water-glycol mixture is used for corrosion and frost protection. All glycols are classified at least as WGK 1 and must also be retained. This also applies to food-grade glycols.

Gewässer
Umwelt
Schutz

GmbH

Bentheimer Str. 300

D-48529 Nordhorn

T: +0049 5921 71347-0

info@oelprotektor.de

Ölprotektor.de