

# PROTECTOR

by



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## WHAT IS PROTECTOR?

### PROTECTOR IS A UNIQUE WATER CONDITIONER

Protector is a water treatment system for closed heating and cooling systems with water and water glycol as energy carriers. The Protector is installed in new and existing systems.

It provides complete corrosion protection, while also cleansing the water of sediment and impurities. The Protector can replace traditional filters, chemical treatments, and sediment separators. Protector is a Norwegian patented design.

### “HYBRIDFILTER” — THE LATEST GENERATION OF WATER TREATMENT SYSTEMS

The Protector will normally be installed in the sub-current, often with its own pump on the return line.

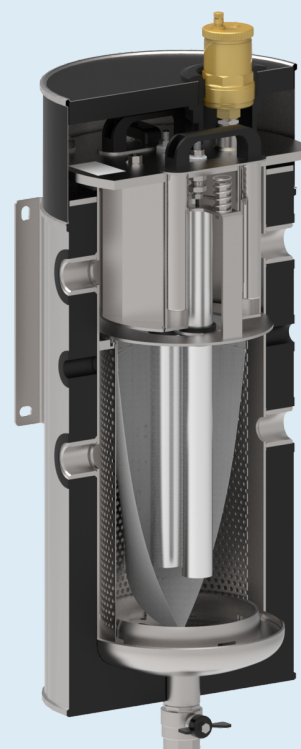
The Protector is not just a filter, but a full-fledged water treatment system that also removes oxygen and increases the pH value of the water.

The Protector is self-regulating without the addition of voltage or chemicals. Digital models can be equipped with readings of pH value, conductivity, oxygen, water flow, and anode current. Via Modbus, the Protector can be connected to an SD system or our cloud solution. A controller can also be used to fill and drain the water.

### HOW DOES IT WORK?

The water enters the upper chamber, where it is set into rotation. This initiates the release of microbubbles, resulting in the degassing of the water. The water then continues to rotate downward, passing over a magnetic field and sacrificial anodes. As the anodes corrode, oxygen is consumed, and the water’s pH level increases. The magnetic field captures metallic particles, preventing them from circulating further in the system. The final filtration stage consists of a 40-micron stainless steel filter, which removes remaining particulate matter. If required, a bag filter with a filtration capability down to 1 micron can be installed for enhanced particle removal.

- The Protector is an all-in-one solution.
- It controls all important parameters to prevent corrosion and regulate pH, conductivity, and oxygen.
- It prevents bacterial growth.
- It ensures a clean medium for heating/cooling fluids with its unique combination of filters and magnets. Water becomes crystal clear without sludge and particles (magnetite).



# OPERATION, MAINTENANCE, AND INSTALLATION

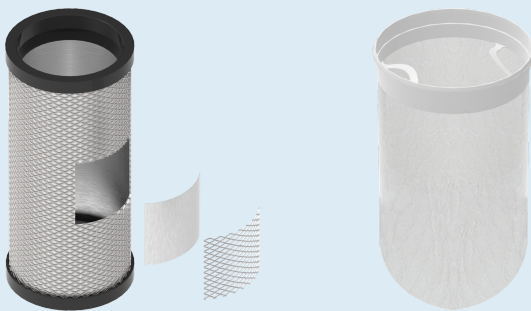
## MAINTENANCE

The Protector requires minimal maintenance. It only needs occasional drainage of the filter section and an annual inspection and cleaning of the sacrificial anode.

The filter is backflushed by opening the drainage valve while the water is circulating. During anode replacement, the inlet and outlet are closed, and the flange (where the anode is mounted) is removed. The anode(s) can then be cleaned.\*

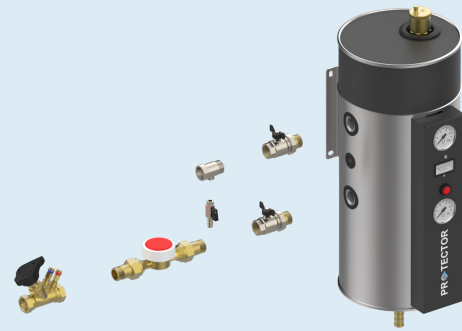
## FILTER/FILTER BAGS

Inside the protector (on the flange) there are pockets for neodymium magnets. This ensures that the magnets are not in physical contact with the water. The magnets are lifted out before draining or cleaning the filter. The stainless steel filter of 40 microns can, if desired, be replaced with bag filters in various sizes, down to 1 micron.



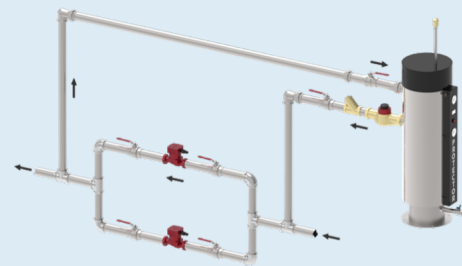
## CONNECTION KIT

The connection set normally consists of water meter, throttling valve, sampling point, and drainage valve.



## INSTALLATION

Typical installation with 1-3



Delivered as mobile or stationary module, with or without pump.

## DIMENSIONING

Model	Max pressure	Max temperature	Max system volume heating, liters	Max system volume cooling, liters	Analog NRF no.	Digital NRF no.
P5	10 bar	95°C	5000	3000	8526076	8526076
P10	10 bar	95°C	10 000	7000	8526074	8526075
P25	10 bar	95°C	25 000	17 500	8525888	8525884
P40	10 bar	95°C	40 000	30 000	8526072	8526073
P70	10 bar	95°C	70 000	60 000	8526078	8526079
P200	10 bar	95°C	200 000	170 000	1401400	

Model	Dry weight	Wet weight	Height	Width
P5	12 kg	16 kg	540 mm	184 mm
P10	33 kg	52 kg	800 mm	294 mm
P25	50 kg	81 kg	1200 mm	340 mm
P40	59 kg	116 kg	1200 mm	390 mm
P70	88 kg	218 kg	1465 mm	530 mm
P200	160 kg	400 kg	1630 mm	530 mm



## DIGITALIZE PROTECTOR

### PROTECTOR DIGITAL SA

In our digitalized world, it's important to have the option to control everything remotely, and water treatment equipment is no exception. Therefore, we have created an add-on for Protector to digitalize it.

### CONNECTIVITY

- Ethernet
- WiFi
- LTE
- RS485
- 4-20mA

### FEATURES

- Digital sensors for flow, conductivity, temperature, pressure, and anode current, with optional oxygen and pH sensors.
- Connection to a BMS: Modbus/RTU, Modbus/TCP, BACnet, BasTech, 4-20mA.
- Internal web-server for monitoring within a local network.

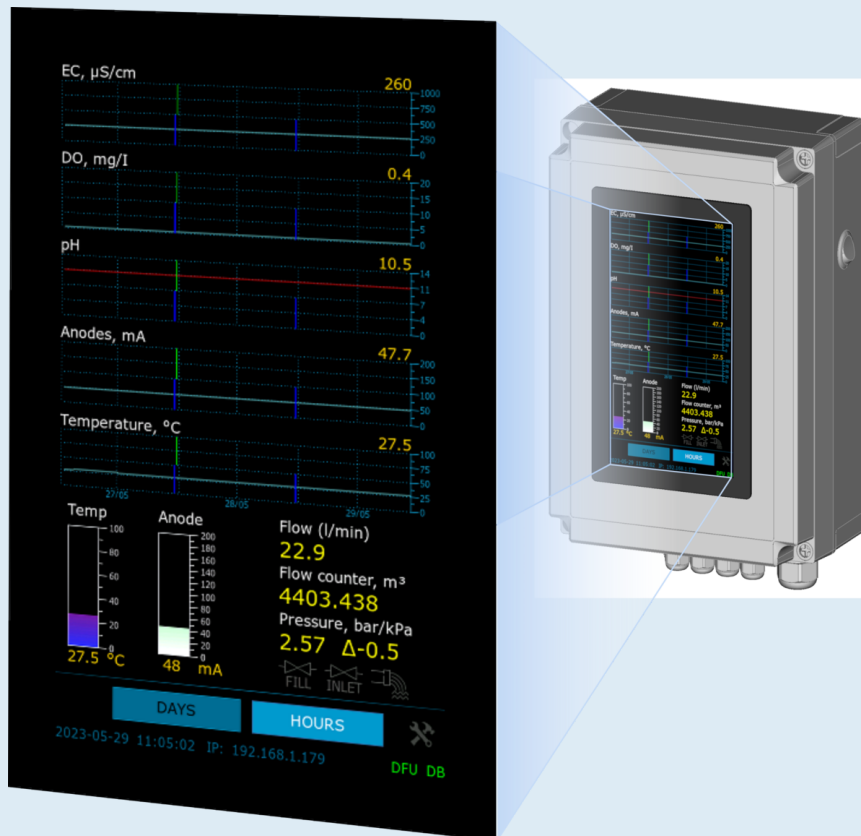
- Online monitoring, remote control, alarms and notifications via our cloud service.
- Automatic pressure control and refilling.
- Leak detection.

### SECURITY

Protector Digital uses secure technologies to communicate with the cloud and enable remote control over the Internet:

- The operating system is embedded in the processor, is protected from reading, and cannot be hacked.
- All traffic is encrypted using SSL
- Each device has its own security token
- Each device has its own authentication credentials on IoT server
- The cloud API is protected by an authentication system

Part number: 1401401



## USAGE AREAS

- Heating systems
- Cooling systems
- Industries
- Shipping
- Offshore
- All locations with water and water-glycol as energy carriers.

Our Protectors are available in a variety of versions: small or large, fixed, mobile, or individually mounted, in series or parallel. They are equally suitable in new and old installations.

They can be used to prevent corrosion in new installations or to remove sludge in older installations.

## ADDITIONAL EQUIPMENT



Mobile refill unit for demineralizing water.



Mobile demineralization systems and filters for purification and flushing.

# PROTECTOR

by



IWTM was established in 1992 and has over 30 years of experience in water treatment of technical systems ranging from small single-family homes to nuclear power plants, with a focus on maritime and land-based heating and cooling systems.

DNV issued the world's first certificate for environmentally friendly water treatment "clean machinery and components" in 2003. IWTM is still the only company in the world with this type of certificate.

IWTM Protector is our latest, most innovative product and is built with the future in mind and can be adapted to SDsystems.

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