TTM
Flow efficiency

EFFECTIVE DEGASSING DOWN TO -10 °C

Modbus RTU

Easy to install, commission and control

Lowers operating costs

Increases energy efficiency in heating and cooling systems

TTM NoXygen® F650

Removes harmful gases in system fluids down to -10 °C

TTM NoXygen® F650 is a fully automatic vacuum degasser for heating and cooling systems that can be connected for control, regulation and monitoring via Modbus RTU. TTM TTM NoXygen® F650 is designed for systems subjected to sub-zero temperatures. Energy losses, corrosion and sound problems in the systems are mainly caused by a high gas concentration in the system fluid.

In the air conditioning unit, overheating and undercooling are affected by high gas concentrations in the fluid.

TTM NoXygen® F650 prevents above stated problems by using an effective method that keeps the system free of gases that gives higher energy efficiency, lower maintenance cost and longer lifetime of the system components. TTM NoXygen® F650 can be installed in both existing and new systems.

TTM NoXygen® F650 is specially designed for large kitchens, ice rinks, comfort cooling, commercial cooling and similar facilities.

TTM NoXygen® F650 is environmentally assessed according to a Swedish Standard.

CE EMC LVD

TTM NoXygen® may be installed in disturbance sensitive environments such as hospitals, offices and industries.

Installation benefits:

- Easy to install, commission and control
- Quick degassing function
- Can be installed in both small and large systems.

Operational benefits:

- Reduces operating costs
- Prevents corrosion of system components
- No need to vent radiators
- Increases energy efficiency of heating and cooling systems
- Minimises noise problems in heating and cooling systems
- Stable and easy adjustment
- Removes gases from the system fluid
- Prevents degradation of refrigerant liquids
- The automation for control, regulation and monitoring is connected via Modbus-RTU.

NoXygen®
Degasser

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Operating principle

TTM NoXygen® F650

TTM NoXygen® takes out and treats a partial stream that is pumped from the main fluid conduit and processed with a strong underpressure in the NoXygen unit between -0.7 and -0.9 bars. The gases are released by the pressure reduction and are led out through a gas-release valve. The fluid is then returned to the main conduit.

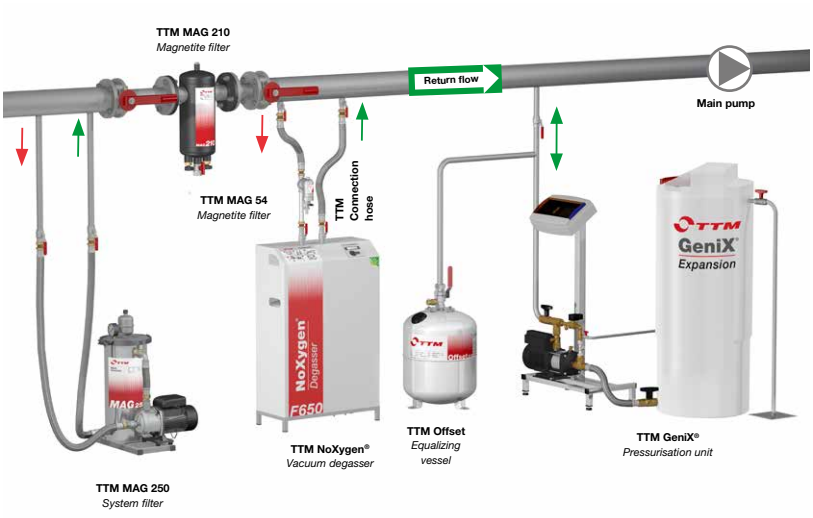
TTM NoXygen® is very easy to install, commission and operate. Operation is monitored by a control unit where 2 pushes of a button is enough to start the operating mode.

TTM NoXygen® starts in manual operation and after 30 days it automatically switch to a timer mode.

There is an option to select manual operation between 1-30 days before. TTM NoXygen® switches over to timer operation. Time operation can be selected using three different starting times: 9:00 am, 1:00 pm or 7:00 pm. In most cases, one hour of operation per day is fully sufficient to keep the gas concentration in the fluid at a low level. Timer operation can be chosen for operating times of 1-8 hours.

Options

TTM NoXygen® F650



TTM MAG 76

- Magnetite trap/particle with a 250 micron particle filter.
  Art. no: 506188

TTM MAG 54

- Magnetite trap/particle with a 300 micron particle filter.
  Art. no: 514428

TTM Connection hose

- Flexible butyl* hose with stainless steel braiding and internally-threaded connections. Two hex double nipples 1/2" x 1/2" in brass with gaskets are included for each hose. 2 pcs 1.5 meter conn. DN13.

  Art.no: 517726

  **(≤ 0,32 mg/(m² · d) vid 40°C).*

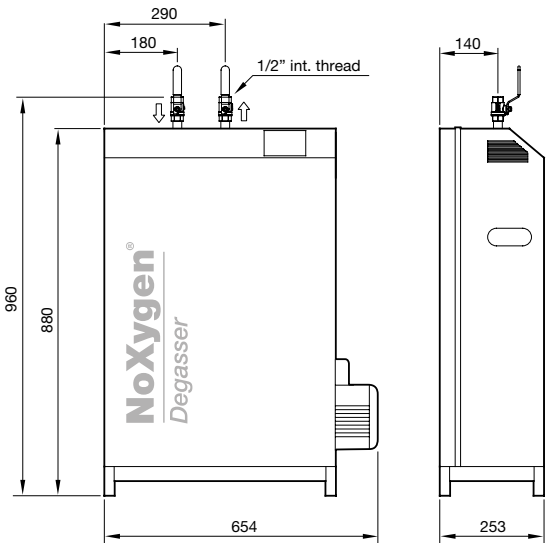
TTM Offset

- TTM Offset prevents the pump expansion system turning on and off and generating noise in the system on the premises.
  Art. no: 508410

Technical data

TTM NoXygen® F650

System pressure standard, total pressure at the connection point, max.	+5.0 bar
Media temperature	-10 – +70 °C
Ambient temperature	0 – +40 °C
Capacity, degassed fluid	min. 126 l/h
Vacuum capacity during degassing	Down to -0.9 bar
Pressure class	PN 10
Media	Water and deionised water Propylene/ethylene glycol max 50 vol% Ethanol[1] less than 30 vol% Saline solution Temper T10, T20, T30, T40 Kilfrost GEO max 35 vol % Calcium chloride max 25% %.
Connection dimension	DN15 – G1/2" int.
Electrical data **Internal fuse**	1~230 V, 50 Hz 10 A
Nominal power **Voltage** **Nominal current** **Energy usage**	0.75 kW 1~230 V, 50 Hz 5.0 A 37 kWh/year [2]
Communication protocol	Modbus RTU (RS485)
Class of protection	IP44
Condensation insulation	AF Armaflex 13 mm
Noise Level	61 dB
Weight	30 kg
Art. no.	515982



Width:	654 mm
Height:	960 mm
Depth:	253 mm

[1] When degassing ethanol, make sure the room is well ventilated.
[2] Operation with 30 days of fast degassing gives a energy consumption of 102 kWh in the first year.

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