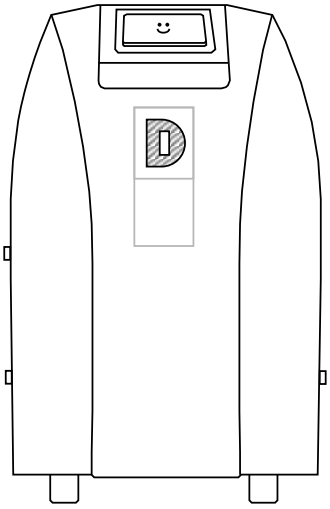
HYDRUN

Degasser
HY-D
Manual
English
Ver. 260630

Former name: HL Hydronics O2-X



Support and product feedback

Need help?

You can find guides, frequently asked questions and technical support at hydrun.se/support.

You can also contact us directly:

- support@hydrun.se
- +46 (0)573-21 630

Via your dealer

Our dealers are experienced and knowledgeable about the Hydrun range. They are your closest point of contact for questions regarding installation, operation and spare parts – and have direct access to our support and expertise.

We'd love to hear from you

We develop and manufacture our products here in Töcksfors, Sweden, based on our experience in operation and installation. That's why we'd appreciate it if you could share your views and ideas – big or small. Your feedback helps us make the next generation of Hydrun products even better.

Would you like to contribute directly?

Please feel free to contact our CEO: bl@hydrun.se

1. Quick guide

System components

A complete installation of the degasser must always include a magnetite and dirt separator (HY-S-DM-20-S or HY-S-DM-25-S), a buffer tank (applicable where the degasser and pressurisation unit are installed on the same system) and Hydrun's flexible connection hoses.
NOTE! Hydrun's magnetite and dirt separators and Hydrun's flexible connection hoses are a requirement for the warranty to apply.
If automatic refilling is required, select a model with **AF** in the item number.

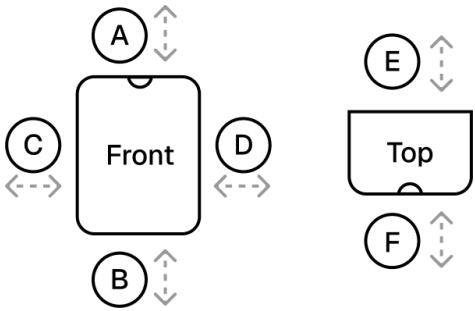
Operating parameters

- Maximum system temperature: 70 °C
- Minimum distance between inlet and outlet: 500 mm
- Recommended operating pressure at connection points: 0.8–6 bar (depending on model)
- Maximum pressure difference between connections for full output: 0.3 bar

Installation Dimensions

To ensure a correct installation and proper operation of the unit, it is important to maintain the specified minimum clearances.

A: 1000 mm
B: floor-mounted / wall-mounted
C: 400 mm
D: 400 mm
E: 400 mm
F: 500 mm



Instructions

Check that all components are correctly installed before commissioning. Always read the manual in full before starting work. Correct installation in accordance with the above requirements is essential for safe operation and a long service life.

Always ensure that the Hydrun degasser is installed level and is not positioned unevenly or unsteadily. If you need to wall-mount the Hydrun degasser, a suitable wall bracket is available for the unit (HY-A-WB-MP-1, HY-A-WB-WP-1).
The Hydrun degasser can be installed on the system's pipe connections from the side, from above or from below.

You can always reach us on +46 573 21 630 or support@hydrun.se . Good luck!

1.1 Quick guide: technical information

1. Degasser connections must be installed >500mm apart on the system's return

2. Dirt and magnetite separator (HY-S-DM-20-S or HY-S-DM-25-S)

3. Hydrun's flexible connection hoses, connection to the system's **inlet**

4. Auto-fill, filling from the fresh water supply. A water meter, solenoid valve (supplied with AF models) and backflow preventer (available to purchase if required) are also installed here.

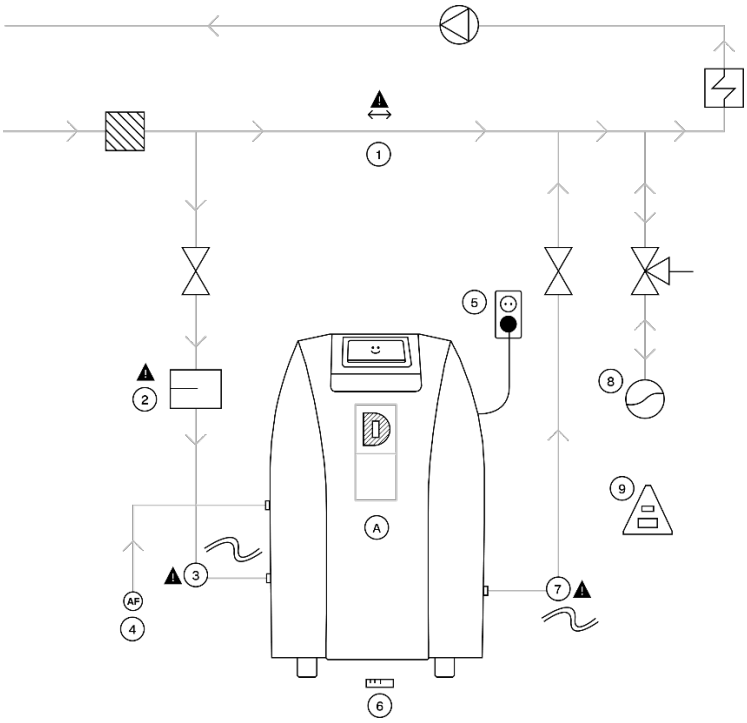
5. 2- meter cable with 230 V, single-phase plug

6. Dimensions: W500 x D250 X H700 mm

7. Hydrun's flexible connection hoses, connection to the system's **outlet**

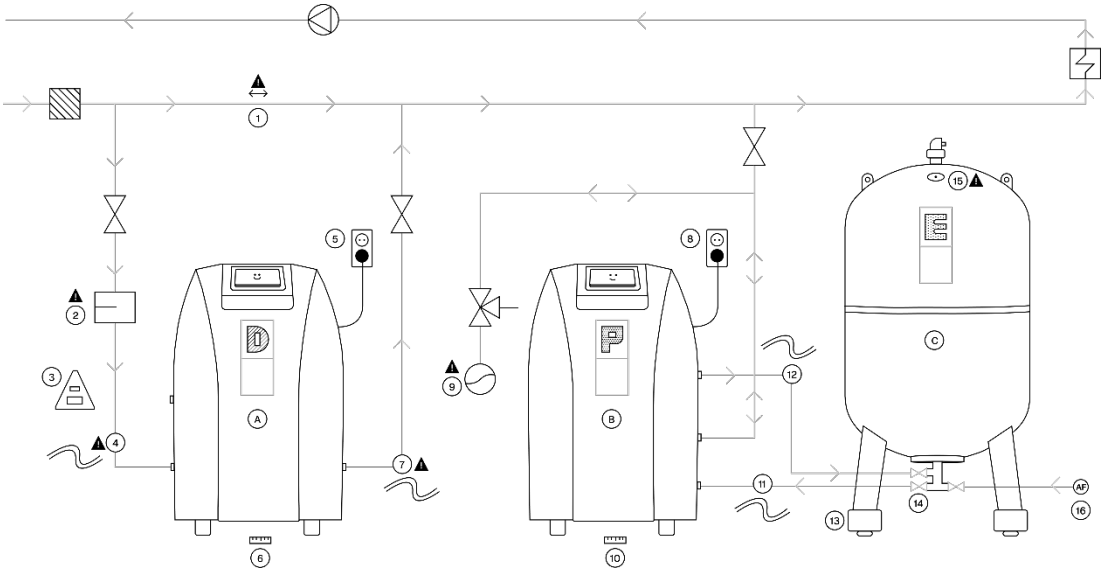
8. 50-litre buffer tank (applies when installing a degasser and dynamic pressure maintenance on the same system)

9. Wall-mounted degasser accessories: wall bracket (HY-A-WB-MP-1, HY-A-WB-WP-1)



1.2 Quick guide: technical information – Degasser and pressure maintenance on the same system

1. Connections are installed >500 mm apart on the system's return
2. Dirt and magnetite separator (HY-S-DM-20-S or HY-S-DM-25-S)
3. Accessories for wall-mounted degasser: wall bracket (HY-A-WB-MP-1, HY-A-WB-WP-1)
4. Hydrun's flexible connection hoses for connection to the system's inlet
5. 2- meter cable with 230 V, single-phase plug
6. Dimensions: W500 x D250 X H700 mm
7. Hydrun's flexible connection hoses for connection to the system's outlet
8. 2- meter cable with 230 V, single-phase plug
9. 50-litre buffer tank (applies when installing a degasser and dynamic pressure maintenance on the same system)
10. Dimensions: W500 x D250 X H700 mm
11. Hydrun flexible connection hoses, connection to suction line vessel
12. Hydrun flexible connection hoses, connection to return vessel
13. Load cell (applies only to closed, pressureless vessels)
14. Recommendation: installation of shut-off valves, for future servicing
15. Hole for pressureless vessel; **it is important that this is not covered or plugged**
16. Auto-fill, filling from fresh water supply



2. Function

Hydrun Degasser is a fully automatic vacuum degasser that continuously draws in system water in a partial flow, removes gases from the liquid and returns the deaerated water to the system. This keeps the entire system free from air, microbubbles and dissolved gases, thereby improving energy efficiency, operational reliability and service life.

How it works in practice

- The water is drawn into the degasser in a partial flow.
- By creating a strong vacuum down to –0.9 bar, the dissolved gases in the liquid are released.
- The gases are vented from the system.
- The degassed water is returned to the system and can then absorb new gases again.

A well-degassed system:

- Prevents air-related problems and operational disruptions.
- Protects pumps, valves and heat exchangers from wear and tear.
- Contributes to lower energy consumption and smoother operation.

2.1 Automatic refilling

Hydrun Degassers are available as a separate model with automatic system refilling. Models with this function are identified by **'AF'** in the item number. This option means that the unit monitors a minimum pressure in the system. If the pressure falls below a specified minimum, automatic refilling of the system begins. The pressure increases as refilling takes place, until the pressure reaches a preset stop limit. Refilling does not take place directly into the system; instead, the supplied water is degassed first before being released into the system. Refilling is monitored by a water meter and can be limited to a maximum volume per unit of time as well as a total quantity. Monitored filling with a limit ensures that you can be confident the system pressure is maintained and that the system will not overfill in the event of a leak.

3. Installation

Filter

Hydrun Degasser must always be installed together with a dirt and magnetite filter (HY-S-DM-20-S or HY-S-DM-25-S). The filter separates dirt and magnetite that would otherwise circulate in the system. This protects both the degasser and other system components whilst extending their service life.

The filter provides primary protection for the unit and is mandatory for the warranty to remain valid.

Tip: A correctly fitted filter not only extends the service life of the degasser but also reduces the risk of malfunctions throughout the entire system.

Connections

Hydrun's flexible connection hoses must be fitted to the degasser unit's inlet and outlet. The hoses are steel-braided and supplied in 1.5-metre lengths. The hoses are diffusion-tight and dampen vibrations between the system and the unit.
These hoses are also a requirement for the warranty to apply.

Pipe sizing

Standard pipe sizing should be 22 mm, If the distance between the connection to the main pipe and the degasser unit is greater than 1.5 metres, the pipe diameter must be at least 28 mm. For distances greater than 4 metres, the diameter must be at least 32 mm. (Distances exclude flexible hoses)

4. Technical specifications

Pump data			
Product	HY-D-25	HY-D-40	HY-D-60
Maximum pressure at connection point	0.8 – 2.5 bar	0.8 – 4.0 bar	3.0–6.0 bar
Weight	25.7 kg	30.6 kg	34.7 kg
Fluid temperature	Max 70°C		
Sound level/noise	55 dB(A)		
Ambient temperature:	Max 45°C		
Dimensions (H x W x D) mm	750 x 500 x 250 mm		
Max. inlet pressure:	The actual inlet pressure + the pump pressure against a closed valve must be less than the "maximum pressure at the connection point"		
Electrical data			
Product	HY-D-25	HY-D-40	HY-D-60
Power consumption	5 A	5 A	6 A
Power consumption (kW)	0.75	0.75	0.75
Supply voltage	230 V Earthed plug		
Rated voltage	230 V		
Rated current	10 A		
Overcurrent protection	230 V thermal fuse in electric motor/pump, 400 V motor protection		
Trigger conditions	230 V overheated motor, 400 V circuit breaker adjusted for the respective motor power.		
IP rating	IP-44		
Permitted media	Water, Glycol >50%, Ethanol >29%		

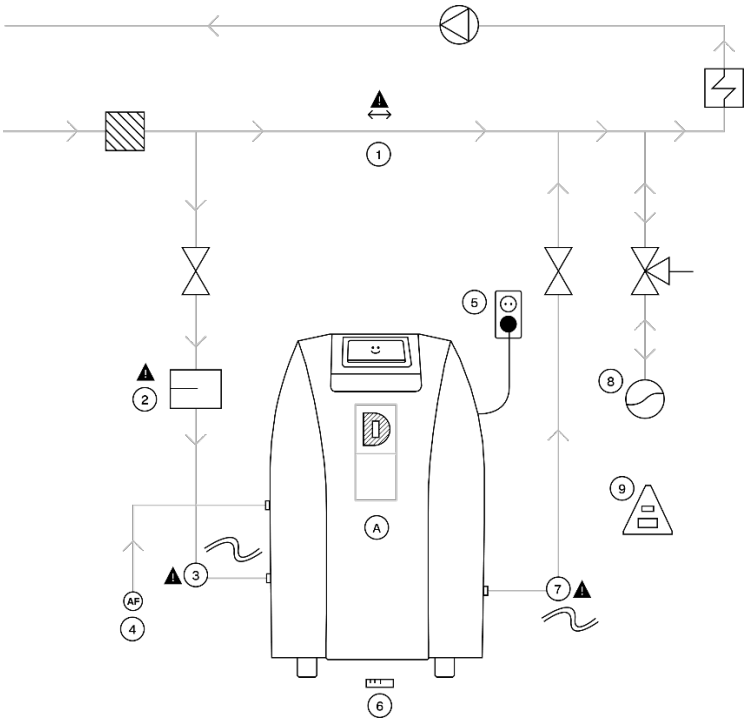
5 Installation Guide

Connections and preparations

A. Install the HY-D according to the schematic diagram below. Minimum distance of 500 mm between the connections to the system.

B. If you have a unit with automatic filling, the supplied water meter must be installed on the auto-fill connection and the white pulse cable connected to the water meter. Note that the cable is approx. 400 mm long and that the water meter must therefore be positioned within its reach.

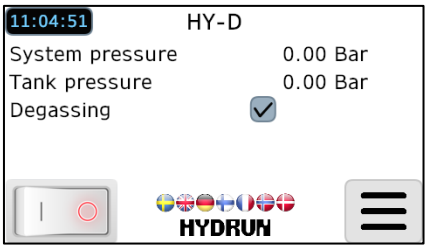
C. Ensure that all ball valves between the HY-D and the system are open.



5.2 Control system settings

1. On start-up, the main menu appears on the display. The main menu shows the current pressure in the system and in the tank. If the unit is not actively operating, both pressures should be the same; during active venting, the tank pressure will be lower.

At the bottom of the menu, you can select the language by pressing the flags.



2. Check that the power switch on the left indicates that the unit is in the off position.

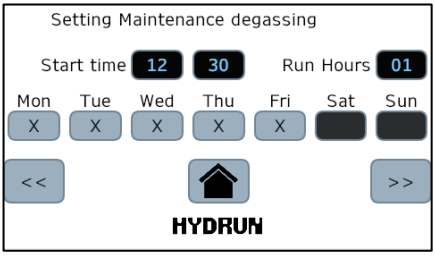
Tip: Pressing the house symbol always takes you back to the main menu.

3. Then press **Menu** at the bottom right of the display and then go to **System settings – Degassing**.

This displays **the Maintenance Degassing Settings**. In this menu, you can select which days of the week and at what time of day it should start and begin venting.

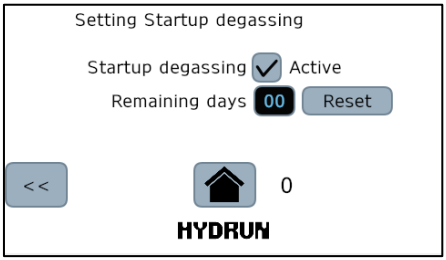
It is also possible to select how long you want the degasser to run each time.

Each cycle takes approximately 2 minutes.



NOTE! This setting is intended for normal operation and does not include start-up venting. mm

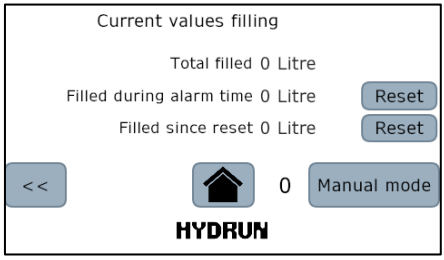
4. Press the right arrow >> to go to **Start-up Degassing Settings**.



In this menu, you can choose to either enable or disable the start-up exhaust by ticking the small box to the right of the text **'Start-up degassing**'.
If the box is ticked, this indicates that the start-up venting is active.
Under **'Days remaining',** you can see how many days are left of the start-up venting before the venting system switches to scheduled operation. If you wish to have a shorter start-up venting period or to restart it, press **'Reset'** and a new 30-day period will begin. If you want a period shorter than 30 days, press the box and enter the number of days you want for the start-up venting. Automatic transition to maintenance venting is retained.

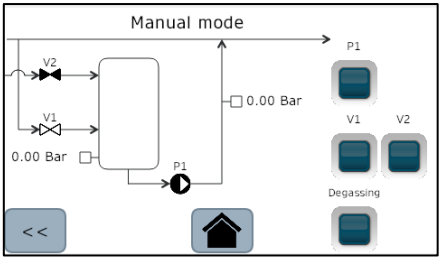
5. Press the House icon to return to the main menu.

6. Go back to **the Menu** and then select **Operating Times and Manual Operation.**
This displays information about the operation of the pump and valves. The number of activations for each solenoid valve, as well as the total number of operating hours for the pump.
If the unit is an automatic refill model, you can press the right arrow >> in this mode. There you can see the current values for the refill function.



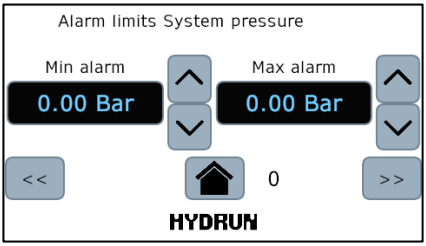
7. Then press **Manual operation** at the bottom right of the display.

P1= Pump
V1= Inlet valve
V2= Auto-fill valve. Only available on units with auto-fill function.
Ventilation: The unit performs a ventilation cycle lasting approx. 2 minutes.

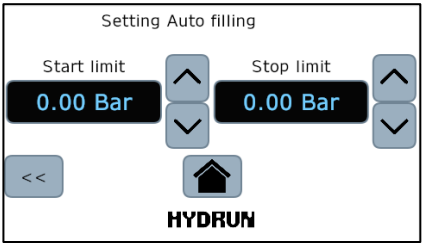


Please note that manual operation can only be performed if the unit is stopped.

8. Then press back to **Menu** and select **Alarm Limits**. **The System Pressure Alarm Setting** is displayed here. If you wish to set an alarm for high/low pressure in the system, set the respective limit using the arrows. If you do not wish to set alarm limits, lower the lower limit to below the static head and the upper limit to above the opening pressure for the SÄV. If the unit has an auto-fill function, you can now press the right arrow >>; if it does not have an auto-fill function, please skip to point: 10

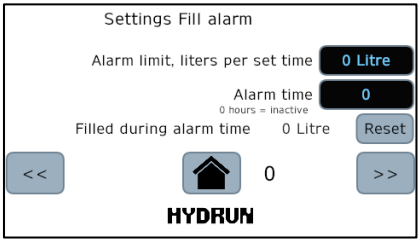


9. Press the right arrow >> to go to **Automatic Refill Settings**.
Here, the unit monitors the set limits for starting and stopping automatic filling.

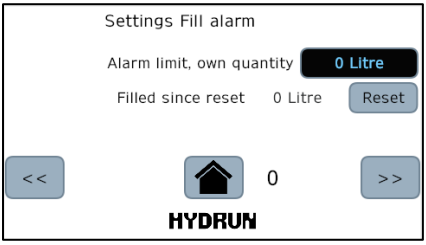


9.1 Press the right arrow >> to go to **the Refill Alarm Settings.**
In this menu, it is possible to set multiple alarm limits.

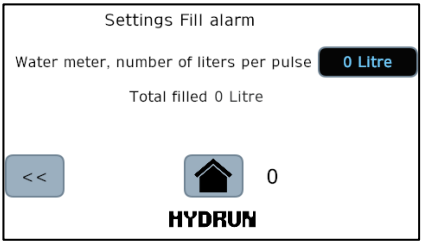
9.2 **Alarm limit litres per set time**:
First, enter the maximum volume permitted to be filled into the system. Then specify the duration during which this volume is permitted to be filled. If this limit is exceeded, an alarm will be triggered and refilling will stop.



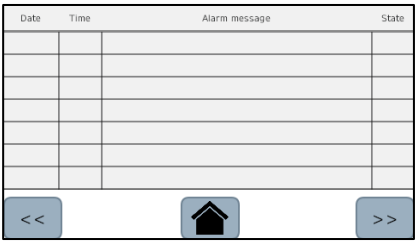
9.3 **Total volume alarm limit:**
Enter the total volume permitted to be filled before the exhaust system triggers an alarm and stops the filling process. This alarm limit is independent of time and monitors only the volume filled, regardless of how long it takes to reach it. In this menu, you can also see how much has been filled since the reset; it is possible to reset the volume filled during the alarm interval at any time.



9.4 Press the right arrow >> to view the menu where you can set the pulse size for the water meter on the auto-fill connection. The default value is 10 litres/pulse. This should not be changed unless otherwise specified. In this menu, you can also view the total volume of water filled via the drain valve since start-up.
It is not possible to reset the calculated amount of water filled since start-up.

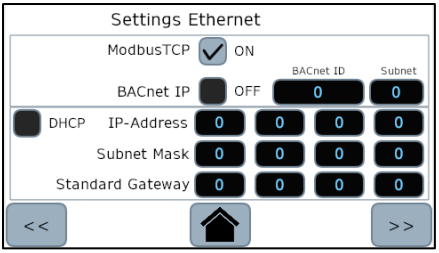


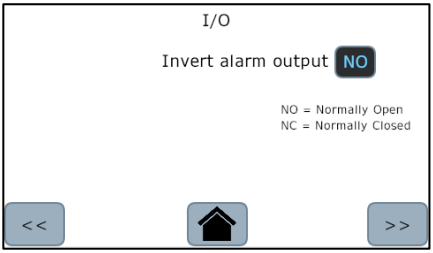
10. Return to the main menu and then select **Alarm List**. Here you can view active alarms on the unit; press the right arrow >> to view historical alarms for the unit.

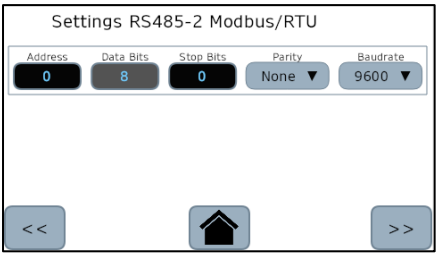


11. Return to the main menu and then select **Communication settings**.

Here you can set the parameters required for communication via Modbus TCP/IP, Modbus RTU and BACnet. For the new settings to take effect, the unit must be restarted. Restarting is done by disconnecting the power to the unit; upon restart, the unit will have performed a so-called reboot of the PLC.







6. Troubleshooting

Below are the most common faults that may occur, along with their causes and recommended actions.
If you experience other fault symptoms, please contact Hydrun's technical support:

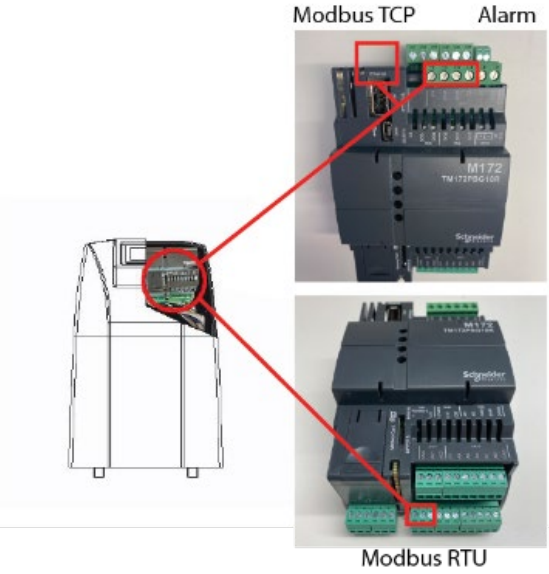
support@hydrun.se
+46 573 21 630

Symptom	Cause	Action
Incorrect tank pressure	Forgot to open the ball valve on the inlet/outlet	Open the closed valve
Took too long to fill	1. Forgot to open the ball valve for filling/fresh water 2. Fresh water pressure too low	1. Open the valve 2. Increase the fresh water pressure to >1.0 bar
Large amounts of water are coming from the drain hose attached to the top vent	The top vent may need replacing. Replacement is expected after approx. 60,000 cycles or approx. 2 years	Replace the top vent and fit the spare part (HY-SP-D-TD)
The tank pressure on the display does not drop to negative pressure	1. Air in the pump 2. Top vent out of order	1. Manually operate the pump to remove any air 2. Replace the top vent with a spare part (HY-SP-D-TD)
The pressure rises so much that the SÄV trips	1. Insufficient expansion space available in the system 2. No pressure equalisation vessel installed 3. The pressure equalisation vessel/expansion vessel has incorrect pre-pressure	1. Install a pressure compensation vessel (HY-A-E-PC-50-20), or upgrade to a larger expansion vessel 2. Install a pressure equalisation vessel (HY-A-E-PC-50-20) 3. Check the pre-pressure on the pressure equalisation vessel. It should be approx. 75% of normal operating pressure.
No communication with the unit after changing Modbus and Bacnet settings	The unit has not been rebooted	Disconnect the unit from the power supply and allow it to restart. The new settings will then take effect.
No values are displayed on the panel; where values would normally appear, there are only red frames	The panel has lost communication with the PLC	Check the cable connection at the back of the panel. The black Ethernet cable is the communication cable.
The system pressure drops sharply during the cycle and returns to normal after the cycle	The system's expansion vessel is too small	Install a larger expansion vessel. >100 litres total expansion volume.
Pressure in the tank or system shows 0.00 or an illogically high value	The pressure sensor has been exposed to frost and damaged	Replace the pressure sensor with a new one. Part no.: A10118

6.1 Alarm

Alarm	Cause	Action
High system pressure alarm (non-stopping)	System pressure exceeds preset limit	Adjust the high-pressure alarm limit, or investigate the cause of the high pressure
Low system pressure alarm (non-stopping)	System pressure falls below preset limit	Adjust the low-pressure alarm limit, or investigate the cause of the low pressure
Tank pressure sensor fault	The connection to the tank pressure sensor is faulty	Troubleshoot the connection. 1. Ensure the connector is properly connected at both ends. 2. If the connector is damaged, contact an electrician
System pressure sensor fault	The connection to the system pressure sensor is faulty	Troubleshoot the connector. 1. Ensure that the connector is properly connected at both ends. 2. If the connector is faulty, contact an electrician.
Alarm for long filling time	The tank has taken too long to fill	Check the valve and the pressure on the fresh water line. Ensure the valve is fully open and that the pressure is >1.0 bar
Incorrect tank pressure	1. Valve on inlet or outlet is closed 2. The inlet filter is blocked 3. Differential between inlet and outlet >1.5 bar	1. Check that all valves are fully open 2. Check the filter and clean if necessary 3. Check that the exhaust is correctly connected to the system.
Fill alarm: volume/time exceeded	A larger volume than specified has been added to the system within the specified time frame	Check the reason why the system needed refilling, e.g. a leak Alternatively, check whether the alarm limit is too tight – adjust if necessary.
Refill alarm: total volume exceeded	A larger volume than specified has been added to the system	Check the reason why the system needed topping up; possible leak Alternatively, check whether the alarm limit is too tight – adjust if necessary.

6.2 Alarm signals and communication



Modbus TCP:
Connects via Ethernet port, see image.

Modbus RTU:
Connect the cable to terminal block CN1, see image.

Summary alarm:
Connection between terminals C5-DO5

Modbus RTU Standardinställning

Address	Namn	Value
16124	Adress	1
16125	Protocol	3=Modbus/RTU
16126	Data bit number	8
16127	Stop bit number	1
16128	Parity protocol	2=Even
16129	Baud rate protocol	2=38400

6.3 Modbus address list

#	Address	Description	Device	Writable	Scaling	Alarm type	Data type	IEC.type	Description of discrete values
1	8963	System pressure	Bar	No	0.01		Signed 16-bit	INT	
2	8964	Tank pressure	Bar	No	0.01		Signed 16-bit	INT	
3	8972	High pressure alarm		No		B	Boolean	BOOL	0=Normal; 1=Alarm
4	8973	Low pressure alarm		No		B	Boolean	BOOL	0=Normal; 1=Alarm
5	8974	High pressure alarm setting	Bar	Yes	0.01		Unsigned 16-bit	UINT	Set alarm limit
6	8975	Low pressure alarm setting	Bar	Yes	0.01		Unsigned 16-bit	UINT	Set alarm limit
7	8960	Start/Stop		Yes			Boolean	BOOL	0=Stop; 1=Start
8	8961	Start-up degassing mode		Yes			Boolean	BOOL	0=No start-up purge 1=Start-up purge
9	8977	Number of days remaining for start-up exhaust	Number of days		1		Unsigned 16-bit	UINT	
10	8962	Automatic refill initiated					Boolean	BOOL	0=Not active; 1=Active
11	8968	Stop pressure for automatic refilling	Bar		0.01		Signed 16-bit	INT	
12	8969	Start pressure for automatic refilling	Bar		0.01		Signed 16-bit	INT	
13	8971	Automatic refill status					Boolean	BOOL	0=No automatic refill 1=Automatic refill
14	8979	Alarm for large difference between tank pressure and system pressure		No		A	Boolean	BOOL	0=Normal; 1=Alarm
15	8980	Alarm for long filling time		No		A	Boolean	BOOL	0=Normal; 1=Alarm
16	8982	Alarm: fault in system pressure sensor		No		A	Boolean	BOOL	0=Normal; 1=Alarm
17	8983	Alarm: fault in tank pressure sensor		No		A	Boolean	BOOL	0=Normal; 1=Alarm
18	8996	Total number of litres refuelled since start	Litres	No	1		Unsigned 32-bit	UDINT	

#	Address	Description	Device	Writable	Scaling	Alarm type	Data type	IEC.type	Description of discrete values
19	8998	Alarm setting for number of days (quantity per time)	Days	Yes	1		Unsigned 32-bit	UDINT	
20	9000	Alarm setting for number of hours (quantity per time)	Hours	Yes	1		Unsigned 32-bit	UDINT	
21	9002	Setting for number of litres per pulse from water meter	Litres	Yes	1		Unsigned 16-bit	UINT	
22	9003	Alarm quantity per time setting	Litres	Yes	1		Unsigned 16-bit	UINT	
23	9004	Counter quantity during ongoing alarm time	Litres	No	1		Unsigned 16-bit	UINT	
24	9005	Volume since last reset of water meter	Litres	No	1		Unsigned 16-bit	UINT	
25	9006	Alarm for quantity per time reached		No		A	Boolean	BOOL	0=Normal; 1=Alarm
26	9007	Alarm limit setting for own quantity	Litres	Yes			Unsigned 16-bit	UINT	
27	9008	Alarm: own quantity reached		No		A	Boolean	BOOL	0=Normal; 1=Alarm
28	9009	Reset counter for quantity per time		Yes			Boolean	BOOL	1 pulse = reset

7. Maintenance

Pump

For pump operation and maintenance, please refer to the extract from the Grundfos installation and operating instructions.
The pump requires no maintenance during normal operation. If the pump has been used for contaminated liquids, it must be flushed immediately after use.

Pumps that are not used during periods of frost should be drained to prevent damage.

Filter

Inspect the filter visually at least once a year. If dirt is visible, close the valves, then remove the filter element and clean it. Reassemble and check that it is working properly.

7.1 Function test

The unit must be checked annually with a simple function test.

Checkpoints:

- A negative pressure must be created in the tank during a normal cycle; the negative pressure must be -0.5 bar for at least 10 seconds.

- Check the tightness of the top vent by monitoring a cycle and inspecting how much moisture is released at the end of the cycle.

If >1 dl of water is released per cycle, it is time to replace the top vent; this is a wear part that operates during every cycle and may therefore need replacing depending on the individually selected degassing frequency. The top vent is therefore not covered by the warranty. Spare parts can be ordered from Hydrun (item no.: HY-SP-D-TD)

7.2 Inspection

During the annual service, open the cover by releasing the clips on either side. Then check the interior of the de-gasser for leaks or water. Also check the unit for dried water, as this may indicate a leak. Tighten connections if necessary.

Check the cables and note any damage found. Check the electrical components; if any component is damaged, hot or has changed colour, please contact the manufacturer for advice.

7.3 Storage

It is important that the unit is always stored in a frost-free environment.
This applies before installation, during transport and after installation. The unit is sensitive to frost.

8. Electrical documentation

General information on electrical safety.

When carrying out service work involving high-voltage current in machinery, a local safety switch must always be used to cut off the power supply. Furthermore, the service location must provide a clear view of the safety switch to prevent it from being activated by another person.

Where there is no local safety switch, or where the safety switch is not visible, the main switch on the electrical cabinet connected to the power source must always be switched off.

Where the main switch is used, it must, without exception, always be locked with a padlock and a warning sign must be affixed to the electrical cabinet to indicate that maintenance work is in progress.

If fuses are removed, they must be replaced with circuit breakers fitted using special tools.

Work on high-voltage systems must only be carried out by a suitably qualified person.

Electrical hazards and power disconnection

In this context, a ‘layperson’ refers to the machine operator (a person who is not a qualified electrician or has not received specific training) and must not carry out work inside the electrical cabinet, as there is live voltage present.

Work on the machine, other than brief tasks, must not be carried out without disconnecting the main switch on the incoming supply and de-energising the system.

When carrying out electrical work on the machine, call in a qualified or trained person.

Contact the manufacturer for more detailed information regarding the electrical connection of the pump/motor. Upon delivery from Hydrun, this is normally pre-connected.

9. Declaration

EU Declaration of Conformity

In accordance with of European Parliament and Council Decision No 768/2008/EC ANNEX III

1. *Product model/product:*

Product	Avgasare
Model/type	O2-X
Serial nos	123456

2. Manufacturer: HL Hydronics AB
   Address: Bögatan 40, 67010, Töcksfors
3. *This declaration is issued under sole responsibility of the manufacturer.*
4. *Object of declaration:*
   Product: Machine for reducing oxygen concentration in closed heating and cooling systems.
5. *The object of the declaration described above is in conformity with relevant Union Harmonisation legislation:*

2006/42/EC	The Machinery Directive
2014/30/EU	The Electromagnetic Compatibility Directive (EMC)
2014/35/EU	The Low Voltage Directive (LVD)
2011/65/EU	The use of certain hazardous substances in electrical and electronic equipment (RoHS 2)
2015/863	The use of certain hazardous substances in electrical and electronic equipment (RoHS 3)

6. *References to the relevant harmonised standards used or references to the other technical specifications in relation to which conformity is declared:*

LVD: Reference & Date	***Title***
EN 61010-1:2010	*Safety requirements for electrical equipment for measurement, control, and laboratory use*

EMC: Reference & Date	***Title***
EN 55014-1:2016+A1:2009 +A2:2011	Electromagnetic compability - Requirements for household appliances, electric tools and similar apparatus.
EN 55014-2:2015	Electromagnetic compability - Requirements for household appliances, electric tools and similar apparatus.
EN 61000-6-2:2005+C1:2005	Electromagnetic compability - Generic standards, Immunity for industrial environments.
EN 61000-3-2:2014	Electromagnetic compability - Limits for harmonic current emission (equipment input current = 16 A per phase)
EN 61000-3-3:2013	Electromagnetic compability - Limits, Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipments with rated current = 16 A per phase and not subject to conditional connection.

7. *The technical file is available from the manufacturer at the address above*

Signed for and behalf of:	HL Hydronics
Place of issue:	Töcksfors, Sweden
Date of issue:	25 th February 2022
Name:	Björn Lennartsson
Position:	Chief Executive Officer (CEO)
Signature:	

10. Machine CE marking

The machinery is fitted with a legible and durable marking in accordance with the provisions of Annex 1, point 1.7.3 of the Machinery Directive.

The manufacturer's plate contains the following information:

- Type
- Year of manufacture
- Serial number
- Contact details
- CE marking

11. Delivery exceptions and the buyer's responsibility

NB! Upon delivery, always check that the product is complete and undamaged.
In the event of any transport damage, report this immediately to the carrier.

The customer/consumer is responsible for the necessary electrical and plumbing connections, as well as ensuring that the necessary drainage is available in the installation area.

General and safety instructions
The HY-D is designed for stationary operation in a non-mobile installation.

Installation and commissioning of the HY-D must only be carried out by specially trained personnel/qualified tradespeople.
The HY-D must only be used in systems with media permitted in accordance with the technical data.

During any type of maintenance or repair of the HY-D, it must be disconnected from the power supply.

Information regarding the manufacturer, year of manufacture and serial number can be found on the manufacturer's plate located on the right-hand side of the HY-D chassis.

Take measures to ensure temperature and pressure safety in the system so that the specified, permitted maximum and minimum operating parameters are not exceeded or fallen short of.

The HY-D has been tested and approved for water and glycol mixtures up to 50% (propylene and ethylene).

For systems using ethanol, a special model must be used. Contact your sales representative for further information. Please also refer to the contents of this user manual.

12. Revisions

If a machine undergoes modifications that affect its fundamental health and safety requirements as per the CE marking, the original declaration of conformity ceases to be valid.

All significant design changes or modifications that affect function, performance or the risk profile must be documented and subjected to a risk assessment.

If the change is deemed to affect the machine's compliance with the requirements of the directives, a new CE marking and declaration of conformity may be required. As a rule, however, it is sufficient to supplement the existing documentation (technical file and instructions for use).

Nordic health and safety authorities have agreed that new CE certification is required only in the case of significant changes affecting the safety concept, design, risks or capacity. The replacement of parts that do not alter function or performance does not require new marking.

All major modifications must be risk assessed and documented, even if the CE marking is not affected. The assessment determines whether the original declaration of conformity remains valid. Hydrun is responsible for the machine's CE marking and the technical documentation, including future modifications and safety aspects.

If you have any questions or uncertainties regarding changes that may affect health and safety requirements in the design or operating instructions, please contact Hydrun.