LOWARA

Ecocirc® OEM
ECOFLOOR T55/T45

Applica qui l'adesivo col codice a barre
Here apply the bar code label

cod. 671075133-A ECOFLOOR V2013-09-09

en	« Original instructions »

These installation and operating instructions must be followed during installation and operation. Read them carefully. We recommend that you keep these instructions where the device is used. Particular attention must be paid to instructions marked as follows:

⚠ Failure to follow these instructions may lead to personal safety risks.

ATTENTION Failure to follow these instructions may lead to the malfunction and possible damage of the device.

1. Safety instructions

This appliance is not to be used by children or persons with reduced physical, sensory or mental capabilities, or persons with a lack of experience or knowledge, unless suitably supervised or unless provided with suitable instructions.

⚠ Children should be supervised at all times and should not play with appliance.

The pump must NOT be used with a damaged cord or enclosure.

In the event of damage to the cord, the cord must be replaced by one of the following parties: the manufacturer, its authorized service center or a professional electrician.

Other relevant regulations should also be followed: e.g. accident prevention regulations or the internal operating and safety instructions of the system manufacturer.
Failure to follow these instructions can result in the loss of all entitlements to claim damages.

2. General Description (figure 6)

ECOFLOOR circulation pumps are shaftless spherical motor pumps with energy-efficient, electronically commutated permanent magnet technology (ECM technology) for use in hot water heating systems, heat pumps, solar systems, air conditioning systems, closed cooling circuits and industrial circulation systems.

For technical reasons, the contact surface between the rotor and the ceramic ball bearing in spherical motor pumps is very small. For this reason, even if they have not been in operation for a long time, such as after the summer, only a small amount of torque is required to start the pump. ECOFLOOR pumps do not require (and thus do not have) a release/vent screw.

A temperature sensor is integrated into the ECOFLOOR pumps, depending on the type fixed setted to 55C or 45°C, which turns off the pump when reaching the preset temperature, and turns it on automatically after cooling down. ECOFLOOR pumps are especially capable for floor heating systems. This temperature sensor is acc. To DIN 1264/4.

ECOFLOOR pump has two standard and two auxiliary operation modes:

Constant Speed (Δpc) = The user can set the speed of the pump by turning the knob into any position between 1 and 7, 7 is the fastest. The preset speed re-mains constant, independently from the flow.

Proportional Pressure (Δpv) = The user can set the maximum strength of the pump by turning the knob into any position between 1 and 7, 7 is the strongest. The pump automatically decreases its speed at low flow, thus providing **energy saving.**

Automatic Air Purge = The user can purge the trapped air from the pumphouse.

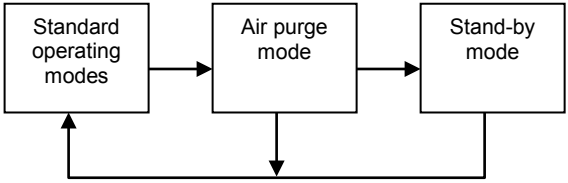
Standby = The user can keep the power consumption low (<1W) when pump operation is not needed.

Instructions to change between operation modes:

- To change between standard operation modes (proportional pressure (Δpv) and constant speed (Δpc)) the user shall turn the knob until the low end position and turn the knob back to the desired setting within 5 sec. Pump indicates mode change by switching the color of the knob LED (proportional pressure (Δpv) is blue and constant speed (Δpc) is white). In both cases the light is constant.
- To activate the air purge function the user shall turn the knob until the low end position and wait at least 5 seconds before turning the knob back to the desired setting. For air purge indication see section 9. After air purge cycle finishes (approximately 10 minutes) the pump will return to the previous standard operating mode.

Note: if user leaves the knob at the low end position pump will enter standby mode after the air purge cycle finishes.

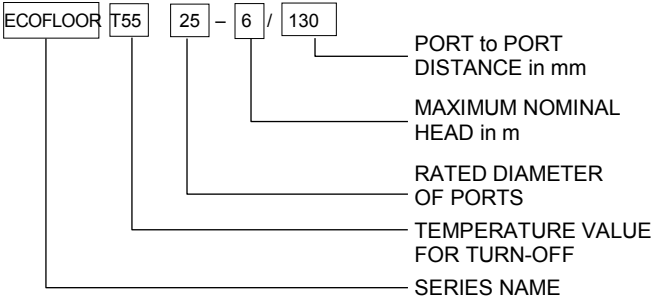
- To enter standby mode without going through the entire air purge cycle the user shall first activate the air purge function, then, turn the knob to any other setting and immediately turn it back to the low end position. LED has a steady light. To return to a standard operation mode the user shall turn the knob to the desired position. Note: returning from standby changes the pump operation mode from Constant Speed (Δpc) to Proportional Pressure (Δpv) and vice-versa. The user can reset the desired mode as described in the first paragraph.



ATTENTION

Heating system power range up to approx. 50 kW (radiator heating systems up to approx. 500 m² living space, underfloor heating systems up to approx. 200 m² floor space). The power of the ECOFLOOR pump must not be adjusted by applying phase trimming ("pulsing") to the supply voltage.

The version at hand can be determined from the name of the model, e.g.:



EXAMPLE: ECOFLOOR 25-6/130
Electronic circulator, series ECOFLOOR, rated diameter of ports = 25, maximum head = 6 m, port-to-port distance = 130 mm.
The following applies:

Series	Max. delivery height	Max. delivery volume
ECOFLOOR…-4	3.5 m	2500 l/h
ECOFLOOR…-6	5.7 m	3200 l/h

Rated connection width DN	For pipe thread	Pump connection thread
15	½“	G 1“
20	¾“	G 1 ¼“
25	1“	G 1 ½“
32	1¼“	G 2“

Installation length (see fig. 1): 130 mm, 180 mm

3. Dimensions (see figure 1)

4. Technical Specifications

Motor model	Electronically commutated spherical motor with permanent magnet rotor	
	“ECOFLOOR...-4”	“ECOFLOOR...-6”
Rated voltage	200-240 V	200-240 V
Frequency	50/60 Hz	50/60 Hz
Power consumption	4-23 W	4-42 W
IP protection	IP 44	IP 44
Insulation class	Class F	Class F
Max. system pressure	10 bar	10 bar
Permitted temperature range of pumped fluid	-10 °C*to +110 °C	-10 °C* to +110 °C
Permitted pumping media	Heating water according to VDI 2035, water/glycol mixtures**	

* Must not freeze. To avoid condensation the fluid temperature must always be higher than the ambient temperature.

** Performance of the pump will noticeably change when pumping water/glycol mixtures with concentrations higher than 20%.

5. Characteristic Curve (see figure 2a + 2b)

6. Installation Advice

The installation of a stop valve upstream and downstream of the pump is recommended so the pump can be replaced at a later time without the need to completely drain the system.

7. Installation

⚠ The unit may not be installed in areas where there is a danger of explosion and may not be used to pump flammable liquids.

Figure 3: Only install in dry, frost-proof rooms in one of the permitted fitting positions.

Figure 4: The use of type WD-B thermal insulation shells, available from the manufacturer, is recommended when a thermal insulation of the pump is required. When using other materials, leave the motor housing uninsulated, otherwise the electronics may overheat and the pump may automatically switch off.

Screw connections for installing the pump in the system are not included in the scope of delivery, but they may be ordered as accessories from the manufacturer.

Use new gaskets (included in the scope of delivery) when installing the pump.

The customer must take appropriate isolation measures and provide appropriate acoustic insulation to reduce possible noise transfer.

7.1 Electrical connection (see figure 7)

⚠ The unit may only be connected by an authorized electrician. The pump is equipped with a factory installed cable.

ATTENTION In case of changing the connection, it must be made as shown in figure 7. The pump requires a separate circuit breaker installed on the phase with a rated value of 10A. The socket must be positioned in such way that no water can drip onto it even in the event of damage to the piping.

7.2 Getting started

ATTENTION The pump must not run dry as this can result in the destruction of the bearing in a very short time. Fill it with liquid before first start-up.

Before starting, the system must be:
- Rinsed thoroughly to prevent the presence of foreign objects and impurities which could block the pump.
- Fully filled with the pumped media (water or water-glycol mix).
- Completely purged of air.
  - To help to reach this, the pump has a built-in automatic air purge function. See instructions for activating the air purge function in section 2 page 4.
  - The air purge function can be activated any time during operation when the presence of air is suspected in the system.
  - The air purge function can be activated several times in a sequence if necessary.
  - Audible flow noise indicates that there is still air in the pump.

7.3 Typical setting

The corresponding values are derived from the hydraulic calculation of the system. If this calculation is not at hand, then the following speed settings can be used:

Standard single-family home	Apartment block
(approx. 140 m^2 @ 50 W/m^2 = 7 kW)	(approx. 420 m^2 @ 50 W/m^2 = 21 kW)
ECOFLOOR…- 2-3	ECOFLOOR…- 2-3
4	6

If the temperature differential between the flow and the return is too large, increase the power; if the temperature differential is less than expected, reduce the power even further. (Guideline values: underfloor heating: 8–10 K; radiator heating: 15–20 K).

8. Maintenance/Disassembly

Pumps are subject to wear. If the pump is blocked (see section 9) or grinding noises are audible, check the pump and replace it if necessary.
Procedure:

- Disconnect the pump from the mains.
- Shut off supply and drain lines. If there are no shut-off devices, drain the system so that the fluid level is beneath that of the pump.
- Loosen the union nut by hand or with an appropriate tool (such as a strap wrench) and carefully pull the motor out of the pump housing.

ATTENTION Residual water may leak out of the rotor cavity. Prevent the pump's electrical connection from getting wet.

For figure 5:
- Carefully but firmly pull the rotor / impeller upward by hand and remove it.
- If necessary, remove foreign bodies and impurities/deposits with appropriate agents. Reinsert the rotor / impeller.
- The bearing is worn if the rotor / impeller cannot be freely moved or if wear marks are visible. In this case, replace the rotor, the pump motor, or the entire pump.

9. Operating signal light / Troubleshooting / Warranty

Work on electrical parts may only be performed by authorized electricians.

When the electrical connection to the pump is properly made and the pump is powered, a white or blue light (depending on the actual operation mode) is constantly lit in the knob of the ECOFLOOR pump.
Mode selection: turn the knob to the end position below 1 then turn it back within 5 sec.
Constant Speed: white light; **Proportional Pressure**: blue light
Faults are indicated as follows:

Operating LEDs / Blinking light	Cause	Solution
Off	• Pump is not connected or is incorrectly connected	• Check connection
	• Power failure	• Check mains + circuit breaker
3 x short + 1 x long	• Voltage too low / too	• Check mains voltage

	high	
4 x short	• Temperature too high	• Pump restarts automatically (see the notes below) • Determine max. system temperature
2 x short + 1 x long +1 x short	• Self test error	• Please contact authorized service center or point of purchase
2 x short + 2 x long	• Excess current error	• See section 8 Maintenance/ Disassembly”
1 x short + 1 x long + 1 x short + 1 x long	• Unstable operation	• See section 8 Maintenance/ Disassembly”
1 x short + 1 x long + 2 x short	• Start up error	• Rotor blocked • See section 8 Maintenance/ Disassembly”
1 x very short + 1 x long pause	• Air purge function	• Pump runs in air purge function / color means mode selected

Proceed as follows for other faults:

Fault	Cause	Solution
Pump is making loud noises	• Not thoroughly vented	• See section 7.2 “Getting started”
	• Foreign objects in pump	• See section 8 “Maintenance/ Disassembly”
	• Worn out bearing	• Replace pump

Note regarding excessive temperatures:
In order to protect the electronics from temperatures that are dangerously high, the electronic control system monitors its own temperature. If the measured temperature is too high the pump speed is reduced. If the temperature rises above a safety limit, the pump will shut itself off. The pump will automatically restart after cooling down.

10. Disposal

This product and parts thereof must be disposed of in an environmentally friendly manner. Applicable local regulations must be followed.

11. Exploded View (see figure 6)

1. Supply cable
2. Stator/pump motor
3. Union nut
4. O-ring
5. Impeller / Rotor
6. Pump housing
7. Connection thread
8. Continuously adjustable selector knob with built-in LED

12. EC DECLARATION OF CONFORMITY « ORIGINAL »

LOWARA SRL UNIPERSONALE, WITH HEADQUARTERS IN VIA VITTORIO LOMBARDI 14 - 36075 MONTECCHIO MAGGIORE VI - ITALIA, HEREBY DECLARES THAT THE PRODUCT

CIRCULATOR (SEE LABEL ON FIRST PAGE)

FULFILLS THE RELEVANT PROVISIONS OF THE FOLLOWING EUROPEAN DIRECTIVES

- MACHINERY 2006/42/EC (ANNEX II: THE TECHNICAL FILE IS AVAILABLE FROM XYLEM WATER SYSTEMS HUNGARY KFT, KÜLSŐ-KÁTAI ÚT 41, 2700 CEGLÉD, MAGYARORSZÁG).
- ELECTROMAGNETIC COMPATIBILITY 2004/108/EC

AND THE FOLLOWING TECHNICAL STANDARDS

- EN 60335-1, EN 60335-2-51
- EN 55014-1:2006+A1:2009, EN 55014-2:1997+A1:2001+A2:2008

MONTECCHIO MAGGIORE, 31.07.2012
AMEDEO VALENTE
(DIRECTOR OF ENGINEERING AND R&D)
rev.00

fr **« Traduction de la notice originale »**

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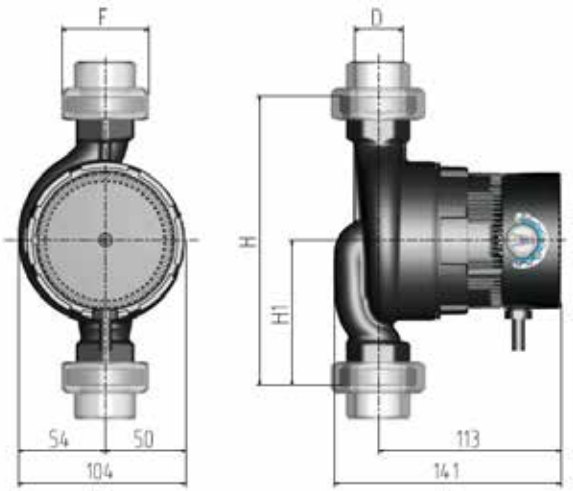
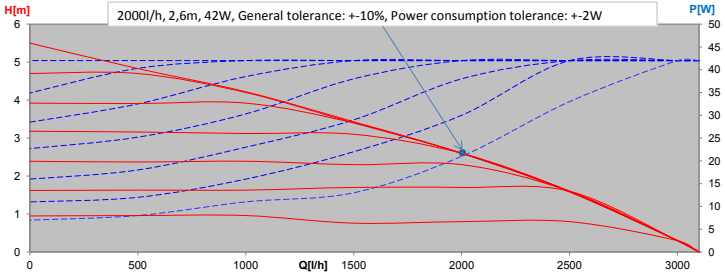
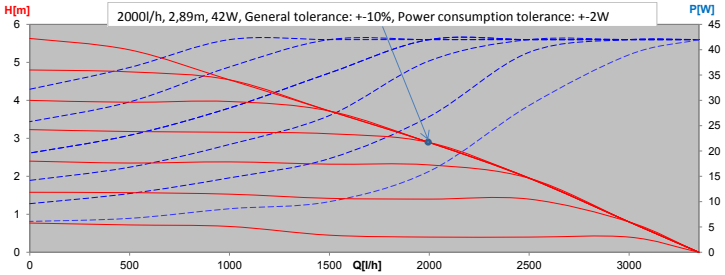


	H	H1	D	F	DN	kg
	mm					
ECOFLOOR 15-4/130	130	65	R ½	R 1	15	1,9
ECOFLOOR 20-4/130	130	65	R ¾	R 1¼	20	2
ECOFLOOR 25-4/130	130	65	R 1	R 1½	25	2,1
ECOFLOOR 25-4/180	180	90	R 1	R 1½	25	2,4
ECOFLOOR 32-4/180	180	90	R 1¼	R 2	32	2,4
ECOFLOOR 15-6/130	130	65	R ½	R 1	15	1,9
ECOFLOOR 20-6/130	130	65	R ¾	R 1¼	20	2
ECOFLOOR 25-6/130	130	65	R 1	R 1½	25	2,1
ECOFLOOR 25-6/180	180	90	R 1	R 1½	25	2,4
ECOFLOOR 32-6/180	180	90	R 1¼	R 2	32	2,4

Pumpenkennlinien ECOFLOOR 15-6/130



Pumpenkennlinien ECOFLOOR T55 25-6/130



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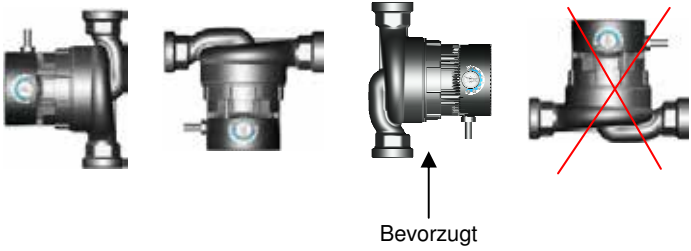

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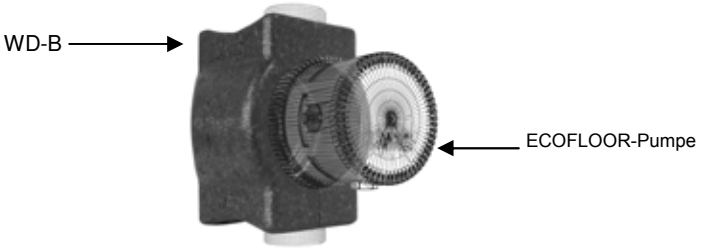

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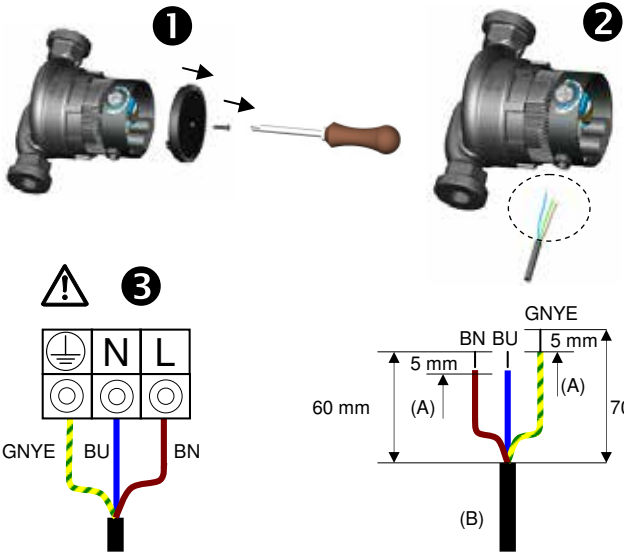

BU	BN	GNYE
Blau	Braun	Grün/Gelb

(A) Bleifrei geschweißt

(B) H05V2V2-F 3x0,75 mm^2 (HAR, VDE, ……..)
H03V2V2-F 3x0,75 mm^2 (HAR, VDE, ……..)