

Additional Installation, Operation
and Maintenance Instructions



eco2 Series

Wet rotor circulators

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1 Introduction and Safety

1.1 Introduction

This manual provides information on how to do the following in the correct manner:

- Installation
- Operation
- Maintenance.

1.2 Acronyms

Code	Definition
AISI	American Iron and Steel Institute, the United States institute for the standardisation of iron and steel
CE	European Conformity Mark
CEN	Comité Européen de Normalisation, European Standardisation Body
EEI	Energy Efficiency Index, the energy efficiency index defined by the EN 16297 standard
EN	Standards developed by CEN
EPDM	Ethylene-Propylene Diene Monomer, synthetic rubbers according to DIN/ISO 1629 and ASTM D 1418-19
IEC	International Electrotechnical Commission
IP	Protection Degree of Enclosures
PWM	Pulse-width modulation
RoHS	Restriction of (the use of certain) Hazardous Substances
VDI	Verein Deutscher Ingenieure, Association of German Engineers
WEEE	Waste electrical and electronic equipment

1.3 Safety

1.3.1 Hazard levels and safety symbols

Before using the unit, the user must read, understand and comply with the indications of the danger warnings in order to avoid the following risks:

- Injuries and health hazards
- Damage to the product
- Unit malfunction.

Hazard levels

Hazard level	Indication
 DANGER:	It identifies a dangerous situation which, if not avoided, causes serious injury, or even death.
 WARNING:	It identifies a dangerous situation which, if not avoided, may cause serious injury, or even death.
 ATTENTION:	It identifies a dangerous situation which, if not avoided, may cause small or medium level injuries.
NOTE:	It identifies a situation which, if not avoided, may cause damage to property but not to people.

Complementary symbols

Symbol	Description
	Electrical hazard
	Hot surface hazard
	Danger, pressurized system
	Do not use flammable liquids
	Do not use corrosive liquids
	Read the instruction manual

1.3.2 User safety

Strictly comply with current health and safety regulations.

**WARNING:**

This unit must be used only by qualified users. Qualified users are people able to recognise the risks and avoid hazards during installation, use and maintenance of the unit.

1.3.3 Protection of the environment

Disposal of packaging and product

Comply with the current regulations on sorted waste disposal.

2 Handling and Storage

2.1 Handling of the packed unit



WARNING:

Take appropriate measures during transport, installation and storage to prevent contamination from external substances.

The Manufacturer delivers the unit and its components in a cardboard box.

2.2 Storage

Storage of the packed unit

The unit must be stored:

- In a covered and dry place
 - Away from heat sources
 - Protected from dirt
 - Protected from vibrations
 - At an ambient temperature between -40°C and +85°C (-40°F and 185°F).
-

NOTE:

Do not place heavy loads on top of the unit.

NOTE:

Protect the unit from collisions.

3 Technical Description

3.1 Designation

Wet rotor circulators with integrated electronic frequency converter.

3.2 Features and integrated functions

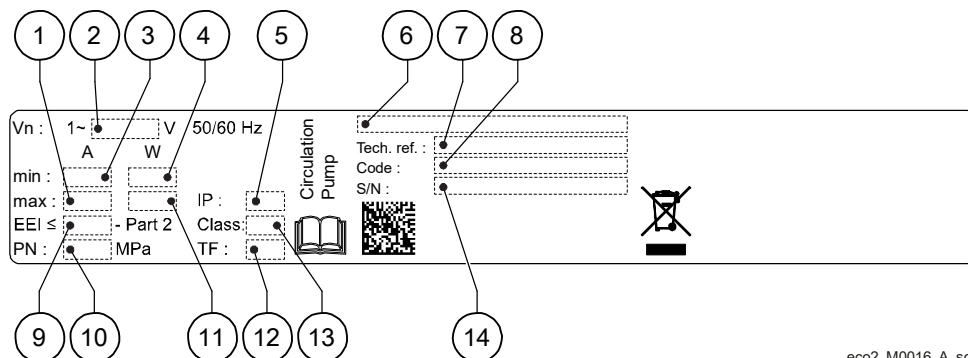
Reading and adjustment

Feature / function	eco2	eco2 PWM	eco2 SOLAR	eco2 PWM SOLAR	eco2 MICROFLOW
Control knob	•		•		
Operating status indicator	•	•	•	•	•

Control and operating mode

Feature / function	eco2	eco2 PWM	eco2 SOLAR	eco2 PWM SOLAR	eco2 MICROFLOW
Operation at constant pressure	•	•	•	•	
Operation at proportional pressure	•	•	•	•	
Operation at constant speed	•	•	•	•	
PWM		•		•	•

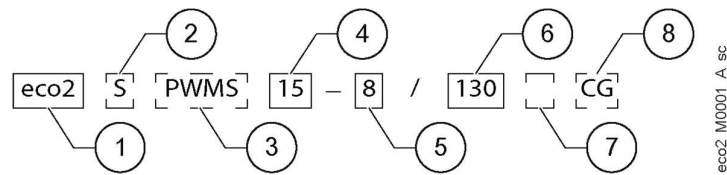
3.3 Data plate



eco2_M0016_A_sc

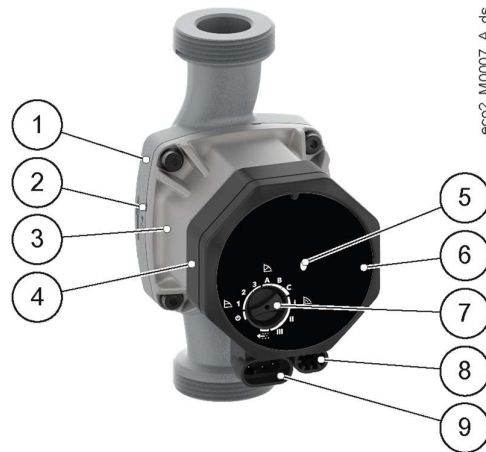
1. Maximum input current
2. Input voltage range
3. Minimum input current
4. Minimum input power
5. IP grade
6. Product name or model description
7. Technical reference
8. Product part number or BPCS code
9. EEI index
10. Rated or maximum pressure
11. Maximum input power
12. Liquid temperature class
13. Insulation class
14. Serial number

3.4 Identification code



1. Product family
2. Product version: SOLAR [S], MICROFLOW [M], or standard []
3. Operating mode with PWM heating profile [PWMH], PWM solar profile [PWMS], PWM microflow profile [PWMM], or basic control modes []
4. Port nominal diameter in mm
5. Maximum head in m
6. Distance between suction port and discharge port in mm, or end suction version [END]
7. Pump body in cast iron [], stainless steel [N], or composite [C]
8. Connection type with cable gland [CG] or Superseal and Mini-superseal plug [TS]

3.5 Names of the main components



1. Pump body
2. Discharge of condensate
3. Motor body
4. Electronic drive
5. Unit status LED indicator
6. Drive display
7. Work and operating mode knob
8. Signal connector socket,
9. Power supply connector socket or cable gland, depending on model

3.6 Intended use

- Gas, diesel oil, wood and pellet boiler
- District heating systems
- Underfloor heating systems
- Multi-zone heating systems
- Cogeneration processes
- Heat transfer stations
- Mixing stations
- Heat pumps
- Domestic hot water systems
- Air-conditioning systems.

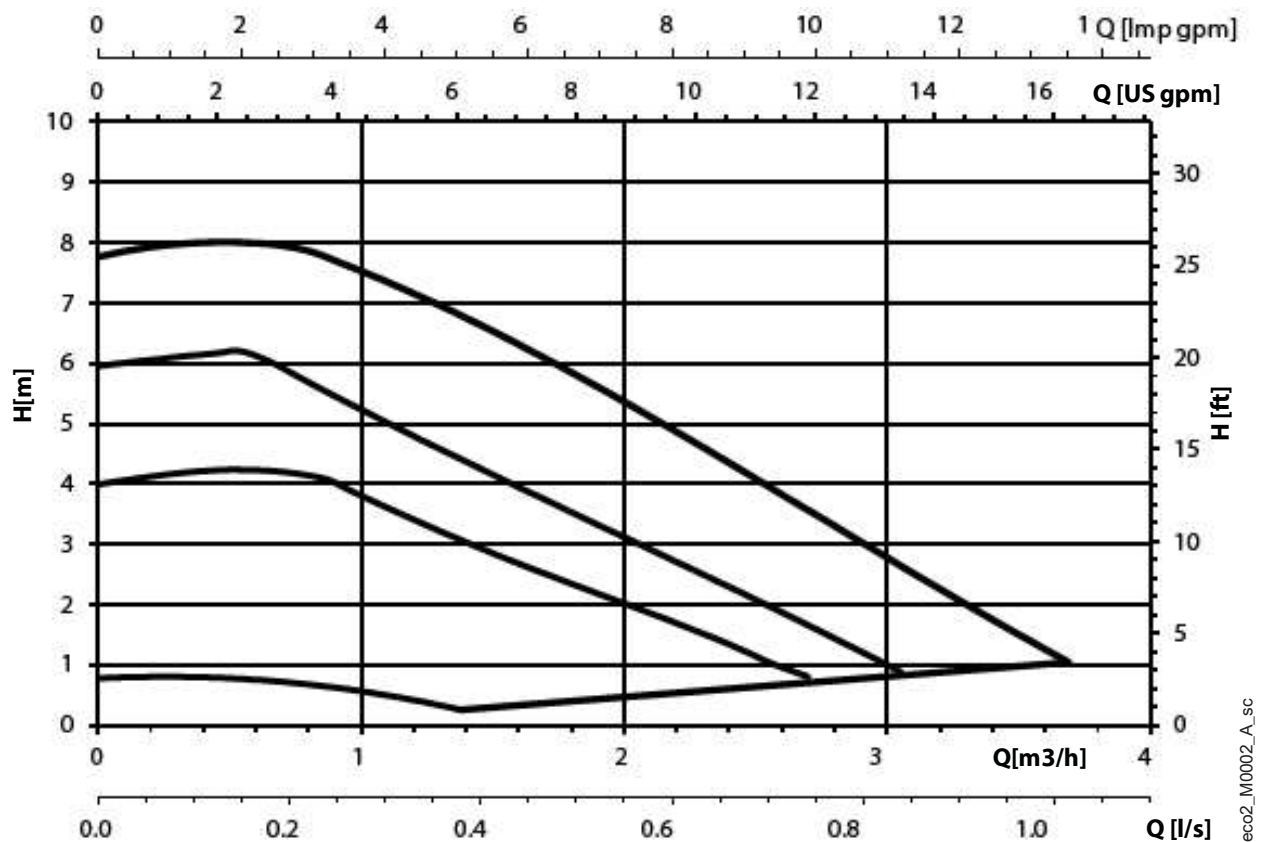
Pumped liquids

- Clean
- Free of solid particles or fibres
- Free of mineral oils
- Chemically and mechanically non aggressive
- Non-flammable
- Non-explosive
- Water/glycol mixtures
- Water for heating according to VDI 2035
- Domestic hot water

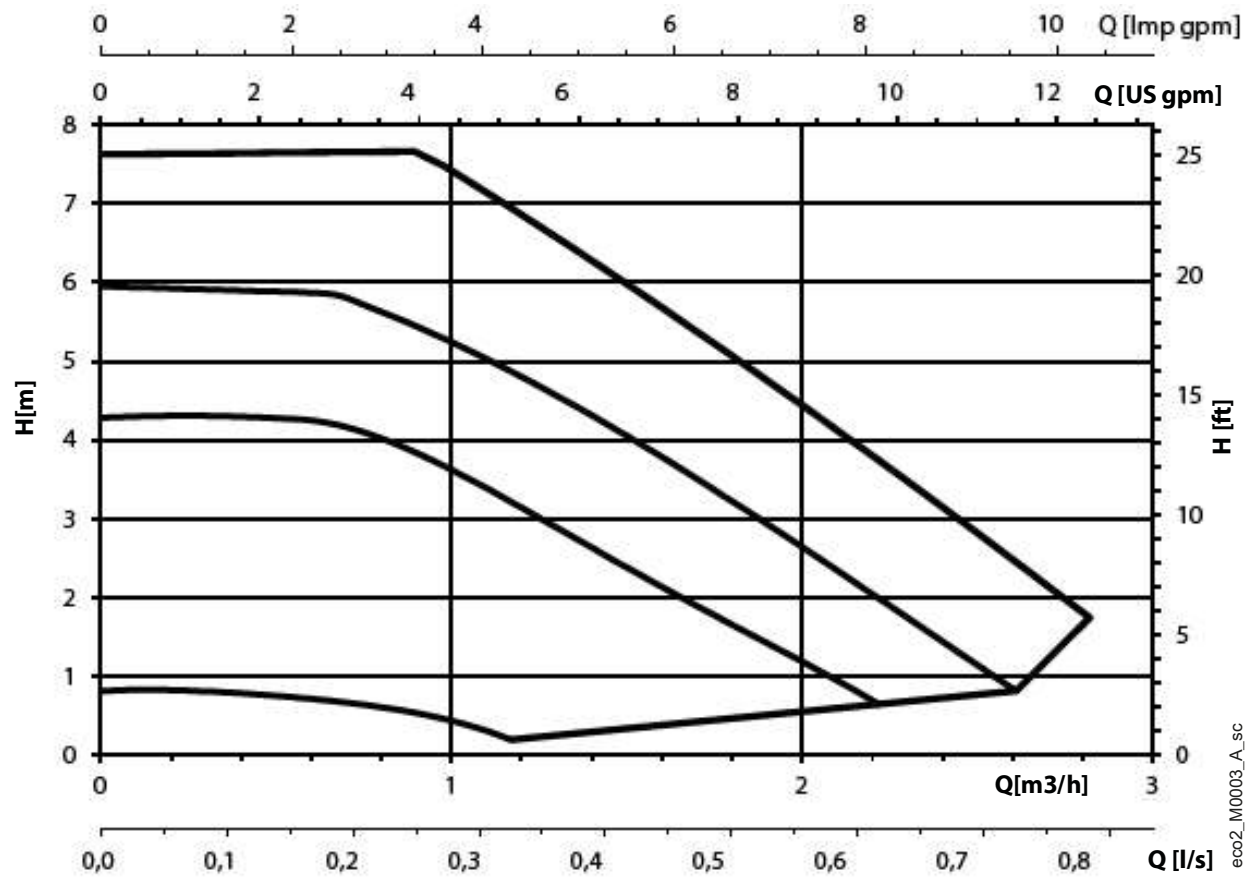
Observe the operating limits in Technical Information on page 27.

3.7 Hydraulic performance diagrams

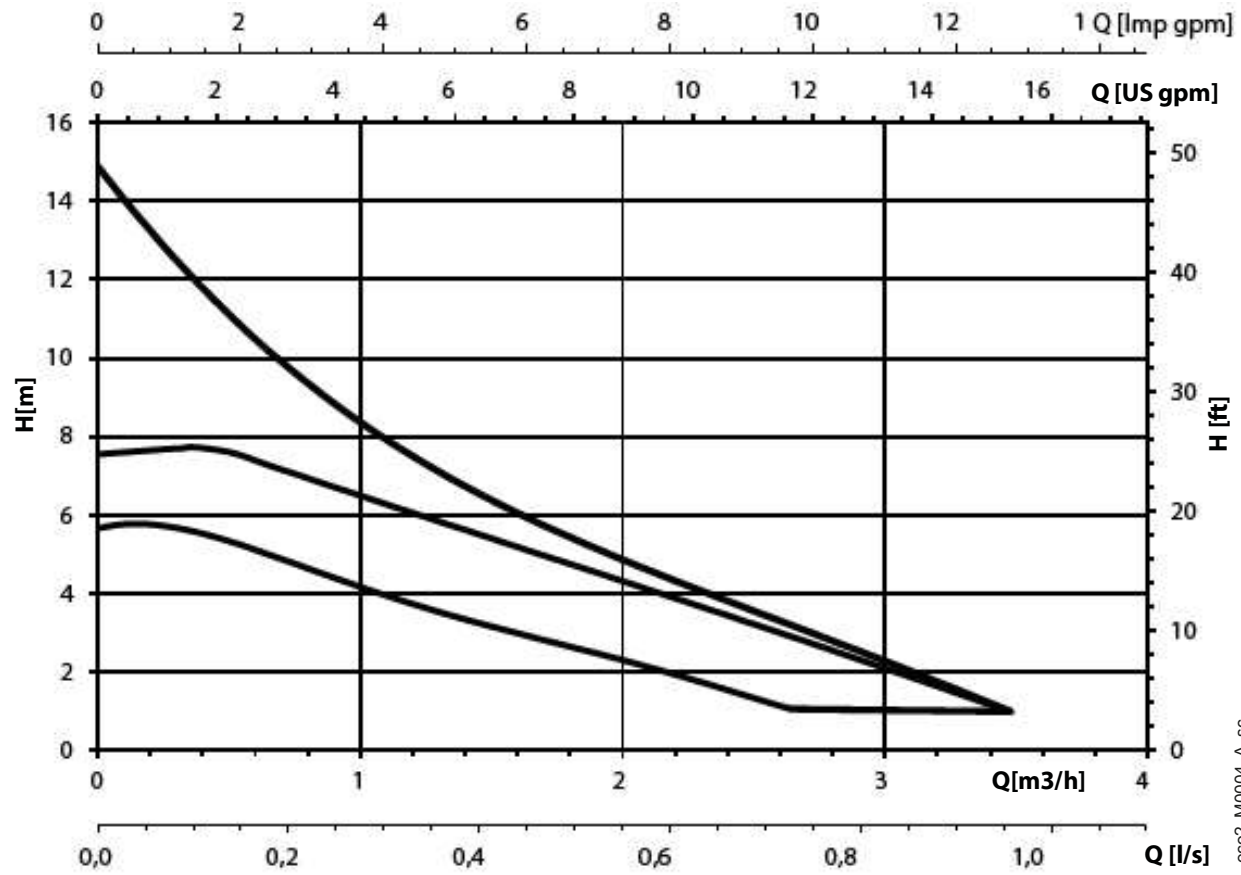
eco2 with cast iron or stainless steel body and end suction versions



eco2 with composite body



eco2 SOLAR



eco2_M0004_A_sc

4 Installation

4.1 Precautions

Before starting, make sure that the safety instructions shown in **Introduction and Safety** on page 4 have been fully read and understood.



DANGER: Potentially explosive atmosphere hazard

It is prohibited to start the unit in environments with potentially explosive atmospheres or with combustible dusts.



WARNING:

Always wear personal protective equipment.



WARNING:

Always use suitable working tools.



WARNING:

When selecting the place of installation and connecting the unit to the hydraulic and electric power supplies, strictly comply with current regulations.

When connecting the unit to a public or private aqueduct, or to a well for the supply of water for human and/or animal consumption:



WARNING:

It is prohibited to pump drinking water after use with other fluids.



WARNING:

Remove the unit from its packaging just before installation to prevent contamination from external substances.

4.2 Installation area

- Install the unit in a dry and well ventilated area, protected against weather conditions.
- Follow the provisions in Operating environment on page 27.

4.3 Hydraulic connection



DANGER:

All the hydraulic and electrical connections must be completed by a technician possessing the technical-professional requirements outlined in the current regulations.



WARNING:

Piping must be sized to ensure safety at the maximum operating pressure.

**WARNING:**

Install appropriate gaskets between the unit and the piping system.

4.3.1 Guidelines for hydraulic connection

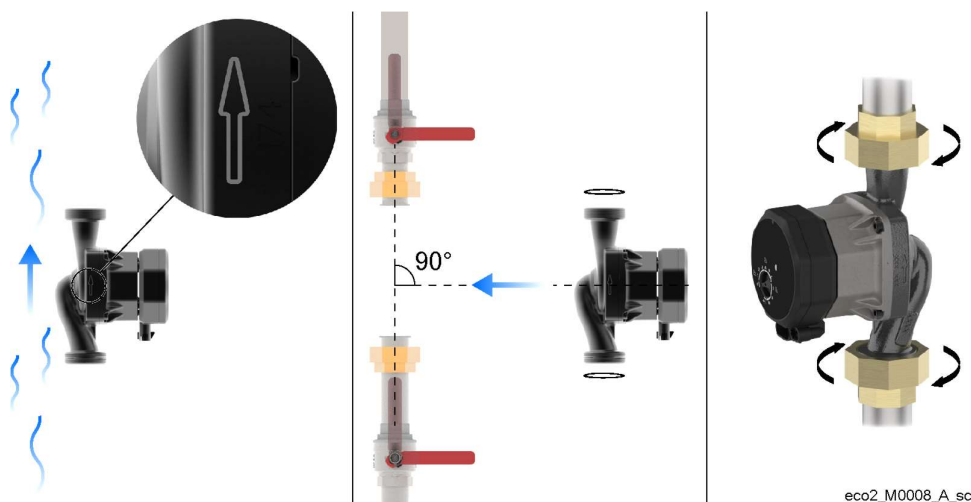
- If possible, install the unit at the lowest point of the system
- Remove any welding residues, deposits and impurities in the pipes that could damage the unit.
- To exclude the unit from the system for the purpose of maintenance, install an on-off valve on the suction side and another on the delivery side
- Support the pipes independently to prevent them from weighing on the unit.
- Check that other devices cannot come in contact with the unit.

4.3.2 Assembly

**ATTENTION: Danger, pressurized system**

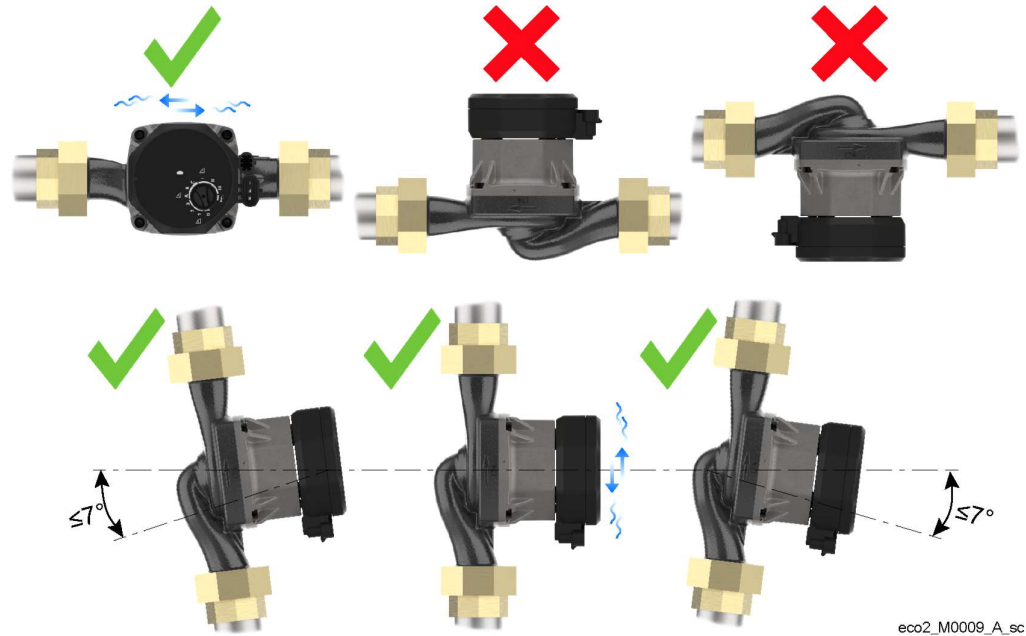
Before starting work, close the on-off valves on the suction and delivery sides or drain the system.

1. Locate the arrow on the unit to determine the correct direction of the flow of liquid.
2. Insert the unit between the pipes with the gaskets.
3. Tighten the nuts in the joints.
Tightening torque: see the table.



Size of the joint	Material of the pipe	Torque, Nm (lbf·in)
G1	Plastic	50 (37)
G1	Cast iron	85 (63)
G1¼	Cast iron	105 (78)
G1½	Cast iron	125 (92)
G2	Cast iron	165 (122)

Mounting positions



4.3.3 Rotation of the drive display

The drive display can be turned 90° at a time.



ATTENTION: Danger, pressurized system

Before starting work, close the on-off valves on the suction and delivery sides or drain the system.



ATTENTION:

Residual liquid could come out of the motor body during disassembly at a very hot or cold temperature: be careful to avoid physical injury.



ATTENTION:

Make sure not to damage the internal gasket, otherwise liquid could leak out at a very hot or cold temperature during operation of the unit.

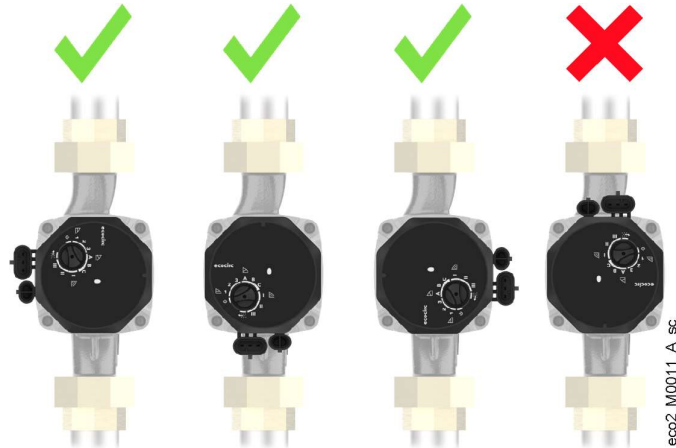
NOTE:

During disassembly, support the motor body and not the electronic drive, in order to avoid damaging the electronic drive.

1. Remove the screws.
2. Turn the motor body without detaching it from the body of the pump.
3. Fasten the screws following a cross pattern.
Tightening torque: 4.5 Nm (40 lbf·in).



Positions of the drive display



4.4 Electrical connection



DANGER:

All the hydraulic and electrical connections must be completed by a technician possessing the technical-professional requirements outlined in the current regulations.



DANGER: Electrical hazard

Before starting work, check that the electric power supply is disconnected and locked out, to avoid unintentional restart of the unit, the control panel and the auxiliary control circuit.

4.4.1 Ground



DANGER: Electrical hazard

Always connect the external protection conductor (ground) to the ground terminal before attempting to make any other electrical connections.



DANGER: Electrical hazard

Check that the external protection conductor (ground) is longer than the phase conductors. In case of accidental disconnection of the unit from the phase conductors, the protection conductor must be the last one to detach itself from the terminal.



DANGER: Electrical hazard

Install suitable systems for protection against indirect contact, in order to prevent lethal electric shocks.

4.4.2 Guidelines for electrical connection

- The mains voltage and frequency must match the specifications on the data plate
- Use a H05V2V2-F 3G0.75-1.5 multi-core power supply cable
- Protect the power supply cable against high temperatures, vibrations, collisions and abrasions.

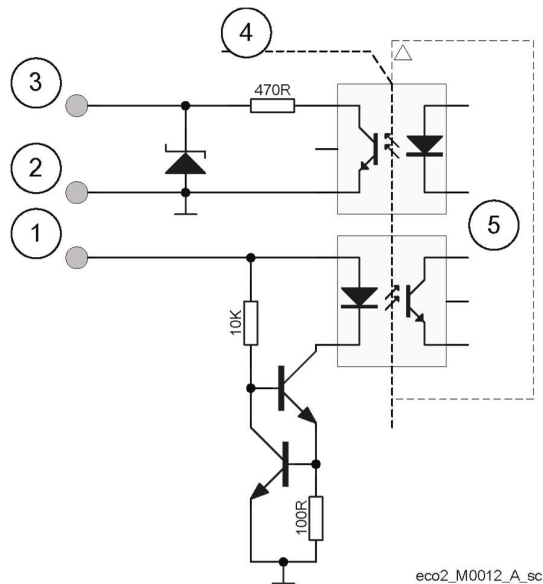
4.4.3 Connector types



1. Cable gland, power supply only
2. Cable gland, power supply and signal
3. Superseal, power supply only
4. Mini Superseal, power supply and signal

4.4.4 Connection of PWM models

Diagram



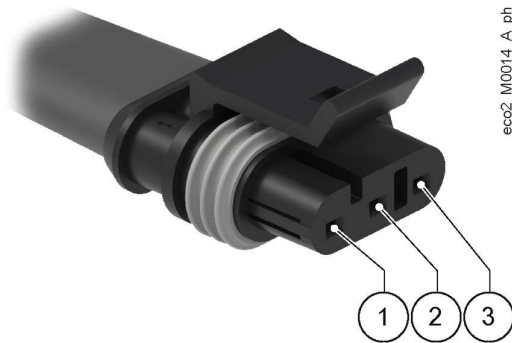
1. Input
2. Common
3. Output
4. Galvanic isolation
5. Internal electronics of the unit

Mini Superseal PWM connector



Position number	Colour	PWM signal
1	Brown	Input
2	White	Common
3	Green	Output

Superseal power supply connector



Position number	Colour	Conductor
1	Brown	Phase
2	Yellow / green	Protection (earth)
3	Blue	Neutral

Check that the unit is properly connected to the mains power supply.



It is prohibited to put combustible materials near the unit.

Dry run of the unit is forbidden.

It is prohibited to operate the unit with the on-off valve closed.

- The instructions in **Installation** on page 12 have been followed.
- The system is full and vented.
- The minimum suction pressure is the same as that indicated in **Technical Information** on page 27.

Action	LED	eco2, eco2 SOLAR	eco2 PWM, eco2 PWM SOLAR, eco2 MICROFLOW
Turn on the power supply	Flashing yellow light	 VnL E_M0017_A.ph	 eco2_M0006_A.ph

5.4 Venting the unit

Vent the unit:

- During filling
- During operation, to remove the dissolved gases (degassing)

Action	LED	Illustration
Keep the knob turned to  until the unit is completely vented	Flashing green light	 AH_M0019_A.ph

Notes:

- Once activated, degassing continues for 3 minutes irrespective of the set mode
- Depending on the features of the system, it may be necessary to activate degassing for more than 3 minutes.

6 Settings and operation

eco2 and eco2 SOLAR

The unit can operate in 3 different modes that can be selected with the selector switch. See paragraph 6.1.

eco2 PWM, eco2 SOLAR PWM and eco2 MICROFLOW

The unit is controlled via PWM signal for the external activation of the functions. The set point level evaluation required for control is referred to a remote control. The remote control sends a PWM signal to the unit as actuation variable.

6.1 eco2 and eco2 SOLAR setup

Turn the knob to select the required mode.



Position of the knob	Description
	Standby
1, 2, 3	Operation with constant pressure
A, B, C	Operation with proportional pressure
I, II, III	Operation with constant pump speed
	Degassing function

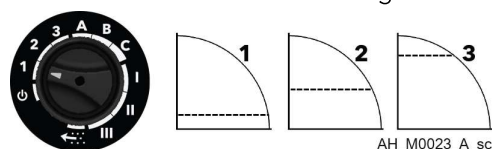
6.1.1 Stand-by

Operation of the unit put on hold.

Action	LED	Illustration
Turn the knob to	Flashing yellow light	A photograph of the selector knob with a yellow LED indicator flashing. The text 'AH_M0017_A_ph' is printed vertically on the right side of the image.

6.1.2 Operation with constant pressure

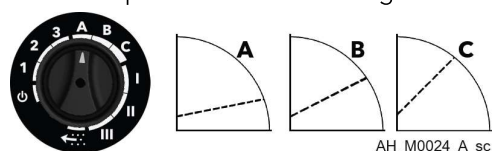
The pressure remains constant irrespective of the system's actual demand for flow. Suitable for underfloor heating systems and without characteristic curve.
Select the level of head according to the features of the system and/or heat demand.



Position number	Description
1	Low performance curve
2	Intermediate performance curve
3	High performance curve

6.1.3 Operation with proportional pressure

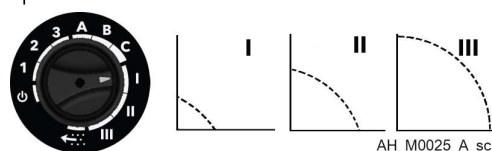
The pressure is constantly adapted according to the system's actual demand for heat. Suited for two-pipe heating systems.
Select the performance according to the features of the system and/or heat demand.



Position number	Description
A	Low performance curve
B	Intermediate performance curve
C	High performance curve

6.1.4 Operation with constant pump speed

The speed is kept constant irrespective of the system's actual demand for flow. Suited for one-pipe heating systems and domestic hot water systems.
Select the speed according to the features of the system or number of valves that can be opened at the same time.



Position number	Description
I	Constant pump speed I
II	Constant pump speed II
III	Constant pump speed III

6.1.5 Degassing function

See **Venting the unit** on page 19.

6.2 Starting at high torque

If the motor shaft is locked, for example due to limescale, the unit automatically makes several attempts to start at high torque. During this phase:

- The unit vibrates and makes a noise
- The LED is red and steady

When locking is resolved, the unit continues to run normally (green LED).

6.3 Dry run signal

Protects the unit against dry running during start-up and normal operation:

- During the first 24 hours, the unit continues to run and the LED is red and flashing
- After 24 hours, the unit stops and the LED is red and steady

See **Troubleshooting** on page 24.

7 Maintenance

7.1 Precautions

Before starting the works, make sure that the instructions shown in **Introduction and Safety** on page 4 have been fully read and understood.



WARNING:

Maintenance must be done by a technician possessing the technical-professional requirements outlined in the current regulations.



WARNING:

Always wear personal protective equipment.



WARNING:

Always use suitable working tools.



WARNING:

In the case of liquids that are excessively hot or cold, pay attention to the risk of injury.



DANGER: Electrical hazard

Before starting work, check that the electric power supply is disconnected and locked out, to avoid unintentional restart of the unit, the control panel and the auxiliary control circuit.

7.2 Spare parts ordering

Contact Xylem or the Authorised Distributor for technical information.

8 Troubleshooting

8.1 Precautions


WARNING:

Maintenance must be done by a technician possessing the technical-professional requirements outlined in the current regulations.


WARNING:

Observe the safety requirements in the chapters on Use and Operation and Maintenance.


WARNING:

If a fault cannot be corrected or is not mentioned, contact Xylem or the Authorised Distributor.

8.1.1 Resetting errors

Errors may sometimes need resetting:

1. Disconnect the power supply.
2. Wait 1 minute.
3. Turn on the power supply.

8.2 Insufficient cooling or heat

LED	Cause	Solution
Green steady	Inadequate performance levels by the unit	• Increase head by increasing speed and wait for the system to become fully operational, or • Select a different operating mode and wait for the system to become fully operational If the problem continues, replace the unit
Flashing red light	Dry running detected	1. Check that the system is free of air 2. Check that the pumped liquid pressure conforms with the working limits 3. Check that the unit is installed according to the instructions in the manual 4. Initiate the degassing process If the problem continues, replace the unit

8.3 Unit not functioning and LED off

Unit not functioning and LED indicator off.

LED	Cause	Solution
Off	Tripping of electric safety devices (system fuse, thermal magnetic circuit breaker, earth leakage circuit breaker)	Restore the electric safety devices; replace the fuse for the system and rearm the safety switch
	Power supply disconnected	Activate the power supply after verifying that the connector is connected to the circulator correctly
	Incorrect wiring	Restore the connector's electrical connections
	Unit faulty	Replace the unit

8.4 Unit not functioning and LED on

Unit not functioning and LED indicator on

LED	Cause	Solution
Flashing yellow light	Knob set to stand-by	Select an operating mode from 1, 2, 3, A, B, C, I, II and III
Red steady	Motor overcurrent	Reset the error; if the problem persists, replace the unit
	Supply voltage too high	1. Check that the grid voltage conforms to the rated values 2. Reset the error If the problem continues, replace the unit
	Regeneration effect due to water flow generated by other equipment	1. Remove the source of the flow 2. Reset the error If the problem continues, replace the unit
	Motor stalled, rotor blocked or loss of speed	The unit automatically carries out several high-torque startup attempts. If the problem continues: 1. Check that the pumped liquid conforms with the working limits 2. Clean the system 3. Reset the error If the problem continues, replace the unit
	Motor control error	Reset the error; if the problem persists, replace the unit
	Supply voltage too low	1. Check that the grid voltage conforms to the rated values 2. Reset the error If the problem continues, replace the unit
	Motor overload	1. Disconnect the power supply 2. Wait for the unit to cool down 3. Check that the pumped liquid conforms with the working limits 4. Activate the power supply If the problem continues, replace the unit
	Overheating	1. Disconnect the power supply 2. Wait for the unit to cool down 3. Check that the ambient and pumped liquid temperatures conform to the working limits 4. Check that the unit is installed according to the instructions in the manual 5. Activate the power supply If the problem continues, replace the unit
	Electrical motor failure	Reset the error; if the problem persists, replace the unit
	Protection Against Dry Running	Reset the error; if the problem persists, replace the unit

8.5 Loss of functionality in the unit

LED	Cause	Solution
Green steady	Communication failure of the electronic board	Reset the error; if the problem persists, replace the unit

8.6 Noise coming from the system

LED	Cause	Solution
Flashing green light	Degassing active	Select an operating mode from 1, 2, 3, A, B, C, I, II and III and wait for the degassing process to complete (approximately 3 minutes)
Green steady	Air in the system	• Vent the system and initiate the degassing process • Wait for the degassing process to complete (approximately 3 minutes)
	Flow rate too high, turbulence	• Select a different operating mode, or • Decrease head by reducing speed
	System features (piping sections, curve shapes, presence of valves)	Inspect the system

8.7 Noise coming from the unit

LED	Cause	Solution
Flashing green light	Degassing active	Select an operating mode from 1, 2, 3, A, B, C, I, II and III and wait for degassing to complete (approximately 3 minutes)
Green steady	Air in the unit	• Check that the unit has not been installed at the highest point of the system, and/or • Initiate the degassing process and wait for it to complete (approximately 3 minutes)
	Cavitation	• Increase system pressure within the working limits, or • Select a different operating mode, or • Decrease head by reducing speed If the problem continues, replace the unit
	Foreign bodies in the unit	Clean the system; if the problem persists, replace the unit

9 Technical Information

9.1 Operating environment

Non-aggressive, non-explosive atmosphere, and not subjected to frost.

Temperature

-10 to 55°C (14 to 131°F).

Relative air humidity

< 95% at 40°C (104°F).

NOTE:

If the temperature and humidity exceed the stated limits, contact Xylem or the Authorised Distributor.

NOTE:

To avoid the formation of condensate in the electronic drive and stator, the temperature of the liquid must be kept above room temperature.

9.2 Pumped liquid

Temperature @ pump body material

- -10 to 110°C (14 to 230°F), stainless steel or cast iron
- -10 to 95°C (14 to 203°F), composite

Water hardness

0 to 21°f (0 to 14°d).

Concentration of water/glycol mixture

≤ 50%.

9.3 Mechanical characteristics

Protection class

IP 44.

Class of the device

I.

Minimum suction pressure @ head @ temperature of the liquid

Pressure, MPa (psi)	Head, m (ft)	Temperature, °C (°F)
0.005 (0.725)	0.5 (1.6)	50 (122)
0.03 (4.35)	3 (10)	95 (203)
0.1 (14.5)	10 (33)	110 (230)

Temperature class

TF110, according to EN 60335-2-51.

9.4 Electrical specifications

Power Supply Voltage

1 x 230 V $\pm$ 10%, 50/60 Hz, PE.

Insulation class

155 (F).

PWM input, specifications according to VDMA 24224

- Galvanic isolation in the unit
- Frequency: 100÷1000 Hz
- High voltage level: 4.5 to 15 V
- Low voltage level: $\leq$ 1 V
- Current: 10 mA
- Working cycle: 0... 100%
- Cable length: < 3 m
- Cable cross-section: $\geq$ 0.25 mm²
- Ascent and descent time: $\leq$ T/500

PWM output

- Type: open collector
- Frequency: 75 Hz
- High voltage level: 3 to 25 V
- Max. voltage from master PWM: 32 V
- Working cycle: 0... 100%
- Max. current in abnormal operation: 10 mA
- Input series resistors: 470 Ω

9.5 Maximum head

The tables show the maximum head according to the circulator model.

eco2

Model	m	Model	m	Model	m	Model	m
15-4/130 CG	4	25-8/130 CG	8	32-4/180 N CG	4	15-8/END TS	8
15-6/130 CG	6	25-4/130 N CG	4	32-6/180 N CG	6	25-4/130 TS	4
15-8/130 CG	8	25-6/130 N CG	6	32-8/180 N CG	8	25-6/130 TS	6
15-4/130 N CG	4	25-8/130 N CG	8	15-4/130 TS	4	25-8/130 TS	8
15-6/130 N CG	6	25-4/180 CG	4	15-6/130 TS	6	25-6/180 N TS	6
15-8/130 N CG	8	25-6/180 CG	6	15-8/130 TS	8	25-8/180 N TS	8
15-4/130 C CG	4	25-8/180 CG	8	15-4/130 N TS	4	32-4/180 TS	4
15-6/130 C CG	6	25-4/180 N CG	4	15-6/130 N TS	6	32-6/180 TS	6
15-8/130 C CG	8	25-6/180 N CG	6	15-8/130 N TS	8	32-8/180 TS	8
15-6/End CG	6	25-8/180 N CG	8	15-4/130 C TS	4	32-4/180 N TS	4
15-8/End CG	8	32-4/180 CG	4	15-6/130 C TS	6	32-6/180 N TS	6
25-4/130 CG	4	32-6/180 CG	6	15-8/130 C TS	8	32-8/180 N TS	8
25-6/130 CG	6	32-8/180 CG	8	15-6/END TS	6	-	-

eco2 PWMH

Model	m	Model	m	Model	m	Model	m
15-4/130 CG	4	25-8/130 CG	8	32-6/180 CG	6	25-8/180 TS	8
15-6/130 CG	6	25-4/130 N CG	4	32-8/180 CG	8	25-4/180 N TS	4
15-8/130 CG	8	25-6/130 N CG	6	32-4/180 N CG	4	25-6/180 N TS	6
15-4/130 N CG	4	25-8/130 N CG	8	32-6/180 N CG	6	25-8/180 N TS	8
15-6/130 N CG	6	25-4/180 CG	4	32-8/180 N CG	8	32-4/180 TS	4
15-8/130 N CG	8	25-6/180 CG	6	15-4/130 S CS	4	32-6/180 TS	6
15-4/130 C CG	4	25-8/180 CG	8	15-6/130 S CS	6	32-8/180 TS	8
15-6/130 C CG	6	25-4/180 N CG	4	15-8/130 S CS	8	32-4/180 N TS	4
15-8/130 C CG	8	25-6/180 N CG	6	15-4/130 N TS	4	32-6/180 N TS	6
25-4/130 CG	4	25-8/180 N CG	8	25-4/180 TS	4	32-8/180 N TS	8
25-6/130 CG	6	32-4/180 CG	4	25-6/180 TS	6	25-8/180 N TS	8

eco2 SOLAR

Model	m	Model	m	Model	m	Model	m
15-8/130 CG	8	25-15/130 CG	15	15-8/130 TS	8	25-15/130 TS	15
15-15/130 CG	15	25-8/180 CG	8	15-15/130 TS	15	25-8/180 TS	8
25-8/130 CG	8	25-15/180 CG	15	25-8/130 TS	8	25-15/180 TS	15

eco2 SOLAR PWMS

Model	m	Model	m	Model	m	Model	m
15-8/130 CG	8	25-15/130 CG	15	15-8/130 TS	8	25-15/130 TS	15
15-15/130 CG	15	25-8/180 CG	8	15-15/130 TS	15	25-8/180 TS	8
25-8/130 CG	8	25-15/180 CG	15	25-8/130 TS	8	25-15/180 TS	15

eco2 MICROFLOW

Model	m	Model	m	Model	m	Model	m
15-6/130 CG	6	25-8/130 CG	8	15-6/130 TS	6	25-8/130 TS	8
15-8/130 CG	8	25-6/180 CG	6	15-8/130 TS	8	25-6/180 TS	6
25-6/130 CG	6	25-8/180 CG	8	25-6/130 TS	6	25-8/180 TS	8

9.6 Maximum operating pressure

1 MPa (145 psi).

9.7 Energy efficiency

Model	EEI
eco2 .. 4/(N)	≤ 0.16
eco2 .. 6/(N)	≤ 0.17
eco2 .. 8/(N)	≤ 0.18
eco2 15-6/END	≤ 0.17
eco2 15-8/END	≤ 0.18
eco2 .. -4/130 C	≤ 0.18
eco2 .. -6/130 C	≤ 0.20
eco2 .. -8/130 C	≤ 0.20
eco2 SOLAR .. -8/	≤ 0.18
eco2 SOLAR .. -15/	≤ 0.17

9.8 Sound pressure

LpA, measured in free field at a distance of one meter from the unit:
 $\leq 43 \text{ dB} \pm 2$.

10 Disposal

10.1 Precautions



WARNING:

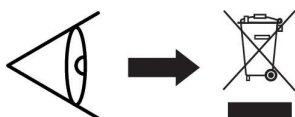
The unit must be disposed of through approved companies specialised in the identification of different types of materials (steel, copper, plastic, etc.).



WARNING:

It is prohibited to dispose of lubricant liquids and other hazardous substances in the environment.

10.2 WEEE (EU/EEA)



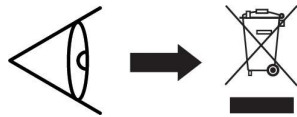
INFORMATION TO USERS pursuant to art. 14 of the Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE). The crossed bin symbol on the appliance or on its packaging indicates that the product at the end of its useful life must be collected separately and not disposed of together with other mixed urban waste. Appropriate separate collection for the subsequent start-up of the disused equipment for recycling, treatment and environmentally compatible disposal helps to avoid possible negative effects on the environment and on health and favours the re-use and / or recycling of the materials of which the equipment is composed.

WEEE from users other than private households¹: the separate collection of this equipment at the end of its life is organized and managed by the producer². The user who wants to get rid of this equipment can then contact the producer and follow the system that it has adopted to allow the separate collection of equipment at the end of life or select an organization independently authorized to manage waste.

¹ Classification according to product type, use and current local laws

² Producer of EEE as per Directive 2012/19/EU

10.3 WEEE (UK)



INFORMATION TO USERS pursuant to art. 44 of the The Waste Electrical and Electronic Equipment Regulations 2013 (S. I. 2013 No. 3113). The crossed bin symbol on the appliance or on its packaging indicates that the product at the end of its useful life must be collected separately and not disposed of together with other mixed urban waste. Appropriate separate collection for the subsequent start-up of the disused equipment for recycling, treatment and environmentally compatible disposal helps to avoid possible negative effects on the environment and on health and favours the re-use and / or recycling of the materials of which the equipment is composed.

WEEE from users other than private households³: the separate collection of this equipment at the end of its life is organized and managed by the producer⁴. The user who wants to get rid of this equipment can then contact the producer and follow the system that it has adopted to allow the separate collection of equipment at the end of life or select an organization independently authorized to manage waste.

³ Classification according to product type, use and current local laws

⁴ Producer of EEE as per WEEE Regulations 2013

11 Declarations

Refer to the specific declaration relating to the marking presents on the product.



11.1 Circulating pump (CE)

EC Declaration of Conformity (Original)

Xylem Service Italia S.r.l., with headquarters in Via Vittorio Lombardi 14 - 36075 Montecchio Maggiore VI - Italy, hereby declares that the product:

Circulator (circulating pump)
(see product's data plate: eco2.....)

fulfils the relevant provisions of the following European Directives

- Machinery 2006/42/EC and subsequent amendments (ANNEX II - natural or legal person authorised to compile the technical file: Xylem Service Italia S.r.l.)
- Eco-design 2009/125/EC and subsequent amendments, Regulation (EC) No 641/2009 and subsequent amendments: $EEL \leq 0$, ... see product's data plate (Annex I: 'The benchmark for the most efficient circulators is $EEL \leq 0,20$ '),

and technical standards

- EN 60335-1:2012+A11:2014+ A13:2017+A14:2019+A1:2019+ A2:2019+A15:2021, EN 60335-2-51:2003+A1:2008+A2:2012, EN 62233: 2008
- EN 16297-1:2012, EN 16297-2:2012.

Montecchio Maggiore, 01.03.2023

Peter Björnsson
Managing Director

rev.00

EU Declaration of Conformity (No 69)

1. EMCD - Apparatus/Product model: see product's data plate.
RoHS - Unique identification of the EEE: eco2
2. Name and address of the manufacturer:
Xylem Service Italia S.r.l.
Via Vittorio Lombardi 14
36075 Montecchio Maggiore VI
Italy
3. This declaration of conformity is issued under the sole responsibility of the manufacturer.
4. Object of the declaration:
Circulator (circulating pump).
5. The object of the declaration described above is in conformity with the relevant Union harmonization legislation:
 - 2014/30/EU Directive of 26 February 2014 and subsequent amendments (electromagnetic compatibility)
 - 2011/65/EU Directive of 8 June 2011 and subsequent amendments, including the (EU) 2015/863 Directive (restriction of the use of certain hazardous substances in electrical and electronic equipment).

6. References to the relevant harmonised standards used or references to the other technical specifications, in relation to which conformity is declared:
- EN 55014-1:2017+A11:2020, EN IEC 55014-1:2021, EN 55014-2:1997+A1:2001+A2:2008, EN IEC 55014-2:2021, EN 61000-3-2:2014, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+ A1:2019+ A2:2021
 - EN IEC 63000:2018.
7. Notified body: - - -
8. Additional information:
RoHS - Annex III - Applications exempted from the restrictions: lead as a binding element in aluminium, copper alloys [6(b), 6(c)], in solders and in electrical/ electronic components [7(a), 7(c)-I].

Signed for and on behalf of:

Xylem Service Italia S.r.l.

Montecchio Maggiore, 01.03.2023

Peter Björnsson
Managing Director

rev.00



This EU declaration of conformity is only valid when published as part of the "Instructions" (Xylem document number 001084086xx).

Lowara is a trademark of Xylem Inc. or one of its subsidiaries.



11.2 Circulating pump (UK)

UK Declaration of Conformity (Original)

Xylem Service Italia S.r.l., with headquarters in Via Vittorio Lombardi 14 - 36075 Montecchio Maggiore VI - Italy, hereby declares that the product:

Circulator (circulating pump)
(see product's data plate: eco2.....)

fulfils the relevant provisions of the following legal acts

- S.I. 2008/1597 - Supply of Machinery (Safety) Regulations 2008 and subsequent amendments (Schedule 2 - Part 2 - Annex II - natural or legal person authorised to compile the technical file: Xylem Service Italia S.r.l.)
- S.I. 2019/539 - The Ecodesign for Energy-Related Products and Energy Information (Amendment) (EU Exit), Regulation (EC) No 641/2009 and subsequent amendments: EEI ≤ 0, ... see product's data plate (Annex I: 'The benchmark for the most efficient circulators is EEI ≤ 0,20'),

and technical standards

- EN 60335-1:2012+A11:2014+ A13:2017+A14:2019+A1:2019+ A2:2019+A15:2021, EN 60335-2-51:2003+A1:2008+A2:2012, EN 62233: 2008
- EN 16297-1:2012, EN 16297-2:2012.

Montecchio Maggiore, 01.03.2023

Peter Björnsson
Managing Director

rev.00



UK Declaration of Conformity (No 69)

1. EMCD - Apparatus/Product model: see product's data plate.
RoHS - Unique identification of the EEE: eco2
2. Name and address of the manufacturer:
Xylem Service Italia S.r.l.
Via Vittorio Lombardi 14
36075 Montecchio Maggiore VI
Italy
3. This declaration of conformity is issued under the sole responsibility of the manufacturer.
4. Object of the declaration:
Circulator (circulating pump).
5. The object of the declaration described above is in conformity with the relevant legal acts:
 - S.I. 2016/1091 - The Electromagnetic Compatibility Regulations 2016 and subsequent amendments
 - S.I. 2012/3032 - The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 and subsequent amendments.
6. References to the relevant designated standards used or references to the other technical specifications, in relation to which conformity is declared:
 - EN 55014-1:2017+A11:2020, EN IEC 55014-1:2021, EN 55014-2:1997+A1:2001+A2:2008, EN IEC 55014-2:2021, EN 61000-3-2:2014, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+ A1:2019+ A2:2021
 - EN IEC 63000:2018.
7. Approved body: - - -
8. Additional information:
RoHS - Annex III of 2011/65/EU
Applications exempted from the restrictions: lead as a binding element in aluminium, copper alloys [6(b), 6(c)], in solders and in electrical/electronic components [7(a), 7(c)-I].

Montecchio Maggiore, 01.03.2023

Peter Björnsson
Managing Director

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Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) A leading global water technology company.

We're a global team unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

For more information on how Xylem can help you, go to www.xylem.com



Xylem Service Italia S.r.l.
Via Vittorio Lombardi 14
36075 - Montecchio Maggiore (VI) - Italy

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