

CIRCULATION UNIT

BIVALENT FUNCTION

INSULATION

With all electrical components on the outside and the plumbing parts on the inside the insulation can truly work as intended, fulfilling the German Energy Saving Ordinance EnEV2014.



MADE IN SWEDEN

ESBE design and quality always assures our customers to expect only the best. Pre-assembled and leak proof tested.



HIGH EFFICIENCY CIRCULATION PUMP

The circulation unit is always delivered with ErP ready circulation pump, already today meeting the higher demands of the second step taking effect across Europe 2015.



MULTIPLE ENERGY SOURCES

To increase the efficiency of the heating system additional heat sources can be added always choosing the cheaper energy first.

OPERATION

The ESBE series GBA and GBC is a circulation unit series with bivalent function intended to deliver the right amount of energy from multiple sources. The ESBE bivalent solution make it possible to optimize the mixing precision. The circulation units has a high capacity and are designed to work perfectly regardless of the system energy need.

Equipped with High Efficiency circulation pump and a tailor-made insulation you can be sure that ESBE delivers the best circulation unit for both your economy as well as for the environment.

When designing the circulation unit product line the focus at ESBE has been to simplify assembly. This goes through the whole product from mounting brackets, insulation to packaging design.

The ESBE series GBC is an weather compensation controlled circulation unit intended to deliver the right amount of energy to the system at every situation.

The ESBE GBA units are controlled by a 3-point signal.

KEY BENEFITS

- Easy installation; everything is ready and assembled out of the box. All connections have been leak proof tested. Just connect the five pipes and connect the power to the circulation pump and you are ready.
- Easy commissioning; all groups are equipped with an A-class pump which is easy to set at the right mode and include a venting function to push air out to the venting valve of the system.
- Easy maintenance; shut off valves for all service and maintenance without draining the heating system.
- Reliable function and elegant look; ESBE Quality and ESBE Design behind. Made in Sweden.
- Pre-assembled, tightness-tested and heat-insulated assembly.
- ErP-Ready high efficiency circulation pump and insulation that truly work as intended, fulfilling the German Energy Saving Ordinance EnEV2014. Taking our green footprint seriously.
- Integrated gravity brake.

VERSIONS



ESBE Series GBC200
With Controller 90C-3 ready and mounted on the Circulation unit.



ESBE Series GBA100
With Actuator ARA600 ready and mounted on the Circulation unit

CIRCULATION UNIT

BIVALENT FUNCTION

PRODUCT ASSORTMENT

ESBE Circulation unit with Controller 90C-3A

Art. No. _____ 61060200
 Reference _____ GBC211
 DN _____ 25

Power range

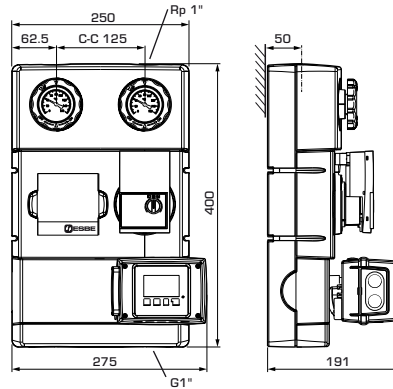
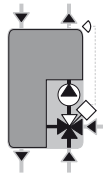
at 2700 l/h with Δt 20 K _____ 62 kW ¹⁾
 with Δt 10 K _____ 31 kW ¹⁾
 with Δt 5 K _____ 15 kW ¹⁾

¹⁾ system pressure losses: 0 kPa

at 2300 l/h with Δt 20 K _____ 54 kW ²⁾
 with Δt 10 K _____ 27 kW ²⁾
 with Δt 5 K _____ 13 kW ²⁾

²⁾ system pressure losses: 15 kPa

Weight _____ 7.5 kg



GBC211 is controlled by ESBE 90C-3A, a complete weather-compensating control unit with integrated actuator. The 90C-3A is equipped with full graphic display for easy handling and instant set-up. It can handle up to 7 different sources of data input and has 3 possibilities of output control. This makes the GBC211 circulation unit versatile and able to control a number of heat circuits and system components with high accuracy. Potential energy savings with the 90C is 17%, compared to a manually operated valve.

ESBE Circulation unit with Actuator ARA661

Art. No. _____ 61060100
 Reference _____ GBA111
 DN _____ 25

Power range

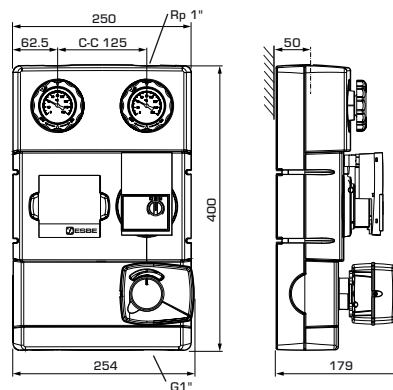
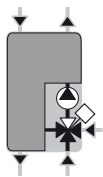
at 2700 l/h with Δt 20 K _____ 62 kW ¹⁾
 with Δt 10 K _____ 31 kW ¹⁾
 with Δt 5 K _____ 15 kW ¹⁾

¹⁾ system pressure losses: 0 kPa

at 2300 l/h with Δt 20 K _____ 54 kW ²⁾
 with Δt 10 K _____ 27 kW ²⁾
 with Δt 5 K _____ 13 kW ²⁾

²⁾ system pressure losses: 15 kPa

Weight _____ 5.6 kg



GBA111 is controlled by ESBE ARA661 (230 V, 90° operating range, 120s running time), an actuator with 3-point (open/close) signal is a perfect match for mixing operations together with an external controller. The compact actuator has an operating range of 90° and can easily be manually operated by the pull-and-turn knob on the front of the cover.

RELATED ACCESSORIES

See separate data sheet for further detailed information.

ESBE Manifold

Manifold for 2 or 3 circulation units. With or without integrated separator function.

Ref. GMA121 _____ Art. No. 66000100
 Ref. GMA131 _____ Art. No. 66000200
 Ref. GMA221 _____ Art. No. 66000300
 Ref. GMA231 _____ Art. No. 66000400

ESBE Manifold connection

Connections between manifold and circulation unit (2 connections/package).

Ref. KGR111 _____ Art. No. 66100200



CIRCULATION UNIT

BIVALENT FUNCTION

TECHNICAL DATA

 Visit esbe.eu for further detailed information.

The circulation unit, in general:

Pressure class: _____ PN 6
 Media temperature: _____ max. (continuously) +110°C
 _____ when ambient temperature is max. 50°C
 _____ min. 0°C
 Working pressure: _____ 0.6 MPa (6 bar)
 Connections: _____ External thread, ISO 228/1
 _____ Internal thread, EN 10226-1
 Insulation: _____ EPP λ 0.036 W/mK

Material, in contact with water:

Components of: _____ Brass, Iron
 Sealings material of: _____ PTFE, Aramid fibre, EPDM

Conformities and certificates:

PED 97/23/EC, article 3.3

 LVD 2006/95/EC  ErP 2009/125/EC
 EMC 2004/108/EC ErP 2015
 RoHS 2011/65/EC  EnEV2014

The integrated bivalent valve:

Max. differential pressure drop: _____ 100 kPa (1 bar)
 Close off pressure: _____ 200 kPa (2 bar)
 Rangeability Kv^{max}/Kv^{min} , A-AB: _____ 100

Leakrate in % of flow*: _____ < 0.5%

Characteristics: _____ See diagram below

* Differential pressure 100kPa (1 bar)

The integrated controller/actuator:

Ambient temperature, CRC/ARA: _____ -5°C to +55°C max.
 90C: _____ 0°C to +40°C max.
 Power supply, CRC/ARA: _____ 230 \pm 10% V AC, 50 Hz
 90C: _____ 230 \pm 10% V AC, 50/60 Hz
 Power consumption: _____ 5 VA

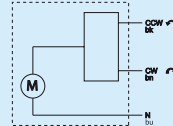
Enclosure rating, CRC/ARA: _____ IP41

90C: _____ IP54

Protection class: _____ II

Actuator wiring:

The actuator should be preceded by a multi-pole contact breaker in the fixed installation.

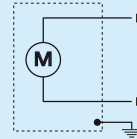


The integrated circulation pump:

Power supply: _____ 230 \pm 10% V AC, 50/60 Hz
 Power consumption: _____ 3-45 W
 Enclosure rating: _____ IP X4D
 Protection class: _____ F
 Characteristics: _____ See diagram below

Circulation pump wiring:

The circulation pump should be preceded by a multi-pole contact breaker in the fixed installation.

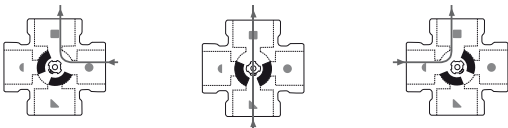
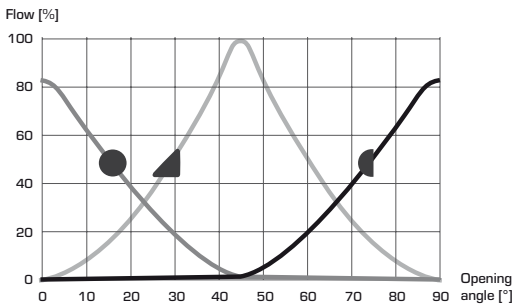


SERVICE AND MAINTENANCE

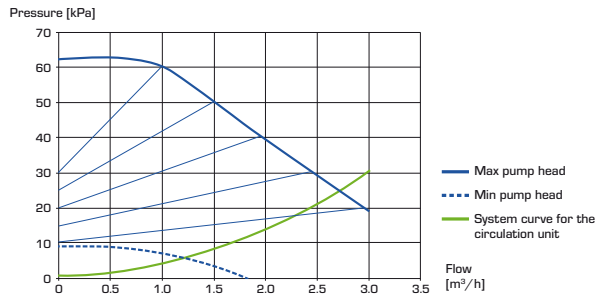
The circulation unit does not require any specific maintenance under normal conditions.

CHARACTERISTICS

The characteristics diagram for the integrated bivalent valve.



The flowrate for the integrated circulation pump and system curve for the circulation unit.



CIRCULATION UNIT BIVALENT FUNCTION

INSTALLATION EXAMPLES

