ESBE SYSTEM UNITS

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.

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.

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

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

NO.1 IN HYDRONIC SYSTEM CONTROL

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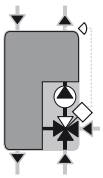
PRODUCT ASSORTMENT

ESBE Circulation unit with Controller 90C-3A

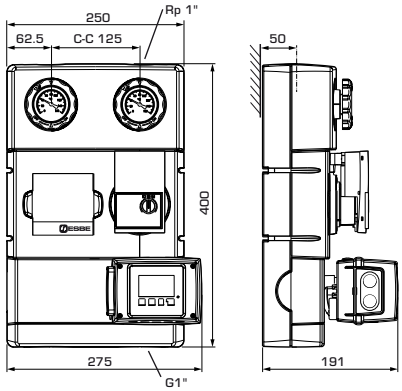


Art. No. _____ 6106 02 00
Reference _____ GBC211
DN _____ 25

Power range
at 2200 l/h with Δt 20 K _____ 50 kW [1]
with Δt 10 K _____ 25 kW [1]
with Δt 5 K _____ 12 kW [1]
[1] system pressure loses: 0 kPa

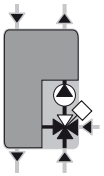
at 1800 l/h with Δt 20 K _____ 40 kW [2]
with Δt 10 K _____ 20 kW [2]
with Δt 5 K _____ 10 kW [2]
[2] system pressure loses: 15 kPa

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

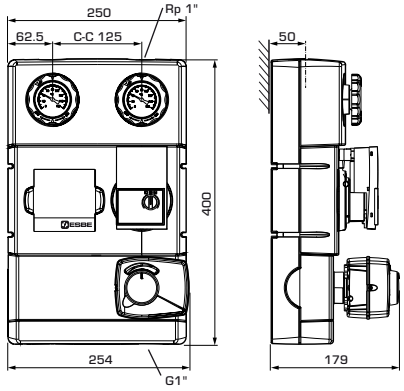


Art. No. _____ 6106 01 00
Reference _____ GBA111
DN _____ 25

Power range
at 2200 l/h with Δt 20 K _____ 50 kW [1]
with Δt 10 K _____ 25 kW [1]
with Δt 5 K _____ 12 kW [1]
[1] system pressure loses: 0 kPa

at 1800 l/h with Δt 20 K _____ 40 kW [2]
with Δt 10 K _____ 20 kW [2]
with Δt 5 K _____ 10 kW [2]
[2] system pressure loses: 15 kPa

Weight _____ 5.6 kg



GBA111 is controlled by ESBE ARA661 (230V, 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. 6600 01 00
Ref. GMA131 _____ Art. No. 6600 02 00
Ref. GMA221 _____ Art. No. 6600 03 00
Ref. GMA231 _____ Art. No. 6600 04 00

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

Ref. KGR111 _____ Art. No. 6610 02 00

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

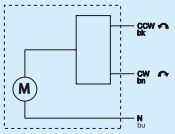
The integrated bivalent valve:

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 ± 10% VAC, 50 Hz
90C: 230 ± 10% VAC, 50/60 Hz
Power consumption: 5 VA
Enclosure rating, CRC/ARA: IP41
90C: IP54
Protection class: II

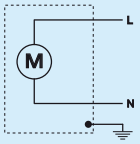
Actuator wiring:
The actuator should be preceded by a multi-pole contact breaker in the fixed installation.



The integrated circulation pump:

Power supply: 230 ± 10% VAC, 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.

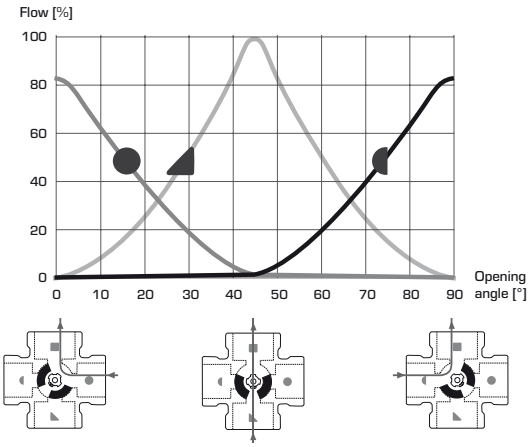


SERVICE AND MAINTENANCE

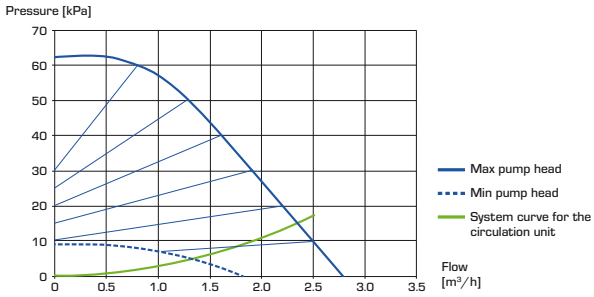
The circulation unit does not require any specific maintenance under normal conditions.

CHARACTERISTICS

The characteristics diagram for the integrated bivalent valve.



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



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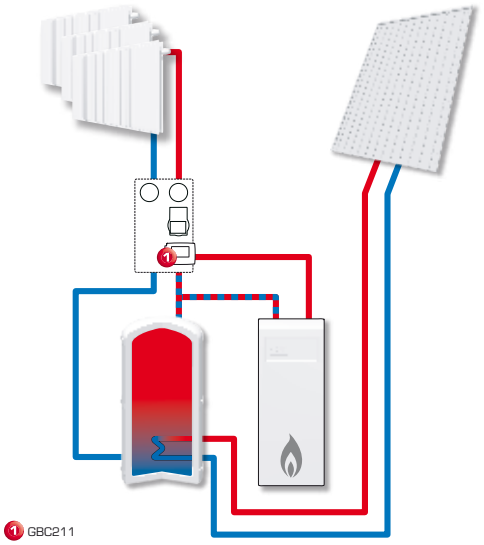
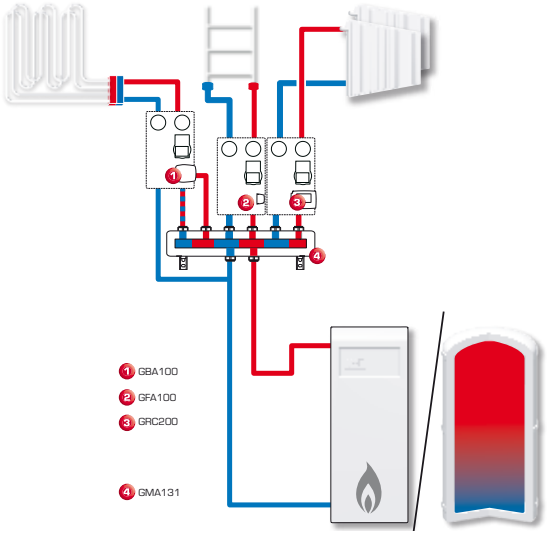
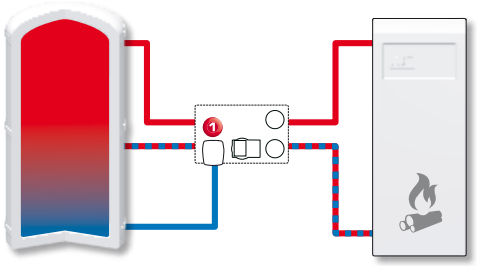
INSTALLATION EXAMPLES



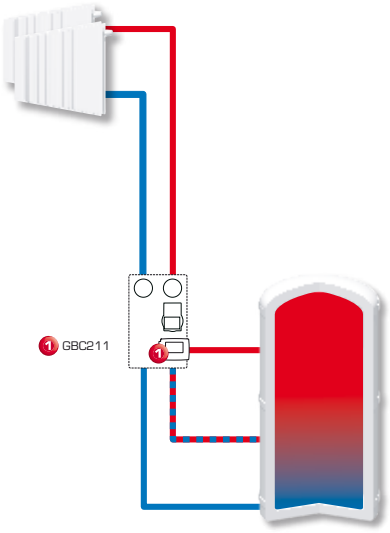
1 GBC211



1 GBA100
2 GFA100
3 GRC200
4 GMA131



1 GBA100



1 GBC211