

# CIRCULATION UNIT

## MIXING FUNCTION, SERIES GRF100



GRF111

GRF121

### PRODUCT DESCRIPTION

The ESBE series GRF100 is a circulation mixing unit which is intended for heating circulations where the flow and temperature control are required. Equipped with two shut-off valves with thermometers, check valve and high class insulation shell. The GRF100 is delivered with the 3-way rotary progressive mixing valve, which ensures low oversizing risk and best regulation performances independent from flow rate. The ESBE Circulation Unit GRF100 is ready to work with 180mm pumps. The smart adjustable insulation shell makes it sure that any kind of pump will be insulated in a right way. Choose the best system control and select one of the actuators or controllers from ESBE program.

### KEY BENEFITS

- Perfect control thanks to progressive valve characteristic
- 180mm pump ready – be free to use favorite pump manufacturer
- Control the system manually, via actuator or even controller
- High class, adjustable insulation shell

### SERVICE AND MAINTENANCE

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

### RELATED ACCESSORIES

See separate data sheet for further detailed information.

#### ESBE Manifold

Manifold for 1, 2, or 3 circulation units. With integrated separator function.  
Art. No.

66001100 \_\_\_\_\_ GMA411- for 1 unit

66001600 \_\_\_\_\_ GMA521 - for 2 units

66001700 \_\_\_\_\_ GMA531 - for 3 units

Manifold for 2, 3, 4 or 5 circulation units. Without integrated separator function.  
Art. No.

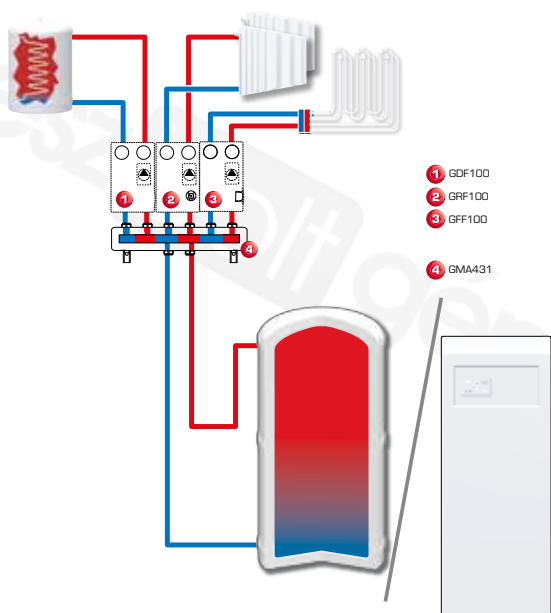
66001200 \_\_\_\_\_ GMA421- for 2 units

66001300 \_\_\_\_\_ GMA431 - for 3 units

66001400 \_\_\_\_\_ GMA441 - for 4 units

66001500 \_\_\_\_\_ GMA451 - for 5 units

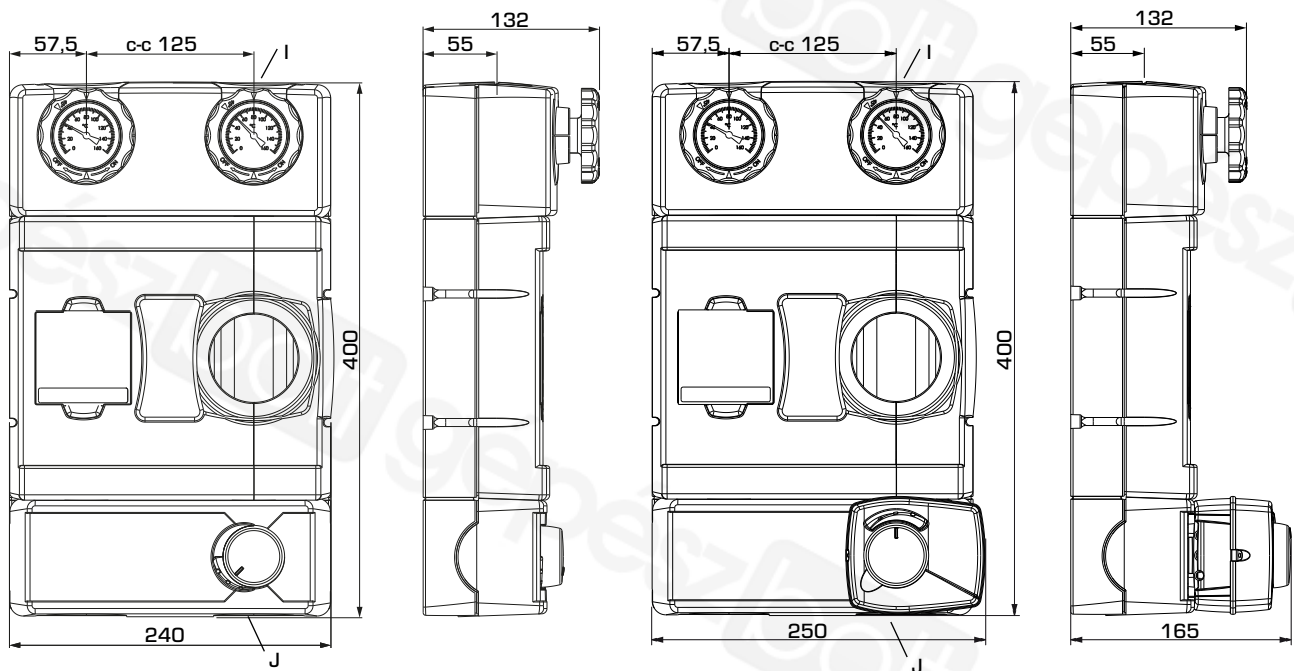
### INSTALLATION EXAMPLE



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### PRODUCT ASSORTMENT



GRF111

GRF121

### SERIES GRF100

| Art. No. | Reference | DN | Connections |       | Weight [kg] | Note                         |
|----------|-----------|----|-------------|-------|-------------|------------------------------|
|          |           |    | I           | J     |             |                              |
| 61240100 | GRF111    | 25 | G 1"        | G 1½" | 3,8         |                              |
| 61241100 | GRF121    | 25 | G 1"        | G 1½" | 4,2         | 230V, 3 point control signal |

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**TECHNICAL DATA**

**i** Visit [esbe.eu](http://esbe.eu) for further detailed information.

**The Circulation unit, in general:**

Pressure class: \_\_\_\_\_ PN 6  
 Media temperature: \_\_\_\_\_ max. +110°C  
 \_\_\_\_\_ min. 0°C  
 Ambient temperature, GRF121: \_\_\_\_\_ max. +50°C / min. 0°C  
 GRF111: \_\_\_\_\_ max. °C / min. °C  
 (depends on the electronic equipment)  
 Working pressure: \_\_\_\_\_ 0,6 MPa (6 bar)  
 Connections, \_\_\_\_\_ Internal thread (G), ISO 228/1  
 \_\_\_\_\_ External thread (G), ISO 228/1  
 Insulation: \_\_\_\_\_ EPP  $\lambda$  0,036 W/mK  
 Media: \_\_\_\_\_ Heating water (in accordance with VDI2035)  
 \_\_\_\_\_ Water / Glycol mixtures, max. 50%.  
 (above 20% admixture, the flow data must be checked)

**Material, in contact with water:**

Components of: \_\_\_\_\_ Brass, Steel  
 Sealing material of: \_\_\_\_\_ PTFE, Aramid fibre, EPDM

**Conformities and certificates:**

**CE** LVD 2014/35/EU  
 EMC 2014/30/EU  
 RoHS 2011/65/EU  
 PED 2014/68/EU, article 4.3

**EnEV2014** EnEV2014

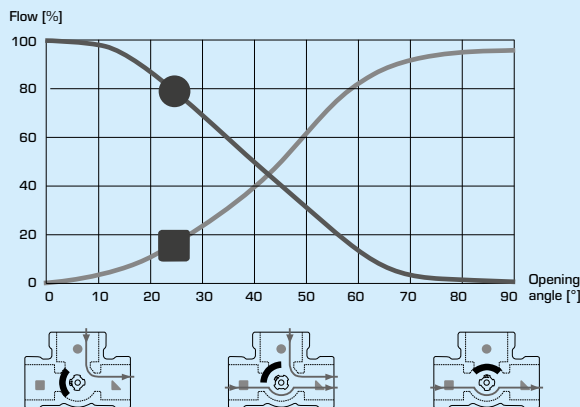
**The integrated mixing valve:**

Max. differential pressure drop: \_\_\_\_\_ 100 kPa (1 bar)  
 Close off pressure: \_\_\_\_\_ 200 kPa (2 bar)  
 Leakrate in % of flow\*: \_\_\_\_\_ < 0,5%  
 \* Differential pressure 100kPa (1 bar)

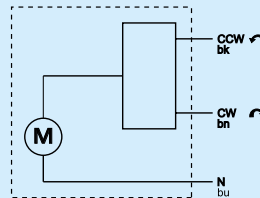
**The integrated actuator, GRF121:**

Actuator type: \_\_\_\_\_ ARA661  
 Control signal: \_\_\_\_\_ 3-point  
 Power supply: \_\_\_\_\_ 230 ± 10% V AC, 50 Hz  
 Power consumption: \_\_\_\_\_ 5 VA  
 Running time 90°: \_\_\_\_\_ 120s  
 Enclosure rating: \_\_\_\_\_ IP41  
 Protection class: \_\_\_\_\_ II

**VALVE CHARACTERISTICS**



**ACTUATOR WIRING\***



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

**CHARACTERISTICS**

