

CIRCULATION UNIT

MIXING FUNCTION, SERIES GRA100



GRA112

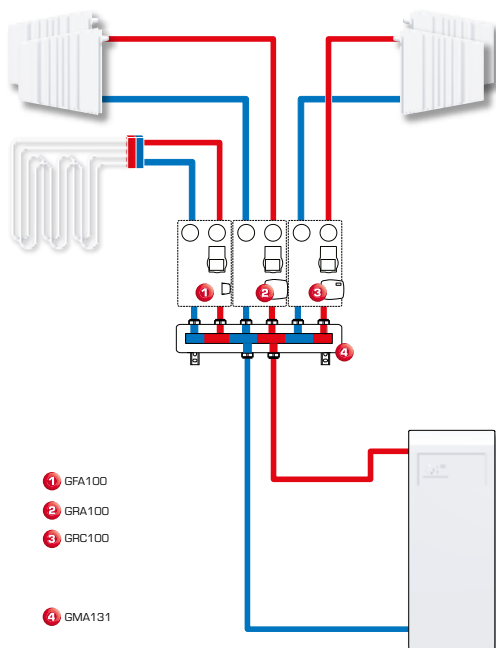
PRODUCT DESCRIPTION

The ESBE series GRA100 is a circulation mixing unit which is intended for heating circulations where the outstanding flow and temperature control are required. Equipped with two shut-off valves with thermometers, check valve, high class insulation shell and high efficiency circulation pump. The GRA100 is delivered with the 3-way rotary progressive mixing valve and actuator. The Circulation Mixing Unit ensures best regulation performances independent from flow rate and low oversizing risk thanks to progressive valve characteristic, as well as the working possibility with most controllers available on the market.

SERVICE AND MAINTENANCE

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

INSTALLATION EXAMPLES



- 1 GFA100
- 2 GRA100
- 3 GRC100
- 4 GMA131

KEY BENEFITS

- Outstanding flow control thanks to the progressive characteristic of the valve
- Ready to use with most controllers available on the market
- High class insulation shell
- One size fits all – auto adapt + progressive characteristic

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.

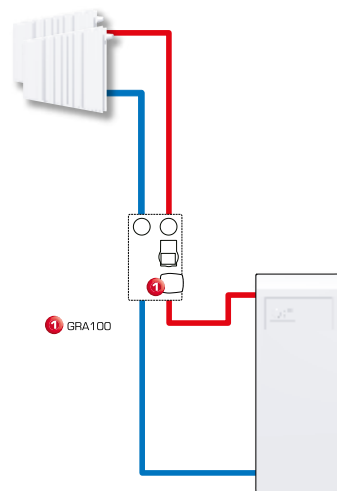
Art. No.

66001200 _____ GMA421 - for 2 units

66001300 _____ GMA431 - for 3 units

66001400 _____ GMA441 - for 4 units

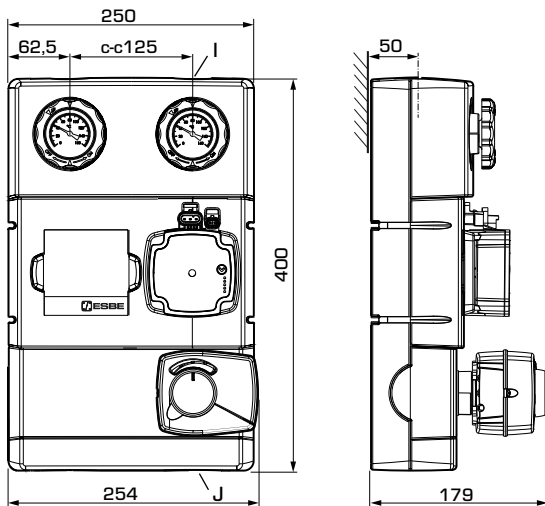
66001500 _____ GMA451 - for 5 units



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PRODUCT ASSORTMENT



GRA112

SERIES GRA110

Art. No.	Reference	DN	Pump	Connections		Weight [kg]	Note
				I	J		
61040600	GRA112	32	Grundfos 25-70	G 1¼"	G 1½"	6,5	230V, 3 point control signal


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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. +110°C
 _____ min. 0°C
 Ambient temperature: _____ max. +50°C
 _____ min. 0°C
 Working pressure: _____ 0,6 MPa (6 bar)
 Connections, _____ Internal thread (G), ISO 228/1
 _____ External thread (G), ISO 228/1
 Insulation: _____ EPP λ 0,036 W/mK
 EnEV2014
 Media: _____ Heating water (in accordance with VDI2035)
 _____ Water / Glycol mixtures, max. 50%.
 (above 20% admixture, the pump data must be checked)
 _____ Water / Ethanol mixtures, max. 28%



Material, in contact with water:

Components of: _____ Brass, Cast iron, Steel
 Sealing material of: _____ PTFE, Aramid fibre, EPDM

EI (Energy Efficiency Index),

Wilo circulation pump: _____ <0,21
 Grundfos circulation pump: _____ <0,20

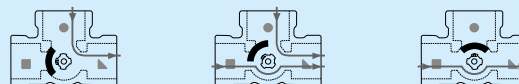
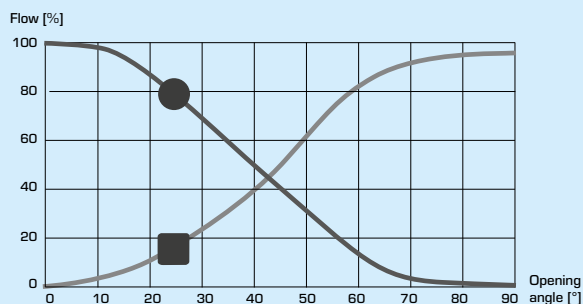
Conformities and certificates:

 LVD 2014/35/EU
 EMC 2014/30/EU
 RoHS3 2015/863/EU
 ErP 2009/125/EU
 SI 2016 No. 1101
 SI 2016 No. 1091
 SI 2012 No. 3032
 SI 2010 No. 2617
 PED 2014/68/EU, article 4.3 / SI 2016 No. 1105 (UK)

The integrated mixing valve:

Max. differential pressure drop: _____ 100 kPa (1 bar)
 Close off pressure: _____ 200 kPa (2 bar)
 Leakrate in % of flow*: _____ < 0,05%
 * Differential pressure 100kPa (1 bar)

VALVE CHARACTERISTICS



The integrated actuator, GRA110:

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

ACTUATOR WIRING*

Please see the Installation Instruction

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

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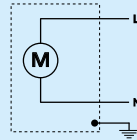
TECHNICAL DATA

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The integrated circulation pump:

Power supply: _____ 230 ± 10% V AC, 50/60 Hz
 Power consumption - Wilo 25/6: _____ 3-45 W
 - Wilo 25/7,5: _____ 3-76 W
 - Grundfos 25-50: _____ 2-34 W
 - Grundfos 25-70: _____ 2-53 W
 Enclosure rating: _____ IP X4D
 Insulation class: _____ F
 EEI (Energy Efficiency Index) - Wilo 25/6: _____ <0,20
 - Wilo 25/7,5: _____ <0,21
 - Grundfos: _____ <0,20

PUMP WIRING*

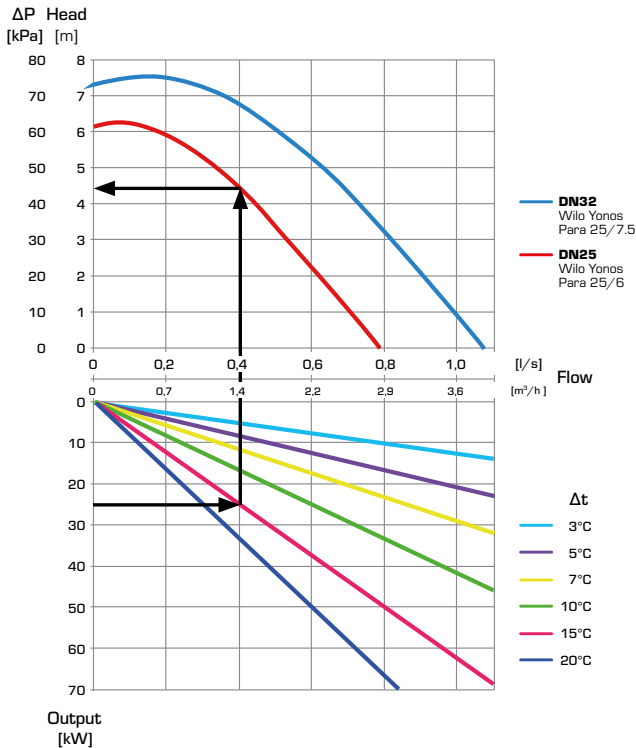


* The circulation pump should be preceded by a multi-pole contact breaker in the fixed installation.

DIMENSIONING, PUMP CAPACITY DIAGRAM

Example: Start with the heating demand of heating circuit (e.g. 25 kW) and move horizontally to the right in the diagram to the $\Delta t = 15^\circ\text{C}$ (temperature difference between flow and return of the heating circuit). Next go up and find working point and read the available pressure of the pump on the left - $\Delta p = 45 \text{ kPa}$.

SERIES GRA100 – available pressure, Wilo pumps



SERIES GRA100 – available pressure, Grundfos pumps

