ESBE SYSTEM UNITS

CIRCULATION UNIT
MIXING FUNCTION, SERIES GRA300

GRA311

PRODUCT DESCRIPTION

The ESBE series GRA300 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 GRA300 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.

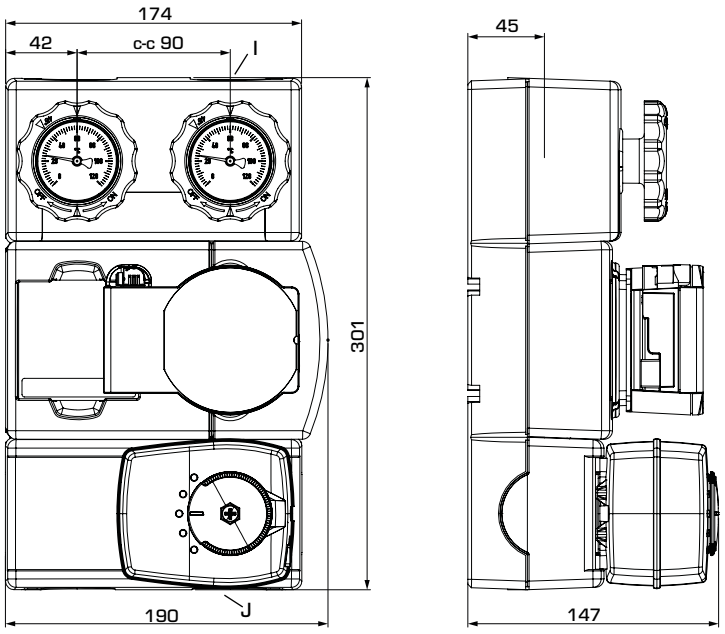
KEY BENEFITS

- 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
- Compact design
- "Quick fit" connection between Valve and Actuator

SERVICE AND MAINTENANCE

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

PRODUCT ASSORTMENT



GRA311

SERIES GRA300

Art. No.	Reference	DN	Pump	Connections		Weight [kg]	Note
				I	J		
61043121	GRA311	20	Wilo 15/8/O	G 1"	G 1"	3,7	

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

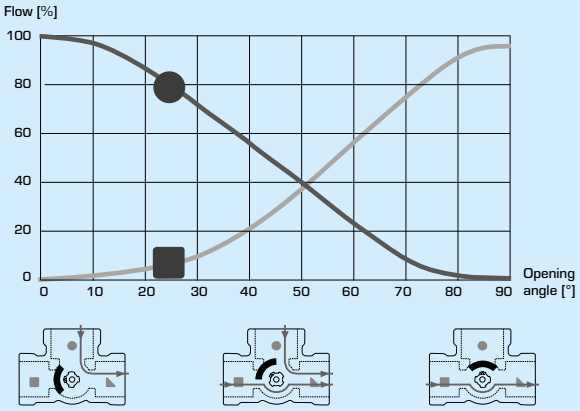
Conformities and certificates:

CE LVD 2014/35/EU
EMC 2014/30/EU
RoHS 2011/65/EU
PED 2014/68/EU, article 4.3
ErP READY 2015 ErP 2009/125/EU
ErP 2015
EnEV 2014 EnEV 2014

The integrated mixing valve:

Valve type: VRG438
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:

Actuator type: ARA561 Quick fit
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

WIRING

Please see the Installation Instruction

The integrated circulation pump:

Type: Wilo PARA STG 15-130/8-60/0
Power supply: 230 ± 10% V AC, 50/60 Hz
Cable length: 3m
Power consumption: 2-60 W
Enclosure rating: IP X4D
Insulation class: F
EEI (Energy Efficiency Index): <0,20

WIRING

Please see the Installation Instruction

CIRCULATION UNIT
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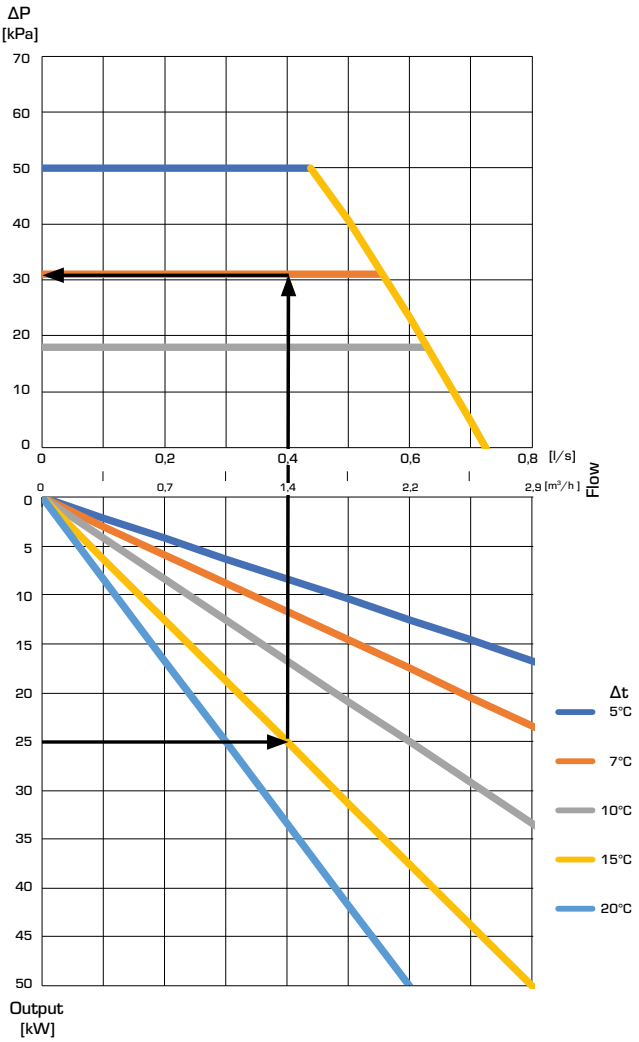
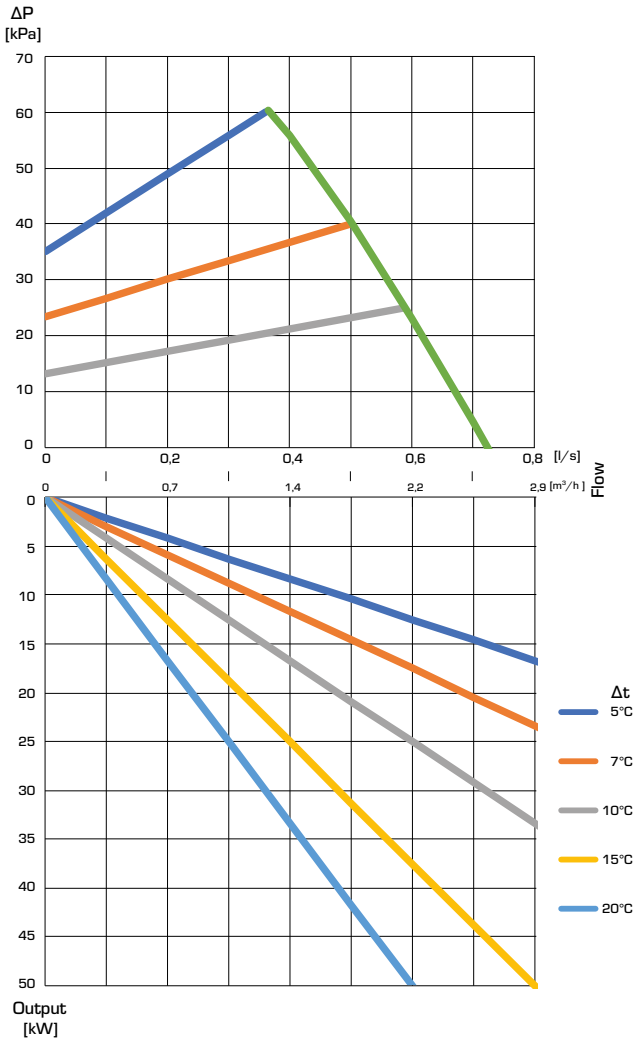
DIMENSIONING, PUMP CAPACITY DIAGRAM

Example: Start with the heating demand of heating circuit (e.g. 25 kW) and move horizontally to the right in the diagram to the Δt = 15°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 – Δp = 31 kPa.

SERIES GRA300 – Constant differential pressure



SERIES GRA300 – Variable differential pressure



CIRCULATION UNIT
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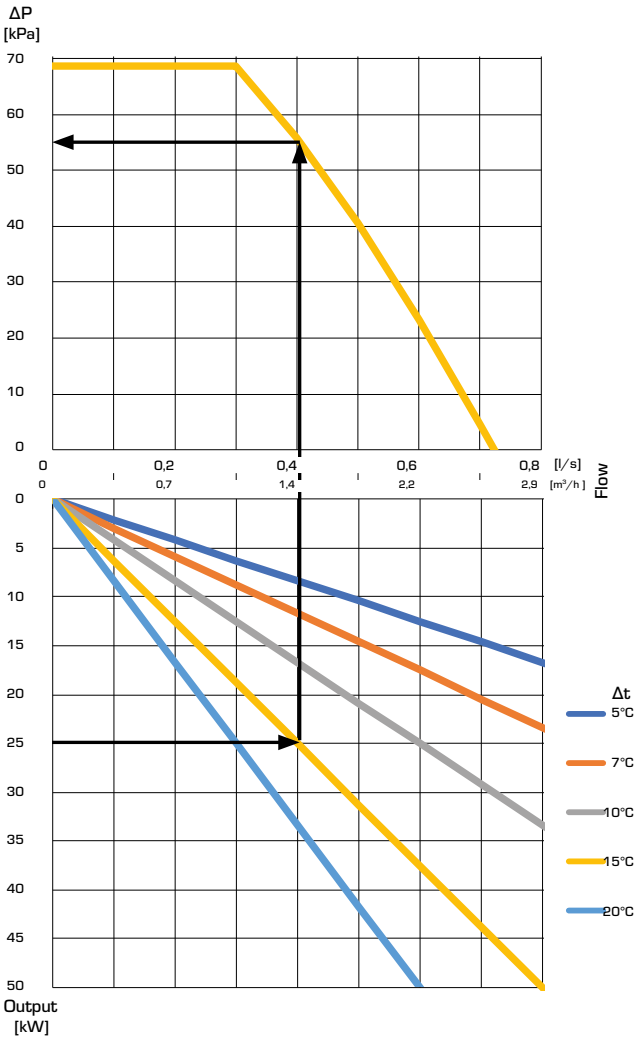
DIMENSIONING, PUMP CAPACITY DIAGRAM

Example: Start with the heating demand of heating circuit (e.g. 25 kW) and move horizontally to the right in the diagram to the Δt = 15°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 – Δp = 55 kPa.

SERIES GRA300 – **Ext** iPWM 1/ iPWM 2



INSTALLATION EXAMPLES