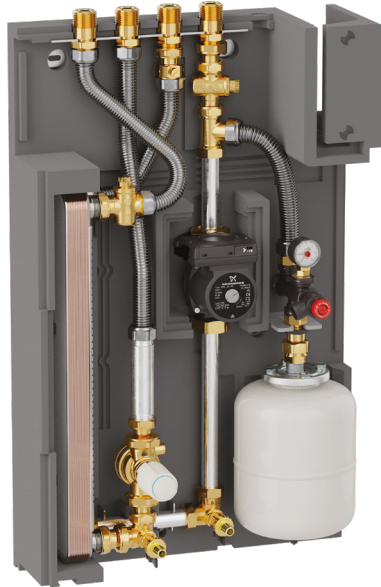


# Module with hydraulic separation for centralised cooling

## 797 series



### Function

The 797 series module is used in centralised cooling systems where hydraulic separation is required between the primary circuit and the apartment circuit. A high-performance heat exchanger, capable of working with a minimal temperature difference between primary and secondary, allows the apartment cooling system to operate at low pressure without the risk of contamination by potentially polluted water, and with a limited risk of damage in the event of any system components developing a leak.

The module is also suitable for large systems, thanks to integrated balancing by the 145 series pressure independent control valve.

The module is designed for cool metering and is supplied with full insulation aimed at minimising dispersion, plus suitable precautions against condensation build-up.

### Product range

- Code 797601 Nominal 3 kW module (\*)
- Code 797603 Nominal 8 kW module (\*)
- Code 797605 Nominal 13 kW module (\*)

(\*) primary 6-12 °C, secondary 14-8 °C

### Technical specifications

#### Performance

Medium:	water
Max. percentage of glycol:	30 %
Max. pressure: - primary circuit	1,6 MPa (16 bar)
- secondary circuit	0,3 MPa (3 bar)
Primary temperature range:	3-85 °C
Primary circuit nominal flow rate:	360 l/h (797601)
	1080 l/h (797603)
	1800 l/h (797605)
Primary circuit pressure drop:	40 kPa (797601)
	50 kPa (797603)
	70 kPa (797605)
Primary circuit maximum head:	$\Delta p$ 400 kPa (4 bar)
Electric supply:	230 V (AC) $\pm$ 10 % 50 Hz
Max. power consumption:	55 W (797601 / 797603)
	145 W (797605)
Safety relief valve setting:	0,3 MPa (3 bar)
Expansion vessel:	5 l

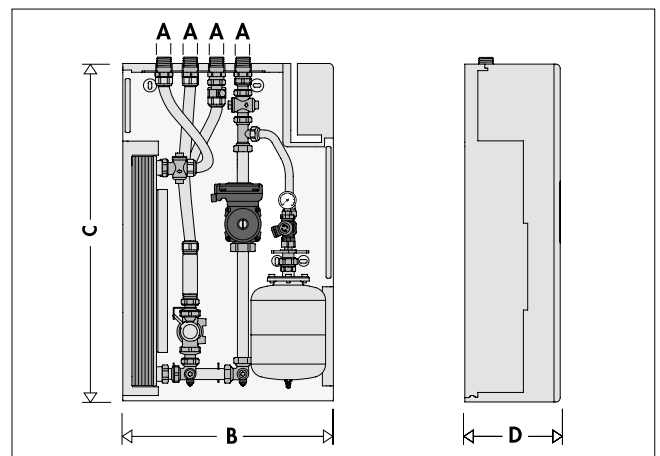
#### Materials

Components:	brass
Connection pipes:	steel
Exchanger:	stainless steel brazed with copper

#### Insulation

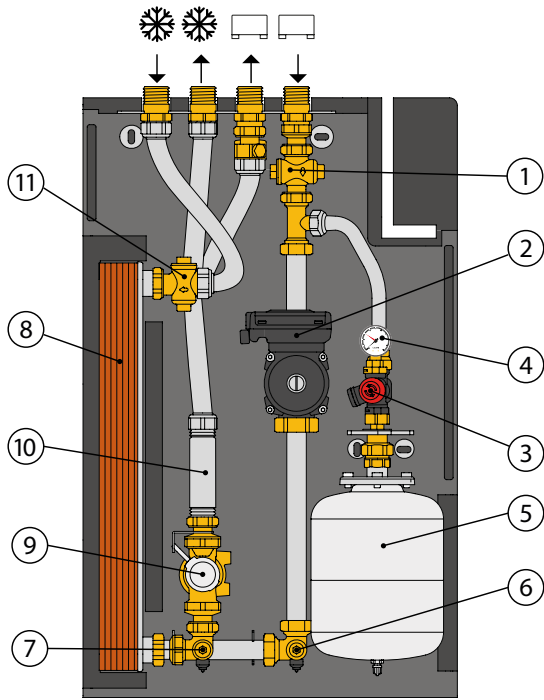
Material:	PPE
Density:	60 kg/m <sup>3</sup>
Thermal conductivity:	0,04 W/(mK)

### Dimensions



Code	A	B	C	D	Mass (kg)
797601	1"	480	780	220	15
797603	1"	480	780	220	17
797605	1"	480	780	220	19

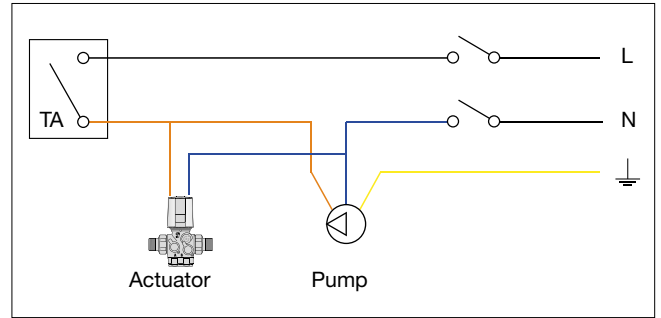
### Characteristic components



1. Secondary filter
2. Wilo Para pump 25/7 (797601 / 797603)  
Grundfos UPML pump 25/105 (797605)
3. Safety relief valve
4. Pressure gauge
5. Expansion vessel
6. Drain cock and system filling point
7. Drain cock
8. Plate heat exchanger
9. Pressure independent control valve (PICV)
10. Meter template L = 130 mm
11. Primary filter + heat meter probe M10x1

### Electrical connections

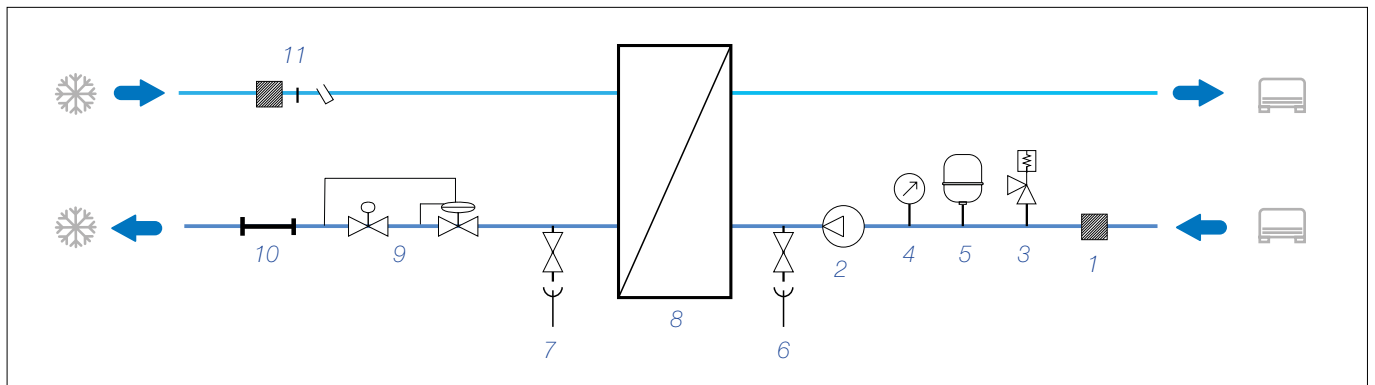
The electrically powered mechanical parts (motor pump and modulating valve actuator) are both powered upon closure of the room thermostat contact when the temperature set point is exceeded.



### Operating principle

The module works according to the following strategy: when the room thermostat (not supplied) detects a temperature greater than the set point chosen by the user, the motor pump (2) and 145 series PICV (Pressure Independent Control Valve) actuator (9) - normally closed - are powered simultaneously. When the valve opens, the medium in the primary circuit crosses the heat exchanger and draws heat from the medium in the secondary circuit which, as it cools, feeds the cooling terminals in the room. To guarantee the safety of the system, the module is equipped with a 3 bar safety relief valve (3) and a 5 l expansion vessel (5).

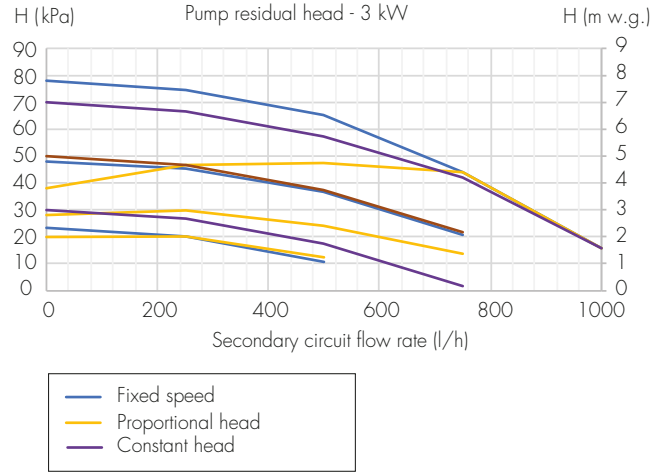
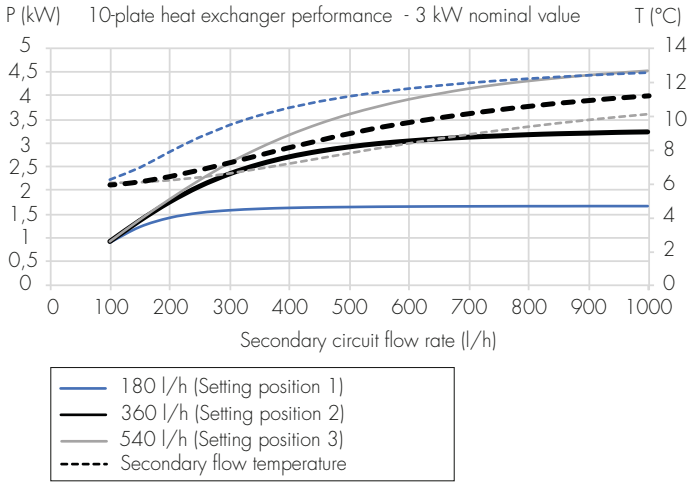
### Hydraulic diagram



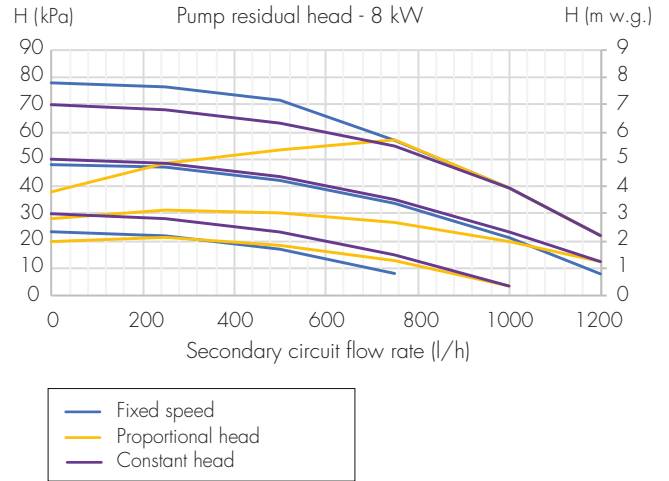
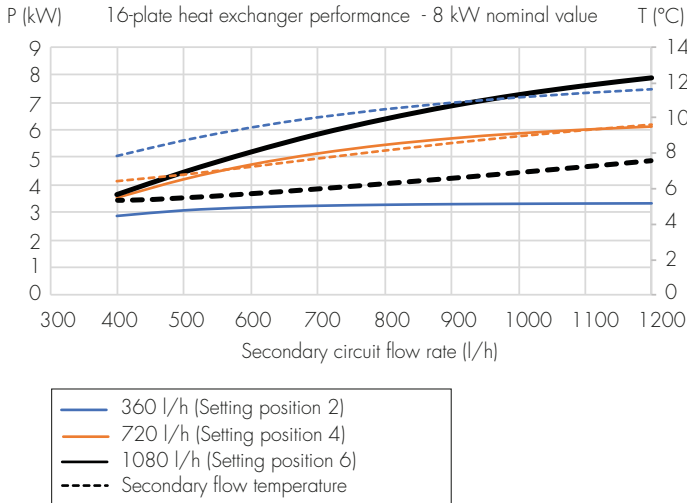
**Plate heat exchanger performance and pump residual head diagrams**

The heat exchange between the primary and secondary circuits takes place by means of a brazed copper plate heat exchanger with nominal 3, 8 and 13 kW sizes. The 145 series PICV valve setting can be selected for each module so that the flow rate to the primary circuit remains constant. The exchanger performance diagrams (left-hand graphs) and pump residual head curves (right-hand graphs) for each heat exchanger size are shown below. More specifically, the performance diagrams show the heating capacity transferred to the primary medium and the resulting flow temperature in the secondary circuit for three different valve setting levels.

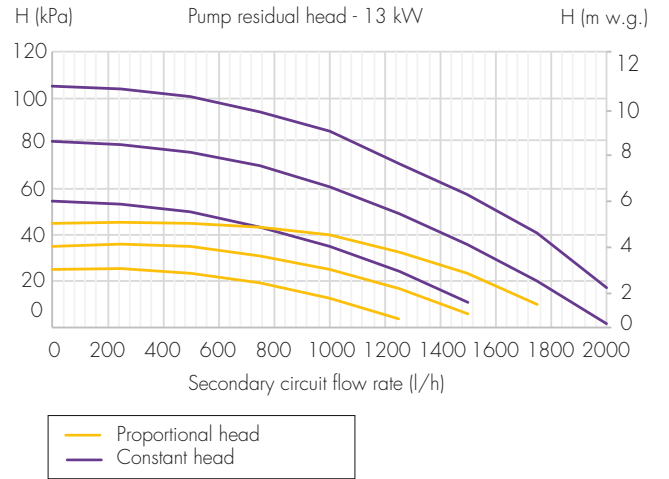
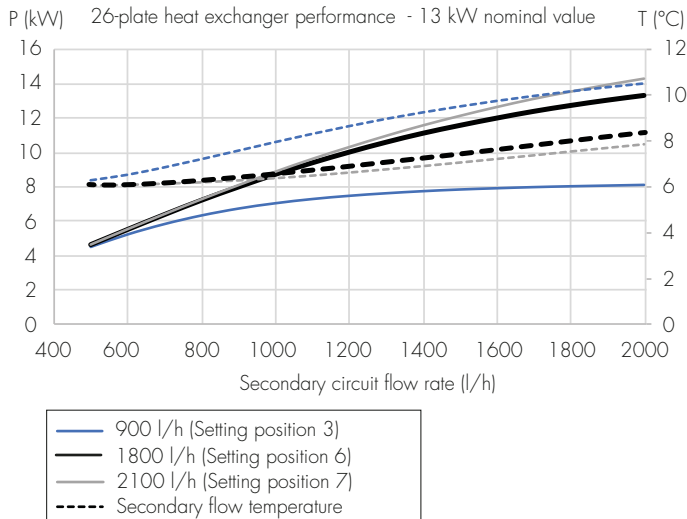
Code 797601



Code 797603



Code 797605

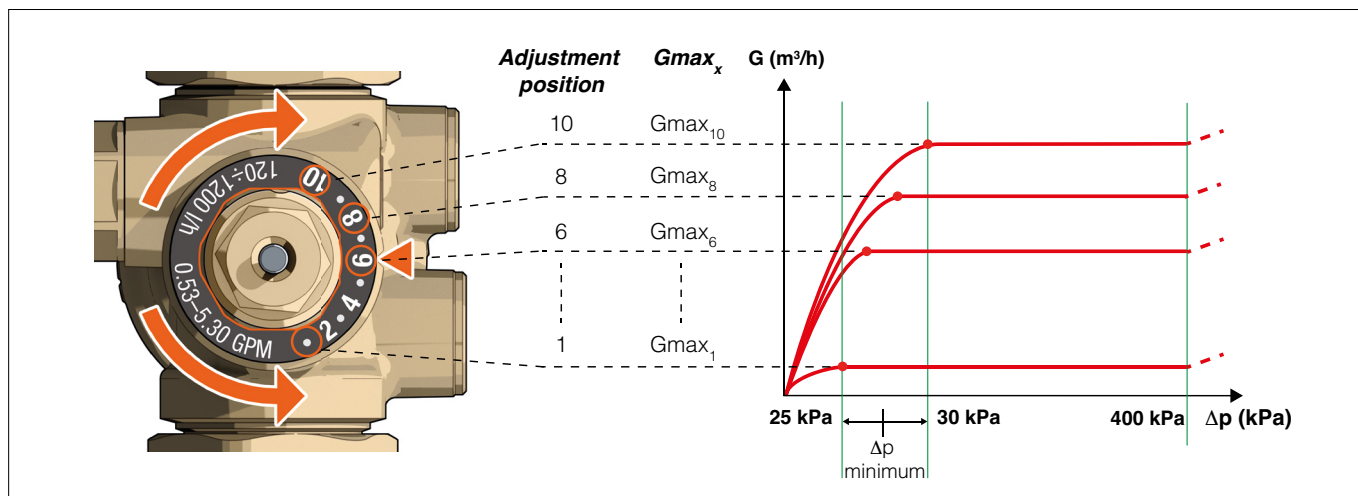


### Primary circuit hydraulic characteristics

Primary circuit flow rate regulation takes place by means of a 145 series pressure independent control valve. The device can adjust flow rate and keep it constant in the presence of changing differential pressure conditions of the circuit in which it is installed.

For the device to keep the flow rate constant independently from the circuit's differential pressure conditions, total valve  $\Delta p$  ( $p_1-p_3$ ) must be in the range from the minimum  $\Delta p$  value and the maximum value of 400 kPa.

The valve adjustment nut can be used to change the maximum flow rate value that will be maintained by the regulating valve.



	Valve range	Setting position - Flow rate
<b>797601</b>	0,18 – 1,8 m³/h	2 – 360 l/h
<b>797603</b>	0,18 – 1,8 m³/h	6 – 1080 l/h
<b>797605</b>	0,3 – 3,0 m³/h	6 – 1800 l/h

### SPECIFICATION SUMMARY

#### Code 797601

Module for indirect cooling with hydraulic separation by means of a plate heat exchanger complete with: primary side filter with M10x1 probe connection, brazed copper heat exchanger with nominal power of 3 kW (primary 6–12 °C, secondary 14–8 °C), primary side drain cock, 145 series pressure independent control valve, 6565 series ON/OFF thermo-electric actuator at 230 V (AC), heat meter template L = 130 mm, Wilo Para pump 25/7, 5 litre expansion vessel, safety relief valve with 3 bar setting, pressure gauge, secondary side filter. Stainless steel pipes, PPE shell insulation. Dimensions 480 x 780 x 220.

#### Code 797603

Module for indirect cooling with hydraulic separation by means of plate heat exchanger complete with: primary side filter with M10x1 probe connection, brazed copper heat exchanger with nominal power of 8 kW (primary 6–12 °C, secondary 14–8 °C), primary side drain cock, 145 series pressure independent control valve, 6565 series ON/OFF thermo-electric actuator at 230 V (AC), heat meter template L = 130 mm, Wilo Para pump 25/7, 5 litre expansion vessel, safety relief valve with 3 bar setting, pressure gauge, secondary side filter. Stainless steel pipes, PPE shell insulation. Dimensions 480 x 780 x 220.

#### Code 797605

Module for indirect cooling with hydraulic separation by means of plate heat exchanger complete with: primary side filter with M10x1 probe connection, brazed copper heat exchanger with nominal power of 13 kW (primary 6–12 °C, secondary 14–8 °C), primary side drain cock, 145 series pressure independent control valve, 6565 series ON/OFF thermo-electric actuator at 230 V (AC), heat meter template L = 130 mm, Grundfos UPML 25/105 pump, 5 litre expansion vessel, safety relief valve with 3 bar setting, pressure gauge, secondary side filter. Stainless steel pipes, PPE shell insulation. Dimensions 480 x 780 x 220.

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