

TACOTHERM FRESH NANO2

GAS BOILER REPLACEMENT UNIT



Preconfigured gas boiler replacement unit with a compact design.

DESCRIPTION

The TacoTherm Fresh Nano2 gas boiler replacement unit suits practically any installation situation thanks to its compact design and various mounting versions. The unit is designed to replace decentralised wall mounted gas boilers with solutions that generate heat centrally, such as heat pumps. Optionally available additional components ensure on-demand heat distribution in the apartment as well as optimisation of the return temperature to the heating buffer cylinder.

Consumption-based billing of the energy costs is possible using the meter mounting boards provided.

INSTALLATION POSITION

The TacoTherm Fresh Nano2 decentralised heat interface unit is fitted as a base station on a base plate. Models are available for shaft or surface mounting. The version for surface mounting is available with a high quality housing casing. This station is designed for the replacement of wall mounted gas boilers in addition to other applications.

ADVANTAGES

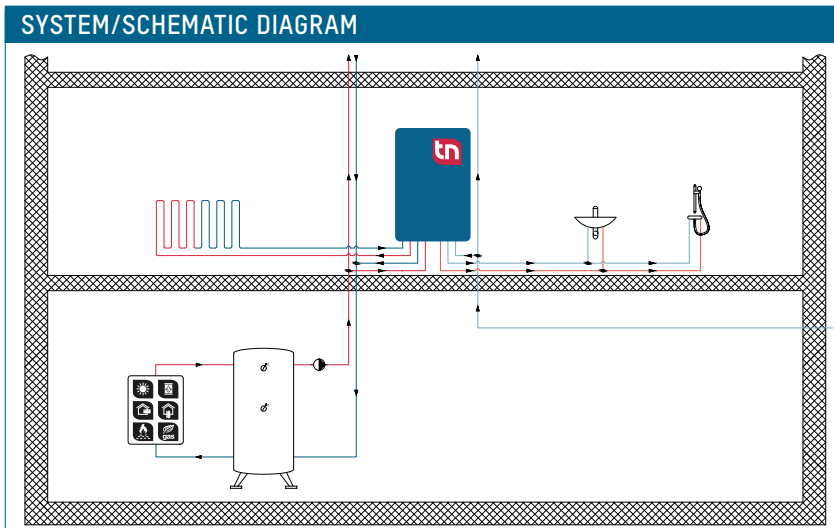
- Compact design
- Preconfigured for straightforward installation
- On-demand, hygienic, decentralised DHW heating
- Reduction of stored drinking water volume to a minimum
- Demand-based energy billing

OPERATING PRINCIPLE

The decentralised heat interface units in the Nano2 series are designed for DHW heating and heat distribution in multi-story residential buildings. Primary energy is supplied via a central buffer cylinder; domestic hot water is heated in the DHW module as required, according to the instantaneous water heating principle. Both fixed-value and weather-compensated control of the heating flow temperature is possible. Fittings are provided as standard for on-site installation of heat meters.

BUILDING CATEGORIES

- Apartment buildings
- Hotels and residential homes
- Industrial buildings



TACOTHERM FRESH NANO2 | DECENTRALISED HEAT INTERFACE UNIT

TENDER DOCUMENTATION

See www.taconova.com

SPECIFICATION

General

- Max. operating temperature $T_{B \max}$: 95 °C
- Max. static pressure $P_{B \max}$:
 - Primary: 6 bar
 - Secondary: 6 bar
- Overall dimensions (incl. cover): W 447 mm × H 800 mm × D 117 mm
- Weight without water: 35 kg

Material

- Plate heat exchanger (plates and connectors): copper brazed / stainless steel brazed
- Housing: painted sheet steel
- Pipes: DN 20 stainless steel 1.4404
- Valve housing: brass
- Gaskets: AFM34 (flat packing)

Performance data

See design diagram

Flow media

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Cold water to DIN 1988-200 and DIN EN 806-5

APPROVALS / CERTIFICATES

- Components in contact with potable water comply with UBA Evaluation Criteria 26/03/2018 and Directive (EU) 2015/1535

TYPE OVERVIEW

TacoTherm Fresh Nano2 | Decentralised heat interface unit *1)

| Part no. | Flow rate *2) | Heat exchanger | Version |
|--------------|---------------|-------------------------------------|------------------|
| 276.1119.000 | 15.5 l/min | Copper brazed 26 plates | Surface mounting |
| 276.1119.125 | 15.5 l/min | Stainless steel brazed 26 plates | Surface mounting |
| 276.2119.000 | 16.5 l/min | Copper brazed 40 plates | Surface mounting |
| 276.2119.125 | 16.5 l/min | Stainless steel brazed 40 plates | Surface mounting |
| 276.1110.000 | 15.5 l/min | Copper brazed 26 plates | On base plate |
| 276.1110.125 | 15.5 l/min | Stainless steel brazed 26 plates | On base plate |
| 276.2110.000 | 16.5 l/min | Copper brazed 40 plates | On base plate |
| 276.2110.125 | 16.5 l/min | Stainless steel brazed 40 plates | On base plate |

* 1) Accessories required for completion can be selected individually

* 2) Performance data at primary = flow 60 °C / secondary = DHW 45 °C; $\Delta p \geq 300$ mbar (780 kg/h)

ACCESSORIES

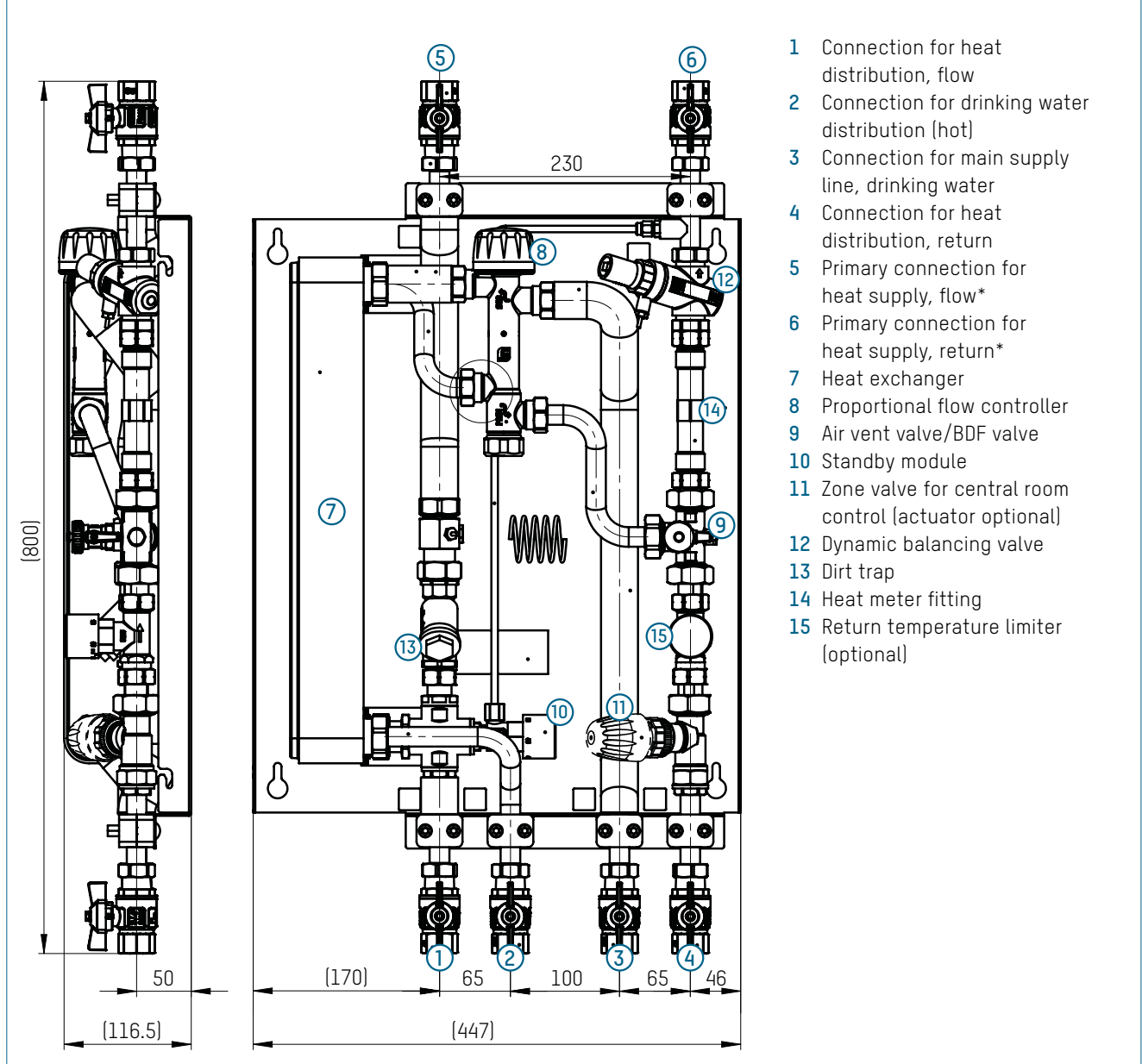
| Part no. | Description |
|--------------|--|
| 296.3003.000 | Return temperature limiter |
| 257.1055.000 | TopDrive actuator for zone control 24 V |
| 257.2055.000 | TopDrive actuator for zone control 230 V |

PLEASE NOTE

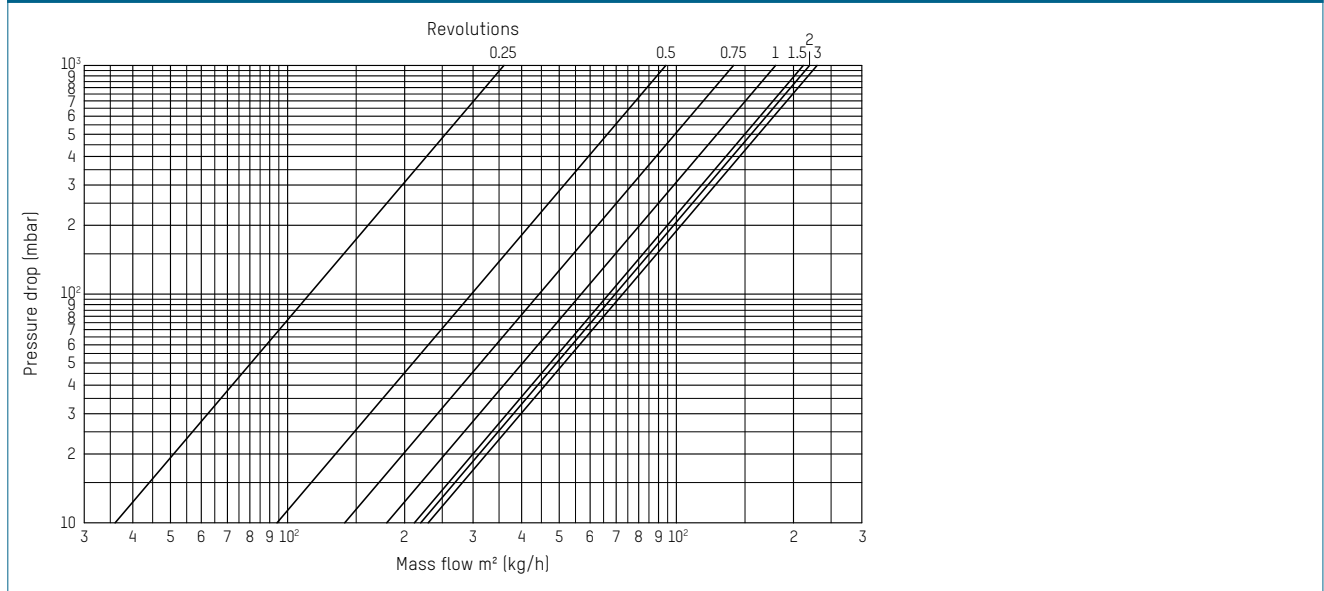
REQUIREMENTS FOR FLOW MEDIA

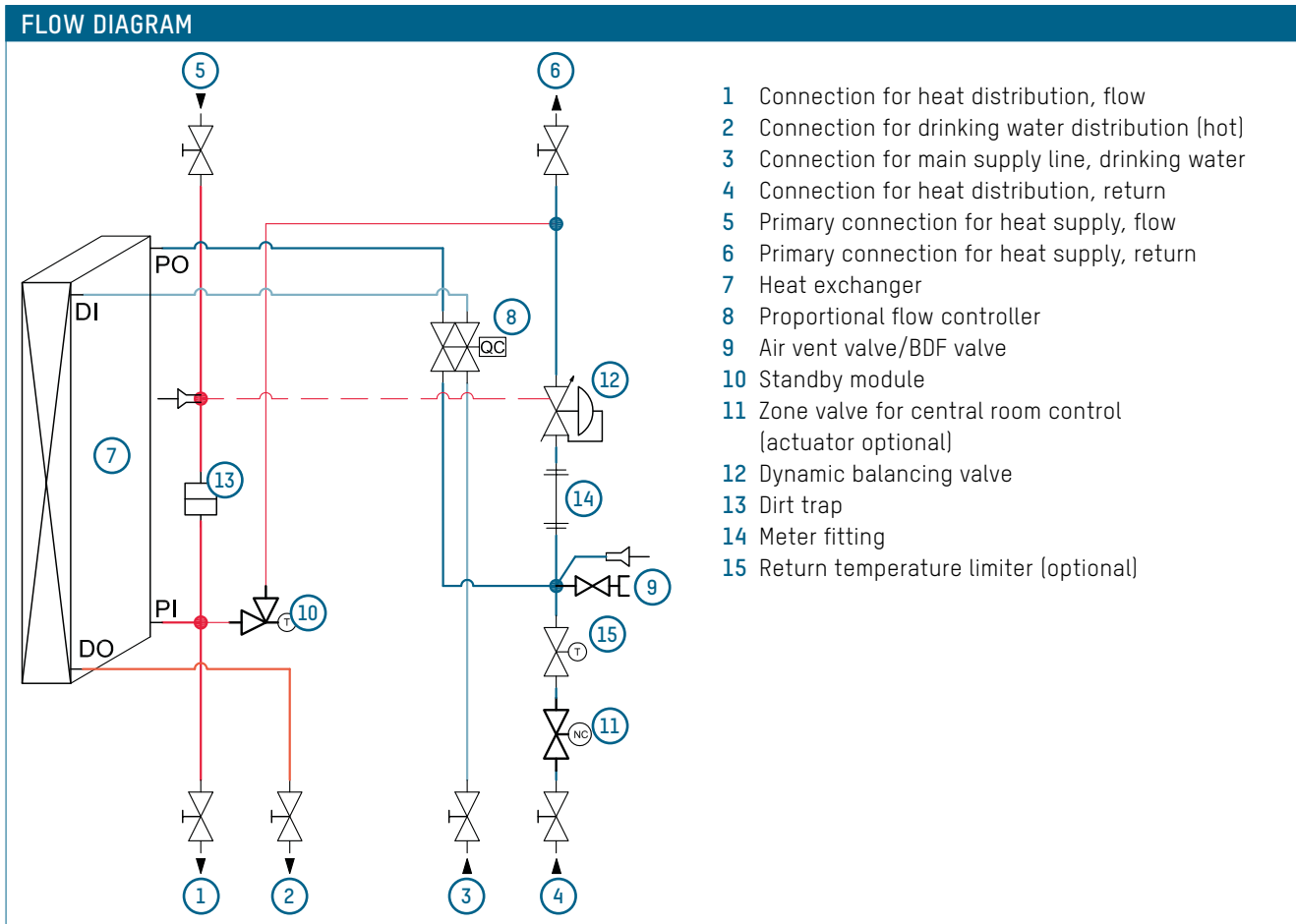
A copper brazed stainless steel plate heat exchanger is used in these units as standard. Before use, it is important to check at the system planning stage whether issues of corrosion protection and scale formation have been given sufficient consideration in accordance with DIN 1988-200 and the current drinking water analyses as set out in DIN EN 806-5. See information sheet "Specifications for plate heat exchanger – limit values for drinking water quality".

DIMENSIONAL DRAWING



PRESSURE DROP DIAGRAM RETURN TEMPERATURE LIMITER (DN15)





EXAMPLE OF INTERPRETING THE FLOW AND PRESSURE DROP DIAGRAMS

Given

- DHW draw-off rate: 18 l/min
- Heating flow temperature, primary: 65 °C
- Required draw-off temperature 45 °C

Sought

- Heating water demand in l/h
- Primary and secondary pressure drop in mbar
- Primary heating return temperature in °C

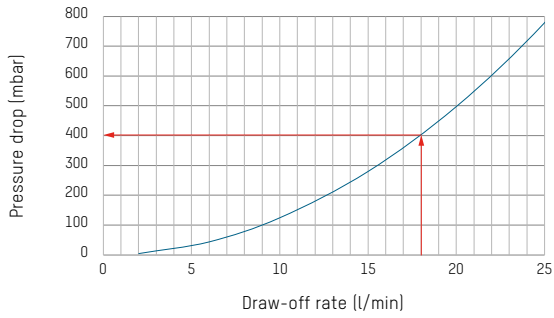
Solution

- On the basis of diagram A), a pressure drop on the secondary side of 400 mbar can be determined at the specified DHW draw-off rate of 18 l/min at the point of intersection.
- Diagram C) shows that a heating water flow of 750 l/h is determined at 18 l/min with 45 °C DHW temperature and a primary flow temperature of 65 °C.

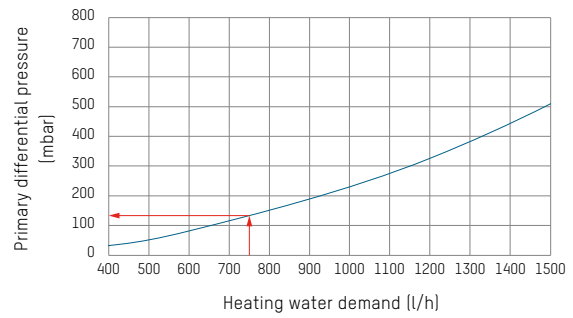
- Diagram D) shows that a return temperature of 16 °C is determined for the same values.
- Diagram B) shows a differential pressure on the primary side of 130 mbar for the given heating water demand of 750 l/h.
- Diagram I shows the setting of the differential pressure control valve as a function of the inlet pressure as calculated for planning purposes.

FLOW AND PRESSURE DROP DIAGRAMS (PLATE HEAT EXCHANGER WITH 26 PLATES)

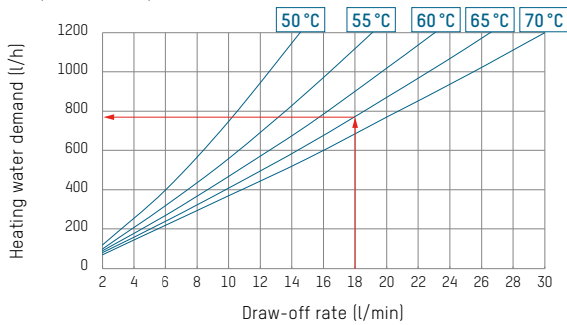
A) Secondary pressure drop



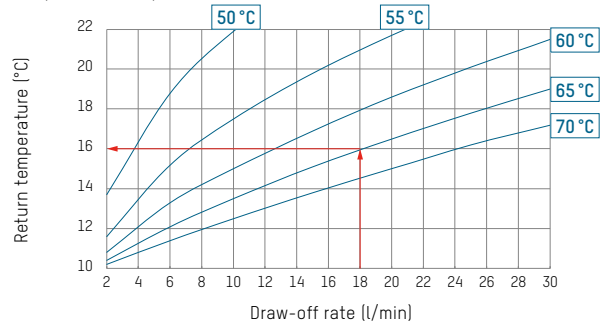
B) Heating water demand/primary differential pressure



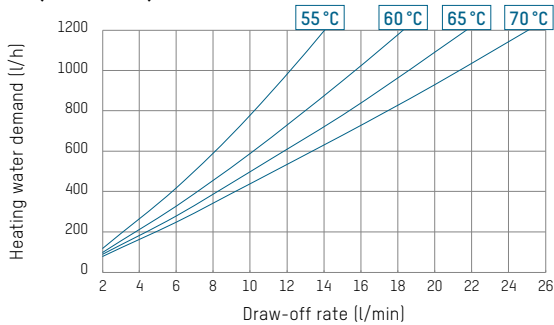
C) Heating water demand for heating DHW by 35 °C (10 – 45 °C)



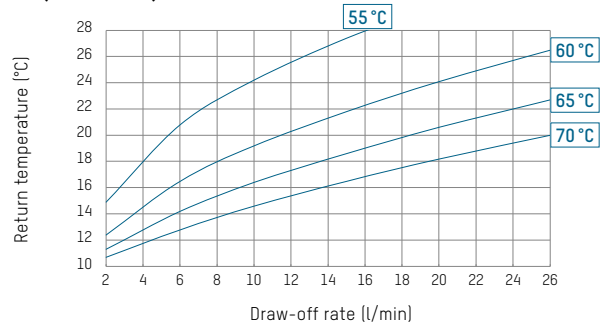
D) Return temperature for heating DHW by 35 °C (10 – 45 °C)



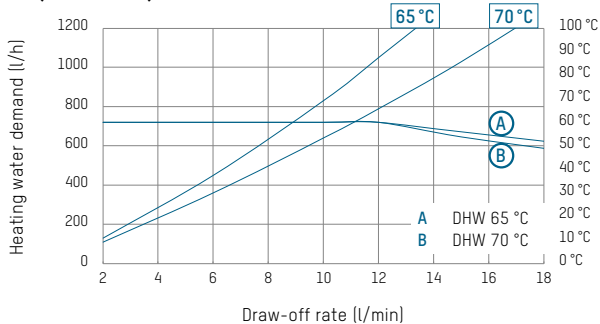
E) Heating water demand for heating DHW by 40 °C (10 – 50 °C)



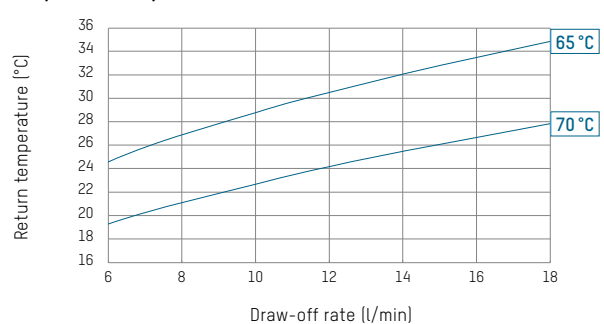
F) Return temperature for heating DHW by 40 °C (10 – 50 °C)



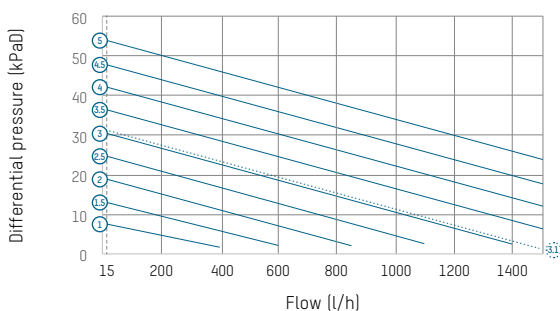
G) Heating water demand for heating DHW by 50 °C (10 – 60 °C)



H) Return temperature for heating DHW by 50 °C (10 – 60 °C)

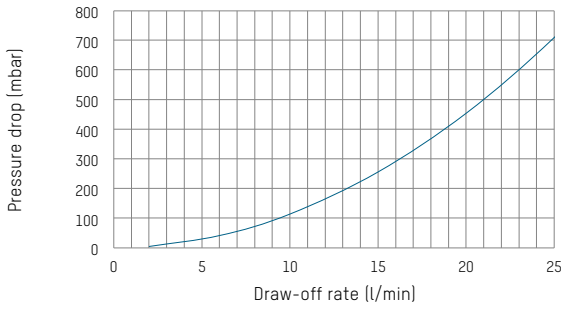


I) Setting differential pressure regulator

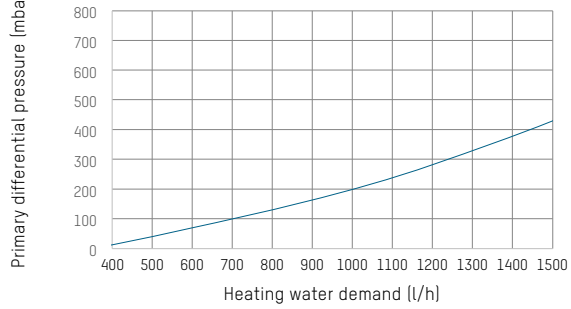


FLOW AND PRESSURE DROP DIAGRAMS (PLATE HEAT EXCHANGER WITH 40 PLATES)

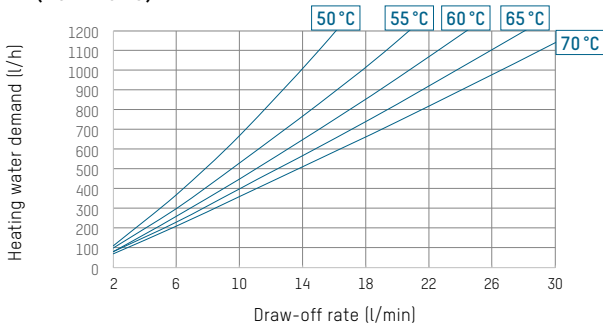
A) Secondary pressure drop



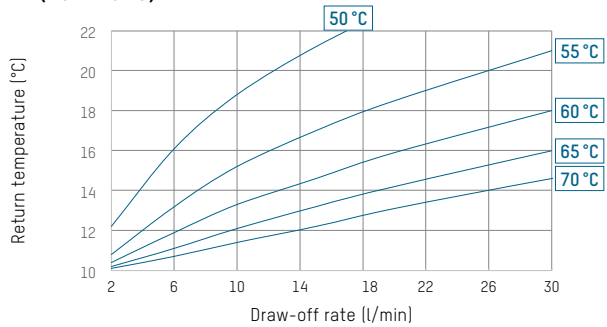
B) Heating water demand/primary differential pressure



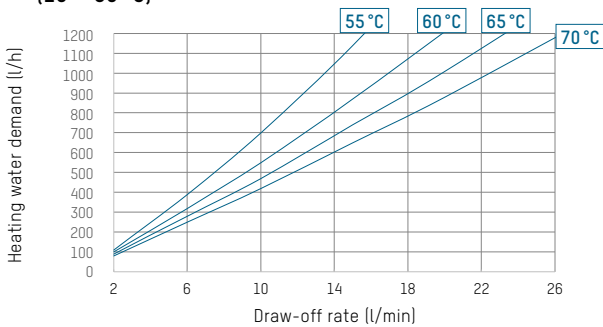
C) Heating water demand for heating DHW by 35 °C (10 – 45 °C)



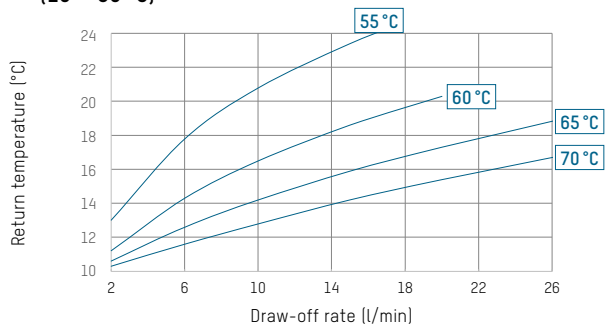
D) Return temperature for heating DHW by 35 °C (10 – 45 °C)



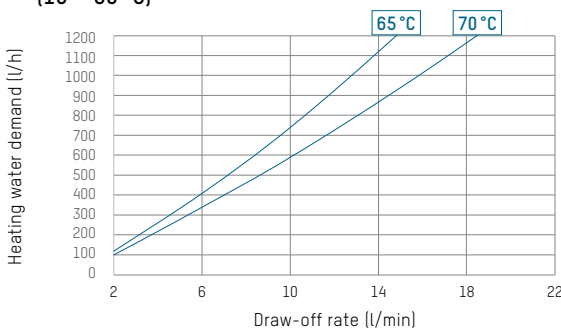
E) Heating water demand for heating DHW by 40 °C (10 – 50 °C)



F) Return temperature for heating DHW by 40 °C (10 – 50 °C)



G) Heating water demand for heating DHW by 50 °C (10 – 60 °C)



H) Return temperature for heating DHW by 50 °C (10 – 60 °C)

