

Plate heat exchanger



Solar/heating plate heat exchanger:

The plate heat exchangers are made of thin, ribbed stainless steel plates mat. (AISI 316) which are vacuum soldered using copper. The max. design temperature is 160°C, the max. design pressure is 16 bar for type CB20 and 32 bar for all other types.

Solar/swimming pool plate heat exchanger:

The plate heat exchangers are made of thin, ribbed stainless steel plates mat. (AISI 316) which are bonded using stainless steel diffusion technology. (Corrosion resistance same as stainless steel). This means that they are more resistant to pressure, temperature and corrosion than are copper-soldered plate heat exchangers (see the following pages).

Heat insulation:

Consists of polyurethane / with blue ABS layer. Insulation thickness: 30mm, max. temperature 140°C.

Screw connections:

Made of red brass with male threads

Foot and mounting brackets:

Made of galvanised steel. Types PWT 100N-200N may be floor or wall-mounted. Types PWT 300N-500N may only be mounted on the floor.

Specifications

	PWT 10N	PWT 20N	PWT 30N	PWT 50N	PWT 80N	PWT 100N
Item no.	540 401	540 402	540 403	540 405	540 408	540 410
Max. collector surface area	up to 10 m ²	up to 20 m ²	up to 30 m ²	up to 50 m ²	up to 80 m ²	up to 200 m ²
Output	7 kW	14 kW	21 kW	35 kW	56 kW	70 kW
Primary pressure loss	9.19 kPa	10.8 kPa	11.6 kPa	12.7 kPa	9.97 kPa	10.7 kPa
Secondary pressure loss	9.04 kPa	12 kPa	13.6 kPa	16 kPa	14.1 kPa	15.1 kPa
Height without insulation	324 mm	324 mm	324 mm	324 mm	526 mm	526 mm
Width without insulation	94 mm	94 mm	94 mm	94 mm	111 mm	111 mm
Depth without insulation	50 mm	59 mm	68 mm	92 mm	151 mm	175 mm
Height with insulation	384 mm	384 mm	384 mm	384 mm	588 mm	588 mm
Width with insulation	157 mm	157 mm	157 mm	157 mm	182 mm	182 mm
Depth with insulation	113 mm	113 mm	113 mm	158 mm	160 mm	257 mm
Weight (net / operation)	1.86 / 2.17 kg	2.34 / 2.82 kg	2.82 / 3.47 kg	4.10 / 5.19 kg	12.1 / 15.8 kg	14.3 / 18.9 kg
Connections (solar - secondary)	1" - 1"	1" - 1"	1" - 1"	1" - 1"	1" - 1 1/4"	1" - 1 1/4"
	PWT 200N	PWT 300N	PWT 500N	PWT-SB 20	PWT-SB 50	PWT-SB 100
Item no.	540 420	540 430	540 450	540 460	540 470	540 480
Max. collector surface area	up to 200 m ²	up to 300 m ²	up to 500 m ²	up to 20 m ²	up to 50 m ²	up to 100 m ²
Output	140 kW	210 kW	350 kW	12 kW	30 kW	60 kW
Primary pressure loss	12.7 kPa	12 kPa	12.6 kPa	1.37 kPa	1.64 kPa	2.08 kPa
Secondary pressure loss	15.8 kPa	14.6 kPa	16.1 kPa	5.82 kPa	7.61 kPa	8.95 kPa
Height without insulation	526 mm	618 mm	618 mm	310 mm	310 mm	310 mm
Width without insulation	111 mm	191 mm	191 mm	111 mm	111 mm	111 mm
Depth without insulation	295 mm	198 mm	283 mm	97 mm	150 mm	246 mm
Height with insulation	588 mm	670 mm	670 mm	360 mm	360 mm	360 mm
Width with insulation	182 mm	240 mm	240 mm	185 mm	185 mm	185 mm
Depth with insulation	304 mm	247 mm	334 mm	112 mm	160 mm	257 mm
Weight (net / operation)	25.4 / 34.8 kg	32.2 / 44.4 kg	45.4 / 65.1 kg	4.36 / 5.22 kg	7.11 / 9.07 kg	12.1 / 16.1 kg
Connections (solar - secondary)	1" - 1 1/4"	2" - 2"	2" - 2"	1" - 1 1/4"	1" - 1 1/4"	1" - 1 1/4"
	Type	Height	Width	Fits		
Mounting sleeve	BB 80-200	155 mm	100 mm	PWT 100N - 200N		
Foot bracket	FK 200-500	199 mm	260 mm	PWT 300N - 500N		

Tank accessories

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Plate heat exchanger pressure loss

PLATE HEAT EXCHANGER PRIMARY SIDE PRESSURE LOSSES (PROP: GLYCOL 46%)

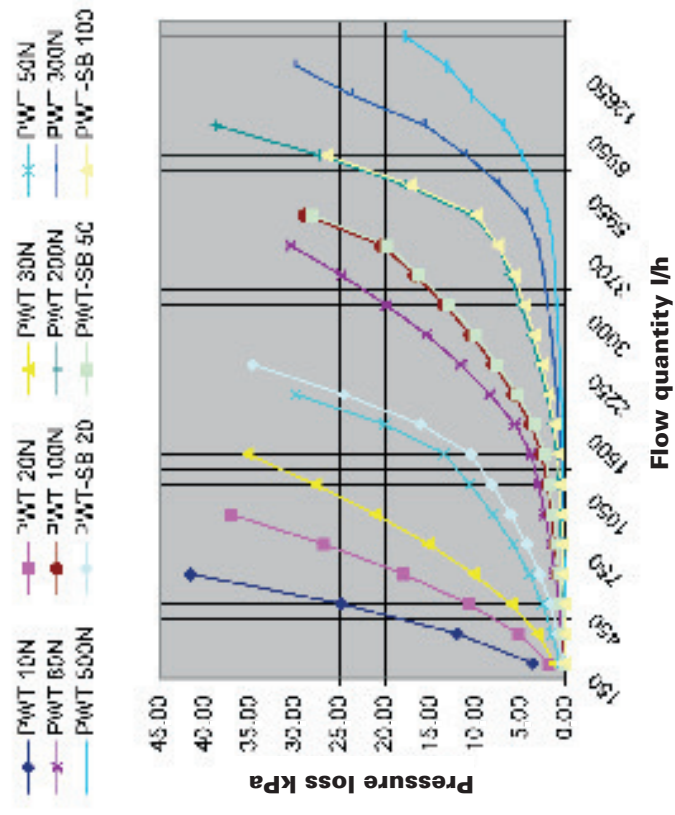
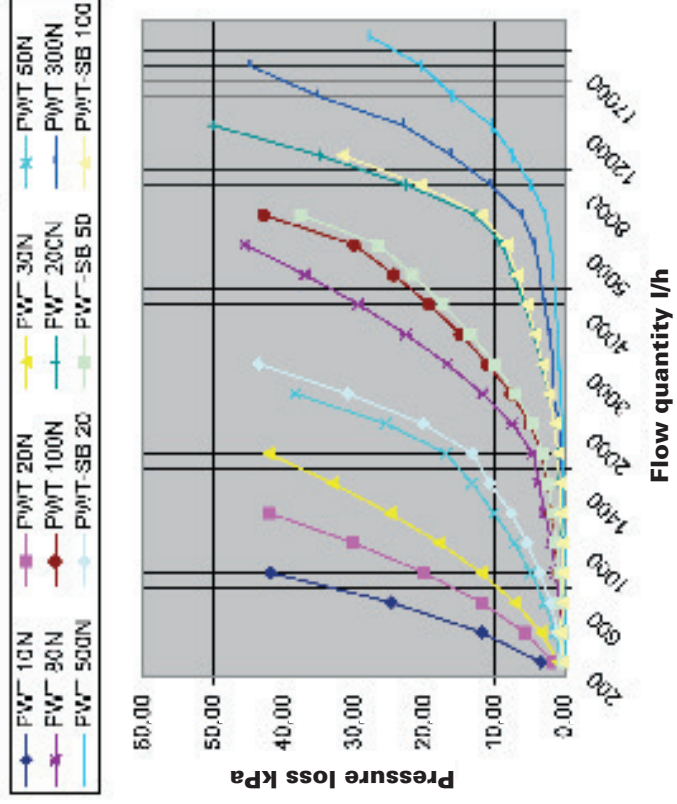


Plate heat exchanger pressure loss

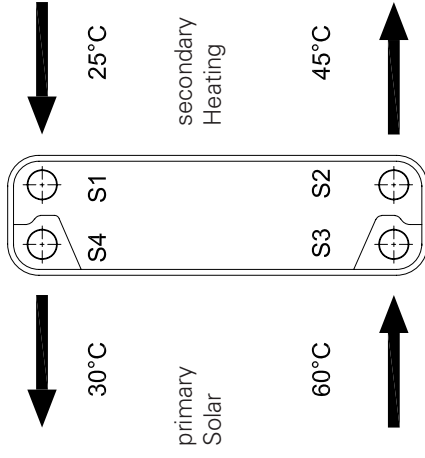
PLATE HEAT EXCHANGER SECONDARY SIDE PRESSURE LOSSES (WATER)



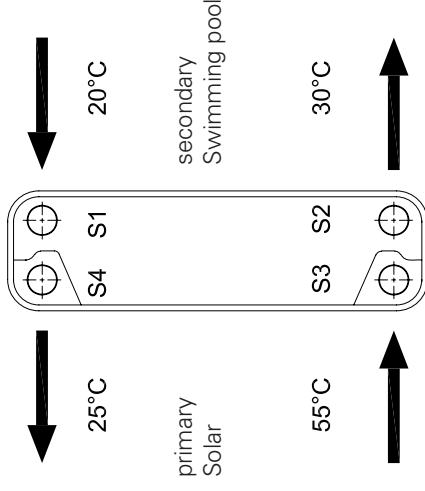
Tank accessories

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Plate heat exchanger temperature examples



SOLAR / HEATING



SOLAR / SWIMMING POOL

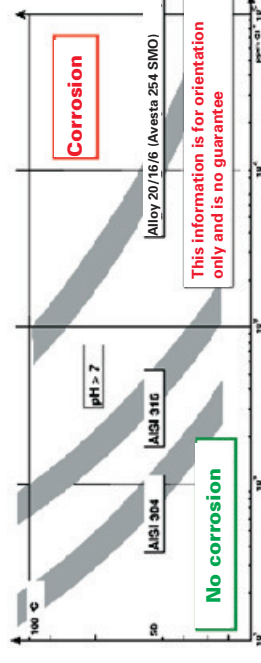
The effects of substances dissolved in hot water system water on copper-soldered plate heat exchangers

We recommend that the following levels of substances dissolved in hot water system water be observed in order to minimize corrosion in copper-soldered plate heat exchangers.

pH	7 to 9	Available chlorine	< 0.5 ppm
SO ₄ ⁻	< 100 ppm	Fe ⁺⁺⁺	< 0.5 ppm
HCO ₃ ⁻ / SO ₄ ⁻	> 1	Mn ⁺⁺	< 0.05 ppm
Cl ⁻	< 0 ppm	CO ₂	< 10 ppm
PO ₄ ⁻	< 2 ppm	H ₂ S	< 50 ppb
NH ₃	< 0.5 ppm	Conductivity	< 50µS/cm < 600µS/cm
Wall temperature	< 80°C		

Other factors which influence corrosion are contaminants in the water, flow speed, dirt or deposit formation in the heat exchanger and mixed installations. The specifications indicated are for orientation and do not represent a basis for warranty.

The effects of chloride ion concentration and temperature on pitting and stress crack corrosion tendencies in stainless steel.



Other factors which may influence these forms of corrosion are:

- pH
- Surface properties
- Water speed
- Impurities (biological and incrustation)
- Contaminants such as CO, HS, SO, iron
- The solution's redox potential (dependant on oxidizing bonds like oxygen, hypochlorous acids, sodium bicarbonate)