

SINGLE PHASE - DESIGN
HEAT EXCHANGER: B10THx10/1P

SWEP DThermX

Date: 30/06/2025

SSP Alias: B10T

DUTY REQUIREMENTS

		Side 1	Side 2
Fluid		Propylene Glycol - Water (20.0 mass%)	Water
		Counter-Current	
Flow type		Outer	Inner
Circuit			
Heat load	kW	3.200	
Inlet temperature	°C	60.0	45.0
Outlet temperature	°C	50.0	55.0
Flow rate	kg/s	0.07899	0.07654
Pressure drop (Design PD)	kPa	1.20 (20.00)	1.60 (20.00)
Thermal length		2.00	2.00

PLATE HEAT EXCHANGER

		Side 1	Side 2
Total heat transfer area	m ²		0.248
Heat flux	kW/m ²		12.9
Mean temperature difference	K		5.0
Overall heat transfer coefficient required	W/m ² ;°C		2580
Pressure drop - total*	kPa	1.20	1.60
- in ports	kPa	0.0144	0.0137
Port diameter (up/down)	mm	24.0/24.0	24.0/24.0
Number of channels per pass		5	4
Number of plates			10
Oversurfacing	%		8
Fouling factor	m ² ;°C/kW		0.027
Reynolds number		332.5	618.8
Port velocity (up/down)	m/s	0.174/0.174	0.171/0.171
Channel velocity	m/s	0.0697	0.0857
Shear stress	kPa	4.89e-3	6.51e-3
Average wall temperature	°C	52.4	52.1
Largest wall temperature difference	K		0.7
Min./Max. wall temperature	°C	47.6/57.6	46.9/56.9

*Excluding pressure drop in connections.

PHYSICAL PROPERTIES

		Side 1	Side 2
Reference temperature	°C	55.0	50.0
Dynamic viscosity	cP	0.841	0.547
Density	kg/m ³	1003	988.1
Heat capacity	kJ/kg;°C	4.051	4.181
Thermal conductivity	W/m;°C	0.5258	0.6436
Film coefficient	W/m ² ;°C	5930	7250

TOTALS

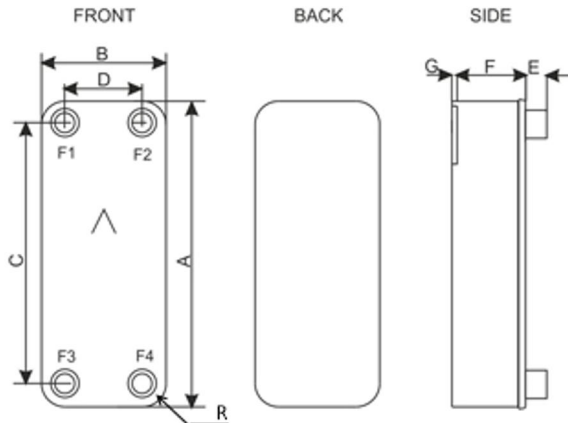
		Side 1	Side 2
Total weight empty (no connections)*	kg	2.11 - 3.06	
Total weight filled (no connections)*	kg	2.66 - 3.6	
Hold-up volume (Inner Circuit)	dm ³	0.24	
Hold-up volume (Outer Circuit)	dm ³	0.3	
Port size F1/P1	mm	24	
Port size F2/P2	mm	24	
Port size F3/P3	mm	24	
Port size F4/P4	mm	24	

*Weight depends on the selected product.

DIMENSIONS



DIMENSIONS



A	mm	289 ±2
B	mm	119 ±1
C	mm	243 ±1
D	mm	72 ±1
E	mm	20 (opt. 45) ±1
F*	mm	26.4 - 30.4 +0.5%/-1.5%
G*	mm	4 - 6 ±1
R*	mm	22 - 23

*Dimensions depend on the selected product.

*This is a schematic sketch. For correct drawings please use the order drawing function or contact your SWEP representative.

CARBON FOOTPRINT

	Unit	Value
Sweden - Landskrona	kg CO ₂ e	10.9 - 15.8
USA - Tulsa	kg CO ₂ e	11.4 - 16.5
Slovakia - Košice	kg CO ₂ e	12.4 - 17.9
Malaysia - Kuala Lumpur	kg CO ₂ e	17.2 - 25.0
China - Suzhou	kg CO ₂ e	29.6 - 42.8

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