

**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	50.0	35.0
Outlet temperature	°C	40.0	45.0
Flow rate	kg/s	0.07942	0.07658
Pressure drop (Design PD)	kPa	1.25 (20.00)	1.64 (20.00)
Thermal length		2.00	2.00

**PLATE HEAT EXCHANGER**

		Side 1	Side 2
Total heat transfer area	m <sup>2</sup>		0.248
Heat flux	kW/m <sup>2</sup>		12.9
Mean temperature difference	K		5.0
Overall heat transfer coefficient required	W/m <sup>2</sup> ;°C		2580
Pressure drop - total*	kPa	1.25	1.64
- in ports	kPa	0.0145	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 <sup>2</sup> ;°C/kW		0.025
Reynolds number		271.6	518.5
Port velocity (up/down)	m/s	0.174/0.174	0.171/0.171
Channel velocity	m/s	0.0697	0.0854
Shear stress	kPa	5.09e-3	6.69e-3
Average wall temperature	°C	42.4	42.1
Largest wall temperature difference	K		0.7
Min./Max. wall temperature	°C	37.6/47.6	36.9/46.9

\*Excluding pressure drop in connections.

**PHYSICAL PROPERTIES**

		Side 1	Side 2
Reference temperature	°C	45.0	40.0
Dynamic viscosity	cP	1.04	0.654
Density	kg/m <sup>3</sup>	1009	992.3
Heat capacity	kJ/kg;°C	4.029	4.179
Thermal conductivity	W/m;°C	0.5178	0.6306
Film coefficient	W/m <sup>2</sup> ;°C	5890	7220

**TOTALS**

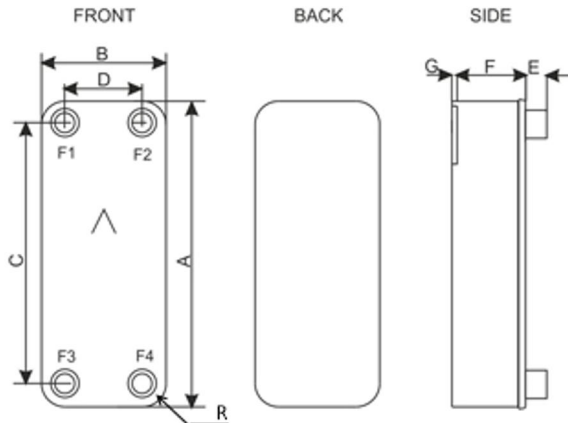
		Side 1	Side 2
Total weight empty (no connections)*	kg	2.11 - 3.06	
Total weight filled (no connections)*	kg	2.66 - 3.61	
Hold-up volume (Inner Circuit)	dm <sup>3</sup>	0.24	
Hold-up volume (Outer Circuit)	dm <sup>3</sup>	0.3	
Port size F1/P1	mm	24	
Port size F2/P2	mm	24	
Port size F3/P3	mm	24	
Port size F4/P4	mm	24	

\*Weight depends on the selected product.

**DIMENSIONS**



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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 <sub>2</sub> e	10.9 - 15.8
USA - Tulsa	kg CO <sub>2</sub> e	11.4 - 16.5
Slovakia - Košice	kg CO <sub>2</sub> e	12.4 - 17.9
Malaysia - Kuala Lumpur	kg CO <sub>2</sub> e	17.2 - 25.0
China - Suzhou	kg CO <sub>2</sub> e	29.6 - 42.8

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