

SINGLE PHASE - DESIGN
HEAT EXCHANGER: B10THx40/1P

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	18.00	
Inlet temperature	°C	50.0	35.0
Outlet temperature	°C	40.0	45.0
Flow rate	kg/s	0.4467	0.4308
Pressure drop (Design PD)	kPa	2.77 (20.00)	2.65 (20.00)
Thermal length		2.00	2.00

PLATE HEAT EXCHANGER

		Side 1	Side 2
Total heat transfer area	m ²		1.18
Heat flux	kW/m ²		15.3
Mean temperature difference	K		5.0
Overall heat transfer coefficient required	W/m ² ;°C		3060
Pressure drop - total*	kPa	2.77	2.65
- in ports	kPa	0.463	0.438
Port diameter (up/down)	mm	24.0/24.0	24.0/24.0
Number of channels per pass		20	19
Number of plates			40
Oversurfacing	%		8
Fouling factor	m ² ;°C/kW		0.023
Reynolds number		381.9	614.0
Port velocity (up/down)	m/s	0.979/0.979	0.960/0.960
Channel velocity	m/s	0.0980	0.101
Shear stress	kPa	9.49e-3	9.12e-3
Average wall temperature	°C	42.5	42.2
Largest wall temperature difference	K		0.4
Min./Max. wall temperature	°C	37.5/47.5	37.1/47.1

*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 ³	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 ² ;°C	6640	7660

TOTALS

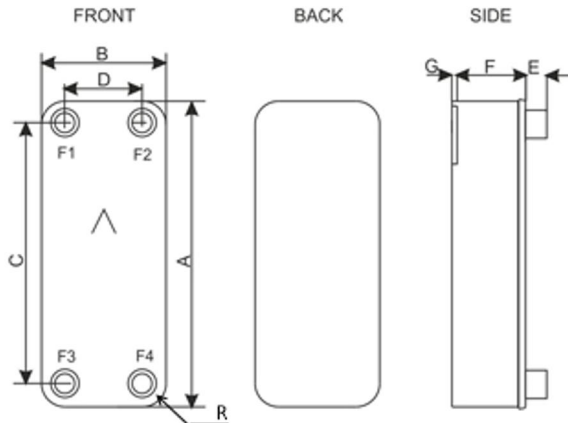
		Side 1	Side 2
Total weight empty (no connections)*	kg	4.99 - 5.94	
Total weight filled (no connections)*	kg	7.35 - 8.3	
Hold-up volume (Inner Circuit)	dm ³	1.16	
Hold-up volume (Outer Circuit)	dm ³	1.22	
Port size F1/P1	mm	24	
Port size F2/P2	mm	24	
Port size F3/P3	mm	24	
Port size F4/P4	mm	24	

*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	93.6 - 97.6 +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	25.7 - 30.6
USA - Tulsa	kg CO ₂ e	27.0 - 32.1
Slovakia - Košice	kg CO ₂ e	29.2 - 34.8
Malaysia - Kuala Lumpur	kg CO ₂ e	40.7 - 48.5
China - Suzhou	kg CO ₂ e	69.9 - 83.1

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