

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	40.00	
Inlet temperature	°C	80.0	50.0
Outlet temperature	°C	60.0	70.0
Flow rate	kg/s	0.4897	0.4779
Pressure drop (Design PD)	kPa	3.12 (20.00)	3.10 (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		34.0
Mean temperature difference	K		10.0
Overall heat transfer coefficient required	W/m ² ;°C		3400
Pressure drop - total*	kPa	3.12	3.10
- in ports	kPa	0.566	0.544
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	%		6
Fouling factor	m ² ;°C/kW		0.016
Reynolds number		669.3	953.6
Port velocity (up/down)	m/s	1.09/1.09	1.07/1.07
Channel velocity	m/s	0.109	0.113
Shear stress	kPa	0.0105	0.0105
Average wall temperature	°C	64.7	64.1
Largest wall temperature difference	K		0.8
Min./Max. wall temperature	°C	54.8/74.8	54.0/74.0

*Excluding pressure drop in connections.

PHYSICAL PROPERTIES

		Side 1	Side 2
Reference temperature	°C	70.0	60.0
Dynamic viscosity	cP	0.648	0.467
Density	kg/m ³	994.1	983.2
Heat capacity	kJ/kg;°C	4.084	4.185
Thermal conductivity	W/m;°C	0.5351	0.6544
Film coefficient	W/m ² ;°C	6930	8910

TOTALS

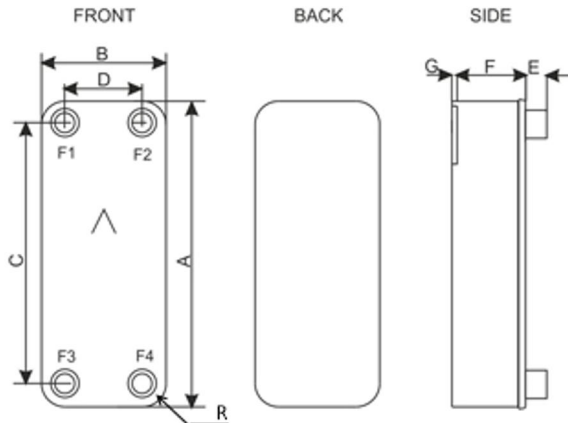
		Side 1	Side 2
Total weight empty (no connections)*	kg	4.99 - 5.94	
Total weight filled (no connections)*	kg	7.33 - 8.28	
Hold-up volume (Inner Circuit)	dm ³	1.16	
Hold-up volume (Outer Circuit)	dm ³	1.22	
Port size F1/P1	mm	24	
Port size F2/P2	mm	24	
Port size F3/P3	mm	24	
Port size F4/P4	mm	24	

*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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