

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	60.0	45.0
Outlet temperature	°C	50.0	55.0
Flow rate	kg/s	0.4443	0.4305
Pressure drop (Design PD)	kPa	2.68 (20.00)	2.60 (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	2.68	2.60
- in ports	kPa	0.461	0.439
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	%		9
Fouling factor	m ² ;°C/kW		0.027
Reynolds number		467.6	732.8
Port velocity (up/down)	m/s	0.979/0.979	0.963/0.963
Channel velocity	m/s	0.0980	0.101
Shear stress	kPa	9.11e-3	8.88e-3
Average wall temperature	°C	52.4	52.2
Largest wall temperature difference	K		0.4
Min./Max. wall temperature	°C	47.5/57.5	47.1/57.1

*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	6690	7810

TOTALS

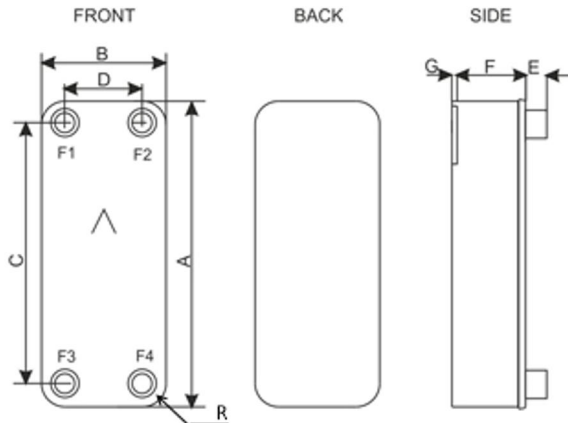
		Side 1	Side 2
Total weight empty (no connections)*	kg	4.99 - 5.94	
Total weight filled (no connections)*	kg	7.34 - 8.29	
Hold-up volume (Inner Circuit)	dm ³	1.16	
Hold-up volume (Outer Circuit)	dm ³	1.22	
Port size F1/P1	mm	24	
Port size F2/P2	mm	24	
Port size F3/P3	mm	24	
Port size F4/P4	mm	24	

*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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