

**SINGLE PHASE - DESIGN**  
**HEAT EXCHANGER: B16Hx100/1P**

SWEP DThermX

Date: 01/07/2025

SSP Alias: B16

**DUTY REQUIREMENTS**

		Side 1	Side 2
Fluid		Propylene Glycol - Water (20.0 mass%)	Water
		Counter-Current	
Flow type		Outer	Inner
Circuit			
Heat load	kW	85.00	
Inlet temperature	°C	60.0	45.0
Outlet temperature	°C	50.0	55.0
Flow rate	kg/s	2.098	2.033
Pressure drop (Design PD)	kPa	10.9 (20.00)	10.2 (20.00)
Thermal length		2.00	2.00

**PLATE HEAT EXCHANGER**

		Side 1	Side 2
Total heat transfer area	m <sup>2</sup>	3.92	
Heat flux	kW/m <sup>2</sup>	21.7	
Mean temperature difference	K	5.0	
Overall heat transfer coefficient required	W/m <sup>2</sup> ;°C	4340	
Pressure drop - total*	kPa	10.9	10.2
- in ports	kPa	2.91	2.77
Port diameter (up/down)	mm	33.0/33.0	33.0/33.0
Number of channels per pass		50	49
Number of plates			100
Oversurfacing	%		0
Fouling factor	m <sup>2</sup> ;°C/kW		0.002
Reynolds number		883.3	1342
Port velocity (up/down)	m/s	2.45/2.45	2.41/2.41
Channel velocity	m/s	0.185	0.186
Shear stress	kPa	0.0277	0.0258
Average wall temperature	°C	52.4	52.0
Largest wall temperature difference	K		0.4
Min./Max. wall temperature	°C	47.4/57.4	47.0/57.0

\*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 <sup>3</sup>	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 <sup>2</sup> ;°C	8360	10900

**TOTALS**

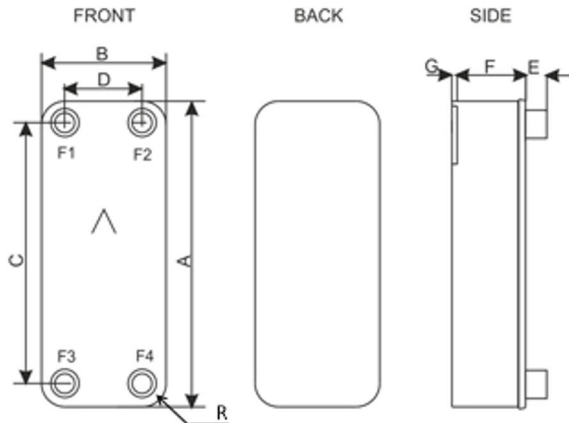
		Side 1	Side 2
Total weight empty (no connections)*	kg	13.48	
Total weight filled (no connections)*	kg	21.49	
Hold-up volume (Inner Circuit)	dm <sup>3</sup>	4.02	
Hold-up volume (Outer Circuit)	dm <sup>3</sup>	4.1	
Port size F1/P1	mm	33	
Port size F2/P2	mm	33	
Port size F3/P3	mm	33	
Port size F4/P4	mm	33	

\*Weight depends on the selected product.

**DIMENSIONS**



## DIMENSIONS



A	mm	376 ±2
B	mm	119 ±1
C	mm	320 ±1
D	mm	63 ±1
E	mm	27 (opt. 45) ±1
F	mm	228 +3%/-1.5%
G	mm	6 ±2
R	mm	23

\*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	69.4
USA - Tulsa	kg CO <sub>2</sub> e	72.8
Slovakia - Košice	kg CO <sub>2</sub> e	78.9
Malaysia - Kuala Lumpur	kg CO <sub>2</sub> e	109.9
China - Suzhou	kg CO <sub>2</sub> e	188.5

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