SINGLE PHASE - DESIGN
HEAT EXCHANGER: B4THx30/1P

SWEP SSP G8 2024.912.1.0

Date: 19/11/2024

SSP Alias: B4TH

DUTY REQUIREMENTS		Side 1		Side 2
Fluid		**Water**		**Water**
Flow type			**Counter-Current**	
Circuit		Inner		Outer
Heat load	kW		**12.00**	
Inlet temperature	°C	**80.00**		**40.00**
Outlet temperature	°C	**43.00**		**60.00**
Flow rate	kg/s	0.07747		0.1435
Pressure drop (Design PD)	kPa	4.58 **(15.00)**		12.8 **(15.00)**
Thermal length		4.129		2.232

| PLATE HEAT EXCHANGER		Side 1	Side 2
Total heat transfer area	m²	0.336	
Heat flux	kW/m²	35.7	
Mean temperature difference	K	8.96	
O.H.T.C. (available/required)	W/m²,°C	5520/3990	
Pressure drop - total*	kPa	4.58	12.8
- in ports	kPa	0.0715	0.244
Port diameter (up/down)	mm	17.5/17.5	17.5/17.5
Number of channels per pass		14	15
Number of plates		30	
Oversurfacing	%	39	
Fouling factor	m²,°C/kW	0.068	
Reynolds number		346.4	499.5
Port velocity (up/down)	m/s	0.328/0.328	0.604/0.604
Channel velocity	m/s	0.101	0.173
Shear stress	Pa	9.39	26.2
Average wall temperature	°C	55.39	54.38
Largest wall temperature difference	K	2.33	
Min./Max. wall temperature	°C	41.46/69.71	41.11/67.38

Excluding pressure drop in connections.

PHYSICAL PROPERTIES		Side 1	Side 2
Reference temperature	°C	61.50	50.00
Dynamic viscosity	cP	0.456	0.547
Dynamic viscosity - wall	cP	0.501	0.509
Density	kg/m³	982.4	988.1
Heat capacity	kJ/kg,°C	4.186	4.181
Thermal conductivity	W/m,°C	0.6558	0.6436
Film coefficient	W/m²,°C	10700	15000

TOTALS		Side 1	Side 2
Total weight empty (no connections)*	kg	1.68 - 2.02	
Total weight filled (no connections)*	kg	1.94 - 2.29	
Hold-up volume (Inner Circuit)	dm³	0.13	
Hold-up volume (Outer Circuit)	dm³	0.14	
Port size F1/P1	mm	17.5	
Port size F2/P2	mm	17.5	
Port size F3/P3	mm	17.5	
Port size F4/P4	mm	17.5	
Carbon footprint	kg	11.8	

Weight depends on the selected product.

DIMENSIONS
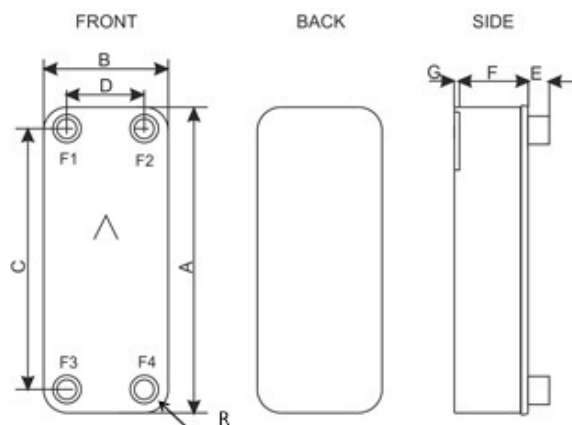
A	mm	194.5 ±2
B	mm	76.9 ±1
C	mm	154 ±1
D	mm	40 ±1
E*	mm	20 - 30 / 20 ±1
F*	mm	35.8 - 39.8 ±3%
G*	mm	4 - 6 ±1
R	mm	18

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.