

CONDENSER - RATING

HEAT EXCHANGER: B15THx40/1P

SWEP SSP G8 2024.116.2.0

Date: 07/03/2024

SSP Alias: B15T

DUTY REQUIREMENTS		Side 1	Side 2
Fluid		R410A	Water
Flow type		Counter-Current	
Circuit		Inner	Outer
Heat load	kW		21,00
Inlet vapor quality		1,000	
Outlet vapor quality		0,000	
Inlet temperature	°C	70,00	35,00
Condensation temperature (dew)	°C	45,00	
Subcooling	K	3,00	
Outlet temperature	°C	41,90	40,00
Flow rate	kg/h m³/h	398,4	3,643
Fluid condensed	kg/h	398,4	

PLATE HEAT EXCHANGER		Side 1	Side 2
Total heat transfer area	m²		1,29
Heat flux	kW/m²		16,3
Mean temperature difference	K		7,34
O.H.T.C. (available/required)	W/m², °C		2430/2210
Pressure drop - total*	kPa	1,23	50,4
- in ports (Inlet/Outlet)	kPa	-0,629/0,159	9,71
Operating pressure (outlet)	kPa	2720	
Number of channels per pass		19	20
Number of plates			40
Oversurfacing	%		10
Fouling factor	m², °C/kW		0,041
Port diameter (up/down)	mm	16,0/16,0	16,0/16,0
Recommended inlet connection diameter	mm	7,19 - 16,1	
Recommended outlet connection diameter	mm	8,62 - 17,2	
Reynolds number			2095
Inlet Port velocity	m/s	5,05	5,03
Channel velocity	m/s	0,382	0,361
Shear stress	Pa		94,1
Largest wall temperature difference	K		0,34
Min./Max. wall temperature	°C	35,72/40,77	35,57/40,60

*Excluding pressure drop in connections.

PHYSICAL PROPERTIES		Side 1	Side 2
Reference temperature	°C	44,96	37,50
Liquid • Dynamic viscosity	cP	0,0899	0,685
• Density	kg/m³	947,3	993,2
• Heat capacity	kJ/kg, °C	2,033	4,178
• Thermal conductivity	W/m, °C	0,08406	0,6270
Vapor • Dynamic viscosity	cP	0,0143	
• Density	kg/m³	109,0	
• Heat capacity	kJ/kg, °C	1,490	
• Thermal conductivity	W/m, °C	0,01363	
• Latent heat	kJ/kg	149,3	
Film coefficient	W/m², °C	3580	17100

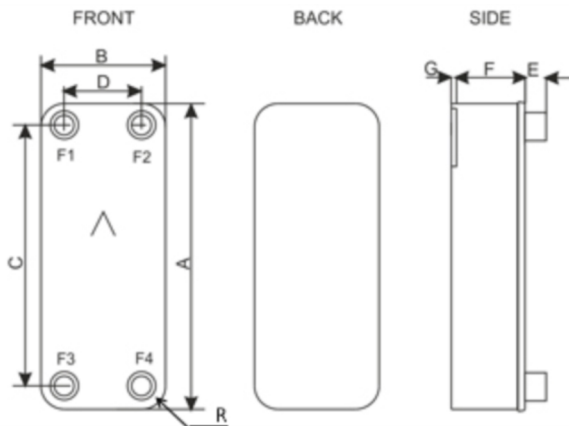
TOTALS		Side 1	Side 2
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TOTALS		Side 1	Side 2
Total weight (no connections)*	kg		4,79 - 5,41
Hold-up volume (Inner Circuit)	dm ³		1,2
Estimated refrigerant charge	kg		0,41
Hold-up volume (Outer Circuit)	dm ³		1,26
Port size F1/P1	mm		16
Port size F2/P2	mm		16
Port size F3/P3	mm		16
Port size F4/P4	mm		16
Carbon footprint	kg		38,03

*Weight depends on the selected product.

DIMENSIONS



A*	mm	466 - 468 ±2
B*	mm	74 - 76 ±1
C	mm	432 ±1
D	mm	40 ±1
E	mm	20 (opt. 45) ±1
F*	mm	91,6 - 93,6 ±2,5%
G	mm	7 ±1
R*	mm	16 - 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.

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