

# CONDENSER - RATING

## HEAT EXCHANGER: B200THx60/1P

SWEP SSP G8 2024.116.2.0

Date: 07/03/2024

SSP Alias: B200T

| DUTY REQUIREMENTS              |             | Side 1          | Side 2 |
|--------------------------------|-------------|-----------------|--------|
| Fluid                          |             | R410A           | Water  |
| Flow type                      |             | Counter-Current |        |
| Circuit                        |             | Inner           | Outer  |
| Heat load                      | kW          |                 | 118,0  |
| 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 | 2238            | 20,47  |
| Fluid condensed                | kg/h        | 2238            |        |

| PLATE HEAT EXCHANGER                   |           | Side 1       | Side 2      |
|--|-----------|--------------|-------------|
| Total heat transfer area               | m²        |              | 7,48        |
| Heat flux                              | kW/m²     |              | 15,8        |
| Mean temperature difference            | K         |              | 7,37        |
| O.H.T.C. (available/required)          | W/m², °C  |              | 2160/2140   |
| Pressure drop - total*                 | kPa       | 2,06         | 49,1        |
| - in ports (Inlet/Outlet)              | kPa       | -0,130/0,130 | 3,13        |
| Operating pressure (outlet)            | kPa       | 2720         |             |
| Number of channels per pass            |           | 29           | 30          |
| Number of plates                       |           |              | 60          |
| Oversurfacing                          | %         |              | 1           |
| Fouling factor                         | m², °C/kW |              | 0,004       |
| Port diameter (up/down)                | mm        | 60,0/42,0    | 53,0/53,0   |
| Recommended inlet connection diameter  | mm        | 17,0 - 38,1  |             |
| Recommended outlet connection diameter | mm        | 20,4 - 40,9  |             |
| Reynolds number                        |           |              | 2308        |
| Inlet Port velocity                    | m/s       | 2,02         | 2,58        |
| Channel velocity                       | m/s       | 0,413        | 0,398       |
| Shear stress                           | Pa        |              | 101         |
| Largest wall temperature difference    | K         |              | 0,34        |
| Min./Max. wall temperature             | °C        | 35,72/40,83  | 35,56/40,65 |

\*Excluding pressure drop in connections.

| PHYSICAL PROPERTIES        |           | Side 1  | Side 2 |
|----------------------------|-----------|---------|--------|
| Reference temperature      | °C        | 44,95   | 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  | 3100    | 15600  |

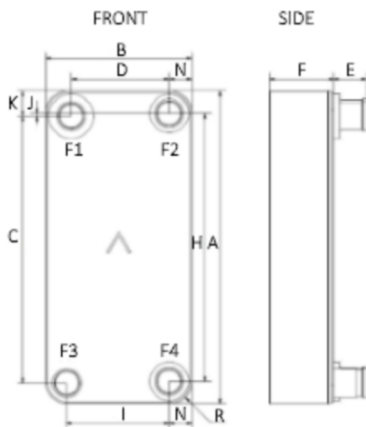
| TOTALS | Side 1 | Side 2 |
|--------|--------|--------|
|--------|--------|--------|



| TOTALS                         |                 | Side 1 | Side 2        |
|--------------------------------|-----------------|--------|---------------|
| Total weight (no connections)* | kg              |        | 33,45 - 44,65 |
| Hold-up volume (Inner Circuit) | dm <sup>3</sup> |        | 6,99          |
| Estimated refrigerant charge   | kg              |        | 2,41          |
| Hold-up volume (Outer Circuit) | dm <sup>3</sup> |        | 7,23          |
| Port size F1/P1                | mm              |        | 60            |
| Port size F2/P2                | mm              |        | 53            |
| Port size F3/P3                | mm              |        | 42            |
| Port size F4/P4                | mm              |        | 53            |
| Carbon footprint               | kg              |        | 313,77        |

\*Weight depends on the selected product.

**DIMENSIONS**



|    |    |                         |
|----|----|-------------------------|
| A  | mm | 525 ±2                  |
| B  | mm | 243 ±1                  |
| C  | mm | 448,5 ±1                |
| D  | mm | 163,5 ±1                |
| E  | mm | 54 (opt. 27) ±1         |
| F* | mm | 147,4 - 159,4 +2%/-1,5% |
| G* | mm | 0 - 4 ±1                |
| H  | mm | 450 ±1                  |
| I  | mm | 171 ±1                  |
| J  | mm | 4,5                     |
| K  | mm | 42                      |
| N  | mm | 37,5                    |
| R  | mm | 35                      |

\*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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