Data sheet



Micro Plate heat exchanger

MPHE C117-EZD

For more efficient Chillers

Description

21% lower hold-up volume enables significant reduction in refrigerant charge.

C117L-EZD is an evaporator optimized for R410A for use in high-efficiency chillers with capacities of 50 – 200 kW, and standard efficiency chillers with capacities of 50 – 250 kW.

The Z-pattern channel plate technology pushes the performance of heat exchangers to the limits by fully mixing the liquid and gasrefrigerant through a "zigzag" flow, which increases the heat transfer coefficient. At the same time, inheriting from the dimple plate pattern of the previous generation of MPHE, C117L-EZD reduces the water side pressure drop and the amount of material used. In the reversible mode of the chiller as a condenser, C117L-EZD also has outstanding performance

To meet demands for higher seasonal efficiency, the C117L-EZD is designed to work efficiently and increase comfort in modern commercialbuildings without increasing the carbon footprint. Helping chillers perform more efficiently, it reduces both energy costs and environmentalimpact. The low hold-up volumereduces the system refrigerant charge and offers valuable savings.

Features & benefits

- Improved heat transfer - equals higher efficiency chillers
- Minimal hold-up volume - equals less refrigerant charge
- Smaller footprint - enables more compact chillers
- High heat transfer and minimal refrigerant charge - equals a reduced CO_2 footprint

Applications

The C117L-EZD is true dual evaporators specifically designed for high efficient chiller systems dedicated to comfort applications, cooling-industrial process, data centers. The evaporators are design to operate also in reversible systems in condenser mode, in co or counter current flow configuration.

The models are characterized by different distributor system the make the evaporator optimized for the high-density refrigerants. All models can run with high efficiency also in condenser mode.

Ordering

Product code numbers

Global or local standard code numbers can be accessed via Store.Danfoss.com on local subsites, with full set of technical data as well as relevant assets such as documentation and drawings.

Configuring and calculating products

C117(L)-EZD(-B) can be easily customized based on the application needs; model size can be evaluated using Hexact software. For details, product configuration and code creation please contact your Danfoss Sales representative.

Accessories code numbers

Accessories and spare parts

MPHE products are not serviceable, i.e. cannot be taken apart and repaired, and there are no spare parts program. As for accessories, stud bolts, feet on front and/or back cover plates for mounting support and handling are available upon request.

Table: Stud bolts

Stud bolt position	Bolt sizes
110x300 mm, middle	M8x20, M8x25, M8x30
100x140 mm, middle	

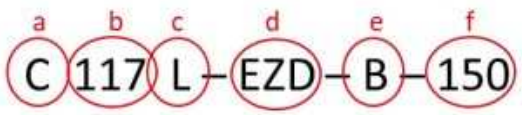
Contact your Danfoss sales representative for further information.

Overview

Product portfolio

- C117L-EZD: High efficiency evaporator optimized for R410A, R452B and R454B
- C117L-EZD-B: Standards efficiency evaporator for R410A
- C117-EZD: Evaporator for medium density refrigerants
- C117-EZD-B: Evaporator for medium density refrigerants

Table: Designation

<table>
<tr><td colspan="3">
</td></tr>
<tr><td>a

Applications
C: chiller
H: heat pump
HDW: heat pump double wall</td><td rowspan="3">d

Specific duty
E= evaporator
C= condenser

Plate design
Omit
L: L-type
M: M-type
H: H-type
W: W-type
X: Asymmetric
Z: Z flow
Configuration
Omit: single
D: Dual circuit
U: Mixing chamber</td><td>e

Distributor version
Omit
B
F
Plate stacking sequence
Omit: a-b-a...
R: b-a-b...</td></tr>
<tr><td>b

Platform * 22,30,55,62,118...

*heat exchanging surface per plate 1/1000 m²</td><td>f

Number of plates **

**Rule:

-Single: even number

-Dual: even number not multiple of 4</td></tr>
<tr><td>c

Pressure Service
Omit: 30bar
L: 45/49bar</td></tr>
</table>

Functions

Operation

Preconditions:

N = number of plates

Max number of plates: 250

Media

Refrigerants

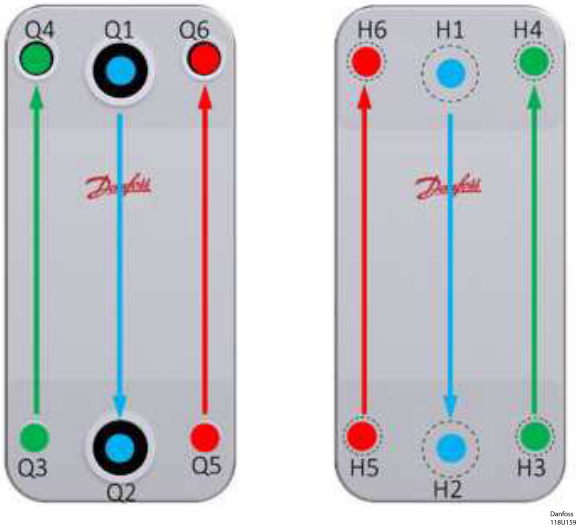
Max water flow (@6 m/s): 49.4m³/h

R410A, R452B, R454B, R407C
For other refrigerants please contact your Danfoss Sales representative.

Product details

General data

Figure: Configuration flow



Parallel flow:
Q1 – Q2 [H1 – H2]: brine/secondary side
Q3 – Q4 [H3 – H4]: primary, first circuit
Q5 – Q6 [H5 – H6]: primary, second circuit

Hold up volume
Q1 – Q2: 0.163 x N/2 [l] / 0.043 x N/2 [gal]
Q3 – Q4: 0.128 x (N-2)/4 [l] / 0.034 x (N-2)/4 [gal]
Q5 – Q6: 0.128 x (N-2)/4 [l] / 0.034 x (N-2)/4 [gal]
N: Number of Plate

Materials

Table: Standard materials

Item	Material	Specification
Cover plates	Stainless steel	AISI 304L
Plates	Stainless steel	AISI 316L
Connections	Stainless steel	AISI 304L
Brazing filler	Pure copper	Cu

Other material combinations are available on request. Please contact your Danfoss sales representative for more information.

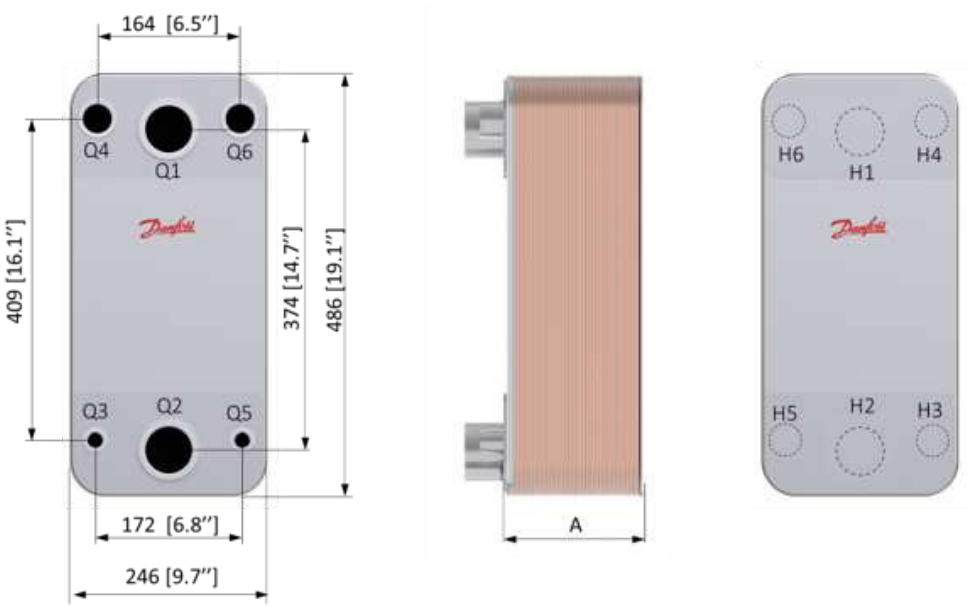
Pressure and temperature data

Min. working temperature: -196 °C (-320 °F)
Max. working temperature: 200 °C (390 °F)
Max. working pressure: 45 bar (653 psi) refrigerant side / 25 bar (363 psi) water side

Note:

For details, refer to the topic: Third party approvals

Dimensions



A:
C117L-EZD(-B): 13+1.64 x N [0.51+0.064xN]
C117-EZD(-B): 11+1.64 x N [0.43+0.064xN]
N: Number of Plate

Weight*
C117L-EZD(-B): 6.15 + 0.27 x N[kg] / 13.6 + 0.595 x N[lb]
C117-EZD(-B): 5.34 + 0.27 x N[kg] / 11.8 + 0.595 x N[lb]
N: Number of Plate
*Excluding connections and accessories

Connections

Table: Mechanical connections

Circuits	Connection type options	Connection size option [in]
Q1 – Q2 (water-brine side)	BSP Gas male	½, ¾, 1, 1 ¼, 1 ½, 2, 2 ½,
	BSP Gas female	½
	DIN R male	2, 2½
	NPT	2, 2½
	Victaulic	2, 2½
Q3 – Q5 (Refrigerant inlet)	Soldering	⅜, ½, ⅝, ¾, ⅞
Q4 – Q6 (Refrigerant outlet)	Soldering	⅝, ¾, ⅞, 1 ⅛, 1 ⅜, 1 ½, 2, 2 ½

Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

When you click on the link you will be directed to the latest version of the 'Declaration of Conformity'. Products developed and sold before this date of issue conform to the directives/standards in force at the time of their sale.

Approval type	Title	Certification body	Approval topic
Export Control Declaration	Micro Plate Heat Exchangers - Not dual use	Danfoss	
EU Declaration	Danfoss EU BF202407en-0001.01	Danfoss	Pressure, PED
Pressure Safety Certificate	BV CE-0062-PED-H-DMC 001-23-CHN-Rev.C	BV - Bureau Veritas	Pressure, PED
Mechanical Safety Certificate	UL SA13363	UL - Underwriters Laboratories inc.	
EU Declaration	Danfoss EU BF202604en-0002.02	Danfoss	Pressure, PED
Manufacturer's Declaration	Danfoss MD EU-ROHS-MD-202404-01.01	Danfoss	EU RoHS
Manufacturer's Declaration	Danfoss MD UK-ROHS-MOD-202304-02.01	Danfoss	UK RoHS
Manufacturer's Declaration	Danfoss UK-ROHS-MOD-202304-01.01	Danfoss	UK RoHS
Pressure Safety Certificate	BV CE-0062-PED-H-DAF 001-24-DNK	BV - Bureau Veritas	Pressure, PED
UA Declaration	Danfoss UA 2023-01-10 Heat Exchangers PL24 PL31	Danfoss	Pressure, PED
Manufacturer's Declaration	Danfoss MD BPHE-RoHS-DOC-201601	Danfoss	China RoHS
Manufacturer's Declaration	Danfoss MD EU-RoHS-DoC-202309-01.01	Danfoss	EU RoHS
Pressure Safety Certificate	LLC CDC EURO TYSK UA.TR.089.0330.04.23	LLC CDC EURO TYSK - Ukraine	Pressure, PED

Third party approvals

The list contains all approvals registered for this product type. Individual code numbers may have some or all of these approvals, some local approvals may not be in the list, and approvals change over time. Check status on www.danfoss.com or contact your local Danfoss representative if in doubt.

All MPHE and BPHE are certified to European Pressure Equipment Directive (PED) and are approved by Underwriters Laboratories (UL).

Contact details

Online support

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