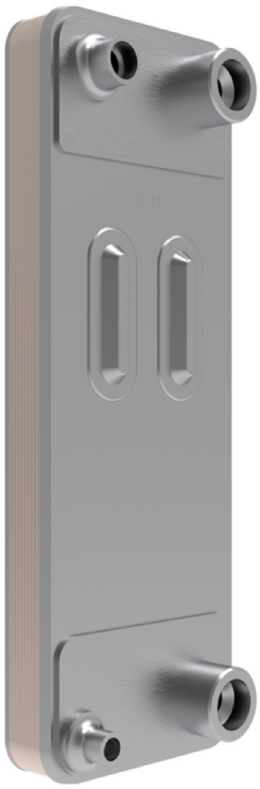
ENGINEERING TOMORROW

Data Sheet

MicroPlate Heat Exchanger Type **H39L-EZU**

For more efficient Heat Pumps



The H39L-EZU is new Micro Plate heat exchanger which was designed dedicated to R290 heat pump systems with low charge requirement.

The Z-pattern channel plate technology pushes the performance of heat exchangers to the limits by fully mixing the liquid and gas refrigerant through a “zigzag” flow, which increases the heat transfer coefficient. At the same time, inheriting from dimple plate pattern of the previous generation of MPHE, H39L-EZU reduces the water side pressure drop and the amount of material used. In the reversible mode of the heat pump as a condenser, H39L-EZU also has outstanding performance.

To meet demands for higher seasonal efficiency, the H39L-EZU is designed to work efficiently and increase comfort in modern residential and commercial buildings without increasing the carbon footprint. Helping heat pumps perform more efficiently, it reduces both energy costs and environmental impact. The low hold-up volume reduces the system refrigerant charge and offers valuable savings.

Features

- Minimal hold-up volume – suitable for systems with 152 g propane charge limitations
- Thanks to the mixing chamber, the innovative refrigerant distribution device, the H39L-EZU is applicable as evaporator and condenser with all refrigerant types.
- Improved heat transfer - equals higher efficiency heat pumps
- Reduced water side pressure drop – equals higher efficiency heat pumps
- Smaller footprint - enables more compact heat pumps
- High heat transfer and minimal refrigerant charge - equals a reduced CO footprint

Portfolio overview

The H39L-EZU is single circuit evaporators specifically designed for highly efficient heat pump systems. The evaporator is design to operate also in reversable systems in condenser mode, in co or counter current flow configuration.

H39L-EZU: Evaporator optimized for R290 and could be used with R410A, R32, R452B and R454B

Application

The H39L-EZU is single circuit heat exchanger specifically designed for highly efficient heat pump systems. The heat exchanger is design to operate as an evaporator and condenser also in reversable systems, in co or counter current flow configuration.

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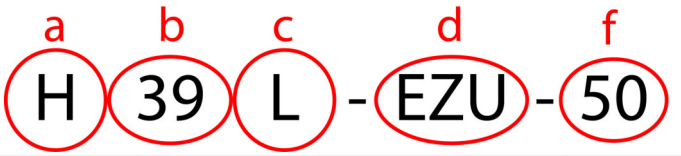
Table 1: Designation



a **Applications** **C:** chiller **D:** universal **H:** heat pump **HDW:** heat pump double wall	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	e **Distributor version** Omit **B** **F** **Plate stacking sequence** Omit: a-b-a… **R:** b-a-b…
b **Platform**[1] 22, 30, 39, 44, 55, 62, 118…		
c **Pressure Service** Omit: 30 bar **L:** 45/49 bar		f **Number of plates**[2]

[1] heat exchanging surface per plate 1/1000 m^2
[2] Rule:
-Single: even number
-Dual: even number not multiple of 4

Media

Refrigerants

R290, R410A, R32, R452B, R454B, R454C
For other refrigerants please contact your Danfoss Sales representative.

Product specification

Operating conditions

Preconditions:
N = number of plates
Max number of plates: 120

Pressure and temperature data:[1]
Min. working temperature: -196 °C (-320 °F)
Max. working temperature: 200 °C (390 °F)
Max. working pressure: 49 bar (711 psi) refrigerant side** / 25 bar (363 psi) water side

Weight

H39L-EZU: 1.4 + 0.072 x N [kg]/ 3.09 + 0.16 x N [lb]
N:Number of Plate

Material specification

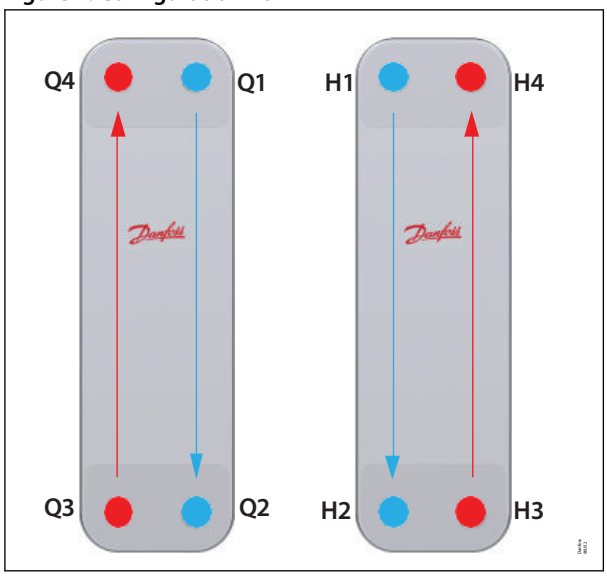
Table 2: Standard materials

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.

Configuration flow

Figure 1: Configuration flow



Q1 - Q2 [H1 - H2]: brine/secondary side
Q3 - Q4 [H3 - H4]: refrigerant/primary side

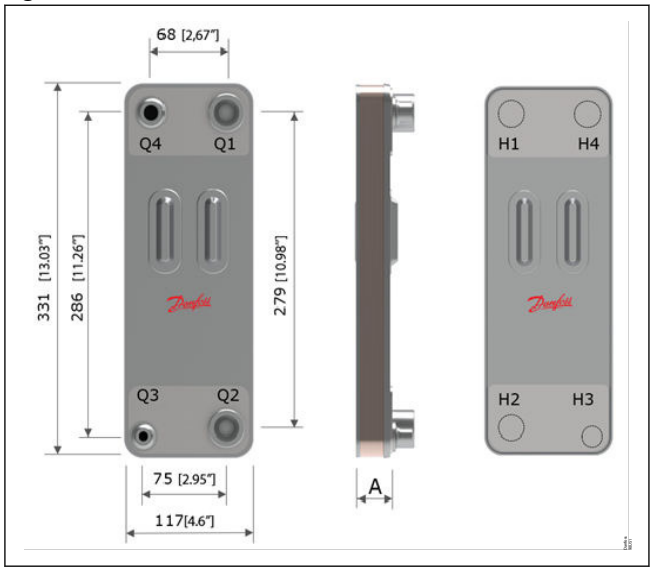
Hold up volume

Q1 - Q2 (l): 0.037 x N/2
Q3 - Q4 (l): 0.0274 x (N-2)/2+0.012
N: Number of Plate

[1] For details, refer to the topic.Third party approvals

Dimensions

Figure 2: Dimensions



A: H39L-EZU: 10 + 1.09 x N [mm] // 0.4 + 0.043 x N [inch]
N: Number of Plate

Ordering

Configuring and calculating products

The H39L-EZU can be easily customized based on the application needs; model size can be evaluated using HEXSelector software.

For details, product configuration and code creation please contact your Danfoss Sales representative.

Mechanical connections

Table 3: Mechanical connections

Circuits	Connection type options	Connection size option [in.]
Q1 - Q2 (water-brine side)	G/R/NPT male thread	½, ¾, 1, 1 ¼
	G/R/NPT female thread	½, ¾, 1
	Victaulic	¾, 1, 1 ¼
Q3 (Refrigerant inlet)	Soldering	¼, 5⁄16, ⅜, ½
Q4 (Refrigerant outlet)	Soldering	⅜, ½, ⅝, ¾, ⅞, 1 ⅛

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 4: Stud bolts

Stud bolt position	Bolt sizes
220 mm, middle	M8 x 30 mm
	M6 x 30 mm

Contact your Danfoss sales representative for further information.

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.

Some approvals may change over time. You can check the most current status at danfoss.com or contact your local Danfoss representative if you have any questions.

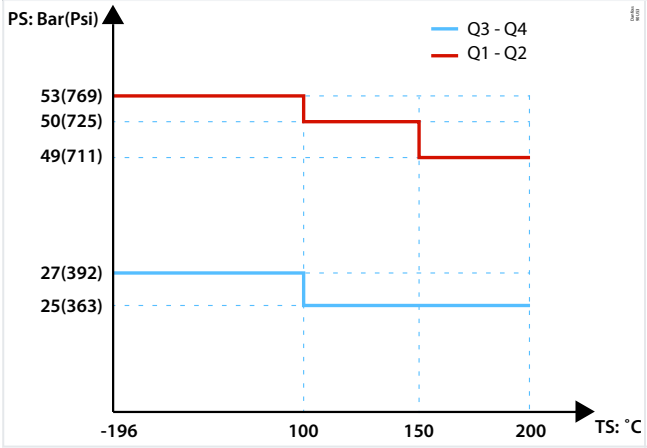
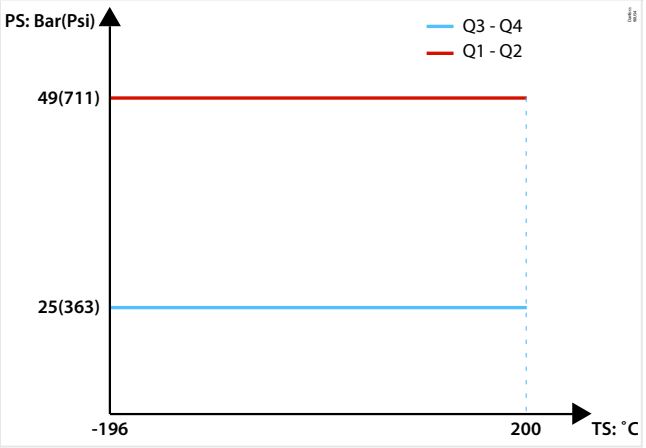
Approvals

The list contains all approvals registered for this product type. Individual code numbers may have some or all of these approvals, somelocal 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.

Third party approvals

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

Table 5: Third party approvals

PressureEquipment Directive (PED)	Underwriters Laboratory Inc (UL)
	

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