ENGINEERING TOMORROW

Data Sheet

Micro Channel Heat Exchanger Type **MCHE D1800-C** E-coating version

Condenser – standard series

D1800-C is ideal for use in many different applications, such as chillers and commercial split/roof tops.

MCHEs have an ingeniously simple all-aluminum design that is not only lightweight but also prevents galvanic corrosion.

The refrigerant-carrying tubes are formed to optimize heat transfer, enabling the production of more compact, but equally effective, cooling solutions. The smart louvered fin design maximizes surface contact, reducing the air-side pressure loss, improving efficiency and reducing noise levels.

Electrostatically applied epoxy coating evenly covers all exposed surface of coil under controlled direct current, an effective anticorrosion solution; used with topcoat to prevent ultraviolet (UV) irradiation.

Features

- Reduce refrigerant system charge
- Improve efficiency – More compact/better COP/increased capacity
- Cost - Less sensitive to fluctuations in raw material prices
- Better strength and better anticorrosion characteristic
- Less than 3% degradation on thermal performance compared bare coil
- High physical stability and chemical durability

Product specification

Technical data

Table 1: Technical data

Model	Coil length	Coil height	Core depth	Fin pitch	Inlet ID diameter	Outlet ID diameter	Continuous operating temperature	Max. working pressure
D1800-C	1074 mm	1213 mm	25.4 mm	1.1 mm	22.4 mm	22.4 mm	-40 °C / 121 °C	45 bar
	40.3 in	47.8 in	1.0 in	23 FPI	0.88 in	0.88 in	-40 °F / 250 °F	650 psi

Weight / internal volume

Coil weight: 18.2 kg / 40.12 lb
Internal volume: 2.79 l / 170.26 in^3

Material specification

MPE Tube: 9153
Fins: 3003
Manifold: 3003
Side plate: 3003
Inlet/Outlet tubes: Copper

Performance data (Bare Coil Data)

Table 2: Performance data of R410A and R134a

Air Velocity	Performance [KW/Btu/h×1000]							
[m/s]	R410A				R134a			
[ft/min]	Δ=10 K / 18 °F	Δ=15 K / 27 °F	Δ=20 K / 36 °F	Δ=25 K/ 45 °F	Δ=10 K / 18 °F	Δ=15 K / 27 °F	Δ=20 K / 36 °F	Δ=25 K/ 45 °F
1.0/197	13.27/45.28	20.25/69.09	27.19/92.77	34.64/118.19	12.81/43.71	19.5/66.53	26.16/89.26	32.8/111.91
1.5/295	18.92/64.56	28.92/98.68	39.64/135.25	49.98/170.53	18.09/61.72	27.66/94.38	37.2/126.93	46.72/159.41
2.0/394	24.03/81.99	37.61/128.33	50.8/173.33	64.18/218.98	22.79/77.76	34.97/119.32	47.12/160.77	60.21/205.44
2.5/492	28.69/97.89	45.3/154.56	61.18/208.75	77.34/263.88	27.02/92.19	41.56/141.8	57.01/194.52	71.99/245.63
3.0/591	32.99/112.56	52.36/178.65	70.86/241.77	89.68/305.99	30.84/105.23	47.55/162.24	65.58/223.76	82.09/280.09

Table 3: Performance data of R404A and R407C

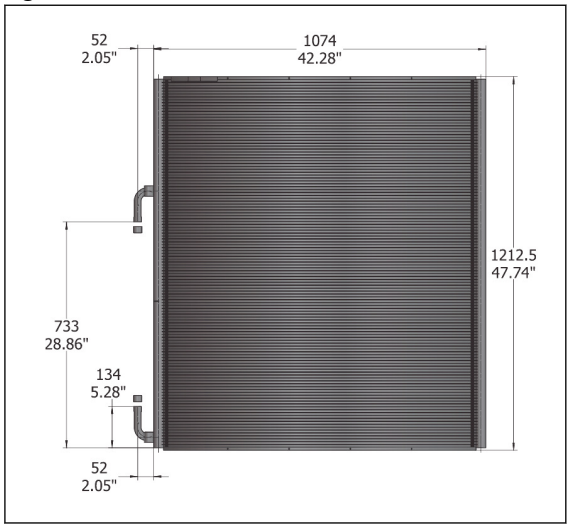
Air Velocity	Performance [KW/Btu/h×1000]							
[m/s]	R404A				R407C			
[ft/min]	Δ=10 K / 18 °F	Δ=15 K / 27 °F	Δ=20 K / 36 °F	Δ=25 K/ 45 °F	Δ=10 K / 18 °F	Δ=15 K / 27 °F	Δ=20 K / 36 °F	Δ=25 K/ 45 °F
1.0/197	13.26/45.24	20.25/69.09	27.59/94.14	34.79/118.7	8.5/29	16.47/56.2	23.57/80.42	30.6/104.41
1.5/295	18.74/63.94	29.08/99.22	39.65/135.29	50.02/170.67	12.51/42.68	23.42/79.91	33.65/114.81	44.36/151.36
2.0/394	23.6/80.52	37.59/128.26	50.68/172.92	63.97/218.27	15.69/53.53	29.62/101.06	42.75/145.86	56.8/193.8
2.5/492	27.99/95.5	44.95/153.37	60.77/207.35	76.77/261.94	18.5/63.12	35.39/120.75	52.21/178.14	68.03/232.12
3.0/591	33.02/112.66	51.83/176.84	70.12/239.25	88.59/302.27	21.07/71.89	40.65/138.7	60.34/205.88	78.55/268.01

Table 4: Performance data of R454B and R452B

Air Velocity	Performance [KW/Btu/h×1000]							
[m/s]	R454B				R452B			
[ft/min]	Δ=10 K / 18 °F	Δ=15 K / 27 °F	Δ=20 K / 36 °F	Δ=25 K/ 45 °F	Δ=10 K / 18 °F	Δ=15 K / 27 °F	Δ=20 K / 36 °F	Δ=25 K/ 45 °F
1.0/197	12.19/41.59	19.19/65.48	26.12/89.12	33.33/113.72	12.34/42.1	19.31/65.89	26.27/89.63	33.49/114.27
1.5/295	17.44/59.51	27.48/93.76	37.72/128.7	48.15/164.29	17.65/60.22	27.65/94.34	38.07/129.89	48.34/164.94
2.0/394	22.18/75.68	35.02/119.49	48.61/165.86	61.75/210.69	22.46/76.63	35.25/120.27	48.88/166.78	62.05/211.71
2.5/492	26.53/90.52	42.65/145.52	58.49/199.57	74.42/253.92	26.86/91.65	43.04/146.85	58.84/200.76	74.8/255.22
3.0/591	30.55/104.24	49.44/168.69	67.75/231.16	86.26/294.32	30.91/105.46	49.87/170.16	68.13/232.46	86.68/295.75

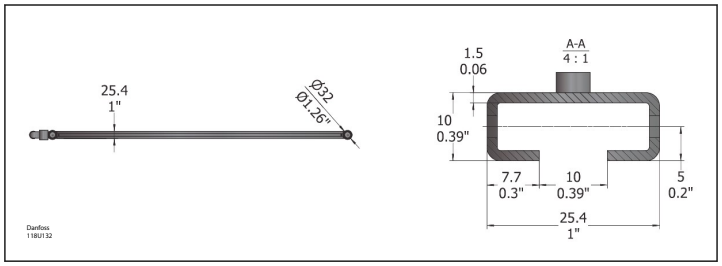
Dimensions

Figure 1: Dimensions



Mounting

Figure 2: Mounting



Aluminum MCHEs expand and contract when exposed to big temperature changes. Installation supports/brackets must allow the MCHE to move in two dimensions.

Standard connections

The product is equipped with standard copper pipe connections for easy mounting.
Never bend or stress the inlet/outlet connections during mounting, and design installations to avoid vibration in operation.

Bending

Micro Channel Heat Exchangers can easily be bent to fit in any application.
Ask your local Danfoss Sales representative for advice.

Availability

Our local stocking and distribution network allows standard MCHEs to be delivered globally with short delivery times. Contact your local Danfoss sales representative for the standard lead times in your region.

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.

Table 5: Certificates, declarations, and approvals

File name	Document type	Document topic	Approvals Authority
UL SA33862	Safety certificate	UL	UL-CCIC Company Limited
BV CE-0062-PED-H-DMC 001-20-CHN	Pressure - Safety Certificate	PED	Bureau Veritas Services SAS
EU Declaration Danfoss BF202010en-0001.01	EU Declaration	PED	Danfoss
TSSA CRN 0H22500.512346	Pressure - Safety Certificate	CRN	TSSA
EAC RU Д-DK.PA01.B.72299_20	EAC Declaration	EAC	CU-TR
EAC RU Д-DK.БЛ08.B.00327_18	EAC Declaration	EAC	CU-TR
EAC RU Д-DK.БЛ08.B.00162	EAC Declaration	EAC	CU-TR
Certificate UA TR TOV EVRO-TYSK UA.TR.089.1122.05-19 HE 22.11.19 - 21.11.22	UA Certificate	UA Conformity	LLC CDC EURO TYSK
Manufacturers Declaration Danfoss EU-ROHS-DoC-202009-01.01	Manufacturer Declaration	EU ROHS	Danfoss
Manufacturers Declaration Danfoss MCHE-RoHS-DOC-201601	Manufacturer Declaration	China RoHS	Danfoss

3 EAC files are suitable for using different refrigerants.

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