

Data sheet

# Micro plate heat exchanger (MPHE): XB52

Description



Micro Plate Heat Exchangers - a revolutionary technology from Danfoss. Characterized by their unique plate pattern, MPHEs enable heat to be transferred more efficient than any previous model of heat exchangers.

**Benefits:**

- Energy and cost savings
- Better heat transfer
- Lower pressure loss
- More flexible design
- Longer life time

more on:  
[districtenergy.danfoss.com](http://districtenergy.danfoss.com) (MPHE)

XB52 is copper brazed heat exchanger, designed and configured for District Heating, District Cooling and other Heating applications. Heat exchanger XB52 will be available in plate corrugation M. It will be available in 1-pass (with 4 connections) and 2-pass version (with 6 connections). Heat exchangers can be dimensioned in Danfoss calculation software "Hexact" which can be downloaded from [hexact.danfoss.com](http://hexact.danfoss.com).

**Approval:**

Pressure Equipment Directive (PED).

Ordering

**1-pass heat exchanger XB52 Cu**

| Picture | No. of plates, n | Connection       | Code No. |
|---------|------------------|------------------|----------|
|         | 20               | Ext. Thread G 2" | 004H4520 |
|         | 26               |                  | 004H4521 |
|         | 30               |                  | 004H4522 |
|         | 36               |                  | 004H4523 |
|         | 40               |                  | 004H4524 |
|         | 50               |                  | 004H4525 |
|         | 60               |                  | 004H4526 |
|         | 70               |                  | 004H4527 |
|         | 80               |                  | 004H4528 |
|         | 90               |                  | 004H4529 |
|         | 100              |                  | 004H4530 |
|         | 110              |                  | 004H4531 |
|         | 120              |                  | 004H4532 |
|         | 130              |                  | 004H4533 |
| 140     | 004H4534         |                  |          |

**1-pass heat exchanger XB52 Cu+**

| Picture | No. of plates, n | Connection       | Code No. |
|---------|------------------|------------------|----------|
|         | 20               | Ext. Thread G 2" | 079G1776 |
|         | 26               |                  | 079G1777 |
|         | 30               |                  | 079G1778 |
|         | 36               |                  | 079G1779 |
|         | 40               |                  | 079G1780 |
|         | 50               |                  | 079G1781 |
|         | 60               |                  | 079G1782 |
|         | 70               |                  | 079G1783 |
|         | 80               |                  | 079G1784 |
|         | 90               |                  | 079G1785 |
|         | 100              |                  | 079G1786 |
|         | 110              |                  | 079G1787 |
|         | 120              |                  | 079G1788 |
|         | 130              |                  | 079G1789 |
| 140     | 079G1790         |                  |          |

**2-pass heat exchanger XB52 Cu**

| Picture | No. of plates, n | Connection       | Code No. |
|---------|------------------|------------------|----------|
|         | 20/20            | Ext. Thread G 2" | 004H4540 |
|         | 26/26            |                  | 004H4541 |
|         | 30/30            |                  | 004H4542 |
|         | 36/36            |                  | 004H4543 |
|         | 40/40            |                  | 004H4544 |
|         | 46/46            |                  | 004H4545 |
|         | 50/50            |                  | 004H4546 |
|         | 56/56            |                  | 004H4547 |
|         | 60/60            |                  | 004H4548 |
|         | 66/66            |                  | 004H4549 |
|         | 70/70            |                  | 004H4550 |

**2-pass heat exchanger XB52 Cu+**

| Picture | No. of plates, n | Connection       | Code No. |
|---------|------------------|------------------|----------|
|         | 20/20            | Ext. Thread G 2" | 079G1791 |
|         | 26/26            |                  | 079G1792 |
|         | 30/30            |                  | 079G1793 |
|         | 36/36            |                  | 079G1794 |
|         | 40/40            |                  | 079G1795 |
|         | 46/46            |                  | 079G1796 |
|         | 50/50            |                  | 079G1797 |
|         | 56/56            |                  | 079G1798 |
|         | 60/60            |                  | 079G1799 |
|         | 66/66            |                  | 079G1800 |
|         | 70/70            |                  | 079G1801 |

Ordering (continued)

Accessories-Tailpieces

| Picture | Description        | Connection  | Code No. <sup>1)</sup> |
|---------|--------------------|-------------|------------------------|
|         | Solder tailpieces  | G 2" / 28mm | <b>004B2910</b>        |
|         |                    | G 2" / 35mm | <b>004B2911</b>        |
|         |                    | G 2" / 42mm | <b>004B2912</b>        |
|         | Weld-on tailpieces | G 2" / DN32 | <b>004B2907</b>        |
|         |                    | G 2" / DN40 | <b>004B2908</b>        |
|         |                    | G 2" / DN50 | <b>004B2909</b>        |

<sup>1)</sup> One set contains 2 tailpieces with union nuts and gaskets

Accessories-Bracket

| Picture | Code No.        |
|---------|-----------------|
|         | <b>004H4518</b> |

Insulation for 1-pass XB52M-1

PU (Polyurethane) insulation

| No. of plates | Type coverage (plate number) |
|---------------|------------------------------|
| 20            | <b>004B1924</b>              |
| 26            |                              |
| 30            |                              |
| 36            |                              |
| 40            |                              |
| 50            |                              |
| 60            | <b>004B1935</b>              |
| 70            |                              |
| 80            |                              |
| 90            |                              |
| 100           | <b>004B1950</b>              |
| 110           |                              |
| 120           |                              |
| 130           |                              |
| 140           |                              |

Insulation for 2-pass XB52M-1

PU (Polyurethane) insulation

| No. of plates | Type coverage (plate number) |
|---------------|------------------------------|
| 20/20         | <b>004B1924</b>              |
| 26/26         |                              |
| 30/30         |                              |
| 36/36         |                              |
| 40/40         | <b>004B1935</b>              |
| 46/46         |                              |
| 50/50         |                              |
| 56/56         | <b>004B1950</b>              |
| 60/60         |                              |
| 66/66         |                              |
| 70/70         |                              |

Technical data

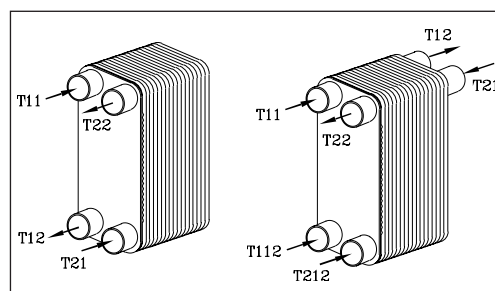
| Type                    | XB52M                                                                                                                                                                                                                      |                                                |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Max. working pressure   | bar                                                                                                                                                                                                                        | 25                                             |
| Min. / Max. temperature | °C                                                                                                                                                                                                                         | -196 / 180                                     |
| Flow medium             | DH: Circulation water / glycolic water up to 50% transfer media.<br>DC: ethylene-, propylene-glycolic water, ethanol-water solutions and other suitable heat transfer media. (Please contact your Danfoss representative). |                                                |
| Volume/channel          | Ltr                                                                                                                                                                                                                        | 0.163                                          |
| Connection type         | Cylindrical external thread acc. to DIN ISO 228/1                                                                                                                                                                          |                                                |
| Connection size         | G 2"                                                                                                                                                                                                                       |                                                |
| Weight                  | kg                                                                                                                                                                                                                         | 1-pass: 7.39+0.27 × n<br>2-pass: 8.11+0.27 × n |
| <b>Materials</b>        |                                                                                                                                                                                                                            |                                                |
| Plate                   | Stainless steel, EN 1.4404 (AISI 316L)                                                                                                                                                                                     |                                                |
| Brazing                 | Copper (Cu) / CoResist (Cu+)                                                                                                                                                                                               |                                                |

Insulation

| Type                | PU (Polyurethane) |       |
|---------------------|-------------------|-------|
| Heatconductivity, λ | W/mK              | 0,035 |
| Max temperature     | Permanent         | 130   |
|                     | Short term peak   | 150   |
| Wall thickness      | mm                | 20    |

Design and function

- T11** - Primary side in
- T12** - Primary side out
- T112** - Primary side second inlet (2-pass)
- T21** - Secondary side in
- T22** - Secondary side out
- T212** - Secondary side second inlet (2- pass)

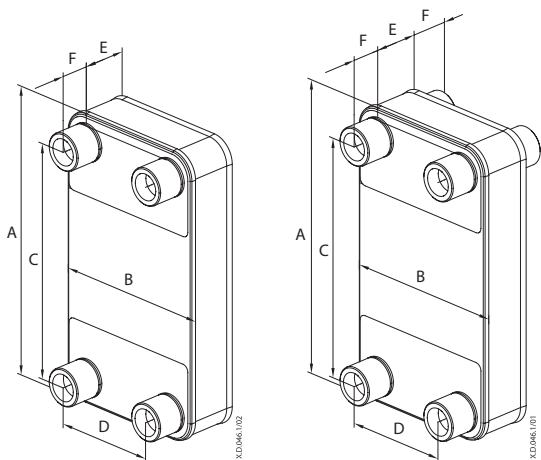


Danfoss 2 pass heat exchangers are made with 6 connections, as they are primarily used to heat tap water.

There is one additional connection to allow circulation of hot water and one connection to connect and extract heat from return water from heating heat exchanger.

Connections T112 and T212 can be blocked if they are not used.

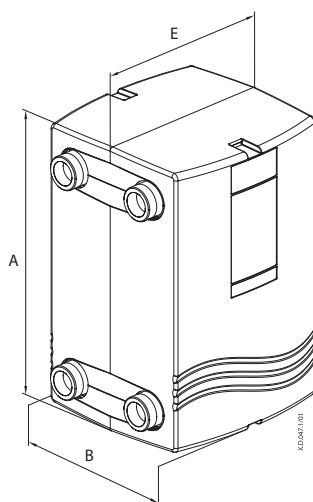
Dimensions <sup>1)</sup>



| Type | Connection<br>G 2" <sup>1)</sup> |
|------|----------------------------------|
| A    | 466                              |
| B    | 256                              |
| C    | 379                              |
| D    | 170                              |
| F    | 50                               |

| Type | E<br>(mm)                     |
|------|-------------------------------|
| M    | 15.2 + 1.75*NoP<br>(+0.5/-3%) |

NoP = number of plates  
<sup>1)</sup> Cylindrical external thread acc. to DIN ISO 228/1



PU - insulation

Insulation for 1-pass

| Type coverage<br>(plate number) | Code No.                            |
|---------------------------------|-------------------------------------|
| 20                              | 004B1924<br>A=512<br>B=320<br>E=197 |
| 26                              |                                     |
| 30                              |                                     |
| 36                              |                                     |
| 40                              |                                     |
| 50                              |                                     |
| 60                              |                                     |
| 70                              | 004B1935<br>A=512<br>B=320<br>E=257 |
| 80                              |                                     |
| 90                              |                                     |
| 100                             | 004B1950<br>A=512<br>B=320<br>E=337 |
| 110                             |                                     |
| 120                             |                                     |
| 130                             |                                     |
| 140                             |                                     |

Insulation for 2-pass

| Type coverage<br>(plate number) | Code No.                            |
|---------------------------------|-------------------------------------|
| 20/20                           | 004B1924<br>A=512<br>B=320<br>E=197 |
| 26/26                           |                                     |
| 30/30                           |                                     |
| 36/36                           | 004B1935<br>A=512<br>B=320<br>E=257 |
| 40/40                           |                                     |
| 46/46                           |                                     |
| 50/50                           | 004B1950<br>A=512<br>B=320<br>E=337 |
| 56/56                           |                                     |
| 60/60                           |                                     |
| 66/66                           |                                     |
| 70/70                           |                                     |

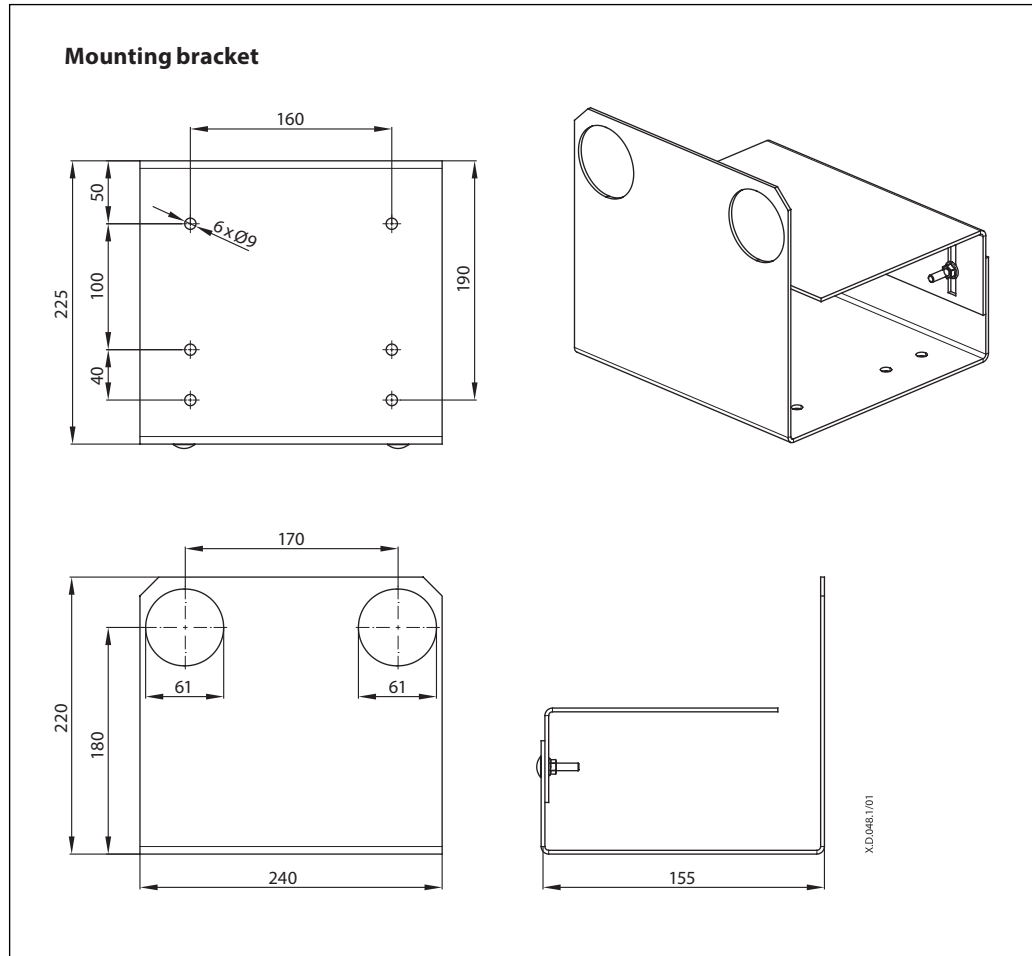
<sup>1)</sup> Dimensions can be as well extract from Danfoss calculation software "Hexact" which can be downloaded from hexact.danfoss.com.

Tailpieces

| Picture | Description        | Connection  | Code No. | a    | b  | SW <sup>1)</sup> |
|---------|--------------------|-------------|----------|------|----|------------------|
|         |                    |             |          | mm   |    |                  |
|         | Solder tailpieces  | G 2" / 28mm | 004B2910 | 32   | 45 | 65               |
|         |                    | G 2" / 35mm | 004B2911 | 39   | 45 | 65               |
|         |                    | G 2" / 42mm | 004B2912 | 51   | 45 | 65               |
|         | Weld-on tailpieces | G 2" / DN32 | 004B2907 | 42.4 | 45 | 65               |
|         |                    | G 2" / DN40 | 004B2908 | 48.5 | 45 | 65               |
|         |                    | G 2" / DN50 | 004B2909 | 58   | 43 | 65               |

<sup>1)</sup> Union nut, width across flats

Dimensions (continuous)



**Danfoss A/S**

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