

Data sheet

# Micro plate heat exchanger (MPHE): XB12

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)

XB12 is copper brazed heat exchanger, designed and configured for District Heating, District Cooling and other Heating applications. Heat exchanger XB12 will be available in plate corrugation H, M and L. 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) 97/23/EC.

Ordering

1-pass heat exchanger **XB12 Cu** with G 1 1/4" connection size <sup>1)</sup>

Picture	No. of plates, n	Connection	XB12H-1	XB12M-1	XB12L-1
			Code No.		
	10	Thread G 1 1/4"	004H7555	004H7540	004H7525
	16		004H7556	004H7541	004H7526
	20		004H7557	004H7542	004H7527
	26		004H7558	004H7543	004H7528
	30		004H7559	004H7544	004H7529
	36		004H7560	004H7545	004H7530
	40		004H7561	004H7546	004H7531
	50		004H7562	004H7547	004H7532
	60		004H7563	004H7548	004H7533
	70		004H7564	004H7549	004H7534
	80		004H7565	004H7550	004H7535
	90		004H7566	004H7551	004H7536
	100		004H7567	004H7552	004H7537
	110		004H7568	004H7553	004H7538
	120		004H7569	-	-
140	004H7570	-	-		

<sup>1)</sup> Available also with 1 inch connection size. Please contact your Danfoss representative.

2-pass heat exchanger **XB12 Cu** with G 1 1/4" connection size <sup>1)</sup>

Picture	No. of plates <sup>2)</sup> , n	Connection	XB12H-2	XB12M-2	XB12L-2
			Code No.		
	20/20	Thread G 1 1/4"	004H7596	004H7584	004H7572
	26/26		004H7597	004H7585	004H7573
	30/30		004H7598	004H7586	004H7574
	36/36		004H7599	004H7587	004H7575
	40/40		004H7600	004H7588	004H7576
	46/46		004H7601	004H7589	004H7577
	50/50		004H7602	004H7590	004H7578
	56/56		004H7603	004H7591	004H7579
	60/60		004H7604	004H7592	004H7580
	66/66		004H7605	004H7593	004H7581
	70/70		004H7606	004H7594	004H7582

<sup>1)</sup> Available also with 1 inch connection size. Please contact your Danfoss representative.

<sup>2)</sup> First pass/second pass

Ordering (continued)

1-pass heat exchanger **XB12 Cu+** with G 1 1/4" connection size

Picture	No. of plates, n	Connection	XB12H-1	XB12M-1	XB12L-1
			Code No.		
	10	Thread G 1 1/4"	079G1320	079G1347	079G1372
	16		079G1321	079G1348	079G1373
	20		079G1322	079G1349	079G1374
	26		079G1323	079G1350	079G1375
	30		079G1324	079G1351	079G1376
	36		079G1325	079G1352	079G1377
	40		079G1326	079G1353	079G1378
	50		079G1327	079G1354	079G1379
	60		079G1328	079G1355	079G1380
	70		079G1329	079G1356	079G1381
	80		079G1330	079G1357	079G1382
	90		079G1331	079G1358	079G1383
	100		079G1332	079G1359	079G1384
	110		079G1333	079G1360	079G1385
	120		079G1334	-	-
140	079G1335	-	-		

2-pass heat exchanger **XB12 Cu+** with G 1 1/4" connection size

Picture	No. of plates <sup>2)</sup> , n	Connection	XB12H-2	XB12M-2	XB12L-2
			Code No.		
	20/20	Thread G 1 1/4"	079G1336	079G1361	079G1386
	26/26		079G1337	079G1362	079G1387
	30/30		079G1338	079G1363	079G1388
	36/36		079G1339	079G1364	079G1389
	40/40		079G1340	079G1365	079G1390
	46/46		079G1341	079G1366	079G1391
	50/50		079G1342	079G1367	079G1392
	56/56		079G1343	079G1368	079G1393
	60/60		079G1344	079G1369	079G1394
	66/66		079G1345	079G1370	079G1395
	70/70		079G1346	079G1371	079G1396

<sup>2)</sup> First pass/second pass

Accessories:  
Insulation for 1-pass

EPP (Expanded Polypropylene) insulation

No. of plates	Type coverage (plate number)		
	H	M	L
10	004H4201	004H4201	004H4201
16			
20			
26			
30			
36			
40	004H4202	004H4202	004H4202
50			
60			
70	004H4203	004H4203	004H4203
80			
90			
100	004H4203	004H4203	<sup>1)</sup>
110			
120			
140	<sup>1)</sup>	-	-

PU (Polyurethane) insulation

No. of plates	Type coverage (plate number)		
	H	M	L
10	004H4210	004H4210	004H4210
16			
20			
26			
30			
36			
40	004H4211	004H4211	004H4211
50			
60			
70	004H4212	004H4212	004H4212
80			
90			
100	004H4212	004H4212	004H4213
110			
120			
140	-	-	-

<sup>1)</sup> EPP insulation is not available please order PU insulation for this size.

Ordering (continued)

Accessories:  
Insulation for 2-pass

EPP (Expanded Polypropylene) insulation

No. of plates	Type coverage (plate number)		
	H	M	L
20/20	004H4201	004H4201	004H4202
26/26	004H4202	004H4202	
30/30			
36/36			
40/40	004H4203	004H4203	004H4203
46/46			
50/50			
56/56	004H4203	004H4203	1)
60/60			
66/66			
70/70	1)	1)	1)

PU (Polyurethane) insulation

No. of plates	Type coverage (plate number)		
	H	M	L
20/20	004H4210	004H4210	004H4211
26/26			
30/30			
36/36	004H4211	004H4211	004H4212
40/40			
46/46			
50/50	004H4212	004H4212	004H4213
56/56			
60/60			
66/66	004H4212	004H4213	004H4214
70/70			

1) EPP insulation is not available please order PU insulation for this size.

Accessories-Tailpieces

Picture	Description	Connection	Code No. <sup>1)</sup>
	Solder tailpieces	G 1 1/4" / 28 mm	004B1358
		G 1" / 22 mm	004B2906
		G 1" / 18 mm	004B2905
		G 1" / 15 mm	004B2904
	Weld-on tailpieces	G 1" / DN 20	003H6909
		G 1 1/4" / DN 25	003H6910
	Threaded tailpieces	G 1 1/4" / G 1"	004H4205
		G 1 1/4" / G 1 1/2"	004H4206
		G 1" / G 3/4"	004B2913

1) One set contains 2 tailpieces with union nuts and gaskets

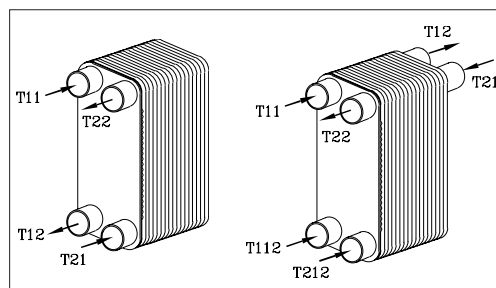
Accessories-Bracket<sup>1)</sup>

Picture	Connection	Code No.
	Thread G 1 1/4"	004H4200
	Thread G 1"	004B2919

1) Bracket set consist of bracket and 2 seeger rings

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.

Technical data

Type		XB12L-1	XB12M-1	XB12H-1
Max. working pressure	bar	25		
Min. / Max. temperature	°C	-196 / 180		
Flow medium		DH: Circulation water / glycolic water up to 50% DC: ethylene-, propylene-glycolic water, ethanol-water solutions and other suitable heat transfer media. (Please contact your Danfoss representative).		
Volume/channel	Ltr	0,045	0,035	0,029
Connection type		Cylindrical external thread acc. to DIN ISO 228/1		
Connection size		G 1 1/4" or G 1"		
Weight	kg	1-pass: G 1 1/4" / G 1" connection: 1,53+0,076*n / 1,36+0,076*n		
		2-pass: G 1 1/4" / G 1" connection: 1,77+0,076*n / 1,52+0,076*n		
<b>Materials</b>				
Plate		Stainless steel, EN 1.4404 (AISI 316L)		
Brazing		Copper (Cu), CoResist (Cu+)		

Insulation

Type		PU (Polyurethane)	EPP (Expanded Polypropylene)
Heatconductivity, λ	W/mK	0,035	0,038
Max temperature	Permanent	130	110
	Short term peak	160	
Wall thickness	mm	20	30

Dimensions <sup>1)</sup>

Type	Connection	
	G 1 1/4" <sup>1)</sup>	G 1" <sup>1)</sup>
A	289	
B	118	
C	234	235
D	63	65
F	25	20

Type	E (mm)
XB12L	$n \times 1,75 + 10 (+0,5/-3\%)$
XB12M	$n \times 1,40 + 10 (+0,5/-3\%)$
XB12H	$n \times 1,2 + 10 (+0,5/-3\%)$

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

Type	Insulation			Code No.
	A	B	E	
EPP	352	185	130	004H4201
			180	004H4202
			235	004H4203
PU	336	185	176	004H4210
			184	004H4211
			185	004H4212
			188	004H4213
			200	004H4214

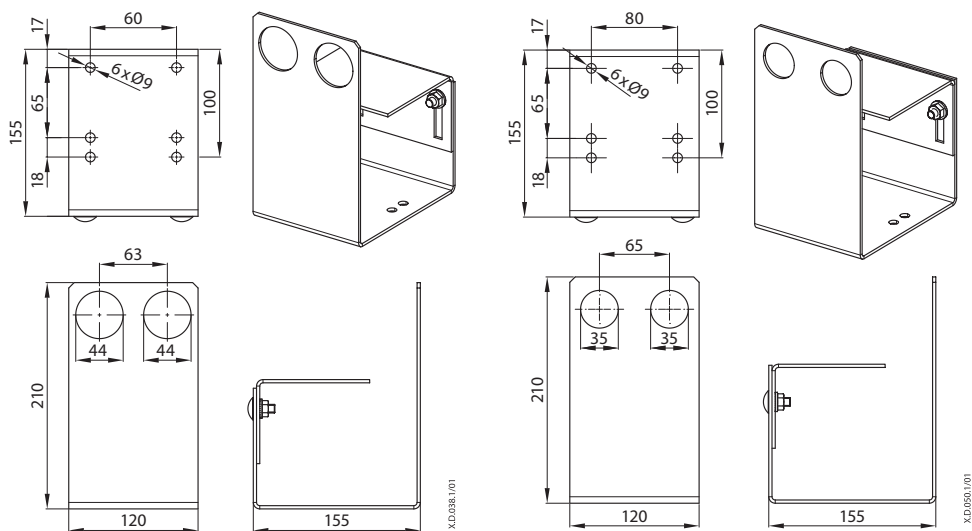
**PU - insulation**

**EPP - insulation**

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

Dimensions (continuous)

Mounting bracket



Thread G 1 1/4"    **004H4200**

Thread G 1"    **004B2919**

Tailpieces

Picture	Description	Connection	Code No.	a	b	SW <sup>1)</sup>
				mm		
	Solder tailpieces	G 1 1/4" / 28 mm	<b>004B1358</b>	25,4 / 28	33	46
		G 1" / 22 mm	<b>004B2906</b>	25,6	35	37
		G 1" / 18 mm	<b>004B2905</b>	20	35	37
		G 1" / 15 mm	<b>004B2904</b>	20	35	37
	Weld-on tailpieces	G 1" / DN 20	<b>003H6909</b>	26	49,5	41
		G 1 1/4" / DN 25	<b>003H6910</b>	33	49,5	50
	Threaded tailpieces	G 1 1/4" / G 1"	<b>004H4205</b>	1"	40	46
		G 1 1/4" / G 1 1/2"	<b>004H4206</b>	1 1/2"	60	46
		G 1" / G 3/4"	<b>004B2913</b>	3/4"	35	37

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



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