

Datasheets

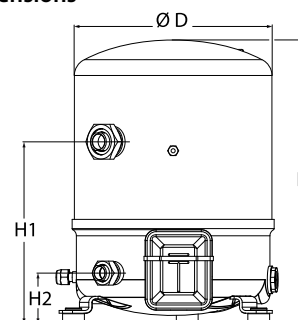
Danfoss Reciprocating compressors **MT / MTZ / NTZ**



General Characteristics

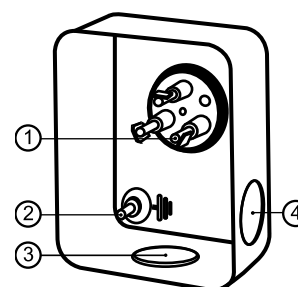
Model number (on compressor nameplate)		MT80HP4AVE
Code number for Singlepack*		MT80-4VI
Code number for Industrial pack**		MT80-4VM
Drawing number		8502012g
Suction and discharge connections		Rotolock
Suction connection		1-3/4" Rotolock
Discharge connection		1-1/4" Rotolock
Suction connection with supplied sleeve		1-1/8" ODF
Discharge connection with supplied sleeve		3/4" ODF
Oil sight glass		Threaded
Oil equalisation connection		3/8" flare SAE
Oil drain connection		None
LP gauge port		Schrader
IPR valve		30 bar / 8 bar
Cylinders	2	
Swept volume	135,78 cm ³ /rev	
Displacement @ Nominal speed	23.6 m ³ /h @ 2900 rpm - 28.5 m ³ /h @ 3500 rpm	
Net weight	40 kg	
Oil charge	1,8 litre, Mineral - 160P	
Maximum system test pressure Low Side / High side	25 bar(g) / 30 bar(g)	
Maximum differential test pressure	30 bar	
Maximum number of starts per hour	12	
Refrigerant charge limit	5 kg	
Approved refrigerants	R22, R417A-160PZ	

Dimensions



D=288 mm
H=413 mm
H1=265 mm
H2=74 mm
H3=- mm

Terminal box



IP55 (with cable gland)
1: Spade connectors 1/4"
2: Earth M4-12
3: Knock-out Ø 21 mm (0.83")
4: Hole Ø 21 mm (0.83")

Electrical Characteristics

Nominal voltage	380-400V/3/50Hz - 460V/3/60Hz
Voltage range	340-440 V @ 50Hz - 414-506 V @ 60Hz
Winding resistance (between phases) +/- 7% at 25°C	1.9 Ω
Maximum Continuous Current (MCC)	18 A
Locked Rotor Amps (LRA)	80 A
Motor protection	Internal overload protector

Recommended Installation torques

Oil sight glass	50 Nm
Power connections / Earth connection	Nm / 2 Nm
Mounting bolts	15 Nm

Parts shipped with compressor

Mounting kit with grommets, bolts, nuts, sleeves and washers
Suction & Discharge solder sleeves, rotolock nuts and gaskets (shipped with rotolock version only)
Initial oil charge
Installation instructions

Approvals : CE certified, UL certified (file SA6873), -

*Singlepack: Compressor in cardboard box

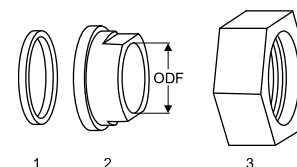
**Industrial pack: 6 Unboxed compressors on pallet (order per multiples of 6)

Rotolock accessories, suction side

Code no.

Solder sleeve, P02 (1-3/4" Rotolock, 1-1/8" ODF)	8153004
Angle adapter, C02 (1-3/4" Rotolock, 1-1/8" ODF)	8168005
Rotolock valve, V02 (1-3/4" Rotolock, 1-1/8" ODF)	8168028
Gasket, 1-3/4"	8156132

Gaskets, sleeves and nuts



- 1: Gasket
2: Solder sleeve
3: Rotolock nut

Rotolock accessories, discharge side

Code no.

Solder sleeve, P04 (1-1/4" Rotolock, 3/4" ODF)	8153008
Angle adapter, C04 (1-1/4" Rotolock, 3/4" ODF)	8168006
Rotolock valve, V04 (1-1/4" Rotolock, 3/4" ODF)	8168029
Gasket, 1-1/4"	8156131

Rotolock accessories, sets

Code no.

Angle adapter set, C02 (1-3/4"~1-1/8"), C04 (1-1/4"~3/4")	7703014
Valve set, V02 (1-3/4"~1-1/8"), V04 (1-1/4"~3/4")	7703009
Gasket set, 1", 1-1/4", 1-3/4", OSG gaskets black & white	8156009

Oil / lubricants

Code no.

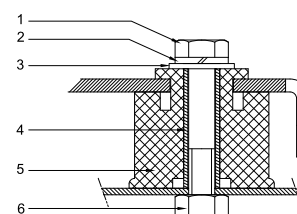
Mineral oil, 160P, 2 litre can	7754001
Mineral oil, 160P, 5 litre can	7754002

Crankcase heaters

Code no.

PTC heater 27W, CE mark, UL	120Z0459
Belt type crankcase heater, 65 W, 230 V, CE mark, UL	7773107
Belt type crankcase heater, 65 W, 400 V, CE mark, UL	7773117
Belt type crankcase heater, 65 W, 460 V, CE mark, UL	120Z0466

Mounting kit



- 1: Bolt (3x)
2: Lock washer (3x)
3: Flat washer (3x)
4: Sleeve (3x)
5: Grommet (3x)
6: Nut (3x)

Miscellaneous accessories

Code no.

Electronic soft start kit, MCI 15 C	7705006
Acoustic hood for 2 cylinder compressor	120Z0472
Oil equalisation nut	8153127

Spare parts

Code no.

Mounting kit for 1 and 2 cylinder compressor, including 3 grommets, 3 bolts	8156001
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (black chloroprene)	8156145
Service kit for terminal box 80 x 96 mm, including 1 cover, 1 clamp	8156134

Performance data at 50 Hz, EN 12900 rating conditions
R22

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-25	-20	-15	-10	-5	0	5	10	15

Cooling capacity in W

30	5 461	7 514	9 952	12 815	16 146	19 986	24 378	29 362	34 980
35	4 962	6 943	9 284	12 026	15 211	18 880	23 075	27 839	33 212
40	4 451	6 353	8 590	11 204	14 235	17 727	21 720	26 256	31 377
45	3 936	5 753	7 880	10 358	13 230	16 537	20 320	24 622	29 484
50	-	5 151	7 161	9 498	12 203	15 319	18 886	22 947	27 544
55	-	-	6 444	8 632	11 164	14 082	17 426	21 240	25 564
60	-	-	-	7 771	10 123	12 836	15 951	19 510	23 555
65	-	-	-	-	9 088	11 589	14 468	17 766	21 525

Power input in W

30	3 102	3 486	3 833	4 148	4 434	4 693	4 931	5 149	5 351
35	3 198	3 635	4 032	4 392	4 718	5 014	5 284	5 531	5 757
40	3 276	3 775	4 230	4 644	5 020	5 362	5 674	5 958	6 218
45	3 320	3 891	4 414	4 891	5 327	5 724	6 087	6 418	6 721
50	-	3 972	4 571	5 121	5 626	6 087	6 510	6 897	7 252
55	-	-	4 688	5 321	5 903	6 438	6 931	7 383	7 799
60	-	-	-	5 476	6 146	6 764	7 336	7 863	8 350
65	-	-	-	-	6 342	7 052	7 712	8 323	8 890

Current consumption in A

30	7.44	7.83	8.22	8.60	8.96	9.29	9.57	9.78	9.93
35	7.56	8.01	8.46	8.90	9.32	9.69	10.02	10.28	10.46
40	7.65	8.18	8.70	9.21	9.70	10.14	10.53	10.85	11.09
45	7.68	8.31	8.92	9.52	10.09	10.62	11.09	11.49	11.81
50	-	8.38	9.10	9.81	10.49	11.11	11.68	12.18	12.58
55	-	-	9.23	10.06	10.86	11.60	12.29	12.89	13.41
60	-	-	-	10.26	11.19	12.07	12.89	13.62	14.27
65	-	-	-	-	11.47	12.50	13.47	14.35	15.14

Mass flow in kg/h

30	119	162	211	268	334	408	492	587	692
35	112	155	205	261	326	400	483	577	682
40	105	148	197	254	318	391	473	565	669
45	97	140	189	245	308	380	461	552	654
50	-	131	180	235	297	368	448	538	638
55	-	-	170	224	286	355	434	521	619
60	-	-	-	213	273	341	418	504	600
65	-	-	-	-	260	326	401	485	579

Coefficient of performance (C.O.P.)

30	1.76	2.16	2.60	3.09	3.64	4.26	4.94	5.70	6.54
35	1.55	1.91	2.30	2.74	3.22	3.77	4.37	5.03	5.77
40	1.36	1.68	2.03	2.41	2.84	3.31	3.83	4.41	5.05
45	1.19	1.48	1.79	2.12	2.48	2.89	3.34	3.84	4.39
50	-	1.30	1.57	1.85	2.17	2.52	2.90	3.33	3.80
55	-	-	1.37	1.62	1.89	2.19	2.51	2.88	3.28
60	-	-	-	1.42	1.65	1.90	2.17	2.48	2.82
65	-	-	-	-	1.43	1.64	1.88	2.13	2.42

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	18 886	W
Power input	6 510	W
Current consumption	11.68	A
Mass flow	448	kg/h
C.O.P.	2.90	

Pressure switch settings

Maximum HP switch setting	27.7	bar(g)
Minimum LP switch setting	0.2	bar(g)
LP pump down setting	0.9	bar(g)

Sound power data

Sound power level	76	dB(A)
With acoustic hood	70	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

All performance data +/- 5%

Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss, the Danfoss logotype and Maneurop are trademarks of Danfoss A/S. All rights reserved.

Performance data at 50 Hz, ARI rating conditions
R22

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-25	-20	-15	-10	-5	0	5	10	15

Cooling capacity in W

30	5 800	7 974	10 552	13 578	17 095	21 146	25 775	31 025	36 938
35	5 289	7 394	9 878	12 785	16 158	20 040	24 476	29 507	35 178
40	4 763	6 792	9 175	11 956	15 178	18 885	23 120	27 927	33 349
45	4 231	6 178	8 453	11 101	14 165	17 689	21 718	26 293	31 460
50	-	5 561	7 722	10 230	13 129	16 464	20 279	24 616	29 521
55	-	-	6 990	9 351	12 080	15 219	18 813	22 906	27 542
60	-	-	-	8 476	11 026	13 963	17 331	21 173	25 535
65	-	-	-	-	9 980	12 708	15 843	19 429	23 510

Power input in W

30	3 102	3 486	3 833	4 148	4 434	4 693	4 931	5 149	5 351
35	3 198	3 635	4 032	4 392	4 718	5 014	5 284	5 531	5 757
40	3 276	3 775	4 230	4 644	5 020	5 362	5 674	5 958	6 218
45	3 320	3 891	4 414	4 891	5 327	5 724	6 087	6 418	6 721
50	-	3 972	4 571	5 121	5 626	6 087	6 510	6 897	7 252
55	-	-	4 688	5 321	5 903	6 438	6 931	7 383	7 799
60	-	-	-	5 476	6 146	6 764	7 336	7 863	8 350
65	-	-	-	-	6 342	7 052	7 712	8 323	8 890

Current consumption in A

30	7.44	7.83	8.22	8.60	8.96	9.29	9.57	9.78	9.93
35	7.56	8.01	8.46	8.90	9.32	9.69	10.02	10.28	10.46
40	7.65	8.18	8.70	9.21	9.70	10.14	10.53	10.85	11.09
45	7.68	8.31	8.92	9.52	10.09	10.62	11.09	11.49	11.81
50	-	8.38	9.10	9.81	10.49	11.11	11.68	12.18	12.58
55	-	-	9.23	10.06	10.86	11.60	12.29	12.89	13.41
60	-	-	-	10.26	11.19	12.07	12.89	13.62	14.27
65	-	-	-	-	11.47	12.50	13.47	14.35	15.14

Mass flow in kg/h

30	118	161	210	267	332	406	489	583	688
35	112	154	204	260	325	398	481	574	678
40	105	147	196	252	316	389	471	562	665
45	97	139	188	243	307	378	459	549	650
50	-	131	179	234	296	366	446	535	634
55	-	-	169	223	284	353	431	518	616
60	-	-	-	212	272	339	416	501	596
65	-	-	-	-	258	324	399	482	575

Coefficient of performance (C.O.P.)

30	1.87	2.29	2.75	3.27	3.86	4.51	5.23	6.03	6.90
35	1.65	2.03	2.45	2.91	3.42	4.00	4.63	5.34	6.11
40	1.45	1.80	2.17	2.57	3.02	3.52	4.07	4.69	5.36
45	1.27	1.59	1.92	2.27	2.66	3.09	3.57	4.10	4.68
50	-	1.40	1.69	2.00	2.33	2.70	3.11	3.57	4.07
55	-	-	1.49	1.76	2.05	2.36	2.71	3.10	3.53
60	-	-	-	1.55	1.79	2.06	2.36	2.69	3.06
65	-	-	-	-	1.57	1.80	2.05	2.33	2.64

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	20 740	W
Power input	7 081	W
Current consumption	12.48	A
Mass flow	470	kg/h
C.O.P.	2.93	

Pressure switch settings

Maximum HP switch setting	27.7	bar(g)
Minimum LP switch setting	0.2	bar(g)
LP pump down setting	0.9	bar(g)

Sound power data

Sound power level	76	dB(A)
With acoustic hood	70	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

All performance data +/- 5%

Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alternations can be made without subsequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss, the Danfoss logotype and Maneurop are trademarks of Danfoss A/S. All rights reserved.

