

Datasheets

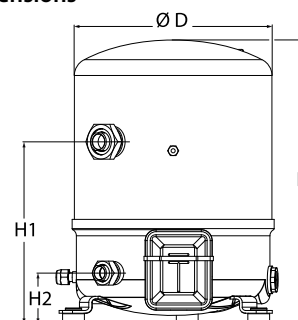
Danfoss Reciprocating compressors **MT / MTZ / NTZ**



General Characteristics

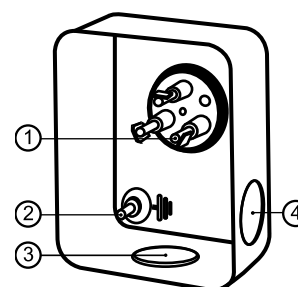
Model number (on compressor nameplate)		MT72HN4AVE
Code number for Singlepack*		MT72-4VI
Code number for Industrial pack**		MT72-4VM
Drawing number		8502012g
Suction and discharge connections		Rotolock
Suction connection		1-3/4" Rotolock
Discharge connection		1-1/4" Rotolock
Suction connection with supplied sleeve		7/8" 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	120.94 cm ³ /rev	
Displacement @ Nominal speed	21.0 m ³ /h @ 2900 rpm - 25.4 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)	17 A
Locked Rotor Amps (LRA)	80 A
Motor protection	Internal overload protector

Recommended Installation torques

Oil sight glass	50 Nm
Power connections / Earth connection	2 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

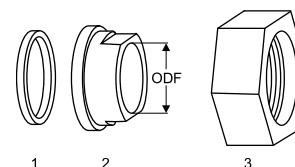
**Industrial pack: 6 Unboxed compressors on pallet (order per multiples of 6)

Rotolock accessories, suction side

Code no.

Solder sleeve, P07 (1-3/4" Rotolock, 7/8" ODF)	8153013
Angle adapter, C07 (1-3/4" Rotolock, 7/8" ODF)	8168008
Rotolock valve, V07 (1-3/4" Rotolock, 7/8" ODF)	8168032
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, C07 (1-3/4"~7/8"), C04 (1-1/4"~3/4")	7703013
Valve set, V07 (1-3/4"~7/8"), V04 (1-1/4"~3/4")	7703006
Gasket set, 1", 1-1/4", 1-3/4", OSG gaskets black & white	8156009

Oil / lubricants

Code no.

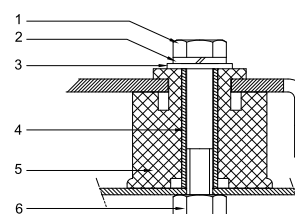
Mineral oil, 160P, 2 litre can	7754001
Mineral oil, 160P, 5 litre can	7754002

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	4 414	6 222	8 397	10 982	14 020	17 553	21 623	26 274	31 547
35	3 955	5 692	7 771	10 234	13 125	16 485	20 358	24 785	29 810
40	3 487	5 152	7 134	9 476	12 219	15 407	19 082	23 286	28 062
45	3 010	4 605	6 490	8 710	11 306	14 321	17 798	21 779	26 307
50	-	4 051	5 840	7 938	10 386	13 229	16 508	20 265	24 545
55	-	-	5 186	7 161	9 463	12 133	15 213	18 748	22 778
60	-	-	-	6 383	8 537	11 034	13 916	17 227	21 009
65	-	-	-	-	7 610	9 935	12 619	15 706	19 239

Power input in W

30	2 559	2 941	3 276	3 568	3 821	4 040	4 227	4 388	4 526
35	2 614	3 056	3 445	3 787	4 084	4 342	4 564	4 754	4 916
40	2 634	3 143	3 596	3 995	4 345	4 650	4 914	5 141	5 336
45	2 613	3 199	3 722	4 186	4 597	4 957	5 272	5 544	5 779
50	-	3 215	3 817	4 355	4 834	5 258	5 630	5 956	6 239
55	-	-	3 874	4 494	5 050	5 545	5 984	6 371	6 711
60	-	-	-	4 598	5 238	5 813	6 327	6 783	7 187
65	-	-	-	-	5 393	6 055	6 651	7 185	7 661

Current consumption in A

30	6.68	7.03	7.38	7.71	8.02	8.29	8.52	8.70	8.82
35	6.77	7.19	7.59	7.98	8.33	8.65	8.91	9.12	9.26
40	6.80	7.30	7.78	8.24	8.66	9.03	9.35	9.60	9.79
45	6.76	7.36	7.94	8.48	8.98	9.43	9.82	10.14	10.38
50	-	7.35	8.04	8.69	9.29	9.84	10.31	10.71	11.03
55	-	-	8.09	8.86	9.58	10.23	10.81	11.31	11.72
60	-	-	-	8.97	9.82	10.61	11.31	11.93	12.45
65	-	-	-	-	10.02	10.95	11.80	12.55	13.20

Mass flow in kg/h

30	96	134	178	230	290	358	437	525	625
35	89	127	171	222	282	349	426	514	612
40	82	120	164	214	273	340	416	501	598
45	75	112	156	206	263	329	404	489	583
50	-	103	147	196	253	318	392	475	568
55	-	-	137	186	242	306	379	460	552
60	-	-	-	175	230	293	365	445	535
65	-	-	-	-	218	280	350	429	517

Coefficient of performance (C.O.P.)

30	1.73	2.12	2.56	3.08	3.67	4.35	5.12	5.99	6.97
35	1.51	1.86	2.26	2.70	3.21	3.80	4.46	5.21	6.06
40	1.32	1.64	1.98	2.37	2.81	3.31	3.88	4.53	5.26
45	1.15	1.44	1.74	2.08	2.46	2.89	3.38	3.93	4.55
50	-	1.26	1.53	1.82	2.15	2.52	2.93	3.40	3.93
55	-	-	1.34	1.59	1.87	2.19	2.54	2.94	3.39
60	-	-	-	1.39	1.63	1.90	2.20	2.54	2.92
65	-	-	-	-	1.41	1.64	1.90	2.19	2.51

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

Cooling capacity	16 508	W
Power input	5 630	W
Current consumption	10.31	A
Mass flow	392	kg/h
C.O.P.	2.93	

Pressure switch settings

Maximum HP switch setting	27.9	bar(g)
Minimum LP switch setting	0.7	bar(g)
LP pump down setting	0.9	bar(g)

Sound power data

Sound power level	76	dB(A)
With acoustic hood	69	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

Tolerance according EN12900

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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	4 688	6 603	8 904	11 637	14 844	18 572	22 863	27 762	33 312
35	4 216	6 062	8 268	10 880	13 942	17 498	21 593	26 270	31 575
40	3 732	5 508	7 620	10 112	13 028	16 413	20 312	24 768	29 826
45	3 237	4 945	6 963	9 335	12 105	15 320	19 022	23 257	28 070
50	-	4 373	6 297	8 549	11 175	14 218	17 725	21 740	26 307
55	-	-	5 625	7 758	10 238	13 112	16 424	20 218	24 541
60	-	-	-	6 962	9 299	12 003	15 120	18 696	22 775
65	-	-	-	-	8 358	10 894	13 818	17 176	21 013

Power input in W

30	2 559	2 941	3 276	3 568	3 821	4 040	4 227	4 388	4 526
35	2 614	3 056	3 445	3 787	4 084	4 342	4 564	4 754	4 916
40	2 634	3 143	3 596	3 995	4 345	4 650	4 914	5 141	5 336
45	2 613	3 199	3 722	4 186	4 597	4 957	5 272	5 544	5 779
50	-	3 215	3 817	4 355	4 834	5 258	5 630	5 956	6 239
55	-	-	3 874	4 494	5 050	5 545	5 984	6 371	6 711
60	-	-	-	4 598	5 238	5 813	6 327	6 783	7 187
65	-	-	-	-	5 393	6 055	6 651	7 185	7 661

Current consumption in A

30	6.68	7.03	7.38	7.71	8.02	8.29	8.52	8.70	8.82
35	6.77	7.19	7.59	7.98	8.33	8.65	8.91	9.12	9.26
40	6.80	7.30	7.78	8.24	8.66	9.03	9.35	9.60	9.79
45	6.76	7.36	7.94	8.48	8.98	9.43	9.82	10.14	10.38
50	-	7.35	8.04	8.69	9.29	9.84	10.31	10.71	11.03
55	-	-	8.09	8.86	9.58	10.23	10.81	11.31	11.72
60	-	-	-	8.97	9.82	10.61	11.31	11.93	12.45
65	-	-	-	-	10.02	10.95	11.80	12.55	13.20

Mass flow in kg/h

30	96	133	177	229	288	356	434	522	621
35	89	127	170	221	280	347	424	511	608
40	82	119	163	213	271	338	413	499	595
45	74	111	155	205	262	327	402	486	580
50	-	103	146	195	252	316	390	472	565
55	-	-	136	185	241	304	377	458	549
60	-	-	-	174	229	292	363	442	532
65	-	-	-	-	216	278	348	426	514

Coefficient of performance (C.O.P.)

30	1.83	2.25	2.72	3.26	3.88	4.60	5.41	6.33	7.36
35	1.61	1.98	2.40	2.87	3.41	4.03	4.73	5.53	6.42
40	1.42	1.75	2.12	2.53	3.00	3.53	4.13	4.82	5.59
45	1.24	1.55	1.87	2.23	2.63	3.09	3.61	4.19	4.86
50	-	1.36	1.65	1.96	2.31	2.70	3.15	3.65	4.22
55	-	-	1.45	1.73	2.03	2.36	2.74	3.17	3.66
60	-	-	-	1.51	1.78	2.06	2.39	2.76	3.17
65	-	-	-	-	1.55	1.80	2.08	2.39	2.74

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

Cooling capacity	18 199	W
Power input	6 115	W
Current consumption	10.98	A
Mass flow	413	kg/h
C.O.P.	2.98	

Pressure switch settings

Maximum HP switch setting	27.9	bar(g)
Minimum LP switch setting	0.7	bar(g)
LP pump down setting	0.9	bar(g)

Sound power data

Sound power level	76	dB(A)
With accoustic hood	69	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

Tolerance according EN12900

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Performance data at 60 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	5 870	7 917	10 410	13 396	16 924	21 041	25 796	31 237	37 414
35	5 360	7 306	9 676	12 517	15 878	19 808	24 353	29 564	35 487
40	4 864	6 699	8 937	11 625	14 811	18 544	22 871	27 841	33 502
45	4 392	6 107	8 204	10 730	13 732	17 259	21 358	26 079	31 467
50	-	5 538	7 485	9 840	12 649	15 962	19 825	24 286	29 393
55	-	-	6 790	8 965	11 573	14 661	18 278	22 471	27 287
60	-	-	-	8 113	10 511	13 366	16 728	20 643	25 158
65	-	-	-	-	9 471	12 085	15 182	18 809	23 013

Power input in W

30	3 142	3 567	3 962	4 326	4 655	4 946	5 197	5 402	5 561
35	3 245	3 715	4 158	4 571	4 950	5 292	5 594	5 853	6 066
40	3 330	3 850	4 344	4 808	5 240	5 636	5 993	6 309	6 579
45	3 394	3 966	4 514	5 033	5 520	5 973	6 389	6 764	7 095
50	-	4 060	4 664	5 241	5 787	6 300	6 777	7 214	7 609
55	-	-	4 790	5 428	6 036	6 612	7 153	7 656	8 117
60	-	-	-	5 589	6 262	6 905	7 513	8 084	8 614
65	-	-	-	-	6 461	7 173	7 851	8 494	9 097

Current consumption in A

30	5.99	6.39	6.81	7.23	7.60	7.92	8.15	8.26	8.23
35	6.11	6.55	7.02	7.49	7.94	8.34	8.66	8.88	8.96
40	6.22	6.69	7.21	7.74	8.26	8.74	9.15	9.47	9.67
45	6.32	6.83	7.40	7.99	8.57	9.13	9.63	10.05	10.36
50	-	6.96	7.57	8.22	8.87	9.51	10.10	10.62	11.04
55	-	-	7.74	8.44	9.16	9.87	10.55	11.17	11.70
60	-	-	-	8.65	9.44	10.22	10.99	11.70	12.34
65	-	-	-	-	9.70	10.56	11.41	12.22	12.96

Mass flow in kg/h

30	127	170	221	281	350	430	521	624	740
35	121	163	213	272	341	420	510	613	728
40	115	156	205	263	331	409	498	600	714
45	109	149	197	253	320	397	485	585	698
50	-	141	188	243	308	384	470	569	681
55	-	-	179	233	296	370	455	552	661
60	-	-	-	222	284	355	438	533	641
65	-	-	-	-	271	340	421	513	619

Coefficient of performance (C.O.P.)

30	1.87	2.22	2.63	3.10	3.64	4.25	4.96	5.78	6.73
35	1.65	1.97	2.33	2.74	3.21	3.74	4.35	5.05	5.85
40	1.46	1.74	2.06	2.42	2.83	3.29	3.82	4.41	5.09
45	1.29	1.54	1.82	2.13	2.49	2.89	3.34	3.86	4.44
50	-	1.36	1.60	1.88	2.19	2.53	2.93	3.37	3.86
55	-	-	1.42	1.65	1.92	2.22	2.56	2.94	3.36
60	-	-	-	1.45	1.68	1.94	2.23	2.55	2.92
65	-	-	-	-	1.47	1.68	1.93	2.21	2.53

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

Cooling capacity	19 825	W
Power input	6 777	W
Current consumption	10.10	A
Mass flow	470	kg/h
C.O.P.	2.93	

Pressure switch settings

Maximum HP switch setting	27.9	bar(g)
Minimum LP switch setting	0.7	bar(g)
LP pump down setting	0.9	bar(g)

Sound power data

Sound power level	79	dB(A)
With accoustic hood	72	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

Tolerance according EN12900

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Performance data at 60 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	6 234	8 402	11 039	14 194	17 919	22 262	27 275	33 006	39 508
35	5 713	7 780	10 295	13 307	16 867	21 025	25 831	31 335	37 588
40	5 206	7 163	9 546	12 406	15 792	19 755	24 346	29 613	35 608
45	4 722	6 559	8 801	11 499	14 703	18 462	22 827	27 849	33 576
50	-	5 978	8 071	10 598	13 609	17 156	21 286	26 052	31 503
55	-	-	7 365	9 711	12 521	15 845	19 733	24 234	29 399
60	-	-	-	8 849	11 449	14 541	18 175	22 403	27 273
65	-	-	-	-	10 401	13 252	16 625	20 569	25 135

Power input in W

30	3 142	3 567	3 962	4 326	4 655	4 946	5 197	5 402	5 561
35	3 245	3 715	4 158	4 571	4 950	5 292	5 594	5 853	6 066
40	3 330	3 850	4 344	4 808	5 240	5 636	5 993	6 309	6 579
45	3 394	3 966	4 514	5 033	5 520	5 973	6 389	6 764	7 095
50	-	4 060	4 664	5 241	5 787	6 300	6 777	7 214	7 609
55	-	-	4 790	5 428	6 036	6 612	7 153	7 656	8 117
60	-	-	-	5 589	6 262	6 905	7 513	8 084	8 614
65	-	-	-	-	6 461	7 173	7 851	8 494	9 097

Current consumption in A

30	5.99	6.39	6.81	7.23	7.60	7.92	8.15	8.26	8.23
35	6.11	6.55	7.02	7.49	7.94	8.34	8.66	8.88	8.96
40	6.22	6.69	7.21	7.74	8.26	8.74	9.15	9.47	9.67
45	6.32	6.83	7.40	7.99	8.57	9.13	9.63	10.05	10.36
50	-	6.96	7.57	8.22	8.87	9.51	10.10	10.62	11.04
55	-	-	7.74	8.44	9.16	9.87	10.55	11.17	11.70
60	-	-	-	8.65	9.44	10.22	10.99	11.70	12.34
65	-	-	-	-	9.70	10.56	11.41	12.22	12.96

Mass flow in kg/h

30	127	169	220	279	348	427	518	621	736
35	120	162	212	271	339	418	507	609	724
40	114	155	204	262	329	407	495	596	710
45	108	148	196	252	318	395	482	582	694
50	-	141	187	242	307	382	468	566	677
55	-	-	178	232	295	368	452	549	658
60	-	-	-	221	282	353	436	530	637
65	-	-	-	-	269	338	418	511	615

Coefficient of performance (C.O.P.)

30	1.98	2.36	2.79	3.28	3.85	4.50	5.25	6.11	7.10
35	1.76	2.09	2.48	2.91	3.41	3.97	4.62	5.35	6.20
40	1.56	1.86	2.20	2.58	3.01	3.51	4.06	4.69	5.41
45	1.39	1.65	1.95	2.28	2.66	3.09	3.57	4.12	4.73
50	-	1.47	1.73	2.02	2.35	2.72	3.14	3.61	4.14
55	-	-	1.54	1.79	2.07	2.40	2.76	3.17	3.62
60	-	-	-	1.58	1.83	2.11	2.42	2.77	3.17
65	-	-	-	-	1.61	1.85	2.12	2.42	2.76

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

Cooling capacity	21 835	W
Power input	7 331	W
Current consumption	10.77	A
Mass flow	495	kg/h
C.O.P.	2.98	

Pressure switch settings

Maximum HP switch setting	27.9	bar(g)
Minimum LP switch setting	0.7	bar(g)
LP pump down setting	0.9	bar(g)

Sound power data

Sound power level	79	dB(A)
With accoustic hood	72	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

Tolerance according EN12900

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