

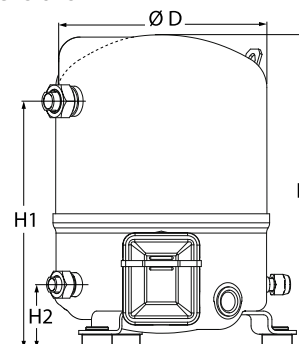
Datasheets

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



General Characteristics

Model number (on compressor nameplate)		MT22JC4BVE
Code number for Singlepack*		MT22-4VI
Code number for Industrial pack**		MT22-4VM
Drawing number		8501024e
Suction and discharge connections		Rotolock
Suction connection		1 " Rotolock
Discharge connection		1 " Rotolock
Suction connection with supplied sleeve		1/2 " ODF
Discharge connection with supplied sleeve		3/8 " ODF
Oil sight glass		Threaded
Oil equalisation connection		3/8" flare SAE
Oil drain connection		None
LP gauge port		Schrader
IPR valve		None
Cylinders	1	
Swept volume	38.12 cm ³ /rev	
Displacement @ Nominal speed	6.6 m ³ /h @ 2900 rpm - 8.0 m ³ /h @ 3500 rpm	
Net weight	21 kg	
Oil charge	0.95 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	2.5 kg	
Approved refrigerants	R22, R417A-160PZ	

Dimensions


D=224 mm

H=333 mm

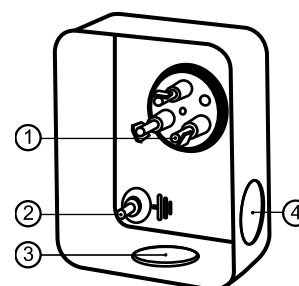
H1=263 mm

H2=68 mm

H3= mm

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	11.88 Ω
Maximum Continuous Current (MCC)	6 A
Locked Rotor Amps (LRA)	20 A
Motor protection	Internal overload protector

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")

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), CCC certified

*Singlepack: Compressor in cardboard box

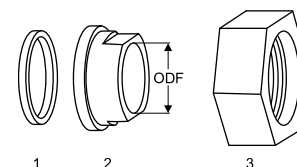
**Industrial pack: 12 Unboxed compressors on pallet (order per multiples of 12)

Rotolock accessories, suction side

Code no.

Solder sleeve, P06 (1" Rotolock, 1/2" ODF)	8153007
Angle adapter, C06 (1" Rotolock, 1/2" ODF)	8168007
Rotolock valve, V06 (1" Rotolock, 1/2" ODF)	8168031
Gasket, 1"	8156130

Gaskets, sleeves and nuts



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

Rotolock accessories, discharge side

Code no.

Solder sleeve, P01 (1" Rotolock, 3/8" ODF)	8153010
Angle adapter, C01 (1" Rotolock, 3/8" ODF)	8168004
Rotolock valve, V01 (1" Rotolock, 3/8" ODF)	8168027
Gasket, 1"	8156130

Rotolock accessories, sets

Code no.

Angle adapter set, C06 (1"~1/2"), C01 (1"~3/8")	7703011
Valve set, V06 (1"~1/2"), V01 (1"~3/8")	7703004
Gasket set, 1", 1-1/4", 1-3/4", OSG gaskets black & white	8156009

Oil / lubricants

Code no.

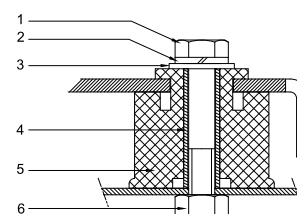
Mineral oil, 160P, 2 litre can	7754001
Mineral oil, 160P, 5 litre can	7754002

Crankcase heaters

Code no.

PTC heater 27W, CE mark, UL	120Z0459
Belt type crankcase heater, 54 W, 230 V, CE mark, UL	7773106
Belt type crankcase heater, 54 W, 400 V, UL	7773013

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 1 cylinder compressor	120Z0575
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	1 240	1 817	2 502	3 309	4 251	5 340	6 589	8 012	9 621
35	1 050	1 607	2 267	3 043	3 947	4 993	6 193	7 561	9 109
40	865	1 399	2 029	2 770	3 633	4 632	5 779	7 088	8 571
45	686	1 193	1 791	2 492	3 311	4 259	5 349	6 595	8 009
50	-	991	1 552	2 211	2 981	3 874	4 904	6 083	7 424
55	-	-	1 314	1 927	2 645	3 480	4 445	5 553	6 817
60	-	-	-	1 642	2 303	3 076	3 973	5 007	6 190
65	-	-	-	-	1 959	2 666	3 490	4 445	5 544

Power input in W

30	707	860	1 004	1 132	1 238	1 317	1 361	1 365	1 323
35	739	898	1 051	1 190	1 309	1 403	1 464	1 488	1 467
40	760	928	1 090	1 242	1 376	1 486	1 566	1 610	1 612
45	769	947	1 121	1 286	1 436	1 564	1 664	1 731	1 757
50	-	954	1 141	1 322	1 489	1 636	1 758	1 848	1 900
55	-	-	1 150	1 347	1 533	1 701	1 846	1 961	2 041
60	-	-	-	1 360	1 566	1 757	1 927	2 068	2 176
65	-	-	-	-	1 589	1 803	1 998	2 168	2 306

Current consumption in A

30	2.04	2.15	2.28	2.40	2.51	2.59	2.64	2.64	2.58
35	2.07	2.19	2.32	2.45	2.58	2.68	2.76	2.79	2.76
40	2.09	2.21	2.35	2.50	2.65	2.78	2.88	2.94	2.95
45	2.10	2.23	2.38	2.55	2.72	2.87	3.00	3.10	3.15
50	-	2.24	2.41	2.59	2.78	2.97	3.13	3.26	3.35
55	-	-	2.42	2.62	2.84	3.05	3.25	3.42	3.55
60	-	-	-	2.65	2.89	3.13	3.37	3.57	3.75
65	-	-	-	-	2.93	3.21	3.48	3.73	3.95

Mass flow in kg/h

30	27	39	53	70	88	109	133	160	191
35	24	36	50	66	85	106	130	157	187
40	20	33	47	63	81	102	126	153	183
45	17	29	43	59	77	98	122	148	178
50	-	25	39	55	73	93	117	143	172
55	-	-	35	50	68	88	111	137	166
60	-	-	-	45	62	82	104	130	158
65	-	-	-	-	56	75	97	122	150

Coefficient of performance (C.O.P.)

30	1.75	2.11	2.49	2.92	3.43	4.06	4.84	5.87	7.27
35	1.42	1.79	2.16	2.56	3.01	3.56	4.23	5.08	6.21
40	1.14	1.51	1.86	2.23	2.64	3.12	3.69	4.40	5.32
45	0.89	1.26	1.60	1.94	2.31	2.72	3.21	3.81	4.56
50	-	1.04	1.36	1.67	2.00	2.37	2.79	3.29	3.91
55	-	-	1.14	1.43	1.73	2.05	2.41	2.83	3.34
60	-	-	-	1.21	1.47	1.75	2.06	2.42	2.84
65	-	-	-	-	1.23	1.48	1.75	2.05	2.40

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

Cooling capacity	4 904	W
Power input	1 758	W
Current consumption	3.13	A
Mass flow	117	kg/h
C.O.P.	2.79	

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	71	dB(A)
With accoustic hood	65	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	1 317	1 928	2 653	3 506	4 501	5 650	6 967	8 466	10 160
35	1 119	1 712	2 412	3 235	4 193	5 300	6 569	8 014	9 648
40	926	1 495	2 168	2 956	3 874	4 935	6 152	7 539	9 110
45	738	1 281	1 921	2 671	3 545	4 556	5 717	7 043	8 545
50	-	1 069	1 673	2 381	3 207	4 164	5 266	6 525	7 957
55	-	-	1 425	2 087	2 861	3 761	4 799	5 989	7 345
60	-	-	-	1 791	2 509	3 347	4 317	5 434	6 710
65	-	-	-	-	2 151	2 923	3 822	4 861	6 055

Power input in W

30	707	860	1 004	1 132	1 238	1 317	1 361	1 365	1 323
35	739	898	1 051	1 190	1 309	1 403	1 464	1 488	1 467
40	760	928	1 090	1 242	1 376	1 486	1 566	1 610	1 612
45	769	947	1 121	1 286	1 436	1 564	1 664	1 731	1 757
50	-	954	1 141	1 322	1 489	1 636	1 758	1 848	1 900
55	-	-	1 150	1 347	1 533	1 701	1 846	1 961	2 041
60	-	-	-	1 360	1 566	1 757	1 927	2 068	2 176
65	-	-	-	-	1 589	1 803	1 998	2 168	2 306

Current consumption in A

30	2.04	2.15	2.28	2.40	2.51	2.59	2.64	2.64	2.58
35	2.07	2.19	2.32	2.45	2.58	2.68	2.76	2.79	2.76
40	2.09	2.21	2.35	2.50	2.65	2.78	2.88	2.94	2.95
45	2.10	2.23	2.38	2.55	2.72	2.87	3.00	3.10	3.15
50	-	2.24	2.41	2.59	2.78	2.97	3.13	3.26	3.35
55	-	-	2.42	2.62	2.84	3.05	3.25	3.42	3.55
60	-	-	-	2.65	2.89	3.13	3.37	3.57	3.75
65	-	-	-	-	2.93	3.21	3.48	3.73	3.95

Mass flow in kg/h

30	27	39	53	69	88	109	132	159	189
35	24	36	50	66	84	105	129	156	186
40	20	32	46	63	81	102	125	152	182
45	17	29	43	59	77	98	121	148	177
50	-	25	39	55	72	93	116	142	171
55	-	-	35	50	68	88	110	136	165
60	-	-	-	45	62	82	104	129	157
65	-	-	-	-	56	75	97	121	149

Coefficient of performance (C.O.P.)

30	1.86	2.24	2.64	3.10	3.63	4.29	5.12	6.20	7.68
35	1.51	1.90	2.30	2.72	3.20	3.78	4.49	5.39	6.58
40	1.22	1.61	1.99	2.38	2.82	3.32	3.93	4.68	5.65
45	0.96	1.35	1.71	2.08	2.47	2.91	3.43	4.07	4.86
50	-	1.12	1.47	1.80	2.15	2.54	2.99	3.53	4.19
55	-	-	1.24	1.55	1.87	2.21	2.60	3.05	3.60
60	-	-	-	1.32	1.60	1.90	2.24	2.63	3.08
65	-	-	-	-	1.35	1.62	1.91	2.24	2.63

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

Cooling capacity	5 363	W
Power input	1 889	W
Current consumption	3.31	A
Mass flow	122	kg/h
C.O.P.	2.84	

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	71	dB(A)
With accoustic hood	65	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	1 489	2 180	3 003	3 971	5 101	6 408	7 907	9 614	11 546
35	1 260	1 929	2 720	3 651	4 736	5 991	7 432	9 073	10 930
40	1 038	1 678	2 435	3 324	4 360	5 558	6 935	8 505	10 285
45	823	1 431	2 149	2 991	3 973	5 111	6 419	7 914	9 610
50	-	1 189	1 862	2 653	3 577	4 649	5 885	7 300	8 908
55	-	-	1 577	2 312	3 173	4 176	5 334	6 664	8 181
60	-	-	-	1 970	2 764	3 692	4 768	6 008	7 428
65	-	-	-	-	2 350	3 199	4 188	5 335	6 652

Power input in W

30	849	1 032	1 204	1 358	1 486	1 580	1 633	1 638	1 588
35	887	1 078	1 261	1 428	1 571	1 683	1 757	1 786	1 761
40	912	1 113	1 308	1 490	1 651	1 783	1 879	1 932	1 935
45	923	1 136	1 345	1 543	1 723	1 877	1 997	2 077	2 109
50	-	1 145	1 369	1 586	1 786	1 963	2 110	2 218	2 281
55	-	-	1 380	1 616	1 839	2 041	2 215	2 354	2 449
60	-	-	-	1 632	1 880	2 109	2 312	2 482	2 611
65	-	-	-	-	1 906	2 164	2 398	2 602	2 767

Current consumption in A

30	2.04	2.15	2.28	2.40	2.51	2.59	2.64	2.64	2.58
35	2.07	2.19	2.32	2.45	2.58	2.68	2.76	2.79	2.76
40	2.09	2.21	2.35	2.50	2.65	2.78	2.88	2.94	2.95
45	2.10	2.23	2.38	2.55	2.72	2.87	3.00	3.10	3.15
50	-	2.24	2.41	2.59	2.78	2.97	3.13	3.26	3.35
55	-	-	2.42	2.62	2.84	3.05	3.25	3.42	3.55
60	-	-	-	2.65	2.89	3.13	3.37	3.57	3.75
65	-	-	-	-	2.93	3.21	3.48	3.73	3.95

Mass flow in kg/h

30	33	47	64	84	106	131	160	192	229
35	29	43	60	80	102	127	156	188	225
40	24	39	56	75	98	123	151	184	220
45	20	35	52	71	93	118	146	178	214
50	-	30	47	66	87	112	140	172	207
55	-	-	42	60	82	106	133	164	199
60	-	-	-	54	75	99	125	156	190
65	-	-	-	-	68	90	117	146	180

Coefficient of performance (C.O.P.)

30	1.75	2.11	2.49	2.92	3.43	4.06	4.84	5.87	7.27
35	1.42	1.79	2.16	2.56	3.01	3.56	4.23	5.08	6.21
40	1.14	1.51	1.86	2.23	2.64	3.12	3.69	4.40	5.32
45	0.89	1.26	1.60	1.94	2.31	2.72	3.21	3.81	4.56
50	-	1.04	1.36	1.67	2.00	2.37	2.79	3.29	3.91
55	-	-	1.14	1.43	1.73	2.05	2.41	2.83	3.34
60	-	-	-	1.21	1.47	1.75	2.06	2.42	2.84
65	-	-	-	-	1.23	1.48	1.75	2.05	2.40

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

Cooling capacity	5 885	W
Power input	2 110	W
Current consumption	3.13	A
Mass flow	140	kg/h
C.O.P.	2.79	

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	74	dB(A)
With acoustic hood	68	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	1 581	2 314	3 184	4 208	5 401	6 780	8 360	10 159	12 192
35	1 343	2 054	2 895	3 882	5 031	6 360	7 883	9 617	11 578
40	1 111	1 795	2 601	3 547	4 649	5 922	7 382	9 047	10 931
45	885	1 537	2 305	3 205	4 254	5 467	6 861	8 451	10 254
50	-	1 283	2 008	2 857	3 848	4 997	6 319	7 831	9 548
55	-	-	1 710	2 505	3 434	4 513	5 758	7 187	8 814
60	-	-	-	2 149	3 011	4 016	5 180	6 521	8 052
65	-	-	-	-	2 581	3 508	4 586	5 834	7 266

Power input in W

30	849	1 032	1 204	1 358	1 486	1 580	1 633	1 638	1 588
35	887	1 078	1 261	1 428	1 571	1 683	1 757	1 786	1 761
40	912	1 113	1 308	1 490	1 651	1 783	1 879	1 932	1 935
45	923	1 136	1 345	1 543	1 723	1 877	1 997	2 077	2 109
50	-	1 145	1 369	1 586	1 786	1 963	2 110	2 218	2 281
55	-	-	1 380	1 616	1 839	2 041	2 215	2 354	2 449
60	-	-	-	1 632	1 880	2 109	2 312	2 482	2 611
65	-	-	-	-	1 906	2 164	2 398	2 602	2 767

Current consumption in A

30	2.04	2.15	2.28	2.40	2.51	2.59	2.64	2.64	2.58
35	2.07	2.19	2.32	2.45	2.58	2.68	2.76	2.79	2.76
40	2.09	2.21	2.35	2.50	2.65	2.78	2.88	2.94	2.95
45	2.10	2.23	2.38	2.55	2.72	2.87	3.00	3.10	3.15
50	-	2.24	2.41	2.59	2.78	2.97	3.13	3.26	3.35
55	-	-	2.42	2.62	2.84	3.05	3.25	3.42	3.55
60	-	-	-	2.65	2.89	3.13	3.37	3.57	3.75
65	-	-	-	-	2.93	3.21	3.48	3.73	3.95

Mass flow in kg/h

30	32	47	64	83	105	130	159	191	227
35	28	43	60	79	101	127	155	187	223
40	24	39	56	75	97	122	151	183	218
45	20	35	51	70	92	117	145	177	213
50	-	30	47	65	87	111	139	171	206
55	-	-	42	60	81	105	132	163	198
60	-	-	-	54	75	98	125	155	189
65	-	-	-	-	67	90	116	145	179

Coefficient of performance (C.O.P.)

30	1.86	2.24	2.64	3.10	3.63	4.29	5.12	6.20	7.68
35	1.51	1.90	2.30	2.72	3.20	3.78	4.49	5.39	6.58
40	1.22	1.61	1.99	2.38	2.82	3.32	3.93	4.68	5.65
45	0.96	1.35	1.71	2.08	2.47	2.91	3.43	4.07	4.86
50	-	1.12	1.47	1.80	2.15	2.54	2.99	3.53	4.19
55	-	-	1.24	1.55	1.87	2.21	2.60	3.05	3.60
60	-	-	-	1.32	1.60	1.90	2.24	2.63	3.08
65	-	-	-	-	1.35	1.62	1.91	2.24	2.63

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

Cooling capacity	6 436	W
Power input	2 267	W
Current consumption	3.31	A
Mass flow	146	kg/h
C.O.P.	2.84	

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	74	dB(A)
With accoustic hood	68	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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