

Datasheets

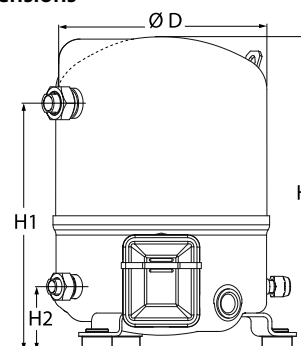
Danfoss Reciprocating compressors **MT / MTZ / NTZ**



General Characteristics

Model number (on compressor nameplate)		MT28JE4AVE
Code number for Singlepack*		MT28-4VI
Code number for Industrial pack**		MT28-4VM
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	48.06 cm ³ /rev	
Displacement @ Nominal speed	8.4 m ³ /h @ 2900 rpm - 10.1 m ³ /h @ 3500 rpm	
Net weight	23 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

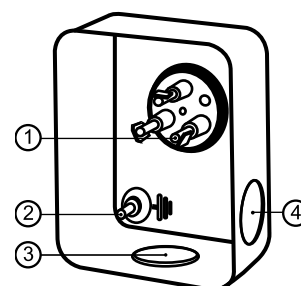
H2=68 mm

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	6.23 Ω
Maximum Continuous Current (MCC)	7.5 A
Locked Rotor Amps (LRA)	29 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

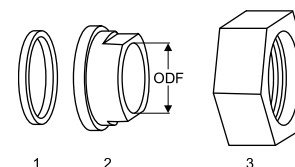
**Industrial pack: 12 Unboxed compressors on pallet (order per multiples of 12)

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.

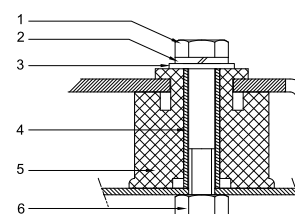
Mineral oil, 160P, 2 litre can	7754001
Mineral oil, 160P, 5 litre can	7754002

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	2 029	2 783	3 657	4 661	5 808	7 107	8 571	10 210	12 036
35	1 807	2 541	3 390	4 363	5 473	6 730	8 146	9 731	11 497
40	1 583	2 294	3 114	4 053	5 122	6 333	7 697	9 224	10 927
45	1 358	2 042	2 829	3 730	4 755	5 916	7 224	8 690	10 325
50	-	1 785	2 536	3 394	4 372	5 479	6 727	8 128	9 691
55	-	-	2 235	3 047	3 973	5 023	6 208	7 539	9 027
60	-	-	-	2 689	3 559	4 548	5 666	6 923	8 332
65	-	-	-	-	3 132	4 055	5 101	6 281	7 606

Power input in W

30	1 183	1 349	1 497	1 620	1 710	1 758	1 757	1 697	1 572
35	1 206	1 383	1 547	1 689	1 801	1 875	1 902	1 876	1 787
40	1 218	1 409	1 590	1 753	1 890	1 992	2 052	2 061	2 011
45	1 218	1 425	1 626	1 813	1 976	2 109	2 203	2 250	2 242
50	-	1 430	1 654	1 866	2 060	2 226	2 357	2 444	2 479
55	-	-	1 672	1 913	2 139	2 340	2 510	2 640	2 722
60	-	-	-	1 952	2 212	2 452	2 664	2 839	2 970
65	-	-	-	-	2 279	2 559	2 815	3 038	3 220

Current consumption in A

30	2.96	3.10	3.25	3.38	3.48	3.54	3.54	3.46	3.30
35	2.98	3.14	3.30	3.45	3.58	3.67	3.70	3.67	3.56
40	3.00	3.17	3.35	3.52	3.68	3.81	3.89	3.90	3.85
45	3.00	3.18	3.39	3.59	3.79	3.95	4.08	4.15	4.15
50	-	3.19	3.42	3.66	3.89	4.11	4.29	4.41	4.48
55	-	-	3.44	3.72	4.00	4.26	4.50	4.69	4.83
60	-	-	-	3.78	4.10	4.42	4.72	4.98	5.19
65	-	-	-	-	4.21	4.59	4.95	5.28	5.57

Mass flow in kg/h

30	44	60	78	98	120	146	174	204	239
35	41	57	75	95	118	143	171	202	236
40	37	54	72	92	115	140	168	199	233
45	34	50	68	88	111	136	164	195	230
50	-	46	64	84	107	132	160	191	225
55	-	-	59	79	102	127	155	186	220
60	-	-	-	74	96	121	149	180	213
65	-	-	-	-	90	115	142	172	206

Coefficient of performance (C.O.P.)

30	1.71	2.06	2.44	2.88	3.40	4.04	4.88	6.02	7.66
35	1.50	1.84	2.19	2.58	3.04	3.59	4.28	5.19	6.43
40	1.30	1.63	1.96	2.31	2.71	3.18	3.75	4.48	5.43
45	1.11	1.43	1.74	2.06	2.41	2.80	3.28	3.86	4.61
50	-	1.25	1.53	1.82	2.12	2.46	2.85	3.33	3.91
55	-	-	1.34	1.59	1.86	2.15	2.47	2.86	3.32
60	-	-	-	1.38	1.61	1.85	2.13	2.44	2.81
65	-	-	-	-	1.37	1.58	1.81	2.07	2.36

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

Cooling capacity	6 727	W
Power input	2 357	W
Current consumption	4.29	A
Mass flow	160	kg/h
C.O.P.	2.85	

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	68	dB(A)
With accoustic hood	61	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	2 155	2 953	3 877	4 939	6 149	7 520	9 062	10 788	12 709
35	1 926	2 706	3 607	4 639	5 814	7 144	8 640	10 314	12 178
40	1 694	2 453	3 326	4 325	5 461	6 747	8 193	9 811	11 614
45	1 460	2 193	3 035	3 997	5 091	6 328	7 721	9 280	11 016
50	-	1 927	2 734	3 656	4 703	5 889	7 224	8 719	10 387
55	-	-	2 424	3 301	4 299	5 428	6 702	8 130	9 726
60	-	-	-	2 933	3 877	4 947	6 156	7 514	9 032
65	-	-	-	-	3 439	4 446	5 586	6 869	8 308

Power input in W

30	1 183	1 349	1 497	1 620	1 710	1 758	1 757	1 697	1 572
35	1 206	1 383	1 547	1 689	1 801	1 875	1 902	1 876	1 787
40	1 218	1 409	1 590	1 753	1 890	1 992	2 052	2 061	2 011
45	1 218	1 425	1 626	1 813	1 976	2 109	2 203	2 250	2 242
50	-	1 430	1 654	1 866	2 060	2 226	2 357	2 444	2 479
55	-	-	1 672	1 913	2 139	2 340	2 510	2 640	2 722
60	-	-	-	1 952	2 212	2 452	2 664	2 839	2 970
65	-	-	-	-	2 279	2 559	2 815	3 038	3 220

Current consumption in A

30	2.96	3.10	3.25	3.38	3.48	3.54	3.54	3.46	3.30
35	2.98	3.14	3.30	3.45	3.58	3.67	3.70	3.67	3.56
40	3.00	3.17	3.35	3.52	3.68	3.81	3.89	3.90	3.85
45	3.00	3.18	3.39	3.59	3.79	3.95	4.08	4.15	4.15
50	-	3.19	3.42	3.66	3.89	4.11	4.29	4.41	4.48
55	-	-	3.44	3.72	4.00	4.26	4.50	4.69	4.83
60	-	-	-	3.78	4.10	4.42	4.72	4.98	5.19
65	-	-	-	-	4.21	4.59	4.95	5.28	5.57

Mass flow in kg/h

30	44	60	78	97	120	145	173	203	237
35	41	57	75	95	117	142	170	201	235
40	37	53	71	91	114	139	167	198	232
45	33	50	68	88	110	136	163	194	228
50	-	45	64	84	106	131	159	190	224
55	-	-	59	79	102	126	154	185	218
60	-	-	-	74	96	121	148	179	212
65	-	-	-	-	89	114	141	171	204

Coefficient of performance (C.O.P.)

30	1.82	2.19	2.59	3.05	3.60	4.28	5.16	6.36	8.09
35	1.60	1.96	2.33	2.75	3.23	3.81	4.54	5.50	6.81
40	1.39	1.74	2.09	2.47	2.89	3.39	3.99	4.76	5.78
45	1.20	1.54	1.87	2.21	2.58	3.00	3.50	4.12	4.91
50	-	1.35	1.65	1.96	2.28	2.65	3.07	3.57	4.19
55	-	-	1.45	1.73	2.01	2.32	2.67	3.08	3.57
60	-	-	-	1.50	1.75	2.02	2.31	2.65	3.04
65	-	-	-	-	1.51	1.74	1.98	2.26	2.58

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

Cooling capacity	7 378	W
Power input	2 552	W
Current consumption	4.56	A
Mass flow	168	kg/h
C.O.P.	2.89	

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	68	dB(A)
With accoustic hood	61	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	2 434	3 339	4 388	5 593	6 969	8 529	10 285	12 252	14 443
35	2 168	3 050	4 068	5 236	6 568	8 077	9 775	11 678	13 797
40	1 900	2 753	3 737	4 863	6 147	7 600	9 236	11 069	13 112
45	1 629	2 450	3 395	4 475	5 706	7 099	8 669	10 428	12 389
50	-	2 142	3 043	4 073	5 246	6 575	8 073	9 753	11 630
55	-	-	2 682	3 657	4 768	6 027	7 449	9 047	10 832
60	-	-	-	3 227	4 271	5 458	6 799	8 308	9 998
65	-	-	-	-	3 758	4 866	6 121	7 538	9 128

Power input in W

30	1 420	1 618	1 797	1 944	2 052	2 110	2 108	2 037	1 886
35	1 448	1 660	1 856	2 026	2 161	2 249	2 283	2 251	2 144
40	1 462	1 691	1 908	2 104	2 268	2 390	2 462	2 473	2 413
45	1 462	1 710	1 951	2 175	2 372	2 531	2 644	2 700	2 690
50	-	1 717	1 985	2 240	2 472	2 671	2 828	2 933	2 975
55	-	-	2 007	2 296	2 566	2 808	3 012	3 169	3 267
60	-	-	-	2 342	2 654	2 942	3 196	3 407	3 564
65	-	-	-	-	2 735	3 071	3 378	3 646	3 864

Current consumption in A

30	2.96	3.10	3.25	3.38	3.48	3.54	3.54	3.46	3.30
35	2.98	3.14	3.30	3.45	3.58	3.67	3.70	3.67	3.56
40	3.00	3.17	3.35	3.52	3.68	3.81	3.89	3.90	3.85
45	3.00	3.18	3.39	3.59	3.79	3.95	4.08	4.15	4.15
50	-	3.19	3.42	3.66	3.89	4.11	4.29	4.41	4.48
55	-	-	3.44	3.72	4.00	4.26	4.50	4.69	4.83
60	-	-	-	3.78	4.10	4.42	4.72	4.98	5.19
65	-	-	-	-	4.21	4.59	4.95	5.28	5.57

Mass flow in kg/h

30	53	72	93	117	144	175	208	245	286
35	49	68	90	114	141	172	205	242	284
40	45	64	86	110	138	168	202	239	280
45	40	60	82	106	133	164	197	235	276
50	-	55	77	101	128	159	192	229	270
55	-	-	71	95	122	153	186	223	264
60	-	-	-	89	116	146	179	215	256
65	-	-	-	-	108	138	170	207	247

Coefficient of performance (C.O.P.)

30	1.71	2.06	2.44	2.88	3.40	4.04	4.88	6.02	7.66
35	1.50	1.84	2.19	2.58	3.04	3.59	4.28	5.19	6.43
40	1.30	1.63	1.96	2.31	2.71	3.18	3.75	4.48	5.43
45	1.11	1.43	1.74	2.06	2.41	2.80	3.28	3.86	4.61
50	-	1.25	1.53	1.82	2.12	2.46	2.85	3.33	3.91
55	-	-	1.34	1.59	1.86	2.15	2.47	2.86	3.32
60	-	-	-	1.38	1.61	1.85	2.13	2.44	2.81
65	-	-	-	-	1.37	1.58	1.81	2.07	2.36

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

Cooling capacity	8 073	W
Power input	2 828	W
Current consumption	4.29	A
Mass flow	192	kg/h
C.O.P.	2.85	

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	64	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	2 585	3 544	4 653	5 927	7 379	9 024	10 875	12 946	15 251
35	2 311	3 248	4 328	5 567	6 977	8 573	10 369	12 377	14 613
40	2 033	2 943	3 991	5 190	6 554	8 096	9 832	11 774	13 936
45	1 752	2 632	3 642	4 796	6 109	7 594	9 265	11 135	13 220
50	-	2 313	3 281	4 387	5 644	7 067	8 668	10 463	12 464
55	-	-	2 909	3 961	5 158	6 514	8 042	9 756	11 671
60	-	-	-	3 520	4 653	5 937	7 387	9 016	10 839
65	-	-	-	-	4 127	5 336	6 703	8 243	9 969

Power input in W

30	1 420	1 618	1 797	1 944	2 052	2 110	2 108	2 037	1 886
35	1 448	1 660	1 856	2 026	2 161	2 249	2 283	2 251	2 144
40	1 462	1 691	1 908	2 104	2 268	2 390	2 462	2 473	2 413
45	1 462	1 710	1 951	2 175	2 372	2 531	2 644	2 700	2 690
50	-	1 717	1 985	2 240	2 472	2 671	2 828	2 933	2 975
55	-	-	2 007	2 296	2 566	2 808	3 012	3 169	3 267
60	-	-	-	2 342	2 654	2 942	3 196	3 407	3 564
65	-	-	-	-	2 735	3 071	3 378	3 646	3 864

Current consumption in A

30	2.96	3.10	3.25	3.38	3.48	3.54	3.54	3.46	3.30
35	2.98	3.14	3.30	3.45	3.58	3.67	3.70	3.67	3.56
40	3.00	3.17	3.35	3.52	3.68	3.81	3.89	3.90	3.85
45	3.00	3.18	3.39	3.59	3.79	3.95	4.08	4.15	4.15
50	-	3.19	3.42	3.66	3.89	4.11	4.29	4.41	4.48
55	-	-	3.44	3.72	4.00	4.26	4.50	4.69	4.83
60	-	-	-	3.78	4.10	4.42	4.72	4.98	5.19
65	-	-	-	-	4.21	4.59	4.95	5.28	5.57

Mass flow in kg/h

30	53	72	93	117	144	174	207	244	285
35	49	68	89	114	141	171	204	241	282
40	45	64	86	110	137	167	201	238	278
45	40	59	81	105	133	163	196	233	274
50	-	55	76	101	128	158	191	228	269
55	-	-	71	95	122	152	185	222	262
60	-	-	-	88	115	145	178	214	254
65	-	-	-	-	107	137	169	206	245

Coefficient of performance (C.O.P.)

30	1.82	2.19	2.59	3.05	3.60	4.28	5.16	6.36	8.09
35	1.60	1.96	2.33	2.75	3.23	3.81	4.54	5.50	6.81
40	1.39	1.74	2.09	2.47	2.89	3.39	3.99	4.76	5.78
45	1.20	1.54	1.87	2.21	2.58	3.00	3.50	4.12	4.91
50	-	1.35	1.65	1.96	2.28	2.65	3.07	3.57	4.19
55	-	-	1.45	1.73	2.01	2.32	2.67	3.08	3.57
60	-	-	-	1.50	1.75	2.02	2.31	2.65	3.04
65	-	-	-	-	1.51	1.74	1.98	2.26	2.58

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

Cooling capacity	8 854	W
Power input	3 063	W
Current consumption	4.56	A
Mass flow	201	kg/h
C.O.P.	2.89	

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	64	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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