

Datasheets

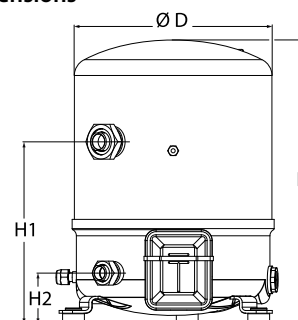
Danfoss Reciprocating compressors **MT / MTZ / NTZ**



General Characteristics

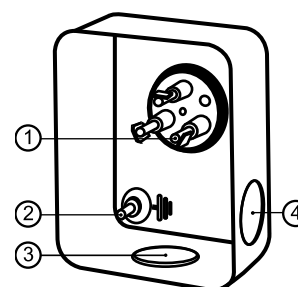
Model number (on compressor nameplate)		MT50HK4CVE
Code number for Singlepack*		MT50-4VI
Code number for Industrial pack**		MT50-4VM
Drawing number		8502012g
Suction and discharge connections		Rotolock
Suction connection		1-3/4" Rotolock
Discharge connection		1-1/4" Rotolock
Suction connection with supplied 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	85,64 cm ³ /rev	
Displacement @ Nominal speed	14.9 m ³ /h @ 2900 rpm - 18.0 m ³ /h @ 3500 rpm	
Net weight	37 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	3.35 Ω
Maximum Continuous Current (MCC)	12 A
Locked Rotor Amps (LRA)	48.5 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), CCC certified

*Singlepack: Compressor in cardboard box

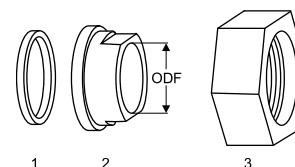
**Industrial pack: 6 Unboxed compressors on pallet (order per multiples of 6)

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.

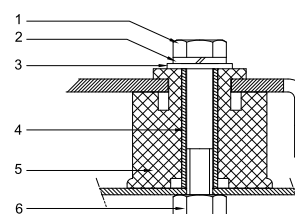
Mineral oil, 160P, 2 litre can	7754001
Mineral oil, 160P, 5 litre can	7754002

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	2 978	4 246	5 785	7 619	9 777	12 284	15 167	18 453	22 170
35	2 649	3 850	5 306	7 042	9 085	11 462	14 199	17 324	20 863
40	2 327	3 456	4 824	6 457	8 381	10 623	13 210	16 168	19 525
45	2 018	3 071	4 347	5 871	7 672	9 774	12 206	14 994	18 164
50	-	2 702	3 881	5 293	6 965	8 924	11 196	13 808	16 787
55	-	-	3 435	4 730	6 269	8 079	10 187	12 619	15 402
60	-	-	-	4 188	5 590	7 247	9 185	11 433	14 015
65	-	-	-	-	4 935	6 434	8 199	10 257	12 635

Power input in W

30	1 873	2 115	2 319	2 489	2 629	2 744	2 838	2 915	2 981
35	1 920	2 204	2 446	2 652	2 825	2 970	3 091	3 192	3 279
40	1 940	2 272	2 558	2 805	3 016	3 196	3 349	3 480	3 593
45	1 930	2 313	2 649	2 943	3 197	3 417	3 608	3 773	3 918
50	-	2 323	2 714	3 059	3 362	3 628	3 861	4 066	4 247
55	-	-	2 747	3 148	3 506	3 823	4 104	4 354	4 577
60	-	-	-	3 206	3 622	3 995	4 330	4 630	4 900
65	-	-	-	-	3 706	4 141	4 534	4 889	5 212

Current consumption in A

30	4.29	4.53	4.76	4.99	5.19	5.37	5.52	5.64	5.73
35	4.37	4.65	4.92	5.17	5.40	5.60	5.77	5.91	6.00
40	4.41	4.74	5.06	5.36	5.63	5.87	6.07	6.23	6.35
45	4.39	4.79	5.18	5.53	5.86	6.15	6.40	6.60	6.76
50	-	4.79	5.25	5.68	6.08	6.43	6.74	7.00	7.21
55	-	-	5.26	5.78	6.26	6.70	7.09	7.42	7.70
60	-	-	-	5.83	6.41	6.94	7.42	7.84	8.20
65	-	-	-	-	6.50	7.14	7.73	8.25	8.70

Mass flow in kg/h

30	65	91	123	159	202	251	306	369	439
35	60	86	117	153	195	243	297	359	428
40	55	80	111	146	187	234	288	348	416
45	50	75	104	139	179	225	277	336	403
50	-	69	97	131	170	215	266	324	389
55	-	-	91	123	160	204	253	310	373
60	-	-	-	115	151	193	241	295	357
65	-	-	-	-	141	181	227	280	340

Coefficient of performance (C.O.P.)

30	1.59	2.01	2.49	3.06	3.72	4.48	5.34	6.33	7.44
35	1.38	1.75	2.17	2.66	3.22	3.86	4.59	5.43	6.36
40	1.20	1.52	1.89	2.30	2.78	3.32	3.94	4.65	5.43
45	1.05	1.33	1.64	2.00	2.40	2.86	3.38	3.97	4.64
50	-	1.16	1.43	1.73	2.07	2.46	2.90	3.40	3.95
55	-	-	1.25	1.50	1.79	2.11	2.48	2.90	3.37
60	-	-	-	1.31	1.54	1.81	2.12	2.47	2.86
65	-	-	-	-	1.33	1.55	1.81	2.10	2.42

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

Cooling capacity	11 196	W
Power input	3 861	W
Current consumption	6.74	A
Mass flow	266	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	80	dB(A)
With acoustic hood	73	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%

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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	3 162	4 506	6 134	8 073	10 351	12 997	16 036	19 499	23 410
35	2 824	4 100	5 645	7 486	9 650	12 166	15 061	18 362	22 098
40	2 490	3 695	5 153	6 890	8 935	11 317	14 061	17 197	20 752
45	2 169	3 298	4 663	6 292	8 214	10 456	13 046	16 011	19 381
50	-	2 917	4 185	5 701	7 494	9 591	12 022	14 813	17 992
55	-	-	3 725	5 123	6 783	8 731	10 997	13 609	16 594
60	-	-	-	4 568	6 089	7 883	9 980	12 407	15 193
65	-	-	-	-	5 420	7 056	8 979	11 217	13 800

Power input in W

30	1 873	2 115	2 319	2 489	2 629	2 744	2 838	2 915	2 981
35	1 920	2 204	2 446	2 652	2 825	2 970	3 091	3 192	3 279
40	1 940	2 272	2 558	2 805	3 016	3 196	3 349	3 480	3 593
45	1 930	2 313	2 649	2 943	3 197	3 417	3 608	3 773	3 918
50	-	2 323	2 714	3 059	3 362	3 628	3 861	4 066	4 247
55	-	-	2 747	3 148	3 506	3 823	4 104	4 354	4 577
60	-	-	-	3 206	3 622	3 995	4 330	4 630	4 900
65	-	-	-	-	3 706	4 141	4 534	4 889	5 212

Current consumption in A

30	4.29	4.53	4.76	4.99	5.19	5.37	5.52	5.64	5.73
35	4.37	4.65	4.92	5.17	5.40	5.60	5.77	5.91	6.00
40	4.41	4.74	5.06	5.36	5.63	5.87	6.07	6.23	6.35
45	4.39	4.79	5.18	5.53	5.86	6.15	6.40	6.60	6.76
50	-	4.79	5.25	5.68	6.08	6.43	6.74	7.00	7.21
55	-	-	5.26	5.78	6.26	6.70	7.09	7.42	7.70
60	-	-	-	5.83	6.41	6.94	7.42	7.84	8.20
65	-	-	-	-	6.50	7.14	7.73	8.25	8.70

Mass flow in kg/h

30	64	91	122	159	201	249	304	367	436
35	60	86	116	152	194	242	296	357	426
40	55	80	110	145	186	233	286	346	414
45	50	74	104	138	178	223	276	335	401
50	-	69	97	130	169	213	264	322	386
55	-	-	90	122	160	203	252	308	371
60	-	-	-	114	150	192	239	294	355
65	-	-	-	-	140	180	226	278	338

Coefficient of performance (C.O.P.)

30	1.69	2.13	2.65	3.24	3.94	4.74	5.65	6.69	7.85
35	1.47	1.86	2.31	2.82	3.42	4.10	4.87	5.75	6.74
40	1.28	1.63	2.01	2.46	2.96	3.54	4.20	4.94	5.78
45	1.12	1.43	1.76	2.14	2.57	3.06	3.62	4.24	4.95
50	-	1.26	1.54	1.86	2.23	2.64	3.11	3.64	4.24
55	-	-	1.36	1.63	1.93	2.28	2.68	3.13	3.63
60	-	-	-	1.42	1.68	1.97	2.30	2.68	3.10
65	-	-	-	-	1.46	1.70	1.98	2.29	2.65

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

Cooling capacity	12 234	W
Power input	4 186	W
Current consumption	7.20	A
Mass flow	277	kg/h
C.O.P.	2.92	

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	80	dB(A)
With accoustic hood	73	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%

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