ENGINEERING
TOMORROW

Datasheets

Danfoss Reciprocating compressors
MT / MTZ / NTZ

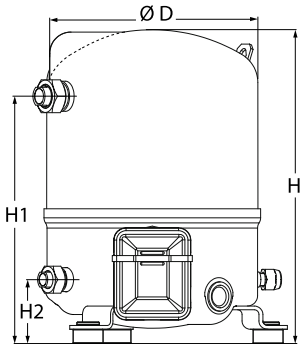
FRCC.UD.180316.101040

www.danfoss.com/odsg

General Characteristics

Model number (on compressor nameplate)		**MT18JA4BVE**
Code number for Singlepack*		MT18-4VI
Code number for Industrial pack**		MT18-4VM
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	30.23 cm3/rev	
Displacement @ Nominal speed	5.3 m3/h @ 2900 rpm - 6.3 m3/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	3 kg	
Approved refrigerants	R22, R417A-160PZ	

Dimensions

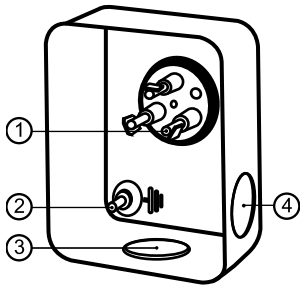


D=224 mm
H=333 mm
H1=263 mm
H2=68 mm
H3=- mm

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 25ºC	9.37 Ω
Maximum Continuous Current (MCC)	5 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

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

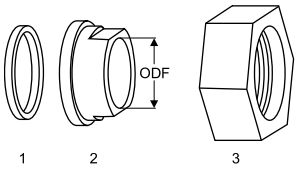
Oil / lubricants	Code no.
Mineral oil, 160P, 2 litre can	7754001
Mineral oil, 160P, 5 litre can	7754002

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

Miscellaneous accessories	Code no.
Electronic soft start kit, MCI 15 C	7705006
Acoustic hood for 1 cylinder compressor	120Z0575
Oil equalisation nut	8153127

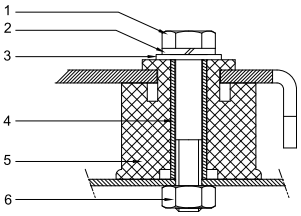
Spare parts	Code no.
Mounting kit for 1 and 2 cylinder compressor, including 3 grommets, 3 bolts	8156001
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (black chloroprene)	8156145
Service kit for terminal box 80 x 96 mm, including 1 cover, 1 clamp	8156134

Gaskets, sleeves and nuts



1: Gasket
2: Solder sleeve
3: Rotolock nut

Mounting kit



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

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	800	1 169	1 639	2 226	2 947	3 819	4 858	6 081	7 504
35	700	1 049	1 493	2 049	2 731	3 558	4 546	5 711	7 070
40	611	936	1 350	1 870	2 510	3 288	4 221	5 324	6 615
45	532	830	1 211	1 690	2 284	3 010	3 884	4 921	6 140
50	-	733	1 076	1 512	2 056	2 725	3 536	4 504	5 646
55	-	-	947	1 335	1 825	2 434	3 178	4 073	5 135
60	-	-	-	1 161	1 594	2 138	2 812	3 629	4 608
65	-	-	-	-	1 362	1 839	2 438	3 175	4 065
Power input in W									
30	587	691	789	876	950	1 005	1 037	1 043	1 018
35	610	719	823	918	1 000	1 066	1 111	1 130	1 120
40	629	743	855	959	1 051	1 128	1 186	1 220	1 226
45	644	765	884	997	1 101	1 191	1 262	1 312	1 334
50	-	782	910	1 034	1 150	1 253	1 340	1 406	1 446
55	-	-	933	1 069	1 197	1 315	1 418	1 501	1 561
60	-	-	-	1 100	1 243	1 376	1 495	1 597	1 677
65	-	-	-	-	1 285	1 435	1 573	1 694	1 795
Current consumption in A									
30	1.97	2.03	2.10	2.17	2.23	2.28	2.31	2.31	2.28
35	1.98	2.05	2.13	2.20	2.27	2.33	2.37	2.39	2.38
40	2.00	2.07	2.15	2.24	2.32	2.39	2.45	2.49	2.50
45	2.01	2.09	2.18	2.27	2.36	2.45	2.53	2.58	2.62
50	-	2.10	2.20	2.31	2.41	2.52	2.61	2.69	2.74
55	-	-	2.22	2.34	2.46	2.59	2.70	2.80	2.88
60	-	-	-	2.37	2.51	2.65	2.79	2.92	3.02
65	-	-	-	-	2.56	2.72	2.88	3.04	3.17
Mass flow in kg/h									
30	18	25	35	47	61	78	98	121	148
35	16	24	33	45	59	76	95	118	145
40	14	22	31	42	56	73	92	115	141
45	13	20	29	40	53	69	88	111	137
50	-	19	27	37	50	66	84	106	131
55	-	-	25	35	47	62	79	100	125
60	-	-	-	32	43	57	74	94	118
65	-	-	-	-	39	52	68	87	110
Coefficient of performance (C.O.P.)									
30	1.36	1.69	2.08	2.54	3.10	3.80	4.68	5.83	7.37
35	1.15	1.46	1.82	2.23	2.73	3.34	4.09	5.05	6.31
40	0.97	1.26	1.58	1.95	2.39	2.91	3.56	4.37	5.40
45	0.83	1.09	1.37	1.69	2.07	2.53	3.08	3.75	4.60
50	-	0.94	1.18	1.46	1.79	2.17	2.64	3.20	3.90
55	-	-	1.01	1.25	1.52	1.85	2.24	2.71	3.29
60	-	-	-	1.06	1.28	1.55	1.88	2.27	2.75
65	-	-	-	-	1.06	1.28	1.55	1.87	2.27

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

Cooling capacity	3 536	W
Power input	1 340	W
Current consumption	2.61	A
Mass flow	84	kg/h
C.O.P.	2.64	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

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	70	dB(A)
With accoustic hood	62	dB(A)

Tolerance according EN12900

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	849	1 240	1 738	2 359	3 121	4 041	5 137	6 425	7 924
35	746	1 117	1 589	2 178	2 901	3 777	4 822	6 053	7 488
40	653	1 001	1 442	1 995	2 676	3 503	4 493	5 663	7 030
45	572	892	1 299	1 812	2 446	3 220	4 151	5 255	6 551
50	-	791	1 160	1 628	2 212	2 929	3 796	4 831	6 052
55	-	-	1 027	1 446	1 975	2 631	3 431	4 392	5 532
60	-	-	-	1 266	1 736	2 326	3 055	3 939	4 995
65	-	-	-	-	1 496	2 017	2 670	3 472	4 440
Power input in W									
30	587	691	789	876	950	1 005	1 037	1 043	1 018
35	610	719	823	918	1 000	1 066	1 111	1 130	1 120
40	629	743	855	959	1 051	1 128	1 186	1 220	1 226
45	644	765	884	997	1 101	1 191	1 262	1 312	1 334
50	-	782	910	1 034	1 150	1 253	1 340	1 406	1 446
55	-	-	933	1 069	1 197	1 315	1 418	1 501	1 561
60	-	-	-	1 100	1 243	1 376	1 495	1 597	1 677
65	-	-	-	-	1 285	1 435	1 573	1 694	1 795
Current consumption in A									
30	1.97	2.03	2.10	2.17	2.23	2.28	2.31	2.31	2.28
35	1.98	2.05	2.13	2.20	2.27	2.33	2.37	2.39	2.38
40	2.00	2.07	2.15	2.24	2.32	2.39	2.45	2.49	2.50
45	2.01	2.09	2.18	2.27	2.36	2.45	2.53	2.58	2.62
50	-	2.10	2.20	2.31	2.41	2.52	2.61	2.69	2.74
55	-	-	2.22	2.34	2.46	2.59	2.70	2.80	2.88
60	-	-	-	2.37	2.51	2.65	2.79	2.92	3.02
65	-	-	-	-	2.56	2.72	2.88	3.04	3.17
Mass flow in kg/h									
30	17	25	35	47	61	78	98	121	148
35	16	23	33	44	58	75	95	118	144
40	14	22	31	42	56	72	92	114	141
45	13	20	29	40	53	69	88	110	136
50	-	19	27	37	50	65	84	105	130
55	-	-	25	35	47	61	79	100	124
60	-	-	-	32	43	57	74	94	117
65	-	-	-	-	39	52	68	87	109
Coefficient of performance (C.O.P.)									
30	1.45	1.80	2.20	2.69	3.29	4.02	4.95	6.16	7.78
35	1.22	1.55	1.93	2.37	2.90	3.54	4.34	5.36	6.69
40	1.04	1.35	1.69	2.08	2.55	3.11	3.79	4.64	5.74
45	0.89	1.17	1.47	1.82	2.22	2.70	3.29	4.01	4.91
50	-	1.01	1.27	1.57	1.92	2.34	2.83	3.44	4.18
55	-	-	1.10	1.35	1.65	2.00	2.42	2.93	3.54
60	-	-	-	1.15	1.40	1.69	2.04	2.47	2.98
65	-	-	-	-	1.16	1.41	1.70	2.05	2.47

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

Cooling capacity	3 881	W
Power input	1 447	W
Current consumption	2.73	A
Mass flow	88	kg/h
C.O.P.	2.68	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

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	70	dB(A)
With accoustic hood	62	dB(A)

Tolerance according EN12900

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	960	1 403	1 967	2 671	3 537	4 583	5 830	7 297	9 005
35	840	1 259	1 792	2 458	3 278	4 270	5 455	6 853	8 484
40	733	1 123	1 621	2 243	3 012	3 946	5 065	6 389	7 938
45	639	997	1 453	2 028	2 741	3 612	4 660	5 905	7 368
50	-	879	1 291	1 814	2 467	3 270	4 243	5 404	6 775
55	-	-	1 136	1 602	2 190	2 921	3 813	4 887	6 162
60	-	-	-	1 393	1 912	2 566	3 374	4 355	5 529
65	-	-	-	-	1 634	2 207	2 926	3 810	4 878
Power input in W									
30	704	829	946	1 052	1 140	1 206	1 245	1 252	1 222
35	732	862	987	1 102	1 201	1 279	1 333	1 356	1 344
40	755	892	1 026	1 150	1 261	1 354	1 423	1 463	1 471
45	772	918	1 061	1 197	1 321	1 429	1 515	1 574	1 601
50	-	938	1 092	1 241	1 380	1 504	1 608	1 687	1 736
55	-	-	1 119	1 282	1 437	1 578	1 701	1 801	1 873
60	-	-	-	1 320	1 491	1 651	1 795	1 917	2 012
65	-	-	-	-	1 542	1 722	1 887	2 033	2 154
Current consumption in A									
30	1.97	2.03	2.10	2.17	2.23	2.28	2.31	2.31	2.28
35	1.98	2.05	2.13	2.20	2.27	2.33	2.37	2.39	2.38
40	2.00	2.07	2.15	2.24	2.32	2.39	2.45	2.49	2.50
45	2.01	2.09	2.18	2.27	2.36	2.45	2.53	2.58	2.62
50	-	2.10	2.20	2.31	2.41	2.52	2.61	2.69	2.74
55	-	-	2.22	2.34	2.46	2.59	2.70	2.80	2.88
60	-	-	-	2.37	2.51	2.65	2.79	2.92	3.02
65	-	-	-	-	2.56	2.72	2.88	3.04	3.17
Mass flow in kg/h									
30	21	30	42	56	73	94	118	146	178
35	19	28	40	54	71	91	114	142	174
40	17	26	37	51	67	87	111	138	170
45	16	24	35	48	64	83	106	133	164
50	-	23	33	45	60	79	101	127	157
55	-	-	30	42	56	74	95	120	150
60	-	-	-	38	52	68	89	113	141
65	-	-	-	-	47	63	82	105	132
Coefficient of performance (C.O.P.)									
30	1.36	1.69	2.08	2.54	3.10	3.80	4.68	5.83	7.37
35	1.15	1.46	1.82	2.23	2.73	3.34	4.09	5.05	6.31
40	0.97	1.26	1.58	1.95	2.39	2.91	3.56	4.37	5.40
45	0.83	1.09	1.37	1.69	2.07	2.53	3.08	3.75	4.60
50	-	0.94	1.18	1.46	1.79	2.17	2.64	3.20	3.90
55	-	-	1.01	1.25	1.52	1.85	2.24	2.71	3.29
60	-	-	-	1.06	1.28	1.55	1.88	2.27	2.75
65	-	-	-	-	1.06	1.28	1.55	1.87	2.27

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

Cooling capacity	4 243	W
Power input	1 608	W
Current consumption	2.61	A
Mass flow	101	kg/h
C.O.P.	2.64	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

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	73	dB(A)
With accoustic hood	65	dB(A)

Tolerance according EN12900

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	1 019	1 488	2 085	2 830	3 745	4 849	6 164	7 710	9 508
35	895	1 341	1 907	2 613	3 482	4 532	5 786	7 264	8 986
40	784	1 201	1 731	2 394	3 211	4 204	5 391	6 795	8 437
45	687	1 070	1 559	2 174	2 935	3 864	4 981	6 306	7 861
50	-	949	1 392	1 954	2 654	3 515	4 555	5 798	7 262
55	-	-	1 232	1 735	2 370	3 157	4 117	5 271	6 639
60	-	-	-	1 519	2 083	2 792	3 666	4 726	5 994
65	-	-	-	-	1 795	2 420	3 204	4 166	5 328
Power input in W									
30	704	829	946	1 052	1 140	1 206	1 245	1 252	1 222
35	732	862	987	1 102	1 201	1 279	1 333	1 356	1 344
40	755	892	1 026	1 150	1 261	1 354	1 423	1 463	1 471
45	772	918	1 061	1 197	1 321	1 429	1 515	1 574	1 601
50	-	938	1 092	1 241	1 380	1 504	1 608	1 687	1 736
55	-	-	1 119	1 282	1 437	1 578	1 701	1 801	1 873
60	-	-	-	1 320	1 491	1 651	1 795	1 917	2 012
65	-	-	-	-	1 542	1 722	1 887	2 033	2 154
Current consumption in A									
30	1.97	2.03	2.10	2.17	2.23	2.28	2.31	2.31	2.28
35	1.98	2.05	2.13	2.20	2.27	2.33	2.37	2.39	2.38
40	2.00	2.07	2.15	2.24	2.32	2.39	2.45	2.49	2.50
45	2.01	2.09	2.18	2.27	2.36	2.45	2.53	2.58	2.62
50	-	2.10	2.20	2.31	2.41	2.52	2.61	2.69	2.74
55	-	-	2.22	2.34	2.46	2.59	2.70	2.80	2.88
60	-	-	-	2.37	2.51	2.65	2.79	2.92	3.02
65	-	-	-	-	2.56	2.72	2.88	3.04	3.17
Mass flow in kg/h									
30	21	30	42	56	73	93	117	145	177
35	19	28	39	53	70	90	114	141	173
40	17	26	37	51	67	87	110	137	169
45	16	24	35	48	64	83	105	132	163
50	-	22	32	45	60	78	100	126	157
55	-	-	30	42	56	74	95	120	149
60	-	-	-	38	52	68	88	112	141
65	-	-	-	-	47	62	81	104	131
Coefficient of performance (C.O.P.)									
30	1.45	1.80	2.20	2.69	3.29	4.02	4.95	6.16	7.78
35	1.22	1.55	1.93	2.37	2.90	3.54	4.34	5.36	6.69
40	1.04	1.35	1.69	2.08	2.55	3.11	3.79	4.64	5.74
45	0.89	1.17	1.47	1.82	2.22	2.70	3.29	4.01	4.91
50	-	1.01	1.27	1.57	1.92	2.34	2.83	3.44	4.18
55	-	-	1.10	1.35	1.65	2.00	2.42	2.93	3.54
60	-	-	-	1.15	1.40	1.69	2.04	2.47	2.98
65	-	-	-	-	1.16	1.41	1.70	2.05	2.47

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

Cooling capacity	4 657	W
Power input	1 736	W
Current consumption	2.73	A
Mass flow	106	kg/h
C.O.P.	2.68	

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	73	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