



Selection & Application guidelines

W **Laneurop**[®]

RECIPROCATING COMPRESSORS

MTIMTZ

50 Hz

R22

R407C

R134a

R404A / R507



1 CYLINDER
2 CYLINDERS
4 CYLINDERS
8 CYLINDERS



Danfoss Maneurop Reciprocating Compressors

Danfoss Maneurop reciprocating compressors are specially designed for applications with a wide range of operating conditions.

All components are of high quality and precision in order to assure a long product life. The compressor design allows for the motor to be 100% suction-gas cooled.

The positive benefits of internal motor protection, high efficiency circular valve design and high torque motors provide for a quality installation.

Maneurop® MT and MTZ series compressors are of the hermetic reciprocating type and are designed for medium and high evaporating temperature applications.

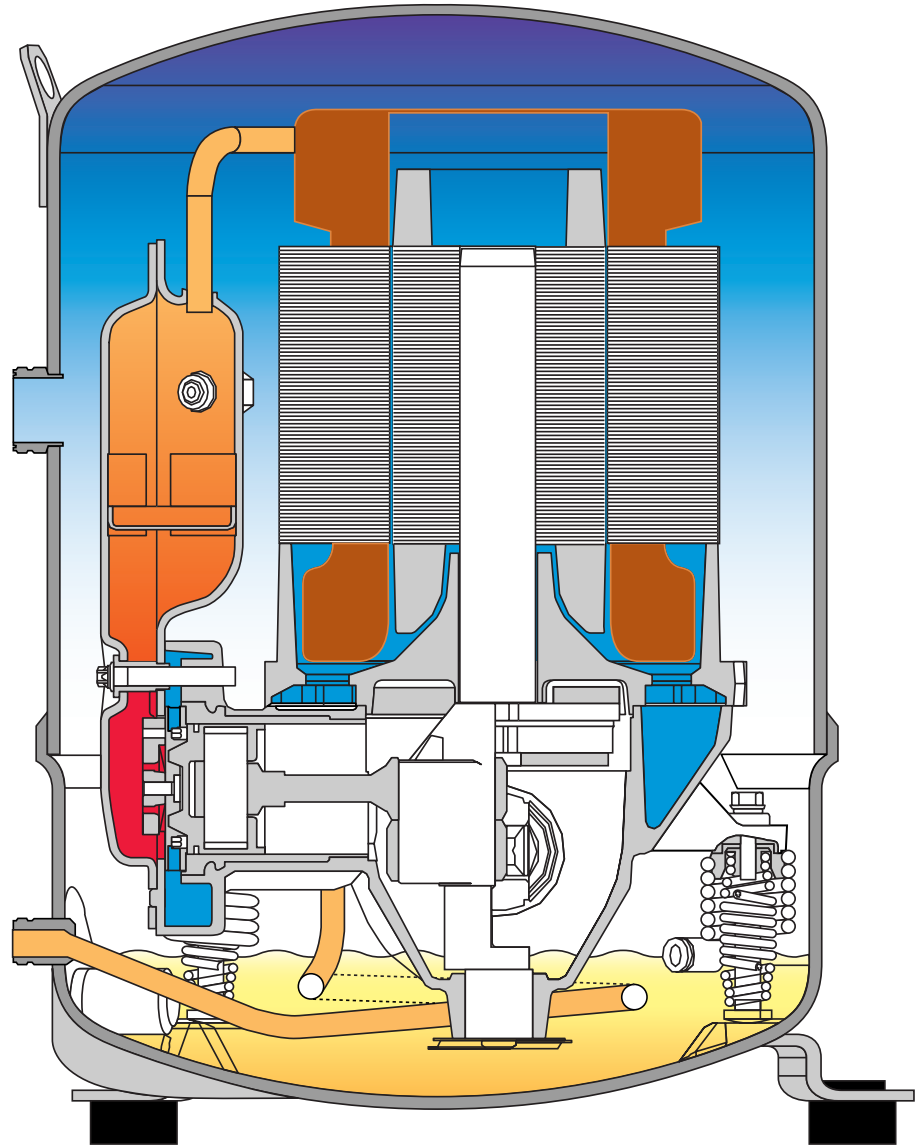
The MT series is designed for use with the “traditional” R22 refrigerant, using Danfoss Maneurop® mineral oil I60P as lubricant.

The MT series can also be applied with several R22 based refrigerant blends (substitute refrigerants), using I60 ABM alkylbenzene as lubricant. The MTZ series is specifically designed for use with the HFC refrigerants R407C, R134a, R404A, and R507, using I60PZ polyester oil as lubricant.

These compressors can be used in new installations and also to replace Maneurop® MTE compressors in existing installations.

MT and MTZ compressors have a large internal free volume that protects against the risk of liquid hammering when liquid refrigerant enters the compressor.

MT and MTZ compressors are fully suction-gas cooled. This means that no additional compressor cooling is required and allows



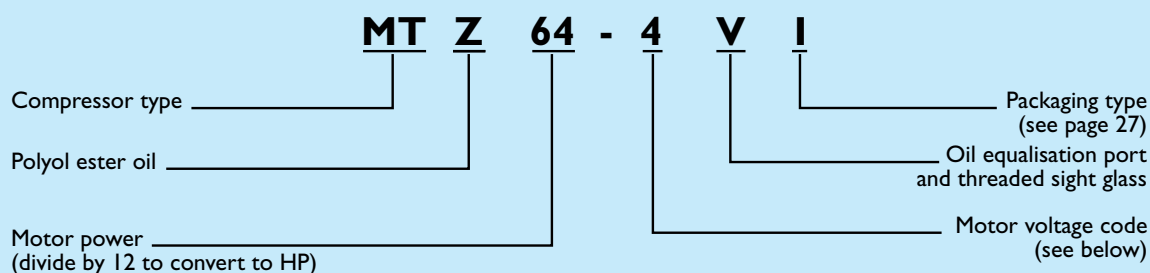
the compressors to be insulated with acoustic jackets, to obtain lower sound levels, without the risk of compressor overheating.

MT and MTZ compressors are available in 26 different models with displacement ranging from 30

to 543 cm³/rev. Seven different motor voltage ranges are available for single and three phase power supplies at 50 and 60 Hz. Most compressors exist in two versions:
- standard version
- VE version (oil equalisation + oil sight glass).

Compressor nomenclature

ORDER REFERENCE



EXAMPLE:

MT 64 - 4I MT 64, individual packaging (I), motor voltage code 4, standard version

MT 64 - 4VI MT 64, individual packaging (I), motor voltage code 4,VE version (V)

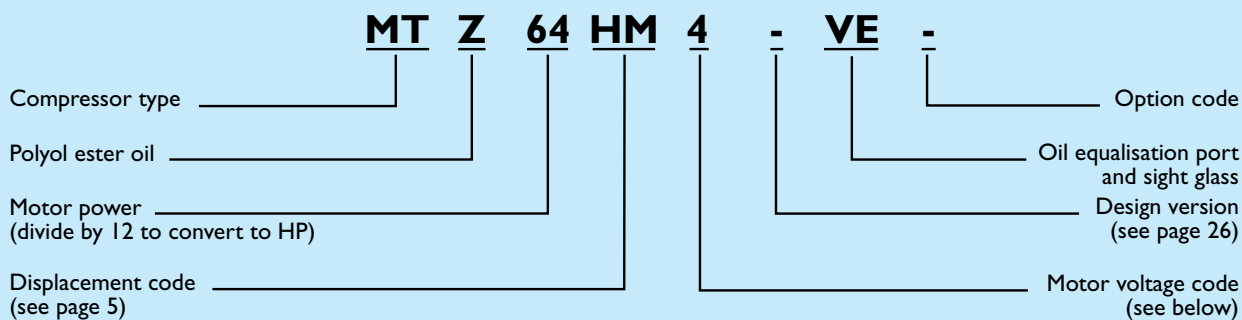
MT 64 - 4M MT 64, multiple packaging (M), motor voltage code 4, standard version

MT 64 - 4VM MT 64, multiple packaging (M), motor voltage code 4,VE version (V)

Individual packaging: single packaging per compressor

Multiple packaging: single packaging for several compressors, full pallet (number of compressors per pallet depending on compressor model).

COMPRESSOR REFERENCE (INDICATED ON THE COMPRESSOR NAMEPLATE)



VERSIONS

Models	S version standard		VE version (optional)	
	Oil sight glass	Oil equalisation connection	Oil sight glass	Oil equalisation connection
MT / MTZ 18-40 (1 cyl.)	-	-	threaded	3/8"flare
MT / MTZ 44-81 (2 cyl.)	-	-	threaded	3/8"flare
MT / MTZ 100-160 (4 cyl.)	brazed	-	threaded	3/8"flare
MT / MTZ 200-320 (8 cyl.)	threaded	3/8"flare		

MOTOR VOLTAGE

Motor Code	Nominal voltage	Voltage application range
1	208-230 V / 1 ph / 60 Hz	187 - 253 V
3	200-230 V / 3 ph / 60 Hz	180 - 253 V
4	400 V / 3 ph / 50 Hz 460 V / 3 ph / 60 Hz	360 - 440 V 414 - 506 V
5	230 V / 1 ph / 50 Hz	207 - 253 V
6	230 V / 3 ph / 50 Hz	207 - 253 V
7	500 V / 3 ph / 50 Hz 575 V / 3 ph / 60 Hz	450 - 550 V 517 - 632 V
9	380 V / 3 ph / 60 Hz	342 - 418 V

Specifications

TECHNICAL SPECIFICATIONS

Compressor model	Displacement		Cyl. number	Oil charge (dm ³)	Net weight (kg)	Design versions**						
	(cm ³ /rev)	(m ³ /h)*				motor voltage code						
						1	3	4	5	6	7	9
MT / MTZ 18 JA	30.23	5.26	1	0.95	21	S-VE	S-VE	S-VE	S-VE	-	-	-
MT / MTZ 22 JC	38.12	6.63	1	0.95	21	S-VE	S-VE	S-VE	S-VE	S-VE	-	-
MT / MTZ 28 JE	48.06	8.36	1	0.95	23	S-VE	S-VE	S-VE	S-VE	S-VE	-	-
MT / MTZ 32 JF	53.86	9.37	1	0.95	24	S-VE	S-VE	S-VE	S-VE	S-VE	S-VE	S-VE
MT / MTZ 36 JG	60.47	10.52	1	0.95	25	S-VE	S-VE	S-VE	S-VE	S-VE	-	-
MT / MTZ 40 JH	67.89	11.81	1	0.95	26	S-VE	S-VE	S-VE	-	S-VE	-	-
MT / MTZ 44 HJ	76.22	13.26	2	1.8	35	S-VE	S-VE	S-VE	-	S-VE	-	-
MT / MTZ 45 HJ	76.22	13.26	2	1.8	37	S-VE	S-VE	S-VE	-	-	-	-
MT / MTZ 50 HK	85.64	14.90	2	1.8	35	S-VE	S-VE	S-VE	-	S-VE	S-VE	S-VE
MT / MTZ 51 HK	85.64	14.90	2	1.8	37	S-VE	S-VE	S-VE	-	S-VE	-	-
MT / MTZ 56 HL	96.13	16.73	2	1.8	37	S-VE	S-VE	S-VE	-	S-VE	S-VE	S-VE
MT / MTZ 57 HL	96.13	16.73	2	1.8	39	S-VE	S-VE	S-VE	-	-	-	-
MT / MTZ 64 HM	107.71	18.74	2	1.8	37	S-VE	S-VE	S-VE	-	S-VE	-	S-VE
MT / MTZ 65 HM	107.71	18.74	2	1.8	39	S-VE	S-VE	S-VE	-	S-VE	-	-
MT / MTZ 72 HN	120.94	21.04	2	1.8	40	-	S-VE	S-VE	-	S-VE	-	S-VE
MT / MTZ 73 HN	120.94	21.04	2	1.8	41	-	S-VE	S-VE	-	S-VE	-	-
MT / MTZ 80 HP	135.78	23.63	2	1.8	40	-	S-VE	S-VE	-	S-VE	-	S-VE
MT / MTZ 81 HP	135.78	23.63	2	1.8	41	-	S-VE	S-VE	-	-	-	-
MT / MTZ 100 HS	171.26	29.80	4	3.9	60	-	S-VE	S-VE	-	S-VE	S-VE	S-VE
MT / MTZ 125 HU	215.44	37.49	4	3.9	64	-	S-VE	S-VE	-	S-VE	S-VE	S-VE
MT / MTZ 144 HV	241.87	42.09	4	3.9	67	-	S-VE	S-VE	-	S-VE	S-VE	S-VE
MT / MTZ 160 HW	271.55	47.25	4	3.9	69	-	S-VE	S-VE	-	S-VE	S-VE	S-VE
MT / MTZ 200 HSS	342.52	2 x 29.80	8	10.4	170	-	S	S	-	S	-	-
MT / MTZ 250 HUU	430.88	2 x 37.49	8	10.4	175	-	S	S	-	S	-	-
MT / MTZ 288 HVV	483.74	2 x 42.09	8	10.4	178	-	S	S	-	-	-	-
MT / MTZ 320 HWW	543.10	2 x 47.25	8	10.4	180	-	S	S	-	S	-	-

* At 2900 rpm

** S & VE versions, see table on page 4.

Specifications

NOMINAL PERFORMANCE R22, R407C - 50 HZ

Compressor model	NOMINAL RATINGS * MT - R22				NOMINAL RATINGS ** MTZ - R407C			
	Cooling capacity (W)	Power input (kW)	Current input (A)	COP (W/W)	Cooling capacity (W)	Power input (kW)	Current input (A)	COP (W/W)
MT / MTZ 18 JA	3881	1.45	2.73	2.68	3726	1.39	2.47	2.68
MT / MTZ 22 JC	5363	1.89	3.31	2.84	4777	1.81	3.31	2.64
MT / MTZ 28 JE	7378	2.55	4.56	2.89	6137	2.35	4.39	2.61
MT / MTZ 32 JF	8064	2.98	4.97	2.70	6941	2.67	5.03	2.60
MT / MTZ 36 JG	9272	3.37	5.77	2.75	7994	3.12	5.71	2.56
MT / MTZ 40 JH	10475	3.85	6.47	2.72	9128	3.61	6.45	2.53
MT / MTZ 44 HJ	11037	3.89	7.37	2.84	9867	3.63	6.49	2.72
MT / MTZ 50 HK	12324	4.32	8.46	2.85	11266	4.11	7.34	2.74
MT / MTZ 56 HL	13771	5.04	10.27	2.73	12944	4.69	8.36	2.76
MT / MTZ 64 HM	15820	5.66	9.54	2.79	14587	5.25	9.35	2.78
MT / MTZ 72 HN	17124	6.31	10.54	2.71	16380	5.97	10.48	2.74
MT / MTZ 80 HP	19534	7.13	11.58	2.74	18525	6.83	11.83	2.71
MT / MTZ 100 HS	23403	7.98	14.59	2.93	22111	7.85	13.58	2.82
MT / MTZ 125 HU	30429	10.66	17.37	2.85	29212	10.15	16.00	2.88
MT / MTZ 144 HV	34340	11.95	22.75	2.87	32934	11.57	18.46	2.85
MT / MTZ 160 HW	38273	13.39	22.16	2.86	37386	13.28	21.40	2.82
MT / MTZ 200 HSS	46807	15.97	29.19	2.93	43780	15.54	26.90	2.82
MT / MTZ 250 HUU	60858	21.33	34.75	2.85	57839	20.09	31.69	2.88
MT / MTZ 288 HVV	68379	23.91	45.50	2.87	65225	22.92	36.56	2.85
MT / MTZ 320 HWW	76547	26.79	44.32	2.86	74024	26.30	42.37	2.81

NOMINAL RATINGS* MT HIGH EFFICIENCY COMPRESSORS R22 - 50HZ

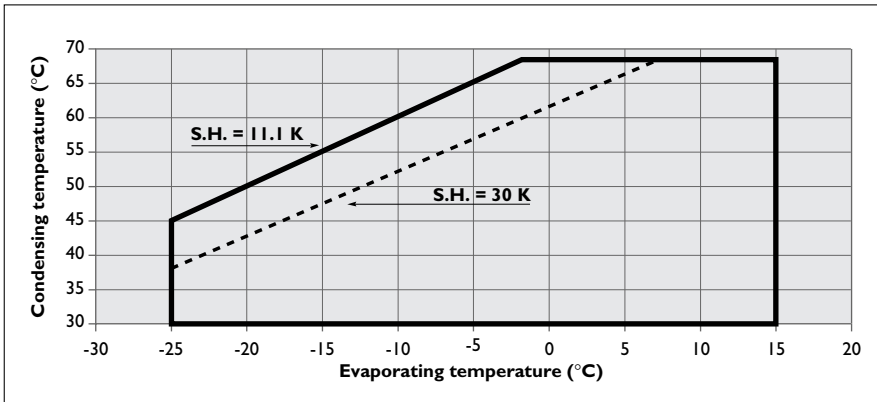
Compressor	Cooling capacity (W)	Power input (kW)	Current input (A)	COP (W/W)
MT 45 HJ	10786	3.62	6.86	2.98
MT 51 HK	12300	4.01	7.86	3.07
MT 57 HL	13711	4.54	9.24	3.02
MT 65 HM	15763	5.23	8.81	3.01
MT 73 HN	17863	5.98	9.99	2.99
MT 81 HP	20298	6.94	11.27	2.93

* Ratings at ARI conditions with R22: 7.2°C evaporating temperature, 54.4°C condensing temperature, 8.3 K subcooling, 11.1 K superheat, 50 Hz, 400 V.

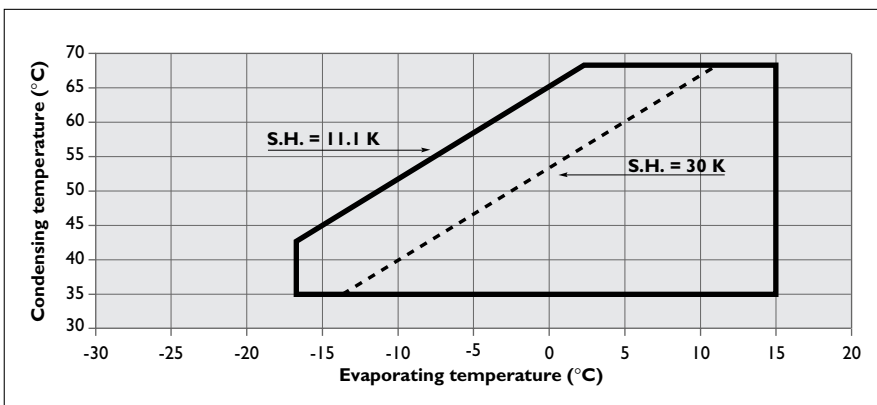
** Ratings at ARI conditions with R407C at dew point: 7.2°C evaporating temperature, 54.4°C condensing temperature, 8.3 K subcooling, 11.1 K superheat, 50 Hz, 400 V.

Capacity and power input data ± 5%.

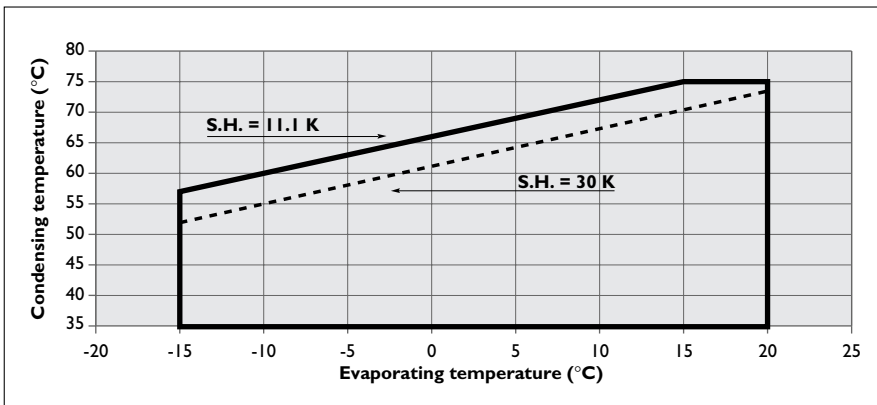
Operating envelopes



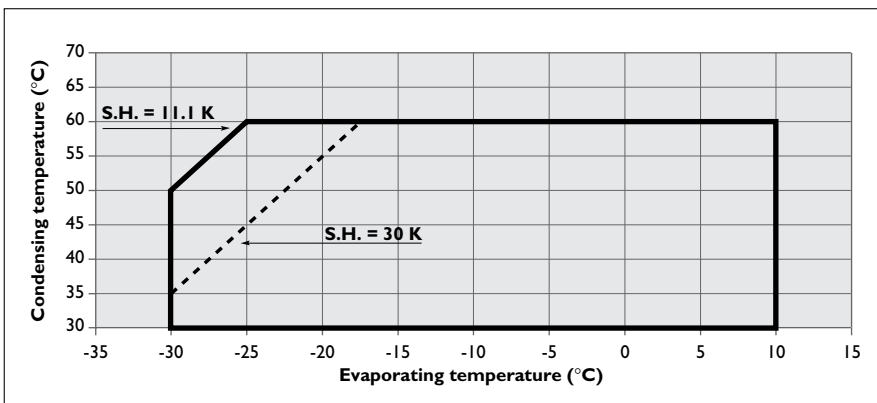
Application Envelope
for MT compressors with
R22



Application Envelope
for MTZ compressors with
R407C
at DEW POINT



Application Envelope
for MTZ compressors with
R134a



Application Envelope
for MTZ compressors with
R404A/R507

ZEOTROPIC REFRIGERANT MIXTURES

Refrigerant mixtures can be either zeotropic or azeotropic.

An azeotropic mixture (like R502 or R507) behaves like a pure refrigerant. During a phase transition (from vapour to liquid or from liquid to vapour) the composition of vapour and liquid stays the same.

In a zeotropic mixture (like R407C) on the other hand the composition of vapour and liquid changes during the phase transition. When the effect of this phase transition is very small, the mixture is often called a near-azeotropic mixture. R404A is such a near-azeotropic mixture.

The composition change has two resulting effects:

Phase shift

In system components where both vapour and liquid phase are present (evaporator, condenser, liquid receiver), the liquid phase and vapour phase do not have the same composition. In fact both phases form two different refrigerants.

Therefore zeotropic refrigerants need some special attention. Zeotropic refrigerants must always be charged in liquid phase. Flooded evaporators and suction accumulators should not be applied in systems with zeotropic refrigerants. This also applies to near-azeotropic mixtures.

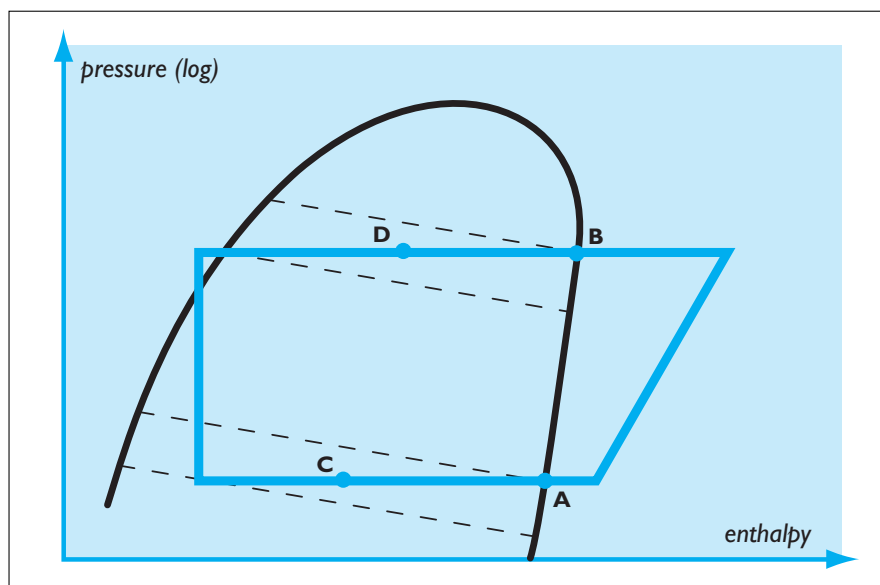
Temperature glide

During the evaporating process and the condensing process at constant pressure, the refrigerant temperature will decrease in the condenser and rise in the evaporator. Therefore when speaking about evaporating and condensing temperatures, it is important to indicate whether this is a DEW point temperature or a MEAN point value. In the figure below, the dotted lines are lines of constant temperature.

They do not correspond to the lines of constant pressure. Points A and B are DEW point values. These are temperatures on the saturated vapour line. Points C and D are MEAN point

values. These are temperatures which correspond more or less with the average temperature during the evaporating and condensing process. For the same R407C cycle, MEAN point temperatures are typically about 2 to 3°C lower than DEW point temperatures. According to Asercom recommendations, Danfoss Maneurop uses DEW point temperatures for selection tables and application envelopes etc.

To obtain exact capacity data at mean point temperatures, the mean point temperatures must be converted to dew point temperatures with help of refrigerant data tables from the refrigerant manufacturer.



**DEW temperature
and
MEAN temperature
for
R407C**

Performance tables

R22

Models	TE	-25		-20		-15		-10		-5		0		5		10		15	
	TC	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.
MT 18	30	850	0.59	1 240	0.69	1 740	0.79	2 360	0.88	3 120	0.95	4 040	1.00	5 140	1.04	6 430	1.04	7 920	1.02
	40	650	0.63	1 000	0.74	1 440	0.85	2 000	0.96	2 680	1.05	3 500	1.13	4 490	1.19	5 660	1.22	7 030	1.23
	50	-	-	-	-	1 160	0.91	1 630	1.03	2 210	1.15	2 930	1.25	3 800	1.34	4 830	1.41	6 050	1.45
	60	-	-	-	-	-	-	-	-	1 740	1.24	2 330	1.38	3 050	1.50	3 940	1.60	4 990	1.68
MT 22	30	1 320	0.71	1 930	0.86	2 650	1.00	3 510	1.13	4 500	1.24	5 650	1.32	6 970	1.36	8 470	1.37	10 160	1.32
	40	930	0.76	1 500	0.93	2 170	1.09	2 960	1.24	3 870	1.38	4 930	1.49	6 150	1.57	7 540	1.61	9 110	1.61
	50	-	-	-	-	1 670	1.14	2 380	1.32	3 210	1.49	4 160	1.64	5 270	1.76	6 530	1.85	7 960	1.90
	60	-	-	-	-	-	-	-	-	2 510	1.57	3 350	1.76	4 320	1.93	5 430	2.07	6 710	2.18
MT 28	30	2 150	1.18	2 950	1.35	3 880	1.50	4 940	1.62	6 150	1.71	7 520	1.76	9 060	1.76	10 790	1.70	12 710	1.57
	40	1 690	1.22	2 450	1.41	3 330	1.59	4 320	1.75	5 460	1.89	6 750	1.99	8 190	2.05	9 810	2.06	11 610	2.01
	50	-	-	-	-	2 730	1.65	3 660	1.87	4 700	2.06	5 890	2.23	7 220	2.36	8 720	2.44	10 390	2.48
	60	-	-	-	-	-	-	-	-	3 880	2.21	4 950	2.45	6 160	2.66	7 510	2.84	9 030	2.97
MT 32	30	2 380	1.38	3 220	1.56	4 220	1.74	5 390	1.89	6 750	2.01	8 320	2.10	10 110	2.15	12 150	2.14	14 460	2.07
	40	1 800	1.44	2 590	1.65	3 520	1.85	4 610	2.04	5 870	2.21	7 320	2.35	8 990	2.45	10 890	2.50	13 030	2.51
	50	-	-	-	-	2 890	1.95	3 870	2.18	5 020	2.40	6 340	2.60	7 860	2.76	9 590	2.89	11 560	2.97
	60	-	-	-	-	-	-	-	-	4 220	2.59	5 390	2.85	6 740	3.09	8 290	3.30	10 060	3.47
MT 36	30	2 910	1.52	3 920	1.71	5 070	1.89	6 390	2.06	7 870	2.21	9 540	2.33	11 410	2.41	13 490	2.46	15 790	2.46
	40	2 280	1.63	3 240	1.84	4 330	2.05	5 580	2.25	6 980	2.44	8 550	2.61	10 310	2.75	12 260	2.85	14 420	2.92
	50	-	-	-	-	3 560	2.20	4 710	2.45	6 010	2.69	7 470	2.91	9 090	3.11	10 900	3.29	12 910	3.43
	60	-	-	-	-	-	-	-	-	4 980	2.94	6 300	3.22	7 780	3.50	9 430	3.75	11 260	3.97
MT 40	30	3 190	1.54	4 270	1.80	5 500	2.04	6 900	2.24	8 480	2.41	10 250	2.52	12 230	2.57	14 440	2.54	16 880	2.43
	40	2 430	1.71	3 480	2.00	4 680	2.28	6 030	2.54	7 570	2.77	9 290	2.95	11 210	3.07	13 340	3.13	15 700	3.11
	50	-	-	-	-	3 830	2.47	5 140	2.79	6 610	3.08	8 270	3.34	10 110	3.56	12 160	3.71	14 440	3.80
	60	-	-	-	-	-	-	-	-	5 630	3.34	7 210	3.69	8 970	4.01	10 930	4.27	13 100	4.47
MT 44	30	3 140	1.55	4 180	1.81	5 460	2.05	7 030	2.26	8 920	2.42	11 160	2.52	13 810	2.56	16 880	2.51	20 420	2.37
	40	2 590	1.75	3 540	2.05	4 710	2.33	6 130	2.58	7 850	2.80	9 910	2.97	12 330	3.09	15 160	3.13	18 430	3.08
	50	-	-	2 960	2.19	3 980	2.52	5 230	2.84	6 750	3.14	8 580	3.39	10 750	3.59	13 300	3.73	16 260	3.79
	60	-	-	-	-	-	-	4 340	3.01	5 630	3.39	7 190	3.74	9 080	4.04	11 310	4.29	13 940	4.48
MT 45	30	3 200	1.55	4 450	1.83	5 870	2.07	7 490	2.25	9 340	2.37	11 470	2.41	13 900	2.37	16 690	2.22	19 850	1.95
	40	2 160	1.58	3 390	1.91	4 750	2.22	6 290	2.48	8 040	2.68	10 030	2.82	12 310	2.87	14 910	2.83	17 860	2.69
	50	-	-	2 390	1.91	3 660	2.29	5 080	2.64	6 690	2.94	8 520	3.18	10 600	3.35	12 980	3.44	15 690	3.43
	60	-	-	-	-	-	-	3 890	2.71	5 320	3.12	6 950	3.48	8 810	3.78	10 940	4.00	13 370	4.14
MT 50	30	3 650	1.67	4 750	1.95	6 130	2.23	7 820	2.49	9 880	2.73	12 330	2.94	15 240	3.11	18 630	3.23	22 550	3.29
	40	2 910	1.90	3 940	2.20	5 210	2.51	6 770	2.81	8 680	3.09	10 960	3.34	13 660	3.56	16 830	3.74	20 510	3.87
	50	-	-	3 140	2.40	4 280	2.74	5 680	3.08	7 400	3.41	9 470	3.72	11 940	4.00	14 860	4.25	18 260	4.45
	60	-	-	-	-	-	-	4 560	3.29	6 070	3.68	7 900	4.06	10 110	4.41	12 740	4.74	15 830	5.02
MT 51	30	3 510	1.79	4 930	2.06	6 540	2.30	8 380	2.48	10 490	2.61	12 920	2.67	15 720	2.65	18 910	2.55	22 560	2.36
	40	2 660	1.80	3 990	2.14	5 480	2.46	7 180	2.72	9 140	2.94	11 380	3.10	13 970	3.18	16 930	3.19	20 320	3.11
	50	-	-	3 060	2.17	4 410	2.57	5 940	2.93	7 700	3.24	9 740	3.50	12 080	3.70	14 780	3.83	17 880	3.87
	60	-	-	-	-	-	-	4 680	3.07	6 220	3.49	8 000	3.87	10 080	4.19	12 480	4.44	15 270	4.62
MT 56	30	3 830	1.98	5 310	2.33	7 050	2.64	9 070	2.91	11 410	3.12	14 090	3.25	17 140	3.28	20 590	3.21	24 470	3.00
	40	3 040	2.16	4 420	2.55	6 040	2.93	7 910	3.27	10 080	3.56	12 560	3.79	15 380	3.94	18 570	3.99	22 170	3.93
	50	-	-	3 570	2.70	5 030	3.15	6 720	3.59	8 670	3.99	10 910	4.34	13 470	4.62	16 380	4.81	19 650	4.91
	60	-	-	-	-	-	-	5 510	3.85	7 220	4.37	9 190	4.86	11 450	5.29	14 030	5.65	16 950	5.92
MT 57	30	4 320	2.17	5 690	2.30	7 360	2.45	9 350	2.59	11 690	2.72	14 410	2.81	17 530	2.85	21 090	2.83	25 100	2.73
	40	3 720	2.44	4 940	2.60	6 420	2.78	8 200	2.98	10 310	3.17	12 760	3.35	15 590	3.48	18 830	3.57	22 510	3.58
	50	-	-	4 220	2.82	5 490	3.06	7 020	3.33	8 850	3.61	11 010	3.88	13 510	4.13	16 400	4.34	19 690	4.49
	60	-	-	-	-	-	-	5 830	3.62	7 350	4.00	9 170	4.39	11 320	4.77	13 810	5.12	16 690	5.43
MT 64	30	4 400	2.18	6 010	2.56	7 940	2.92	10 230	3.25	12 920	3.52	16 050	3.73	19 660	3.86	23 800	3.89	28 510	3.81
	40	3 470	2.47	4 960	2.89	6 740	3.31	8 850	3.69	11 320	4.04	14 200	4.34	17 530	4.56	21 360	4.70	25 710	4.75
	50	-	-	4 100	3.11	5 690	3.59	7 570	4.06	9 780	4.50	12 370	4.90	15 370	5.23	18 830	5.50	22 790	5.68
	60	-	-	-	-	-	-	6 460	4.31	8 370	4.86	10 620	5.37	13 250	5.84	16 310	6.25	19 800	6.58
MT 65	30	5 240	2.37	6 780	2.56	8 650	2.77	10 900	2.97	13 550	3.14	16 660	3.29	20 260	3.38	24 400	3.40	29 100	3.34
	40	4 250	2.70	5 640	2.93	7 340	3.19	9 360	3.45	11 770	3.70	14 590	3.92	17 880	4.10	21 660	4.23	25 990	4.30
	50	-	-	4 700	3.19	6 160	3.51	7 930	3.85	10 040	4.18	12 540	4.50	15 470	4.80	18 860	5.05	22 750	5.25
	60	-	-	-	-	-	-	6 670	4.13	8 440	4.57	10 570	5.01	13 090	5.43	16 040	5.82	19 470	6.16

R22

Models	TE	-25		-20		-15		-10		-5		0		5		10		15	
	TC	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.
MT 72	30	4 850	2.64	6 670	2.99	8 820	3.35	11 340	3.69	14 260	4.01	17 610	4.30	21 430	4.56	25 750	4.76	30 620	4.91
	40	3 850	2.91	5 540	3.29	7 520	3.68	9 830	4.07	12 500	4.44	15 560	4.79	19 060	5.11	23 020	5.39	27 490	5.62
	50	-	-	4 680	3.66	6 440	4.10	8 490	4.54	10 860	4.97	13 590	5.39	16 710	5.79	20 260	6.15	24 280	6.48
	60	-	-	-	-	-	-	7 400	5.10	9 420	5.61	11 760	6.11	14 460	6.59	17 550	7.05	21 060	7.48
MT 73	30	6 090	2.93	7 800	3.23	9 910	3.52	12 450	3.77	15 460	3.98	18 970	4.14	23 020	4.25	27 650	4.28	32 890	4.24
	40	4 790	2.90	6 350	3.28	8 270	3.65	10 590	4.00	13 330	4.31	16 540	4.58	20 260	4.80	24 510	4.96	29 340	5.05
	50	-	-	5 170	3.40	6 850	3.87	8 890	4.32	11 330	4.74	14 190	5.13	17 510	5.48	21 340	5.77	25 700	6.01
	60	-	-	-	-	-	-	7 450	4.73	9 520	5.28	11 980	5.80	14 870	6.28	18 210	6.72	22 060	7.11
MT 80	30	5 520	2.94	7 600	3.34	10 050	3.75	12 910	4.14	16 230	4.51	20 030	4.85	24 380	5.14	29 290	5.39	34 820	5.57
	40	4 390	3.27	6 320	3.71	8 580	4.15	11 210	4.59	14 250	5.01	17 740	5.41	21 720	5.78	26 230	6.10	31 320	6.37
	50	-	-	5 320	4.14	7 330	4.63	9 670	5.12	12 380	5.62	15 500	6.09	19 060	6.54	23 110	6.96	27 690	7.32
	60	-	-	-	-	-	-	8 380	5.77	10 700	6.34	13 380	6.90	16 480	7.44	20 010	7.96	24 040	8.44
MT 81	30	6 760	3.19	8 670	3.65	11 060	4.06	13 950	4.40	17 380	4.68	21 410	4.88	26 060	4.98	31 380	4.98	37 410	4.87
	40	5 300	3.07	7 050	3.64	9 220	4.16	11 860	4.63	15 010	5.03	18 700	5.36	22 970	5.61	27 870	5.77	33 440	5.82
	50	-	-	5 700	3.69	7 610	4.34	9 940	4.94	12 730	5.49	16 030	5.97	19 870	6.37	24 290	6.69	29 400	6.92
	60	-	-	-	-	-	-	8 260	5.36	10 650	6.06	13 500	6.70	16 850	7.27	20 740	7.77	25 210	8.18
MT 100	30	7 300	3.90	9 690	4.39	12 580	4.84	16 030	5.22	20 130	5.50	24 930	5.67	30 510	5.71	36 930	5.57	44 250	5.26
	40	5 360	4.03	7 560	4.58	10 210	5.12	13 370	5.60	17 120	6.01	21 520	6.32	26 640	6.51	32 550	6.56	39 320	6.44
	50	-	-	5 870	4.73	8 210	5.37	11 010	5.98	14 340	6.54	18 270	7.02	22 870	7.40	28 190	7.65	34 330	7.76
	60	-	-	-	-	-	-	9 100	6.37	11 950	7.10	15 330	7.77	19 330	8.36	24 010	8.85	29 440	9.20
MT 125	30	9 340	4.82	12 420	5.40	16 140	5.94	20 580	6.43	25 820	6.85	31 940	7.17	39 040	7.38	47 180	7.45	56 450	7.37
	40	7 490	5.30	10 320	5.95	13 710	6.59	17 750	7.20	22 510	7.75	28 090	8.23	34 570	8.62	42 020	8.89	50 530	9.03
	50	-	-	8 480	6.35	11 450	7.11	14 990	7.87	19 190	8.59	24 120	9.26	29 880	9.86	36 540	10.36	44 190	10.74
	60	-	-	-	-	-	-	12 400	8.40	15 930	9.31	20 130	10.20	25 070	11.03	30 850	11.79	37 540	12.46
MT 144	30	10 790	5.45	14 250	6.09	18 450	6.69	23 490	7.23	29 460	7.69	36 470	8.05	44 620	8.29	53 990	8.37	64 710	8.27
	40	8 620	5.97	11 780	6.69	15 590	7.40	20 150	8.08	25 560	8.70	31 920	9.23	39 330	9.67	47 890	9.98	57 690	10.13
	50	-	-	9 640	7.13	12 940	7.98	16 910	8.82	21 650	9.63	27 240	10.38	33 800	11.05	41 420	11.61	50 190	12.05
	60	-	-	-	-	-	-	13 880	9.40	17 820	10.43	22 540	11.43	28 130	12.36	34 700	13.22	42 340	13.98
MT 160	30	11 950	6.15	15 720	6.86	20 310	7.53	25 820	8.13	32 360	8.64	40 030	9.04	48 960	9.30	59 250	9.39	71 010	9.29
	40	9 660	6.72	13 120	7.52	17 300	8.31	22 310	9.06	28 250	9.75	35 250	10.35	43 410	10.84	52 840	11.19	63 640	11.37
	50	-	-	10 810	8.00	14 460	8.95	18 850	9.88	24 090	10.79	30 290	11.63	37 560	12.38	46 000	13.02	55 740	13.52
	60	-	-	-	-	-	-	15 550	10.54	19 960	11.69	25 240	12.80	31 500	13.86	38 840	14.82	47 390	15.68
MT 200	30	14 610	7.80	19 380	8.79	25 150	9.68	32 070	10.44	40 260	11.01	49 870	11.35	61 020	11.41	73 850	11.15	88 510	10.52
	40	10 720	8.05	15 120	9.17	20 410	10.23	26 740	11.19	34 240	12.01	43 040	12.64	53 290	13.02	65 100	13.12	78 630	12.88
	50	-	-	11 740	9.45	16 420	10.74	22 020	11.96	28 680	13.08	36 540	14.04	45 730	14.80	56 390	15.30	68 650	15.52
	60	-	-	-	-	-	-	18 210	12.73	23 890	14.20	30 670	15.54	38 670	16.72	48 030	17.70	58 880	18.41
MT 250	30	18 680	9.64	24 840	10.79	32 280	11.88	41 160	12.86	51 640	13.70	63 890	14.34	78 070	14.76	94 350	14.91	112 900	14.73
	40	14 980	10.60	20 630	11.90	27 420	13.18	35 490	14.39	45 030	15.50	56 190	16.47	69 130	17.24	84 030	17.79	101 050	18.06
	50	-	-	16 950	12.70	22 890	14.23	29 980	15.74	38 370	17.18	48 250	18.52	59 760	19.71	73 090	20.72	88 380	21.49
	60	-	-	-	-	-	-	24 790	16.79	31 860	18.63	40 250	20.40	50 150	22.07	61 700	23.59	75 090	24.92
MT 288	30	21 580	10.90	28 500	12.17	36 900	13.37	46 970	14.46	58 920	15.39	72 940	16.11	89 230	16.57	107 990	16.73	129 410	16.54
	40	17 250	11.94	23 560	13.38	31 180	14.80	40 300	16.15	51 130	17.39	63 850	18.47	78 670	19.34	95 780	19.95	115 380	20.27
	50	-	-	19 270	14.26	25 880	15.96	33 820	17.64	43 290	19.25	54 490	20.75	67 600	22.09	82 840	23.23	100 390	24.11
	60	-	-	-	-	-	-	27 760	18.81	35 650	20.86	45 080	22.85	56 270	24.73	69 400	26.45	84 670	27.96
MT 320	30	23 900	12.31	31 450	13.72	40 620	15.05	51 640	16.26	64 710	17.29	80 070	18.08	97 920	18.60	118 500	18.78	142 020	18.58
	40	19 320	13.45	26 230	15.05	34 590	16.62	44 610	18.13	56 510	19.51	70 510	20.71	86 820	21.68	105 680	22.37	127 290	22.74
	50	-	-	21 610	16.00	28 920	17.90	37 700	19.77	48 180	21.57	60 580	23.25	75 110	24.76	92 000	26.03	111 470	27.04
	60	-	-	-	-	-	-	31 100	21.07	39 930	23.37	50 490	25.60	63 000	27.71	77 690	29.65	94 770	31.36

LEGEND

P.F. cooling capacity (W)
P.A. power input (kW)

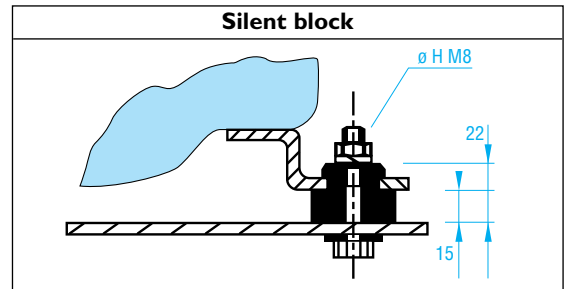
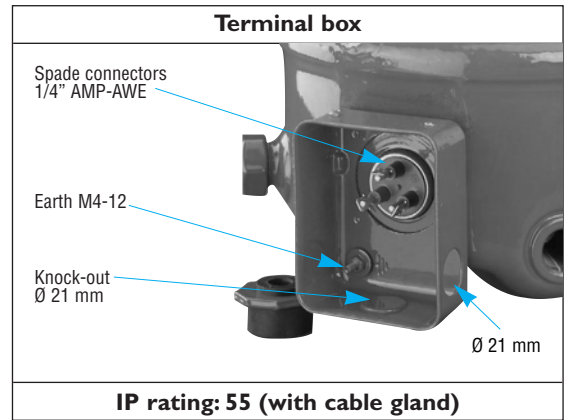
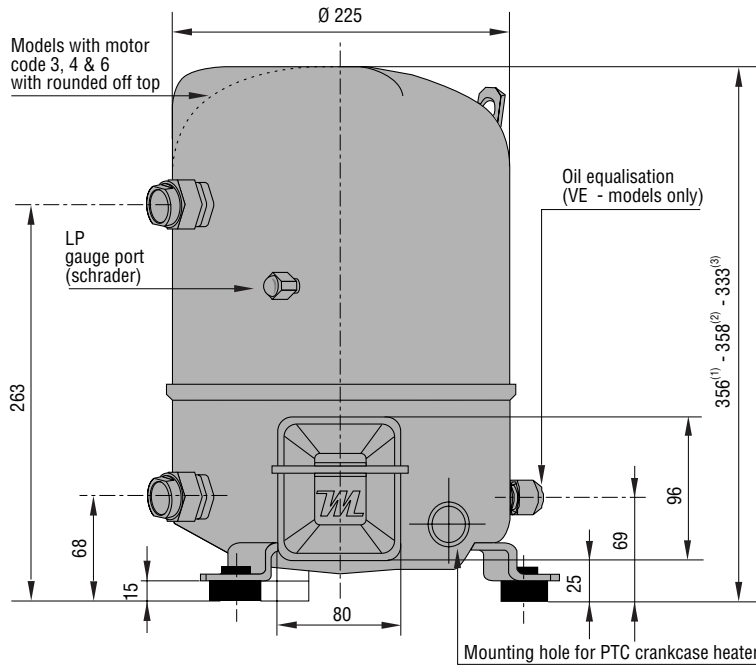
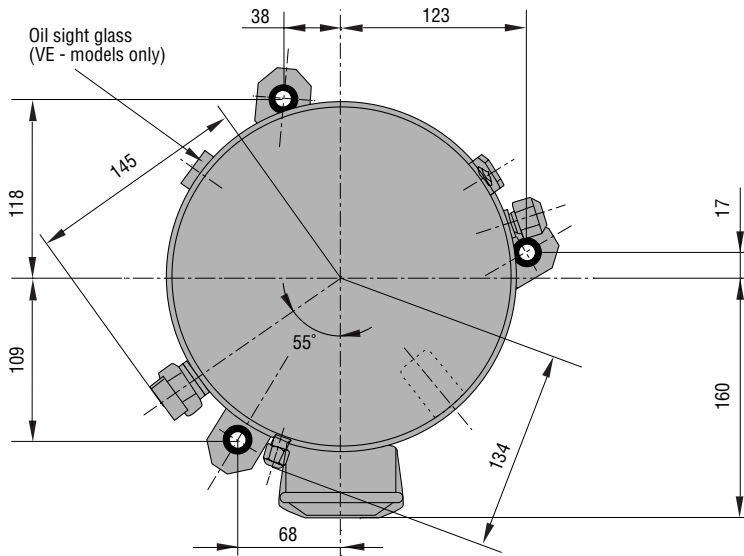
TE evaporating temperature (°C)
TC condensing temperature (°C)

RATING CONDITIONS

• 50 Hz • Superheat 11.1 K
• Subcooling 8.3 K

Outline drawings

I CYLINDER



- (1) MT (Z) 28 - 32 - 36 - 40/1 and MT (Z) 32 - 36/5
 (2) MT (Z) 32 - 36 - 40/3 - 4 - 6
 (3) MT (Z) 18 - 22/1 and MT (Z) 18 - 22 - 28/3 - 4 - 5 - 6

	Rotolock connections size		Pipe sizing size		Rotolock valve	
	Suction	Discharge	Suction	Discharge	Suction	Discharge
MT / MTZ 18 JA MT / MTZ 22 JC 3/4/5/6 MT / MTZ 28 JE 3/4/5/6	1"	1"	1/2"	3/8"	V06	V01
MT / MTZ 22 JCI	1"1/4	1"	5/8"	3/8"	V09	V01
MT / MTZ 28 JEI MT / MTZ 32 JF MT / MTZ 36 JG MT / MTZ 40 JH	1"1/4	1"	5/8"	1/2"	V09	V06

Electrical connections and wiring

SINGLE PHASE ELECTRICAL CHARACTERISTICS

Motor Code	LRA - Locked Rotor Current (A)		MCC - Maximum Continuous Current (A)		Winding resistance (Ω) ($\pm 7\%$ at 20°C)			
	1	5	1	5	1		5	
Winding					run	start	run	start
MT / MTZ 18 JA	51	41	13	12	1.36	4.82	1.78	4.74
MT / MTZ 22 JC	49.3	41	17	15	1.25	2.49	1.78	4.74
MT / MTZ 28 JE	81	55	25	16	0.74	1.85	1.16	3.24
MT / MTZ 32 JF	84	70	26.5	20	0.64	2.85	0.89	4.35
MT / MTZ 36 JG	84	70	30	20	0.64	2.85	0.89	4.35
MT / MTZ 40 JH	99	-	34	-	0.53	2.00	-	-
MT / MTZ 44 HJ	103	-	34	-	0.41	1.90	-	-
MT / MTZ 45 HJ	143	-	37	-	0.33	1.95	-	-
MT / MTZ 50 HK	143	-	37	-	0.33	1.95	-	-
MT / MTZ 51 HK	146	-	46	-	0.31	2.00	-	-
MT / MTZ 56 HL	146	-	46	-	0.31	2.00	-	-
MT / MTZ 57 HL	148	-	53	-	0.32	1.32	-	-
MT / MTZ 64 HM	148	-	53	-	0.32	1.32	-	-
MT / MTZ 65 HM	148	-	53	-	0.32	1.32	-	-

CAPACITOR AND RELAY SELECTION TABLE

50 Hz	PSC/CSR*		CSR only		Models
	Run capacitors ⁽¹⁾		Start capacitors ⁽²⁾	Start relay	
	(A) μF	(C) μF	(B) μF		
MT / MTZ 18 JA-5	20	10	100	all models 3ARR3J4A4	
MT / MTZ 22 JC-5	20	10	100		
MT / MTZ 28 JE-5	20	10	100		
MT / MTZ 32 JF-5	25	10	135		
MT / MTZ 36 JG-5	25	10	135		

60 Hz	PSC/CSR*		CSR only		Models
	Run capacitors ⁽¹⁾		Start capacitors ⁽²⁾	Start relay	
	(A) μF	(C) μF	(B) μF		
MT / MTZ 18 JA-I	15	10	-	all models 3ARR3J4A4	
MT / MTZ 22 JC-I	15	30	100		
MT / MTZ 28 JE-I	25	25	135		
MT / MTZ 32 JF-I	25	20	100		
MT / MTZ 36 JG-I	25	20	100		
MT / MTZ 40 JH-I	35	20	100		
MT / MTZ 44 / 45 HJ-I	30	15	135		
MT / MTZ 50 / 51 HK-I	30	15	135		
MT / MTZ 56 / 57 HL-I	30	20	200		
MT / MTZ 64 / 65 HM-I	30	25	235		

* PSC Permanent Split Capacitor / CSR Capacitor Start Run

⁽¹⁾ Run capacitors: 440 volts - minimum 10 000 hours.

⁽²⁾ Start capacitors: 330 Volts.

Trickle circuit

The trickle circuit provides the facility of heating the compressor crankcase by feeding a small current to the auxiliary winding and the run capacitor.

See the drawings page 23.

By using PSC or CSR starting systems, compressor models MT/MTZ 18-22 can be operated without crankcase heaters as the heater function is provided by the trickle circuit. For the larger single phase compressor models MT/MTZ 28-64, the use of the PTC crankcase heater is recommended.

PSC wiring

This system may be used for refrigerant circuits with capillary tubes or expansion valves with bleed ports. Pressure equalisation must be ensured before start up because of the low starting torque characteristics of this system.

CSR wiring

This system provides additional motor torque at start up, by the use of a start capacitor in combination with the run capacitor. This system can be used for refrigerant circuits with capillary tubes or expansion valves.

The start capacitor is only connected during the starting operation, a potential relay is used to disconnect it after the start sequence.

The single phase compressor motors are internally protected by a temperature/current sensing bimetallic protector, which senses the main and start winding currents, and also the winding temperature. Once the protector has tripped, it may take up to two to four hours to reset and restart the compressor. Check that power supply corresponds to compressor characteristics (refer to compressor nameplate).

MAS INFORMACION

