



technical data



**MA-GZ7**

**Multi Model Application**

air conditioning systems

Split  
Sky Air

# Split - Sky Air



ISO14001 assures an effective environmental management system in order to help protect human health and the environment from the potential impact of our activities, products and services and to assist in maintaining and improving the quality of the environment



Daikin units comply with the European regulations that guarantee the safety of the product.



Daikin Europe N.V. is approved by LRQA for its Quality Management System in accordance with the ISO9001 standard. ISO9001 pertains to quality assurance regarding design, development, manufacturing as well as to services related to the product.



Daikin Europe N.V. is participating in the EUROVENT Certification Programme. Products are as listed in the EUROVENT Directory of Certified Products. Multi units are certified by Eurovent for combinations up to two indoor units.

Specifications are subject to change without prior notice

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## MA-GZ7

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# 1 Features



- With ozone friendly, multi outdoor units, it is possible to connect up to 5 indoor units of different capacities to a single outdoor unit, thereby reducing installation space and costs.
- It is possible to combine different types of indoor units as well. (e.g. wall mounted, ceiling mounted cassette corner)
- All indoor units remain individually controllable and do not need to be installed at the same time or in the same room. Further units can always be added at a later stage. Moreover, the energy consumption of a Daikin Multi system can be up to 20% lower than that of a separate indoor and outdoor unit application.
- Multi outdoor units are equipped with a rotary compressor, renowned for its low noise and high energy efficiency.

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## 2 Specifications



| TECHNICAL SPECIFICATIONS |   |                                       |                     | MA56GZ7W11            | MA90GZ7W11                            |
|--------------------------|---|---------------------------------------|---------------------|-----------------------|---------------------------------------|
| OUTDOOR UNITS            |   |                                       |                     | MA56GZ7W11            | MA90GZ7W11                            |
| DIMENSIONS               | Unit  | H                                     | mm                  | 660                   | 865                                   |
|                          |   | W                                     | mm                  | 880                   | 880                                   |
|                          |   | D                                     | mm                  | 350                   | 350                                   |
| WEIGHT                   | Unit  |                                       | kg                  | 62                    | 87                                    |
| MATERIAL                 | Unit  | Painted metal                         |                     |                       |                                       |
| COLOUR                   | Unit  | Ivory white                           |                     |                       |                                       |
| SOUND LEVEL              | Sound pressure (1)                                    | high                                  | dB(A)               | 52                    | 56                                    |
|                          | Sound power (2)                                       | high                                  | dB(A)               | 65                    | 68                                    |
| FAN                      | Air flow rate   | high                                  | m <sup>3</sup> /min | 43                    | 46                                    |
|                          | Speed   | steps                                 |                     | 2 steps               | 1 step                                |
|                          |   | high                                  | rpm                 | 765                   | 775                                   |
|                          | Qty x model   |                                       |                     | 1 x AF-220-49-6-1     | 1 x AF-230-66-6-1                     |
| Qty x motor output       |   |                                       | 1 x 49              | 1 x 66                |                                       |
| HEAT EXCHANGER           | Type  | Hi-XA U-cooling tube, WL fin          |                     |                       |                                       |
|                          | Rows x stages x fin pitch                             | mm                                    |                     | 2 x 24 x 2.0          | 2 x 32 x 2.0                          |
|                          | Face area   | m <sup>2</sup>                        |                     | 0.481                 | 0.319                                 |
| REFRIGERANT CIRCUIT      | Refrigerant type                                      |                                       |                     | R-407C                | R-407C                                |
|                          | Refrigerant charge                                    | kg                                    |                     | 1.9                   | 3.0                                   |
|                          | Maximum allowable distance between indoor and outdoor | m                                     |                     | 60                    | For 1 room = 25<br>For all rooms = 75 |
|                          | Maximum allowable level difference                    | m                                     |                     | 7.5                   | 7.5                                   |
|                          | Number of circuits                                    |                                       |                     | Max. 4                | Max. 5                                |
| COMPRESSOR               | Type  | Hermetically sealed rotary compressor |                     |                       |                                       |
|                          | Qty x model   |                                       |                     | 1 x 808 060 88        | 1 x 802 445 88                        |
|                          | Number of cylinders                                   |                                       |                     | 1                     | —                                     |
|                          | Speed   | rpm                                   |                     | 2,790                 | —                                     |
|                          | Oil type  |                                       |                     | FV68S                 | FV68S                                 |
|                          | Oil charge volume                                     | ℓ                                     |                     | 0.75                  | 1.35                                  |
| PIPING CONNECTIONS       |   | liquid (O.D.)                         | mm                  | ∅ 6.4 x 4             | ∅ 6.4 x 5                             |
|                          |   | gas (O.D.)                            | mm                  | ∅ 9.5, ∅ 12.7, ∅ 15.9 | ∅ 12.7 x 2, ∅ 15.9 x 3                |
|                          |   | drain                                 | mm                  | ∅ 18 x 3              | ∅ 18 x 3                              |
| INSULATION MATERIAL      | Heat insulation                                       | Both liquid and gas pipes             |                     |                       |                                       |

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3TW01551-1

| ELECTRICAL SPECIFICATIONS |                         |         |   | MA56GZ7W11                      | MA90GZ7W11 |
|---------------------------|-------------------------|---------|---|---------------------------------|------------|
| OUTDOOR UNITS             |                         |         |   | MA56GZ7W11                      | MA90GZ7W11 |
| CURRENT                   | Nominal running current | cooling | A | Please refer to electrical data | 19         |
|                           | Max. running current    | cooling | A |                                 |            |
|                           | Starting current        | cooling | A |                                 |            |

| OUTDOOR UNITS                       |           |    |  | MA56GZ7W11 | MA90GZ7W11 |
|-------------------------------------|-----------|----|--|------------|------------|
| POWER SUPPLY                        |           |    |  | W11        | W11        |
| NOMINAL DISTRIBUTION SYSTEM VOLTAGE | Phase     |    |  | 3N~        | 3N~        |
|                                     | Frequency | Hz |  | 50         | 50         |
|                                     | Voltage   | V  |  | 400        | 400        |

### NOTES

- The sound pressure level is measured via a microphone at 1m distance from the unit. For measuring conditions: please refer to item 9 of this chapter.
- The sound power level is an absolute value indicating the "power" which a sound source generates.
- Multi units are certified by Eurovent for combinations up to two indoor units.

# 2 Specifications



## ELECTRICAL DATA

### MA56GZ7W11

| Connection ratio (%) | Indoor unit                        | Power supply               |                        |     |      |      | Comp. |     | OFM |     | IFM |     | EH |     |
|----------------------|------------------------------------|----------------------------|------------------------|-----|------|------|-------|-----|-----|-----|-----|-----|----|-----|
|                      |                                    | Hz-Volts                   | Voltage range          | MCA | TOCA | MFA  | LRA   | RLA | W   | FLA | W   | FLA | W  | FLA |
| 100                  | 2 x FT25JZV1NB                     | 50-380<br>50-400<br>50-415 | Max. 440V<br>Min. 342V | 4.0 | —    | 16.0 | 19    | 2.5 | 49  | 0.5 | 38  | 0.3 | —  | —   |
| 200                  | 2 x FT25JZV1NB<br>+<br>FT45GAZV1NB | 50-380<br>50-400<br>50-415 | Max. 440V<br>Min. 342V | 4.6 | —    | 16.0 | 19    | 2.9 | 49  | 0.5 | 78  | 0.6 | —  | —   |
| 250 (Max.)           | FT25JZV1NB<br>+<br>2 x FT45GAZV1NB | 50-380<br>50-400<br>50-415 | Max. 440V<br>Min. 342V | 4.8 | —    | 16.0 | 19    | 2.9 | 49  | 0.5 | 99  | 0.6 | —  | —   |

3TW02071-2A

### MA90GZ7W11

| Connection ratio (%) | Indoor unit                            | Power supply               |                        |     |      |      | Comp. |     | OFM |     | IFM |     | EH |     |
|----------------------|--|----------------------------|------------------------|-----|------|------|-------|-----|-----|-----|-----|-----|----|-----|
|                      |  | Hz-Volts                   | Voltage range          | MCA | TOCA | MFA  | LRA   | RLA | W   | FLA | W   | FLA | W  | FLA |
| 100                  | FT25JZV1NB<br>+<br>FT45GAZV1NB         | 50-380<br>50-400<br>50-415 | Max. 440V<br>Min. 342V | 7.3 | 10.0 | 16.0 | 26    | 5.1 | 66  | 0.6 | 59  | 0.4 | —  | —   |
| 200                  | 2 x FT25JZV1NB<br>+<br>2 x FT45GAZV1NB | 50-380<br>50-400<br>50-415 | Max. 440V<br>Min. 342V | 8.3 | 10.0 | 16.0 | 26    | 5.5 | 66  | 0.6 | 118 | 0.8 | —  | —   |
| 250 (Max.)           | FT35JZV1NB<br>+<br>3 x FT45GAZV1NB     | 50-380<br>50-400<br>50-415 | Max. 440V<br>Min. 342V | 8.4 | 10.0 | 16.0 | 26    | 5.5 | 66  | 0.6 | 139 | 0.9 | —  | —   |

3TW01551-2A

### SYMBOLS

- MCA : Min. Circuit Amps
- TOCA : Total Over Current Amps
- MFA : Max. Fuse Amps
- LRA : Locked Rotor Amps
- RLA : Rated Load Amps (A)
- OFM : Outdoor Fan Motor
- IFM : Indoor Fan Motor
- FLA : Full Load Amps
- W : Fan Motor Rated Output (W)
- EH : Electric heater

### NOTES

1. RLA is based on the following conditions:  
Indoor temperature 27°CDB/19°CWB
2. TOCA means the total value of each OC set.
3. Voltage range  
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed operation range limits
4. Maximum allowable voltage unbalance between phases is 2%.
5. MCA/MFA  
 $MCA = 1.25 \times RLA + ea. FLA + 1.25 \times EH FLA$   
 $MFA < 2.25 \times RLA + ea. FLA + 2.25 \times EH FLA$   
 (next lower standard fuse rating min 16A)

### 3 Combination table



| Outdoor unit | Indoor units (W) | Connection ratio %  | Cooling capacity (W) | Total (W) | Electric characteristics (230V) |                            |                           |
|--------------|------------------|---------------------|----------------------|-----------|---------------------------------|----------------------------|---------------------------|
|              |                  |                     |                      |           | Power consumption (W)           | Running current (A)<br>W11 | Power factor % (A)<br>W11 |
| MA56GZ7W11   | 25               | 50                  | 2720                 | 2720      | 1740                            | 2.8                        | 79                        |
|              | 35               | 65                  | 3740                 | 3740      | 1760                            | 2.8                        | 79                        |
|              | 45               | 100                 | 4540                 | 4540      | 1825                            | 3.0                        | 80                        |
|              | 25+25            | 100                 | 2270+2270            | 4540      | 1845                            | 3.1                        | 80                        |
|              | 25+35            | 115                 | 2170+2820            | 4990      | 1855                            | 3.1                        | 80                        |
|              | 25+45            | 150                 | 1817+3633            | 5450      | 1955                            | 3.3                        | 80                        |
|              | 35+35            | 130                 | 2650+2650            | 5300      | 1920                            | 3.3                        | 80                        |
|              | 35+45            | 165                 | 2186+3364            | 5550      | 1985                            | 3.5                        | 80                        |
|              | 45+45            | 200                 | 3060+3060            | 6120      | 2020                            | 3.6                        | 80                        |
|              | 25+25+25         | 150                 | 1873+1873+1873       | 5620      | 1980                            | 3.4                        | 80                        |
|              | 25+25+35         | 165                 | 1764+1764+2293       | 5820      | 2020                            | 3.6                        | 80                        |
|              | 25+25+45         | 200                 | 1535+1535+3070       | 6140      | 2040                            | 3.6                        | 80                        |
|              | 25+35+35         | 180                 | 1647+2141+2141       | 5930      | 2020                            | 3.6                        | 80                        |
|              | 25+35+45         | 215                 | 1437+1868+2874       | 6180      | 2060                            | 3.7                        | 81                        |
|              | 25+45+45         | 250                 | 1252+2504+2504       | 6260      | 2070                            | 3.7                        | 80                        |
|              | 35+35+35         | 195                 | 2010+2010+2010       | 6030      | 2030                            | 3.6                        | 80                        |
|              | 35+35+45         | 230                 | 1758+1758+2704       | 6220      | 2075                            | 3.7                        | 81                        |
|              | 25+25+25+25      | 200                 | 1535+1535+1535+1535  | 6140      | 2065                            | 3.7                        | 80                        |
|              | 25+25+25+35      | 215                 | 1440+1440+440+1871   | 6190      | 2080                            | 3.8                        | 81                        |
|              | 25+25+25+45      | 250                 | 1252+1252+1252+2504  | 6260      | 2090                            | 3.8                        | 81                        |
| 25+25+35+35  | 230              | 1357+1357+1763+1763 | 6240                 | 2085      | 3.8                             | 81                         |                           |

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#### NOTES

- Cooling capacities are based on: indoor temp.: 24°CDB/19°CWB; outdoor temp.: 35°CDB/24°CWB; power supply: 230V/50Hz for V1(1) models, 400V/50Hz for W1(1) models; refrigerant piping length 7.5m; level difference: 0m.
- The power consumption mentioned in the table above is the TOTAL power consumption, i.e. based on the combination with FT...G(A)Z/JZ-indoor unit(s).
- Add, for each indoor unit that differs from FT...G(A)Z/JZ-indoor unit(s), the correction value to the power consumption (W) as shown below.

| Class | Model | Correction (W) |             |
|-------|-------|----------------|-------------|
|       |       | Capacity       | Power input |
| 25    | FL    | 50             | 20          |
|       | FHEB  | 0              | 20          |
| 35    | FL    | -50            | 50          |
|       | FH    | 60             | 40          |
|       | FHB   | 50             | 80          |
| 45    | FHC   | 70             | 60          |
|       | FL    | -20            | 30          |
|       | FH    | 0              | 30          |
|       | FHB   | 0              | 80          |
|       | FHC   | 0              | 60          |

# 3 Combination table



3

| Outdoor unit   | Indoor units<br>(W) | Connection ratio<br>%    | Cooling capacity<br>(W) | Total<br>(W) | Electric characteristics (230V) |                        |                        |
|----------------|---------------------|--------------------------|-------------------------|--------------|---------------------------------|------------------------|------------------------|
|                |                     |                          |                         |              | Power consumption<br>(W)        | Running current<br>(A) | Running current<br>(A) |
| MA90GZ7W11     | 25                  | 33                       | 2675                    | 2675         | 2345                            | 4.4                    | 77                     |
|                | 35                  | 46                       | 3950                    | 3950         | 2455                            | 4.6                    | 77                     |
|                | 45                  | 70                       | 5250                    | 5250         | 2600                            | 4.9                    | 77                     |
|                | 60                  | 100                      | 6340                    | 6340         | 2695                            | 5.1                    | 76                     |
|                | 25+25               | 67                       | 2465+2465               | 4930         | 2520                            | 4.8                    | 76                     |
|                | 25+35               | 79                       | 2339+3231               | 5570         | 2610                            | 5.0                    | 76                     |
|                | 25+45               | 103                      | 1941+4079               | 6020         | 2665                            | 5.1                    | 76                     |
|                | 25+60               | 133                      | 1726+5184               | 6910         | 2770                            | 5.3                    | 76                     |
|                | 35+35               | 92                       | 2920+2920               | 5840         | 2665                            | 5.1                    | 76                     |
|                | 35+45               | 116                      | 2546+3874               | 6420         | 2705                            | 5.2                    | 75                     |
|                | 35+60               | 146                      | 2281+4959               | 7240         | 2805                            | 5.3                    | 76                     |
|                | 45+45               | 140                      | 3550+3550               | 7100         | 2820                            | 5.4                    | 76                     |
|                | 45+60               | 170                      | 3138+4482               | 7620         | 2830                            | 5.5                    | 76                     |
|                | 60+60               | 200                      | 4060+4060               | 8120         | 2870                            | 5.5                    | 76                     |
|                | 25+25+25            | 100                      | 2010+2010+2010          | 6030         | 2660                            | 5.1                    | 75                     |
|                | 25+25+35            | 113                      | 1899+1899+2623          | 6420         | 2700                            | 5.2                    | 75                     |
|                | 25+25+45            | 137                      | 1685+1685+3541          | 6910         | 2730                            | 5.3                    | 75                     |
|                | 25+25+60            | 167                      | 1523+1523+4574          | 7620         | 2815                            | 5.4                    | 75                     |
|                | 25+35+35            | 125                      | 1805+2493+2493          | 6790         | 2735                            | 5.3                    | 75                     |
|                | 25+35+45            | 149                      | 1619+2237+3404          | 7260         | 2775                            | 5.3                    | 75                     |
|                | 25+35+60            | 179                      | 1465+2024+4400          | 7890         | 2845                            | 5.5                    | 74                     |
|                | 25+45+45            | 173                      | 1464+3078+3078          | 7620         | 2790                            | 5.4                    | 74                     |
|                | 25+45+60            | 203                      | 1330+2796+3994          | 8120         | 2860                            | 5.5                    | 75                     |
|                | 25+60+60            | 233                      | 1186+3562+3562          | 8310         | 2900                            | 5.6                    | 75                     |
|                | 35+35+35            | 138                      | 2390+2390+2390          | 7170         | 2775                            | 5.4                    | 74                     |
|                | 35+35+45            | 162                      | 2135+2135+3249          | 7520         | 2800                            | 5.5                    | 74                     |
|                | 35+35+60            | 192                      | 1926+1926+4188          | 8040         | 2865                            | 5.6                    | 74                     |
|                | 35+45+45            | 186                      | 1951+2969+2969          | 7890         | 2790                            | 5.4                    | 74                     |
|                | 35+45+60            | 216                      | 1744+2654+3792          | 8190         | 2895                            | 5.6                    | 74                     |
|                | 45+45+45            | 210                      | 2707+2707+2707          | 8120         | 2810                            | 5.5                    | 74                     |
|                | 45+45+60            | 240                      | 2424+2424+3463          | 8310         | 2900                            | 5.6                    | 75                     |
|                | 25+25+25+25         | 133                      | 1725+1725+1725+1725     | 6900         | 2695                            | 5.3                    | 74                     |
|                | 25+25+25+35         | 146                      | 1671+1671+1671+2308     | 7320         | 2740                            | 5.3                    | 74                     |
|                | 25+25+25+45         | 170                      | 1494+1494+1494+3139     | 7620         | 2755                            | 5.4                    | 74                     |
|                | 25+25+25+60         | 200                      | 1353+1353+1353+4062     | 8120         | 2850                            | 5.6                    | 74                     |
|                | 25+25+35+35         | 159                      | 1600+1600+2210+2210     | 7620         | 2760                            | 5.4                    | 74                     |
|                | 25+25+35+45         | 183                      | 1446+1446+1998+3040     | 7930         | 2785                            | 5.4                    | 74                     |
|                | 25+25+35+60         | 213                      | 1289+1289+1781+3871     | 8230         | 2885                            | 5.6                    | 74                     |
|                | 25+25+45+45         | 207                      | 1309+1309+2751+2751     | 8120         | 2800                            | 5.5                    | 73                     |
|                | 25+25+45+60         | 237                      | 1170+1170+2459+3512     | 8310         | 2895                            | 5.6                    | 74                     |
|                | 25+35+35+35         | 171                      | 1542+2129+2129+2129     | 7930         | 2785                            | 5.4                    | 74                     |
|                | 25+35+35+45         | 195                      | 1385+1913+1913+2910     | 8120         | 2805                            | 5.5                    | 73                     |
|                | 25+35+35+60         | 225                      | 1227+1695+1695+3684     | 8300         | 2900                            | 5.7                    | 73                     |
|                | 25+35+45+45         | 219                      | 1250+1726+2627+2627     | 8230         | 2825                            | 5.6                    | 73                     |
|                | 25+35+45+60         | 225                      | 1227+1695+1695+3684     | 8300         | 2900                            | 5.7                    | 73                     |
|                | 35+35+35+35         | 184                      | 2033+2033+2033+2033     | 8130         | 2810                            | 5.6                    | 73                     |
|                | 35+35+35+45         | 208                      | 1820+1820+1820+2770     | 8230         | 2830                            | 5.6                    | 73                     |
|                | 35+35+35+60         | 238                      | 1610+1610+1610+3500     | 8330         | 2920                            | 5.8                    | 73                     |
|                | 35+35+45+45         | 232                      | 1646+1646+2504+2504     | 8300         | 2845                            | 5.6                    | 73                     |
|                | 35+45+45+45         | 256                      | 1499+2280+2280+2280     | 8340         | 2860                            | 5.7                    | 73                     |
| 25+25+25+25+25 | 167                 | 1524+1524+1524+1524+1524 | 7620                    | 2755         | 5.4                             | 73                     |                        |
| 25+25+25+25+35 | 179                 | 1475+1475+1475+1475+2038 | 7940                    | 2775         | 5.6                             | 72                     |                        |
| 25+25+25+25+45 | 203                 | 1331+1331+1331+1331+2797 | 8120                    | 2790         | 5.6                             | 72                     |                        |
| 25+25+25+25+60 | 233                 | 1187+1187+1187+1187+3563 | 8310                    | 2890         | 5.8                             | 72                     |                        |
| 25+25+25+35+35 | 192                 | 1407+1407+1407+1944+1944 | 8110                    | 2795         | 5.6                             | 72                     |                        |
| 25+25+25+35+45 | 216                 | 1268+1268+1268+1751+2665 | 8220                    | 2820         | 5.7                             | 72                     |                        |
| 25+25+25+35+60 | 246                 | 1128+1128+1128+1558+3388 | 8330                    | 2845         | 5.7                             | 72                     |                        |
| 25+25+35+35+35 | 205                 | 1341+1341+1853+1853+1853 | 8240                    | 2825         | 5.7                             | 72                     |                        |
| 25+25+35+35+45 | 229                 | 1209+1209+1670+1670+2542 | 8300                    | 2835         | 5.7                             | 72                     |                        |
| 25+25+35+45+45 | 253                 | 1098+1098+1517+2308+2308 | 8330                    | 2850         | 5.7                             | 72                     |                        |
| 25+35+35+35+35 | 217                 | 1272+1757+1757+1757+1757 | 8300                    | 2840         | 5.7                             | 72                     |                        |
| 25+35+35+35+45 | 241                 | 1150+1588+1588+1588+2416 | 8330                    | 2855         | 5.7                             | 72                     |                        |
| 35+35+35+35+35 | 230                 | 1668+1668+1668+1668+1668 | 8340                    | 2860         | 5.7                             | 72                     |                        |

3TW01551-3C

### NOTES

- Cooling capacities are based on: indoor temp.: 27°CDB/19°CWB; outdoor temp.: 35°CDB/24°CWB; power supply: 400V/50Hz for W11 models; refrigerant piping length: 7.5m; level difference: 0m.
- The power consumption mentioned in the table above is the TOTAL power consumption, i.e. based on the combination with FT...JZ/G(A)Z-indoor unit(s).
- Add, for each indoor unit that differs from FT...JZ/G(A)Z, the correction value to the capacity (W) & power consumption (W) as shown in correction table.

| Class | Model | Correction (W) |             |
|-------|-------|----------------|-------------|
|       |       | Capacity       | Power input |
| 25    | FL    | 50             | 20          |
|       | FHEB  | 0              | 20          |
|       | FL    | -50            | 50          |
| 35    | FH    | 60             | 40          |
|       | FHB   | 50             | 80          |
|       | FHC   | 70             | 60          |
|       | FL    | -200           | 30          |
| 45    | FL    | 0              | 30          |
|       | FHB   | 0              | 80          |
|       | FHC   | 0              | 60          |
|       | FL    | 0              | 60          |



# 4 Capacity tables



## MA56GZ7W11 + 2 x FT25JZV1NB

| Model | FT25JZ |
|-------|--------|
| AFR   | 6.6    |
| BF    | 0.24   |

### Cooling capacity 230V [50Hz]

| Indoor   |          | Outdoor temperature (°C) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----------|----------|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| EWB (°C) | EDB (°C) | 20                       |      |      | 25   |      |      | 32   |      |      | 35   |      |      | 40   |      |      | 46   |      |      |
|          |          | TC                       | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   |
| 12.0     | 18.0     | 4.07                     | 3.07 | 1.37 | 3.88 | 2.98 | 1.50 | 3.62 | 2.86 | 1.69 | 3.51 | 2.80 | 1.71 | 3.32 | 2.71 | 1.90 | 3.10 | 2.60 | 2.05 |
| 14.0     | 20.0     | 4.36                     | 3.14 | 1.39 | 4.18 | 3.05 | 1.53 | 3.92 | 2.93 | 1.71 | 3.80 | 2.87 | 1.79 | 3.62 | 2.78 | 1.92 | 3.40 | 2.68 | 2.08 |
| 16.0     | 22.0     | 4.66                     | 3.21 | 1.42 | 4.47 | 3.12 | 1.55 | 4.21 | 3.00 | 1.73 | 4.10 | 2.94 | 1.81 | 3.91 | 2.85 | 1.94 | 3.69 | 2.75 | 2.10 |
| 18.0     | 25.0     | 4.95                     | 3.28 | 1.44 | 4.76 | 3.19 | 1.57 | 4.50 | 3.07 | 1.75 | 4.39 | 3.01 | 1.83 | 4.21 | 2.92 | 1.97 | 3.98 | 2.82 | 2.12 |
| 19.0     | 27.0     | 5.10                     | 3.32 | 1.45 | 4.91 | 3.23 | 1.58 | 4.65 | 3.10 | 1.77 | 4.54 | 3.05 | 1.85 | 4.35 | 2.96 | 1.98 | 4.13 | 2.85 | 2.13 |
| 22.0     | 30.0     | 5.54                     | 3.43 | 1.48 | 5.35 | 3.34 | 1.62 | 5.09 | 3.21 | 1.80 | 4.98 | 3.16 | 1.88 | 4.80 | 3.07 | 2.01 | 4.57 | 2.96 | 2.17 |
| 24.0     | 32.0     | 5.83                     | 3.50 | 1.51 | 5.65 | 3.41 | 1.64 | 5.39 | 3.28 | 1.82 | 5.28 | 3.23 | 1.90 | 5.09 | 3.14 | 2.03 | 4.87 | 3.03 | 2.19 |

4

## MA56GZ7W11 + 2 x FT25JZV1NB + FT45GAZV1NB 2 x FL25GZV1NB + FL45GZV1NB

| Model | FT25JZ | FT45GAZ |
|-------|--------|---------|
| AFR   | 6.6    | 11.8    |
| BF    | 0.24   | 0.18    |

### Cooling capacity 230V [50Hz]

| Indoor   |          | Outdoor temperature (°C) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----------|----------|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| EWB (°C) | EDB (°C) | 20                       |      |      | 25   |      |      | 32   |      |      | 35   |      |      | 40   |      |      | 46   |      |      |
|          |          | TC                       | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   |
| 12.0     | 18.0     | 5.71                     | 5.71 | 3.36 | 5.45 | 5.45 | 3.50 | 5.08 | 5.08 | 3.70 | 4.93 | 4.93 | 3.79 | 4.67 | 4.67 | 3.93 | 4.35 | 4.35 | 4.10 |
| 14.0     | 20.0     | 6.05                     | 6.01 | 2.86 | 5.79 | 5.79 | 3.00 | 5.43 | 5.43 | 3.20 | 5.27 | 5.27 | 3.29 | 5.01 | 5.01 | 3.43 | 4.70 | 4.70 | 3.60 |
| 16.0     | 22.0     | 6.40                     | 6.23 | 2.36 | 6.14 | 6.07 | 2.50 | 5.78 | 2.70 | 5.62 | 5.62 | 5.62 | 2.79 | 5.36 | 5.36 | 2.93 | 5.05 | 5.05 | 3.10 |
| 18.0     | 25.0     | 6.75                     | 6.45 | 1.86 | 6.49 | 6.28 | 2.00 | 6.12 | 6.06 | 2.20 | 5.97 | 5.96 | 2.29 | 5.71 | 5.71 | 2.43 | 5.39 | 5.39 | 2.60 |
| 19.0     | 27.0     | 6.92                     | 6.56 | 1.61 | 6.66 | 6.39 | 1.76 | 6.30 | 6.17 | 1.95 | 6.14 | 6.07 | 2.04 | 5.88 | 5.88 | 2.18 | 5.57 | 5.57 | 2.35 |
| 22.0     | 30.0     | 7.44                     | 6.88 | 0.86 | 7.18 | 6.72 | 1.01 | 6.82 | 6.49 | 1.21 | 6.66 | 6.40 | 1.29 | 6.40 | 6.21 | 1.43 | 6.09 | 5.90 | 1.60 |
| 24.0     | 32.0     | 7.79                     | 7.10 | 0.36 | 7.53 | 6.94 | 0.51 | 7.16 | 6.71 | 0.71 | 7.01 | 6.62 | 0.79 | 6.75 | 6.43 | 0.93 | 6.43 | 6.11 | 1.10 |

3TW02072-1A

### SYMBOLS

|      |                                  |                       |
|------|----------------------------------|-----------------------|
| AFR: | Air flow rate                    | (m <sup>3</sup> /min) |
| BF:  | Bypass factor                    |                       |
| EWB: | Entering wet bulb temp.          | (°CWB)                |
| EDB: | Entering dry bulb temp.          | (°CDB)                |
| DB*: | Dry bulb temperature             | (°CDB)                |
| TC:  | Total capacity cooling           | (kW)                  |
| SHC: | Sensible heating capacity        | (kW)                  |
| PI:  | Power input                      | (kW)                  |
|      | (comp.+indoor+outdoor fan motor) |                       |

**Caution:**  
TC and SHC are shown by kW

### NOTES

- Ratings shown are net capacities which include a deduction for indoor fan motor heat
- Shows nominal capacities
- SHC is based on each EWB and EDB  
 SHC\* = SHC correction for other dry bulb  
 SHC\* = 0.34 x 60 x AFR (m<sup>3</sup>/min) x (DB-EDB)/1000.  
 Add SHC\* to SHC if SHC > TC, then TC equal SHC  
 - For BF = take average of all units.  
 - AFR = summation of all units individual AFR.
- Direct interpolation is permissible. Do not extrapolate.
- Capacities are based on the following conditions:  
 Corresponding refrigerant piping length: 7.5 m  
 Level difference: 0 m
- For units that differ from FT... G(A)Z/JZ add the corrections indicated.  
 (correction is for 1 unit, if more units, add correction for all units)

Correction table

| Model       | AFR   | BF   | TC (kW) | SHC (kW) | P.I. (kW) |
|-------------|-------|------|---------|----------|-----------|
| FHEB25GZ7V1 | 6.50  | 0.40 | 0.00    | 0.00     | +0.02     |
| FT25JZV1NB  | 6.00  | 0.19 | 0.00    | 0.00     | 0.00      |
| FL25GZV1NB  | 7.50  | 0.21 | +0.05   | +0.03    | +0.02     |
| FH45GZ7V1   | 13.00 | 0.09 | 0.00    | 0.00     | +0.03     |
| FHB45GZ7V1  | 12.00 | 0.18 | 0.00    | 0.00     | +0.08     |
| FHC45BZ7V1  | 14.00 | 0.12 | 0.00    | 0.00     | +0.06     |
| FL45GZV1NB  | 10.80 | 0.18 | -0.20   | -0.11    | +0.03     |

# 4 Capacity tables



## MA90GZ7W11 + [FT25JZV1NB + FT45GAZV1NB]

### Cooling capacity

400V [50Hz]

| Model | FT25JZ | FT45GAZ |
|-------|--------|---------|
| AFR   | 6.6    | 11.8    |
| BF    | 0.24   | 0.18    |

| Indoor   |          | Outdoor temperature (°C) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----------|----------|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| EWB (°C) | EDB (°C) | 20                       |      |      | 25   |      |      | 32   |      |      | 35   |      |      | 40   |      |      | 46   |      |      |
|          |          | TC                       | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   |
| 12.0     | 18.0     | 5.38                     | 4.04 | 1.93 | 5.14 | 3.96 | 2.12 | 4.81 | 3.84 | 2.39 | 4.67 | 3.79 | 2.51 | 4.43 | 3.70 | 2.70 | 4.15 | 3.60 | 2.94 |
| 14.0     | 20.0     | 5.76                     | 4.11 | 1.97 | 5.53 | 4.03 | 2.17 | 5.20 | 3.91 | 2.44 | 5.05 | 3.86 | 2.56 | 4.82 | 3.77 | 2.75 | 4.54 | 3.67 | 2.98 |
| 16.0     | 22.0     | 6.15                     | 4.18 | 2.02 | 5.91 | 4.10 | 2.21 | 5.58 | 3.98 | 2.49 | 5.44 | 3.93 | 2.60 | 5.21 | 3.84 | 2.80 | 4.92 | 3.74 | 3.03 |
| 18.0     | 25.0     | 6.53                     | 4.25 | 2.07 | 6.30 | 4.17 | 2.26 | 5.97 | 4.05 | 2.53 | 5.83 | 4.00 | 2.65 | 5.59 | 3.91 | 2.84 | 5.31 | 3.81 | 3.07 |
| 19.0     | 27.0     | 6.73                     | 4.29 | 2.09 | 6.49 | 4.20 | 2.28 | 6.16 | 4.08 | 2.55 | 6.02 | 4.03 | 2.67 | 5.78 | 3.94 | 2.86 | 5.50 | 3.84 | 3.10 |
| 22.0     | 30.0     | 7.31                     | 4.39 | 2.16 | 7.07 | 4.30 | 2.35 | 6.74 | 4.18 | 2.62 | 6.60 | 4.13 | 2.74 | 6.36 | 4.05 | 2.93 | 6.08 | 3.95 | 3.16 |
| 24.0     | 32.0     | 7.69                     | 4.46 | 2.20 | 7.46 | 4.37 | 2.40 | 7.13 | 4.25 | 2.67 | 6.99 | 4.20 | 2.78 | 6.75 | 4.12 | 2.98 | 6.47 | 4.01 | 3.21 |

## MA90GZ7W11 + [FT25JZV1NB x 2 + FT45GAZV1NB x 2]

### Cooling capacity

400V [50Hz]

| Model | FT25JZ | FT45GAZ |
|-------|--------|---------|
| AFR   | 6.6    | 11.8    |
| BF    | 0.24   | 0.18    |

| Indoor   |          | Outdoor temperature (°C) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----------|----------|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| EWB (°C) | EDB (°C) | 20                       |      |      | 25   |      |      | 32   |      |      | 35   |      |      | 40   |      |      | 46   |      |      |
|          |          | TC                       | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   | TC   | SHC  | PI   |
| 12.0     | 18.0     | 7.56                     | 6.92 | 2.00 | 7.21 | 6.83 | 2.21 | 6.71 | 6.70 | 2.49 | 6.50 | 6.50 | 2.61 | 6.15 | 6.15 | 2.81 | 5.73 | 5.73 | 3.06 |
| 14.0     | 20.0     | 8.02                     | 7.00 | 2.06 | 7.67 | 6.90 | 2.26 | 7.18 | 6.77 | 2.54 | 6.96 | 6.72 | 2.67 | 6.61 | 6.61 | 2.87 | 6.19 | 6.19 | 3.11 |
| 16.0     | 22.0     | 8.48                     | 7.07 | 2.11 | 8.13 | 6.98 | 2.31 | 7.64 | 6.85 | 2.60 | 7.43 | 6.79 | 2.72 | 7.07 | 6.70 | 2.92 | 6.65 | 6.58 | 3.17 |
| 18.0     | 25.0     | 8.95                     | 7.14 | 2.17 | 8.59 | 7.05 | 2.37 | 8.10 | 6.92 | 2.65 | 7.89 | 6.86 | 2.77 | 7.54 | 6.77 | 2.98 | 7.11 | 6.66 | 3.22 |
| 19.0     | 27.0     | 9.18                     | 7.18 | 2.19 | 8.82 | 7.09 | 2.39 | 8.33 | 6.96 | 2.68 | 8.12 | 6.90 | 2.80 | 7.77 | 6.81 | 3.00 | 7.34 | 6.70 | 3.25 |
| 22.0     | 30.0     | 9.87                     | 7.29 | 2.27 | 9.52 | 7.20 | 2.48 | 9.02 | 7.07 | 2.76 | 8.81 | 7.01 | 2.88 | 8.46 | 6.92 | 3.08 | 8.04 | 6.81 | 3.33 |
| 24.0     | 32.0     | 10.33                    | 7.36 | 2.33 | 9.98 | 7.27 | 2.53 | 9.49 | 7.14 | 2.81 | 9.28 | 7.08 | 2.93 | 8.92 | 6.99 | 3.14 | 8.50 | 6.88 | 3.38 |

3TW01552-1D

### SYMBOLS

|      |                                  |                       |
|------|----------------------------------|-----------------------|
| AFR: | Air flow rate                    | (m <sup>3</sup> /min) |
| BF:  | Bypass factor                    |                       |
| EWB: | Entering wet bulb temp.          | (°CWB)                |
| EDB: | Entering dry bulb temp.          | (°CDB)                |
| DB*: | Dry bulb temperature             | (°CDB)                |
| TC:  | Total capacity cooling           | (kW)                  |
| SHC: | Sensible heating capacity        | (kW)                  |
| PI:  | Power input                      | (kW)                  |
|      | (comp.+indoor+outdoor fan motor) |                       |

**Caution:**  
TC and SHC are shown by kW

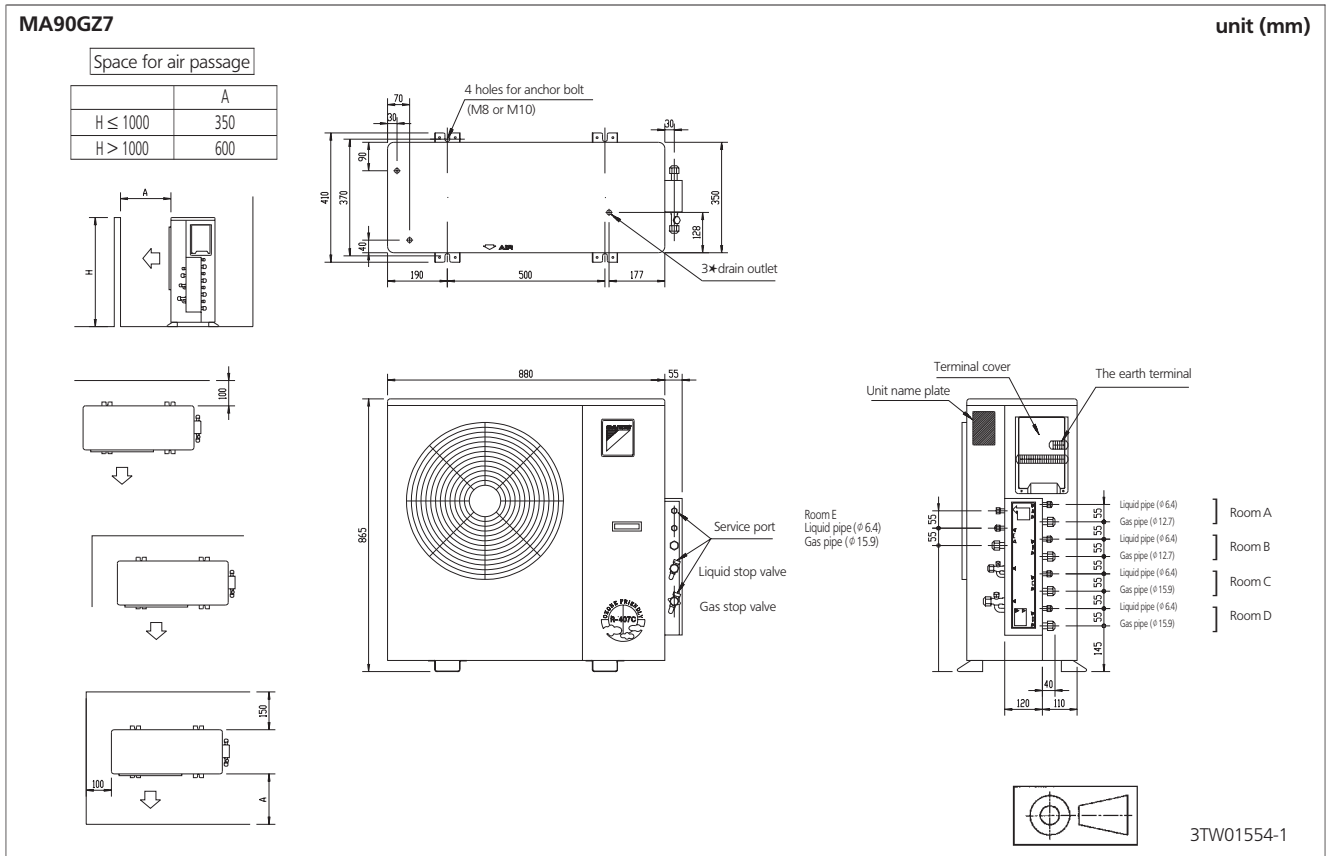
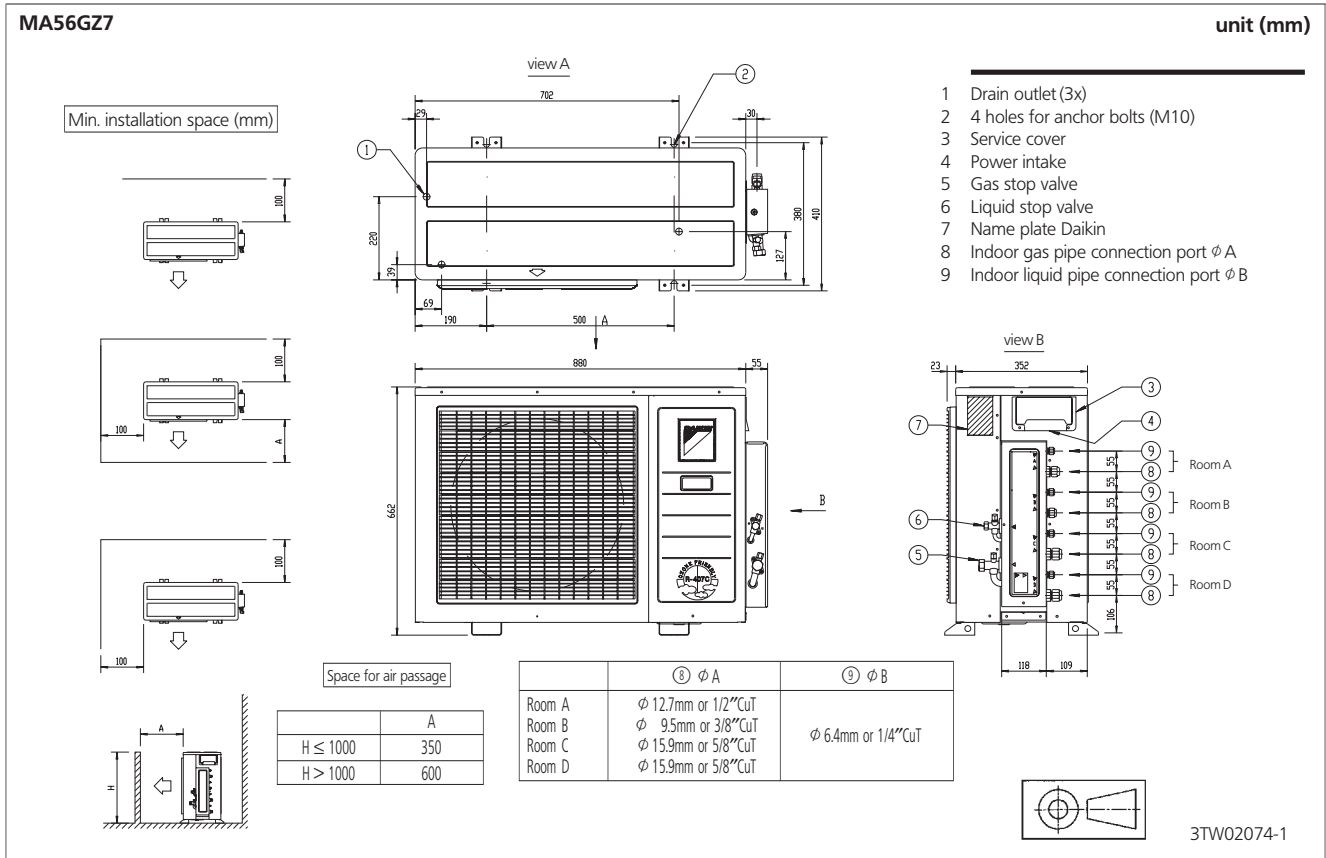
### NOTES

- Ratings shown are net capacities which include a deduction for indoor fan motor heat
- Shows nominal capacities
- SHC is based on each EWB and EDB  
SHC\* = SHC correction for other dry bulb  
SHC\* = 0.34 x 60 x AFR (m<sup>3</sup>/min) x (DB-EDB)/1000.  
Add SHC\* to SHC if SHC > TC, then TC equal SHC  
- For BF = take average of all units.  
- AFR = summation of all units individual AFR.
- Direct interpolation is permissible. Do not extrapolate.
- Capacities are based on the following conditions:  
Corresponding refrigerant piping length: 7.5 m  
Level difference: 0 m
- For units that differ from FT... JZ/G(A)Z add the corrections indicated.  
(correction is for 1 unit, if more units, add correction for all units)

Correction table

| Model       | AFR   | BF   | TC (kW) | SHC (kW) | P.I. (kW) |
|-------------|-------|------|---------|----------|-----------|
| FHEB25GZ7V1 | 6.50  | 0.40 | 0.00    | 0.00     | +0.02     |
| FT25JZV1NB  | 6.00  | 0.19 | 0.00    | 0.00     | 0.00      |
| FL25GZV1NB  | 7.50  | 0.21 | +0.05   | +0.03    | +0.02     |
| FH45GZ7V1   | 13.00 | 0.09 | 0.00    | 0.00     | +0.03     |
| FHB45GZ7V1  | 12.00 | 0.18 | 0.00    | 0.00     | +0.08     |
| FHC45BZ7V1  | 14.00 | 0.12 | 0.00    | 0.00     | +0.06     |
| FL45GZV1NB  | 10.80 | 0.18 | -0.20   | -0.11    | +0.03     |

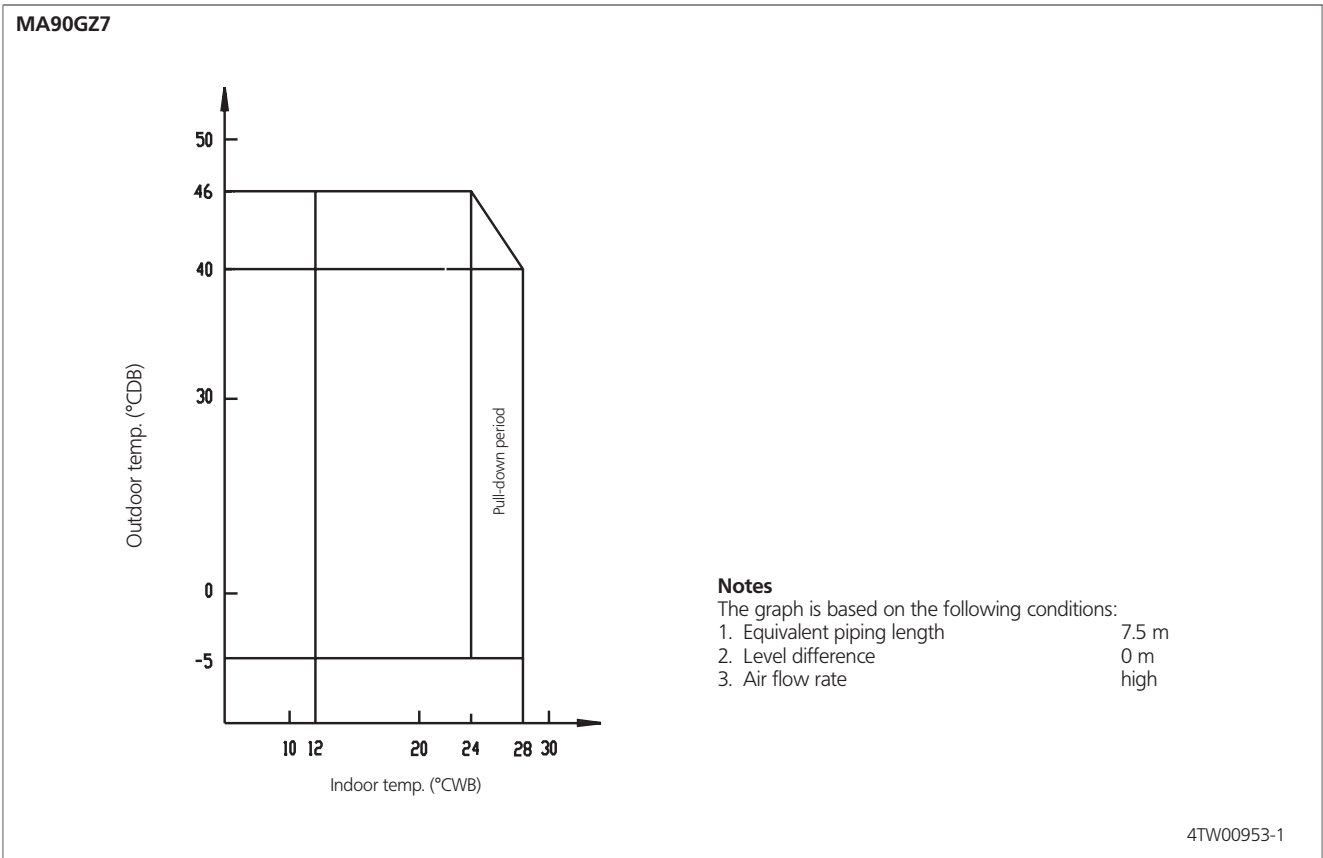
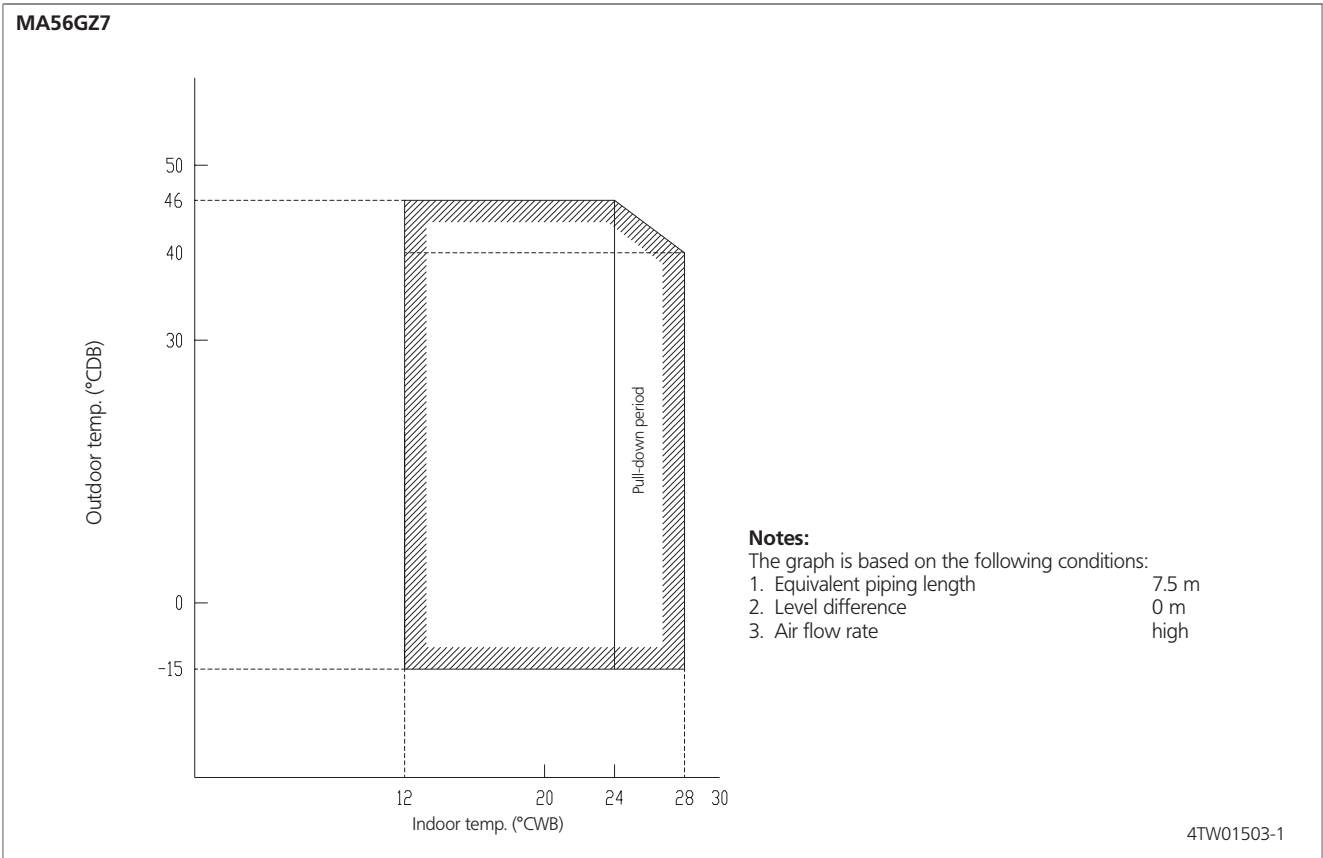
# 5 Dimensional drawings



# 6 Operation range

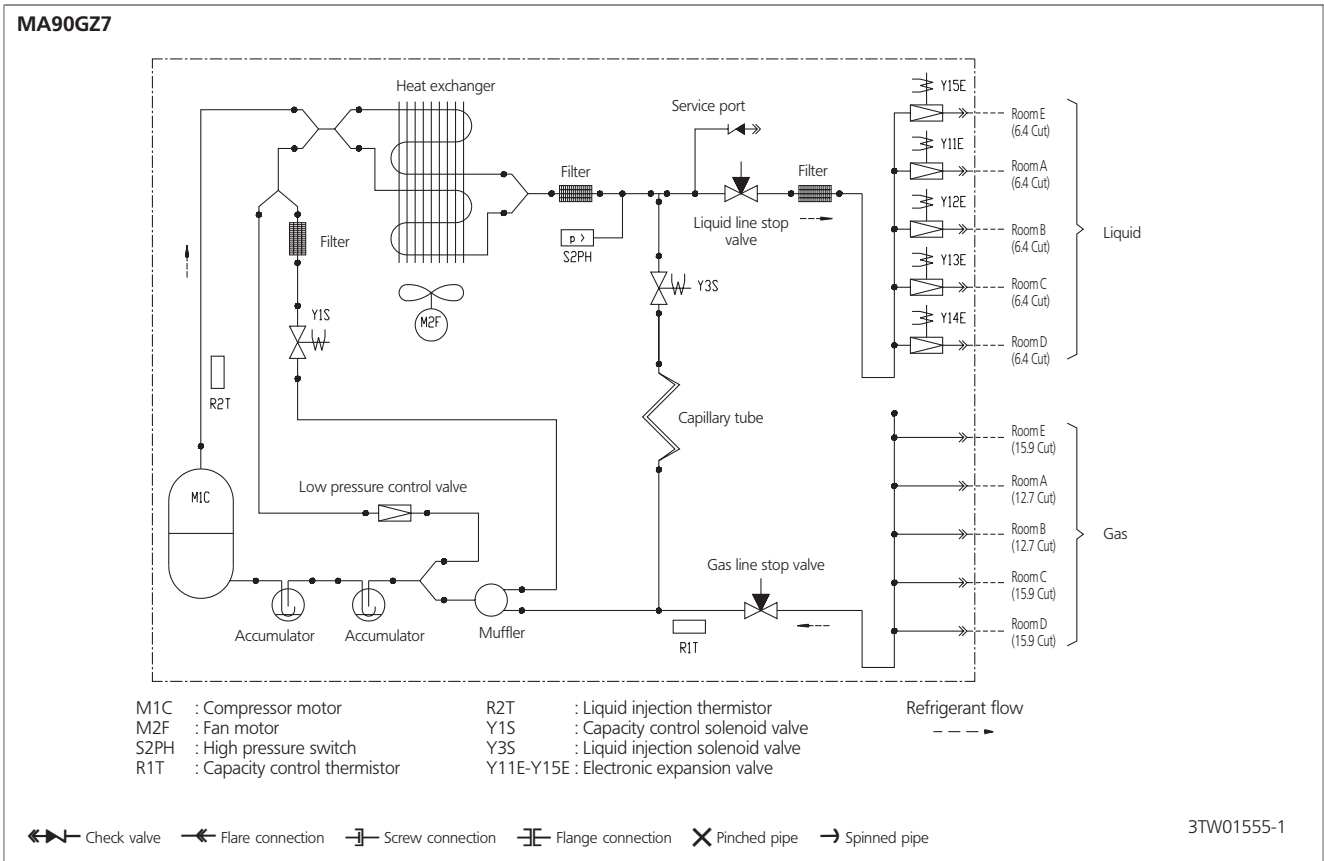
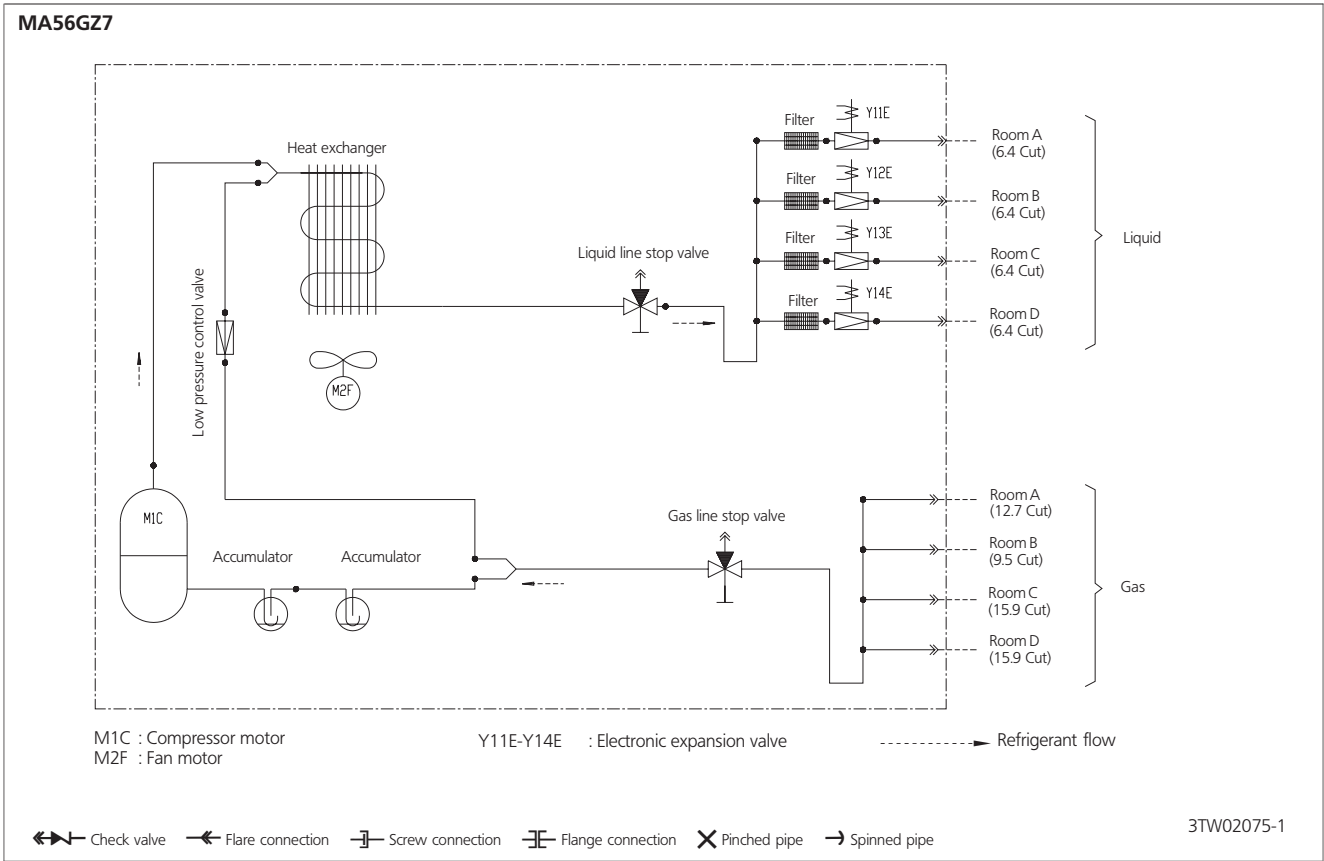


6



# 7

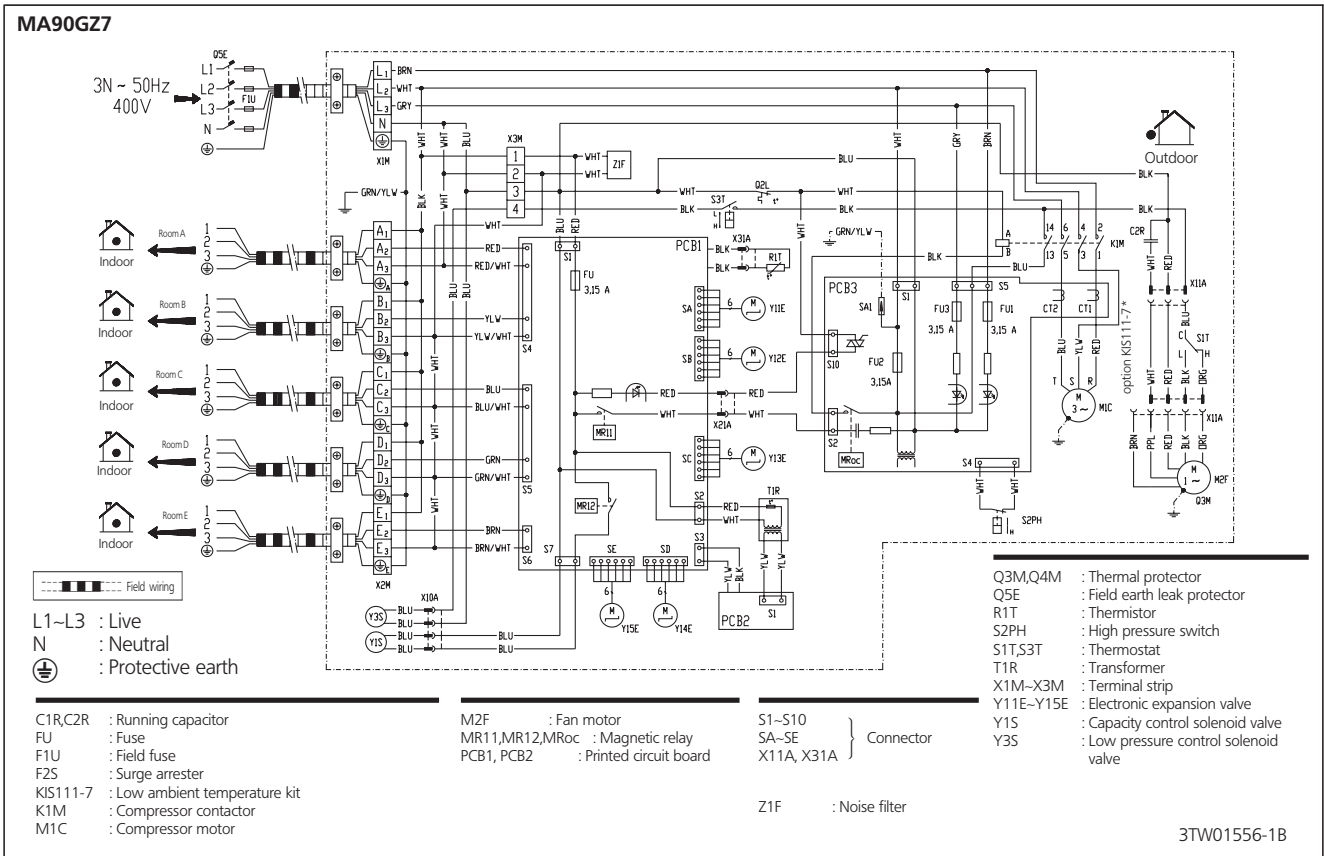
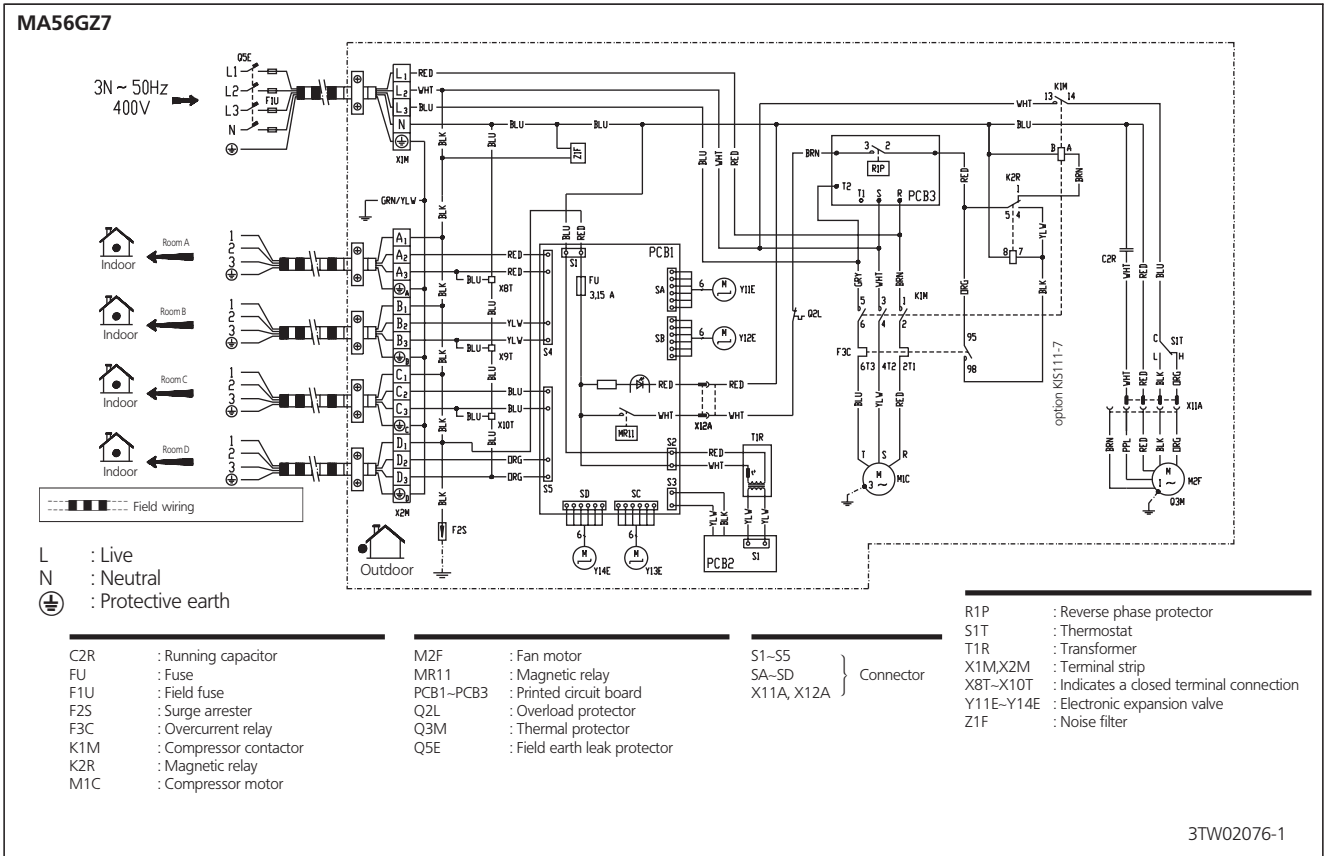
## Piping diagrams



# 8 Wiring diagrams



8



# 9 Sound level

## 9-1 Sound level data

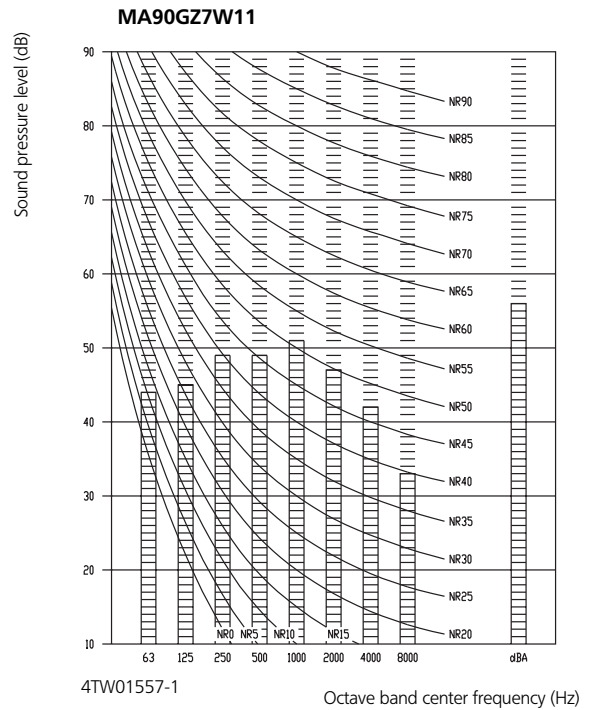
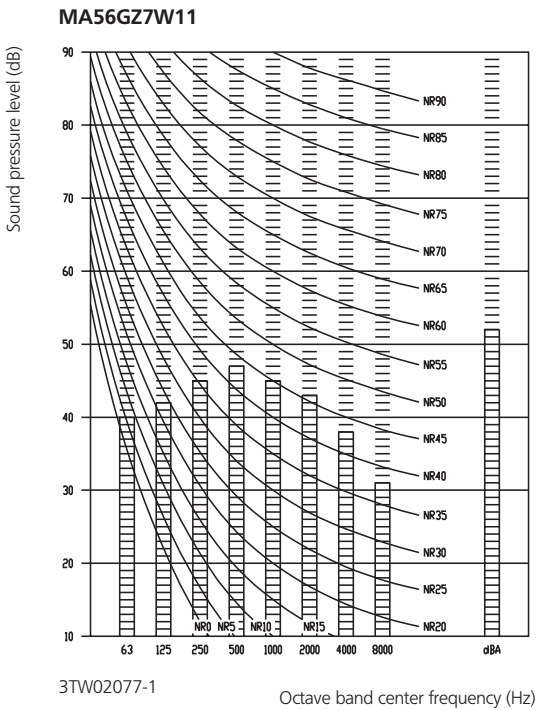


| Model      | Sound pressure level (H) |                    | Sound power level (H) |
|------------|--------------------------|--------------------|-----------------------|
|            | 400V                     | Measuring location | (cooling)             |
|            | 50Hz                     |                    |                       |
| MA56GZ7W11 | 52                       |                    | 65                    |
| MA90GZ7W11 | 56                       |                    | 68                    |

9

9-1

## 9-2 Sound pressure spectrum



### NOTES







- 1
  - Data is valid at free field condition
  - Operation sound levels are valid at nominal operation condition 230V
  - dBA = A-weighted sound pressure level (A-scale according to IEC)
  - Reference acoustic pressure 0dB = 20μPa
- 2
  - Measuring place sound proof room at three phase 400V



# 10 Accessories

## 10-1 Standard accessories

10  
10-1

| Model   |                               | MA56 | MA90 |
|---|-------------------------------|------|------|
|  | Reducer $\phi 12.7-\phi 9.5$  | 1    | 2    |
|  | Reducer $\phi 12.7-\phi 9.5$  | 1    | 2    |
|  | Reducer $\phi 15.9-\phi 12.7$ | 2    | 3    |
|  | Reducer $\phi 15.9-\phi 12.7$ | 2    | 3    |
|  | Reducer $\phi 15.9-\phi 9.5$  | 2    | 3    |
|  | Reducer $\phi 15.9-\phi 9.5$  | 2    | 3    |
|   | Installation manual           | 1    | 1    |

# 11 Safety device settings

| Safety device                 | Model | MA56GZ7W11  | MA90GZ7W11  |
|-------------------------------|-------|---|---|
| Fan motor thermal protector   |       | Off: $135 \pm 5^{\circ}\text{C}$<br>On: $86 \pm 15^{\circ}\text{C}$ | Off: $135 \pm 5^{\circ}\text{C}$<br>On: $86 \pm 15^{\circ}\text{C}$ |
| Compressor internal protector |       | —   | Off: $120 \pm 5^{\circ}\text{C}$<br>On: $98 \pm 11^{\circ}\text{C}$ |
| Overload relay                |       | Off: $120 \pm 5^{\circ}\text{C}$<br>On: $98 \pm 11^{\circ}\text{C}$ | —   |
| Overcurrent relay PCB mounted |       | *Off $5\text{A} \pm 10\%$   | Off 10A<br>Less than 1.5 sec.                                       |

4TW01551-4A

Note: \* shows U/T data (based on air temp.  $100^{\circ}\text{C}$ )

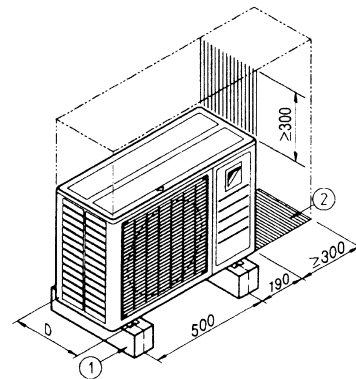
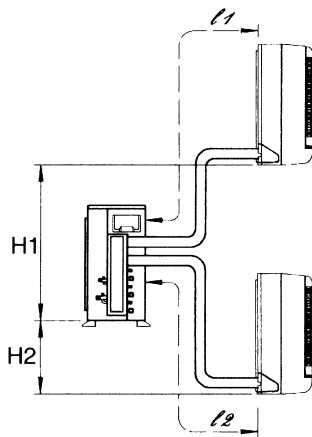


# 12 Installation



## Installing the outdoor unit

|          | MA56  | MA90     |      |
|----------|-------|----------|------|
|          |       | 25/35/45 | 60   |
| ℓ Total  | ≤60m  | ≤75m     |      |
| R407C    | +0g   | +0g      |      |
| ℓ 1 room | ≤25m  | ≤25m     | ≤15m |
| H max.   | 7.5 m | 7.5 m    |      |



|   | MA56 | MA90 |
|---|------|------|
| D | 380  | 370  |