

# technical data

BS-Box

BSVQ100-250P8B

air conditioning systems

**R-410A** 



# AIKIN technical data air conditioning systems BS-Box BSVQ100-250P8B

**R-410A** 

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# BSVQ100-250P8B

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# 1 Specifications

| 1-1 TECHN                                   | ICAL SPECIFICAT         | TIONS     |                              | BSVQ100P8V1B  | BSVQ160P8V1B  | BSVQ250P8V1B  |  |  |
|---|-------------------------|-----------|------------------------------|---|---|---|--|--|
| Power input                                 | Cooling                 |           | kW                           | 0.005   | 0.005   | 0.005   |  |  |
| (nominal)                                   | Heating                 |           | kW                           | 0.005   | 0.005   | 0.005   |  |  |
| Max. number of c                            | connectable units       |           |                              | 5   | 8   | 8   |  |  |
| Total capacity ind                          | lex of connectable indo | or unit   |                              | x ≤ 100   | 100 < x ≤ 160   | 160 < x ≤ 250   |  |  |
| Casing                                      | Material                |           |                              |   | Galvanised steel  | •   |  |  |
| Dimensions                                  | Unit                    | Height mm |                              | 207   | 207   | 207   |  |  |
|   |                         | Width     | mm                           | 388   | 388   | 388   |  |  |
|   |                         | Depth     | mm                           | 326   | 326   | 326   |  |  |
| Weight                                      | Unit                    | •         | kg                           | 14.0  | 14.0  | 15.0  |  |  |
| Outdoor Unit                                | Liquid (OD)             | Туре      |                              |   | Brazing connection  | •   |  |  |
|   |                         | Diameter  | mm                           | 9.5   | 9.5   | 9.5   |  |  |
|   | Gas                     | Туре      |                              | Brazing connection  |   |   |  |  |
|   |                         | Diameter  | mm                           | 15.9  | 15.9  | 22.2  |  |  |
|   | Discharge Gas           | Туре      | •                            |   | Brazing connection  | •   |  |  |
|   |                         | Diameter  | mm                           | 12.7  | 12.7  | 19.1  |  |  |
| Indoor Units                                | Liquid (OD)             | Туре      |                              |   | Brazing connection  |   |  |  |
|   |                         | Diameter  | mm                           | 9.5   | 9.5   | 9.5   |  |  |
|   | Gas Type                |           |                              | Brazing connection  |   |   |  |  |
|   |                         | Diameter  | mm                           | 15.9  | 15.9  | 22.2  |  |  |
| Sound absorbing thermal insulation material |                         |           | Foamed                       | polyurethane, Frame resisting n                             | eedle felt  |   |  |  |
| Standard Item                               |                         |           |                              | Installation manual   |   |   |  |  |
| Accessories                                 |                         |           |                              | Attached piping   |   |   |  |  |
|   |                         |           |                              |   | Insulation pipe cover   |   |  |  |
|   |                         |           |                              |   | Clamps  |   |  |  |
| Notes                                       |                         |           | In case of connection with a | In case of connecting with                                  | In case of connecting with a                                  |   |  |  |
|   |                         |           |                              | 20~50 type indoor unit, match to the size of the field pipe | indoor unit capaicty index 150 or more and 160 or less, match | 200 type indoor unit or capacity index more than 160 and less |  |  |
|   |                         |           |                              | using the attached pipe.                                    | to the size of the field pipe                                 | than 200, match to the size of                                |  |  |
|   |                         |           |                              | Connection between the                                      | using the attached pipe.                                      | the field pipe using the                                      |  |  |
|   |                         |           |                              | attached pipe and the field pipe                            | Connection between the  | attached pipe. Connection                                     |  |  |
|   |                         |           |                              | must be brazed.   | attached pipe and the field pipe must be brazed.              | between the attached pipe and the field pipe must be brazed.  |  |  |
|   |                         |           |                              |   | must be brazeu.   | the held pipe must be brazed.                                 |  |  |

| 1-2 ELECTF    | RICAL SPECIFIC    | ATIONS                     |   | BSVQ100P8V1B                             | BSVQ160P8V1B  | BSVQ250P8V1B    |  |
|---------------|-------------------|----------------------------|---|--|---|-----------------|--|
| Power Supply  | Phase             |                            |   | 1~                                       |   |                 |  |
|               | Frequency         |                            | Hz  | 50                                       | 50  | 50              |  |
|               | Voltage           |                            | V   | 220-240                                  |   |                 |  |
| Voltage range | Minimum           |                            | V   | -10%                                     |   |                 |  |
|               | Maximum           |                            | V   | +10%                                     |   |                 |  |
| Total circuit | Minimum circuit a | Minimum circuit amps (MCA) |   | 0.1                                      | 0.1   | 0.1             |  |
|               | Maximum Fuse A    | Amps                       | Α   | 15                                       | 15  | 15              |  |
| Notes         |                   |                            |   |  | able for use on electrical systems al is not below or above listed rang |                 |  |
|               |                   |                            |   | Maximum allow                            | able voltage range variation betwe                                      | en phases is 2% |  |
|               |                   |                            |   | MCA / MFA : MCA = 1.25 x FLA             |   |                 |  |
|               |                   |                            | MFA is smaller than or equal to 4 x FLA     |  |   |                 |  |
|               |                   |                            | Next lower standard fuse rating minimum 15A |  |   |                 |  |
|               |                   |                            |   |  | Select wire size based on MCA   |                 |  |
|               |                   |                            |   | Instead of a fuse, use a circuit breaker |   |                 |  |

# 2 Safety device settings

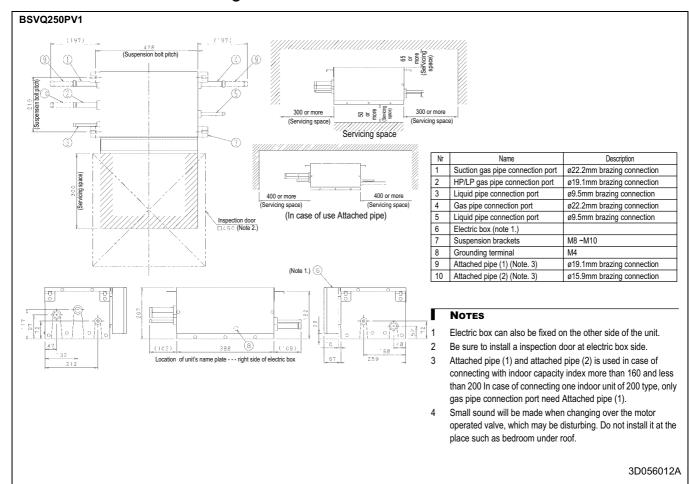
| BSVQ-P8       | 100 | 160        | 250       |
|---------------|-----|------------|-----------|
| PC BOARD FUSE |     | 250V 3.15A |           |
|               |     |            | 4D057956A |
|               |     |            |           |
|               |     |            |           |
|               |     |            |           |
|               |     |            |           |
|               |     |            |           |

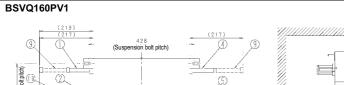
# 3 Options

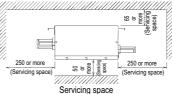
| No         Item         BSVQ100P         BSVQ160P         BSVQ250P           1         PCB for multi tenant         DTA114A61   4TW311 | 1 PCB for multi tenant DTA114A61 4TW3: | DP8                            |          |          |
|--|--|--------------------------------|----------|----------|
| ATW311 Note  | ATW3:                                  | Item BSVQ100P BSVQ160P         | BSVQ250P |          |
| Note   | Note                                   | PCB for multi tenant DTA114A61 |          |          |
|  |  |                                |          | 4TW31159 |
| 7 iii opiiono aro nito.  |  | ns are kits.                   |          |          |

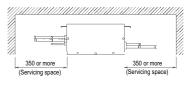
### 4 **Dimensional drawing & centre of gravity**

### **Dimensional drawing** 4 - 1









(In case of use Attached pipe)

| (Suspension by the contract of |   | 250 or more<br>(Servicing space) | Servicing space | 250 or more<br>(Servicing sp |         |
|--|---|----------------------------------|-----------------|------------------------------|---------|
| 300 (Suspension both pith)   |   |                                  |                 |                              |         |
| (Sus)  | K//   |                                  |                 | Nr<br>1                      | Suction |
|  |   |                                  |                 | 2                            | HP/LI   |
|  | Inspection door                             |                                  |                 | 3                            | Liquio  |
|  |   |                                  |                 | 4                            | Gas     |
| Ĺ  | `   | (6)                              |                 | 5                            | Liquid  |
|  | I   | (Note 1.)                        |                 | 6                            | Electi  |
| -51 0 0 1-51   | r=[   |                                  |                 | 7                            | Susp    |
| 3 " 3  |   | 1 -0                             | [6]             | 8                            | Groui   |
|  | <b>≡</b> }•                                 | 0 28                             |                 | 9                            | Attac   |
|  |   |                                  |                 | 10                           | Attac   |
|  | (109) 388 8                                 | (109)                            | 168             |                              |         |
| 212  | Location of unit's name plate right side of | electric box                     | Я               |                              | Nот     |
|  |   |                                  |                 | 1                            | Electr  |

| Nr | Name                             | Description                |
|----|----------------------------------|----------------------------|
| 1  | Suction gas pipe connection port | ø15.9mm brazing connection |
| 2  | HP/LP gas pipe connection port   | ø12.7mm brazing connection |
| 3  | Liquid pipe connection port      | ø9.5mm brazing connection  |
| 4  | Gas pipe connection port         | ø15.9mm brazing connection |
| 5  | Liquid pipe connection port      | ø9.5mm brazing connection  |
| 6  | Electric box (note 1.)           |                            |
| 7  | Suspension brackets              | M8 ~M10                    |
| 8  | Grounding terminal               | M4                         |
| 9  | Attached pipe (1) (Note. 3)      | ø19.1mm brazing connection |
| 10 | Attached pipe (2) (Note. 3)      | ø15.9mm brazing connection |

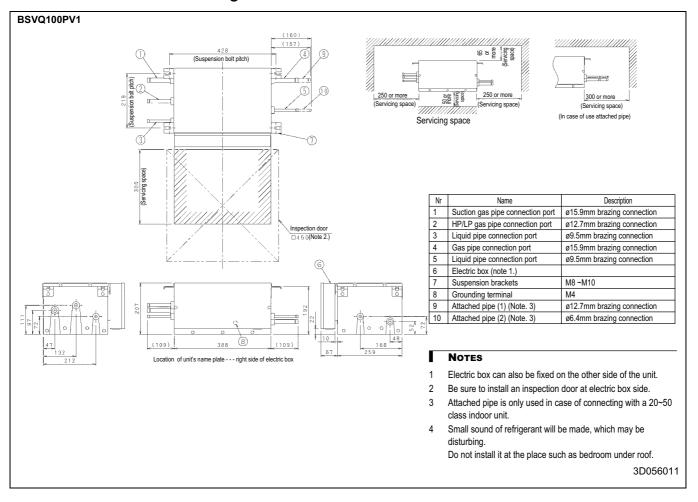
- Electric box can also be fixed on the other side of the unit.
- 2 Be sure to install an inspection door at electric box side.
- Attached pipe is only used in case of connecting with indoor unit capacity index 150 or more and 160 or less.
- Small sound of refrigerant will be made, which may be disturbing.

Do not install it at the place such as bedroom under roof.

3D058004

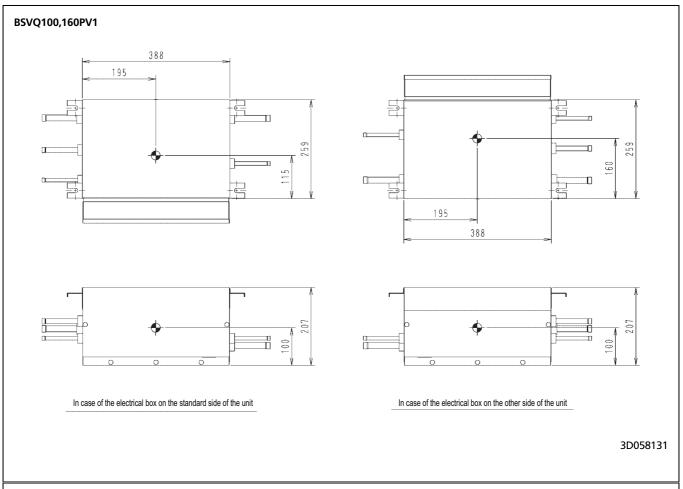
## 4 Dimensional drawing & centre of gravity

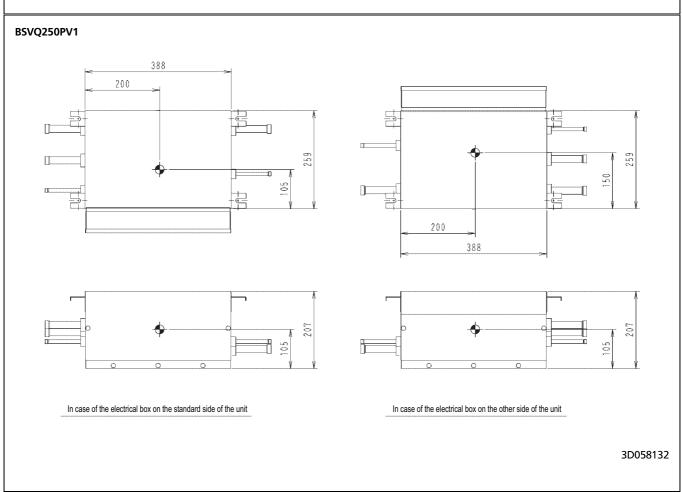
### 4 - 1 Dimensional drawing



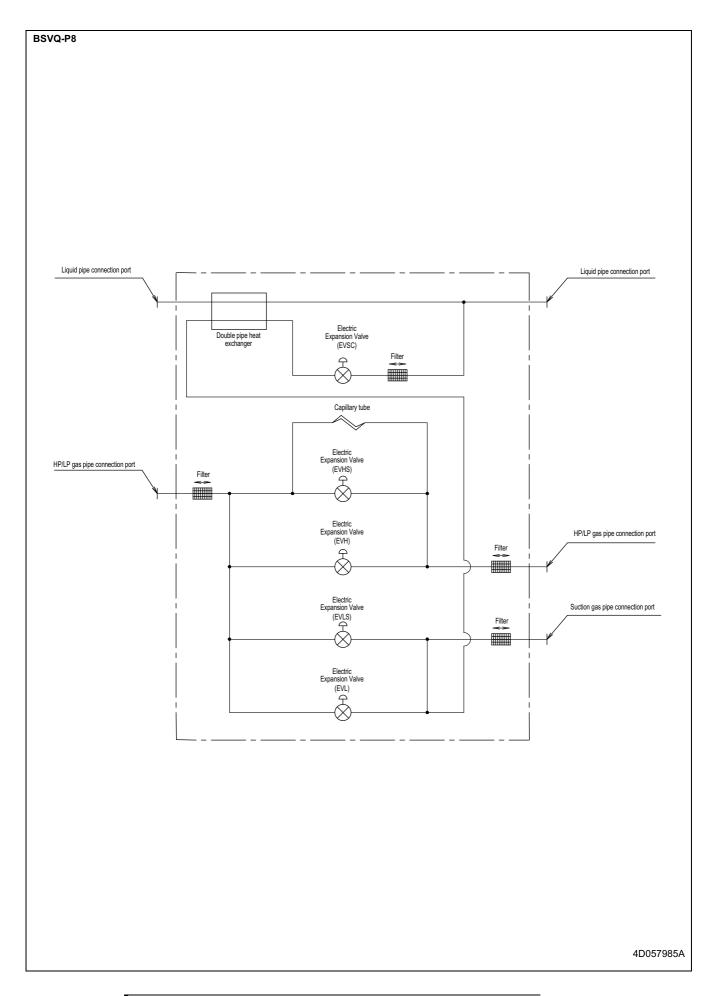
# 4 Dimensional drawing & centre of gravity

# 4 - 2 Centre of gravity



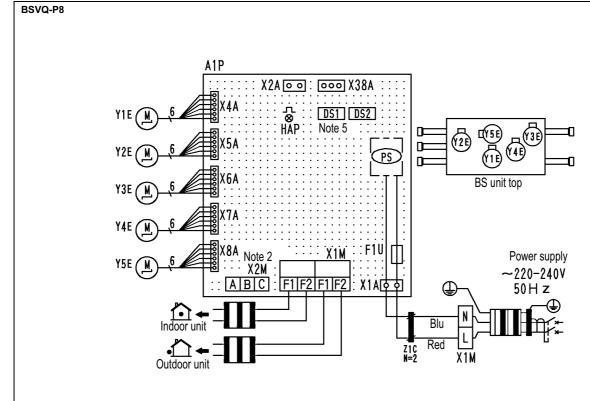


# 5 Piping diagram



### 6 Wiring diagram

### 6 - 1 Wiring diagram



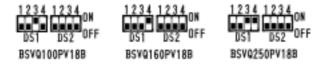
| A1P       | Printed circuit board               | Y2E          | Electric Expansion Valve (Sub Discharge)  |
|-----------|-------------------------------------|--------------|---|
| DS1, DS2  | Dip Switch                          | Y3E          | Electric Expansion Valve (Sub Suction)    |
| F1U       | Fuse (T, 3, 15A, 250V)              | Y4E          | Electric Expansion Valve (Main Discharge) |
| HAP       | Flashing Lamp                       | Y5E          | Electric Expansion Valve (Main Suction)   |
|           | (Service Monitor Green)             | Z1C          | Noise Filter (Ferrite Core)               |
| PS        | Switching Power Supply (A1P)        | Connector Fo | or Optional Parts                         |
| X1M       | Terminal Strip (Power)              | X2A          | Connector (Wiring External Control        |
| X1M (A1P) | Terminal Strip (Control)            |              | Adaptor For Outdoor Unit)                 |
| X2M       | Terminal Strip (C/H Selector)       | X38A         | Connector                                 |
| Y1E       | Electric Expansion Valve (Sub Cool) |              | (Adaptor For Multi Tenant)                |

|               | : Terminal Strip   | Colors: | RED: | Red    | PRP: | Purple | ORG: | Orange |
|---------------|--------------------|---------|------|--------|------|--------|------|--------|
| 00            | : Connector        |         | BLK: | Black  | GRY: | Gray   | GRN: | Green  |
| -0-           | : Connector        |         | WHT: | White  | Blu: | Blue   |      |        |
| <b>=III</b> = | : Field wiring     |         | YLW: | Yellow | PNK: | Pink   |      |        |
| <b></b>       | : Protective earth |         |      |        |      |        |      |        |

3D060928

### NOTES

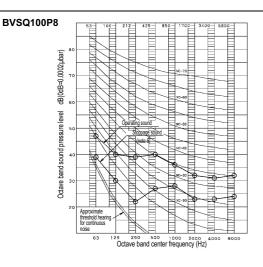
- 1 This wiring diagram applies to the BS unit only.
- When using the cool/heat selector (Optional accessory), connect it to terminals A, B, and C on X2M.
- 3 As for wiring to the IN/D unit (F1) (F2) and OUT/D unit (F1) (F2) on X1M(A1P), refer to installation manual.
- 4 Use copper conductors only.
- 5 DIP switch (DS1-2) initial settings are as follows.



For using DIP switch (DS1-2), refer to installation manual or "service precaution" Label on EL, COMPO, BOX, COVER.

### 7 Sound data

### 7 - 1 Sound pressure spectrum

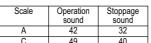


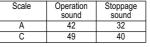
4D058945

### NOTE

- Over All (dB): (B, G, N is already rectified)
- Operating conditions:
  - Power source: 220-240V 50Hz
  - Standard condition (JIS)
- 3 Measuring place: Anechoic chamber.
- Operation noise differs with operation and ambient conditions.
- In case of other unit operating in the same system, operating sound will be generated, ever if indoor unit connected to BS unit is stopped.
- 6 Location of microphone.







| 6 | ever if indoor unit connected to BS unit is stopped. Location of microphone. |
|---|--|
|   | Leg-1  |

NOTE

3

BVSQ160P8

dB(0dB=0.0002µbar

Octave band sound pressure level

Over All (dB): (B, G, N is already rectified)

Power source: 220-240V 50Hz

Operation noise differs with operation and ambient conditions.

Standard condition (JIS)

Measuring place: Anechoic chamber.

Operating conditions:

Octave band center frequency (Hz)

In case of other unit operating in the same system, operating sound will be generated,

4D058953

Stoppage

Operation

sound

| BVSQ250P8                   |  |
|-----------------------------|--|
| DV3QZ30F0                   | 53 106 212 425 850 1700 3400 6800  |
|                             |  |
| oar)                        |  |
| 02 pt                       | NC-70  |
| dB(odB=0.0002µbar)          |  |
| <b>ä</b> p.                 | 100-60   |
|                             |  |
| eve band source bred evesto | Operating sound No-so  |
| sure                        | Stoppage sound   |
| press                       | Inches In |
| punc 41                     |  |
| nd sc                       |  |
| e pa                        |  |
| Octa                        |  |
| 20                          |  |
|                             | Approximate threshold hearing for continuous   |
|                             | 63 125 250 500 1000 2000 4000 8000   |
|                             | Octave band center frequency (Hz)  |

4D058946

Stoppage

Operation

### NOTE

- Over All (dB):
- (B, G, N is already rectified)
- 2 Operating conditions:
  - Power source: 220-240V 50Hz
  - Standard condition (JIS)
- Measuring place: Anechoic chamber.
- Operation noise differs with operation and ambient conditions.
- In case of other unit operating in the same system, operating sound will be generated, ever if indoor unit connected to BS unit is stopped.
- Location of microphone.





Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intension to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.



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.



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.

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

 $\text{VRV}^{\text{\&}}$  products are not within the scope of the Eurovent certification programme.

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