



technical data

FCQ-B7

**4-way Blow Ceiling
Mounted Cassette**



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



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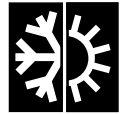


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* For capacity tables, please refer to part II: outdoor units





1 Features

1

- Leaves maximum floor and wall space for furniture, decoration and fittings
- Fits flush into each ceiling
- Extremely quiet in operation both indoors and outdoors
- Air can be discharged in any of four directions
- Possibility of using 1 or 2 branches for better air distribution
- Possibility to shut off 1 or 2 flaps for easy installation in corners
- Air flow distribution for ceiling heights up to 4.2m without loss of capacity
- Up to 4 indoor units can be connected to 1 Multi outdoor unit. All indoor units are individually controllable with remote control and do not need to be installed in the same room.
- The (wired) remote control has a programmable timer
- Centralised control of several units can be achieved via 3 wired remote controls
 - centralised remote control
 - unified ON/OFF control
 - schedule timer
- Set back time clock: connected to a wired remote control. The timer can set two groups of on/off times in an increment of 30 minutes within a day. For each on/off setting a temperature setting is also possible.
 - *Set back time clock cannot be used in auto mode.



2 Specifications



| NOMINAL CAPACITY and NOMINAL INPUT | | | | | |
|------------------------------------|---------|----|-----------|-----------|-----------|
| For indoor units only: | | | | | |
| INDOOR UNITS | | | FCQ35B7V1 | FCQ50B7V1 | FCQ60B7V1 |
| NOMINAL INPUT | Cooling | kW | - | - | - |
| | Heating | kW | - | - | - |

| For combination indoor + outdoor units (air cooled): | | | | | | |
|--|---------|----------------|-----|----------------|----------------|----------------|
| INDOOR UNITS | | | | FCQ35B7V1 | FCQ50B7V1 | FCQ60B7V1 |
| OUTDOOR UNITS | | | | RKS35BVMB | RKS50BVMB | RKS60BVMB |
| CAPACITY (3) | Cooling | min.~nom.~max. | kW | 1.00~3.40~3.70 | 0.90~5.00~5.60 | 0.90~5.70~6.00 |
| NOMINAL INPUT | Cooling | | kW | 1.21 | 1.92 | 2.19 |
| EER | | | | 2.81 | 2.60 | 2.60 |
| ENERGY LABEL | Cooling | | | C | E | E |
| ANNUAL ENERGY CONSUMPTION | Cooling | | kWh | 605 | 960 | 1,095 |

| For combination indoor + outdoor units (air cooled): | | | | | | |
|--|---------|----------------|-----|----------------|----------------|----------------|
| INDOOR UNITS | | | | FCQ35B7V1 | FCQ50B7V1 | FCQ60B7V1 |
| OUTDOOR UNITS | | | | RXS35BVMB | RXS50BVMB | RXS60BVMB |
| CAPACITY (3) | Cooling | min.~nom.~max. | kW | 1.00~3.40~3.70 | 0.90~5.00~5.60 | 0.90~5.70~6.00 |
| | Heating | min.~nom.~max. | kW | 1.00~4.10~5.00 | 0.90~6.00~7.00 | 0.90~7.00~8.00 |
| NOMINAL INPUT | Cooling | | kW | 1.21 | 1.92 | 2.19 |
| | Heating | | kW | 1.28 | 1.87 | 2.19 |
| EER | | | | 2.81 | 2.60 | 2.60 |
| COP | | | | 3.20 | 3.21 | 3.20 |
| ENERGY LABEL | Cooling | | | C | E | E |
| | Heating | | | D | C | D |
| ANNUAL ENERGY CONSUMPTION | Cooling | | kWh | 605 | 960 | 1,095 |

| TECHNICAL SPECIFICATIONS | | | | | | |
|--------------------------|--------------------------------------|-------------------------------------|---------------------|---------------------|-----------|-----------|
| For indoor units only: | | | | | | |
| INDOOR UNITS | | | | FCQ35B7V1 | FCQ50B7V1 | FCQ60B7V1 |
| DIMENSIONS | Unit | H | mm | 230 | | |
| | | W | mm | 840 | | |
| | | D | mm | 840 | | |
| | Decoration panel | H | mm | 40 | | |
| | | W | mm | 950 | | |
| | | D | mm | 950 | | |
| WEIGHT | Unit | kg | 23 | | | |
| | Decoration panel | kg | 5 | | | |
| MATERIAL | Unit | Galvanised steel plate | | | | |
| COLOUR | Decoration panel | White | | | | |
| SOUND LEVEL | Sound pressure (cooling/heating) (1) | high | dB(A) | 31/31 | 33/33 | |
| | | low | dB(A) | 27/27 | 28/28 | |
| | Sound power | | dB(A) | 48 | 50 | |
| FAN | Air flow rate (cooling/heating) | high | m ³ /min | 14/14 | 15/15 | 18/18 |
| | | low | m ³ /min | 10/10 | 11/11 | 14/14 |
| | Speed | steps | 2 steps | | | |
| | Type | Turbo fan | | | | |
| HEAT EXCHANGER | Qty x motor output | W | 1 x 45 | | | |
| | Type | Cross fin coil ϕ 7 HI-XA tubes | | | | |
| | Rows x stages x fin pitch | mm | 2 x 8 x 1.5 | | | |
| AIR FILTER | Face area | m ² | 0.331 | | | |
| | Resin net (with mold resistant) | | | | | |
| PIPING CONNECTIONS | liquid | mm | ϕ 6.4 (flare) | | | |
| | | mm | ϕ 9.5 (flare) | ϕ 12.7 (flare) | | |
| | drain I.D. | mm | ϕ 25 (VP25) | | | |
| | | mm | ϕ 32 (VP25) | | | |
| INSULATION MATERIAL | Heat insulation | Foamed polystyrene | | | | |
| | Sound absorbing insulation | Foamed polystyrene | | | | |

| For outdoor units only: | |
|-------------------------|-------------------------------------|
| Pair application | See chapters RS-B + RKS-B + RXS-B |
| Multi model application | See chapters 4MKS-B + 3MXS-B/4MXS-B |

2 Specifications



2

| ELECTRICAL SPECIFICATIONS | | | | | | |
|---------------------------|-------------------------|-----------------|---|-----------------------------------|-----------|-----------|
| For indoor units only: | | | | FCQ35B7V1 | FCQ50B7V1 | FCQ60B7V1 |
| CURRENT | Nominal running current | cooling/heating | A | See chapters RS-B + RKS-B + RXS-B | | |
| | Max. running current | cooling/heating | A | See chapters RS-B + RKS-B + RXS-B | | |

| For combination indoor units + outdoor units: | | | | FCQ35B7V1 | FCQ50B7V1 | FCQ60B7V1 | FCQ50B7V1 | FCQ60B7V1 |
|---|-------------------------|---------|---|-------------------|-----------|-----------|------------------|-----------|
| | | | | RKS35BVMB | RKS50BVMB | RKS60BVMB | RS50BVMB | RS60BVMB |
| CURRENT | Nominal running current | cooling | A | See chapter RKS-B | | | See chapter RS-B | |
| | Maximum running current | cooling | A | See chapter RKS-B | | | See chapter RS-B | |
| | Starting current | cooling | A | See chapter RKS-B | | | See chapter RS-B | |

| For combination indoor units + outdoor units: | | | | FCQ35B7V1 | FCQ50B7V1 | FCQ60B7V1 |
|---|-------------------------|-----------------|---|-------------------|-----------|-----------|
| | | | | RXS35BVMB | RXS50BVMB | RXS60BVMB |
| CURRENT | Nominal running current | cooling/heating | A | See chapter RXS-B | | |
| | Maximum running current | cooling/heating | A | See chapter RXS-B | | |
| | Starting current | cooling/heating | A | See chapter RXS-B | | |

| For indoor units only: | | | | FCQ35B7V1 | FCQ50B7V1 | FCQ60B7V1 |
|-------------------------------------|-----------|--|----|-----------|-----------|-----------|
| POWER SUPPLY | | | | V1 | V1 | V1 |
| NOMINAL DISTRIBUTION SYSTEM VOLTAGE | Phase | | | 1~ | 1~ | 1~ |
| | Frequency | | Hz | 50 | 50 | 50 |
| | Voltage | | V | 230 | 230 | 230 |

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NOTES

- 1 Nominal cooling capacities are based on: indoor temperature 27°CDB/19°CWB * outdoor temperature 35°CDB * refrigerant piping length: 7.5m * level difference: 0m.
- 2 Nominal heating capacities are based on: indoor temperature: 20°CDB * outdoor temperature: 7°CDB/6°CWB * refrigerant piping length: 7.5m * level difference 0m.
- 3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- 4 The sound pressure level is measured at 1.5m distance from the unit. It is a relative value, depending on the distance and acoustic environment. For measuring conditions: please refer to item 6 of this chapter.
- 5 The sound power level is an absolute value indicating the "power" which a sound source generates.
- 6 Energy label: scale from A (most efficient) to G (less efficient).
- 7 Annual energy consumption: based on average use of 500 running hours per year at full load (= nominal conditions).

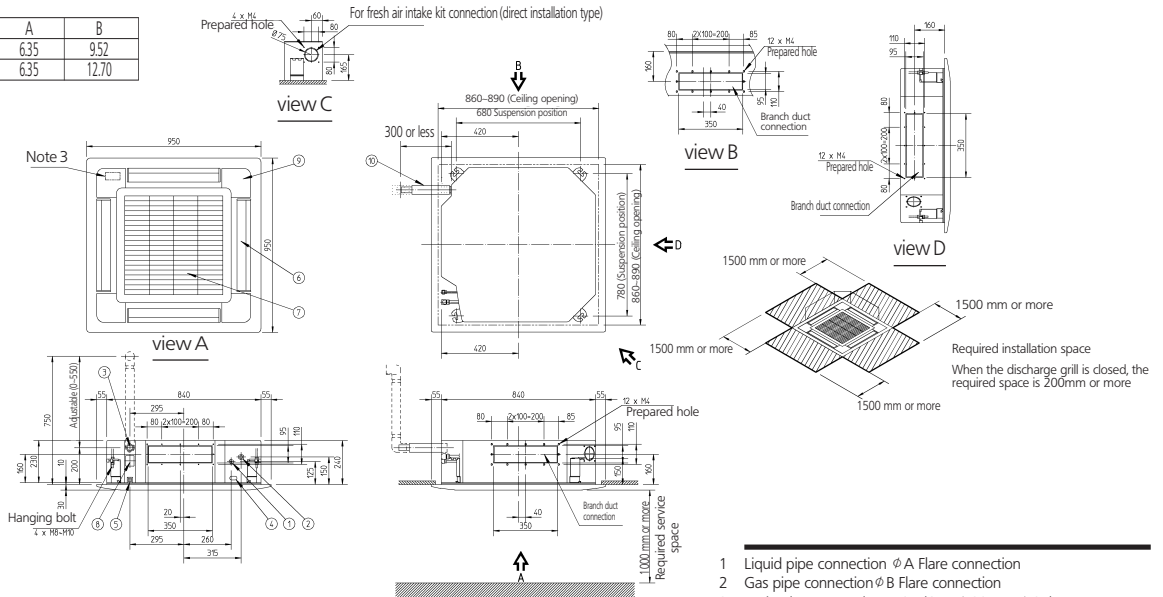


3 Dimensional drawings

3

FCQ-B7

| Model | A | B |
|----------------|------|-------|
| FCQ35B | 6.35 | 9.52 |
| FCQ50B, FCQ60B | 6.35 | 12.70 |



Note:

1. Location of unit's name plate
Main body: bell mouth inside the suction grille.
Decoration panel: panel inner frame inside the suction grille.
2. When installing an optional accessory, refer to the installation drawings.
 - For fresh air intake kit - inspection port is necessary
 - For high efficiency filter unit - inspection port is not necessary.
 - For branch duct chamber - inspection port is not necessary.

3. In case of using an infrared remote control, this position will be a signal receiver.
Refer to the drawing of infrared remote control in detail
4. When it may exceed 30°C and RH 80% in the ceiling or fresh air is inducted into the ceiling, an additional insulation (Thickness 10mm or more of glasswool or polyethylene form) is required.

- 1 Liquid pipe connection ϕ A Flare connection
- 2 Gas pipe connection ϕ B Flare connection
- 3 Drain pipe connection VP25 (O.D. ϕ 32, I.D. ϕ 25)
- 4 Power supply connection
- 5 Transmission wiring connection
- 6 Air discharge grille
- 7 Air suction grille
- 8 Water supply intake
- 9 Corner decoration cover
- 10 Drain hose O.D. ϕ 32

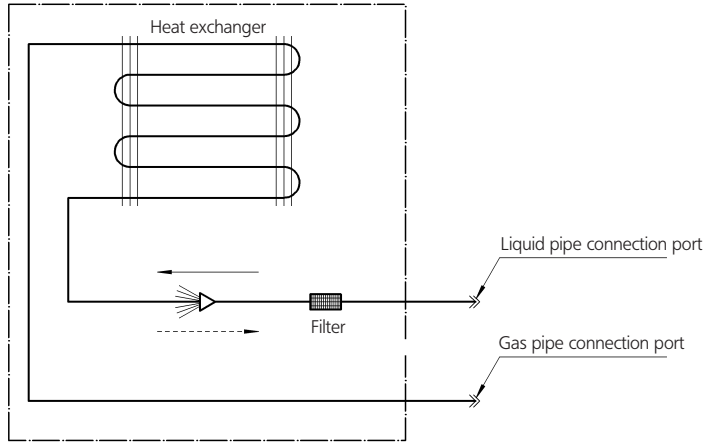
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4 Piping diagrams

4

FCQ-B7



Refrigerant flow

Cooling
 Heating

Refrigerant pipe connection port diameters

| Model | Gas | Liquid |
|----------------|---------|--------|
| FCQ35B | φ 9.52 | φ 6.35 |
| FCQ50B, FCQ60B | φ 12.70 | φ 6.35 |

Check valve Flare connection Screw connection Flange connection Pinched pipe Spinned pipe

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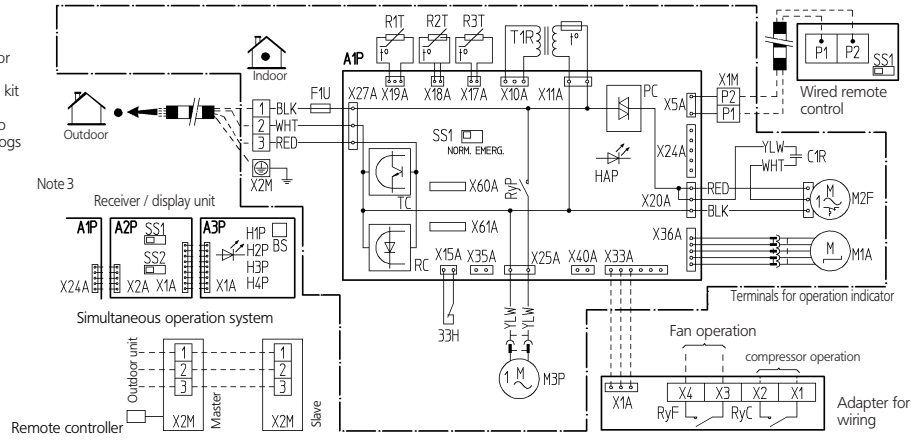
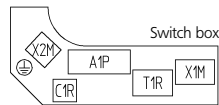
5 Wiring diagrams

FCQ-B7

Notes

1. Use copper conductors only.
2. When using the central remote control, see manual for connection to the unit.
3. X24A is connected when the infrared remote control kit is being used.
4. The infrared remote control model varies according to the combination system. See technical data and catalogs before connecting.

Field wiring Terminal
 : Connector
 : Wire clamp
 : Protective earth (screw)
Colours
 BLK: Black / WHT: White / RED: Red / YLW: Yellow



33H Float switch
 A1P Printed circuit board
 C1R Capacitor (M2F)
 F1U Fuse (5A, 250V)
 HAP Light emitting diode (service monitor green)
 M1A Motor (swing flap)
 M2F Motor (indoor fan)
 M3P Motor (drain pump)
 Q1F Thermo switch (M2F embedded)
 R1T Thermoistor (air)
 R2T Thermoistor (liquid)
 R3T Thermoistor (coil)

RyP Magnetic relay (M3P)
 SS1 Selector switch (emergency)
 T1R Transformer (220-240V/22V)
 X1M Terminal strip (power)
 X2M Terminal strip (control)
 PC Phase control circuit
 RC Signal receiver circuit
 TC Signal transmission circuit
 Wired remote control
 SS1 Selector switch (main/sub)

Receiver / display unit (attached to infrared remote control)
 A2P/A3P Printed circuit board
 BS Push button (on/off)
 H1P Light emitting diode (on-red)
 H2P Light emitting diode (timer-green)
 H3P Light emitting diode (filter sign-red)
 H4P Light emitting diode (defrost-orange)
 SS1 Selector switch (main/sub)
 SS2 Selector switch (wireless address set)

Adapter for wiring
 RyC/RyF Magnetic relay
 Connector for optional parts
 X60A/X61A Connector (interface adapter for sky air series)
 X33A Connector (adapter for wiring)
 X35A Connector (group control adapter)
 X40A Connector (remote ON/OFF forced OFF)

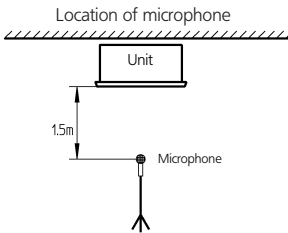
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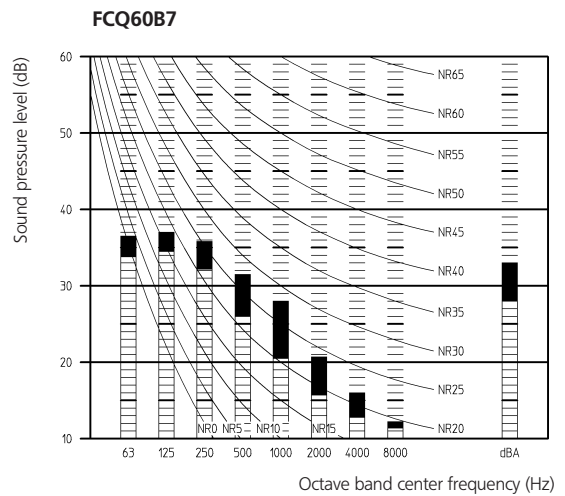
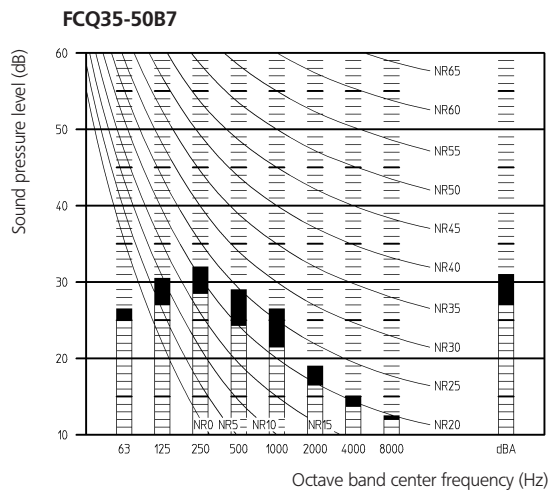
6 Sound level

6-1 Sound level data

6
6-1

| Model | Sound pressure level | | Measuring location  | Sound power level (H) |
|-----------|----------------------|----|--|-----------------------|
| | 230V, 50Hz | | | |
| | H | L | | |
| FCQ35B7V1 | 31 | 27 | | 48 |
| FCQ50B7V1 | 31 | 27 | | 48 |
| FCQ60B7V1 | 33 | 28 | | 50 |

6-2 Sound pressure spectrum



NOTES

- 1 Data is valid at free field condition and nominal operation condition (230V, air discharge in 4 directions).
- 2 The operation noise differs with the operation and ambient conditions.
- 3 dBA = A-weighted sound pressure level (A-scale according to IEC)
- 4 Reference acoustic pressure 0dB = 20μPa

Legend

- ▬ High speed
- ▬ Low speed

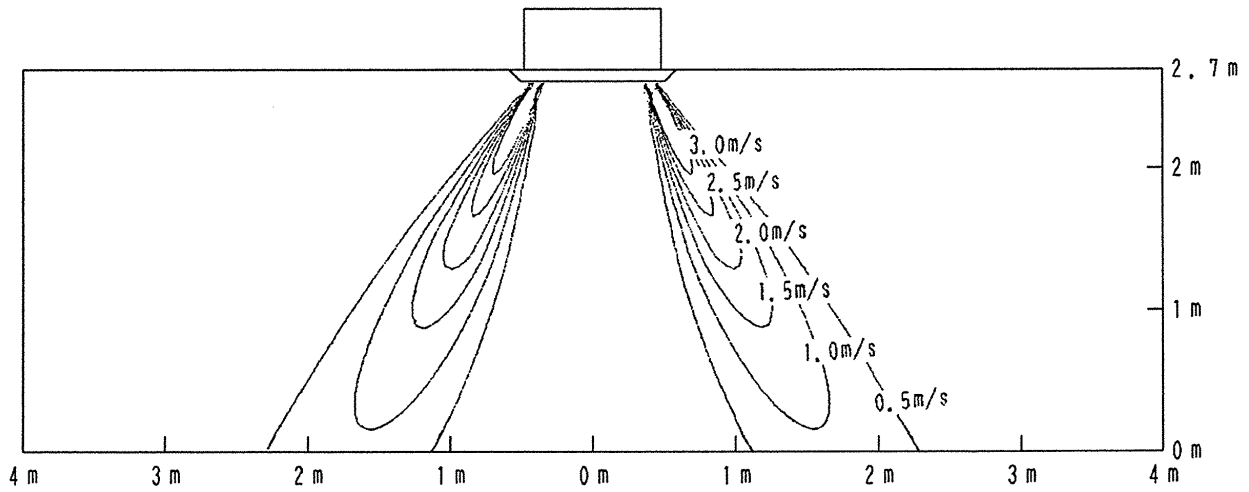


7 Air flow patterns

FCQ35B7

Heating - air velocity distribution

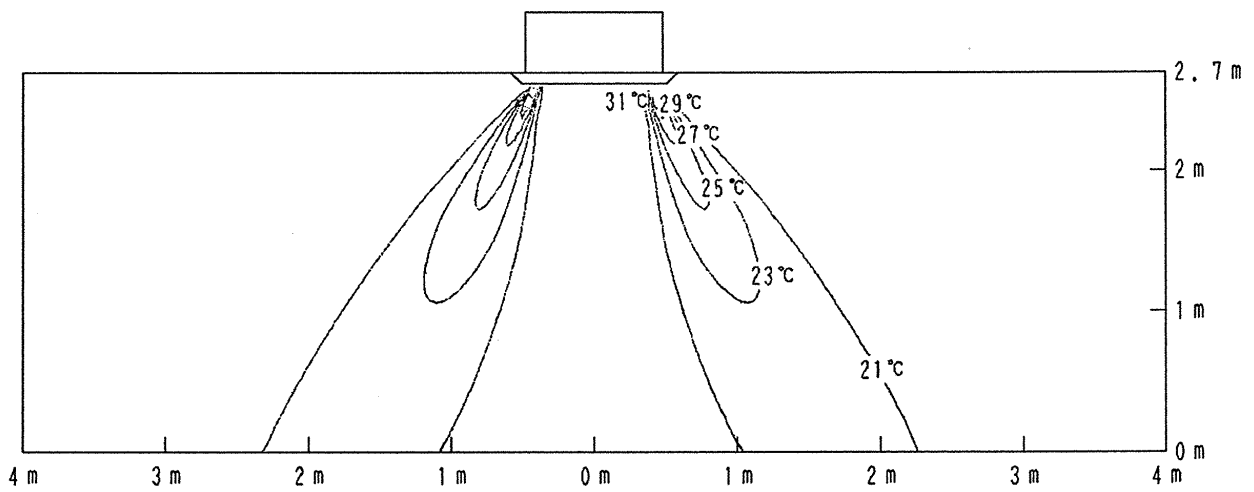
4-way discharge, air flow direction: down



FCQ35B7

Heating - air temperature distribution

4-way discharge, air flow direction: down



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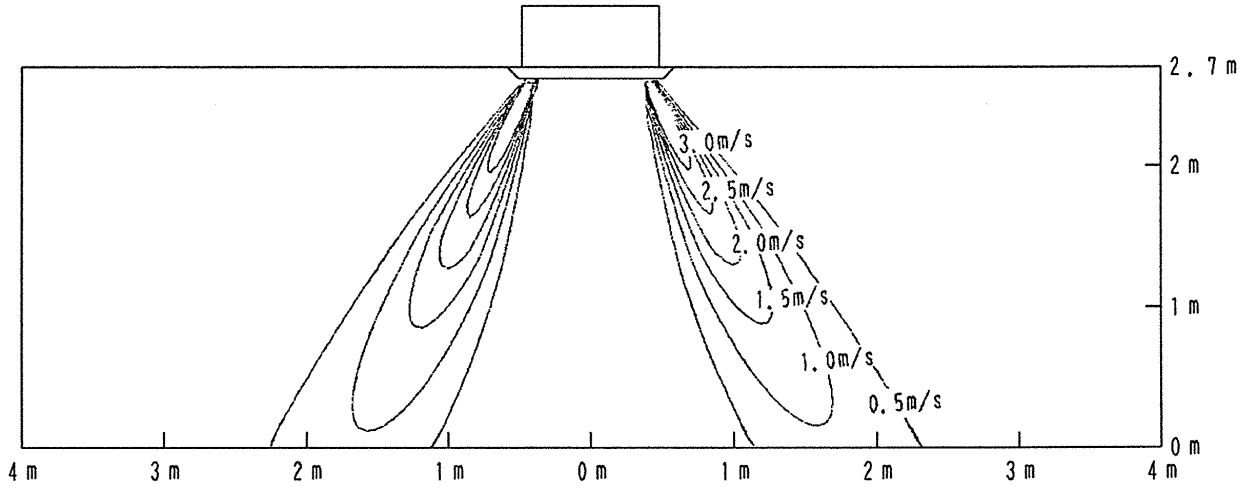


7 Air flow patterns

7 FCQ50B7

Heating - air velocity distribution

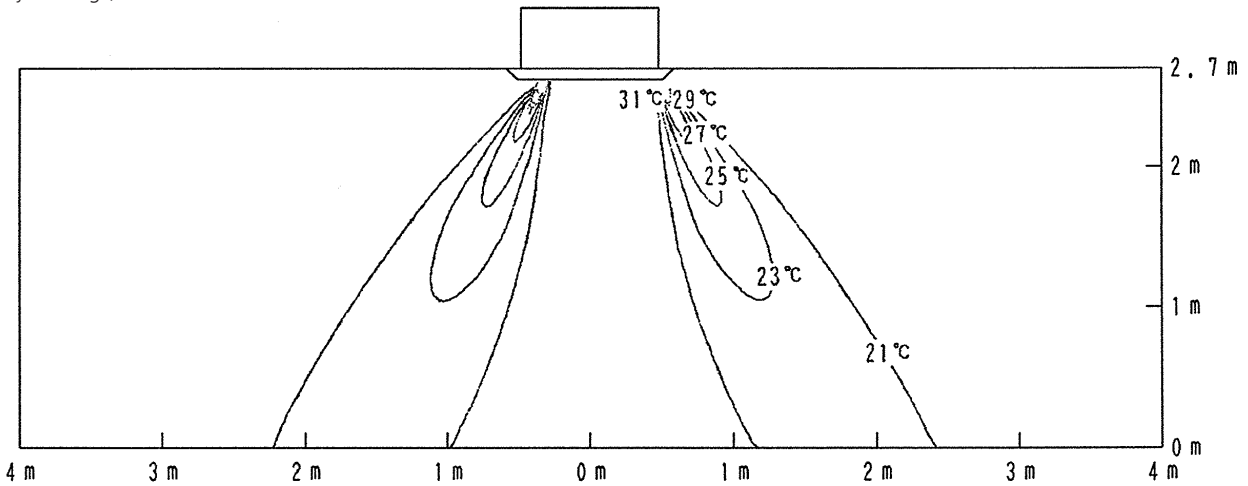
4-way discharge, air flow direction: down



FCQ50B7

Heating - air temperature distribution

4-way discharge, air flow direction: down



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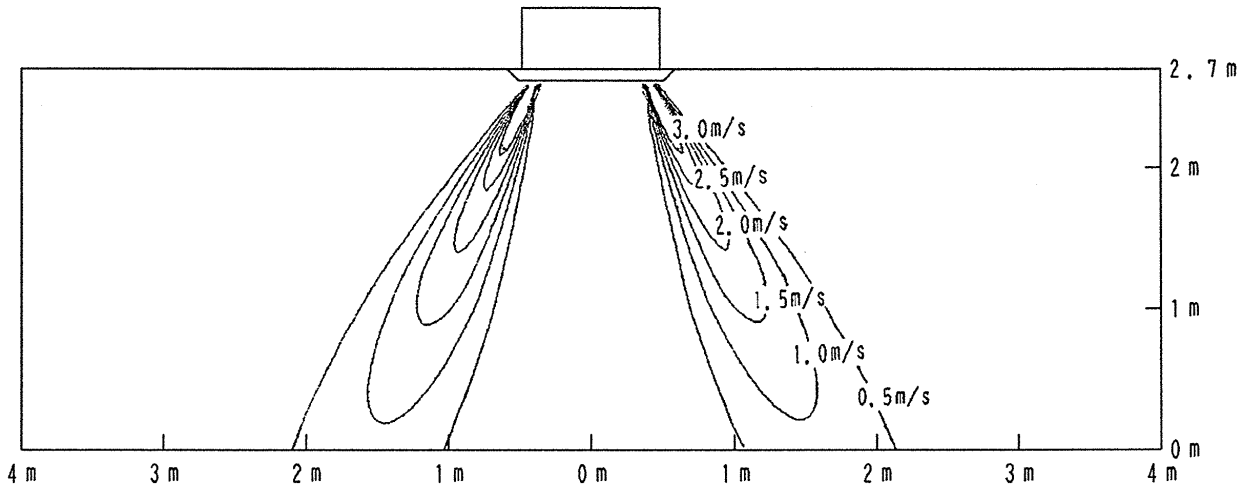


7 Air flow patterns

FCQ60B7

Heating - air velocity distribution

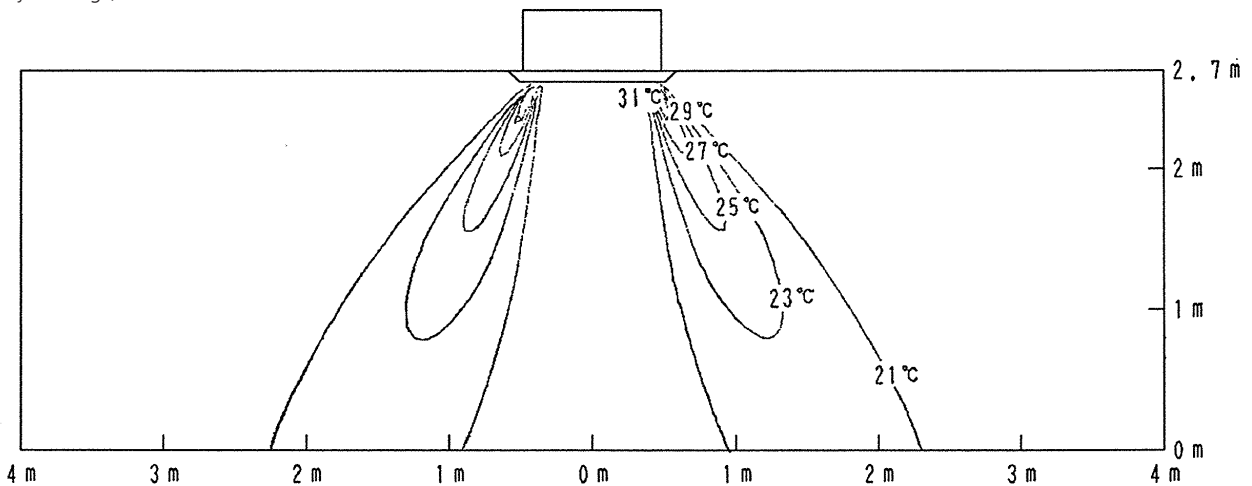
4-way discharge, air flow direction: down



FCQ60B7

Heating - air temperature distribution

4-way discharge, air flow direction: down



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




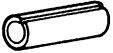



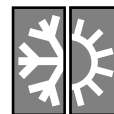
8 Accessories

8-1 Standard accessories

8 Check if the following accessories are included with your unit.

8-1

| | | |
|--|--|---|
|  <p>Clamp 1 pc.</p> | <p>Also used as packing material</p>  <p>Paper pattern for installation 1 pc.</p> |  <p>Drain hose 1 pc.</p> |
|  <p>Screws M5 For paper pattern for installation 4 pcs.</p> |  <p>Washer for hanging bracket 8 pcs.</p> |  <p>Sealing 2 pcs.</p> |
|  <p>For gas pipe</p> | <p>Insulation for fitting 1 of each</p>  <p>For liquid pipe</p> | <p>Other: installation manual, operation manual</p> |



8 Accessories

8-2 Optional accessories

Options

| Item | Model | | FCQ35 | FCQ50 | FCQ60 |
|--|--|---------------------------|-------|-------------|-------|
| Decoration panel | | | | BYC125KW1 | |
| Filter related | High efficiency filter 65% | Colorimetric method | | KAFJ556K80 | |
| | High efficiency filter 90% | Colorimetric method | | KAFJ557K80 | |
| | Replacement high efficiency filter 65% | Colorimetric method | | KAFJ552K80 | |
| | Replacement high efficiency filter 90% | Colorimetric method | | KAFJ553K80 | |
| | Filter chamber | | | KDDFJ55K160 | |
| | Replacement long-life filter | Non-woven type | | KAFJ551K160 | |
| | Ultra-long life filter | | | KAFJ55K160 | |
| | Replacement ultra long-life filter | | | KAFJ55K160H | |
| Fresh air intake kit | Chamber type | Without T-shape and fan | | KDDJ55B160 | |
| | | With T-shape, and fan | | KDDJ55B160F | |
| | | With T-shape, without fan | | KDDJ55B160K | |
| | Direct installation type | | | KDDJ55X160 | |
| Sealing member of air discharge outlet | | | | KDBHJ55B160 | |
| Panel spacer | | | | KDBJ55K160W | |
| Branch duct chamber | | | | KDJ55B80 | |
| Chamber connection kit | | | | KKSJ55K160 | |

8

8-2

Control systems

| Item | Model | | FCQ35 | FCQ50 | FCQ60 |
|---|----------|--------------|-------|-----------|-------|
| Remote control | Infrared | Heat pump | | BRC7C512W | |
| | | Cooling only | | BRC7C513W | |
| | Wired | | | BRC1D517 | |
| Adapter for wiring | | | | KRP1B2 | |
| Wiring adaptor for electrical appendices ※1 | | | | KRP1B57 | |
| Wiring adaptor for electrical appendices ※1 | | | | KRP4A53 | |
| Wiring adapter (hour meter) | | | | EKR1B2 | |
| Remote sensor | | | | KRCS01-1 | |
| Installation box for adapter PCB | | | | KRP1C98 | |
| Central remote control | | | | DCS302B51 | |
| Electrical box with earth terminal (3 blocks) | | | | KJB311A | |
| Unified ON/OFF control | | | | DCS301B51 | |
| Electrical box with earth terminal (2 blocks) | | | | KJB212A | |
| Noise filter (for electromagnetic interface use only) | | | | KEK26-1 | |
| Schedule timer | | | | DST301B51 | |
| Interface adapter for Sky Air series | | | | DTA112B51 | |
| Remote ON/OFF, forced OFF | | | | EKRORO | |

※1; Installation box for adaptor PCB (KRP1C98) is necessary

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8 Accessories

8-2 Optional accessories

8 FCQ-B7

8-2

Fresh air intake kit

1. Option kits KDDJ55B160, KDDJ55B160K, KDDJ55B160F

Following restrictions must be kept:

1. Maximum 20% of the nominal indoor unit air volume can be sucked from the fresh air duct.
2. Put an air filter in the duct.
3. When a duct fan is used, use the option kit together with the duct fan. When only the duct fan is operating, dust can fall from the air filter into the room.

Adapter for wiring KRP1B57
Installation box for adaptor PCB (KRP1C98) is necessary

2. Option kit KDDJ55X160

This kit can be used when the duct length is less than 4 m.
Approximately 2 or 3% of the nominal indoor unit air volume can be sucked from the fresh air duct.

The use of a duct fan is not allowed because the sound of the duct can be heard at the indoor unit.

| Option kit | Fresh air intake volume / static pressure |
|---|---|
| <p>KDDJ55B160 (without T-joint connection and without duct fan)</p> | |
| <p>KDDJ55B160K (with T-joint connection, without duct fan)</p> | |
| <p>KDDJ55B160F (with T-joint connection and with duct fan)</p> | |
| <p>KDDJ55X160 (direct installation)</p> | |

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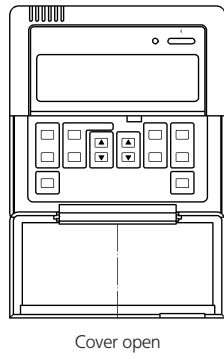
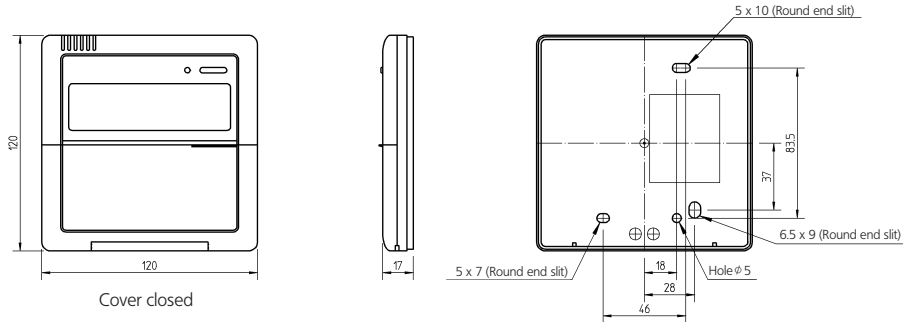
9 Control systems

9-1 Wired remote control

9

9-1

BRC1D517

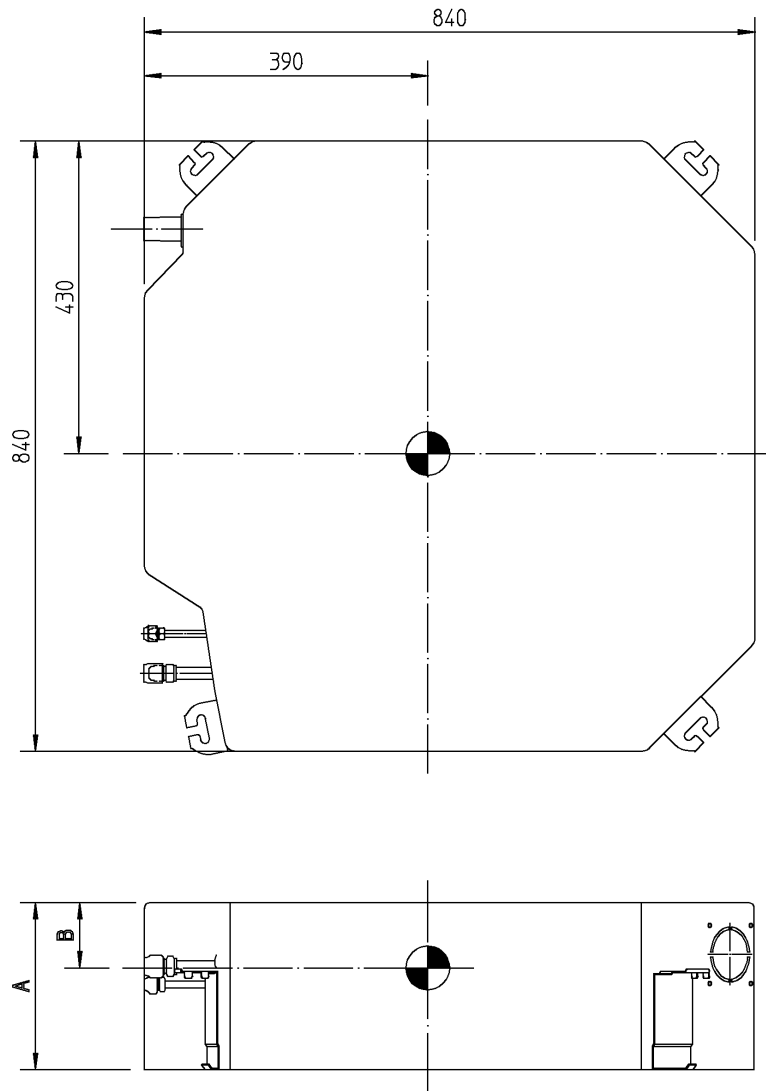


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10 Center of gravity

10 FCQ-B7



| Model | A | B |
|-----------|-----|----|
| FCQ35-60B | 230 | 90 |

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11 Safety device settings

| Model | Safety devices | 35 | 45 | 60 |
|-------|----------------------------------|-------------------------|-------------------------|-------------------------|
| FCQ-B | Fan motor thermal protector (°C) | OFF: 130±5 ON: 80±20 | OFF: 130±5 ON: 80±20 | OFF: 130±5 ON: 80±20 |
| | Drain pump fuse (°C) | 145 | 145 | 145 |

3TW22831-3A



12 Installation

