DAIKIN UNIVERSITY

Daikin
Ductless Single & Multi-Split Key Points of Installation

Participant Guide

Introduction to Daikin

Learning Objectives

- Basic understanding of Daikin's history
- Understand Daikin's position in the global marketplace
- Understand Daikin's commitment to the environment and the industry
- Understand where to go for sales and technical support
- Know what training resources are available to you and how to use them to your advantage

Agenda

- About Daikin
- Daikin North America

DAIKIN

About Daikin

Daikin is a comprehensive global HVAC manufacturer offering extensive products, including ducted and ductless air-conditioning and heat pump systems for residential and commercial applications as well as large-sized HVAC systems for buildings and factories.

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Daikin VRV Innovation

VRF is launched globally

1982 | 1987

1st Heat Recovery

1990 | 1991

Worlds first R410A VRV Heating down to -4F EEV in Branch Selector Box

1998 | 2003

Continuous heating during defrost, Auto Charge 3280ft piping

2005 | 2007

2013

World's first VRV system is developed

1982

First Inverter VRV

1990

World's first R407C VRV Auto Addressing (no rotary or dipswitches

1998

2nd Generation VRV Water Cooled Technology

2005 | 2007

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Daikin Quality

- Daikin is committed to providing homes, businesses and industry with the most efficient HVAC solutions to meet your cooling and heating needs, today and in the future.
- We are keenly aware of our responsibility to protect the environment in everything we do, and all our policies, practices and processes are developed and implemented with environmental sustainability at their heart. We conduct our business in accordance with green principles because it makes sound economical, as well as ecological sense.

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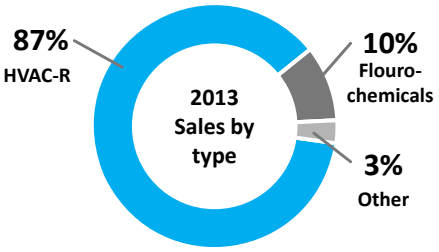
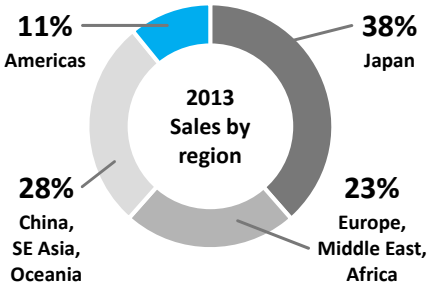
Daikin Dedication

As the only company in the world dedicated to heating and air conditioning systems and refrigerants, 97% of Daikin's core business is focused in HVAC and Refrigerants. Daikin leads the way in energy efficiency, individualized comfort, and quality and is the #1 in HVAC manufacturing sales worldwide.





17 Billion USD World Wide HVAC Sales in 2013

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Daikin's Investments

Who has made the largest investment in the North American HVAC industry over the last 8 years? *Daikin.*

DAIKIN

Goodman® Air Conditioning & Heating

McQuay International

J&E Hall International

Amana Heating & Air Conditioning

AAF International

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Daikin's Social Responsibility

- Recover – Recycle – Reclaim – Reuse
- Partnerships with AHRI, ASHRAE and others

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Agenda

- About Daikin
- Daikin North America

DAIKIN

Daikin North America – Our Vision

Our vision is to be the premier provider of the highest quality air conditioning products, systems, services, and solutions in North America by focusing on outstanding, long-term customer service.

- To accomplish this, we will continue to hire the best people, always conduct our business easily and fairly, and operate with the highest degree of integrity in all business practices.
- In order to attract and retain the best people, we are committed to providing the best training and creating an atmosphere of teamwork where we help each other grow.

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Daikin Locations

Technical Service & Training Center

Carrollton, TX

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Daikin Sales/Service Locations

Western Regional Sales & Training Center

Irvine, CA

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Daikin Sales/Service Locations

Eastern Regional Sales & Training Center

Long Island City in Queens, NY

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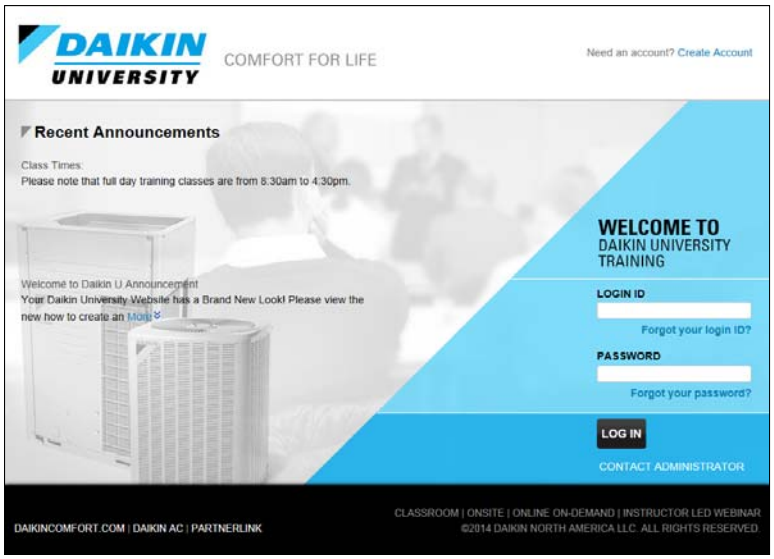
Daikin University Website



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Trust & World-Class Support

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COMFORT FOR LIFE

Thank You

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Daikin Ductless Single & Multi-Split Systems
Key Points of the Installation

Agenda

- Product Introduction
- Unit Location Considerations
- Tools
- Piping & Charging
- R-410A & PVE Oil
- Evacuation & Charging
- Electrical Wiring
- Condensate Management
- Condensate Accessory Installation
- Controls
- Field Settings
- Start-Up
- Troubleshooting
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- Accessories

Ductless Systems

Wall Mount
KE, LV, Quaternity, MXS

Slim Duct
LV, MXS

Cassette
MXS

KE Series (9, 12, 15, 18, 22)
- Up to 18 SEER and 8.5 HSPF
- Whisper quiet operation, as low as 22dB(A)
- Improved indoor air quality

KE and LV compatible with:

DAIKIN ENVi

LV Series
(Wall Mount 9, 12, 15, 18, 21.5 / Slim Duct 8.5, 11)
- Up to 25.5 SEER and 12.5 HSPF – tax credits
- **Intelligent Eye occupancy sensor**
- Improved indoor air quality

Quaternity (9, 12, 15, 18, 22)
- Up to 26.1 SEER and 15.8 EER
- **Low ambient operation** to -4° F
- **Humidity control**
- **Advanced filtration:** allergens, odors and bacteria

DAIKIN

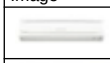
Multi-Split Systems

- Up to 19.5 SEER, 12.6 EER, 9.2 HSPF
- **Multiple Styles** - wall mounted, slim duct and ceiling cassette
- **Maximum Comfort and Control** - up to 8 zones with individual control

Compatible with:

DAIKIN ENVi

2 Zone	3 Zone	4 Zone	8 Zone
2MXS	3MXS	4MXS	RMXS
18,000	24,000	32,000	48,000
●	●	●	●
			

Indoor Capacity Range (Btu/h)							
Image	Model	7,000	9,000	12,000	15,000	18,000	24,000
	CTXS Wall Mount	●	●	●			
	FTXS Wall Mount				●	●	●
	CDXS Slim Duct				●	●	●
	FDXS Slim Duct		●	●			
	FFQ 2'x2' Ceiling Cassette		●	●	●	●	

Note- only FFQ is NOT compatible with Daikin ENVi

DAIKIN

Single-Split Outdoor Units

- RXN_KE Standard Efficiency HP (18 SEER)
- RKN_KE Standard Efficiency Cool only (18 SEER)
- RXS_LV High Efficiency HP (15+ to 24.5 SEER)

Efficiency based on AHRI 210/240 2008/2009

DAIKIN

Single-Split Indoor Units

FTXN
Wall Mount

FTXS
Wall Mount

FDXS
Slim Duct

- FTXN Heat Pump & Cool Only (KE Series) 9,000 – 24,000 Btu/h
- FTXS Heat Pump (LV Series) 9,000 – 24,000 Btu/h
- FDXS Heat Pump (LV Series) 9,000 – 12,000 Btu/h
  (10 ft. & 25 ft. receiver cable extension accessory options available)

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RXS & RKS 4-wire SkyAir

- Single phase 208/230V power supply
- Outdoor unit feeds power to indoor unit
- RXS & RKS 30 - 19.3 SEER
- RXS & RKS 36 - 17.9 SEER
- Heat Pump & Cooling Only
- Heating Range 5°F* to 75°F Outdoor
- Cooling Range 14°F* to 115°F Outdoor
- 54/55 dB(A) Sound Pressure Outdoor
- Optional Ultra Low Ambient Year Round Cooling (-40) Option Kit

FTXS

RXS_LVJU & RKS_LVJU

*Low Temp Heating and Ultra Low Temp Cooling require additional option kits

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Quaternity

- Feature packed Daikin flagship mini-split system up to 26.1 seer
- Ability to dehumidify to 4 preset settings: hi, STD, low & continuous
- “Flash streamer” air cleaner for improved IAQ
- Infra-red remote controller included shows ambient temperature & room temperature

ARC447A3
Included

FTXG09/12/15HVJU

RXG09/12/15HVJU

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2-Port Multi System

- System capacity of 18,000 Btu/h

Model	MBtu/Hr	MBtu/Hr
CTXS	07 LVJU	09 HVJU
FDXS	--	09 LVJU
FFQ	--	09 LVJU

2MXS

FFQ
2' x 2' Ceiling
Cassette

FDXS
Slim Duct

CTXS
Wall Mount

DAIKIN

3-Port & 4-Port Multi System

- System capacities of 24,000 and 32,000 Btu/h

Model	MBtu/Hr	MBtu/Hr	MBtu/Hr	MBtu/Hr	MBtu/Hr
FTXS				15 LVJU	18 LVJU
CTXS	07 LVJU	09 HVJU	12 HVJU		
FFQ		09 LVJU	12 LVJU	15 LVJU	18 LVJU
FDXS		09 LVJU	12 LVJU		
CDXS				15 LVJU	18 LVJU

3/4MXS

FTXS/CTXS
Wall Mount

CDXS/FDXS
Slim Duct

FFQ 2' x 2' Ceiling
Cassette

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- Product Introduction
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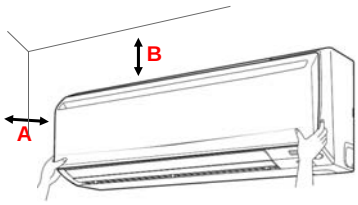
Wall Mount Unit Installation

- Ensure the unit is not exposed to direct sunlight and/or radiant heat or cool appliances.
- Airflow should circulate throughout the room.
- Ensure both air intake and outlet paths are unobstructed.
- Ensure the unit is mounted away from fluorescent lamps.
- Ensure the unit is not exposed to machine oil vapors.



A	B
≥1 15/16”	≥3”

Recommended Service Clearance

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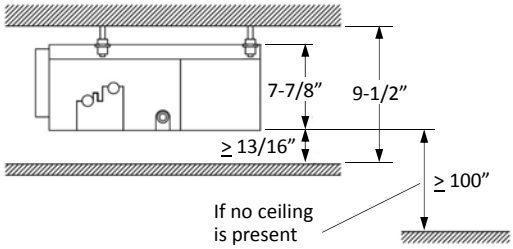
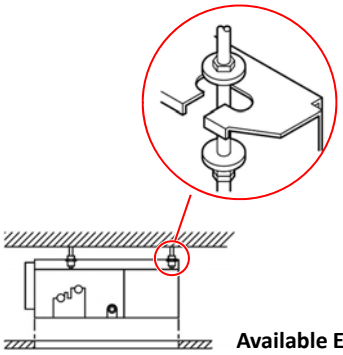
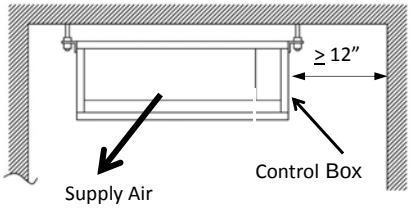
Slim Duct Indoor Units







Available External Static Pressure from 0.04” to 0.12” wg.

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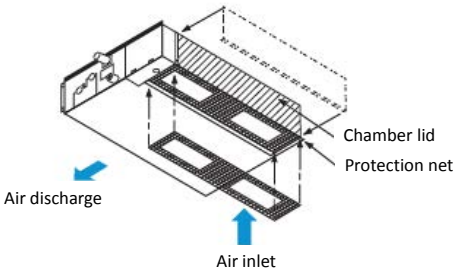
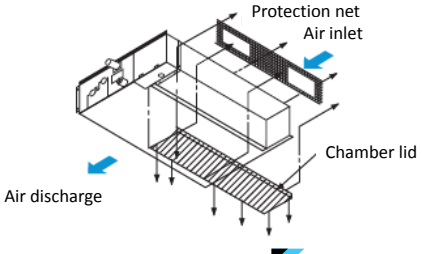
Slim Duct Indoor Units

The slim duct unit must be wrapped with an additional 1” thickness of glass, wool, or polyethylene foam insulation whenever installation conditions can exceed 86°F and 80% RH

The slim duct unit can be field configured for rear or bottom return





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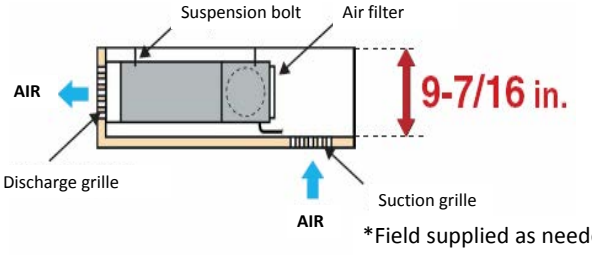
FDXS & CDXS Installation

- Rear or bottom return
- Requires less than 12” of height clearance
- Install in fur-down/soffit or attic space
- Flexible application for Ducted or Ductless installations



*Field supplied as needed

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Temperature Control

- Slim duct indoor units use a remote mounted thermistor/wire receiver.
- Wall mount indoor units use a return air thermistor located under the front cover.
- The wireless and the BRC944 wired control do not have a thermistor in them and do not display room temperature.
  - The ENVi controls the indoor unit using its own sensor.

BRC944
Wired

BRC1E72
Navigation Remote
(FFQ only)

DACA-TS1-1
Daikin ENVi

ARC452
Wireless

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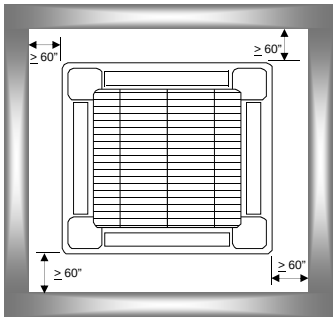
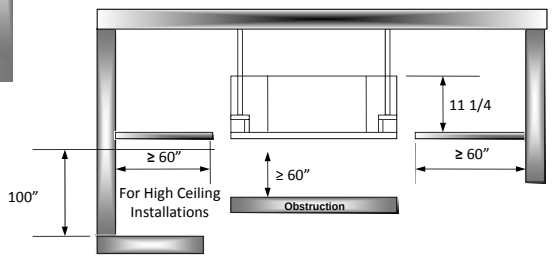
FFQ Ceiling Cassette Dimensions





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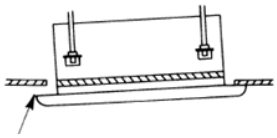
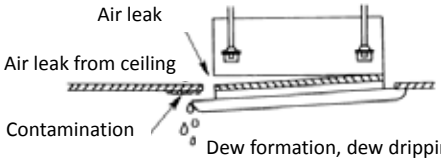
FFQ Decoration Panel Installation

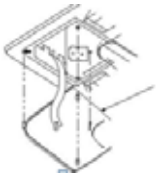
If a gap exists between the ceiling and the decoration panel after screwing in the screws, readjust the indoor unit body height to close gap.



No gap allowed



Dew formation, dew dripping



Install the service cover by sliding 4 latches to fit into the holes on the decoration panel.

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Outdoor Unit Considerations

- Choose a location capable of supporting the weight of the unit
- Choose a location where the air discharge will not interfere with other systems or people

Construct a large canopy

Install the unit high enough off the ground to prevent burying in snow

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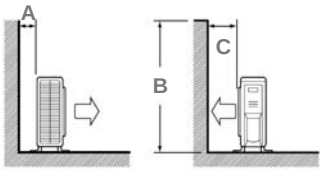
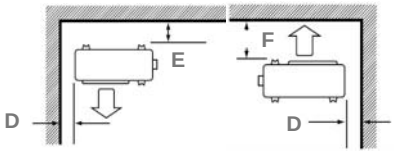
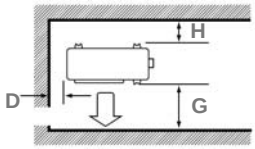
Outdoor Unit Clearances



Side View
(Single Obstruction)



Top View
(Two Obstructions)



Top View
(Three Obstructions)

MODEL	A	B	C	D	E	F	G	H
RXS09/12LVJU	>1 5/16	>47 3/16	>3 15/16	>1 15/16	>3 15/16	>5 7/8	>11 13/16	>5 7/8
RXS15/18/24/30/36 LVJU	>3 15/16	>47 3/16	>13 3/4	>1 15/16	>3 15/16	>13 3/4	>13 3/4	>3 15/16
RXG/FTXG	>1 5/16	>47 3/16	>3 15/16	>1 15/16	>3 15/16	>5 7/8	>11 13/16	>5 7/8
2MXS18GVJU	>3 15/16	>47 3/16	>13 3/4	>1 15/16	>3 15/16	>13 3/4	>13 3/4	>3 15/16
3 & 4MXS32GVJU	>3 15/16	>47 3/16	>13 3/4	>1 15/16	>3 15/16	>13 3/4	>13 3/4	>3 15/16

Unit of Measurement = Inches

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Daikin Tool Kit

Model #: DACA-99S TK-1

- Heat Pump Gauge & BV Ended Hose Set
- Flaring Tool
- Flare Gauge
- Deburring Tool
- Tubing Cutter
- Torque Wrench (SAE & Metric)
- Hex Set (SAE & Metric)
- Core Remover Tool
- Adapter Fittings
- Service Port Caps

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Daikin Tool Kit

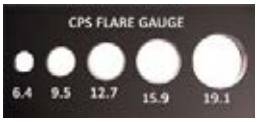
Heat Pump Gauge

Model #: MT2HP

Flaring Tool

Model #: BFT850FN

Flare Gauge



Model #: DACA-FSG-1

Torque Wrench

Model #: TLTW**SAE**/TLTWS**M**

Deburring Tool

Model #: BTLDB3

Tubing Cutter

Model #: BTC300

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Daikin Tool Kit

Core Remover Tool

Model #: TLVC410A

Hex Set (SAE)

5/64" thru 1/4"
Model #: TLSWH

Hex Set (Metric)

1.5mm thru 8mm
Model #: TLSWHM

Adapter Fittings

1/4“ to 5/16”
Angle/Swivel
Model #: AD87S

Adapter Fittings

1/4“ to 5/16”
Adapter
Model #: AD87

Service Port Caps

5/16” Caps
Model #: AD87

DAIKIN

Additional Field Tools

Nitrogen Regulator (700 PSI min)

- Nitrogen regulator capable of measuring up to 700 plus PSI is necessary for pressurizing systems to 550 PSIG

Vacuum Pump

- Having a properly maintained vacuum pump is important for evacuating a refrigerant system
- Pump capacity minimum of 2 cfm

Digital Micron Gauge

- Vacuum Gauge w/Digital Display
- Using a micron gauge for the entire evacuation process is mandatory on all Daikin systems

Digital Scale

- A good digital scale must be used to properly weigh in the liquid R-410A refrigerant

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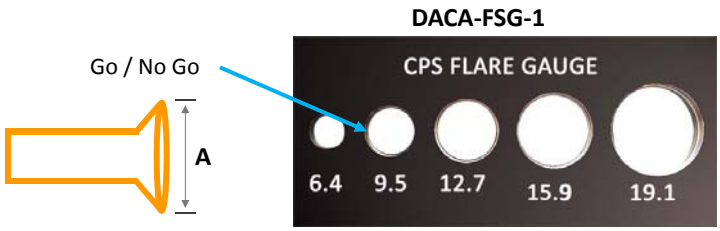
Piping Flaring



Dimension "A" requirement	
Pipe Size	**Dimension**
1/4"	**9.1mm**
3/8"	**13.2mm**
1/2"	**16.6mm**
5/8"	**19.7mm**
3/4"	**24.0mm**

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Piping Rules

Outdoor Unit	Length	Vertical Separation	Maximum Pipe to each Indoor Unit
09/12 KE & LV	66 ft.	49 ft.	N/A
15/18/24/30/36 KE & LV	98 ft.	66 ft.	N/A
RXG	32 ft.	26 ft.	N/A
2-Port	164 ft.	49 ft.	82 ft.
3-Port & 4-Port	231 ft.	49 ft.	82 ft.

- Minimum 5 linear ft. KE & LV Series
- Minimum 10 linear ft. per line 2-Port, 3-Port, & 4-Port
- Maximum 24 ft. vertical separation of indoor units 2-Port, 3-Port, & 4-Port

Piping and Wiring can follow same chase

Flare connections at outdoor unit and at indoor unit. No brazing required.

Vertical Separation Rules apply if indoor units are above OR below condenser

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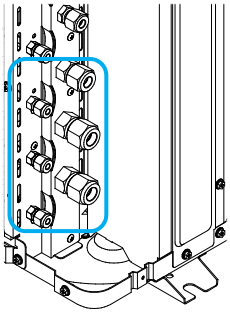
Multi Port Flare Adapters

Port	3MXS24*	4MXS32*	Reducer numbers
A	07 , 09 , 12	07 , 09 , 12	———
B	(07), (09), (12), 15 , 18	(07), (09), (12), 15 , 18	◯ 07, 09 & 12 Use No. 2 & 4 reducers
C	(07), (09), (12), (15), (18)	(07), (09), (12), (15), (18)	◯ 07, 09 & 12 Use No. 5 & 6 reducers 15 & 18 Use No. 1 & 3 reducers
D	———	(07), (09), (12), (15), (18)	◯ 07, 09 & 12 Use No. 5 & 6 reducers 15 & 18 Use No. 1 & 3 reducers



- When using the reducer fittings shown above, be careful not to over tighten the nut, or the smaller pipe may be damaged (about 2/3-1 the normal torque)
- Apply a coat of refrigeration oil to the threaded connection port of the outdoor unit where the flare nut comes in
- Use an appropriate wrench with backup wrench to avoid damaging the connection thread by over tightening the flare nut

Flare Nut Tightening Torque	
Flare nut for ϕ3/8”	24.1 – 29.4ft-lbf
Flare nut for ϕ1/2”	36.5 – 44.5ft.-lbf
Flare nut for ϕ5/8”	45.6 – 55.6ft.-lbf

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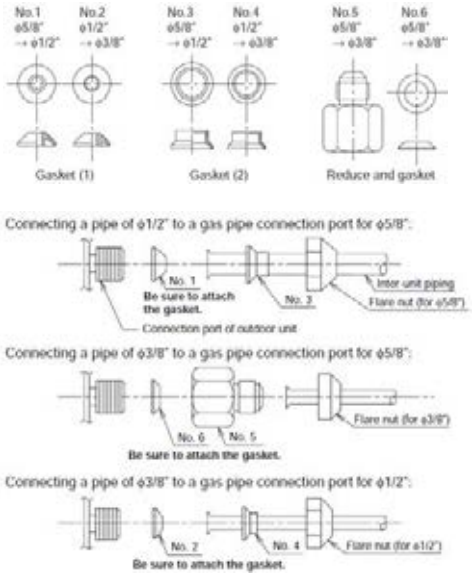
Multi Port Flare Adapters

5/8” to 3/8” or 1/2”



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Flare Torque

Must use back up wrench when tightening or loosening flare nuts

Tightening Torque

Flare nut size	Standard tightening torque	
	Ft/lb.	N/m
1/4	10.5 – 12.7	14.2 –17.2
3/8	24.2 – 29.4	32.7 – 39.9
1/2	36.5 – 44.5	49.5 – 60.3
5/8	45.6 – 55.6	61.8 – 75.4

Use only Daikin supplied flare nuts (shown on left side above)

INAPPROPRIATE TIGHTENING TORQUE

Too tight

- Reduced flare nut wall thickness - leakage
- Flare nut damage

Too loose

- Gas leak

DAIKIN

Brazing

Dry Nitrogen *MUST* be used during all brazing (Pressure regulated to 1.5 to 3 PSIG) to prevent oxidation formation

- Tape in Schrader Fitting
- Set nitrogen regulator between 1.5 – 3 PSIG
- Leave other end of pipe open so nitrogen can flow through during brazing

DAIKIN

Line Components

Only install driers, oil traps, or any other line components in your piping work if instructed to do so in the IOM documents – if no instruction, it's because it is NOT necessary (for Daikin).

The **only** acceptable piping is **ACR (copper)** type tubing which is dehydrated and sealed at both ends.

DAIKIN

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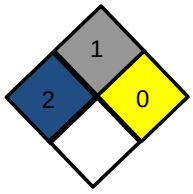
- Trial & Forced Pump Down
- Accessories

DAIKIN

R-410A Safety

ASHRAE



NFPA 704

HMIS®

- Asphyxia
- Heavier than air
- Products of Decomposition
- Skin Irritant
- Frostbite
- Storage below 125 F

DAIKIN

PolyVinylEther Oil (PVE)

- Compatible with all HFC Refrigerants
- Excellent anti-wear properties
- Better solubility with process fluids
- Superior Resistance to Cap tube blockage
- Better lubricity
- Very Hygroscopic but with no hydrolysis
- Moisture easily removed

DAIKIN

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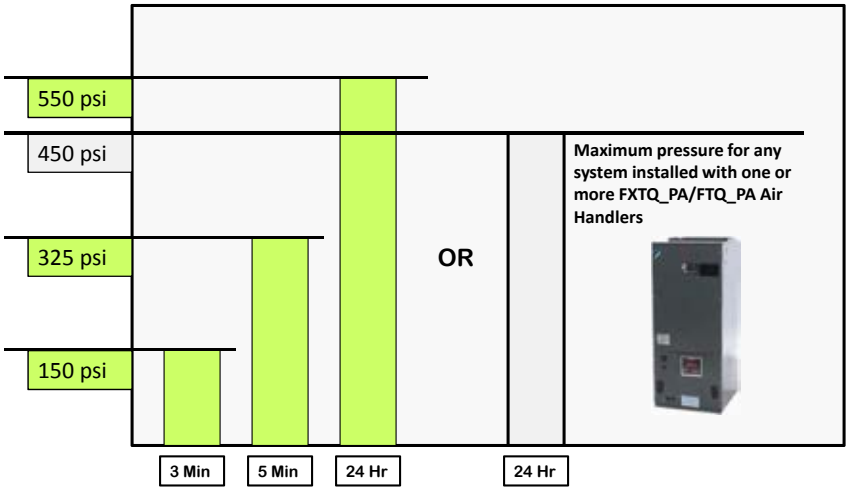
DAIKIN

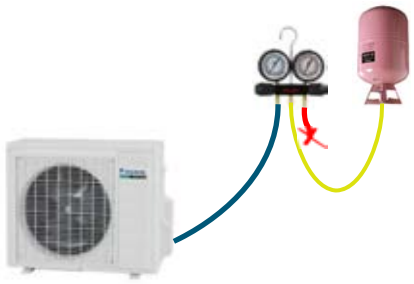
System Nitrogen Pressure Test

Verify all stop valves are securely closed before pressure test



DAIKIN

Evacuation Connections



- Connect manifold gauges to suction port of outdoor unit.
- Connect vacuum pump and micron gauge.
- Triple evacuation down to 500 microns or less using dry nitrogen to break vacuum.
- The final vacuum is used to draw in the calculated “Additional Refrigerant Charge” amount by weight.

DAIKIN

Triple Evacuation

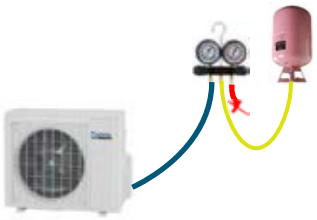
Daikin Recommends Triple Evacuation

- Evacuate the system to 4000 microns and hold for 15 minutes
- Break vacuum with dry nitrogen to a pressure of 2-3 PSIG and hold for 20 minutes
- Evacuate to 1500 microns and hold for 20 minutes
- Break vacuum with dry nitrogen to a pressure of 2-3 PSIG and hold for 20 minutes
- Evacuate below 500 microns and hold for 60 minutes

Note: when evacuation is complete use the vacuum to pull in the additional refrigerant charge

DAIKIN

Additional Refrigerant Charge



NOTE: RXS/RKS_LV - .21 oz per foot
RXG – No additional charge allowed

RXN/RKN_KE	Factory Charge	If line Set Exceeds 33 Feet Add
9,000 Btu	1lb. 12 oz	.22 oz per foot
12,000 Btu	2lb. 3.2 oz	.22 oz per foot
15,000 Btu	3lb. 12 oz	.22 oz per foot
18,000 Btu	3lb. 12 oz	.22 oz per foot
24,000 BTU	3lb. 12 oz	.22 oz per foot

Outdoor Unit Model No.		If line Set Exceeds 98 Feet Add
2MXS18GVJU	5lb. 12 oz	.22 oz per foot

Outdoor Unit Model No.	Factory Charge	If line Set Exceeds 131.5 Feet Add
3MXS24 & 4MXS32GVJU	6lb. 13 oz	.22 oz per foot

DAIKIN

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DAIKIN

Single and Multi Split Wiring Interconnecting Wire

- Cable specification for interconnecting wire
  - 4-conductor, 240 VAC weather-proof cable
  - Solid core wire is acceptable, stranded is preferred
  - There must be no splices on the #3 communication wire
  - Use AWG16 if the connecting wire length is less than 32.8ft (10m)
  - Use AWG14 if the connecting wire is more than 32.8ft (10m)

Interconnecting wire (outdoor unit to indoor unit)

Always follow local codes

DAIKIN

Single-Split Wiring

POWER SUPPLY 1PH
208/230 Volts

L1 L2 ⏚

1 = LINE

2 = LINE

3 = COMM - 5 - 45vdc

⏚ = Ground

1
2
3
⏚

Always follow local codes

DAIKIN

Mini-Split Wiring – With Disconnect at Fan Coil

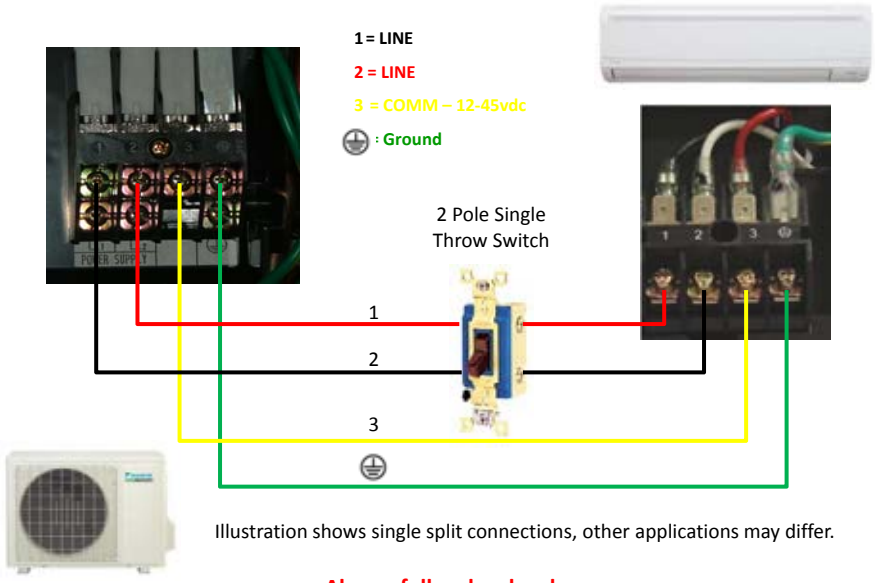
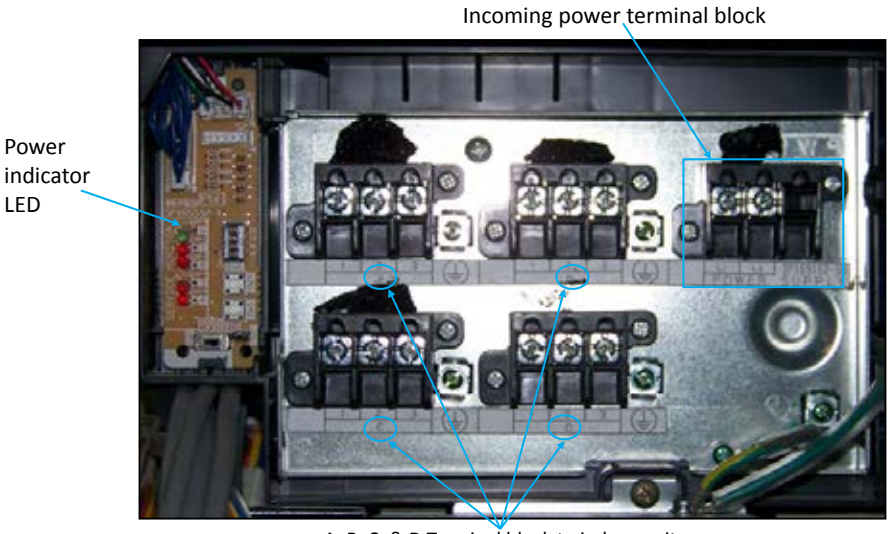


Illustration shows single split connections, other applications may differ.

Always follow local codes

DAIKIN

3 & 4-Port Multi Wiring



A, B, C, & D Terminal block to indoor units

Illustration shows 4-Port connections, other applications may differ.

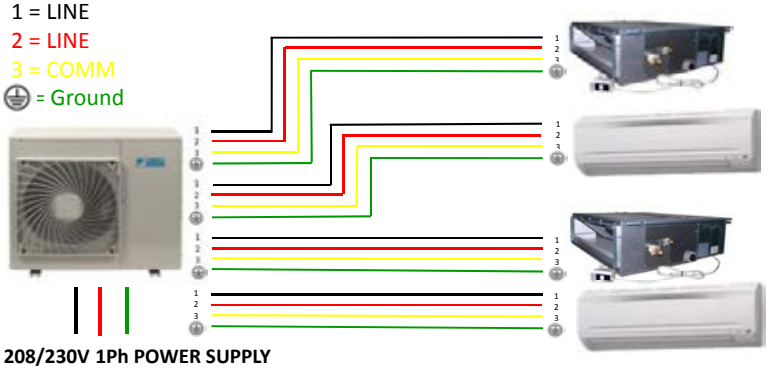
Always follow local codes

DAIKIN

3 & 4-Port Multi Wiring

- 208/230 VAC is connected to the outdoor unit on L1 L2 and Ground
- Lines 1, 2, 3 + Ground (4 conductor) are connected from the outdoor unit to each indoor unit

1 = LINE
2 = LINE
3 = COMM
⏚ = Ground



208/230V 1Ph POWER SUPPLY

Single 20 amp circuit to power outdoor and all indoor units
Illustration shows 4-Port connections, other applications may differ.

Always follow local codes

DAIKIN

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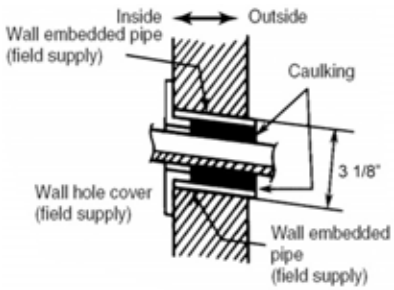
DAIKIN

Condensate Gravity Drain

When installing refrigerant pipe and drain pipe through exterior wall:

- Bore a 3 1/8" diameter hole through the wall sloping toward the exterior.
- Insert wall pipe (feed tube) into the hole.
- Insert wall hole cover into the wall pipe.
- After completing refrigerant piping, wiring and drain piping, fill all gaps and spaces with caulk or putty to prevent water leaks and outside air infiltration.

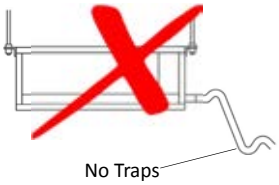


For walls containing metal frame or siding, use field supplied conduit or grommet to prevent heat transfer, electrical shock or fire.

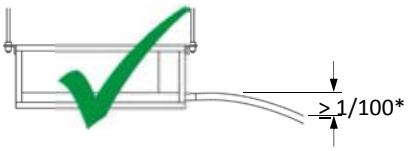
DAIKIN

FDXS & CDXS Gravity Drain

- Must not contain any traps or kinks in the line.



- Must maintain an even slope of 1/100 or greater.



* Slope ≥ 1/100 (Rise/Run)

Always follow local codes

DAIKIN

FFQ Lift Pump

- Precautions for drain raising piping
  - Install the drain raising pipes at a height of less than 21-7/16”
  - Install the drain raising pipes at a right angle to the indoor unit and no more than 11-3/4” from the unit.

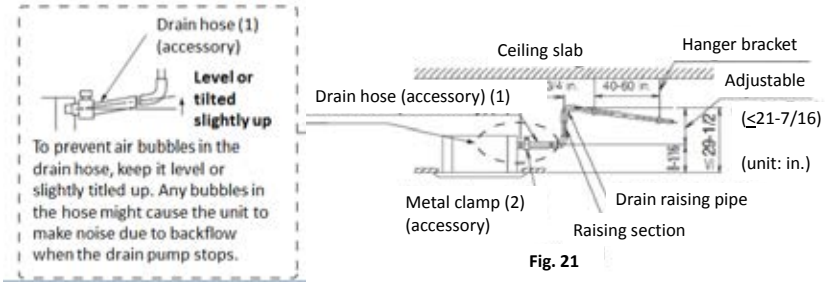


Fig. 21

Note: To ensure no excessive pressure is applied to the included drain hose (1), do not bend or twist the hose when installing as it could cause leakage.

DAIKIN

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DAIKIN

Condensate Pump (Option)

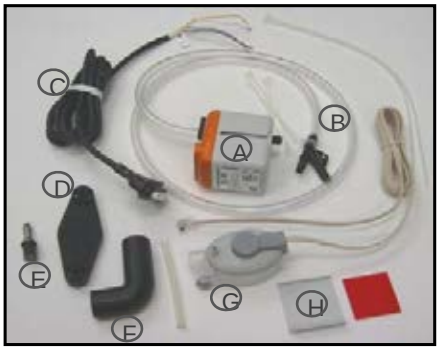
Before You Start Installing Condensate Pump

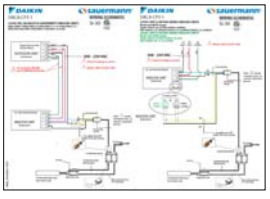
- Installing a condensate pump behind a wall mount unit requires special consideration due to the limited amount of space left over after running the line set and line voltage behind the unit.
- If line set has to go out the left hand side of unit, follow the same instructions listed within for the right hand exit. Drain tubing lengths may very depending on materials used for line set, high voltage and drain. Cut lengths of tubing as you assemble drain and line set.
- When exiting on left side use one piece of ½" insulation to cover both the liquid and suction lines behind unit. This will give you more room for the pump and float assembly. After you exit unit increase insulation back to ¾" wall and insulate the liquid and suction lines separately.
- After install, prime pump before starting unit.

DAIKIN

Condensate Pump Kit Contents

A. Pump Assembly
B. ¼" ID. Discharge tube w/check valve & male barb fitting (40")
C. Power/Safety Switch cable (60")
D. Rubber pump mounting pads R&L
E. 1/4" x 3/8" Self-sealing Drain Fitting
F. Drain outlet to float assembly inlet fitting
G. Float assembly w/cable & vent tube
H. Float assembly mount with double sided adhesive tape
I. Instruction sheet





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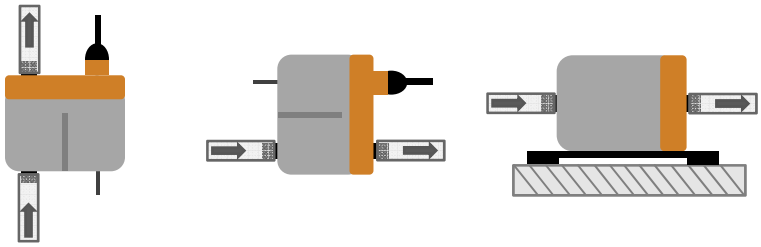
NOTE: Inline fuse (2amp), ¼" ID. Discharge tubing & barbed couplings are field supplied - Refer to pump Installation Instructions

DAIKIN

Pump Installation Tips

- Pump Motor Installation
  - Right and left rubber mounting pads provided
    - Wall or surface mount
    - Suspended
    - Attached to refrigerant line
- Pump Motor Positions
  - Acceptable

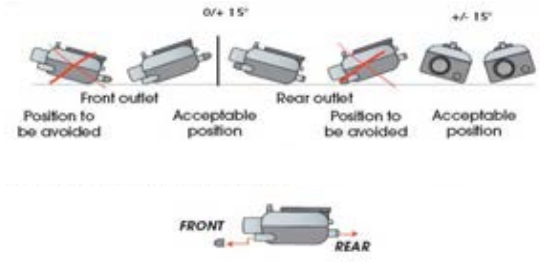


NOTE: Wallmount fan coil installations require the refrigerant lines to only be run on right side of unit for pump to be installed within the cabinet.

DAIKIN

Pump Installation Tips

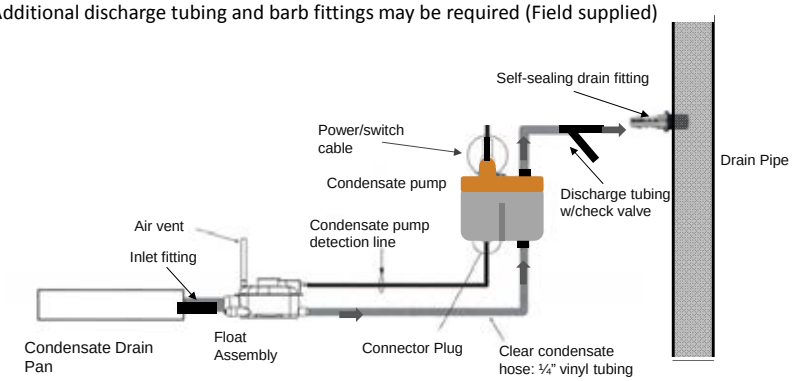
- Float Assembly Installation
  - Float assembly has a 1/4" front and rear outlets
  - Front outlet is capped from the factory
  - The float assembly must be supported
  - Recommended float assembly position: flat and level
  - Install the float assembly where it can be accessed for maintenance
- Alternate float assembly positions



DAIKIN

Pump Installation Tips

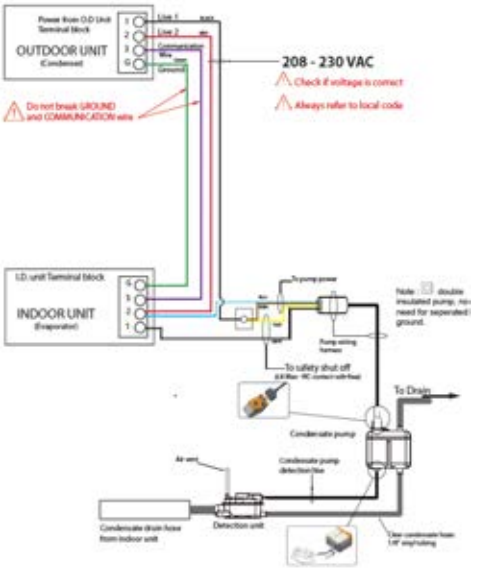
- Trim to fit the black rubber inlet fitting from drain pan outlet to inlet of float assembly (Provided)
  - Drain outlet adapters may be required (Field supplied)
- Install air vent on float assembly (Provided)
  - Air vent tube must terminate above drain pan level
- Install ¼" clear tubing from float outlet to pump inlet (Field supplied)
- Install ¼" clear tubing from pump outlet to self-sealing drain fitting including check valve (Provided)
  - Additional discharge tubing and barb fittings may be required (Field supplied)



DAIKIN

Pump Installation Tips

- Condensate pump is powered from the Indoor fan coil unit on terminals 1 & 2.
  - The pump motor requires no ground conductor.
  - Float switch safety controls line voltage power to fan coil unit by switching terminal 1 (Yellow & White).
- Refer to the pump Installation Instructions for additional information.
- **Always follow local codes for proper wiring.**



DAIKIN

Pump Installation Tips

- After the condensate pump system has been installed it should be checked and tested to verify proper operation
  - Verify all line voltage connections and power supply voltage
  - Verify the correct positioning of the pump motor and float assembly
  - Verify float assembly detection cable is connected to the pump
  - Verify that all tubing is in place with tight connections
  - Self-sealing drain fitting is properly installed in drain pipe where applicable
  - Cycle the pump by priming the condensate drain pan with water when possible
  - Check for excessive vibration and noise from the pump
  - Verify leak-free operation

DAIKIN

Condensate Overflow Protection Sensor DACA-CFS1

- Condensate overflow protection for all Daikin wall mounted indoor units
  - Microelectronic control
  - No moving parts
- Simple two component installation
  - Drain Pan Water Sensor
  - Electronic Control Switch

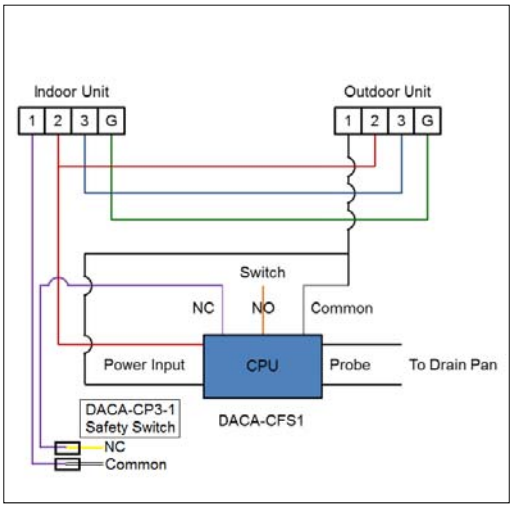
DACA- CFS1

Drain Pan Water Sensor

Electronic Control Switch
Line Voltage Powered

DAIKIN

FTXS & DACA-CFS1 Wiring



DACA-CFS1 Condensate Overflow Safety Switch

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FTXS & CTXS Wireless Remote

Fan Speed Select

Powerful Mode
Max Cool or Heat

Mode Select
AUTO-DRY-COOL-HEAT-FAN

Outdoor Quiet Mode

Intelligent Eye Mode

Timer OFF

Cancel

Timer Select

Backlit LCD Display

System On / Off

Set-Point Temp Up/Down

Vertical Louver Button

Horizontal Louver Button

Timer ON

Standard Remote Controller for all Mini Split Wall Mount Indoor Units

Factory Supplied R/C

ARC452A21: CTXS07LVJU
FTXS09LVJU
FTXS12LVJU
FTXS15LVJU
FTXS18LVJU
FTXS24LVJU

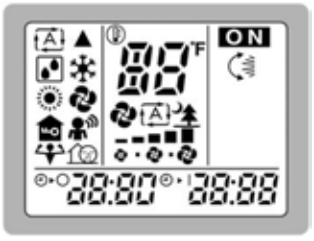
ARC452A9: CTXS09HVJU
CTXS12HVJU

DAIKIN

Remote Controller Icons

: AUTO
: DRY
: COOL
: HEAT
: FAN

"" ""



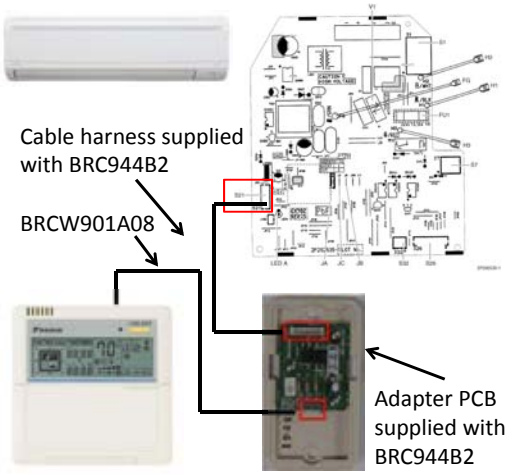
If function is active the icon will appear on screen

DAIKIN

Wall Mounted BRC944B2

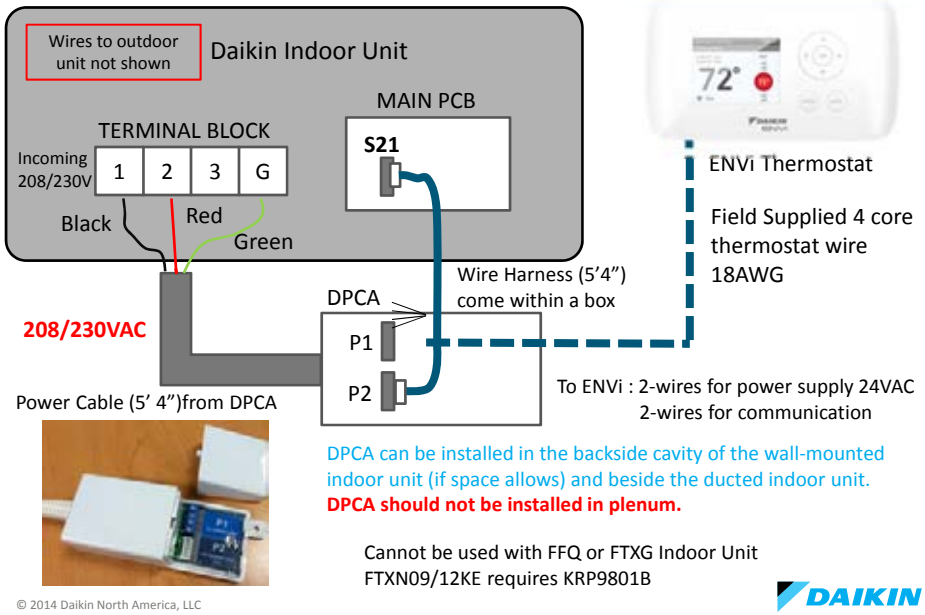
Installation – FTXN/FTXS/CTXS/FDXS/CDXS

- Mount the remote controller back plate to the wall surface or fixing box with the supplied screws
- Mount the remote controller adapter to the wall surface or the indoor unit with the supplied screws or double-sided tape
- Attach one end of the 5-wire cable to the controller adapter PCB and the other end to the S21 connector on the indoor unit main PCB
- Attach one end of the 4-wire cable to the adapter PCB and the other end to the remote controller PCB
- Replace the upper covers of the controller and the controller adapter PCB into their original positions
- Note: ground terminal not required.



FTXN09/12KE requires KRP980B1

Daikin ENVi Wiring



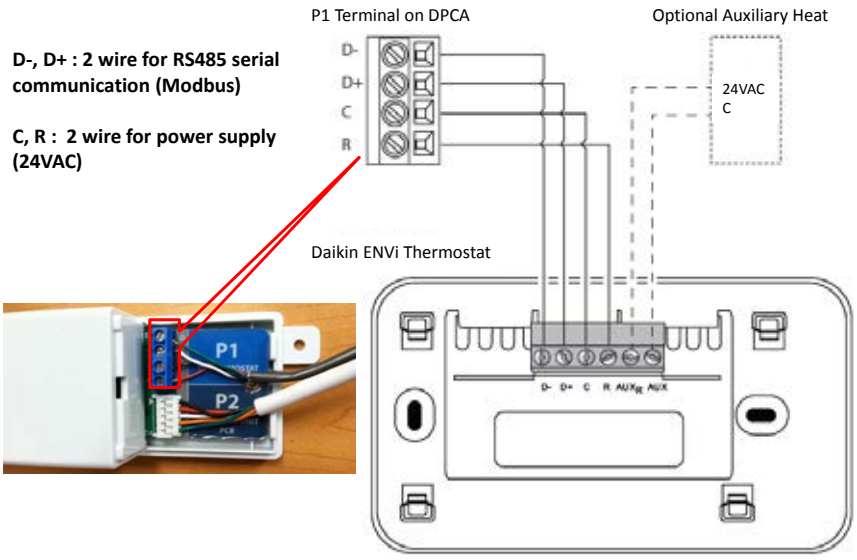
DPCA can be installed in the backside cavity of the wall-mounted indoor unit (if space allows) and beside the ducted indoor unit.
DPCA should not be installed in plenum.

Cannot be used with FFQ or FTXG Indoor Unit
FTXN09/12KE requires KRP9801B

DPCA and Daikin ENVi Wiring

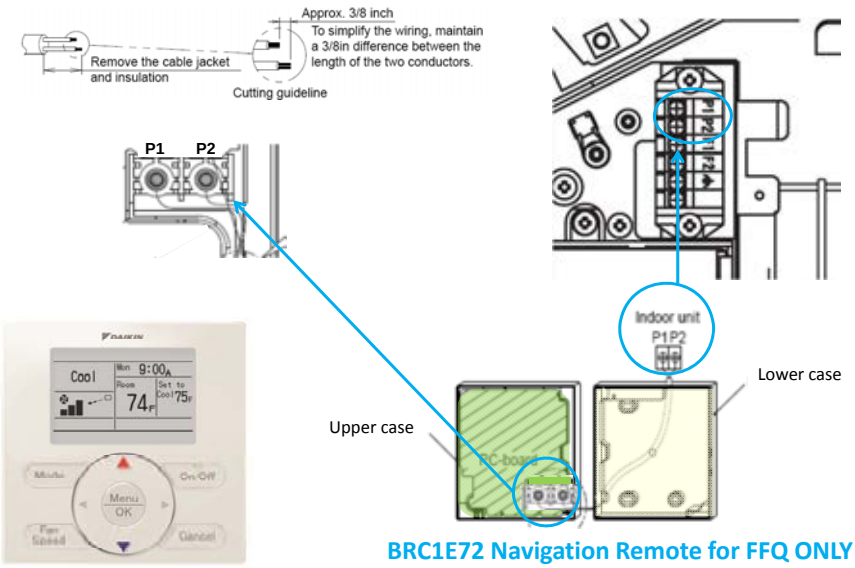
D-, D+ : 2 wire for RS485 serial communication (Modbus)

C, R : 2 wire for power supply (24VAC)



DAIKIN

BRC1E72 Navigation Remote



BRC1E72 Navigation Remote for FFQ ONLY

DAIKIN

BRC7E830

- Solution for applications which cannot use wired remote controllers
- Wireless remote controllers are provided as kits
- Cool or heat temperature setpoint display
- Commonly used control buttons on face with programming buttons behind cover

The Hand-Held Remote Controllers do not have a sensor for measuring space temperature

DAIKIN

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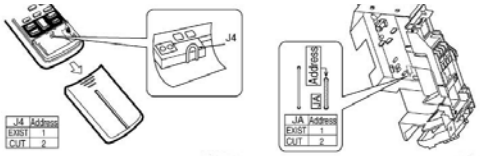
DAIKIN

Addressing the Remote Controller

When two indoor units are installed in one room, the two wireless remote controllers can be set for different addresses

- How to set the different addresses
- Control PCB of the indoor unit
  - (1) Remove the front grille (3 screws)
  - (2) Remove the electrical box (1 screw)
  - (3) Remove the drip proof plate (4 tabs)
  - (4) Cut the address jumper JA on the control PCB
- Wireless remote controller
  - (1) Slide the front cover and take it off
  - (2) Cut the address jumper J4



DAIKIN

Setting Priority

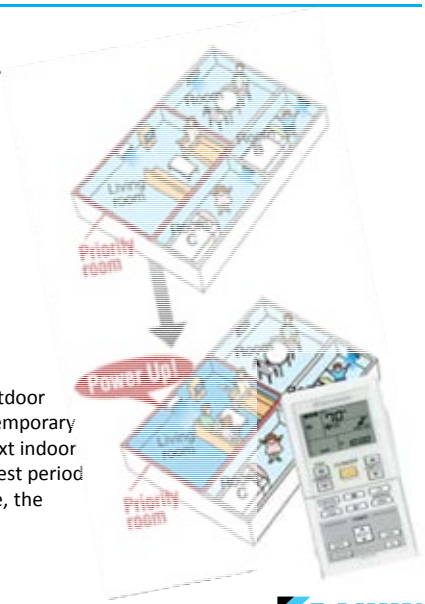
With the 2,3 & 4-Port systems, one of the indoor fan coils must dictate the system mode of operation, for heat or cool. Daikin provides two options to determine the Priority fan coil:

Option 1 (Recommended)

At the time of system commissioning, one fan coil is configured as the Master from the Outdoor Unit.

Option 2

If a priority indoor fan coil is not selected from the Outdoor Unit, the first indoor unit switched ON becomes the temporary Master. When this indoor unit is switched OFF, the next indoor unit which has had an opposite active call for the longest period of time is made the next temporary Master. Therefore, the "floating" priority fan coil function is adopted.



DAIKIN

Multi 2, 3 & 4-Port Priority Setup

- You <u>should</u> choose a Priority Unit during install
- For 2-Port Multi. Inside outdoor unit on PCB slide A or B dip switch over opposite others
- For a 3 or 4-Port Multi. Inside outdoor unit on PCB slide A, B, C or D dip switch over opposite others
- This must be done with power off

DAIKIN

Night Quiet Mode Activation

If Night Quiet Mode is to be used, initial settings must be made when the unit is installed. Explain Night Quiet Mode, as described below, to the customer, and confirm whether or not the customer wants to use Night Quiet Mode.

About Night Quiet Mode
The Night Quiet Mode function reduces operating noise of the outdoor unit at nighttime. This function is useful if the customer is worried about the effects of the operating noise on the neighbors. However, if Night Quiet Mode is running, cooling capacity will be saved.

Setting procedure
Remove the SW5 jumper switch. Once the settings are complete, reset the power.

Note: Install the removed jumper switch as described below. This switch will be needed to later disable this setting.


Jumper switch


After removing

Multi Split 2, 3, & 4-Port Outdoor Unit

DAIKIN

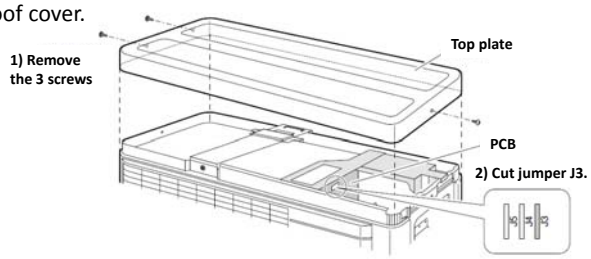
Low Ambient Cooling (KEVJU 9 & 12 series)

RKN_KEVJU/RXN_KEVJU Low Ambient Cooling

Disconnect power from outdoor unit, then wait 10 minutes before cutting jumper

You can expand the cooling operation range from 50°F to (10°C): normal operation) to 5°F (-15°C) cooling at low outdoor temperature setting) by turning on the switch (SW4-B) on the outdoor unit PCB. In addition a jumper must be cut on the main PCB instructions below.

1. Remove the 3 screws on the side and remove the top plate of the outdoor unit.
2. Remove the drip proof cover.
3. Cut the jumper (J3).



This function is designed for facilities such as equipment or computer rooms. It is never to be used in a residence or office where people occupy the space.

DAIKIN

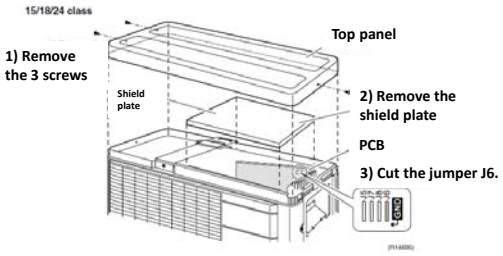
Low Ambient Cooling (KEVJU 15, 18 & 24 Series)

RKN_KEVJU/RXN_KEVJU Low Ambient Cooling

Disconnect power from outdoor unit, then wait 10 minutes before cutting jumper

You can expand the cooling operation range from 50°F (10°C): normal operation) to 5°F (-15°C) cooling at low outdoor temperature setting) by turning on the switch (SW4-B) on the outdoor unit PCB. In addition a jumper must be cut on the main PCB instructions below.

1. Remove the 3 screws on the side and remove the top plate of the outdoor unit.
2. Remove the drip proof cover.
3. Cut the jumper (J6).



This function is designed for facilities such as equipment or computer rooms. It is never to be used in a residence or office where people occupy the space.

DAIKIN

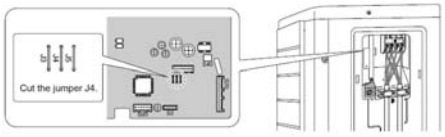
Low Ambient Cooling (LVJU)

RXS_LVJU Low Ambient Cooling

Disconnect power from outdoor unit, then wait 10 minutes before cutting jumper.

RXS09-12LVJU

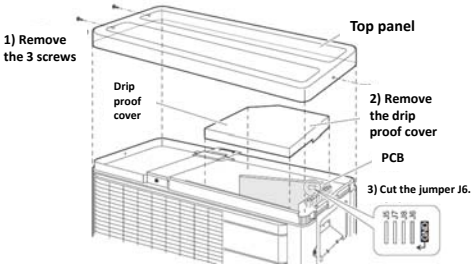
Cutting jumper (J4) on the PCB, as shown below, will expand the operation range down to 14°F (–10°C).
If the outdoor temperature drops below –0.4°F (–18°C), the operation stops and starts back up once the temperature rises again.



Requires wind baffle kit for outdoor unit.

RXS15 & 18LVJU

Cutting jumper (J6) on the PCB, as shown below, will expand the operation range down to 14°F (–10°C). If the outdoor temperature drops below –0.4°F (–18°C), the operation stops and starts back up once the temperature rises again.



This function is designed for facilities such as equipment or computer rooms.
It is never to be used in a residence or office where people occupy the space.

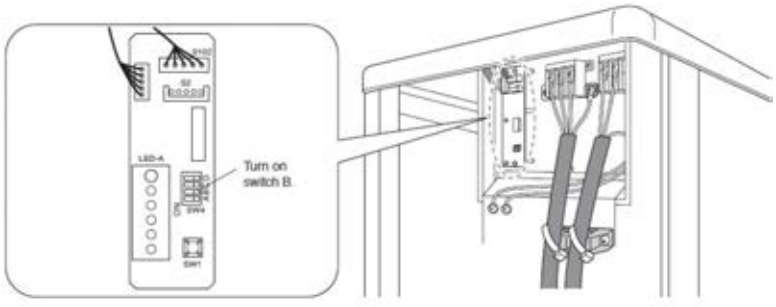
DAIKIN

Low Ambient Cooling (LVJU)

RKS30/36LVJU & RXS24/30/36LVJU Low Ambient Cooling

This function is designed for facilities such as equipment or computer rooms.
It is never to be used in a residence or office where people occupy the space.

Turning on Switch B will expand the operation range down to 14°F (–10°C). If the outdoor temperature drops below –0.4°F (–18°C), the operation stops and starts back up once the temperature rises again.



Year-Round Cooling kits available, 2F018535-1 & 2F018535-2, allow low ambient cooling to -40°F

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Agenda

- Product Introduction
- Unit Location Considerations
- Tools
- Piping & Charging
- R-410A & PVE Oil
- Evacuation & Charging
- Electrical Wiring
- Condensate Management
- Condensate Accessory Installation
- Controls
- Field Settings
- Start-Up
- Troubleshooting
- Trial & Forced Pump Down
- Accessories

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System Start Up Checklist

- Indoor and outdoor units are installed securely & are level
- Pressure test system to 550 PSIG for 24 hours
- Perform triple evacuation on system
- Calculate liquid line length and corresponding required additional refrigerant charge
- Open service valves
- Check supply voltage (L1 to L2) - must read between 187 and 253 volts

DAIKIN

System Start Up Checklist

- Ensure all drain pipe is properly connected
- Ensure all filters are in place
- Ensure all refrigerant piping is properly insulated
  - Insulate each line independently
- Power system on for 6 hours
  - Single Split – Turn on the indoor unit using the remote control and test each mode of operation
  - Multi Split – Turn on each indoor unit individually using the remote control and test each mode of operation

NOTE: All modes of operation may not be available depending on the outside ambient conditions, see the sequence of operation for more information

If system does not operation properly, proceed to Troubleshooting

DAIKIN

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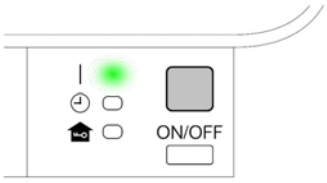
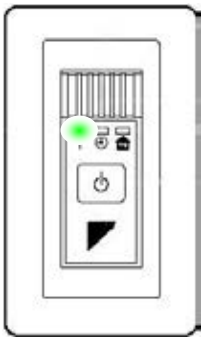
System Fault Indication

- The green operation lamp on the indoor unit's front panel will flash when:
  - A protection device in the indoor or outdoor unit activates
  - A thermistor malfunctions
  - A signal transmission error occurs

CTXS/FTXS09/12LVJU



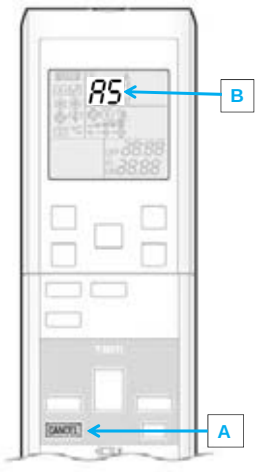
FTXS09 thru 24LVJU



FDXS & CDXS_LVJU

DAIKIN

Fault Diagnosis from the Remote Controller



- Press and hold the **timer cancel** button (A) for 5 seconds to activate the service check function and a long beep will sound from the indoor unit.
- The temperature display on the remote's lcd display flashes **00** (b). As you continue to press the cancel button, error codes will continue to display with a short beep.
- Press the **timer cancel** button (a) repeatedly until a long **beep** is heard.
- The temperature display changes from flashing **00** to the last fault code stored in memory (b).
- Press and hold the **timer cancel** button (a) for 5 seconds to deactivate the service check function.
- Service check mode will cancel automatically after 1 minute.

Your remote controller may look slightly different but same steps apply.

DAIKIN

System Fault Indication

	Error Codes	Description	
System	00	Normal	
	U0★	Refrigerant shortage	
	U2	Low-voltage detection or over-voltage detection	
	U4	Signal transmission error (between indoor unit and outdoor unit)	
	U8	Unspecified voltage (between indoor unit and outdoor unit)	
Indoor Unit	R1	Indoor unit PCB abnormality	
	R5	Freeze-up protection control or heating peak-cut control	
	R6	Fan motor or related abnormality	DC motor (FTXS series)
			AC motor (FDXS series)
	C4	Indoor heat exchanger thermistor or related abnormality	
	C9	Room temperature thermistor or related abnormality	

★: Displayed only when system-down occurs..

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System Fault Indication

Outdoor Unit	E1	Outdoor unit PCB abnormality
	E5★	OL activation (compressor overload)
	E6★	Compressor lock
	E7★	DC fan lock
	E8	Input overcurrent detection
	ER	Four way valve abnormality
	F3	Discharge pipe temperature control
	F6	High pressure control in cooling
	H0	Compressor system sensor abnormality
	H6	Position sensor abnormality
	H8	DC voltage / current sensor abnormality (09/12 class only)
		CT or related abnormality (24/30/36 class only)
	H9	Outdoor temperature thermistor or related abnormality
	J3★	Discharge pipe thermistor or related abnormality
	J6	Outdoor heat exchanger thermistor or related abnormality
	L3	Electrical box temperature rise
	L4	Radiation fin temperature rise
	L5★	Output overcurrent detection
	P4	Radiation fin thermistor or related abnormality
	U5	Signal transmission error on outdoor unit PCB (24/30/36 class only)

★: Displayed only when system-down occurs.

DAIKIN

System Fault Indication

Multi Split 2/3/4MXS Diagnostic by Outdoor Unit PCB

1. The indications in the parenthesis () in the remote controller display column are displayed only system-downs occurs.
2. When a sensor error occurs, check the remote controller display to determine which sensor is malfunctioning.

   If the remote controller does not indicate the error type, conduct the following operation. * Turn the power switch off and back on again.
3. If the same LED indication appears again immediately after the power is turned on, the fault is the thermistor. * If the above condition does not result, the fault is the CT.
4. The indoor unit error indication may take the precedence in the remote controller display

Outdoor Unit LED Indication					Indication on the remote controller	Description of The Fault
Green	Red					
A	1	2	3	4		
◑	●	●	●	●	00	Outdoor unit in normal condition (Conduct a diagnosis of the indoor unit.)
					UR	Unspecified voltage (between indoor and outdoor units)
					UH	Anti-icing function in other rooms
◑	●	●	☼	☼	(U0)	Insufficient gas
◑	☼	●	☼	●	(E5)	OL activation (compressor overload)
◑	●	☼	☼	●	(E6)	Compressor lock
◑	☼	●	☼	●	F3	Discharge pipe temperature control
◑	●	●	●	☼	L4	Radiation fin temperature rise (Protection of driver overheating)
◑	☼	☼	●	●	H8	CT or related abnormality
◑	☼	☼	●	●	H6	Position sensor abnormality
					H9	Outdoor air thermistor or related abnormality
					J3	Discharge pipe thermistor or related abnormality
					J6	Heat exchanger thermistor or related abnormality
					J8	Liquid pipe thermistor or related abnormality
					J9	Gas pipe thermistor or related abnormality
					P4	Radiation fin thermistor or related abnormality
◑	●	●	☼	●	L5	Output over current detection
◑	●	☼	●	☼	E8	Input over current detection
◑	☼	●	☼	☼	P5	Freeze-up protection control
◑	☼	☼	☼	☼	E7	DC fan lock
◑	☼	●	●	●	ER	Four way valve abnormality
◑	☼	☼	●	☼	L3	Electrical box temperature rise
◑	☼	●	●	☼	U2	Low-voltage detection

☼: ON, ●: OFF, ◑: Blinks

Green: Flashes when in normal condition
Red: OFF in normal condition

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Trial & Forced Operation

- Trial Operation
  - Trial mode is a self diagnostic check.
- Forced Operation
  - Cooling mode can be forced from the indoor or outdoor unit (model specific).
  - Multi systems additionally can force heat mode from the outdoor unit.

DAIKIN

KEVJU 9 & 12 Series

Trial Operation and Testing

1-1 Measure the supply voltage and make sure that if falls in the specified range.

1-2 Trial operation should be carried out in either cooling or heating mode.

- In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.
  1. Trial operation may be disabled in either mode depending on the room temperature. Use the remote controller for trial operation as described below.
  2. After trial operation is complete, set the temperature to a normal level (78°F to 82°F (26°C to 28°C) in cooling mode, 68°F to 75°F (20°C to 24°C) in heating mode).
  3. For protection, the system disables restart operation for 3 minutes after it is turned off.

1-3 Carry out the test operation in accordance with the operation manual to ensure that all functions and parts, such as fin movement, are working properly.

- The air conditioner require a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

Trial operation from remote controller

1. Press **ON/OFF** button to turn on the system.
2. Press **TEMP** button (2 locations) and MODE button at the same time.
3. Press **MODE** button twice (T will appear on the display to indicate that trial operation mode is selected).
4. Trial operation terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press **ON/OFF** button.

DAIKIN

KEVJU 15, 18 & 24 series

Trial Operation and Testing

1-1 Measure the supply voltage and make sure that if falls in the specified range.

1-2 Trial operation should be carried out in either cooling or heating mode.

- **For heat pump** - In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.
  1. Trial operation may be disabled in either mode depending on the room temperature. Use the remote controller for trial operation as described below.
  2. After trial operation is complete, set the temperature to a normal level (78°F to 82°F (26°C to 28°C) in cooling mode, 68°F to 75°F (20°C to 24°C) in heating mode).
  3. For protection, the system disables restart operation for 3 minutes after it is turned off.
- **For cooling only –** Select the lowest programmable temperature.
  1. Trial operation may be disabled in either mode depending on the room temperature. Use the remote controller for trial operation as described below.
  2. After trial operation is complete, set the temperature to a normal level (78°F to 82°F (26°C to 28°C)
  3. For protection, the system disables restart operation for 3 minutes after it is turned off.

1-3 Carry out the test operation in accordance with the operation manual to ensure that all functions and parts, such as fin movement, are working properly.

- The air conditioner require a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

Trial operation from remote controller

1. Press **ON/OFF** button to turn on the system.
2. Press **TEMP** button (2 locations) and MODE button at the same time.
3. Press **MODE** button twice (will appear on the display to indicate that trial operation mode is selected).
4. Trial operation terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press **ON/OFF** button.

DAIKIN

LVJU 9 & 12 Series

Trial Operation and Testing

1-1 Measure the supply voltage and make sure that if falls in the specified range.

1-2 Trial operation should be carried out in either cooling or heating mode.

- In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.
  1. Trial operation may be disabled in either mode depending on the room temperature. Use the remote controller for trial operation as described below.
  2. After trial operation is complete, set the temperature to a normal level (78°F to 82°F (26°C to 28°C) in cooling mode, 68°F to 75°F (20°C to 24°C) in heating mode).
  3. For protection, the system disables restart operation for 3 minutes after it is turned off.

1-3 Carry out the test operation in accordance with the operation manual to ensure that all functions and parts, such as fin movement, are working properly.

- The air conditioner require a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

Trial operation from remote controller

1. Press **ON/OFF** button to turn on the system.
2. Press **TEMP** button (2 locations) and MODE button at the same time.
3. Press **MODE** button twice (will appear on the display to indicate that trial operation mode is selected).
4. Trial operation terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press **ON/OFF** button.

DAIKIN

LVJU 15, 18 & 24 Series

Trial Operation and Testing

1-1 Measure the supply voltage and make sure that if falls in the specified range.

1-2 Trial operation should be carried out in either cooling or heating mode.

- In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.
  1. Trial operation may be disabled in either mode depending on the room temperature. Use the remote controller for trial operation as described below.
  2. After trial operation is complete, set the temperature to a normal level (78°F to 82°F (26°C to 28°C) in cooling mode, 68°F to 75°F (20°C to 24°C) in heating mode).
  3. For protection, the system disables restart operation for 3 minutes after it is turned off.

1-3 Carry out the test operation in accordance with the operation manual to ensure that all functions and parts, such as fin movement, are working properly.

- The air conditioner require a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

Trial operation from remote controller

1. Press **ON/OFF** button to turn on the system.
2. Press **TEMP** button (2 locations) and MODE button at the same time.
3. Press **MODE** button twice (will appear on the display to indicate that trial operation mode is selected).
4. Trial operation terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press **ON/OFF** button.

DAIKIN

Quaternity

Trial Operation and Testing for the FTXG09HVJU

1-1 Measure the supply voltage and make sure that if falls in the specified range.

1-2 Trial operation should be carried out in either cooling or heating mode.

- In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.
  1. Trial operation may be disabled in either mode depending on the room temperature. Use the remote controller for trial operation as described below.
  2. After trial operation is complete, set the temperature to a normal level (78°F to 82°F (26°C to 28°C) in cooling mode, 68°F to 75°F (20°C to 24°C) in heating mode).
  3. For protection, the system disables restart operation for 3 minutes after it is turned off.

1-3 Carry out the test operation in accordance with the operation manual to ensure that all functions and parts, such as fin movement, are working properly.

- The air conditioner require a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

Trial operation from remote controller

1. Press **ON/OFF** button to turn on the system.
2. Press **TEMP** button (2 locations) and MODE button at the same time.
3. Press **MODE** button twice (will appear on the display to indicate that trial operation mode is selected).
4. Trial operation terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press **ON/OFF** button.

DAIKIN

Quaternity

Trial Operation and Testing for the FTXG12HVJU & FTXG15HVJU

1-1 Measure the supply voltage and make sure that if falls in the specified range.

1-2 Trial operation should be carried out in either cooling or heating mode.

- In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.
  1. Trial operation may be disabled in either mode depending on the room temperature. Use the remote controller for trial operation as described below.
  2. After trial operation is complete, set the temperature to a normal level (78°F to 82°F (26°C to 28°C) in cooling mode, 68°F to 75°F (20°C to 24°C) in heating mode).
  3. For protection, the system disables restart operation for 3 minutes after it is turned off.

1-3 Operate the unit in accordance with the operation manual to check that it operates normally.

- Even when the air conditioner is not operating, it consumes some electric power. If the customer is not going to use the unit soon after it is installed, turn off the breaker to avoid wasting electricity.

Trial operation from remote controller

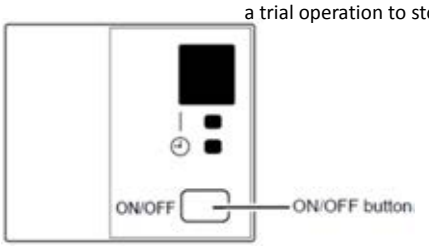
1. Hold the **CLOCK** button for 5 seconds (The matrix display will appear on the remote controller and press the **CLOCK** button.
2. Display SETTING H.TEST on the matrix display of the remote controller and press the **CLOCK** button.
3. " T " will be displayed and the unit will enter test run mode.
4. Press the button for test run mode.
   - Test run mode will stop automatically after around 30 minutes. Press the **ON/OFF** button to force the test-run to stop.

DAIKIN

Forced Operation (KEVJU)

Indoor Units
FTXN09 KEVJU
FTXN12 KEVJU

- Using the indoor unit ON/OFF switch
- Press the indoor unit ON/OFF switch for at least 5 seconds. (Operation will start)
  - Forced cooling operation will stop automatically after around 15 minutes. To force a trial operation to stop, press the indoor unit ON/OFF switch.
- Using the indoor unit's remote controller
  - Press the ON/OFF button. (Operation will start)
  - Press the TEMP button and the MODE button at the same time.
  - Press the MODE button twice.(T will be displayed and the unit will enter trial operation)
  - Press the MODE button to return the operation mode to cooling.
  - Trial operation will stop automatically after around 30 minutes. To force a trial operation to stop, press the ON/OFF button.

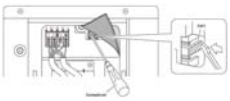


DAIKIN

Forced Operation (KEVJU)

Indoor Units
FTXN15KEVJU
FTXN18KEVJU
FTXN24KEVJU

Outdoor Units
RKN15KEVJU
RXN15KEVJU
RKN18KEVJU
RXN18KEVJU
RKN24KEVJU
RXN24KEVJU



Using the indoor unit ON/OFF switch

- Press the indoor unit ON/OFF switch for at least 5 seconds. (Operation will start)
- Forced cooling operation will stop automatically after around 15 minutes. To force a trial operation to stop, press the indoor unit ON/OFF switch.

Using the indoor unit's remote controller

1. Press the MODE button and select the cooling mode.
2. Press the ON/OFF button to turn on the system.
3. Press both the TEMP button and the MODE button at the same time.
4. Press the MODE button twice. (will be displayed an the unit will enter trial operation)
5. Press the MODE button to return the operation mode to cooling.

- Trial operation will stop automatically after around 30 minutes. To stop trial operation, press the ON/OFF button.

Using the outdoor unit forced cooling operations switch

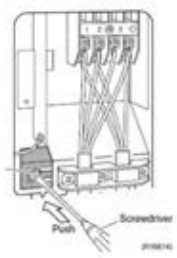
1. Push on SW1 with a screwdriver. The unit will start operating.
2. The forced cooling mode is selected, and terminates in approximately 15 minutes.

DAIKIN

Forced Operation (LVJU)

Indoor Units
FDXS09LVJU
FDXS12LVJU
FTXS09LVJU
FTXS12LVJU

Outdoor Units
RXS09LVJU
RXS12LVJU



Using the indoor unit's remote controller

1. Press the MODE button and select the cooling mode.
2. Press the ON/OFF button to turn on the system.
3. Press both the TEMP button and the MODE button at the same time.
4. Press the MODE button twice. (will be displayed and the unit will enter forced cooling operation)
5. Press the MODE button to return the operation mode to cooling.

Forced cooling operation will stop automatically after around 30 minutes. To stop the operation, press the ON/OFF button.

Using the outdoor unit forced cooling operations switch

Forced cooling operation can be performed when the outdoor unit forced cooling operation switch is pressed within around 3 minutes after power is supplied.

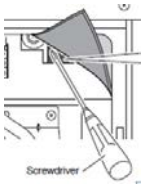
- Push on (SW1) with a screwdriver. The unit will start operating.
- Forced cooling operation will stop automatically after around 15 minutes. To stop the operation, press the SW1 switch.

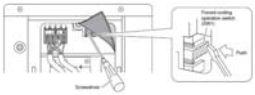
DAIKIN

Forced Operation (LVJU)

Indoor Units
FTXS15LVJU
FTXS18LVJU

Outdoor Units
RXS15LVJU
RXS18LVJU





Using the indoor unit ON/OFF switch

- Press the indoor unit ON/OFF switch for at least 5 seconds. (Operation will start)
- Forced cooling operation will stop automatically after around 15 minutes. To stop the operation, press the indoor unit ON/OFF switch.

Using the indoor unit's remote controller

1. Press the MODE button and select the cooling mode.
2. Press the ON/OFF button to turn on the system.
3. Press both the TEMP button and the MODE button at the same time.
4. Press the MODE button twice. (will be displayed and the unit will enter forced cooling operation)

Forced cooling operation will stop automatically after around 30 minutes. To stop the operation, press the ON/OFF button.

Using the outdoor unit forced cooling operations switch

Forced cooling operation can be performed when the outdoor unit forced cooling operation switch is pressed within around 3 minutes after power is supplied.

- Push on (SW1) with a screwdriver. The operation will start.
- Forced cooling operation will stop automatically after around 15 minutes. To stop the operation, press the SW1 switch.

DAIKIN

Forced Operation (LVJU)

Indoor Units
FTXS24LVJU

Outdoor Units
RXS24LVJU

Using the indoor unit ON/OFF switch

- Press the indoor unit ON/OFF switch for at least 5 seconds. (Operation will start)
- Forced cooling operation will stop automatically after around 15 minutes. To stop the operation, press the indoor unit ON/OFF switch.

Using the indoor unit's remote controller

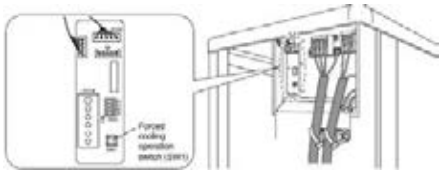
1. Press the MODE button and select the cooling mode.
2. Press the ON/OFF button to turn on the system.
3. Press both the TEMP button and the MODE button at the same time.
4. Press the MODE button twice. (will be displayed and the unit will enter forced cooling operation)

Forced cooling operation will stop automatically after around 30 minutes. To stop the operation, press the ON/OFF button.

Using the outdoor unit forced cooling operations switch

Forced cooling operation can be performed when the outdoor unit forced cooling operation switch is pressed within around 3 minutes after power is supplied.

- Press the switch (SW1). The operation will start.
- Forced cooling operation will stop automatically after around 15 minutes. To stop the operation, press the SW1 switch.

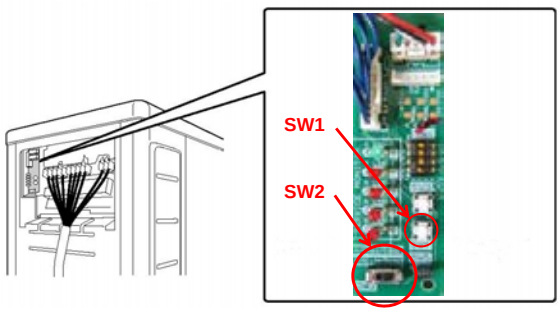


DAIKIN

Forced Operation Multi Split

Outdoor Units
2MXS18GVJU
3MXS24GVJU
4MXS32GVJU

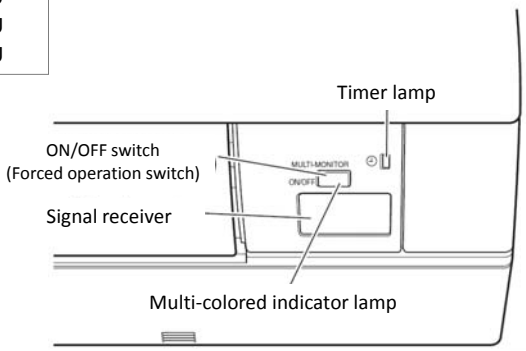
1. Turn the Operation Mode switch SW2 to **COOL.**
2. Press the Forced Operation switch SW1 to begin forced cooling. Press the Forced Operation switch SW1 again to stop forced cooling.
3. Push SW1 to stop or forced Cooling will terminate after 15 minutes.
4. Multi Split systems can also test Heating mode, move SW2 to **HEAT,** then follow steps 2~3.



DAIKIN

Forced Operation Quaternity

Indoor Units
FTXG09HVJU
FTXG12HVJU
FTXG15HVJU



How to force cooling operation mode

- **Using the indoor unit operation/stop button** – Press the indoor unit operation/stop button for at least 5 seconds. (Operation will start).
  - Forced cooling operation will stop automatically after around 15 minutes. To force a test run to stop, press the indoor unit operation/stop button.

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Pump Down Mode

The equipment listed in this presentation all can pump themselves down, refrigerant will be stored in the outdoor unit.

There are different steps depending on model.

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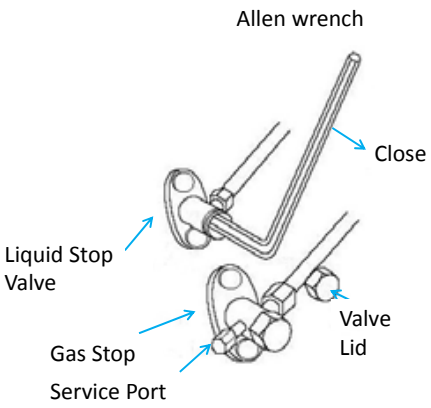
Pump Down Mode

KEVJU

1. Remove the valve lids from liquid stop valve and gas stop valve.
2. Carry out forced cooling operation.
3. After five to ten minutes, close the liquid stop valve with a metric Allen wrench.
4. After two to three minutes more, close the gas stop valve and stop forced cooling operation.

LVJU

1. Remove the valve lids from liquid stop valve and gas stop valve.
2. Carry out forced cooling operation.
3. After five to ten minutes, close the liquid stop valve with a metric Allen wrench.
4. After two to three minutes more, close the gas stop valve and stop forced cooling operation.



Use refrigeration gauges to verify no pressure is present prior to disconnecting any piping.

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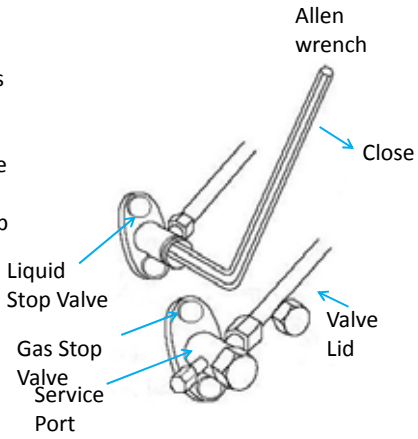
Pump Down Mode

Multi Split 2, 3, & 4-Port Outdoor

1. Remove the valve lids from both liquid stop gas stop valve.
2. Carry out forced cooling operation.
3. After five to ten minutes, close liquid stop valve with a metric Allen wrench.
4. After two to three minutes more, close gas stop valve and stop forced cooling operation.

Quaternity

1. Remove the valve lids from liquid stop valve and gas stop valve.
2. Carry out forced cooling operation.
3. After five to ten minutes, close the liquid stop valve with a metric Allen wrench.
4. After two to three minutes more, close the gas stop valve and stop forced cooling operation.



Use refrigeration gauges to verify no pressure is present prior to disconnecting any piping.

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Agenda

- Product Introduction
- Unit Location Considerations
- Tools
- Piping & Charging
- R-410A & PVE Oil
- Evacuation & Charging
- Electrical Wiring
- Condensate Management
- Condensate Accessory Installation
- Controls
- Field Settings
- Start-Up
- Troubleshooting
- Trial & Forced Pump Down
- Accessories

DAIKIN

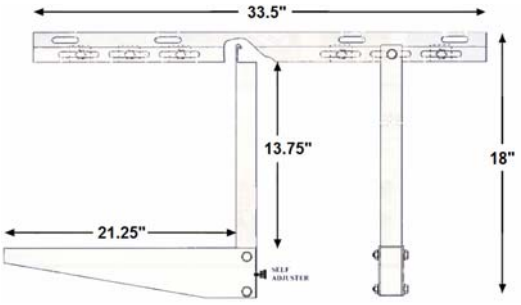
Air Adjustment Grill/Wind Baffle Kits

Kit	Outdoor Unit	Type
KPW038A4	RKN09/12KEVJU RXS09/12KEVJU	Air adjustment grill & Wind baffle
KPW937A4	RXS09/12LVJU	Air adjustment grill & Wind baffle
KPW937C4	RKN15/18/24KEVJU RXN15/18/24KEVJU RXS09/12LVJU	Air adjustment grill & Wind baffle
KPW945A4	RXS15/18/24LVJU	Air adjustment grill & Wind baffle
KPW945A4	2/3/4MXS	Air adjustment grill only, NOT Wind baffle

LOAM* Wind baffle kits direct discharge air and provide some protection from hail damage.
*Requires 2F018535-2

DAIKIN

Wall Mounting Bracket Kit



Wall Mounting Bracket Kit
DACA-WB-3

Useful for floor-by-floor installations in multi-floor applications.

DAIKIN

Condensate Overflow Protection Sensor DACA-CFS1

- Condensate overflow protection for all Daikin wall mounted indoor units
  - Microelectronic control
  - No moving parts
- Simple two component installation
  - Drain Pan Water Sensor
  - Electronic Control Switch

DACA- CFS1

Drain Pan Water Sensor

Electronic Control Switch
Line Voltage Powered

DAIKIN

Condensate Pump Kit

DACA-CP3-1

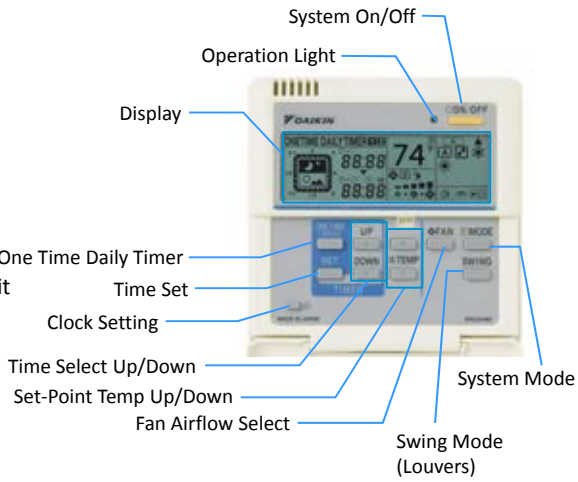
DAIKIN

Optional BRC944B2 Wired Controller

- This controller provides the option of a wall mounted controller for light commercial applications
- For use with all *Daikin* Single and Multi models*
- Controller can be used in conjunction with the wireless remote controller

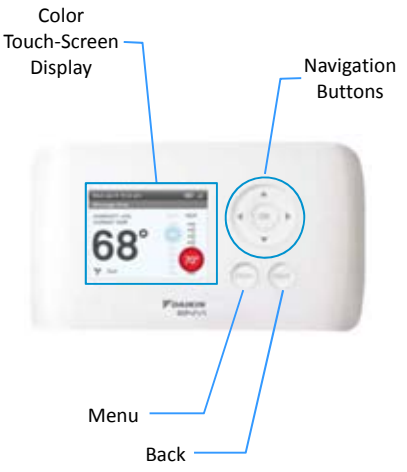
*Not available for FFQ indoor unit

Controller Features
Start / Stop
Operation Mode
Temperature Setting (18 - 32°C, 64 - 90°F)
One Time / Daily Timer
Fahrenheit or Celsius Temperature Display
Fan Speed
Airflow Direction



Daikin ENVi DACA-TS1-1

The Daikin ENVi thermostat kit includes:

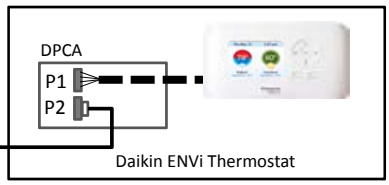


Refer to slides 61-62 for wiring information

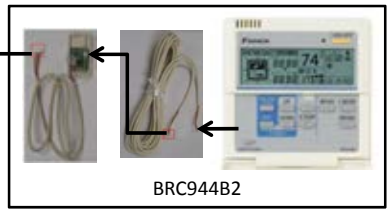
KRP980B1 Interface Adapter Kit

KRP980B1

Use with Daikin ENVi & BRC944B2 for FTXN09/12KEVJU Indoor Units



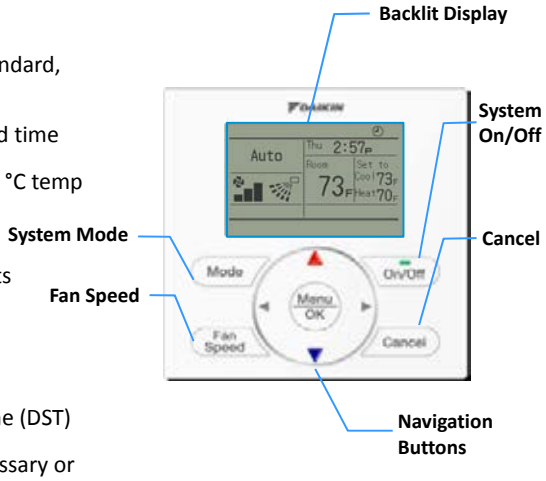
To S21 connector



DAIKIN

BRC1E72 Navigation Remote (FFQ Only)

- FFQ only
- Large backlit LCD display
- Display configurable to detailed, standard, and simple
- Room temperature display – day and time
- Selectable display languages & °F or °C temp
- Weekly schedule
- Dual and single cool & heat setpoints
- Independent setback setpoints
- Selectable 12/24 hour clock display
- Auto-adjustable daylight savings time (DST)
- Optional face decals to hide unnecessary or locked out buttons



DAIKIN

Plenum Rated Cables

Model Name	Description	Applicable to
DACA-ARCW901P10	IR Receiver Cable, Plenum Rated, 10ft	FDXS09,12DVJU
DACA-ARCW901P25	IR Receiver Cable, Plenum Rated, 25ft	FDXS09,12DVJU
DACA-BRCW901P10	Remote Controller Cable, Plenum Rated, 10ft	BRC944B2-A08
DACA-BRCW901P25	Remote Controller Cable, Plenum Rated, 25ft	BRC944B2-A08

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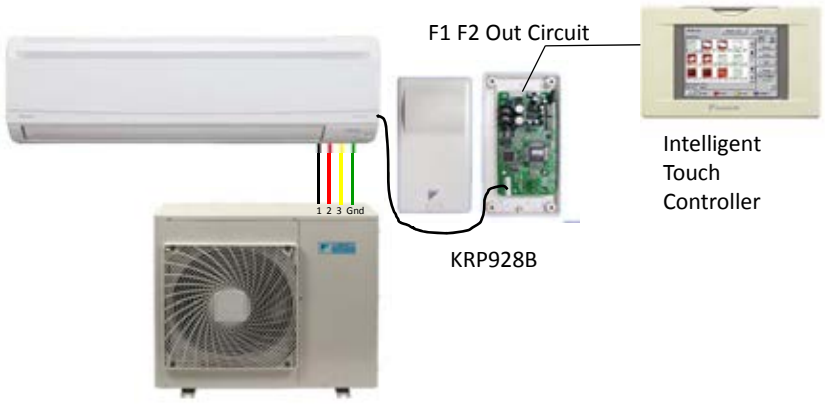
Controls Adapter KRP928B

Simple installation to interface mini-split 4-wire communication to VRV D-III Net 2-wire F1 F2

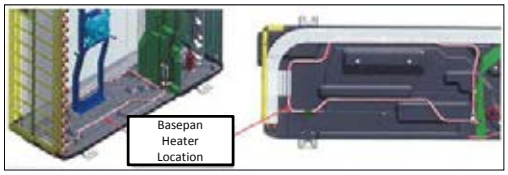


DAIKIN

Bottom Plate Heater Kit Accessory

Bottom Plate Heater Kits offer an option for extraordinary applications where a large number of heating operating hours are seen between 17°F and 32°F coupled with large amounts of snowfall.

Heater Kit	Outdoor Model					
KEH041A41	RXS09LVJU	RXS12LVJU	RXS09DAVJU	RXS12DAVJU	RXS09DVJU	RXS12DVJU
KEH041A42	RXS15LVJU	RXS18LVJU	-	-	-	-
KEH041A43	RXS24LVJU	3MXS24JVJU	4MXS32GVJU			
KEH041A44	RXS30LVJU	RXS36LVJU	-	-	-	-
KEH041A45	RXG09HVJU	RXG12HVJU	RXG15HVJU			
KEH041A46	RXS09JEVJU	RXS12JEVJU	RXN09KEVJU	RXN12KEVJU	RXN09JEVJU	RXN09JEVJU
KEH041A47	RXN15KEVJU	RXN18KEVJU	RXN24KEVJU	-	-	-
KEH041A48	RXN15DVJU	RXN18DVJU	RXN24DVJU	-	-	-
KEH041A49	RXS30HVJU	RXS36HVJU	-	-	-	-



Ensure that power is disconnected to the outdoor unit prior to installing base pan heater. Refer to heater kit install manual for installation instructions.

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COMFORT FOR LIFE

Thank You

PT-RLC-1304-PP1-03

DAIKIN

Assessment: Single & Multi-Split Key Points of Installation

Product Introduction Section

1. Daikin Envi is compatible with all products.
   - ❑ True
   - ❑ False

Unit Location Considerations

2. During a Wall Mount Unit Installation, which of the below considerations are important to adhere to? (check all that apply)
   - ❑ Ensure unit is not exposed to direct sunlight
   - ❑ Ensure that both air intake and outlet paths are obstructed.
   - ❑ Make sure that the unit is mounted at least 1 foot away from any computers, television or radio.
   - ❑ Ensure unit is exposed to radiant heat or cooling from appliances.

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Unit Location Considerations

3. Which of the statements are true regarding the installation of the outdoor unit?
   - ❑ Choose a location where the air discharge will not interfere with other systems or people Ensure there is sufficient service space around the unit.
   - ❑ Select a site where snowfall, snow buildup and drifting will not affect the unit.
   - ❑ All the above

DAIKIN

Piping & Charging

4. Daikin systems need to be tested at a pressure of _____ and held for _____.
   - ❑ 550 PSIG and held for 1hours
   - ❑ 500 PSIG and held for 24 hours
   - ❑ 550 PSIG and held for 24 hours
   - ❑ 500 PSIG and held for 12 hours

5. To prevent gas leakage, apply refrigeration oil only to the outer surface of the flare.
   - ❑ True
   - ❑ False

DAIKIN

Unit Location Considerations

6. Which of the statements are true regarding the installation of the outdoor unit?
   - ❑ Choose a location where the air discharge will not interfere with other systems or people Ensure there is sufficient service space around the unit.
   - ❑ Select a site where snowfall, snow buildup and drifting will not affect the unit.
   - ❑ All the above

DAIKIN

Piping & Charging

7. Daikin systems need to be tested at a pressure of _____ and held for _____.
   - ❑ 550 PSIG and held for 1hours
   - ❑ 500 PSIG and held for 24 hours
   - ❑ 550 PSIG and held for 24 hours
   - ❑ 500 PSIG and held for 12 hours

8. To prevent gas leakage, apply refrigeration oil only to the outer surface of the flare.
   - ❑ True
   - ❑ False

DAIKIN

Piping & Charging

9. Refrigerant piping can expand up to 4” or more.
   - ❑ True
   - ❑ False

10. The angle of a Daikin flare is_____.
    - ❑ 90°
    - ❑ 45°
    - ❑ 75°
    - ❑ 15°

DAIKIN

R-410A & PVE Oil

11. What type of oil is used in a Daikin Ductless Split System?
    - ❑ Polyolester Oil
    - ❑ Mineral Oil
    - ❑ PolyVinyl Ether Oil
    - ❑ Motor Oil

12. It is ok though to use mineral oil on the flared part.
    - ❑ True
    - ❑ False

DAIKIN

R-410A & PVE Oil

13. In a Daikin 4-wire Single and Multi-Split system in order to protect the environment you should pump down the refrigerant when_____.
    - ❑ Installing the Unit
    - ❑ Disposing of the Unit
    - ❑ All the above
    - ❑ *None of the above*

DAIKIN

Electrical Wiring

14. There must be NO splices on the #____ communication wire.
    - ❑ 4
    - ❑ 3
    - ❑ 2
    - ❑ 1

15. Wires from the indoor unit to the outdoor unit can be hooked up in any order. Example #1 wire from the outdoor unit can be attached to the #2 terminal on the indoor unit.
    - ❑ True
    - ❑ False

DAIKIN

Wiring

16. When the protection plate is removed it is ok to turn on the safety breaker.
    - ❑ True
    - ❑ False

DAIKIN

Condensate Management & Accessories

17. When installing refrigerant pipe and drain pipe through an exterior wall, it is important to make sure the hole through the wall is vertical and not at an angle.
    - ❑ True
    - ❑ False
18. The condensate pump motor is powered from the_____.
    - ❑ Indoor fan coil unit from terminals 1 and 2
    - ❑ Outdoor fan coil unit terminal 2 and 4
    - ❑ Powered off a separate
    - ❑ None of the above

DAIKIN

Controls

19. The BRC1E72 Navigation Remote Controller is used with which ceiling cassette?
    - ❑ CTXS
    - ❑ FFQ
    - ❑ FTNX
    - ❑ FTXS

20. The ARC452 is compatible with the FFQ
    - ❑ True
    - ❑ False

DAIKIN

Controls

21. The Daikin ENVi can be used with which indoor units pictured below
    - ❑ ___ b and c only
    - ❑ ___ a, b, and c
    - ❑ ___ b, c and d
    - ❑ ___ All of the above

a) FFQ
2' x 2' Ceiling Cassette

b) CTXS
Wall Mount

c) FTXS/CTXS
Wall Mount

d) CDXS/FDXS
Slim Duct

DAIKIN

Field Settings

22. When two wireless remote controllers are installed in one room they must be addressed the same.
    - ❑ True
    - ❑ False
23. When Low Ambient Cooling should always be used in a residence or office where people occupy the space.
    - ❑ True
    - ❑ False

DAIKIN

Start-Up

24. Check the supply voltage on L1 to L2, it must read between 190 and 193 volts.
    - ❑ True
    - ❑ False
25. Make sure all refrigerant piping is properly insulated. It is not necessary for the drain pipe to be connected.
    - ❑ True
    - ❑ False

DAIKIN

Troubleshooting

26. A blue operation lamp on the indoor unit's front panel will flash when_____.
    - ❑ A protection device in the indoor or outdoor unit activates
    - ❑ A thermistor malfunctions
    - ❑ A signal transmission error occurs
    - ❑ None of the above

27. If there is a whistling sound coming from the indoor unit, power down the unit immediately.
    - ❑ True
    - ❑ False

DAIKIN

Trial & Forced Pump Down

28. During Trial Operation Multi systems additionally can force heat mode from the outdoor unit.
    - ❑ True
    - ❑ False

29. During Forced Operation it performs a self diagnostic check.
    - ❑ True
    - ❑ False

Service

30. The service port on Daikin equipment uses_____.
    - ❑ 1/3 fittings
    - ❑ 3/8 fittings
    - ❑ 5/16 fittings
    - ❑ 8/16 fittings

31. What is the max. piping length for a 15-24,00 BTU KE or LV Series Single-Split?
    - ❑ 78
    - ❑ 98
    - ❑ 88
    - ❑ 108

Daikin Comfort Product Catalog

32. Titanium apatite photocatalytic air purification filter decomposes odors and attracts microscopic particles that can carry bacteria and viruses.
    - ❑ True
    - ❑ False
33. Both the Daikin Single Split & Multi Split system have Pulse Amplitude Modulation.
    - ❑ True
    - ❑ False

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