

# AIRSTAGE



## Quick Select Guide Airstage Transact Program

VU-V Heat Pump VRF Systems

6 through 24 tons

208/230/460/3 phase

# AIRSTAGE VU-V



AOUA72ULB/CV5  
AOUA96ULB/CV5



AOUA120ULB/CV5



AOUA144ULB/CV5  
AOUA168ULB/CV5  
AOUA192ULB/CV5

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## 1. Introduction

Thank you for choosing Airstage VU-V three phase inverter HVAC systems from Fujitsu General America!

The purpose of the Quick Select Guide is to provide a helpful reference for selecting Single Zone system combinations from 6 through 24 tons. Each system features the new VU-V outdoor unit series matched with either the ARUH High Static Horizontal and ARUX series Multi-Position air handlers in heat pump configurations. Every system selection within the Guide consists of easy-to-print pages which provide information needed in order to match the Fujitsu equipment and controls, along with an overview of must-know technical information for both Distributor and Contractor.

The structure for each system provides:

- V-Series indoor and outdoor model numbers
- Actual capacities at AHRI conditions
- AHRI Standard 1230 Certification number
- Refrigerant piping details
- Line voltage and control wiring details
- Bill of Materials
- Optional accessories

NOTE: This Guide provides Single Zone system combinations. Many other combinations are available; please contact your regional Fujitsu Sales representative as needed for assistance with other VU-V system selections.

### 1.1. Available capacities

1.1.1 The VU-V Series 3-phase outdoor units are available in the following tonnages as a single chassis:

- 6 tons
- 8 tons
- 10 tons
- 12 tons
- 14 tons
- 16 tons

1.1.2. The VU-V Series 3 phase outdoor system groups referenced in this guide are available in the following tonnages:

- 20 tons
- 24 tons

1.2. Common ducting– All tonnages within this Guide feature multiple air handlers which share common ducting for single zone application. (6 and 8 ton single AHU option) Common ducting requires design to provide an equal airside pressure drop between indoor units.

## 2. Refrigerant Piping

The refrigerant piping structure requires attention to minimum and maximum piping lengths. Systems with multiple indoor and outdoor units have added piping segment length rules, which are detailed within each system selection.

2.1. Maximum total piping– The total refrigerant piping for each system reflects a one-way measurement sum of each liquid line segment. This is a linear, straight line measurement of the liquid line only, which includes horizontal and vertical measurements; equivalent length of fittings is not calculated. Maximum allowable lengths vary significantly between single and grouped outdoor unit systems. When long lengths are anticipated, it is critical to calculate the total refrigerant charge to ensure the maximum allowable charge per system is not exceeded; Fujitsu "Deign Simulator" software use is recommended.

- VU-V single outdoor unit systems– 6 through 16 tons
  - ◇ 2,296' ft. (700 m)
- VU-V outdoor unit group– 20 and 24 tons
  - ◇ 3,281 ft. (1,000 m)

2.2. Indoor to outdoor unit maximum length– The refrigerant piping length is a one-way measurement between the Primary outdoor and farthest (or nearest) indoor unit. This is a linear, straight line measurement of the liquid line only, which includes horizontal and vertical measurements; equivalent length of fittings is not calculated.

- VU-V– 6 through 24 tons
  - ◇ Maximum length– 541 ft. (165 m)
  - ◇ Minimum length–25 ft. ( 7.6 m)

2.3. Vertical separation limitations– The maximum vertical separation for each system series reflects a one-way, straight line measurement between the indoor and outdoor unit; not a piping measurement. The maximum allowable vertical separation varies depending upon outdoor unit location, either above or below in the indoor unit.

- VU-V– 6 through 24 tons
  - ◇ Outdoor unit below– 131 ft. (40 m)\*
  - ◇ Outdoor unit above– 164 ft. (50 m)†

\* VU-V– 6 through 16 tons– The outdoor to indoor unit vertical separation (outdoor unit below indoor unit(s)) is limited to 16 ft. when the outdoor design temperature is <23° F. (-5° C) This limitation does not apply to the 20 and 24 ton outdoor unit group systems in this Guide

† VU-V– 6 through 24 tons– The outdoor to indoor unit vertical separation (outdoor unit(s) above indoor units) may be increased to 360 ft. when using the UTY-SPWX High Rise Pressure Sensor Kit accessory.

2.4. Refrigerant piping traps– Compressor oil management is maintained by means of “Oil Recovery” modes of operation and proper refrigerant vapor line sizing.

2.4.1. Indoor unit piping traps– Traps are not required or recommended in any of the refrigerant piping between the outdoor unit(s) to the indoor unit(s).

2.4.2. Outdoor unit piping traps– The only exception to piping traps applies to V-Series outdoor units when (2) or (3) units are piped together as a single refrigerant group. An 8” inverted trap (riser) may be installed between outdoor units to inhibit oil migration, when the piping linear length is >6 ft. ≤ maximum length per segment. Please refer to the outdoor unit Installation Manual or Design & Technical Manual for inverted trap piping details.

2.5. Reducing couplings– In some instances, a change in refrigerant pipe diameter is required at the indoor unit connections. Please refer to the indoor unit Installation Manual or notations within the Design Simulator piping report for reducing coupling requirements.

2.6. Outdoor unit Branch Kits– When using the Branch Kit to divide refrigerant flow between outdoor units in a group (20 and 24 tons systems referenced in this Guide) the maximum piping length between the Branch Kit and outdoor unit is 9 ft. (3 m).

### 3. Additional refrigerant charge

Each VU-V outdoor unit is pre-charged with R-410a refrigerant, however this does not include an allowance for piping. An additional refrigerant charge IS REQUIRED FOR EACH INSTALLATION. The additional refrigerant charge is calculated based upon the total length of measured, installed liquid line only. See the additional charge requirements for each system selection page.

3.1. Outdoor unit adder– It is important to note an additional refrigerant charge requirement independent of the piping estimation is required for the 10 through 16 ton outdoor units, whether stand alone or in an outdoor unit group.

3.2. Maximum refrigerant charge– When long line set lengths are anticipated, it is critical to ensure the total refrigerant charge does not exceed the maximum allowable refrigerant charge per system. In most instances, the maximum allowable refrigerant charge will not be exceeded, however the total charge must be calculated and written on the inside cover of the outdoor unit for service purposes. The ONLY method for refrigerant charging is to weight in the total charge.

**If the maximum allowable refrigerant charge is exceeded, the refrigerant piping lengths must be reduced until the total refrigerant charge is at or below the maximum allowed.**

### 4. Extended Warranty Report

Extended Warranty Reports (EWR) used as pre-commissioning checklists, to document system configuration and for refrigerant charge calculation, are available for [download HERE](#) for 208/230 and 460 VAC systems.

Electronically fillable, completed EWR forms may be emailed direct to [commissioning@fujitsugeneral.com](mailto:commissioning@fujitsugeneral.com) for review.

### 5. Reference Literature

The refrigerant piping references discussed in this Guide do not cover all possible contingencies within Airstage VU-V Series installations. Application and installation conditions which are beyond the scope of this Guide should be researched through the respective Installation Manuals and Design & Technical Manuals. It is recommended to validate each refrigerant piping configuration through the Fujitsu “Design Simulator” software prior to installation.

Please contact your regional Fujitsu Sales Representative for support with application, system and accessory selection as required.

## V-Series 6-Ton, Single-Zone VRF System with (2) Multi-Position Air Handlers

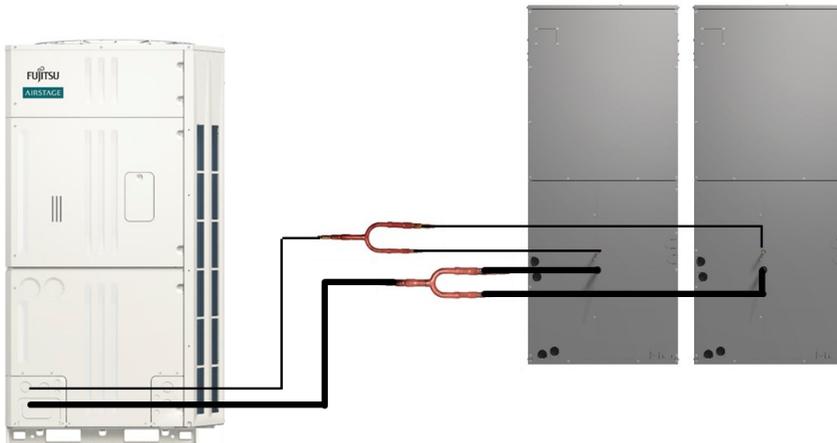
AHRI Standard 1230 Certification # 208812532

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 72,000 BTUH
- Heating- 81,000 BTUH

Capacity	Outdoor Unit	Indoor Unit (X2)	Remote Control
6 tons	AOUA72ULBV5	ARUX36TLAV2	UTY-RNRUZ5

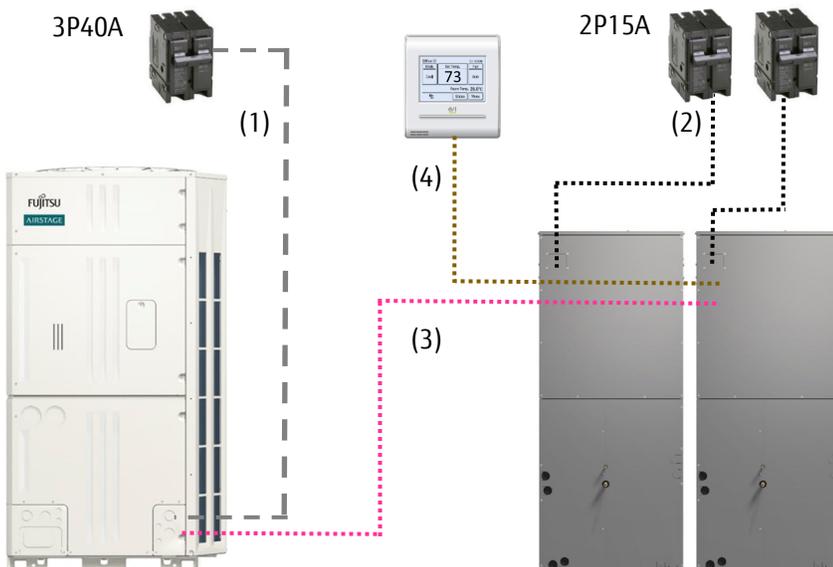
Refrigerant Piping- See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical-Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 8 or 6 AWG & GND to 6 ton outdoor unit\*
- (2) 14/2 or 12/2 w/GND to AHUs\*
- (3) Fujitsu Pink communication cable
- (4) 18/3 thermostat wire (2 conductors minimum)

\* Final wire gauge sized and selected in accordance with NEC and all applicable codes.

Individual 2P15A breaker required per AHU

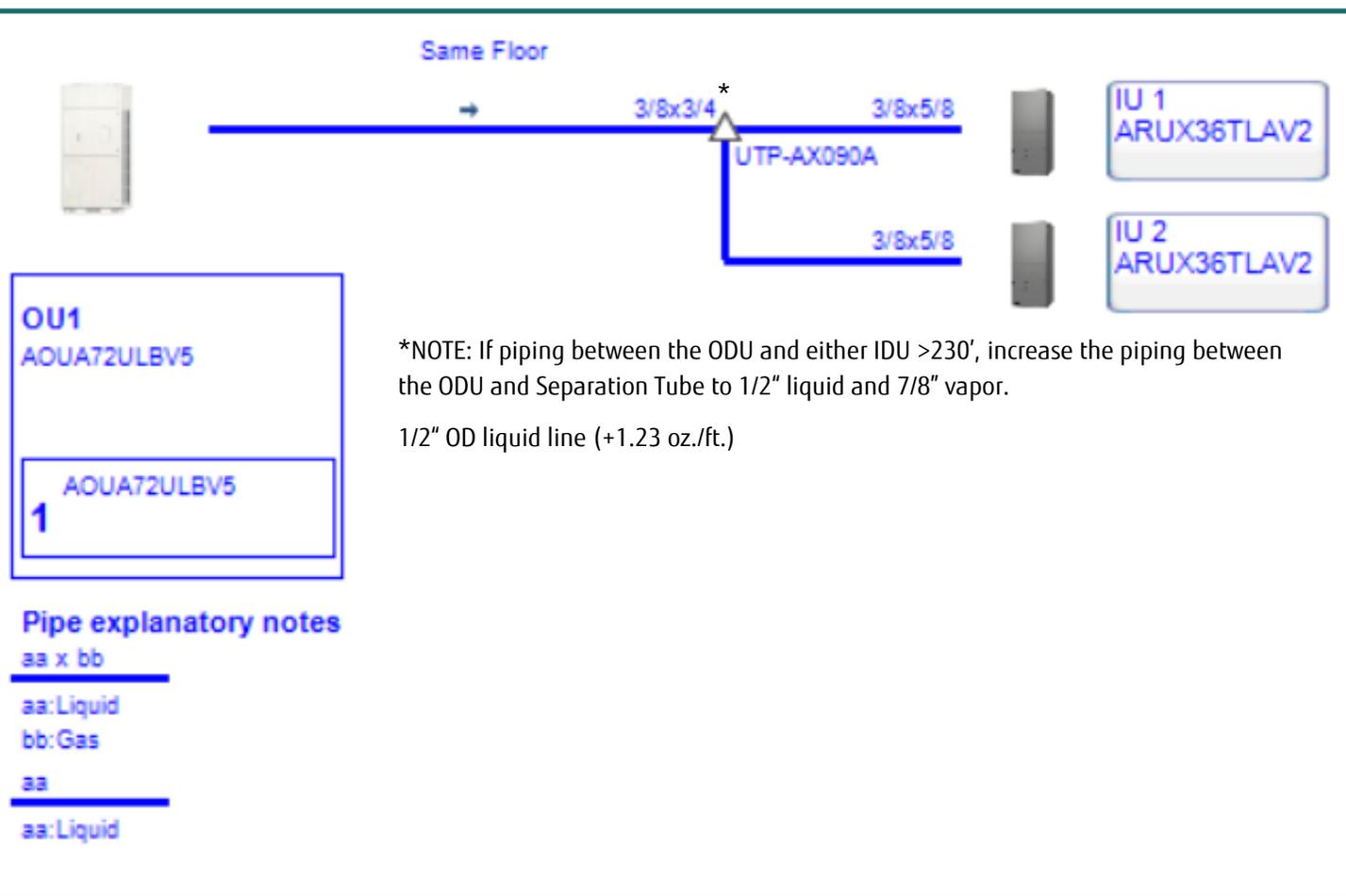
Electrical disconnect switches not shown

Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 6-Ton, Single-Zone VRF System with (2) Multi-Position Air Handlers

### Refrigerant Piping Details

- AOUA72ULBV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)\*
- 77.2 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX090A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below†
- 164' maximum vertical separation- ODU above
- 25' minimum between ODU and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is <23° F.



## V-Series 6-Ton, Single-Zone VRF System with (2) Multi-Position Air Handlers

**IMPORTANT**– Air handlers are not approved for downlow installation unless UTD Downflow Conversion Kit is installed.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AQUA72ULBV5	VU-V Heat Pump Outdoor Unit, 6 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUX36TLAV2 (2)	Airstage Multi-Position Air Handler, 3 ton
UTP-AX090A	Separation Tube assembly (Includes 1- liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
3/4" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
3P40A circuit Breaker	For outdoor unit
2P15A circuit breaker (2)	Indoor unit is powered separately from ODU
Disconnect	3 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code
3/4" male adapter	Indoor unit condensate drain connection
3/4" condensate trap	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter- to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI- Intesis Cloud Control (-TLAV2)
UTD-DFMMA1	Downflow Conversion Kit for ARUX36 air handler

## V-Series 8-Ton, Single-Zone VRF System with (2) Multi-Position Air Handlers

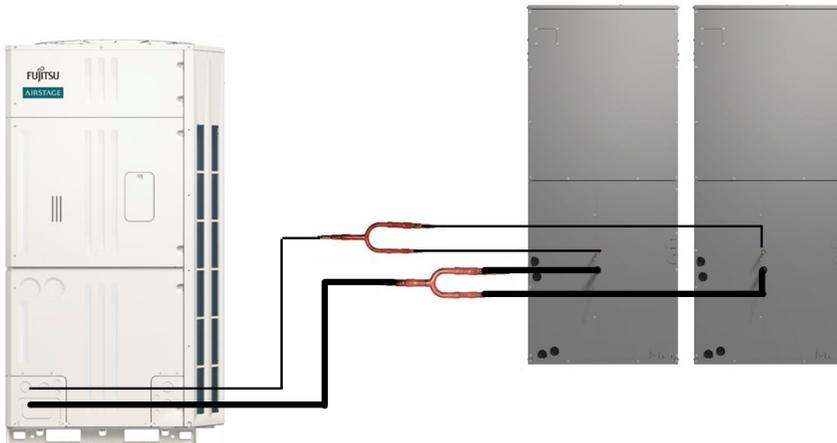
AHRI Standard 1230 Certification # 208812533

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 96,000 BTUH
- Heating- 108,000 BTUH

Capacity	Outdoor Unit	Indoor Unit (X2)	Remote Control
8 tons	AOUA96ULBV5	ARUX48TLAV2	UTY-RNRUZ5

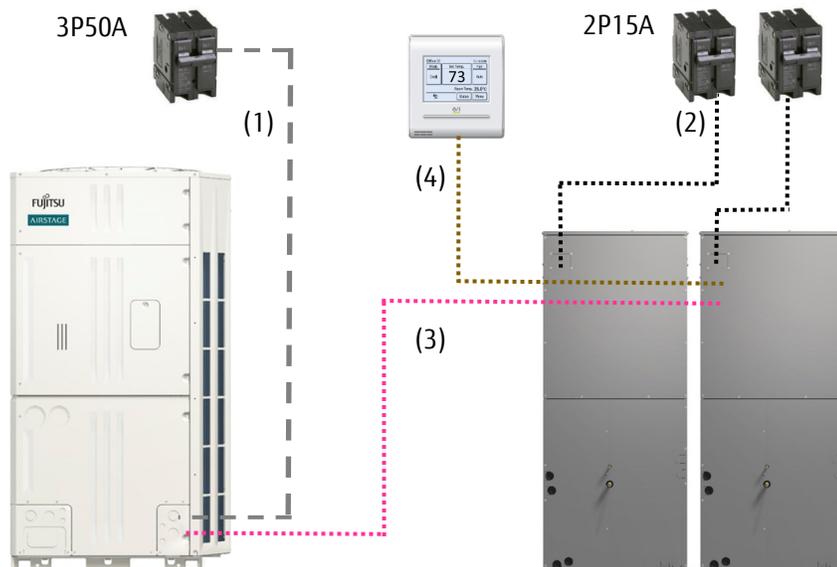
**Refrigerant Piping**– See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical–Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 8 AWG & GND to 8 ton outdoor unit\*
- (2) 14/2 or 12/2 w/GND to AHUs\*
- (3) Fujitsu Pink communication cable
- (4) 18/3 thermostat wire (2 conductors minimum)

\* Final wire gauge sized and selected in accordance with NEC and all applicable codes.

Individual 2P15A breaker required per AHU

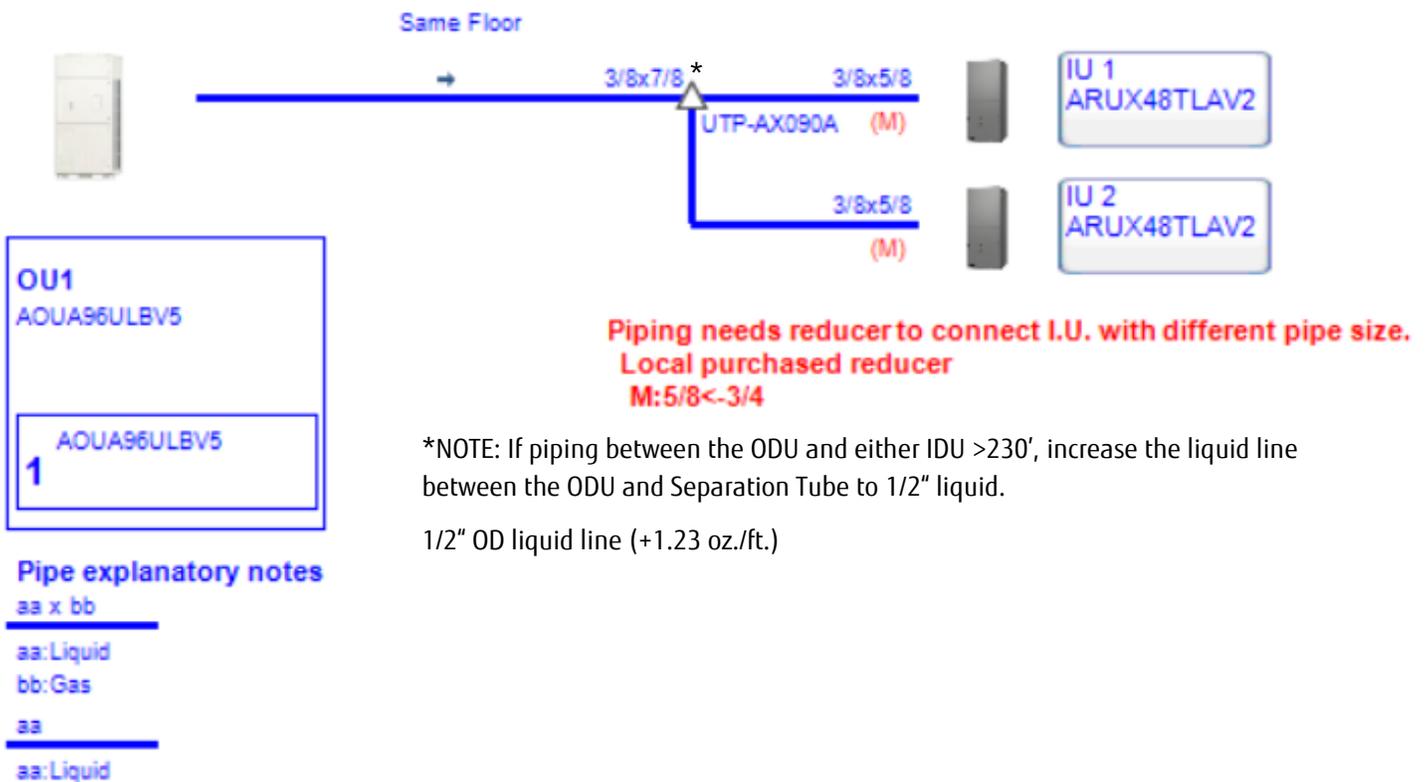
Electrical disconnect switches not shown

Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 8-Ton, Single-Zone VRF System with (2) Multi-Position Air Handlers

### Refrigerant Piping Details

- AOUA96ULBV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)\*
- 77.2 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX090A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below†
- 164' maximum vertical separation- ODU above
- 25' minimum between ODU and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is <23° F.



## V-Series 8-Ton, Single-Zone VRF System with (2) Multi-Position Air Handlers

**IMPORTANT**– Air handlers are not approved for downlow installation unless UTD Downflow Conversion Kit is installed.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AQUA96ULBV5	VU-V Heat Pump Outdoor Unit, 8 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUX48TLAV2 (2)	Airstage Multi-Position Air Handler, 4 ton
UTP-AX090A	Separation Tube assembly (Includes 1- liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
7/8" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
3/4" X 5/8" coupling (2)	Reducing coupling for 5/8" vapor line connection at IDU
3P50A circuit Breaker	For outdoor unit
2P15A circuit breaker (2)	Indoor unit is powered separately from ODU
Disconnect	3 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code
3/4" male adapter	Indoor unit condensate drain connection
3/4" condensate trap	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter- to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI- Intesis Cloud Control (-TLAV2)
UTD-DFMLA1	Downflow Conversion Kit for ARUX48 air handler

## V-Series 10-Ton, Single-Zone, 208/230 VAC VRF System with (2) Multi-Position Air Handlers

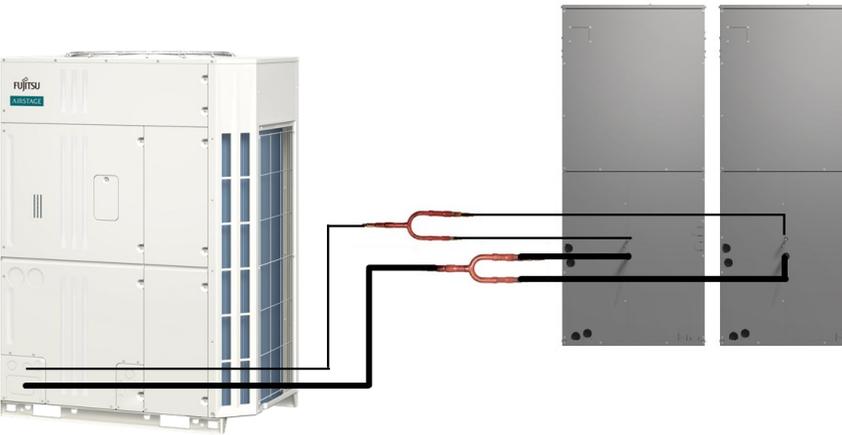
AHRI Standard 1230 Certification # 208812534

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 120,000 BTUH
- Heating- 135,000 BTUH

Capacity	Outdoor Unit	Indoor Unit (X2)	Remote Control
10 tons	AOUA120ULBV5	ARUX60TLAV2	UTY-RNRUZ5

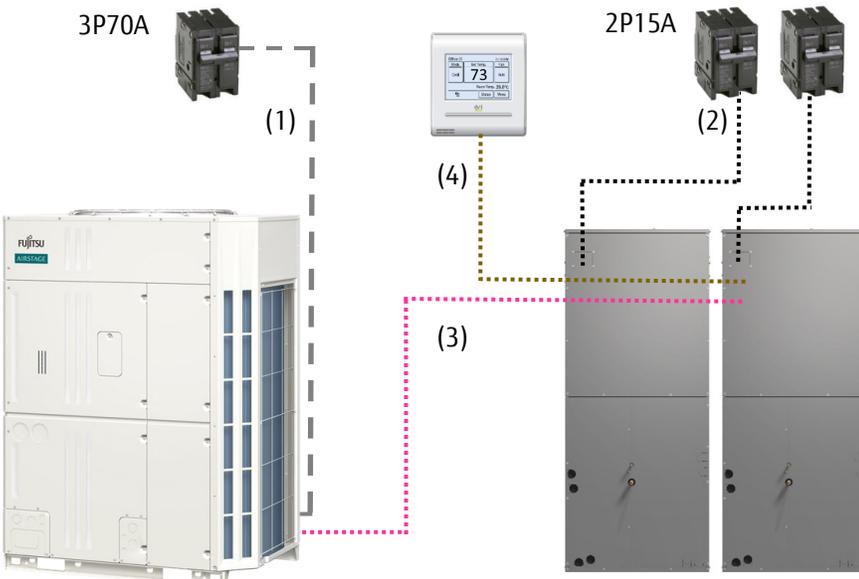
**Refrigerant Piping**– See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical–Line Voltage and Communication Wiring



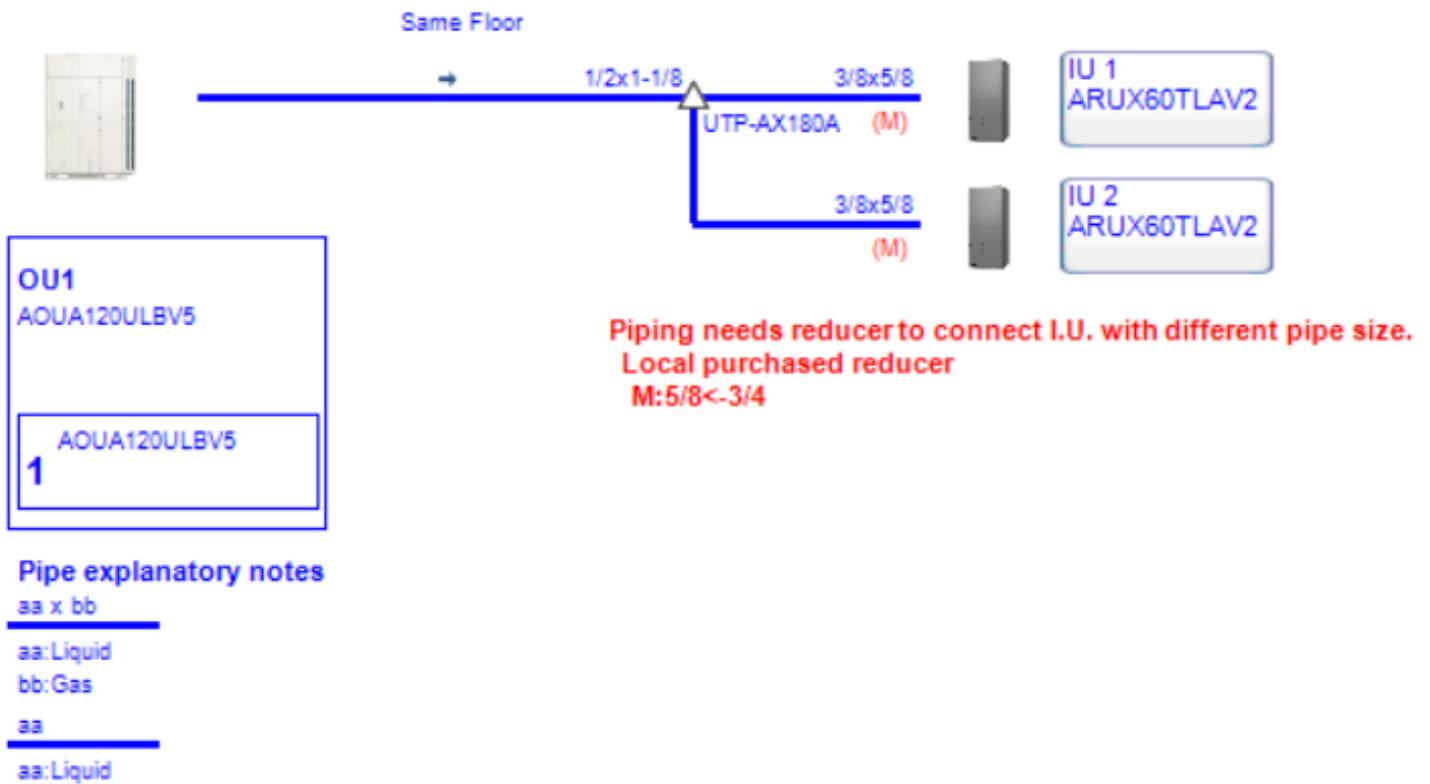
### WIRING NOTES

- (1) 6 AWG & GND to 10 ton outdoor unit\*
  - (2) 14/2 or 12/2 w/GND to AHUs\*
  - (3) Fujitsu Pink communication cable
  - (4) 18/3 thermostat wire (2 conductors min.)
- \* Final wire gauge sized and selected in accordance with NEC and all applicable codes.  
Individual 2P15A breaker required per AHU  
Electrical disconnect switches not shown  
Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 10-Ton, Single-Zone, 208/230 VAC VRF System with (2) Multi-Position Air Handlers

### Refrigerant Piping Details

- AOUA120ULBV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)
- 1/2" OD liquid line (+ 1.23 oz./ft. R-410a)
- 77.2 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX180A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below†
- 164' maximum vertical separation- ODU above
- 25' minimum between ODU and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is <23° F.



## V-Series 10-Ton, Single-Zone, 208/230 VAC VRF System with (2) Multi-Position Air Handlers

**IMPORTANT**– Air handlers are not approved for downlow installation unless UTD Downflow Conversion Kit is installed.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOUA120ULBV5	VU-V Heat Pump Outdoor Unit, 10 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUX60TLAV2 (2)	Airstage Multi-Position Air Handler, 5 ton
UTP-AX090A	Separation Tube assembly (Includes 1- liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
1/2" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
1 1/8" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
5/8" X 3/4" coupling (2)	Reducing coupling for 5/8" vapor line connection at ID unit
3P70A circuit Breaker	For outdoor unit
2P15A circuit breaker (2)	Indoor unit is powered separately from ODU
Disconnect	3 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code
3/4" male adapter	Indoor unit condensate drain connection
3/4" condensate trap	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter- to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI- Intesis Cloud Control (-TLAV2)
UTD-DFMLA2	Downflow Conversion Kit for ARUX60 air handler

## V-Series 15-Ton, Single-Zone, 208/230 VAC VRF System with (3) Multi-Position Air Handlers

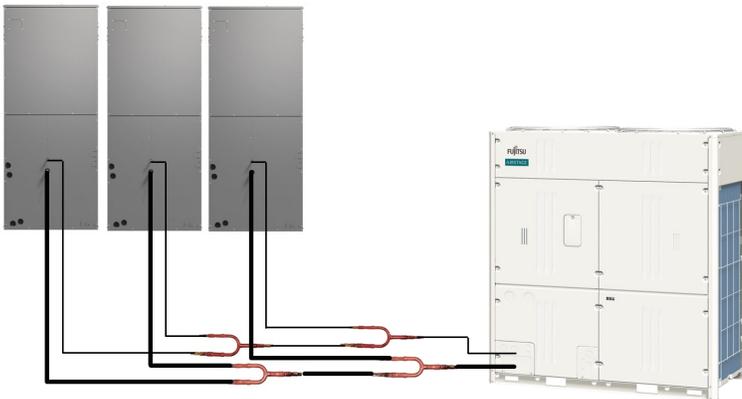
AHRI Standard 1230 Certification # 208931868

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 180,000 BTUH
- Heating- 201,000 BTUH

Capacity	Outdoor Unit Group	Indoor Unit (X3)	Remote Control
15 tons	AOUA192ULBV5	ARUX60TLAV2	UTY-RNRUZ5

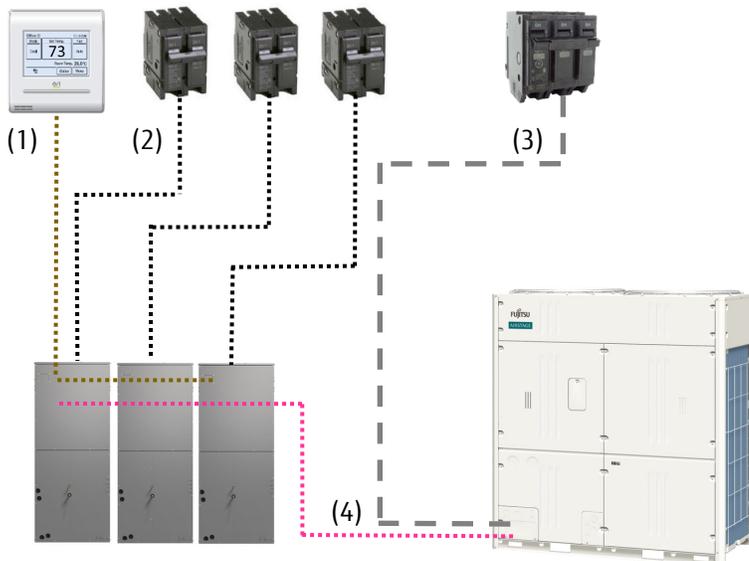
**Refrigerant Piping-** See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical- Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 18/3 thermostat wire (2 conductors minimum) or Fujitsu Pink to each AHU Y1/Y2 connection
- (2) 2P15A breaker- 14/2 or 12/2 w/GND to each AHU\*
- (3) 3P80A breaker- 3 AWG & GND to 16 ton ODU\*
- (4) Fujitsu Pink comm cable to AHUs and outdoor unit X1 & X2 terminals

\*Final wire gauge sized and selected in accordance with NEC and all applicable codes

Individual 2P15A breaker required per AHU

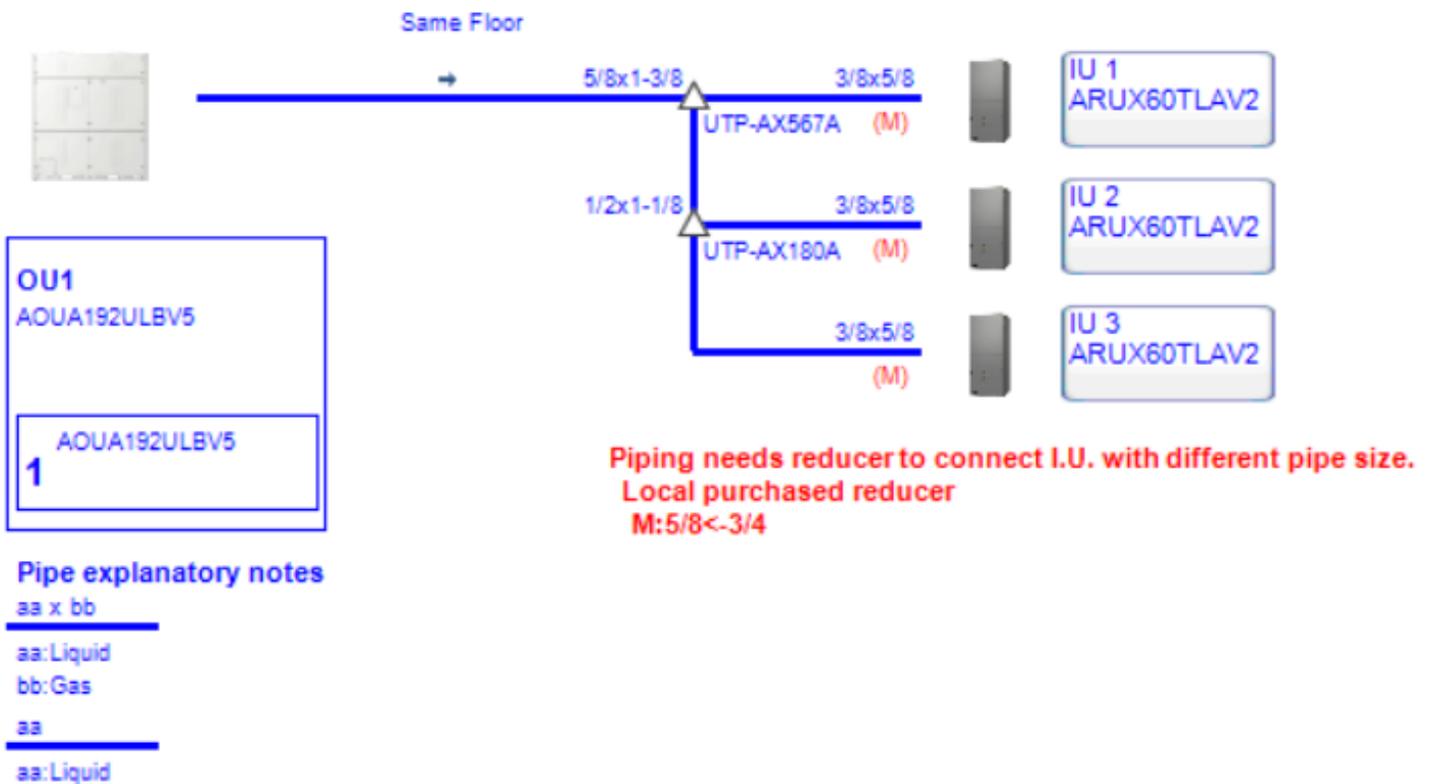
Electrical disconnect switches not shown

Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 15-Ton, Single-Zone, 208/230 VAC VRF System with (3) Multi-Position Air Handlers

### Refrigerant Piping Details

- AOUA192ULBV5 unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)
- 1/2" OD liquid line (+ 1.23 oz./ft. R-410a)
- 5/8" OD liquid line (+ 1.92 oz./ft. R-410a)
- 108 lb. maximum refrigerant charge
- Fujitsu Indoor Separation Tubes must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between Primary ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below†
- 164' maximum vertical separation- ODU above
- 25' minimum distance between outdoor unit and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is <23° F.



## V-Series 15-Ton, Single-Zone, 208/230 VAC VRF System with (3) Multi-Position Air Handlers

**IMPORTANT**– Air handlers may be installed upflow, horizontal (L) or (R). Downflow requires UTD Downflow Conversion Kit.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOU192ULBV5	VU-V Heat Pump Outdoor Unit, pre-charged to 0 feet of piping, see “Refrigerant Piping Details”
ARUX60TLAV2 (3)	Airstage Multi-Position Air Handler, (3) 5 ton units
UTP-AX567A	Separation Tube assembly
UTP-AX180A	Separation Tube assembly
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	“Fujitsu Pink” communication cable , 250’ roll

#### 2. Required Supplies

Description	Comments
3/8" OD– ACR tubing	Liquid line- Soft or hard drawn, must be insulated
1/2" OD– ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8" OD– ACR tubing	Liquid and vapor line- Soft or hard drawn, must be insulated
1 1/8" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
1 3/8" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
5/8" X 3/4" coupling (3)	Reducing coupling for 5/8" line vapor line connection at ID unit
3P80A circuit breaker	For 16 ton outdoor unit
2P15A circuit breaker (3)	For indoor units– Indoor units are powered separately from ODU
3/4" male adapter (3)	Indoor unit condensate drain connections
3/4" condensate trap (3)	Field assembled or prefabricated. Trap height at least 6"

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter– to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI– Intesis Cloud Control
UTD-DFMLA2	Downflow Conversion Kit for ARUX60 air handler

## V-Series 6-Ton, Single-Zone, 208/230 VAC VRF System with horizontal High Static Air Handler

AHRI Standard 1230 Certification # 208812532

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 72,000 BTUH
- Heating- 81,000 BTUH

Capacity	Outdoor Unit	Indoor Unit	Remote Control
6 tons	AOUA72ULBV5	ARUH72TLAV2	UTY-RNRUZ5

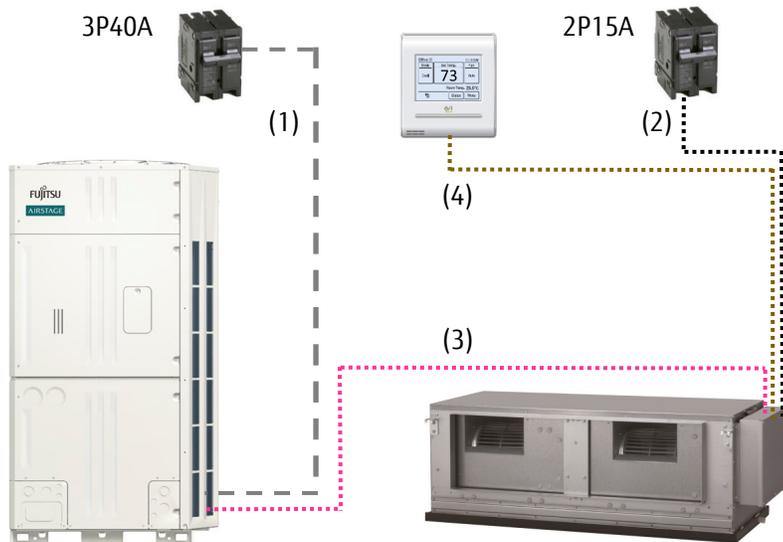
### Refrigerant Piping



### PIPING NOTES:

- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)\*
  - 3/4" OD vapor line\*
  - 131' Maximum vertical separation- ODU below†
  - 164' Maximum vertical separation- ODU above
  - 541' Maximum total piping (one way)
  - 25' Minimum piping length
  - Both refrigerant lines MUST BE insulated
  - No refrigerant piping traps allowed
  - Condensate drain trap is required
- \* Lengths >230' and ≤541' upsize lines to:  
 1/2" OD liquid line (+1.23 oz./ft.)  
 7/8" OD vapor line
- † 16' maximum vertical separation when OD design temperature is < 23° F.

### Electrical-Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 8 or 6 AWG & GND to 6 ton outdoor unit\*
  - (2) 14/2 or 12/2 w/GND to AHU\*
  - (3) Fujitsu Pink communication cable
  - (4) 18/3 thermostat wire (2 conductors minimum)
- \* Final wire gauge sized and selected in accordance with NEC and all applicable codes.  
 Electrical disconnect switches not shown

## V-Series 6-Ton, Single-Zone, 208/230 VAC VRF System with horizontal High Static Air Handler

**IMPORTANT**– Air handler may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOUA72ULBV5	VU-V Heat Pump Outdoor Unit, 6 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUH72TLAV2	Airstage High Static Air Handler, 6 ton
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD– ACR tubing	Liquid line- Soft or hard drawn, must be insulated
3/4" OD– ACR tubing	Vapor line- Soft or hard drawn, must be insulated
1/2" X 3/8" coupling	Reducing coupling for 3/8" liquid line connection at ID unit (only when liquid line is >230')
3P40A circuit Breaker	For outdoor unit
2P15A circuit breaker	Indoor unit is powered separately from ODU
Disconnect	2 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code.
3/4" male adapter	Indoor unit condensate drain connection
3/4" condensate trap	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter– to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI– Intesis Cloud Control (-TLAV2)

## V-Series 8-Ton, Single-Zone, 208/230 VAC VRF System with horizontal High Static Air Handler

AHRI Standard 1230 Certification # 208812533

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 96,000 BTUH
- Heating- 108,000 BTUH

Capacity	Outdoor Unit	Indoor Unit	Remote Control
8 tons	AOUA96ULBV5	ARUH96TLAV2	UTY-RNRUZ5

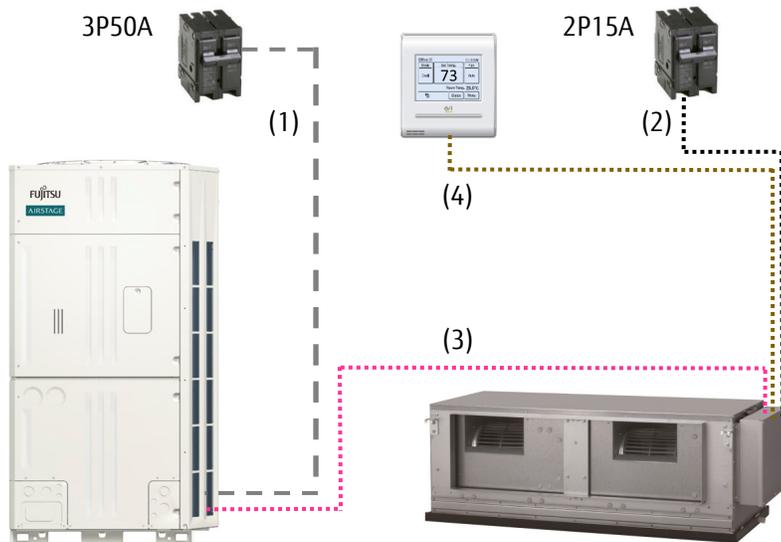
### Refrigerant Piping



### PIPING NOTES:

- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)\*
- 3/4" OD vapor line\*
- 131' Maximum vertical separation- ODU below†
- 164' Maximum vertical separation- ODU above
- 541' Maximum total piping (one way)
- 16' Minimum piping length
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- Condensate drain trap is required
- \* Lengths >230' and ≤541' upsize lines to:  
1/2" OD liquid line (+1.23 oz./ft.)  
7/8" OD vapor line
- † 16' maximum vertical separation when OD design temperature is < 23° F.

### Electrical-Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 8 AWG & GND to 8 ton outdoor unit\*
  - (2) 14/2 or 12/2 w/GND to AHU\*
  - (3) Fujitsu Pink communication cable
  - (4) 18/3 thermostat wire (2 conductors minimum)
- \* Final wire gauge sized and selected in accordance with NEC and all applicable codes.  
Electrical disconnect switches not shown

## V-Series 8-Ton, Single-Zone, 208/230 VAC VRF System with horizontal High Static Air Handler

**IMPORTANT**– Air handler may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOUA96ULBV5	VU-V Heat Pump Outdoor Unit, 8 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUH96TLAV2	Airstage High Static Air Handler, 8 ton
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD– ACR tubing	Liquid line- Soft or hard drawn, must be insulated
3/4" OD– ACR tubing	Vapor line- Soft or hard drawn, must be insulated
3P50A circuit Breaker	For outdoor unit
1/2" X 3/8" coupling	Reducing coupling for 3/8" liquid line connection at ID unit (only when liquid line is >230')
2P15A circuit breaker	Indoor unit is powered separately from ODU
Disconnect	2 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code.
3/4" male adapter	Indoor unit condensate drain connection
3/4" condensate trap	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter– to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI– Intesis Cloud Control (-TLAV2)

## J-Series 6-Ton, Single-Zone, 208/230 VAC VRF System with (2) horizontal High Static Air Handlers

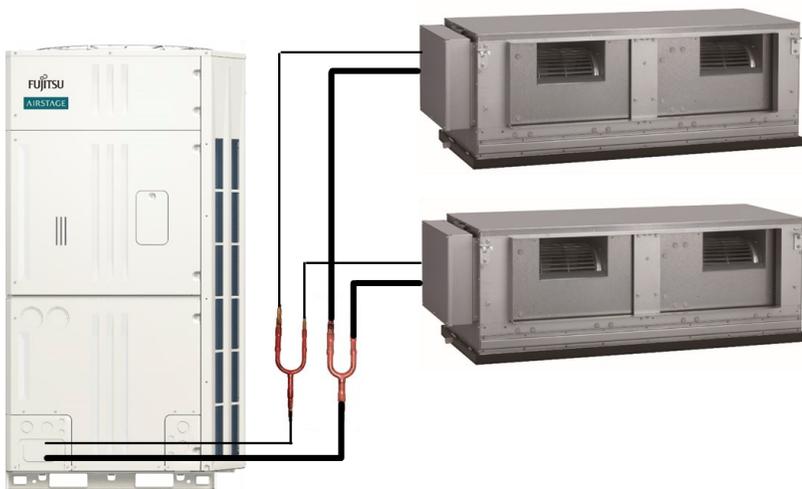
AHRI Standard 1230 Certification # 208812532

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 72,000 BTUH
- Heating- 81,000 BTUH

Capacity	Outdoor Unit	Indoor Unit (X2)	Remote Control
6 tons	AOUA72ULBV5	ARUH36TLAV2	UTY-RNRUZ5

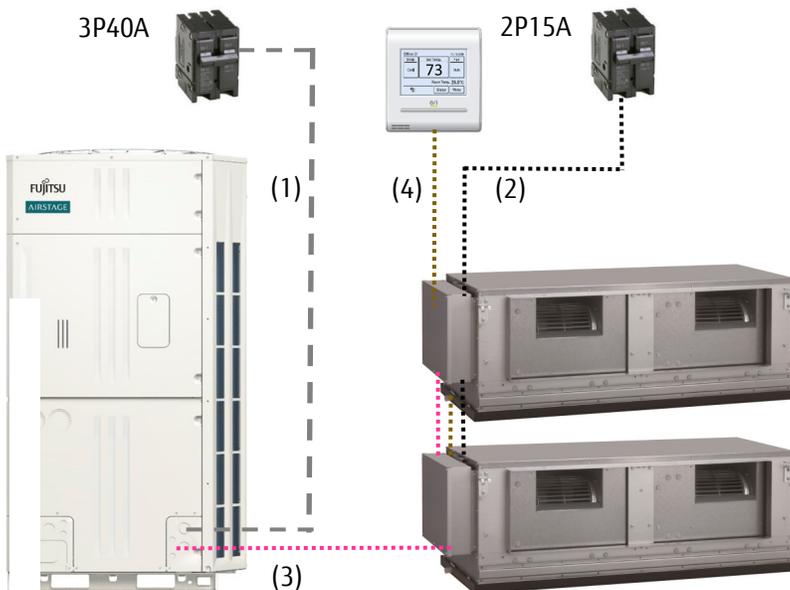
**Refrigerant Piping**– See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical–Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 8 or 6 AWG & GND to 6 ton outdoor unit\*
  - (2) 14/2 or 12/2 w/GND to AHUs\*
  - (3) Fujitsu Pink communication cable
  - (4) 18/3 thermostat wire (2 conductors minimum)
- \* Final wire gauge sized and selected in accordance with NEC and all applicable codes.

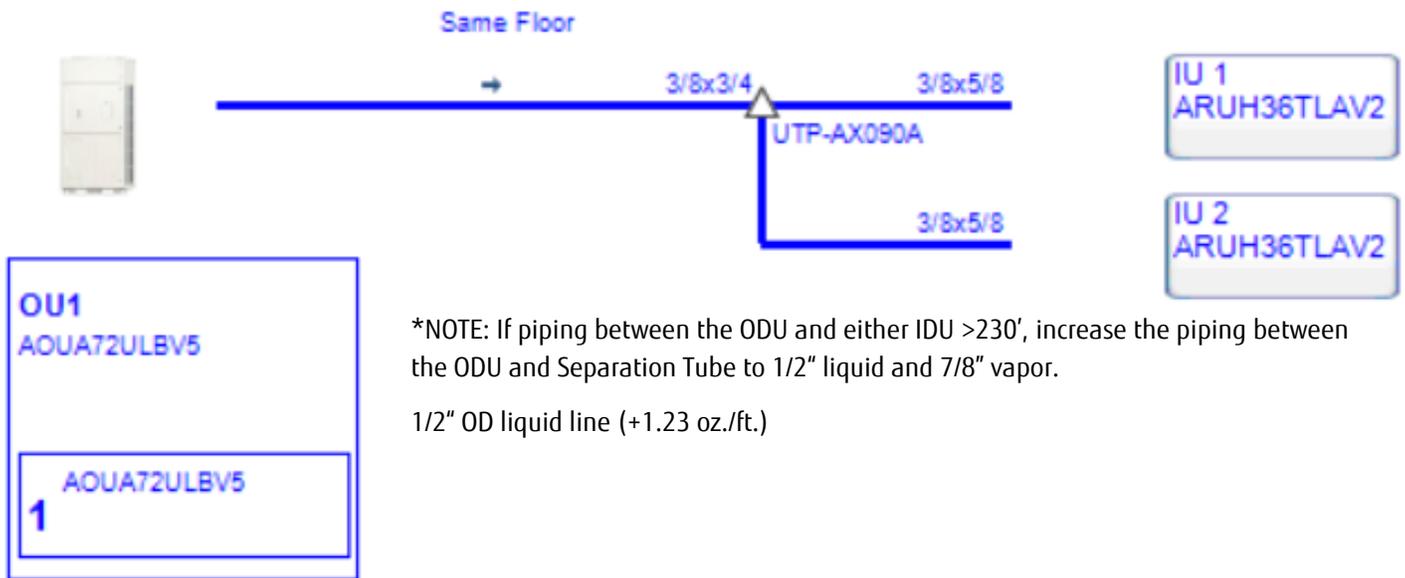
Electrical disconnect switches not shown

Communication, RC and line voltage cables in series (Daisy Chained) between AHUs

## J-Series 6-Ton, Single Zone, 208/230 VAC VRF System with (2) horizontal High Static Air Handlers

### Refrigerant Piping Details

- AOUA72ULBV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)\*
- 77.2 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX090A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation– ODU below†
- 164' maximum vertical separation– ODU above
- 25' minimum between ODU and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is < 23° F.



\*NOTE: If piping between the ODU and either IDU >230', increase the piping between the ODU and Separation Tube to 1/2" liquid and 7/8" vapor.

1/2" OD liquid line (+1.23 oz./ft.)

### Pipe explanatory notes

aa x bb

aa: Liquid

bb: Gas

aa

aa: Liquid

## V-Series 6-Ton, Single-Zone, 208/230 VAC VRF System with (2) horizontal High Static Air Handlers

**IMPORTANT**– Air handlers may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AQUA72ULBV5	VU-V Heat Pump Outdoor Unit, 6 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUH36TLAV2 (2)	Airstage High Static Air Handler, 3 ton
UTP-AX090A	Separation Tube assembly (Includes 1- liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
3/4" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
3P40A circuit Breaker	For outdoor unit
2P15A circuit breaker	Indoor unit is powered separately from ODU
Disconnect	3 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code
3/4" male adapter (2)	Indoor unit condensate drain connection
3/4" condensate trap (2)	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter- to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI- Intesis Cloud Control (-TLAV2)

## V-Series 8-Ton, Single-Zone, 208/230 VAC VRF System with (2) horizontal High Static Air Handlers

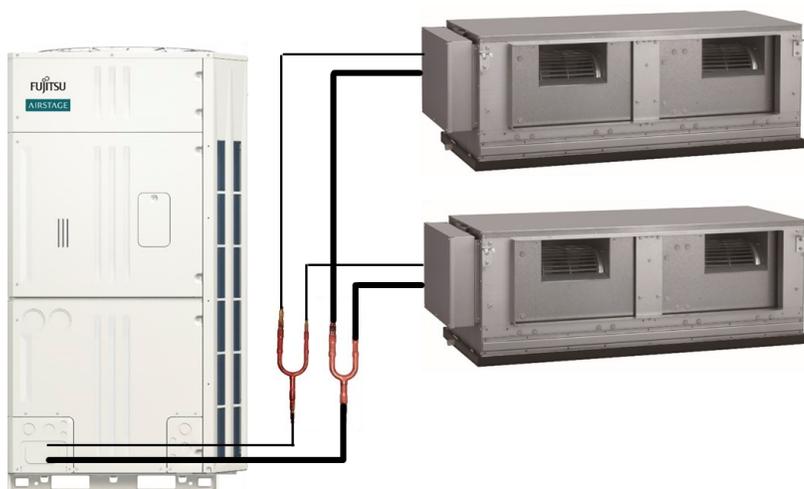
AHRI Standard 1230 Certification # 208812533

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 96,000 BTUH
- Heating- 108,000 BTUH

Capacity	Outdoor Unit	Indoor Unit (X2)	Remote Control
8 tons	AOUA96ULBV5	ARUH48TLAV2	UTY-RNRUZ5

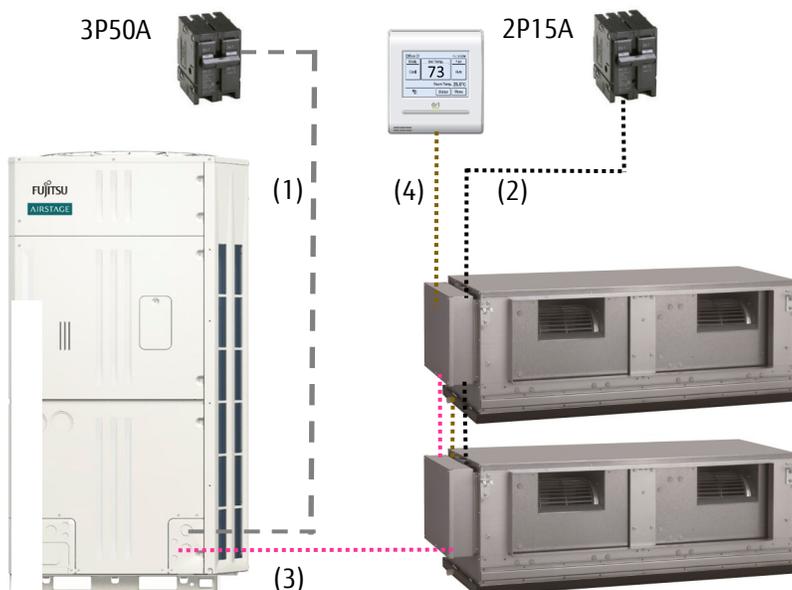
**Refrigerant Piping**– See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical–Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 8 AWG & GND to 8 ton outdoor unit\*
  - (2) 14/2 or 12/2 w/GND to AHUs\*
  - (3) Fujitsu Pink communication cable
  - (4) 18/3 thermostat wire (2 conductors minimum)
- \* Final wire gauge sized and selected in accordance with NEC and all applicable codes.

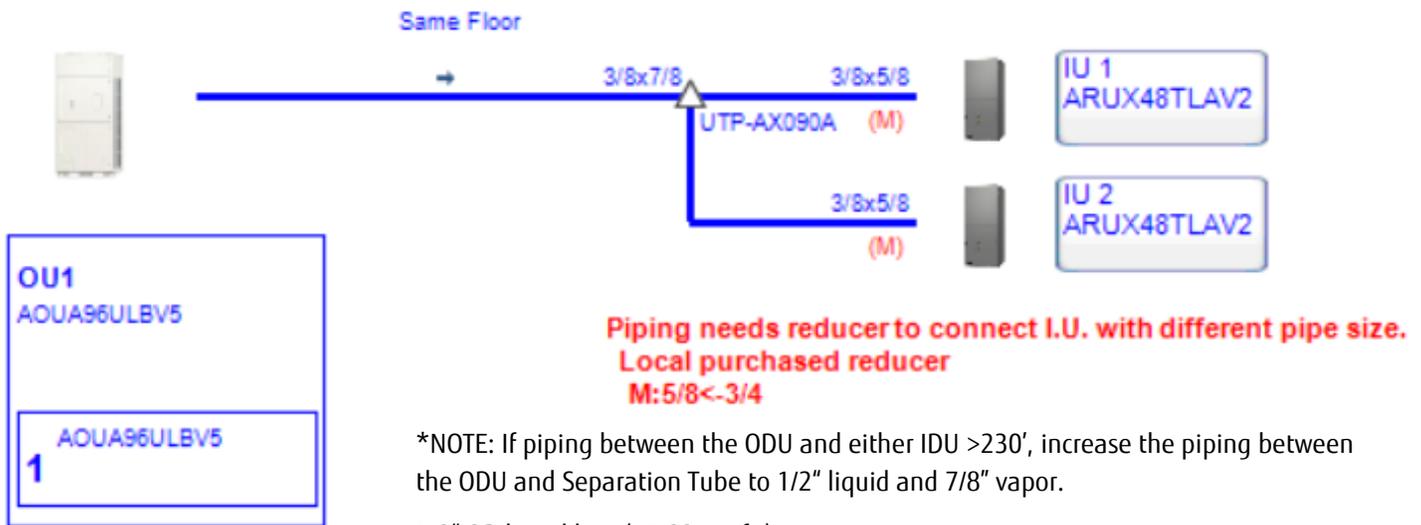
Electrical disconnect switches not shown

Communication, RC and line voltage cables in series (Daisy Chained) between AHUs

## V-Series 8-Ton, Single Zone, 208/230 VAC VRF System with (2) horizontal High Static Air Handlers

### Refrigerant Piping Details

- AOUA96ULBV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)\*
- 77.2 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX090A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below†
- 164' maximum vertical separation- ODU above
- 25' minimum between ODU and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is < 23° F.



**OU1**  
AOUA96ULBV5

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**1**      AOUA96ULBV5

**IU 1**  
ARUX48TLAV2

**IU 2**  
ARUX48TLAV2

#### Pipe explanatory notes

aa x bb

aa: Liquid

bb: Gas

aa

aa: Liquid

## V-Series 8-Ton, Single-Zone, 208/230 VAC VRF System with (2) horizontal High Static Air Handlers

**IMPORTANT**– Air handlers may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOUA96ULBV5	VU-V Heat Pump Outdoor Unit, 8 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUH48TLAV2 (2)	Airstage High Static Air Handler, 4 ton
UTP-AX090A	Separation Tube assembly (Includes 1- liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
3/4" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
5/8" X 3/4" coupling (2)	Reducing coupling for 5/8" line vapor line connection at ID unit
3P40A circuit Breaker	For outdoor unit
2P15A circuit breaker	Indoor unit is powered separately from ODU
Disconnect	3 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code
3/4" male adapter (2)	Indoor unit condensate drain connection
3/4" condensate trap (2)	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter- to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI- Intesis Cloud Control (-TLAV2)

## V-Series 10-Ton, Single-Zone, 208/230 VAC VRF System with (2) horizontal High Static Air Handlers

AHRI Standard 1230 Certification # 208812534

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 120,000 BTUH
- Heating- 135,000 BTUH

Capacity	Outdoor Unit	Indoor Unit (X2)	Remote Control
10 tons	AOUA120ULBV5	ARUH60TLAV2	UTY-RNRUZ5

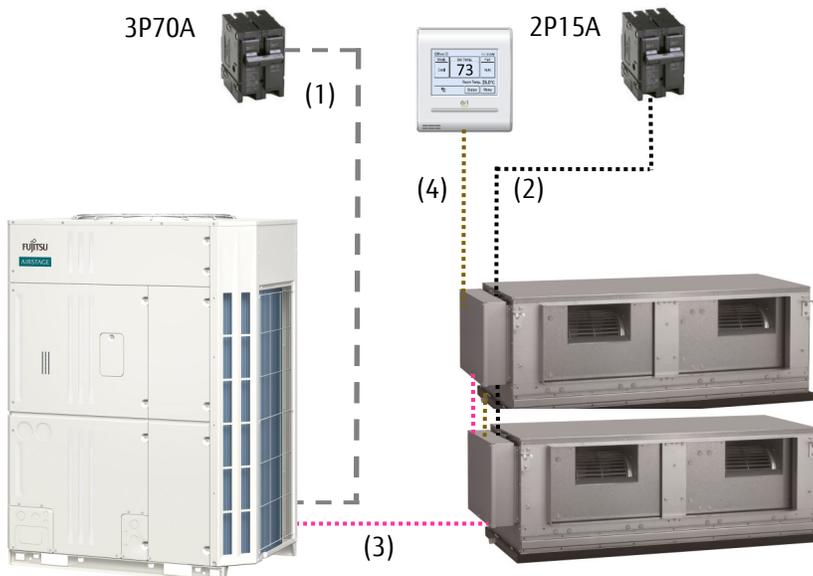
**Refrigerant Piping**– See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical–Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 6 AWG & GND to 10 ton outdoor unit\*
  - (2) 14/2 or 12/2 w/GND to AHUs\*
  - (3) Fujitsu Pink communication cable
  - (4) 18/3 thermostat wire (2 conductors min.)
- \* Final wire gauge sized and selected in accordance with NEC and all applicable codes.

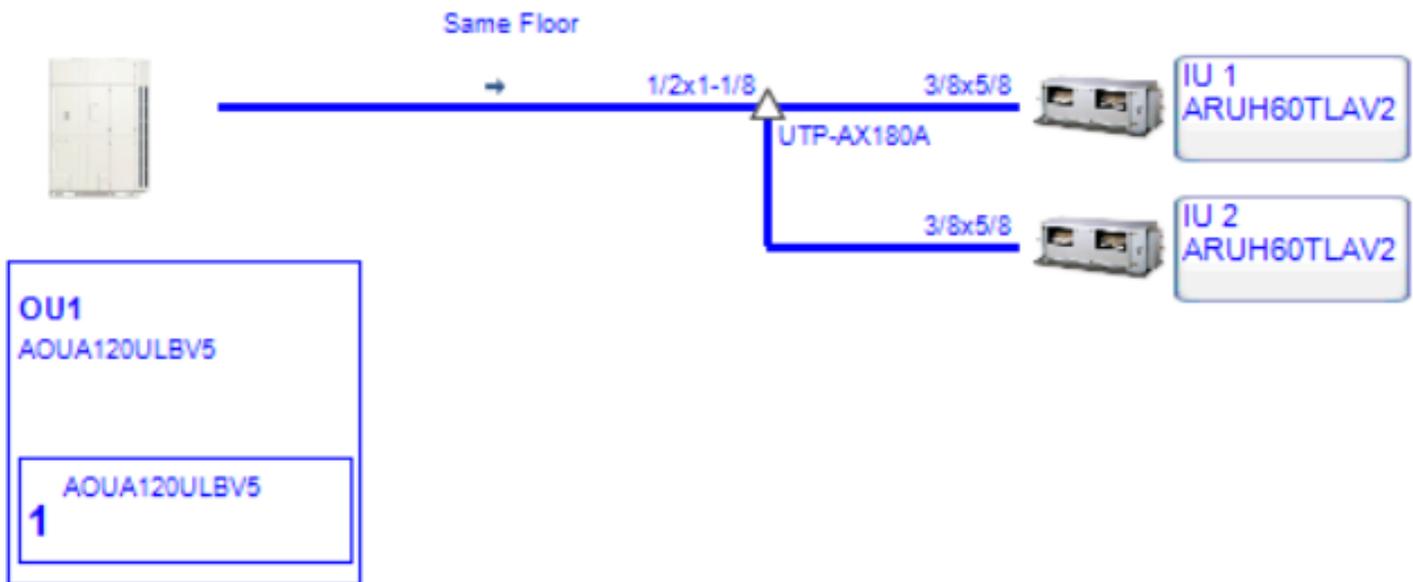
Electrical disconnect switches not shown

Communication, RC and line voltage cables in series (Daisy Chained) between AHUs

## V-Series 10-Ton, Single-Zone, 208/230 VAC VRF System with (2) horizontal High Static Air Handlers

### Refrigerant Piping Details

- AOUA120ULBV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)
- 1/2" OD liquid line (+ 1.23 oz./ft. R-410a)
- 77.2.4 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX180A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below†
- 164' maximum vertical separation- ODU above
- 16' minimum between ODU and nearest indoor unit
- 9' minimum between ODU and Separation Tube
- † 16' maximum vertical separation when OD design temperature is < 23° F.



### Pipe explanatory notes

aa x bb

aa:Liquid

bb:Gas

aa

aa:Liquid

## V-Series 10-Ton, Single-Zone, 208/230 VAC VRF System with (2) horizontal High Static Air Handlers

**IMPORTANT**– Air handlers may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AQUA120ULBV5	VU-V Heat Pump Outdoor Unit, 10 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUH60TLAV2 (2)	Airstage High Static Air Handler, 5 ton
UTP-AX180A	Separation Tube assembly (Includes 1- liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
1/2" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
1 1/8" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
3P70A circuit Breaker	For outdoor unit
2P15A circuit breaker	Indoor unit is powered separately from ODU
Disconnect	3 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code.
3/4" male adapter (2)	Indoor unit condensate drain connection
3/4" condensate trap (2)	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter- to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI- Intesis Cloud Control (-TLAV2)

## V-Series 12-Ton, Single-Zone, 208/230 VAC VRF System with (2) horizontal, High Static Air Handlers

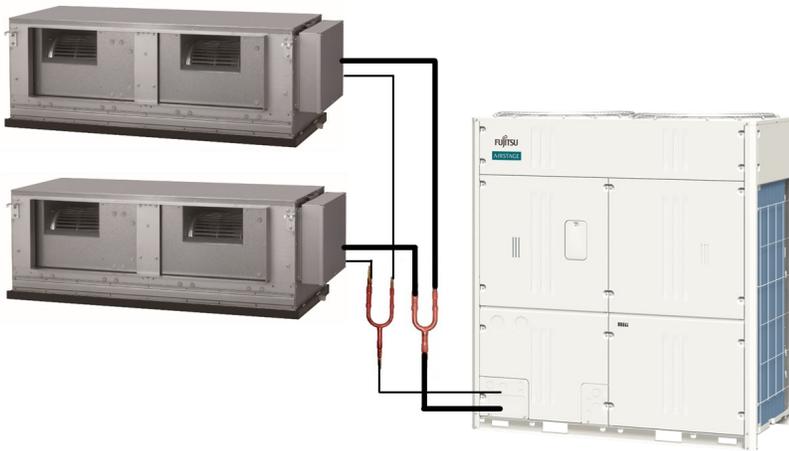
AHRI Standard 1230 Certification # 208931864

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 144,000 BTUH
- Heating- 162,000 BTUH

Capacity	Outdoor Unit Group	Indoor Unit (X2)	Remote Control
12 tons	AOUA144ULBV5	ARUH72TLAV2	UTY-RNRUZ5

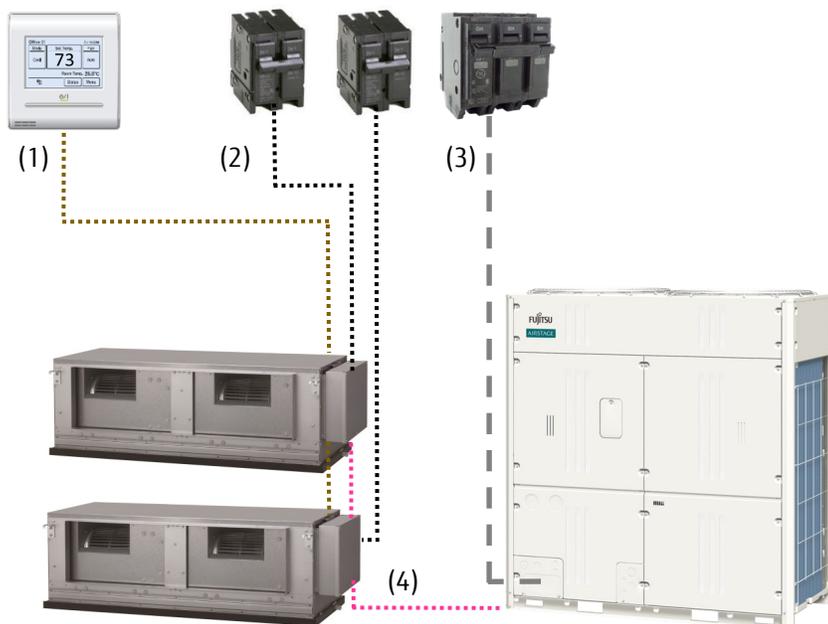
**Refrigerant Piping-** See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical- Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 18/3 thermostat wire (2 conductors minimum) or Fujitsu Pink to each AHU Y1/Y2 connection
- (2) 2P15A breaker- 14/2 or 12/2 w/GND to each AHU\*
- (3) 3P70A breaker- 6 AWG & GND to 12 ton outdoor unit\*
- (4) Fujitsu Pink comm cable to AHUs and OD unit X1 & X2

\*Final wire gauge sized and selected in accordance with NEC and all applicable codes

Individual 2P15A breaker required per AHU

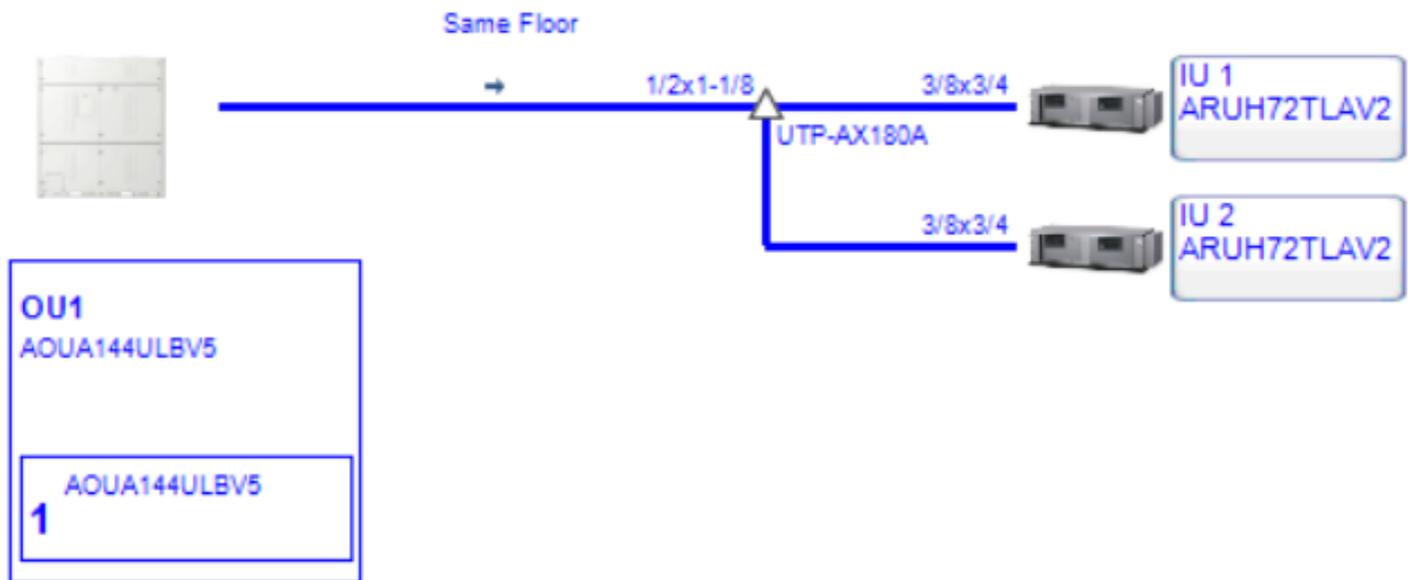
Electrical disconnect switches not shown

Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 12-Ton, Single-Zone, 208/230 VAC VRF System with (2) horizontal High Static Air Handlers

### Refrigerant Piping Details

- AOUA144ULBV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+.063 oz./ft. R-410a)
- 1/2" OD liquid line (+ 1.23 oz./ft. R-410a)
- 108 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX180A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between Primary ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below†
- 164' maximum vertical separation- ODU above
- 25' minimum distance between Primary outdoor unit and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is < 23° F.



### Pipe explanatory notes

aa x bb

aa: Liquid

bb: Gas

aa

aa: Liquid

## V-Series 12-Ton, Single-Zone, 208/230 VAC VRF System with (2) horizontal High Static Air Handlers

**IMPORTANT**– Air handlers may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOU144ULBV5	VU-V Heat Pump Outdoor Unit, 12 tons, pre-charged to 0 feet of piping, see “Piping Details”
ARUH72TLAV2 (2)	Airstage High Static Air Handler, (2) 6 ton units
UTP-AX180A	Separation Tube assembly (Divides refrigerant piping to ID units. Includes 1– liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	“Fujitsu Pink” communication cable , 250’ roll

#### 2. Required Supplies

Description	Comments
3/8” OD– ACR tubing	Liquid line- Soft or hard drawn, must be insulated
1/2” OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
3/4” OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
1 1/8” OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
3P70A circuit breaker	For 12 ton outdoor unit
2P15A circuit breaker (2)	Indoor units are powered separately from ODU
3/4” male adapter (2)	Indoor unit condensate drain connections
3/4” condensate trap (2)	Field assembled or prefabricated. Trap height at least 6”
18/3 thermostat wire	For use between indoor units and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter– to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI– Intesis Cloud Control (-TLAV2)

## V-Series 16-Ton, Single-Zone, 208/230 VAC VRF System with (2) horizontal, High Static Air Handlers

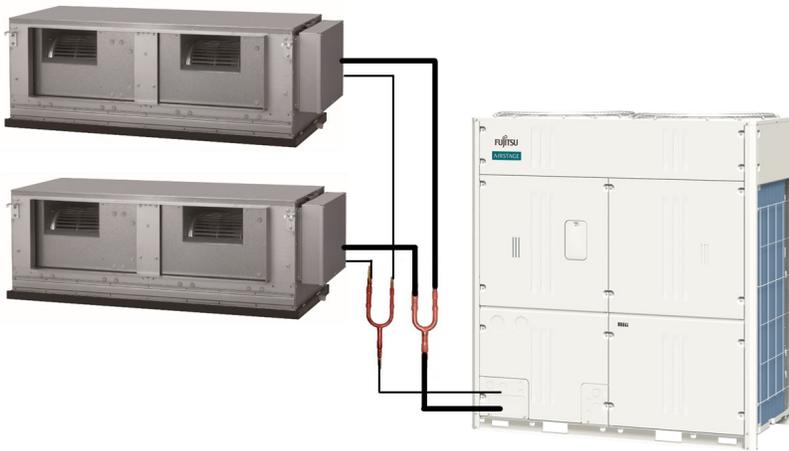
AHRI Standard 1230 Certification # 208931868

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 192,000 BTUH
- Heating- 216,000 BTUH

Capacity	Outdoor Unit Group	Indoor Unit (X2)	Remote Control
16 tons	AOUA192ULBV5	ARUH96TLAV2	UTY-RNRUZ5

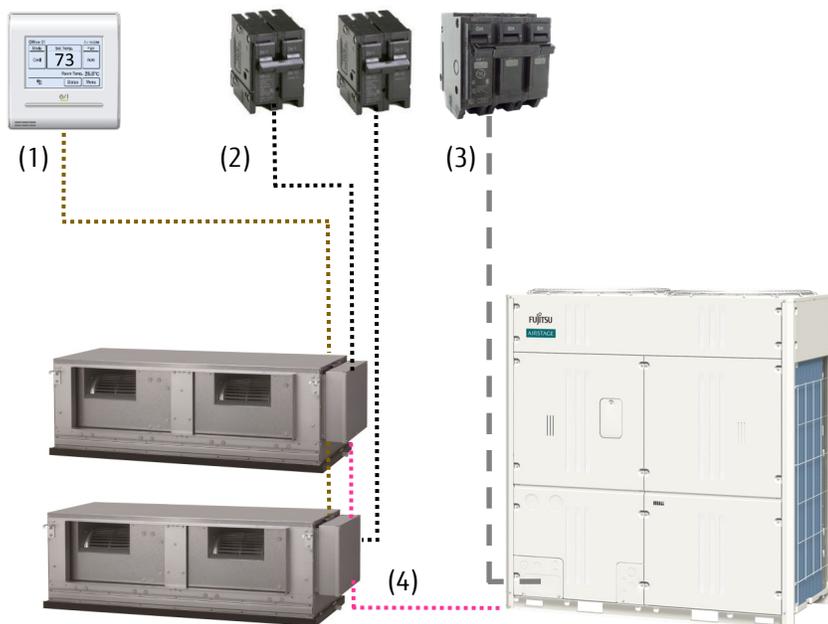
**Refrigerant Piping-** See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical- Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 18/3 thermostat wire (2 conductors minimum) or Fujitsu Pink to each AHU Y1/Y2 connection
- (2) 2P15A breaker- 14/2 or 12/2 w/GND to each AHU\*
- (3) 3P80A breaker- 3 AWG & GND to 16 ton outdoor unit\*
- (4) Fujitsu Pink comm cable to AHUs and OD unit X1 & X2

\*Final wire gauge sized and selected in accordance with NEC and all applicable codes

Individual 2P15A breaker required per AHU

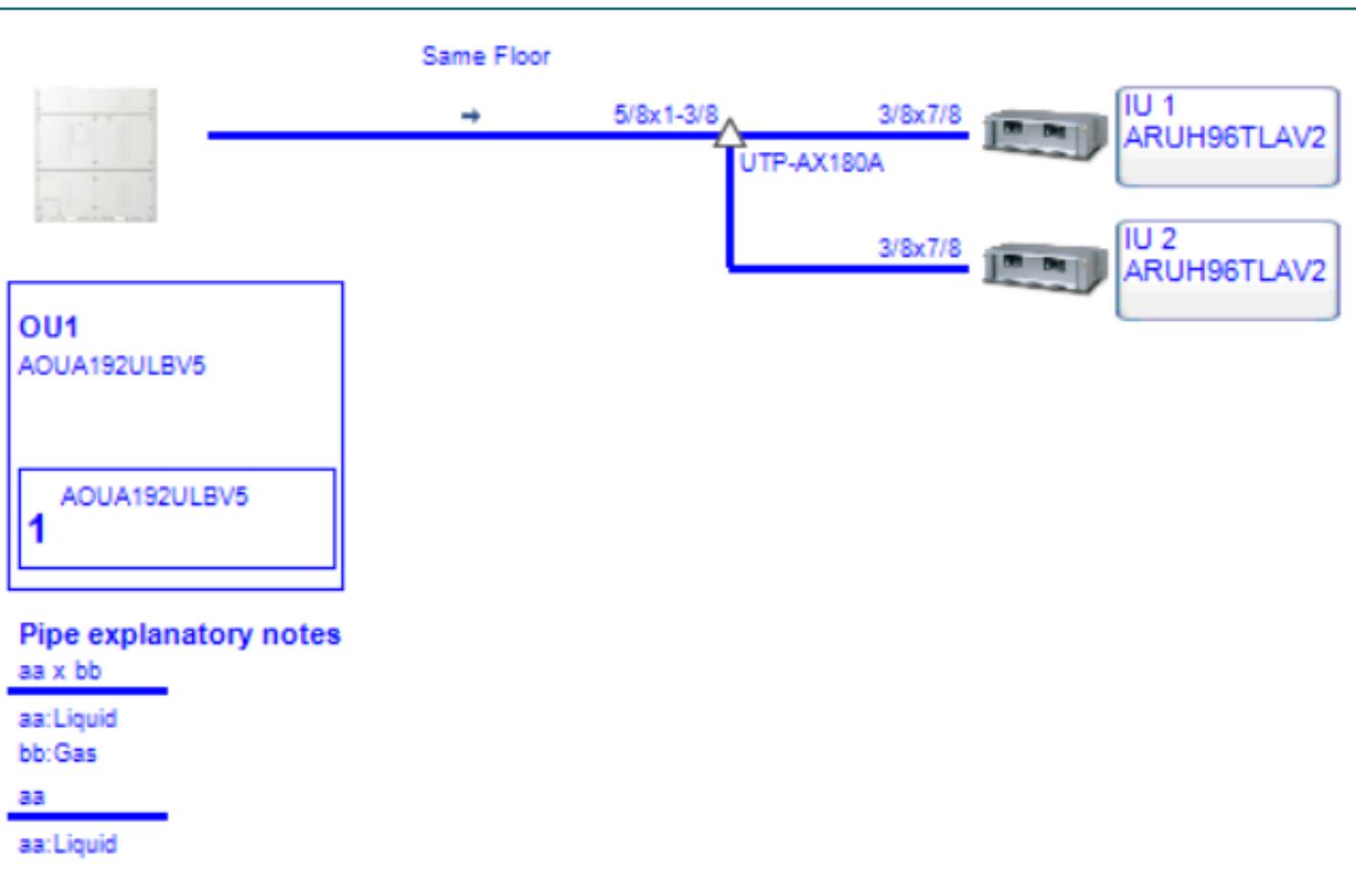
Electrical disconnect switches not shown

Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 16-Ton, Single Zone, 208/230 VAC VRF System with (2) horizontal High Static Air Handlers

### Refrigerant Piping Details

- AOUA192ULBV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+.063 oz./ft. R-410a)
- 5/8" OD liquid line (+ 1.92 oz./ft. R-410a)
- 108 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX180A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between Primary ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below†
- 164' maximum vertical separation- ODU above
- 25' minimum distance between Primary outdoor unit and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is < 23° F.



## V-Series 16-Ton, Single Zone, 208/230 VAC VRF System with (2) horizontal High Static Air Handlers

**IMPORTANT**– Air handlers may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOU192ULBV5	VU-V Heat Pump Outdoor Unit, 16 tons, pre-charged to 0 feet of piping, see “Piping Details”
ARUH96TLAV2 (2)	Airstage High Static Air Handler, (2) 8 ton units
UTP-AX180A	Separation Tube assembly (Divides refrigerant piping to ID units. Includes 1– liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	“Fujitsu Pink” communication cable , 250’ roll

#### 2. Required Supplies

Description	Comments
3/8” OD– ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8” OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
7/8” OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
1 3/8” OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
3P80A circuit breaker	For 16 ton outdoor unit
2P15A circuit breaker (2)	Indoor units are powered separately from ODU
3/4” male adapter (2)	Indoor unit condensate drain connections
3/4” condensate trap (2)	Field assembled or prefabricated. Trap height at least 6”
18/3 thermostat wire	For use between indoor units and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter– to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI– Intesis Cloud Control (-TLAV2)

## V-Series 20-Ton, Single-Zone, 208/230 VAC VRF System with (3) horizontal High Static Air Handlers

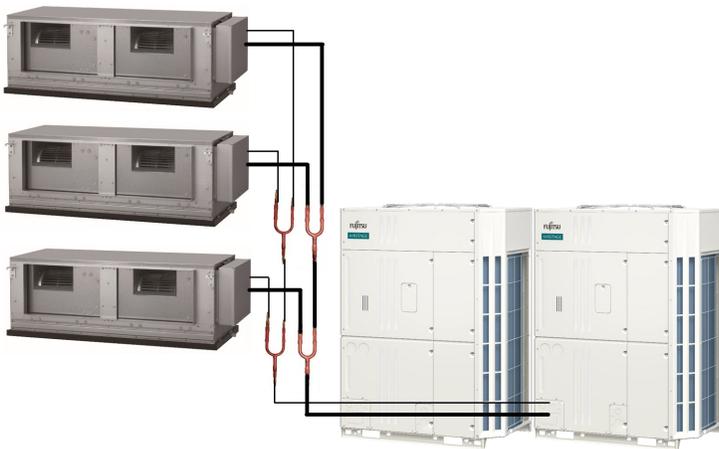
AHRI Standard 1230 Certification # 208812536

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 216,000 BTUH
- Heating- 243,200 BTUH

Capacity	Outdoor Unit Group	Indoor Unit (X3)	Remote Control
20 tons	AOUA240ULBVG5	ARUH72TLAV2	UTY-RNRUZ5

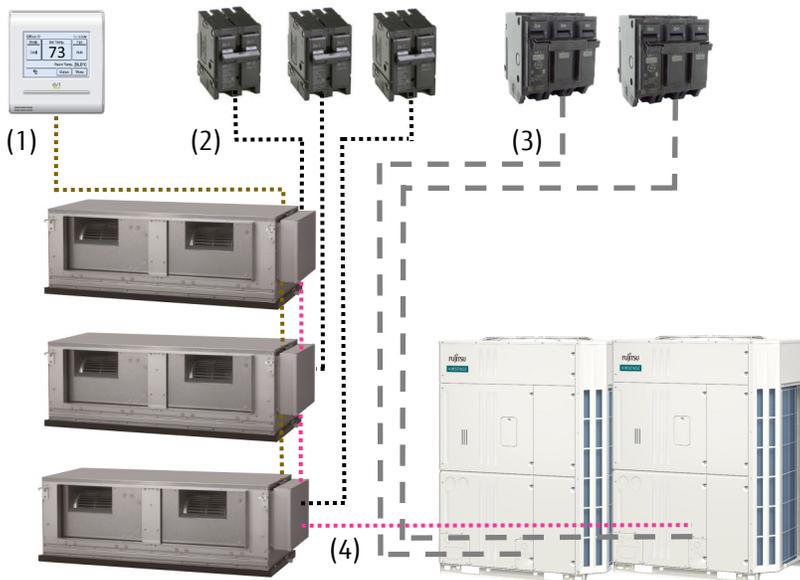
**Refrigerant Piping-** See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical- Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 18/3 thermostat wire (2 conductors minimum) or Fujitsu Pink to each AHU Y1/Y2 connection
- (2) 2P15A breaker- 14/2 or 12/2 w/GND to each AHU\*
- (3) 3P70A breaker- 8 or 6 AWG and GND to each 10 ton ODU\*
- (4) Fujitsu Pink comm cable to:
  - X1/X2- AHUs and Primary outdoor unit
  - H1/H2- Primary to Secondary outdoor unit

\* Final wire gauge sized and selected in accordance with NEC and all applicable codes

Individual 2P15A breaker required per AHU

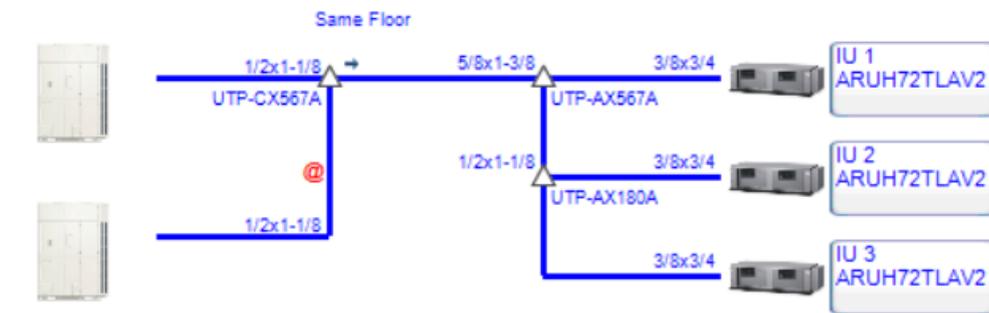
Electrical disconnect switches not shown

Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 20-Ton, Single-Zone, 208/230 VAC VRF System with (3) horizontal High Static Air Handlers

### Refrigerant Piping Details

- AOUA120ULBV5 Primary unit- closest to indoor units
- AOUA120ULBV5 Subordinate unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)
- 1/2" OD liquid line (+ 1.23 oz./ft. R-410a)
- 5/8" OD liquid line (+ 1.92 oz./ft. R-410a)
- 154.3 lb. maximum refrigerant charge
- Separation Tubes UTP-AX567A & AX180A must be used
- 3,280' maximum total piping (liquid line)
- 541' maximum between Primary ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below
- 164' maximum vertical separation- ODU above
- 25' minimum distance between Primary outdoor unit and nearest indoor unit
- 9' maximum from Branch Kit to outdoor unit
- Outdoor unit Branch Kit MUST BE installed flat



**@ Specific installation rules may be applicable for piping multiple outdoor combinations. (e.g. rise setting for gas pipe). Refer to outdoor unit installation manual for specifics.**

#### Pipe explanatory notes

aa x bb

aa: Liquid

bb: Gas

aa

aa: Liquid

## V-Series 20-Ton, Single-Zone, 208/230 VAC VRF System with (3) horizontal High Static Air Handlers

**IMPORTANT**– Air handlers may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOUA240ULBVG5	VU-V Heat Pump OD Unit group, pre-charged to 0 feet of piping, see "Refrigerant Piping Details"
ARUX72TLAV2 (3)	Airstage High Static Air Handler, (3) 6 ton units
UTP-CX567A	Branch Kit (Divides refrigerant piping to OD units. Includes 1– liquid, 1 vapor)
UTP-AX567A	Separation Tube assembly (Divides refrigerant piping to ID units. Includes 1– liquid, 1 vapor)
UTP-AX180A	Separation Tube assembly (Divides refrigerant piping to ID units. Includes 1– liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
1/2" OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
5/8" OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
3/4" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
7/8" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
1 1/8" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
1 3/8" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
3P70A circuit breaker (2)	For 10 ton outdoor units
2P15A circuit breaker (3)	For indoor units– Indoor units are powered separately from ODU
3/4" male adapter (3)	Indoor unit condensate drain connections
3/4" condensate trap (3)	Field assembled or prefabricated. Trap height at least 6"

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter– to allow conventional thermostat use (G/E thermostat only)
UTY-SPWX	High-Rise 360 Pressure Sensor Kit
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI– Intesis Cloud Control (-TLAV1, -TLAV2)

## V-Series 24-Ton, Single-Zone, 208/230 VAC VRF System with (3) horizontal High Static Air Handlers

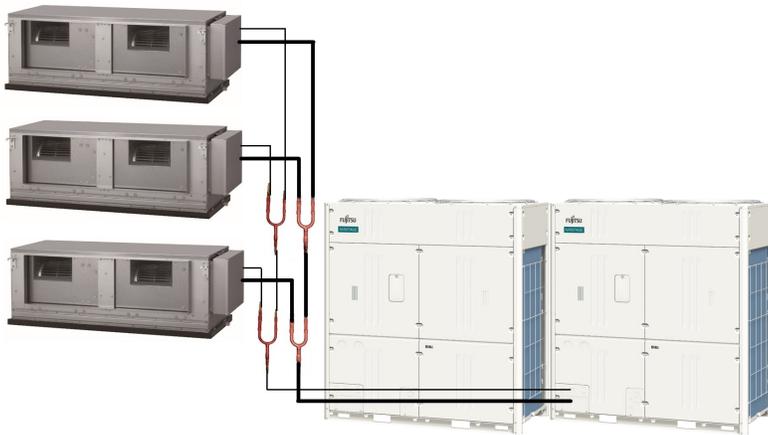
AHRI Standard 1230 Certification # 208931872

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 288,000 BTUH
- Heating- 324,000 BTUH

Capacity	Outdoor Unit Group	Indoor Unit (X3)	Remote Control
24 tons	AOUA288ULBVG5	ARUH96TLAV2	UTY-RNRUZ5

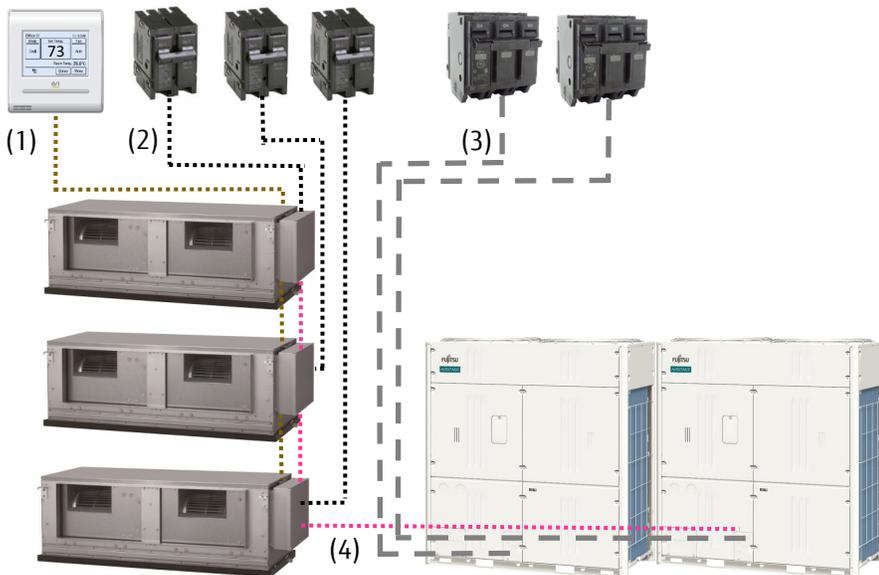
**Refrigerant Piping-** See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical- Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 18/3 thermostat wire (2 conductors minimum) or Fujitsu Pink to each AHU Y1/Y2 connection
- (2) 2P15A breaker- 14/2 or 12/2 w/GND to each AHU\*
- (3) 3P70A breaker- 8 or 6 AWG & GND to each 12 ton outdoor unit\*
- (4) Fujitsu Pink comm cable to:
  - X1/X2- AHUs and Primary ODU
  - H1/H2- Primary to Secondary ODU

\* Final wire gauge sized and selected in accordance with NEC and all applicable codes.

Individual 2P15A breaker required per AHU

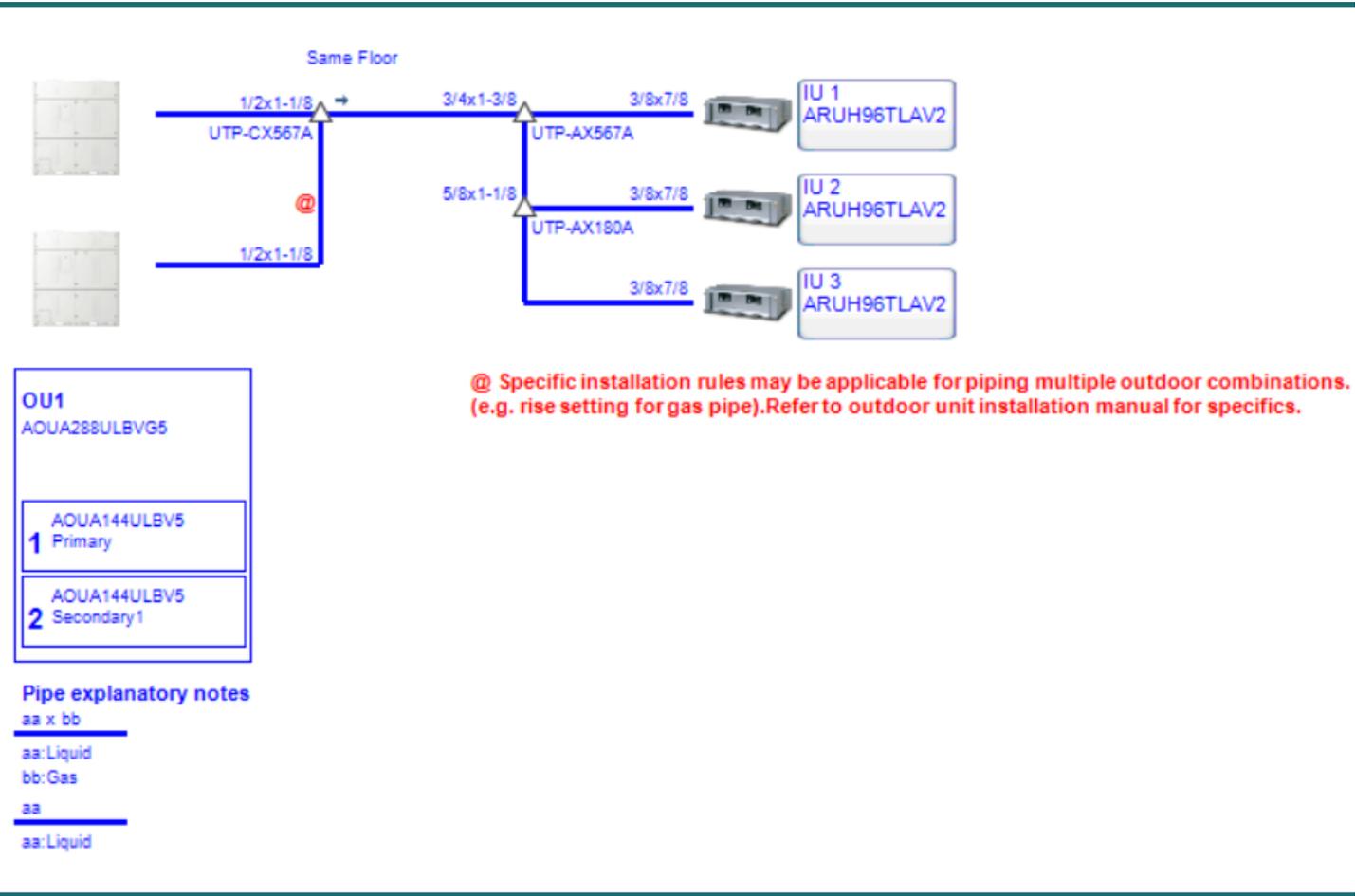
Electrical disconnect switches not shown

Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 24-Ton, Single-Zone, 208/230 VAC VRF System with (3) horizontal High Static Air Handlers

### Refrigerant Piping Details

- AOUA144ULBV5 Primary unit- closest to indoor units
- AOUA144ULBV5 Subordinate unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No ID unit refrigerant piping traps allowed
- 3/8" OD liquid line (+0.62 oz./ft. R-410a)
- 1/2" OD liquid line (+ 1.23 oz./ft. R-410a)
- 5/8" OD liquid line (+ 1.92 oz./ft. R-410a)
- 3/4" OD liquid line (+ 2.88 oz./ft. R-410a)
- 216 lb. maximum refrigerant charge
- Separation Tubes UTP-AX567A & AX180A must be used
- 3,280' maximum total piping (liquid line)
- 541' maximum between Primary ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below
- 164' maximum vertical separation- ODU above
- 25' minimum distance between Primary outdoor unit and nearest indoor unit
- 9' maximum from Branch Kit to outdoor unit
- Outdoor unit Branch Kits MUST BE installed flat



## V-Series 24-Ton, Single-Zone, 208/230 VAC VRF System with (3) horizontal High Static Air Handlers

**IMPORTANT**– Air handlers may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOUA288ULBVG5	VU-V Heat Pump ODU group, pre-charged to 0 feet of piping, see "Refrigerant Piping Details"
ARUH96TLAV2 (3)	Airstage High Static Air Handler, (3) 8 ton units
UTP-CX567A	Branch Kit (Divides refrigerant piping to OD units. Includes 1– liquid, 1 vapor)
UTP-AX567A	Separation Tube assembly (Divides refrigerant piping to ID units. Includes 1– liquid, 1 vapor)
UTP-AX180A	Separation Tube assembly (Divides refrigerant piping to ID units. Includes 1– liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
1/2" OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
5/8" OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
3/4" OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
7/8" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
1 1/8" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
1 3/8" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
3P70A circuit breaker (2)	For 12 ton outdoor units
2P15A circuit breaker (3)	For indoor units– Indoor units are powered separately from OU
3/4" male adapter (3)	Indoor unit condensate drain connections
3/4" condensate trap (3)	Field assembled or prefabricated. Trap height at least 6"

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter– to allow conventional thermostat use (G/E thermostat only)
UTY-SPWX	High-Rise 360 Pressure Sensor Kit
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI– Intesis Cloud Control (-TLAV2)

## V-Series 6-Ton, Single-Zone, 460 VAC VRF System with (2) Multi-Position Air Handlers

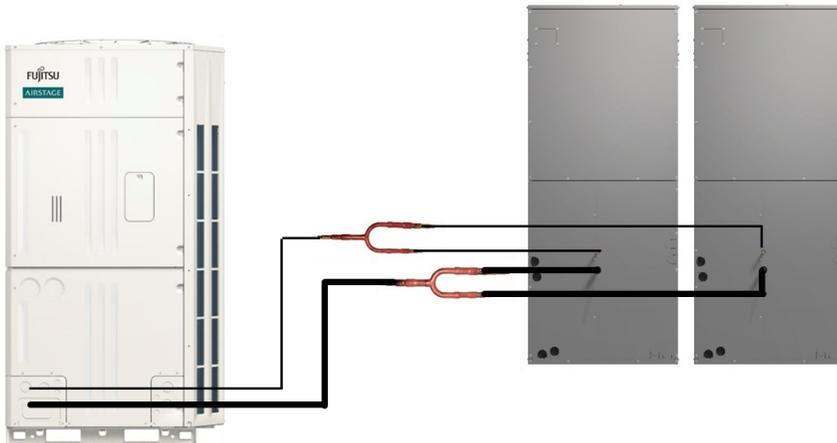
AHRI Standard 1230 Certification # 208812537

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 72,000 BTUH
- Heating- 81,000 BTUH

Capacity	Outdoor Unit	Indoor Unit (X2)	Remote Control
6 tons	AOUA72ULCV5	ARUX36TLAV2	UTY-RNRUZ5

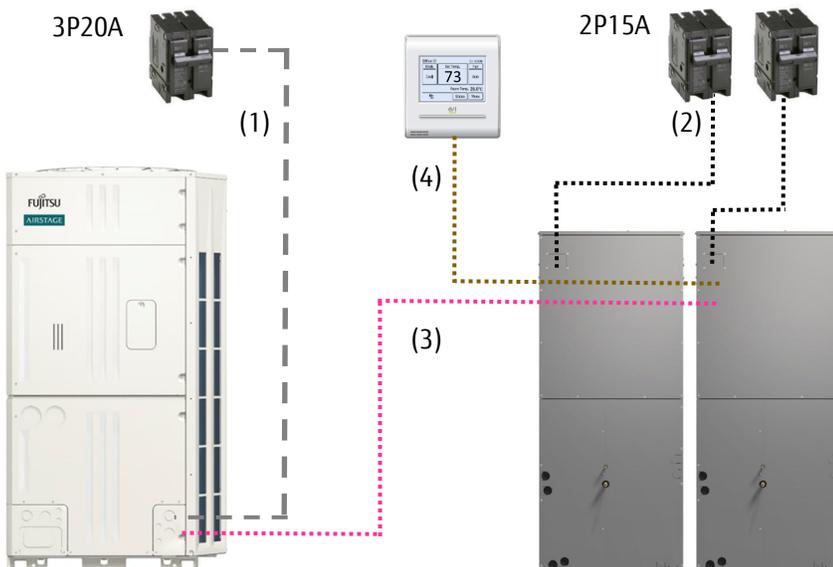
Refrigerant Piping- See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical-Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 12 AWG & GND to 6 ton outdoor unit\*
- (2) 14/2 or 12/2 w/GND to AHUs\*
- (3) Fujitsu Pink communication cable
- (4) 18/3 thermostat wire (2 conductors minimum)

\* Final wire gauge sized and selected in accordance with NEC and all applicable codes.

Individual 2P15A breaker required per AHU

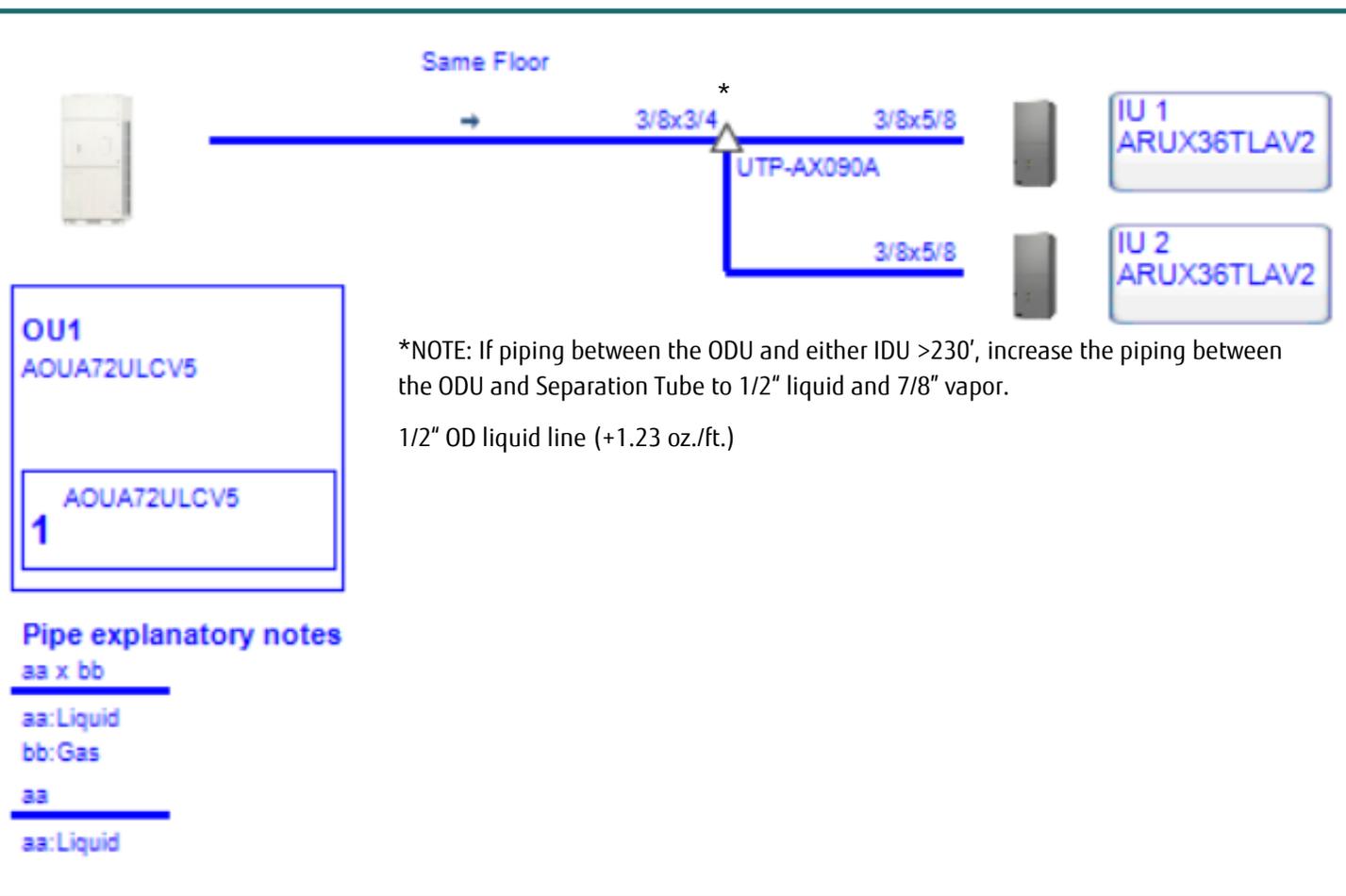
Electrical disconnect switches not shown

Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 6-Ton, Single-Zone, 460 VAC VRF System with (2) Multi-Position Air Handlers

### Refrigerant Piping Details

- AOUA72ULWV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)\*
- 77.2 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX090A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below†
- 164' maximum vertical separation- ODU above
- 25' minimum between ODU and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is <23° F.



## V-Series 6-Ton, Single-Zone, 460 VAC VRF System with (2) Multi-Position Air Handlers

**IMPORTANT**– Air handlers are not approved for downlow installation unless UTD Downflow Conversion Kit is installed.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOUA72ULCV5	VU-V Heat Pump Outdoor Unit, 6 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUX36TLAV2 (2)	Airstage Multi-Position Air Handler, 3 ton
UTP-AX090A	Separation Tube assembly (Includes 1- liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
3/4" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
3P20A circuit Breaker	For outdoor unit
2P15A circuit breaker (2)	Indoor unit is powered separately from ODU
Disconnect	3 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code
3/4" male adapter	Indoor unit condensate drain connection
3/4" condensate trap	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter- to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI- Intesis Cloud Control (-TLAV2)
UTD-DFMMA1	Downflow Conversion Kit for ARUX36 air handler

## V-Series 8-Ton, Single-Zone, 460 VAC VRF System with (2) Multi-Position Air Handlers

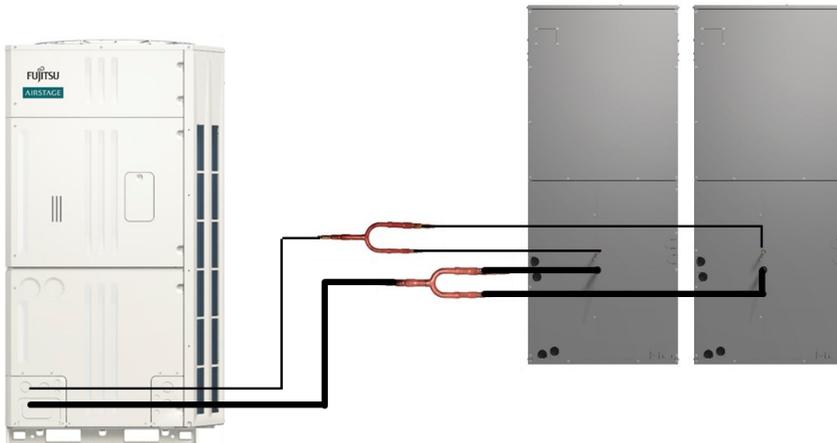
AHRI Standard 1230 Certification # 208812538

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 96,000 BTUH
- Heating- 108,000 BTUH

Capacity	Outdoor Unit	Indoor Unit (X2)	Remote Control
8 tons	AOUA96ULCV5	ARUX48TLAV2	UTY-RNRUZ5

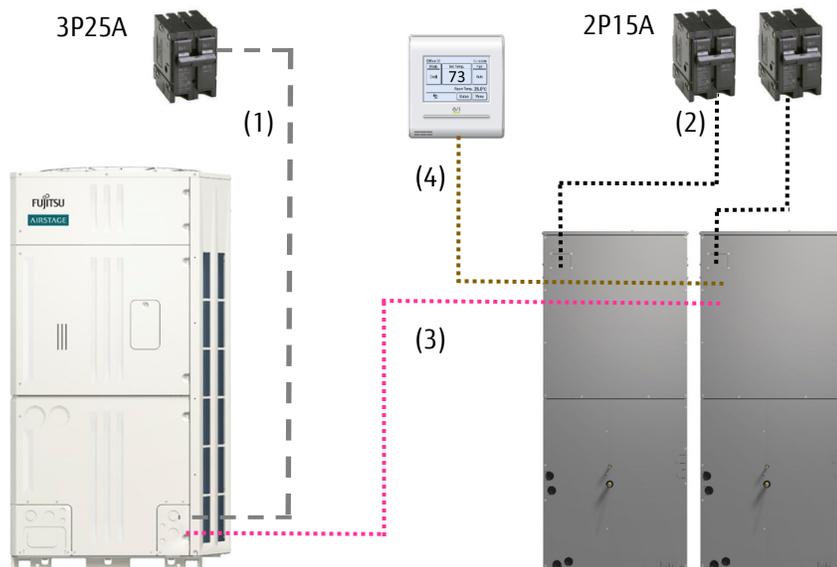
Refrigerant Piping- See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical-Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 10 AWG & GND to 8 ton outdoor unit\*
- (2) 14/2 or 12/2 w/GND to AHUs\*
- (3) Fujitsu Pink communication cable
- (4) 18/3 thermostat wire (2 conductors minimum)

\* Final wire gauge sized and selected in accordance with NEC and all applicable codes.

Individual 2P15A breaker required per AHU

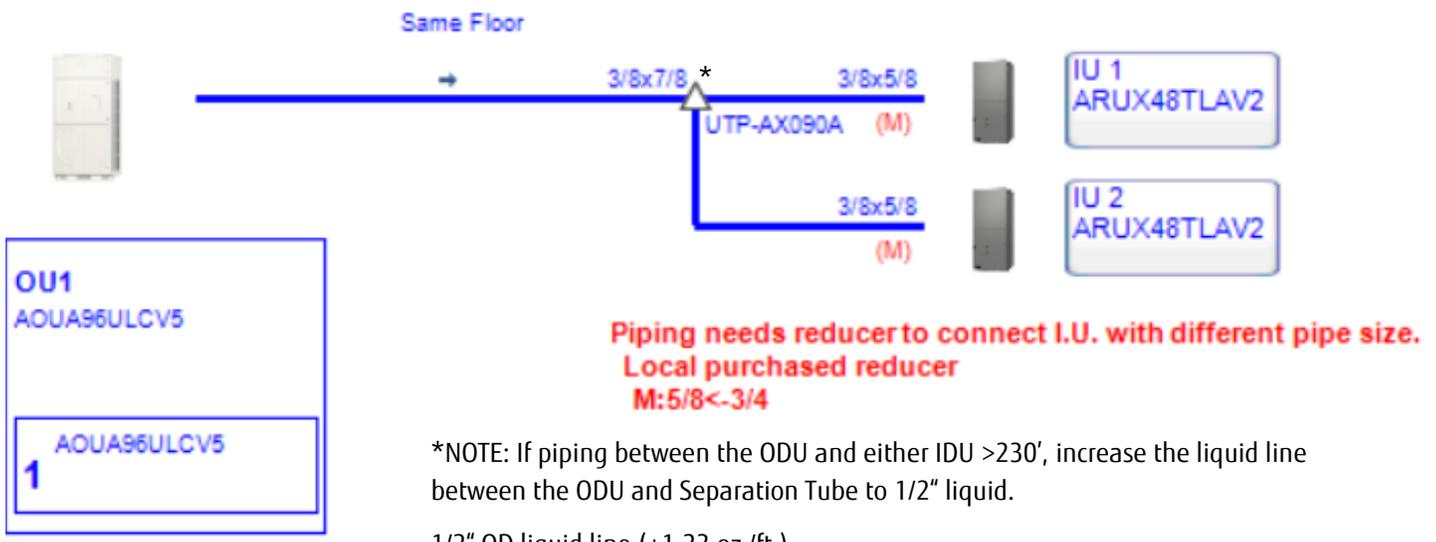
Electrical disconnect switches not shown

Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 8-Ton, Single-Zone, 460 VAC VRF System with (2) Multi-Position Air Handlers

### Refrigerant Piping Details

- AOUA96ULCV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)\*
- 77.2 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX090A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below†
- 164' maximum vertical separation- ODU above
- 25' minimum between ODU and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is <23° F.



**OU1**  
AOUA96ULCV5

**1** AOUA96ULCV5

### Pipe explanatory notes

aa x bb

aa: Liquid

bb: Gas

aa

aa: Liquid

\*NOTE: If piping between the ODU and either IDU >230', increase the liquid line between the ODU and Separation Tube to 1/2" liquid.

1/2" OD liquid line (+1.23 oz./ft.)

## V-Series 8-Ton, Single-Zone, 460 VAC VRF System with (2) Multi-Position Air Handlers

**IMPORTANT**– Air handlers are not approved for downlow installation unless UTD Downflow Conversion Kit is installed.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOUA96ULCV5	VU-V Heat Pump Outdoor Unit, 8 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUX48TLAV2 (2)	Airstage Multi-Position Air Handler, 4 ton
UTP-AX090A	Separation Tube assembly (Includes 1- liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
7/8" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
3/4" X 5/8" coupling (2)	Reducing coupling for 5/8" vapor line connection at IDU
3P25A circuit Breaker	For outdoor unit
2P15A circuit breaker (2)	Indoor unit is powered separately from ODU
Disconnect	3 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code
3/4" male adapter	Indoor unit condensate drain connection
3/4" condensate trap	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter- to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI- Intesis Cloud Control (-TLAV2)
UTD-DFMLA1	Downflow Conversion Kit for ARUX48 air handler

## V-Series 10-Ton, Single-Zone, 460 VAC VRF System with (2) Multi-Position Air Handlers

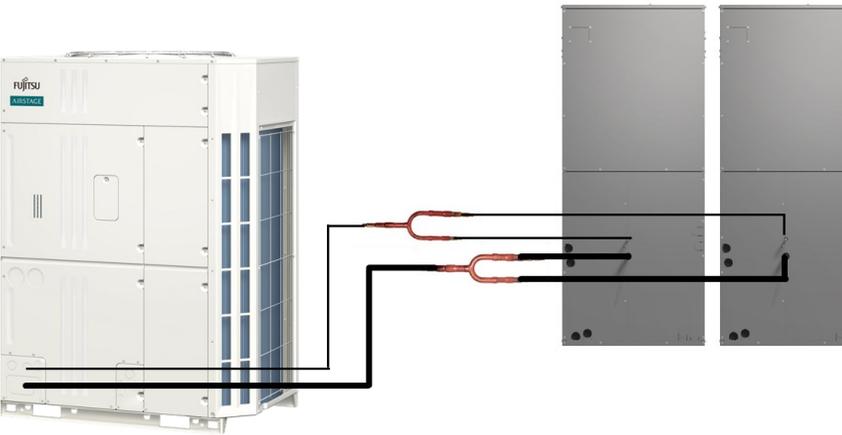
AHRI Standard 1230 Certification # 208812539

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 120,000 BTUH
- Heating- 135,000 BTUH

Capacity	Outdoor Unit	Indoor Unit (X2)	Remote Control
10 tons	AOUA120ULCV5	ARUX60TLAV2	UTY-RNRUZ5

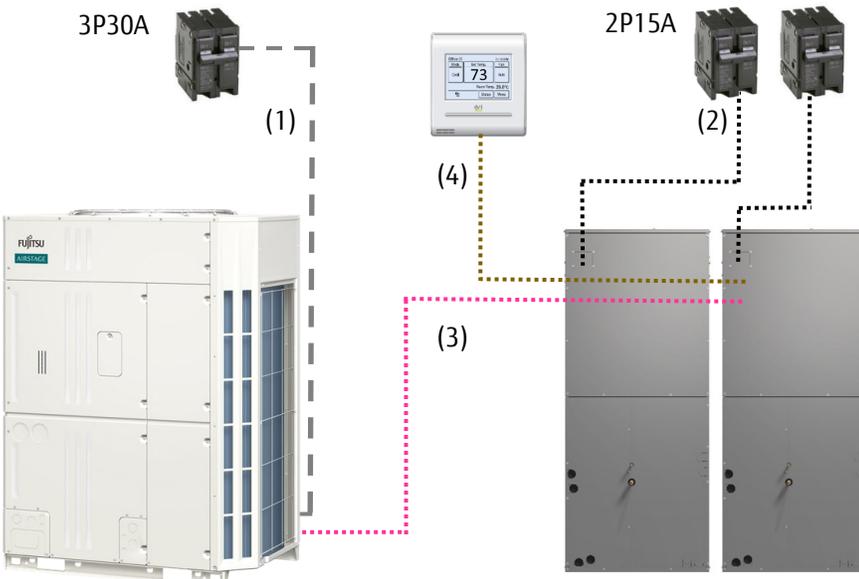
**Refrigerant Piping**– See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical–Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 10 AWG & GND to 10 ton outdoor unit\*
- (2) 14/2 or 12/2 w/GND to AHUs\*
- (3) Fujitsu Pink communication cable
- (4) 18/3 thermostat wire (2 conductors min.)

\* Final wire gauge sized and selected in accordance with NEC and all applicable codes.

Individual 2P15A breaker required per AHU

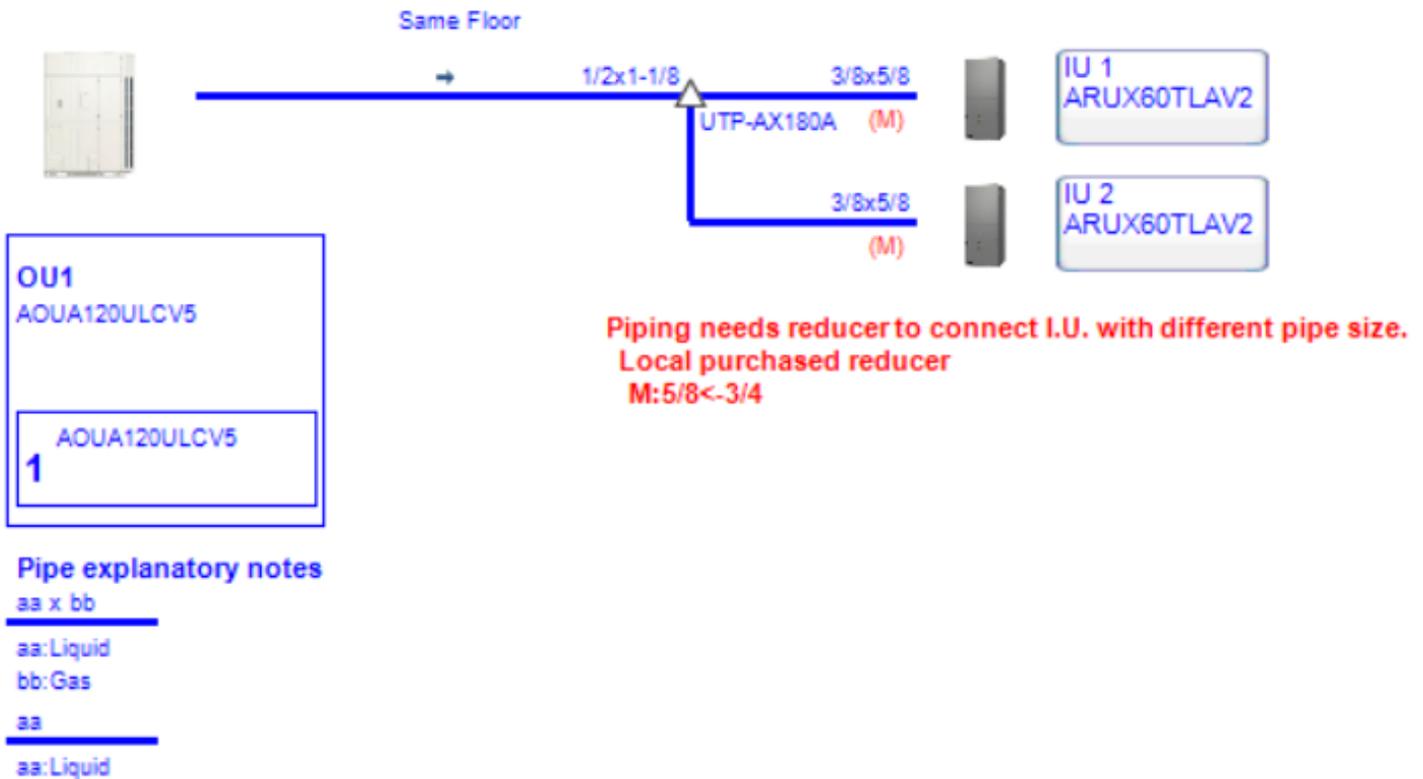
Electrical disconnect switches not shown

Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 10-Ton, Single-Zone, 460 VAC VRF System with (2) Multi-Position Air Handlers

### Refrigerant Piping Details

- AOUA120ULCV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)
- 1/2" OD liquid line (+ 1.23 oz./ft. R-410a)
- 77.2 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX180A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below†
- 164' maximum vertical separation- ODU above
- 25' minimum between ODU and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is <23° F.



## V-Series 10-Ton, Single-Zone, 460 VAC VRF System with (2) Multi-Position Air Handlers

**IMPORTANT**– Air handlers are not approved for downlow installation unless UTD Downflow Conversion Kit is installed.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AQUA120ULCV5	VU-V Heat Pump Outdoor Unit, 10 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUX60TLAV2 (2)	Airstage Multi-Position Air Handler, 5 ton
UTP-AX090A	Separation Tube assembly (Includes 1- liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
1/2" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
1 1/8" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
5/8" X 3/4" coupling (2)	Reducing coupling for 5/8" vapor line connection at ID unit
3P30A circuit Breaker	For outdoor unit
2P15A circuit breaker (2)	Indoor unit is powered separately from ODU
Disconnect	3 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code
3/4" male adapter	Indoor unit condensate drain connection
3/4" condensate trap	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter- to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI- Intesis Cloud Control (-TLAV2)
UTD-DFMLA2	Downflow Conversion Kit for ARUX60 air handler

## V-Series 15-Ton, Single-Zone, 460 VAC VRF System with (3) Multi-Position Air Handlers

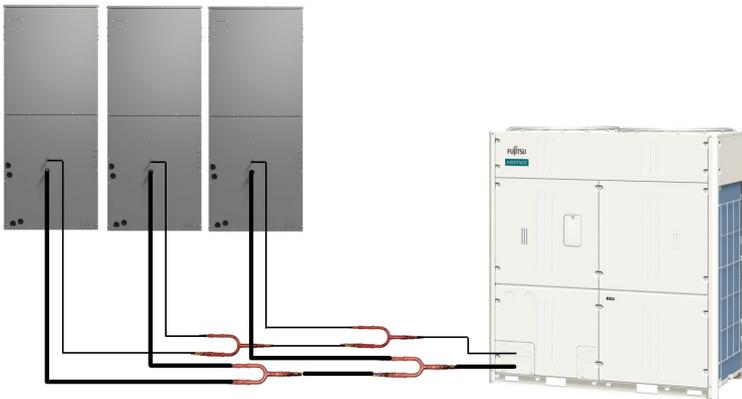
AHRI Standard 1230 Certification # 208931890

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 180,000 BTUH
- Heating- 201,000 BTUH

Capacity	Outdoor Unit Group	Indoor Unit (X3)	Remote Control
15 tons	AOUA192ULCV5	ARUX60TLAV2	UTY-RNRUZ5

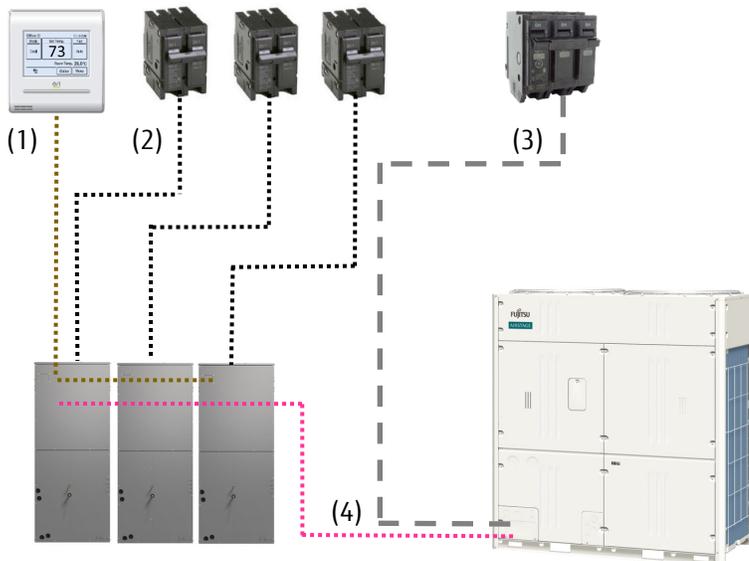
**Refrigerant Piping-** See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical- Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 18/3 thermostat wire (2 conductors minimum) or Fujitsu Pink to each AHU Y1/Y2 connection
- (2) 2P15A breaker- 14/2 or 12/2 w/GND to each AHU\*
- (3) 3P50A breaker- 8 or 6 AWG & GND to 16 ton ODU\*
- (4) Fujitsu Pink comm cable to AHUs and outdoor unit X1 & X2 terminals

\*Final wire gauge sized and selected in accordance with NEC and all applicable codes

Individual 2P15A breaker required per AHU

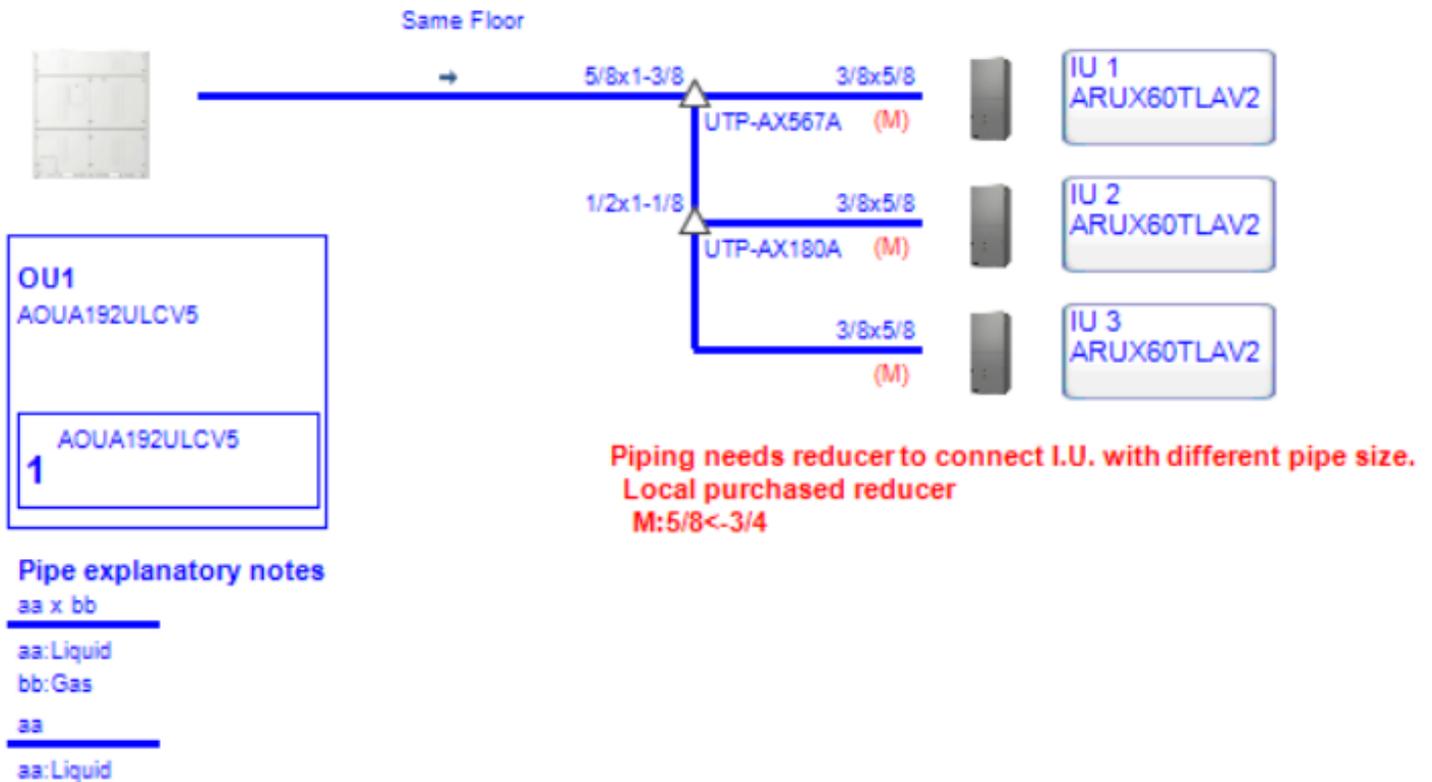
Electrical disconnect switches not shown

Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 15-Ton, Single-Zone, 460 VAC VRF System with (3) Multi-Position Air Handlers

### Refrigerant Piping Details

- AOUA192ULCV5 unit
  - Pipe diameters as shown below
  - Enter installed liquid line lengths for charge calculation
  - Both refrigerant lines MUST BE insulated
  - No refrigerant piping traps allowed
  - 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)
  - 1/2" OD liquid line (+ 1.23 oz./ft. R-410a)
  - 5/8" OD liquid line (+ 1.92 oz./ft. R-410a)
  - 108 lb. maximum refrigerant charge
  - Fujitsu Indoor Separation Tubes must be used
  - 2,296' maximum total piping (liquid line)
  - 541' maximum between Primary ODU and farthest IDU
  - 295' max. between Separation Tube and farthest IDU
  - 131' maximum vertical separation- ODU below†
  - 164' maximum vertical separation- ODU above
  - 25' minimum distance between outdoor unit and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is <23° F.



## V-Series 15-Ton, Single-Zone, 460 VAC VRF System with (3) Multi-Position Air Handlers

**IMPORTANT**– Air handlers may be installed upflow, horizontal (L) or (R). Downflow requires UTD Downflow Conversion Kit.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOU192ULCV5	VU-V Heat Pump Outdoor Unit, pre-charged to 0 feet of piping, see “Refrigerant Piping Details”
ARUX60TLAV2 (3)	Airstage Multi-Position Air Handler, (3) 5 ton units
UTP-AX567A	Separation Tube assembly
UTP-AX180A	Separation Tube assembly
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	“Fujitsu Pink” communication cable , 250’ roll

#### 2. Required Supplies

Description	Comments
3/8” OD– ACR tubing	Liquid line- Soft or hard drawn, must be insulated
1/2” OD– ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8” OD– ACR tubing	Liquid and vapor line- Soft or hard drawn, must be insulated
1 1/8” OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
1 3/8” OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
5/8” X 3/4” coupling (3)	Reducing coupling for 5/8” line vapor line connection at ID unit
3P50A circuit breaker	For 16 ton outdoor unit
2P15A circuit breaker (3)	For indoor units– Indoor units are powered separately from ODU
3/4” male adapter (3)	Indoor unit condensate drain connections
3/4” condensate trap (3)	Field assembled or prefabricated. Trap height at least 6”

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter– to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI– Intesis Cloud Control
UTD-DFMLA2	Downflow Conversion Kit for ARUX60 air handler

## V-Series 6-Ton, Single-Zone, 460 VAC VRF System with horizontal High Static Air Handler

AHRI Standard 1230 Certification # 208812537

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 72,000 BTUH
- Heating- 81,000 BTUH

Capacity	Outdoor Unit	Indoor Unit	Remote Control
6 tons	AOUA72ULCV5	ARUH72TLAV2	UTY-RNRUZ5

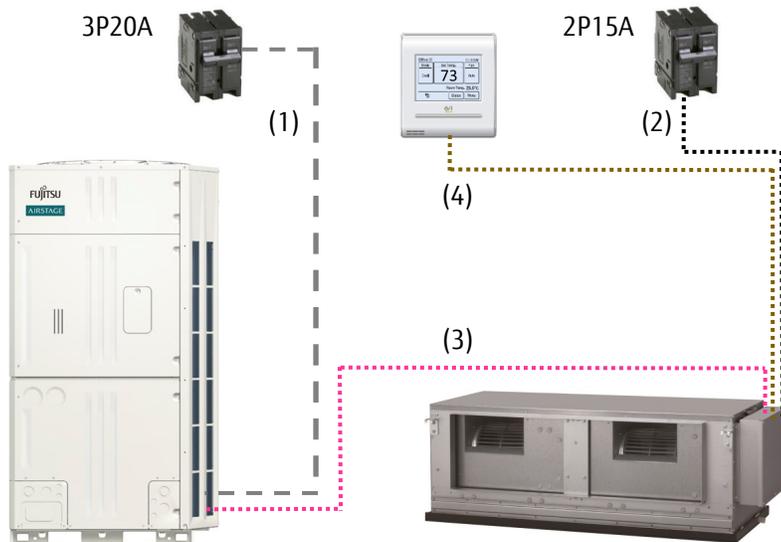
### Refrigerant Piping



### PIPING NOTES:

- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)\*
- 3/4" OD vapor line\*
- 131' Maximum vertical separation- ODU below†
- 164' Maximum vertical separation- ODU above
- 541' Maximum total piping (one way)
- 25' Minimum piping length
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- Condensate drain trap is required
- \* Lengths >230' and ≤541' upsize lines to:  
1/2" OD liquid line (+1.23 oz./ft.)  
7/8" OD vapor line
- † 16' maximum vertical separation when OD design temperature is < 23° F.

### Electrical-Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 12 AWG & GND to 6 ton outdoor unit\*
  - (2) 14/2 or 12/2 w/GND to AHU\*
  - (3) Fujitsu Pink communication cable
  - (4) 18/3 thermostat wire (2 conductors minimum)
- \* Final wire gauge sized and selected in accordance with NEC and all applicable codes.  
Electrical disconnect switches not shown

## V-Series 6-Ton, Single-Zone, 460 VAC VRF System with horizontal High Static Air Handler

**IMPORTANT**– Air handler may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOUA72ULCV5	VU-V Heat Pump Outdoor Unit, 6 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUH72TLAV2	Airstage High Static Air Handler, 6 ton
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD– ACR tubing	Liquid line- Soft or hard drawn, must be insulated
3/4" OD– ACR tubing	Vapor line- Soft or hard drawn, must be insulated
1/2" X 3/8" coupling	Reducing coupling for 3/8" liquid line connection at ID unit (only when liquid line is >230')
3P20A circuit Breaker	For outdoor unit
2P15A circuit breaker	Indoor unit is powered separately from ODU
Disconnect	2 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code.
3/4" male adapter	Indoor unit condensate drain connection
3/4" condensate trap	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter– to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI– Intesis Cloud Control (-TLAV2)

## V-Series 8-Ton, Single-Zone, 460 VAC VRF System with horizontal High Static Air Handler

AHRI Standard 1230 Certification # 208812538

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 96,000 BTUH
- Heating- 108,000 BTUH

Capacity	Outdoor Unit	Indoor Unit	Remote Control
8 tons	AOUA96ULCV5	ARUH96TLAV2	UTY-RNRUZ5

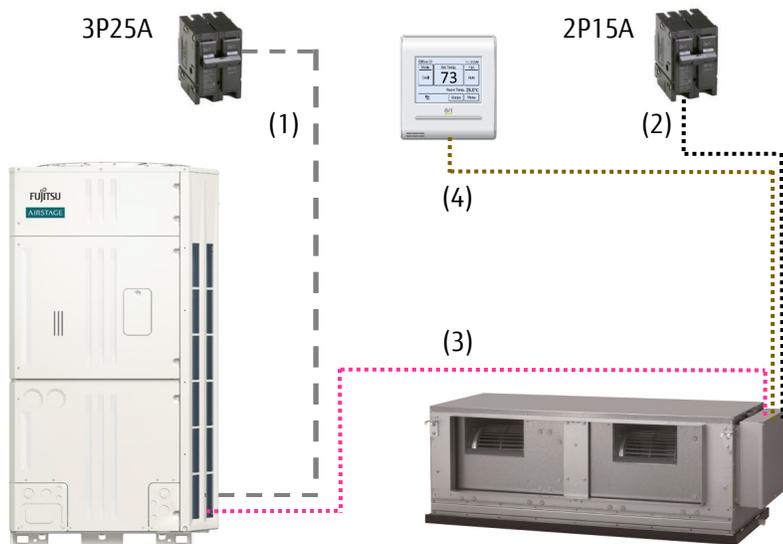
### Refrigerant Piping



### PIPING NOTES:

- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)\*
- 3/4" OD vapor line\*
- 131' Maximum vertical separation- ODU below†
- 164' Maximum vertical separation- ODU above
- 541' Maximum total piping (one way)
- 16' Minimum piping length
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- Condensate drain trap is required
- \* Lengths >230' and ≤541' upsize lines to:  
1/2" OD liquid line (+1.23 oz./ft.)  
7/8" OD vapor line
- † 16' maximum vertical separation when OD design temperature is < 23° F.

### Electrical-Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 10 AWG & GND to 8 ton outdoor unit\*
  - (2) 14/2 or 12/2 w/GND to AHU\*
  - (3) Fujitsu Pink communication cable
  - (4) 18/3 thermostat wire (2 conductors minimum)
- \* Final wire gauge sized and selected in accordance with NEC and all applicable codes.  
Electrical disconnect switches not shown

## V-Series 8-Ton, Single-Zone, 208/230 VAC VRF System with horizontal High Static Air Handler

**IMPORTANT**– Air handler may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AQUA96ULCV5	VU-V Heat Pump Outdoor Unit, 8 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUH96TLAV2	Airstage High Static Air Handler, 8 ton
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD– ACR tubing	Liquid line- Soft or hard drawn, must be insulated
3/4" OD– ACR tubing	Vapor line- Soft or hard drawn, must be insulated
3P25A circuit Breaker	For outdoor unit
1/2" X 3/8" coupling	Reducing coupling for 3/8" liquid line connection at ID unit (only when liquid line is >230')
2P15A circuit breaker	Indoor unit is powered separately from ODU
Disconnect	2 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code.
3/4" male adapter	Indoor unit condensate drain connection
3/4" condensate trap	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter– to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI– Intesis Cloud Control (-TLAV2)

## J-Series 6-Ton, Single-Zone, 460 VAC VRF System with (2) horizontal High Static Air Handlers

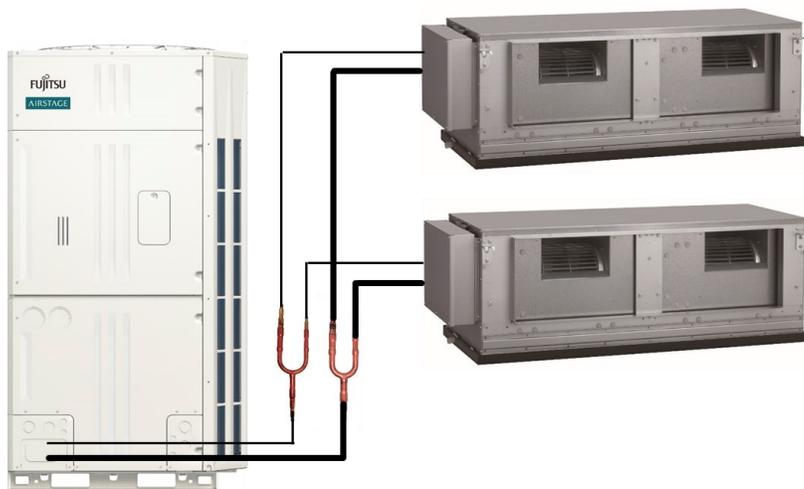
AHRI Standard 1230 Certification # 208812537

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 72,000 BTUH
- Heating- 81,000 BTUH

Capacity	Outdoor Unit	Indoor Unit (X2)	Remote Control
6 tons	AOUA72ULCV5	ARUH36TLAV2	UTY-RNRUZ5

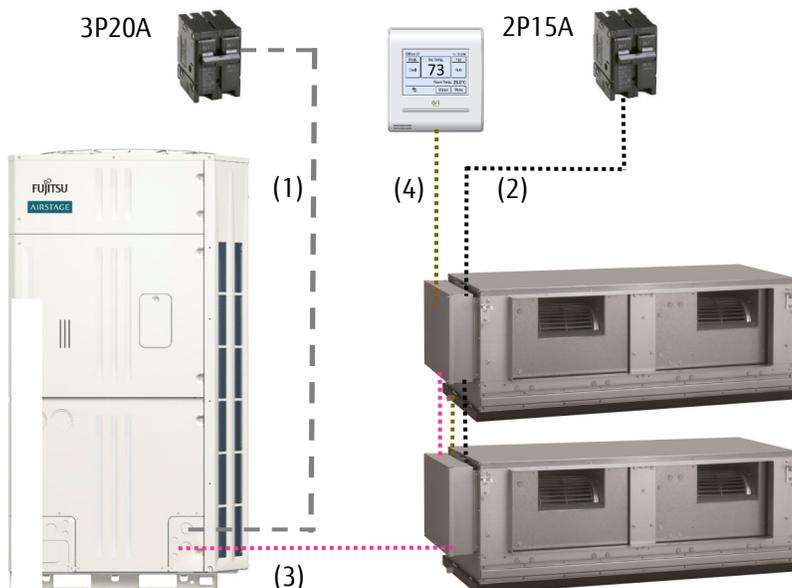
**Refrigerant Piping**– See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical–Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 12 AWG & GND to 6 ton outdoor unit\*
- (2) 14/2 or 12/2 w/GND to AHUs\*
- (3) Fujitsu Pink communication cable
- (4) 18/3 thermostat wire (2 conductors minimum)

\* Final wire gauge sized and selected in accordance with NEC and all applicable codes.

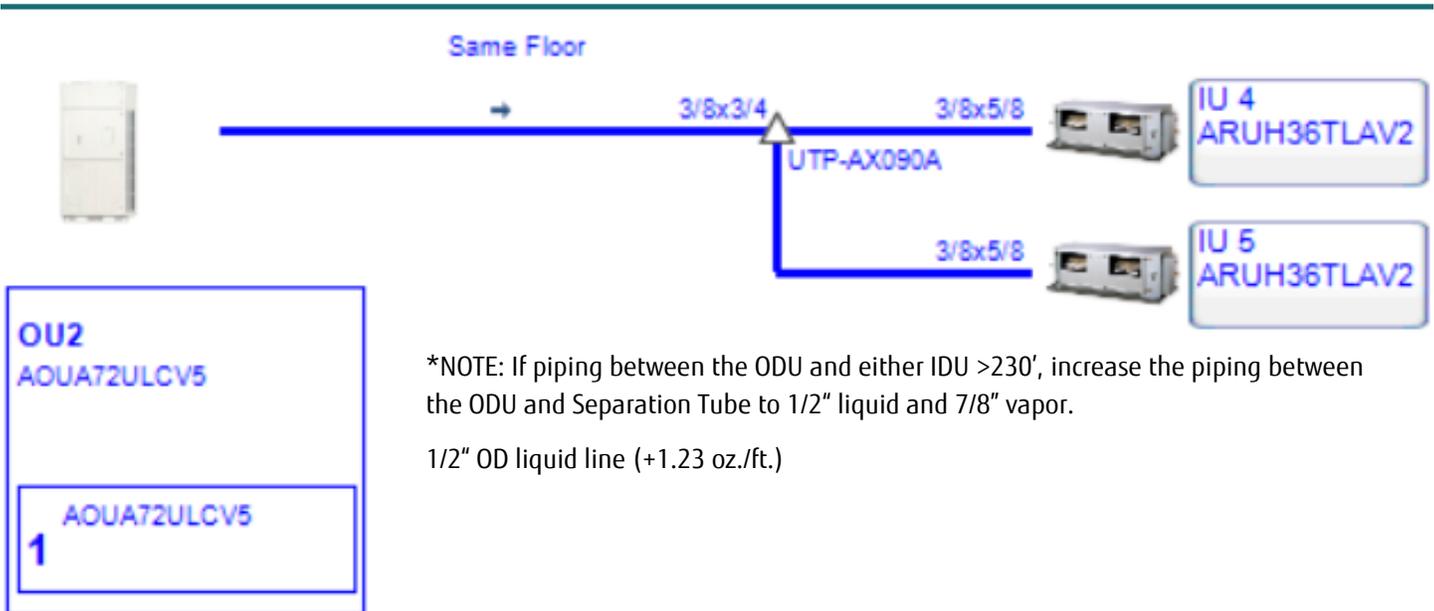
Electrical disconnect switches not shown

Communication, RC and line voltage cables in series (Daisy Chained) between AHUs

## J-Series 6-Ton, Single Zone, 460 VAC VRF System with (2) horizontal High Static Air Handlers

### Refrigerant Piping Details

- AOUA72ULCV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)\*
- 77.2 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX090A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation– ODU below†
- 164' maximum vertical separation– ODU above
- 25' minimum between ODU and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is < 23° F.



### Pipe explanatory notes

aa x bb

aa: Liquid

bb: Gas

aa

aa: Liquid

## V-Series 6-Ton, Single-Zone, 460 VAC VRF System with (2) horizontal High Static Air Handlers

**IMPORTANT**– Air handlers may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AQUA72ULCV5	VU-V Heat Pump Outdoor Unit, 6 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUH36TLAV2 (2)	Airstage High Static Air Handler, 3 ton
UTP-AX090A	Separation Tube assembly (Includes 1- liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
3/4" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
3P20A circuit Breaker	For outdoor unit
2P15A circuit breaker	Indoor unit is powered separately from ODU
Disconnect	3 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code
3/4" male adapter (2)	Indoor unit condensate drain connection
3/4" condensate trap (2)	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter- to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI- Intesis Cloud Control (-TLAV2)

## V-Series 8-Ton, Single-Zone, 460 VAC VRF System with (2) horizontal High Static Air Handlers

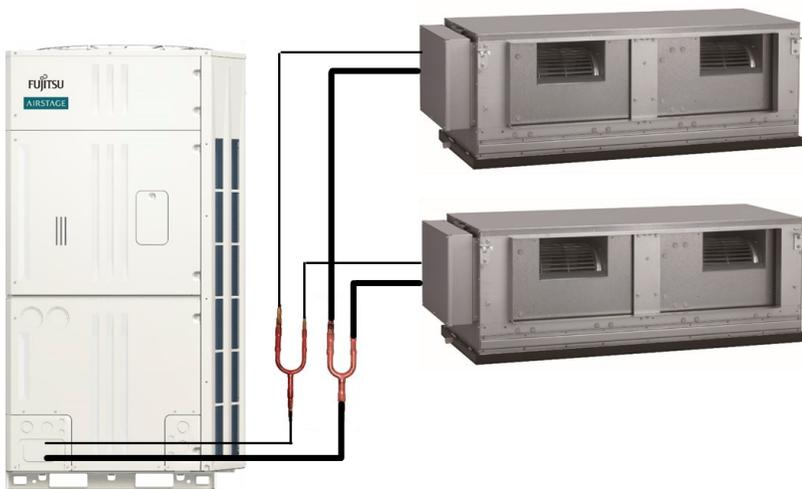
AHRI Standard 1230 Certification # 208812538

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 96,000 BTUH
- Heating- 108,000 BTUH

Capacity	Outdoor Unit	Indoor Unit (X2)	Remote Control
8 tons	AOUA96ULCV5	ARUH48TLAV2	UTY-RNRUZ5

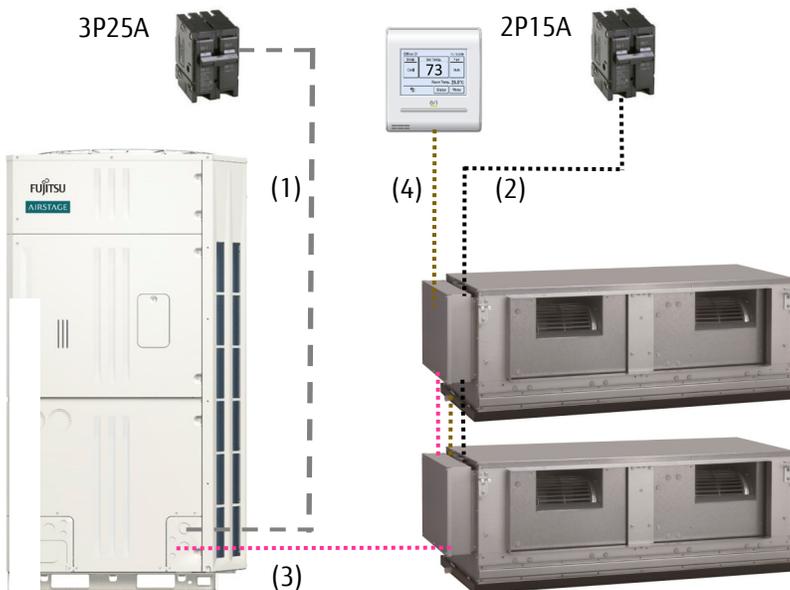
**Refrigerant Piping**– See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical–Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 10 AWG & GND to 8 ton outdoor unit\*
  - (2) 14/2 or 12/2 w/GND to AHUs\*
  - (3) Fujitsu Pink communication cable
  - (4) 18/3 thermostat wire (2 conductors minimum)
- \* Final wire gauge sized and selected in accordance with NEC and all applicable codes.

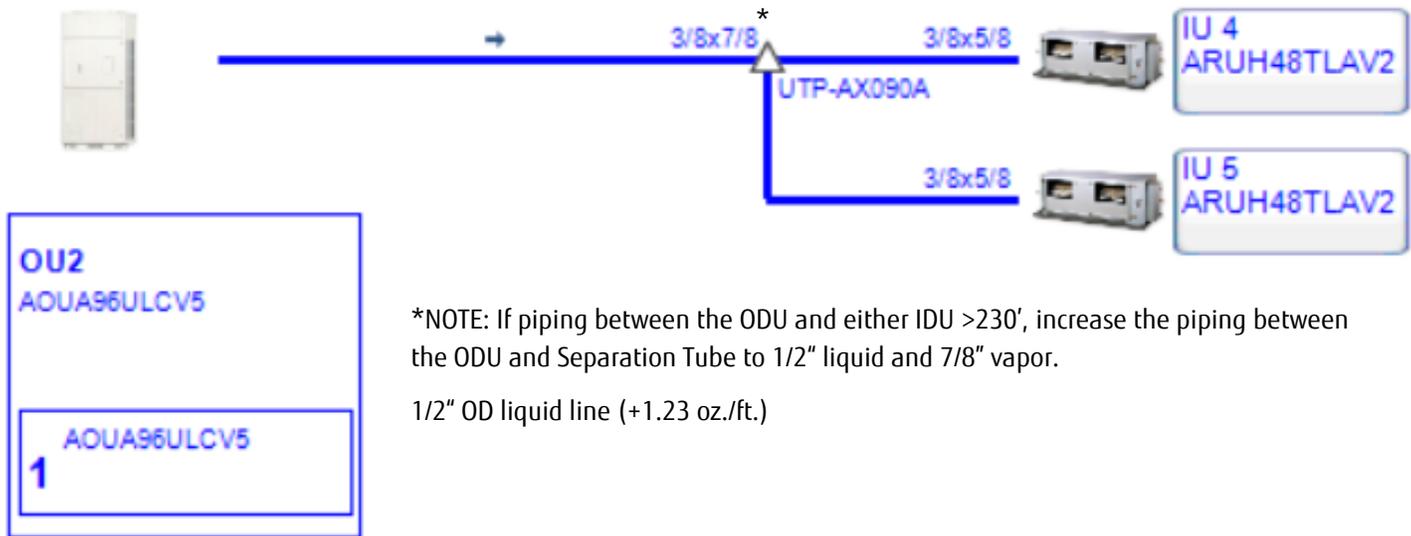
Electrical disconnect switches not shown

Communication, RC and line voltage cables in series (Daisy Chained) between AHUs

## V-Series 8-Ton, Single Zone, 460 VAC VRF System with (2) horizontal High Static Air Handlers

### Refrigerant Piping Details

- AOUA96ULCV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)\*
- 77.2 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX090A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below†
- 164' maximum vertical separation- ODU above
- 25' minimum between ODU and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is < 23° F.



\*NOTE: If piping between the ODU and either IDU >230', increase the piping between the ODU and Separation Tube to 1/2" liquid and 7/8" vapor.

1/2" OD liquid line (+1.23 oz./ft.)

### Pipe explanatory notes

aa x bb

aa: Liquid

bb: Gas

aa

## V-Series 8-Ton, Single-Zone, 460 VAC VRF System with (2) horizontal High Static Air Handlers

**IMPORTANT**– Air handlers may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOUA96ULCV5	VU-V Heat Pump Outdoor Unit, 8 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUH48TLAV2 (2)	Airstage High Static Air Handler, 4 ton
UTP-AX090A	Separation Tube assembly (Includes 1- liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
3/4" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
5/8" X 3/4" coupling (2)	Reducing coupling for 5/8" line vapor line connection at ID unit
3P25A circuit Breaker	For outdoor unit
2P15A circuit breaker	Indoor unit is powered separately from ODU
Disconnect	3 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code
3/4" male adapter (2)	Indoor unit condensate drain connection
3/4" condensate trap (2)	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter- to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI- Intesis Cloud Control (-TLAV2)

## V-Series 10-Ton, Single-Zone, 460 VAC VRF System with (2) horizontal High Static Air Handlers

AHRI Standard 1230 Certification # 208812539

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 120,000 BTUH
- Heating- 135,000 BTUH

Capacity	Outdoor Unit	Indoor Unit (X2)	Remote Control
10 tons	AOUA120ULCV5	ARUH60TLAV2	UTY-RNRUZ5

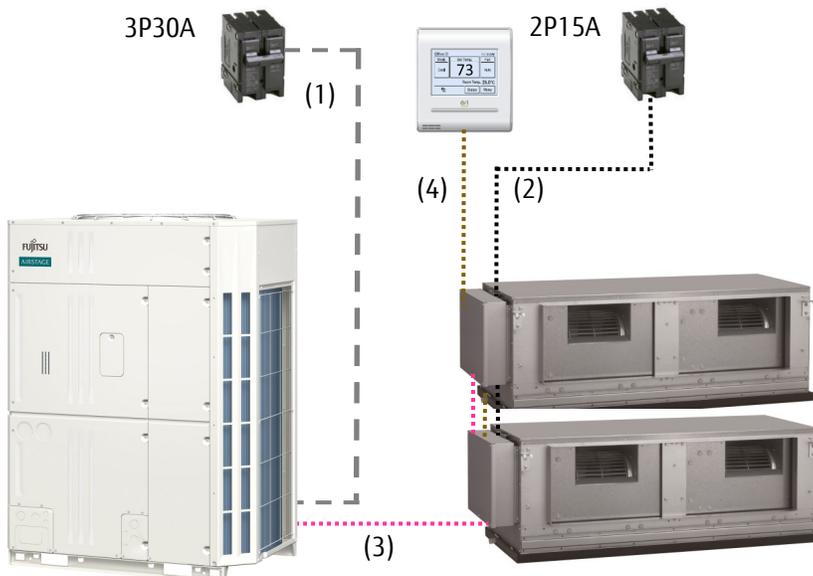
Refrigerant Piping- See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical-Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 12 or 10 AWG & GND to 10 ton outdoor unit\*
- (2) 14/2 or 12/2 w/GND to AHUs\*
- (3) Fujitsu Pink communication cable
- (4) 18/3 thermostat wire (2 conductors min.)

\* Final wire gauge sized and selected in accordance with NEC and all applicable codes.

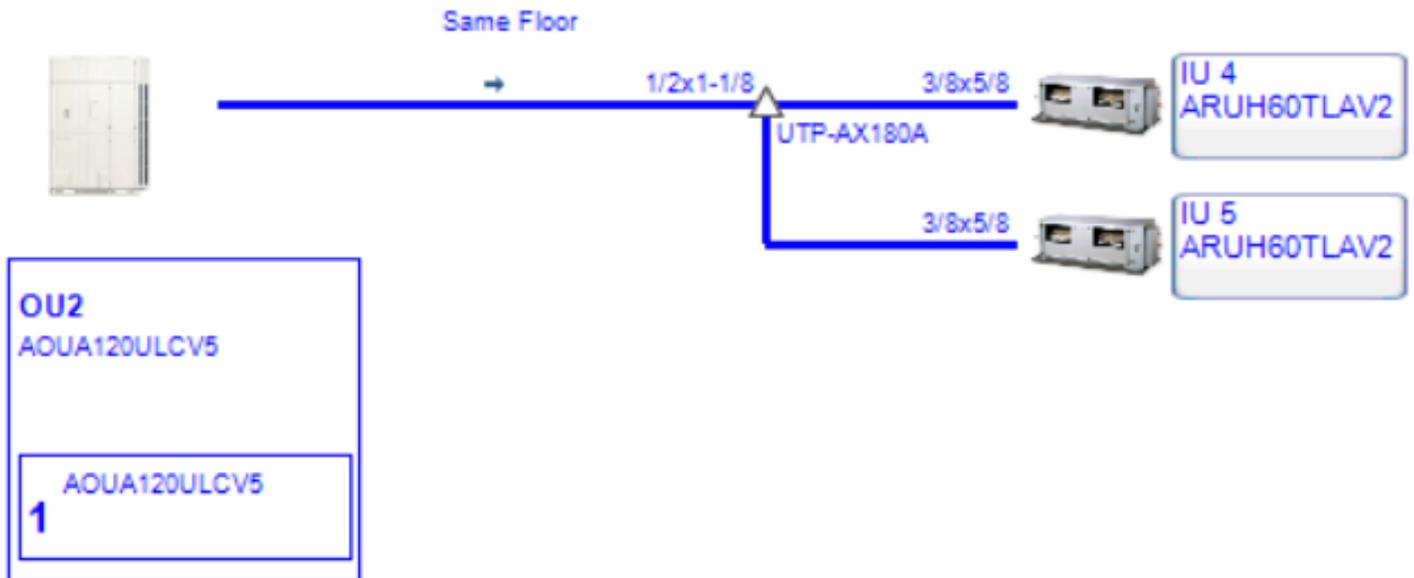
Electrical disconnect switches not shown

Communication, RC and line voltage cables in series (Daisy Chained) between AHUs

## V-Series 10-Ton, Single-Zone, 460 VAC VRF System with (2) horizontal High Static Air Handlers

### Refrigerant Piping Details

- AOUA120ULCV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)
- 1/2" OD liquid line (+ 1.23 oz./ft. R-410a)
- 77.2.4 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX180A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below†
- 164' maximum vertical separation- ODU above
- 16' minimum between ODU and nearest indoor unit
- 9' minimum between ODU and Separation Tube
- † 16' maximum vertical separation when OD design temperature is < 23° F.



### Pipe explanatory notes

aa x bb

aa:Liquid

bb:Gas

aa

aa:Liquid

## V-Series 10-Ton, Single-Zone, 460 VAC VRF System with (2) horizontal High Static Air Handlers

**IMPORTANT**– Air handlers may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AQUA120ULCV5	VU-V Heat Pump Outdoor Unit, 10 ton- pre-charged to 0 feet of piping, see "PIPING NOTES"
ARUH60TLAV2 (2)	Airstage High Static Air Handler, 5 ton
UTP-AX180A	Separation Tube assembly (Includes 1- liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
1/2" OD- ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
1 1/8" OD- ACR tubing	Vapor line- Soft or hard drawn, must be insulated
3P30A circuit Breaker	For outdoor unit
2P15A circuit breaker	Indoor unit is powered separately from ODU
Disconnect	3 total- 1 ea. for indoor and outdoor unit. Fused or non-fused as required by code.
3/4" male adapter (2)	Indoor unit condensate drain connection
3/4" condensate trap (2)	Field assembled or prefabricated. Trap height at least 6"
Pad	Mounting pad and/or stand for outdoor unit
18/3 thermostat wire	For use between indoor unit and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter- to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI- Intesis Cloud Control (-TLAV2)

## V-Series 12-Ton, Single-Zone, 460 VAC VRF System with (2) horizontal, High Static Air Handlers

AHRI Standard 1230 Certification # 208931886

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 144,000 BTUH
- Heating- 162,000 BTUH

Capacity	Outdoor Unit Group	Indoor Unit (X2)	Remote Control
12 tons	AOUA144ULCV5	ARUH72TLAV2	UTY-RNRUZ5

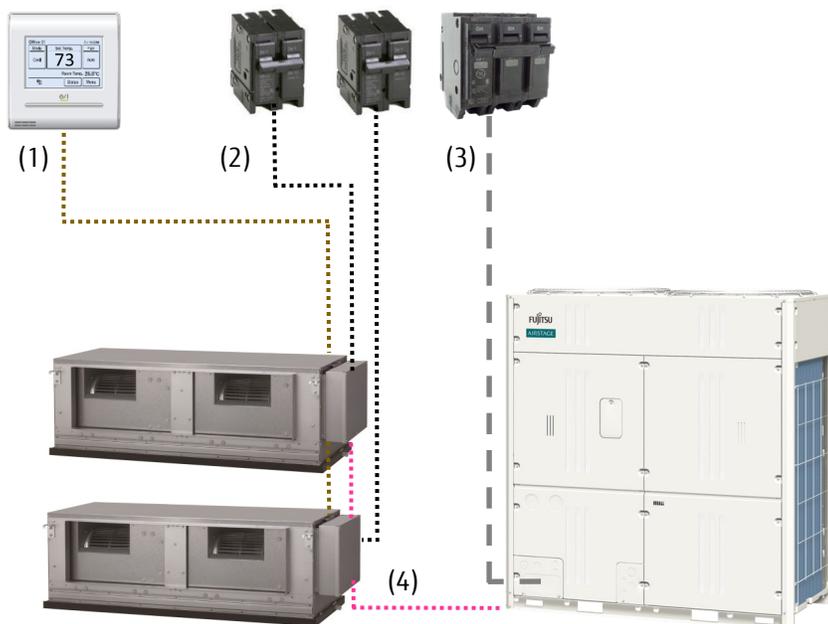
**Refrigerant Piping-** See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical- Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 18/3 thermostat wire (2 conductors minimum) or Fujitsu Pink to each AHU Y1/Y2 connection
- (2) 2P15A breaker- 14/2 or 12/2 w/GND to each AHU\*
- (3) 3P35A breaker- 8 AWG & GND to 12 ton outdoor unit\*
- (4) Fujitsu Pink comm cable to AHUs and OD unit X1 & X2 terminals

\*Final wire gauge sized and selected in accordance with NEC and all applicable codes

Individual 2P15A breaker required per AHU

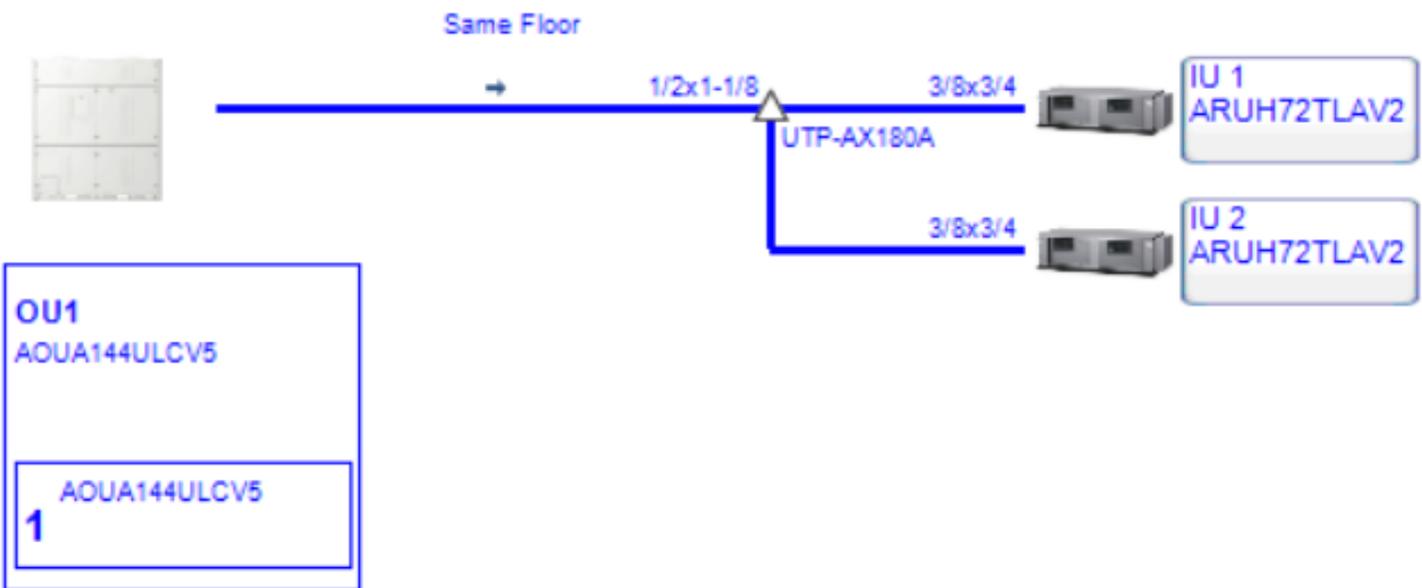
Electrical disconnect switches not shown

Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 12-Ton, Single Zone, 460 VAC VRF System with (2) horizontal High Static Air Handlers

### Refrigerant Piping Details

- AOUA144ULCV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+.063 oz./ft. R-410a)
- 1/2" OD liquid line (+ 1.23 oz./ft. R-410a)
- 108 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX180A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between Primary ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below†
- 164' maximum vertical separation- ODU above
- 25' minimum distance between Primary outdoor unit and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is < 23° F.



### Pipe explanatory notes

aa x bb

aa: Liquid

bb: Gas

aa

aa: Liquid

## V-Series 12-Ton, Single Zone, 460 VAC VRF System with (2) horizontal High Static Air Handlers

**IMPORTANT**– Air handlers may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOU144ULCV5	VU-V Heat Pump Outdoor Unit, 12 tons, pre-charged to 0 feet of piping, see “Piping Details”
ARUH72TLAV2 (2)	Airstage High Static Air Handler, (2) 6 ton units
UTP-AX180A	Separation Tube assembly (Divides refrigerant piping to ID units. Includes 1– liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	“Fujitsu Pink” communication cable , 250’ roll

#### 2. Required Supplies

Description	Comments
3/8” OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
1/2” OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
3/4” OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
1 1/8” OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
3P35A circuit breaker	For 12 ton outdoor unit
2P15A circuit breaker (2)	Indoor units are powered separately from ODU
3/4” male adapter (2)	Indoor unit condensate drain connections
3/4” condensate trap (2)	Field assembled or prefabricated. Trap height at least 6”
18/3 thermostat wire	For use between indoor units and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter– to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI– Intesis Cloud Control (-TLAV2)

## V-Series 16-Ton, Single-Zone, 460 VAC VRF System with (2) horizontal, High Static Air Handlers

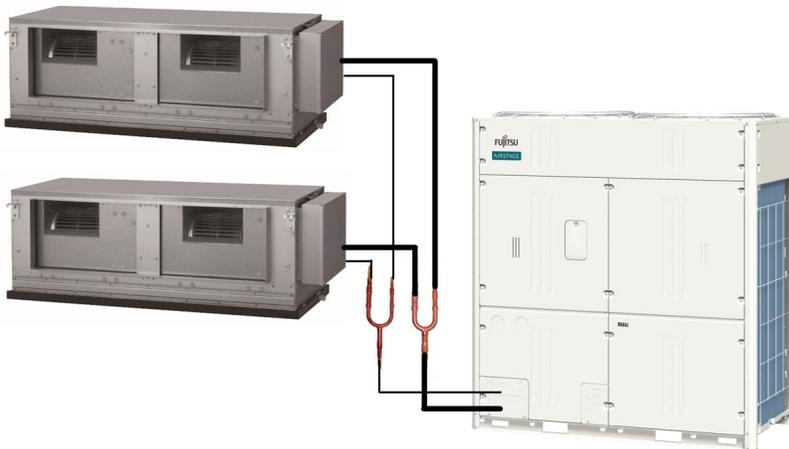
AHRI Standard 1230 Certification # 208931890

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 192,000 BTUH
- Heating- 216,000 BTUH

Capacity	Outdoor Unit Group	Indoor Unit (X2)	Remote Control
16 tons	AOUA192ULCV5	ARUH96TLAV2	UTY-RNRUZ5

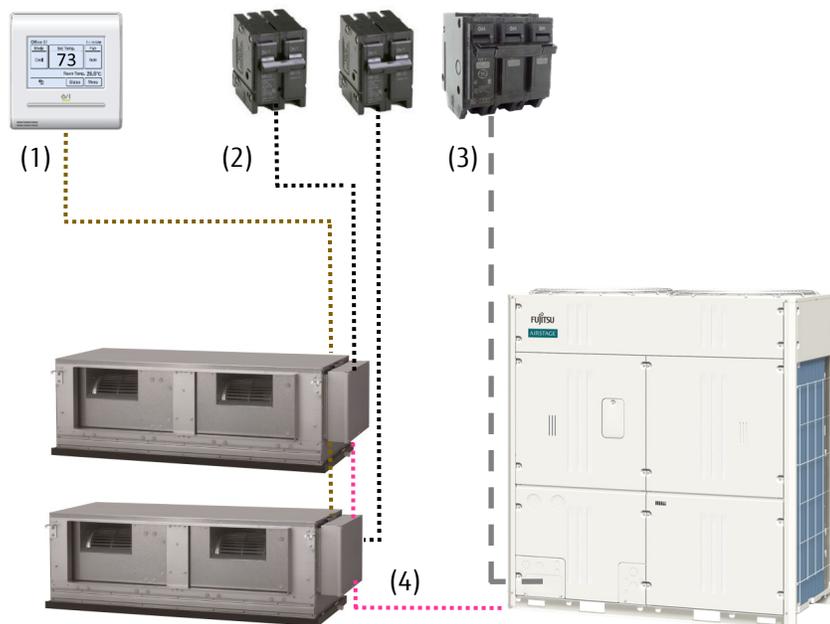
**Refrigerant Piping-** See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical- Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 18/3 thermostat wire (2 conductors minimum) or Fujitsu Pink to each AHU Y1/Y2 connection
- (2) 2P15A breaker- 14/2 or 12/2 w/GND to each AHU\*
- (3) 3P50A breaker- 6 or 8 AWG & GND to 16 ton outdoor unit\*
- (4) Fujitsu Pink comm cable to AHUs and OD unit X1 & X2

\*Final wire gauge sized and selected in accordance with NEC and all applicable codes

Individual 2P15A breaker required per AHU

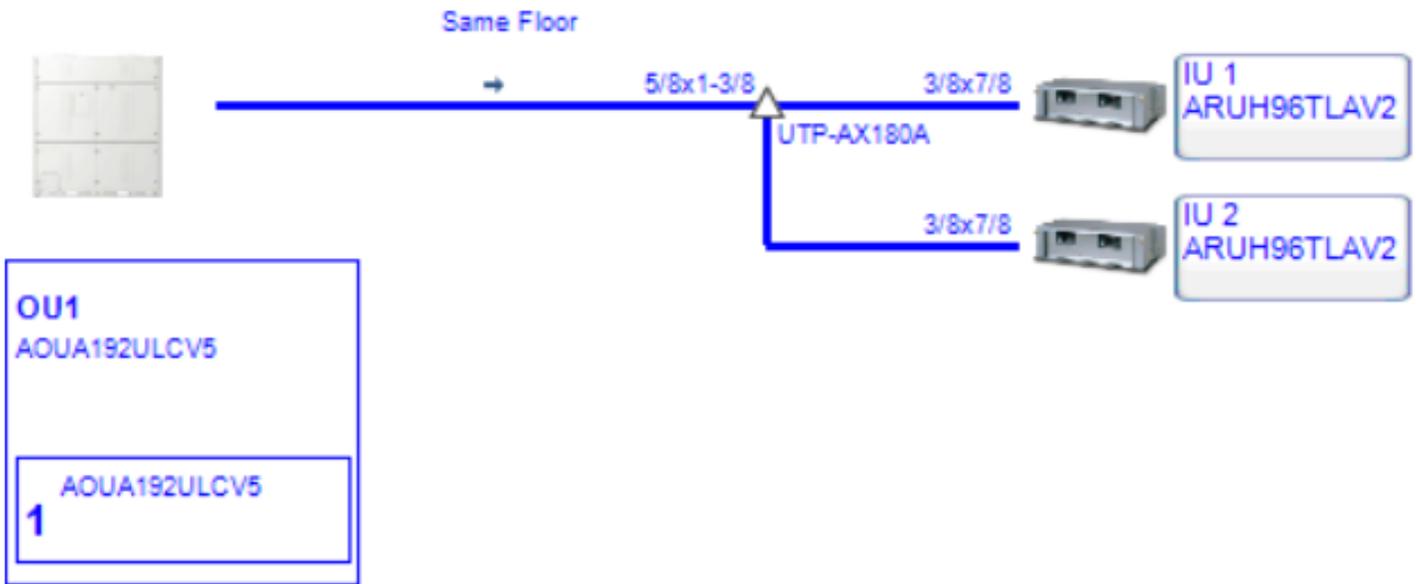
Electrical disconnect switches not shown

Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 16-Ton, Single Zone, 460 VAC VRF System with (2) horizontal High Static Air Handlers

### Refrigerant Piping Details

- AOUA192ULCV5 outdoor unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+.063 oz./ft. R-410a)
- 5/8" OD liquid line (+ 1.92 oz./ft. R-410a)
- 108 lb. maximum refrigerant charge
- Indoor Separation Tube UTP-AX180A must be used
- 2,296' maximum total piping (liquid line)
- 541' maximum between Primary ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below†
- 164' maximum vertical separation- ODU above
- 25' minimum distance between Primary outdoor unit and nearest indoor unit
- † 16' maximum vertical separation when OD design temperature is < 23° F.



### Pipe explanatory notes

aa x bb

aa: Liquid

bb: Gas

aa

aa: Liquid

## V-Series 16-Ton, Single Zone, 460 VAC VRF System with (2) horizontal High Static Air Handlers

**IMPORTANT**– Air handlers may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOU192ULCV5	VU-V Heat Pump Outdoor Unit, 16 tons, pre-charged to 0 feet of piping, see “Piping Details”
ARUH96TLAV2 (2)	Airstage High Static Air Handler, (2) 8 ton units
UTP-AX180A	Separation Tube assembly (Divides refrigerant piping to ID units. Includes 1– liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	“Fujitsu Pink” communication cable , 250’ roll

#### 2. Required Supplies

Description	Comments
3/8” OD– ACR tubing	Liquid line- Soft or hard drawn, must be insulated
5/8” OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
7/8” OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
1 3/8” OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
3P50A circuit breaker	For 16 ton outdoor unit
2P15A circuit breaker (2)	Indoor units are powered separately from ODU
3/4” male adapter (2)	Indoor unit condensate drain connections
3/4” condensate trap (2)	Field assembled or prefabricated. Trap height at least 6”
18/3 thermostat wire	For use between indoor units and Remote Control (thermostat)

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter– to allow conventional thermostat use (G/E thermostat only)
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI– Intesis Cloud Control (-TLAV2)

## V-Series 20-Ton, Single-Zone, 460 VAC VRF System with (3) horizontal High Static Air Handlers

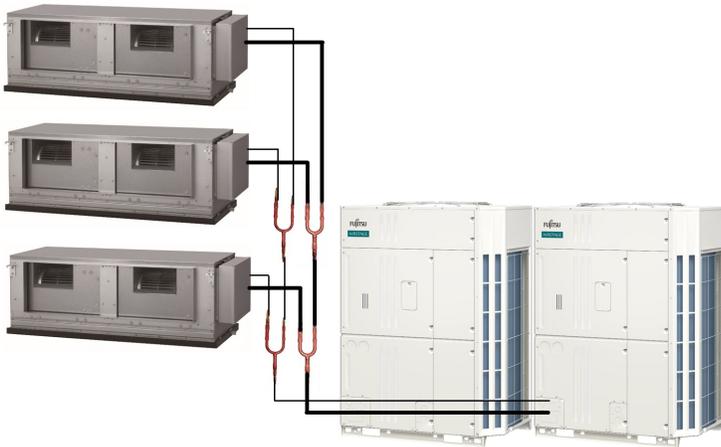
AHRI Standard 1230 Certification # 208812541

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 216,000 BTUH
- Heating- 243,200 BTUH

Capacity	Outdoor Unit Group	Indoor Unit (X3)	Remote Control
20 tons	AOUA240ULCVG5	ARUH72TLAV2	UTY-RNRUZ5

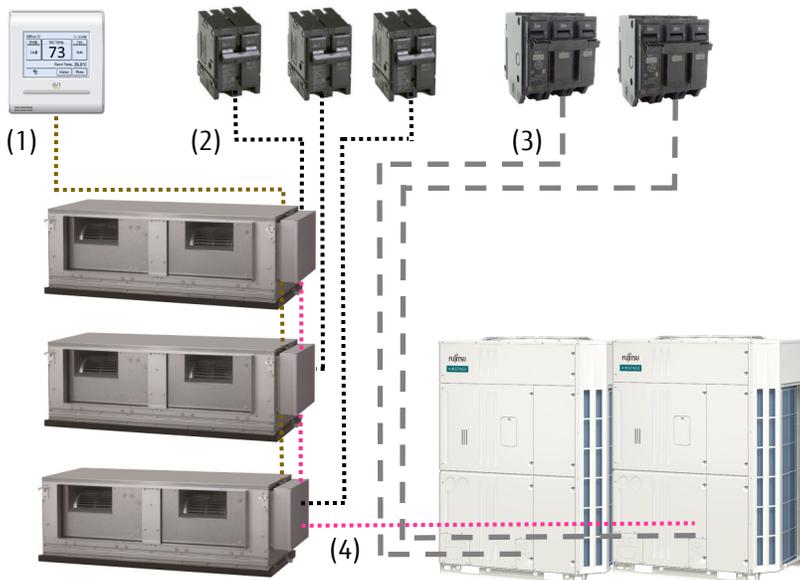
**Refrigerant Piping-** See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical- Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 18/3 thermostat wire (2 conductors minimum) or Fujitsu Pink to each AHU Y1/Y2 connection
- (2) 2P15A breaker- 14/2 or 12/2 w/GND to each AHU\*
- (3) 3P30A breaker- 12 or 10 AWG and GND to each 10 ton ODU\*
- (4) Fujitsu Pink comm cable to:
  - X1/X2- AHUs and Primary outdoor unit
  - H1/H2- Primary to Secondary outdoor unit

\* Final wire gauge sized and selected in accordance with NEC and all applicable codes

Individual 2P15A breaker required per AHU

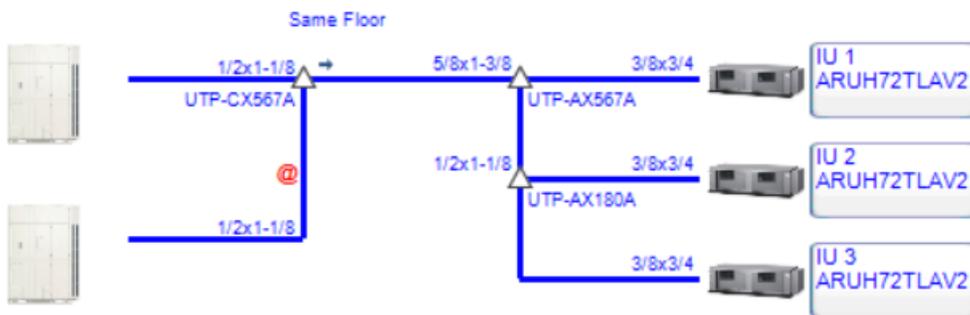
Electrical disconnect switches not shown

Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 20-Ton, Single-Zone, 460 VAC VRF System with (3) horizontal High Static Air Handlers

### Refrigerant Piping Details

- AOUA120ULCV5 Primary unit- closest to indoor units
- AOUA120ULCV5 Subordinate unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No refrigerant piping traps allowed
- 3/8" OD liquid line (+ 0.62 oz./ft. R-410a)
- 1/2" OD liquid line (+ 1.23 oz./ft. R-410a)
- 5/8" OD liquid line (+ 1.92 oz./ft. R-410a)
- 154.3 lb. maximum refrigerant charge
- Separation Tubes UTP-AX567A & AX180A must be used
- 3,280' maximum total piping (liquid line)
- 541' maximum between Primary ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below
- 164' maximum vertical separation- ODU above
- 25' minimum distance between Primary outdoor unit and nearest indoor unit
- 9' maximum from Branch Kit to outdoor unit
- Outdoor unit Branch Kit MUST BE installed flat



**@ Specific installation rules may be applicable for piping multiple outdoor combinations. (e.g. rise setting for gas pipe). Refer to outdoor unit installation manual for specifics.**

#### Pipe explanatory notes

aa x bb

aa: Liquid

bb: Gas

aa

aa: Liquid

## V-Series 20-Ton, Single-Zone, 460 VAC VRF System with (3) horizontal High Static Air Handlers

**IMPORTANT**– Air handlers may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOUA240ULCVG5	VU-V Heat Pump OD Unit group, pre-charged to 0 feet of piping, see "Refrigerant Piping Details"
ARUX72TLAV2 (3)	Airstage High Static Air Handler, (3) 6 ton units
UTP-CX567A	Branch Kit (Divides refrigerant piping to OD units. Includes 1– liquid, 1 vapor)
UTP-AX567A	Separation Tube assembly (Divides refrigerant piping to ID units. Includes 1– liquid, 1 vapor)
UTP-AX180A	Separation Tube assembly (Divides refrigerant piping to ID units. Includes 1– liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
1/2" OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
5/8" OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
3/4" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
7/8" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
1 1/8" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
1 3/8" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
3P30A circuit breaker (2)	For 10 ton outdoor units
2P15A circuit breaker (3)	For indoor units– Indoor units are powered separately from ODU
3/4" male adapter (3)	Indoor unit condensate drain connections
3/4" condensate trap (3)	Field assembled or prefabricated. Trap height at least 6"

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter– to allow conventional thermostat use (G/E thermostat only)
UTY-SPWX	High-Rise 360 Pressure Sensor Kit
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI– Intesis Cloud Control (-TLAV1, -TLAV2)

## V-Series 24-Ton, Single-Zone, 460 VAC VRF System with (3) horizontal High Static Air Handlers

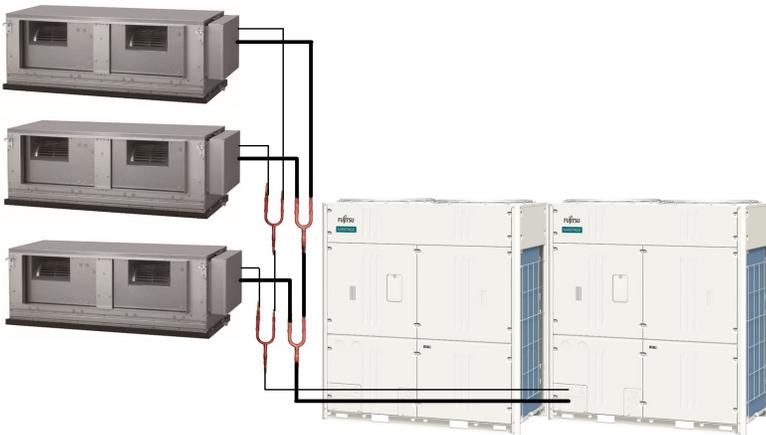
AHRI Standard 1230 Certification # 208931894

Actual capacity (Cooling- 95° OD / 80° ID / 67° ID WB, 50% RH) (Heating- 47° OD / 70° ID)

- Cooling- 288,000 BTUH
- Heating- 324,000 BTUH

Capacity	Outdoor Unit Group	Indoor Unit (X3)	Remote Control
24 tons	AOUA288ULCVG5	ARUH96TLAV2	UTY-RNRUZ5

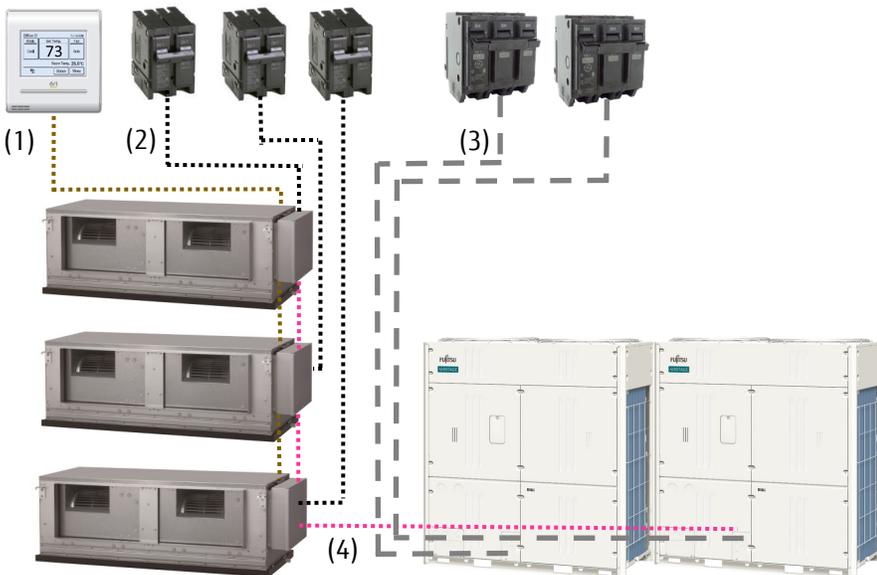
**Refrigerant Piping-** See next page for refrigerant piping details



### COMMON DUCTING NOTES:

- Common supply duct
- Common return duct
- Equal ESP per AHU
- Condensate drain and trap required for each AHU

### Electrical- Line Voltage and Communication Wiring



### WIRING NOTES

- (1) 18/3 thermostat wire (2 conductors minimum) or Fujitsu Pink to each AHU Y1/Y2 connection
- (2) 2P15A breaker- 14/2 or 12/2 w/GND to each AHU\*
- (3) 3P35A breaker- 10 AWG & GND to each 12 ton outdoor unit\*
- (4) Fujitsu Pink comm cable to:
  - X1/X2- AHUs and Primary ODU
  - H1/H2- Primary to Secondary ODU

\* Final wire gauge sized and selected in accordance with NEC and all applicable codes.

Individual 2P15A breaker required per AHU

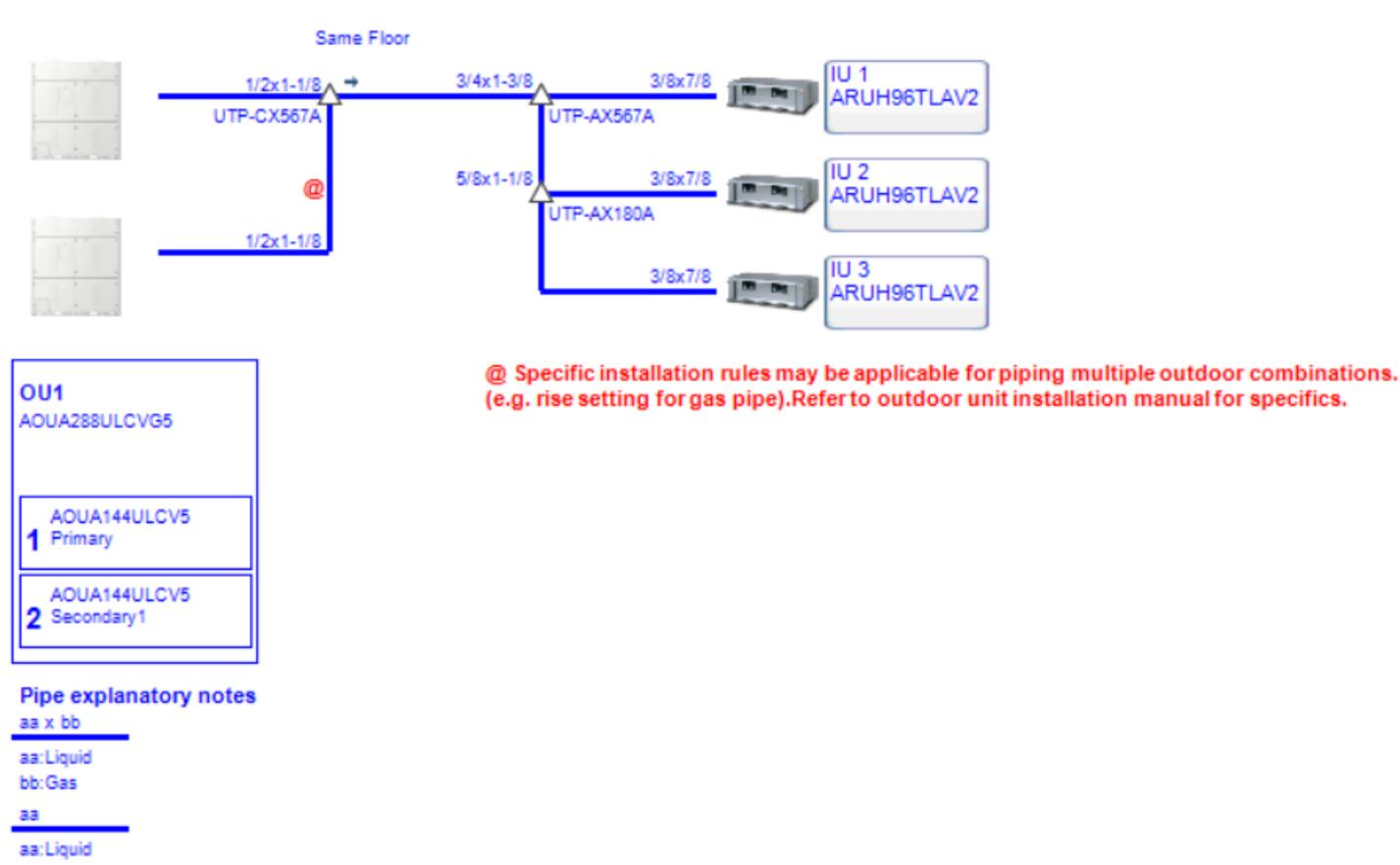
Electrical disconnect switches not shown

Communication and RC cables in series (Daisy Chained) between AHUs

## V-Series 24-Ton, Single-Zone, 460 VAC VRF System with (3) horizontal High Static Air Handlers

### Refrigerant Piping Details

- AOUA144ULCV5 Primary unit- closest to indoor units
- AOUA144ULCV5 Subordinate unit
- Pipe diameters as shown below
- Enter installed liquid line lengths for charge calculation
- Both refrigerant lines MUST BE insulated
- No ID unit refrigerant piping traps allowed
- 3/8" OD liquid line (+0.62 oz./ft. R-410a)
- 1/2" OD liquid line (+ 1.23 oz./ft. R-410a)
- 5/8" OD liquid line (+ 1.92 oz./ft. R-410a)
- 3/4" OD liquid line (+ 2.88 oz./ft. R-410a)
- 216 lb. maximum refrigerant charge
- Separation Tubes UTP-AX567A & AX180A must be used
- 3,280' maximum total piping (liquid line)
- 541' maximum between Primary ODU and farthest IDU
- 295' max. between Separation Tube and farthest IDU
- 131' maximum vertical separation- ODU below
- 164' maximum vertical separation- ODU above
- 25' minimum distance between Primary outdoor unit and nearest indoor unit
- 9' maximum from Branch Kit to outdoor unit
- Outdoor unit Branch Kits MUST BE installed flat



## V-Series 24-Ton, Single-Zone, 460 VAC VRF System with (3) horizontal High Static Air Handlers

**IMPORTANT**– Air handlers may be installed horizontal only.

### Materials List

#### 1. Fujitsu Equipment and Controls

Part No.	Description
AOUA288ULCVG5	VU-V Heat Pump ODU group, pre-charged to 0 feet of piping, see "Refrigerant Piping Details"
ARUH96TLAV2 (3)	Airstage High Static Air Handler, (3) 8 ton units
UTP-CX567A	Branch Kit (Divides refrigerant piping to OD units. Includes 1– liquid, 1 vapor)
UTP-AX567A	Separation Tube assembly (Divides refrigerant piping to ID units. Includes 1– liquid, 1 vapor)
UTP-AX180A	Separation Tube assembly (Divides refrigerant piping to ID units. Includes 1– liquid, 1 vapor)
UTY-RNRUZ5	Touch Screen Remote Control (thermostat)
K00250LW	"Fujitsu Pink" communication cable , 250' roll

#### 2. Required Supplies

Description	Comments
3/8" OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
1/2" OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
5/8" OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
3/4" OD– ACR tubing	Liquid line– Soft or hard drawn, must be insulated
7/8" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
1 1/8" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
1 3/8" OD– ACR tubing	Vapor line– Soft or hard drawn, must be insulated
3P35A circuit breaker (2)	For 12 ton outdoor units
2P15A circuit breaker (3)	For indoor units– Indoor units are powered separately from OU
3/4" male adapter (3)	Indoor unit condensate drain connections
3/4" condensate trap (3)	Field assembled or prefabricated. Trap height at least 6"

#### 3. Optional

Part No.	Description
UTY-TTRXZ1	Thermostat Converter– to allow conventional thermostat use (G/E thermostat only)
UTY-SPWX	High-Rise 360 Pressure Sensor Kit
UTY-LNHU & UTY-TRHX	Wireless Remote Controller and IR Receiver
FJ-IR-WIFI-1NA	WIFI– Intesis Cloud Control (-TLAV2)