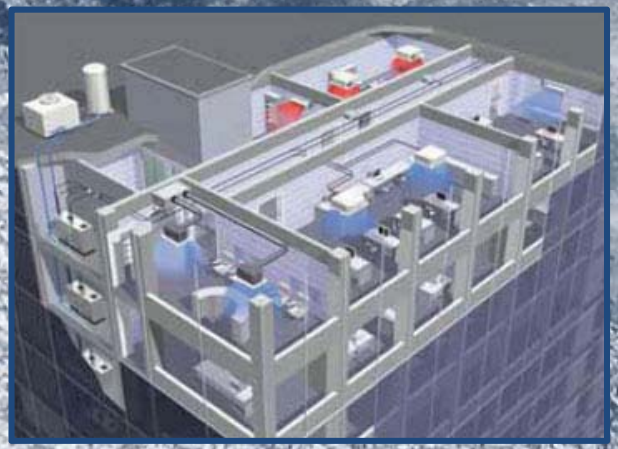
DAIKIN AC UNIVERSITY

VRV-WIII® Commissioning Guide



DaikinAC®
Training Department
Revised April 2013
"P" Series

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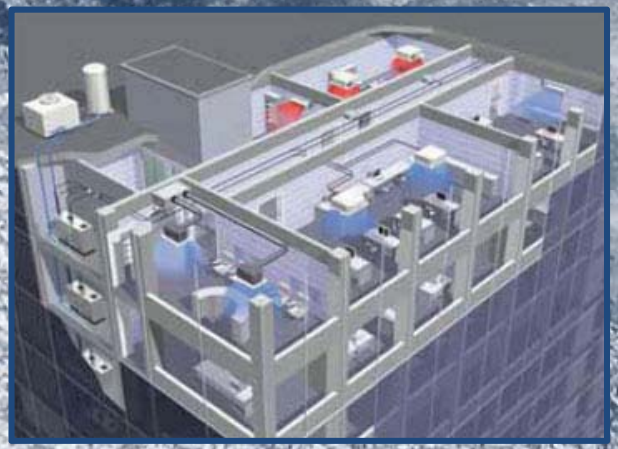
VRV-WIII® Commissioning Guide



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Preface

- This handbook is intended for use as an aid to Field Service Technicians with general technical knowledge and training on VRV equipment. If the Field Service Technician does not have any (or limited) technical knowledge and training on VRV or VRF equipment, do not attempt to install, commission or service any Daikin VRV product with this handbook. Instead, the Field Service Technician needs to complete training offered by Daikin AC (Americas), Inc. ("Daikin AC") before attempting any installation, commissioning or service of the VRV product.
- This reference handbook is available for Field Service Technicians as a simplistic reference guide for commissioning. It is not intended to be a substitute for the VRV Installation and Service Manuals or for training offered by Daikin AC.
- We assume the Field Service Technicians using this handbook are fully qualified to work on the VRV equipment.
- This handbook is intended as a demonstrative aid only. It is not intended as a substitute for training offered by Daikin AC. Anyone installing VRV equipment should first review the unit and inspect and evaluate the location where the unit is to be installed. Every installation varies in its individual circumstances and the Field Service Technician will have to use their professional judgment in each installation.
- Should you require further assistance contact our Technical Service Department.
- Every effort has been made to insure that the information and graphics included in this Commissioning Guide is as accurate as possible at the time of publication. DaikinAC Training Department shall not be held liable for any changes in procedures, specifications, or any system component information which are different from what is represented in this Guide.

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April 2013

Daikin AC (Americas), Inc.

Training Department

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http://DaikinUniversity.com

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Dr. Daikin

Diagnostic Tool

Fault Code Identification

Three ways to help with ERROR CODES:

WEB: *www.drdaikin.com*

MOBILE WEB: *http://mobile.drdaikin.com*

SMS TEXT: **Error** plus (**code**)

- send to 32075 -

Example: Error U4

VRV-WIII System Components

Condensers - Fan Coil Units - Branch Selector Boxes - Local Remote Controllers

Condensers

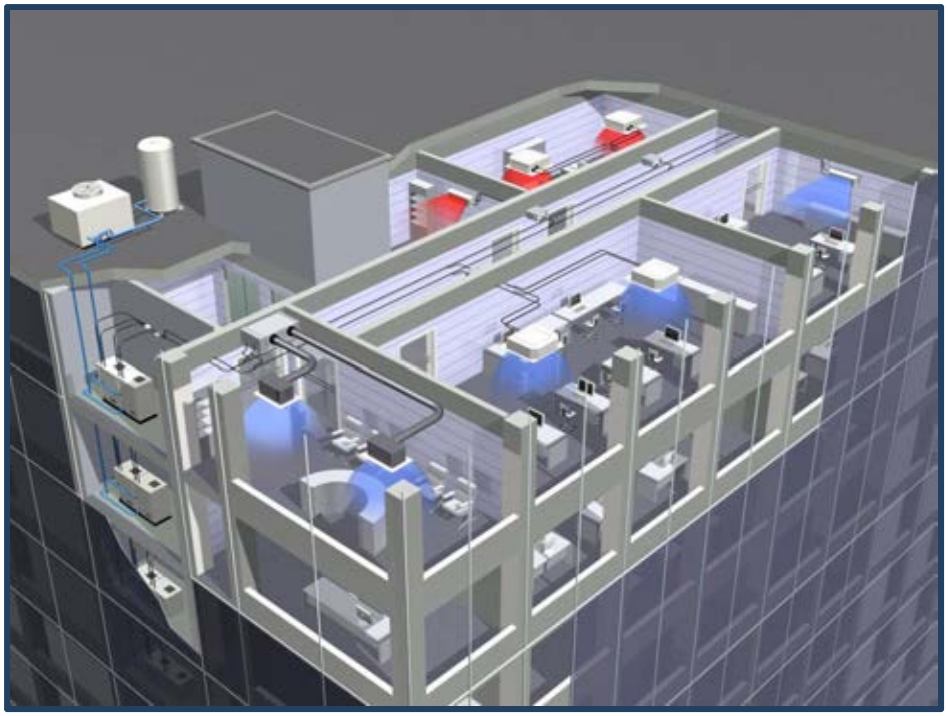
VRV-WIII RWEYQ_P Systems

RWEYQ72P - 6 Ton
RWEYQ86P - 7 Ton
Single Module

12 & 14 Ton
Dual Module

18 & 21 Ton
Triple Module

RWEYQ_PTJU: 208/230vac 3 Phase
RWEYQ_PYDN: 460vac 3 Phase



Indoor Units

VRV-WIII Models & Appearance – 208/230vac 1 Ph

Fan Coil Units

Indoor Units

VRV-WIII Models & Appearance – 208/230vac 1 Ph
Branch Selector Boxes

BSVQ36PVJU 36,000 Btu
BSVQ60PVJU 60,000 Btu
BSVQ96PVJU 96,000 Btu

BSV4Q36PVJU 4 - Port

BSV6Q36PVJU 6 - Port

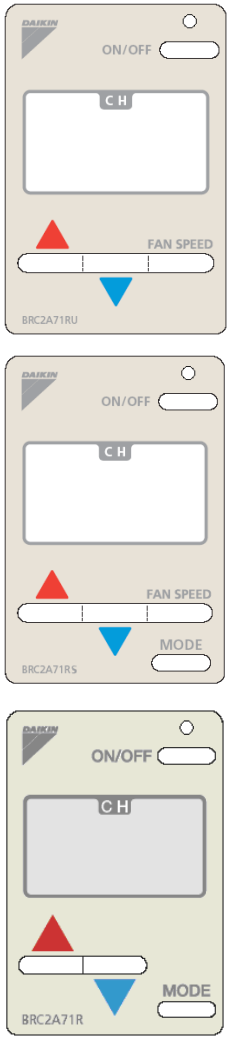
Local Remote Controllers

BRC1E72

Navigation Remote Controller

BRC2A71

Simplified



BRC7C/7E/4C

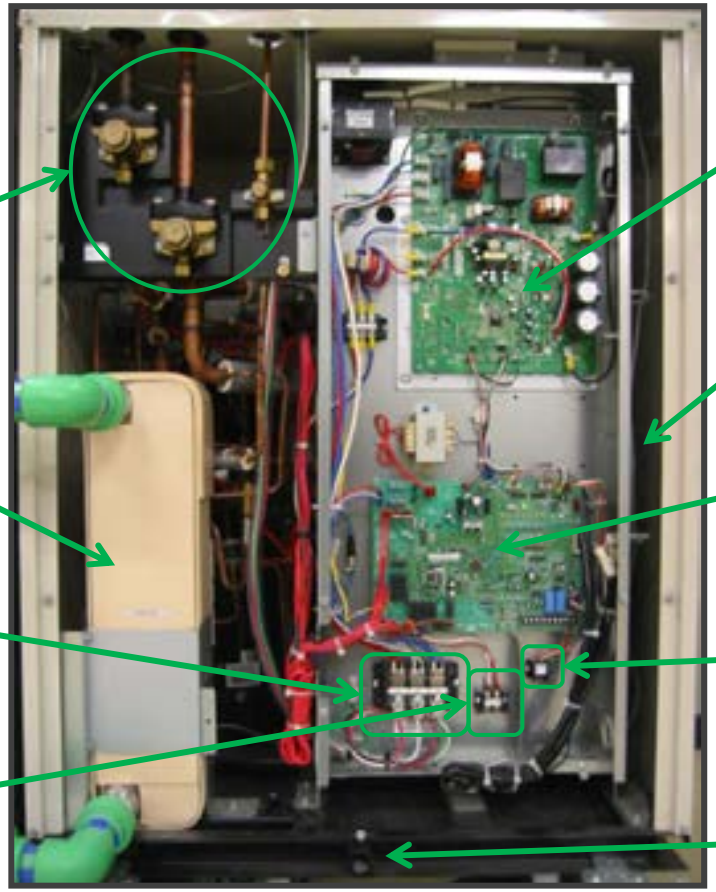
Hand-held

Wireless

VRV-WIII Condenser - Unit Layout

Line & Control Voltage – Stop Valve Layout – Control PCB

Component Location



Condenser ID Plate Location

DAIKIN INDUSTRIES, LTD. (K)

AIR CONDITIONER

MODEL	RWEYQ84PTJU	
SER. NO.	A000129	
MFG. DATE	'09. 12	
NET WEIGHT	330 LBS.	
POWER SUPPLY	3 PHASE 208/230 V 60 Hz	
MAX. FUSE	40 A	
MIN. CIRCUIT AMPACITY	27.4 A	
COMP. MOTOR	RLA	15.4 A
	LRA	90 A
DESIGN PRESSURE	HI SIDE	450 PSIG
	LO SIDE	320 PSIG
AIR TIGHTNESS TEST PRESSURE	HI SIDE	450 PSIG
	LO SIDE	320 PSIG
WATER TEMP.	59°F~113°F	
MAX WATER PRESSURE	285 PSIG	
	230 V 60 Hz	
CAPACITY	COOLING	84,000 Btu/h
	HEATING	94,500 Btu/h
INPUT	COOLING	5.60 kW
	HEATING	5.40 kW
REFRIGERANT	R410A	11.5 LBS

ETL

MADE IN JAPAN

ELECTRIC CHARACTERISTICS ARE ONLY FOR WATER-SOURCE UNIT.

3P190470-5E

VRV-WIII System Commissioning

Pre-Commissioning Checks & Commissioning Steps

Pre-Commissioning Checks

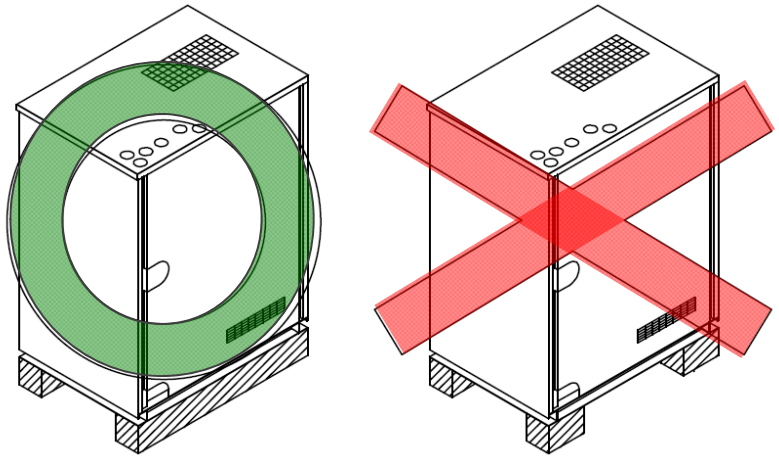
1. The *VRV WIII* condenser(s) are set in place level and properly supported
2. Verify Line voltage power is de-energized at condenser(s) and all indoor units
3. Refrigerant stop valves securely closed & field refrigerant piping pressure tested to 550 psi (450psi FXTQ_PA) for 24 hours min.
4. Triple evacuate refrigerant lines to 500 microns or less – hold for 1 hr.
5. All Liquid lines are measured and recorded - The "Additional Refrigerant Charge" is calculated & Refrigerant weighed into the system using the final evacuation cycle
   (The vacuum might not take the entire calculated charge - Note the amount of refrigerant taken)
6. Stop Valves open – Liq.& HP/LP Gas (HP) Liq. - Suction & HP/LP Gas (HR)
7. Condenser water loop piping ,isolation & balancing valves are installed including the required factory supplied "Y" strainer(s) NOTE: One "Y" strainer installed for each condenser
8. Supply & Return water loop Thermometers (sensors) installed (Recommended & Field supplied)
9. Supply & Return Water Flow Meters installed (Recommended & Field supplied)
10. All control wiring is connected from Condenser(s) to indoor units (fan coils or BS Boxes)
11. Condenser water loop Flow Switch installed and wired (Mandatory and Field supplied)
12. Circulating pump Relay or Starter installed and wired (Field supplied)
13. Verify circulating pump operation, water flow proved, and air purged from water loop piping
14. All Remote Controllers installed and wired
15. All condensate piping is installed and connected including fan coil tie-ins; insulated as required
16. Refrigerant lines completely insulated including all fan coil flare connections
17. All ductwork is connected and all air filters installed
18. Verify Line voltage power supply at condensers and indoor units to be within proper range

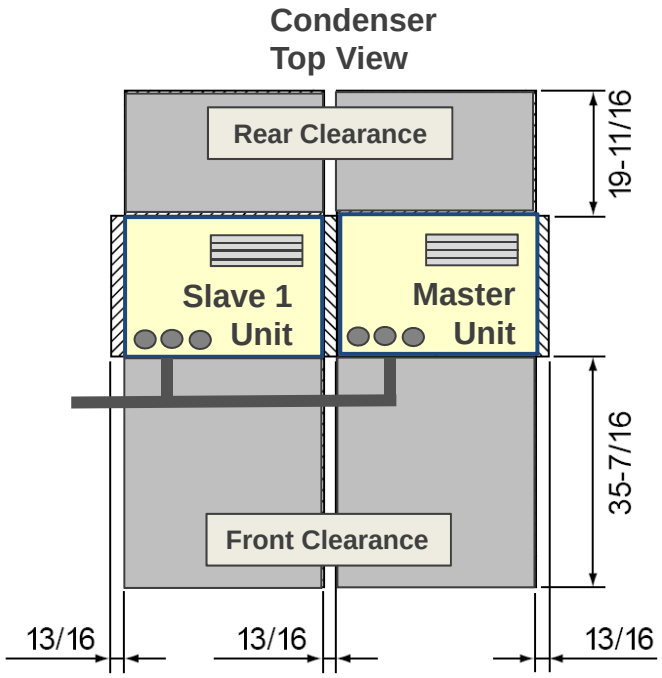
Pre-Commissioning Checks (1-18)

VRV-WIII System Commissioning

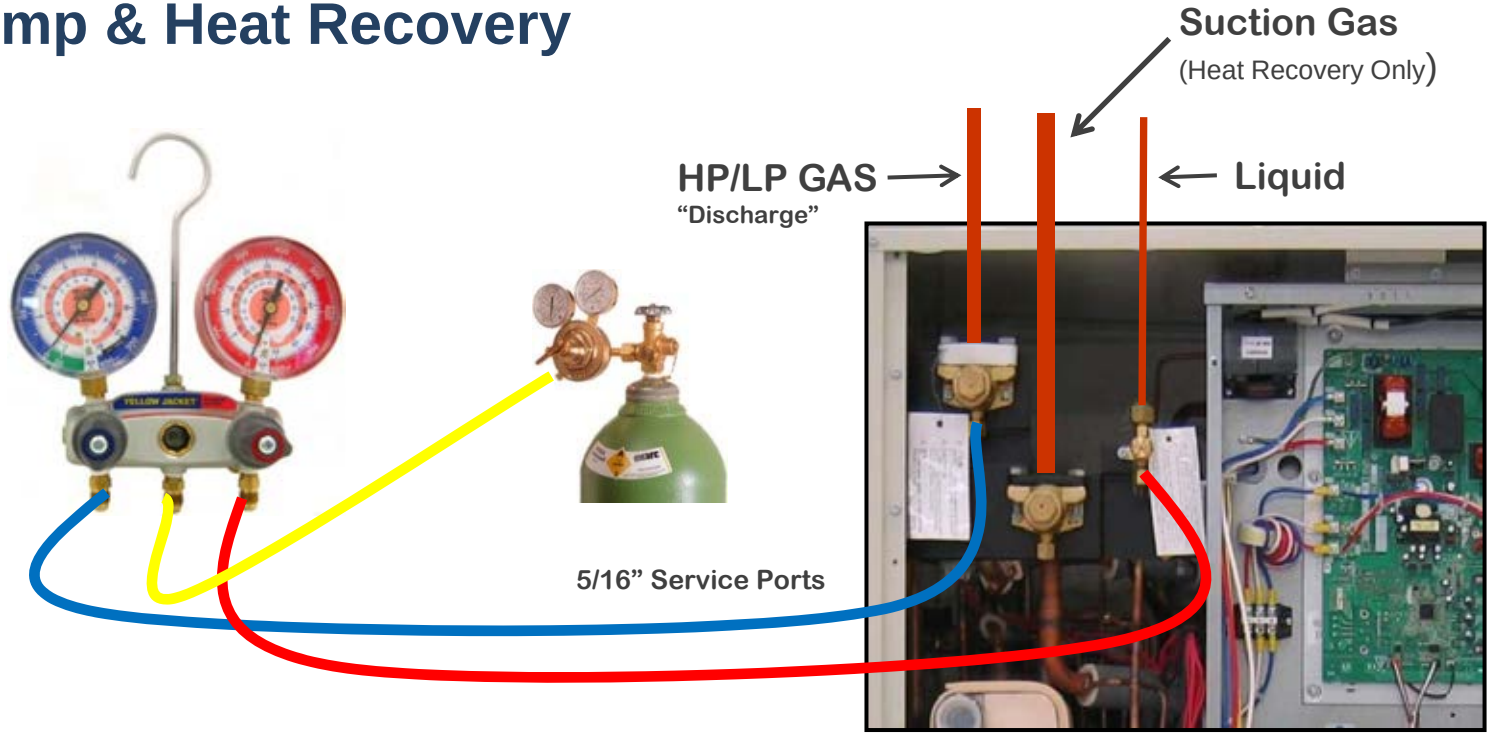
Condenser installed level and properly supported

- Verify the *VRV-WIII* condenser(s) are set on a level pad or supports with proper clearances
  - Minimum 12 inches top clearance
- Verify the line voltage power is de-energized to Condenser(s) and all indoor units
  - If indoor units are powered up, the EEV's will motor fully closed – BS Boxes & fan Coils





VRV-WIII Heat Recovery Pressure Test Connections
Heat Pump & Heat Recovery

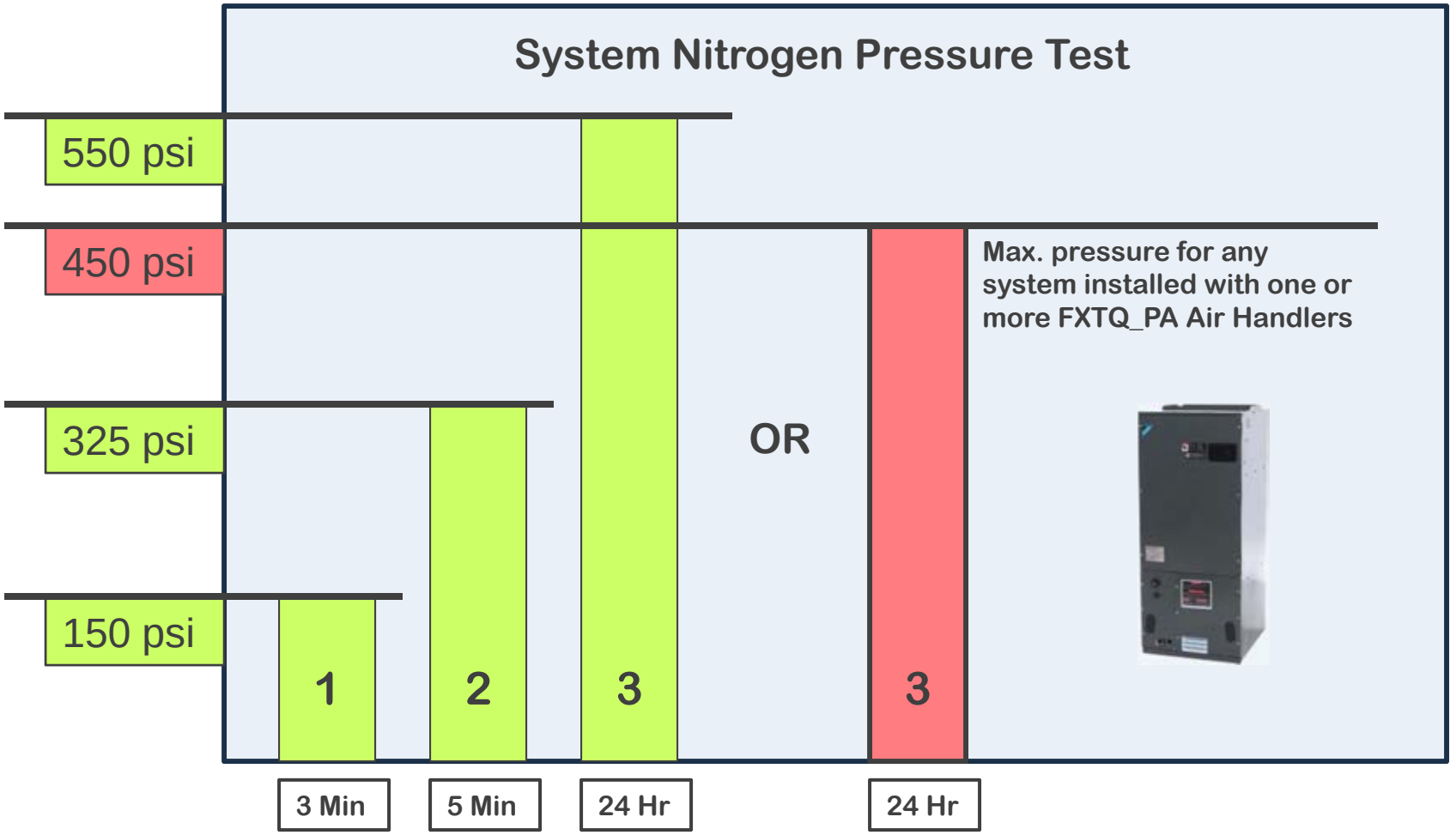


- Connect manifold gauges to the Liquid and Dual Pressure Gas Service Ports
  - On Manifolded systems connect gauges to the Master condenser
- Connect Nitrogen cylinder with regulator to manifold
- Do not energize the indoor units - Indoor unit EEV's close when power is applied
  - If EEV's have closed use Refrigerant Recovery/Evacuation Mode to reopen all EEV's
- Follow the Pressure Test procedure, and perform a system leak test.

NOTE: Designated "Discharge" stop valve is HP/LP Gas – See *VRV-WIII* Service Manual

3 Step System Pressure Test

- Verify all Stop Valves are securely closed before pressure test -



Nitrogen Temperature/Pressure Testing

Nitrogen pressure is subject to fluctuation above 300 psi, based on ambient temperature changes. Use this formula to compensate for temperature changes from one day to the next when performing the 24 hour pressure test. The following formula will determine system pressure drop caused by low ambient temperature.

Note the **T**emperature when the system is **p**ressurized (**Tp**)
Subtract the **T**emperature when the pressure is **c**hecked (**Tc**)
Multiply by a factor of 0.80 to get the **P**ressure **D**rop (**PD**)

(**Tp – Tc**) x 0.80 = **P**ressure **D**rop

System Triple Evacuation

- Minimum 6 cfm vacuum pump with check valve
- Digital Micron Gauge
- Insure Vacuum hoses are in good condition
- Indoor units must not be energized to insure EEV's are open
  - Evacuate the refrigerant piping to 4,000 microns
  - Break the vacuum with Dry Nitrogen to a level of 2-3 PSIG
  - Evacuate the system to 1,500 microns
  - Break the vacuum with Dry Nitrogen to a level of 2-3 PSIG
  - Evacuate the system to 500 microns or less
    - Conduct a micron rise test; system should hold 500 microns for 1 hour
    - Hold vacuum for liquid refrigerant charging

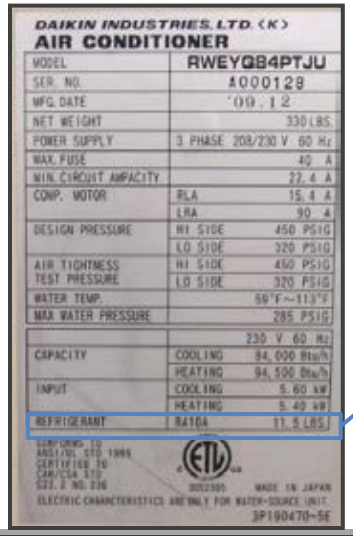
System Refrigerant Charging

Pre-Commissioning Step 5

VRV-WIII System Commissioning

VRV-WIII System Refrigerant Charging Facts

- Accurate refrigerant liquid charging is critical for optimum system performance
- *VRV-WIII* condensers have a factory refrigerant charge based on the unit model
  - The *VRV-WIII* Condensers state the factory refrigerant charge on the unit ID Plate
- Proper *VRV-WIII* system charging requires an "Additional Refrigerant Charge" amount to be calculated which is a simple 2-part calculation.
- The total system refrigerant charge is comprised of the factory charge in the condenser(s), and the "Additional Refrigerant Charge" amount calculated for that system


DAIKIN INDUSTRIES,LTD (K)
AIR CONDITIONER

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MAX WATER PRESSURE		285 PSIG
		230 V 60 Hz
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	HEATING	94,500 Btu/h
INPUT	COOLING	5.60 kW
	HEATING	5.40 kW
REFRIGERANT	R410A	11.5 LBS.

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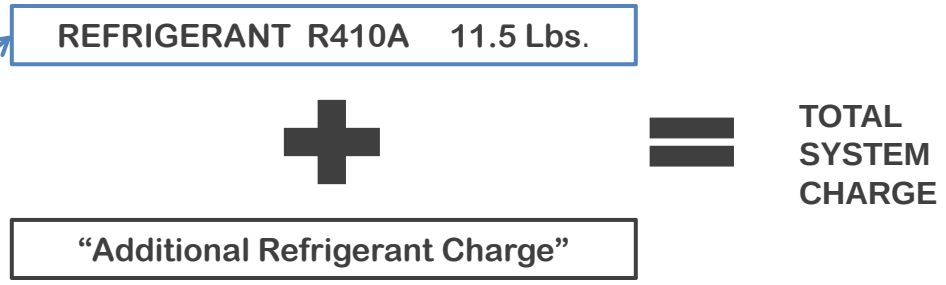
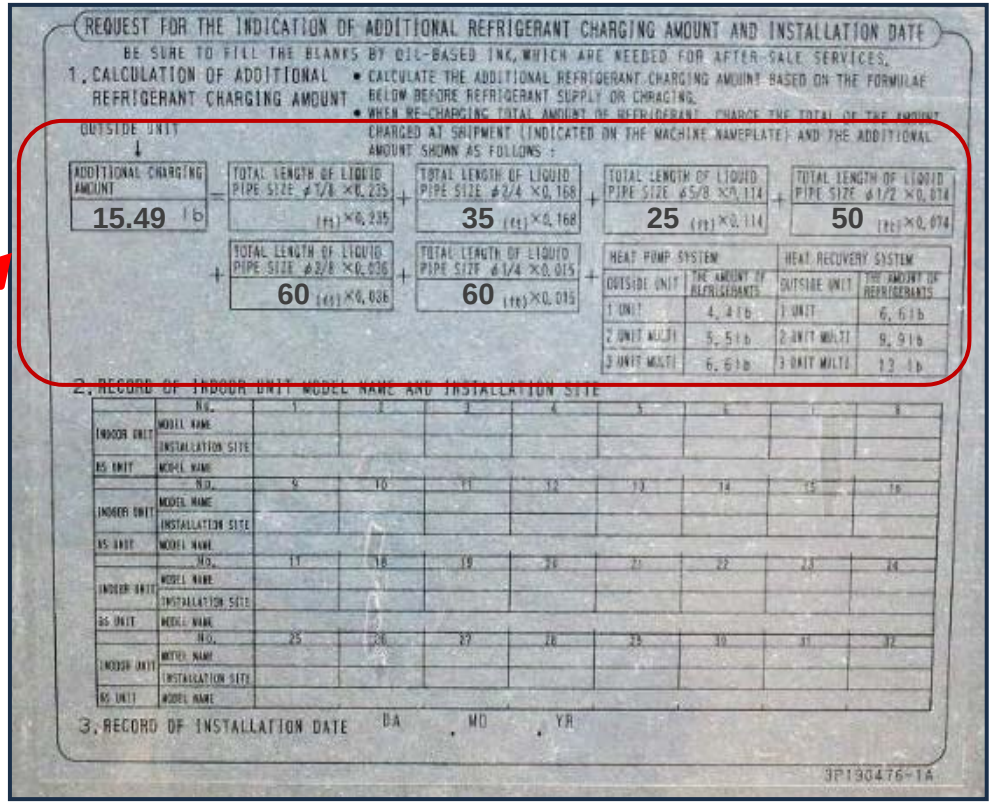


VRV-WIII System Refrigerant Charge Procedures

- All *VRV-WIII* systems are charged by weight based on the calculated "Additional Refrigerant Charge" for the system being commissioned
  - Measure the total linear footage of each Liquid line pipe size in the entire system
  - Calculate the "Additional Refrigerant Charge" based on the two part calculation procedure for the system being commissioned
  - After determining the amount of the "Additional Refrigerant Charge", use the vacuum in the system from the final evacuation cycle, and weigh in liquid refrigerant through the Liquid service port.
    - When there is not enough vacuum to draw in the total additional charge, the "Additional Refrigerant Charge Mode" will be used to complete the system charging process
    - Record the amount of refrigerant taken under vacuum
  - After the system receives the full or partial charge, all of the stop valves may be opened (Pre-Commissioning Step #6)

Additional Refrigerant Charge Instructions (cont.)

- Refrigerant Charging and Commissioning Instructions are listed on a factory installed label located on the front of the control box cover.
- Fill out the lengths of liquid lines installed, and the calculated amount of refrigerant. This is a permanent record for the system to be used for future service work.



VRV-WIII "Additional Refrigerant Charge" Calculation

The **example** system for this exercise is: RWEYQ252PTJU (21 Ton) Heat Recovery

CALCULATION "A"

Total length: **60**ft. – 1/4" Liquid line x .015 lbs/ft = **0.9** lbs.
+
Total length: **60**ft. – 3/8" Liquid line x .036 lbs/ft = **2.16** lbs.
+
Total length: **50**ft. – 1/2" Liquid line x .074 lbs/ft = **3.7** lbs.
+
Total length: **25**ft. – 5/8" Liquid line x .114 lbs/ft = **2.85** lbs.
=
Total length: **35**ft. – 3/4" Liquid line x .168 lbs/ft = **5.88** lbs.

TOTAL: 15.49 lbs.

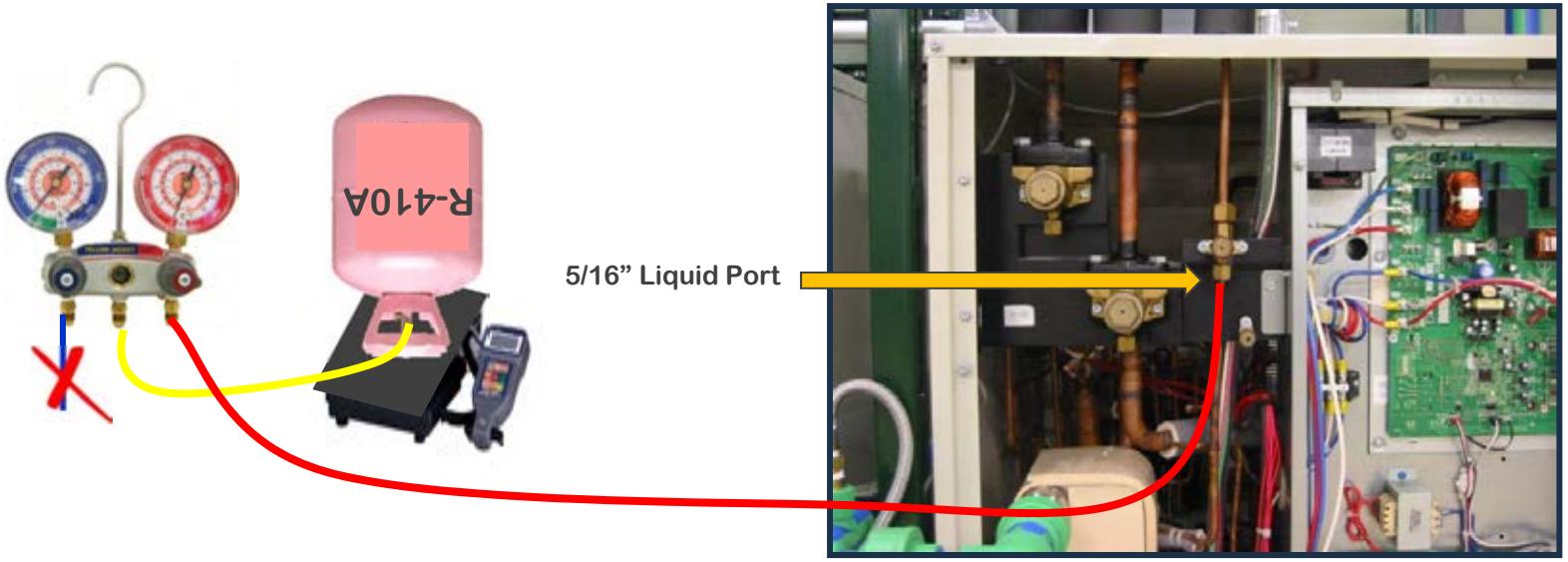
CALCULATION "B"

System name	Heat recovery system	Heat pump system
1 unit (72 / 84)	6.6	4.4
2 unit multi (144 / 168)	9.9	5.5
3 unit multi (216 / 252)	13	6.6

Calculation "A" **15.49** lbs. + Calculation "B" **13** lbs. = **28.49** lbs.

Note: .1 lbs.= 1.6 oz.

Refrigerant Charging Connection



- Low side manifold hose is not used for this procedure
- The high side manifold hose should still be connected to the Liquid service port, from evacuation
- Break the final vacuum by weighing in the entire calculated charge or as much as possible into the system
  - If there is not enough vacuum to draw in the entire calculated charge, the "Additional Refrigerant Charge Mode" will be used later to complete the charging process
- All of the stop valves can now be opened (Heat Pump – Discharge & Liquid only) Step #6

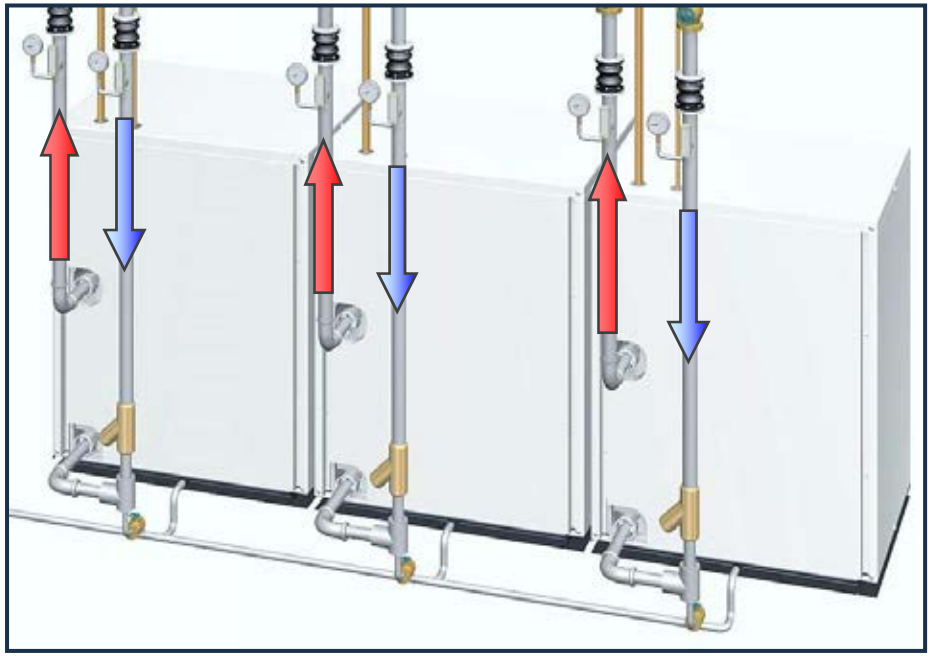
Closed Loop Condenser Water

Pre-Commissioning Steps 7-9

VRV-WIII System Commissioning

Condenser water loop

- All water side components are field supplied excluding plate heat exchanger inlet “Y” Strainer
- A condenser water flow switch is required and field supplied
- It is recommended that the condenser water piping should include isolation and balancing valves where needed, including return & supply thermometers and flow meters to verify the rate of water flow through the plate heat exchanger
- For more information, refer to the *VRV-WIII* Installation and Engineering manuals



Factory supplied “Y” Strainer

Condenser Control Wiring

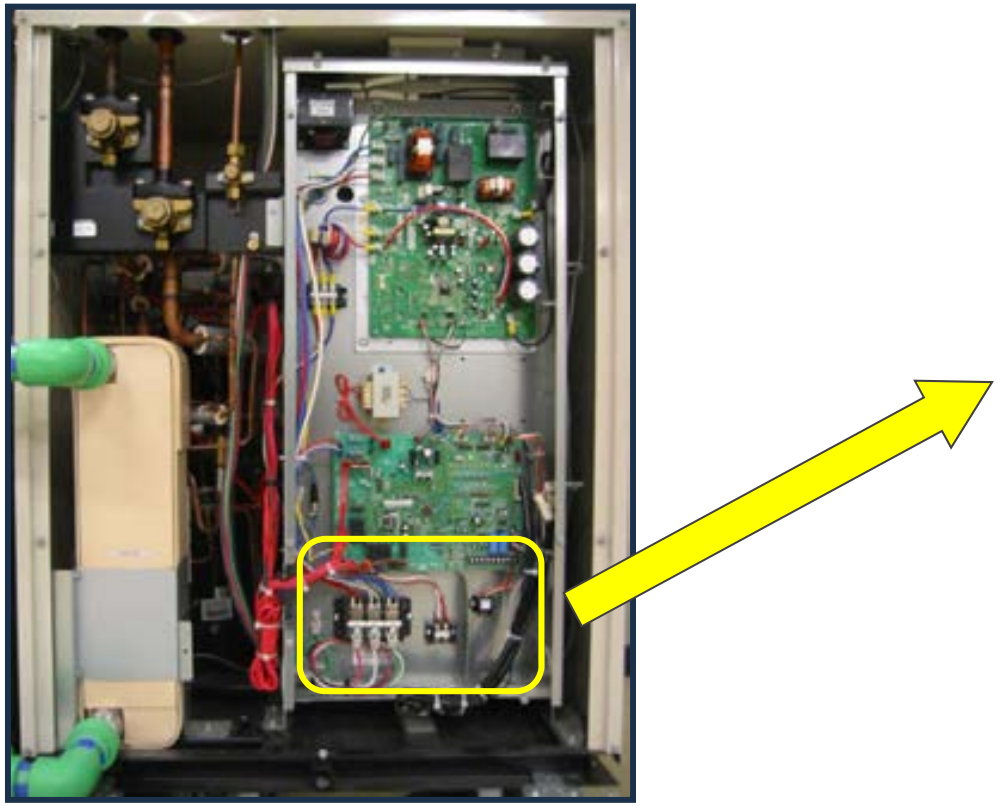
Pre-Commissioning

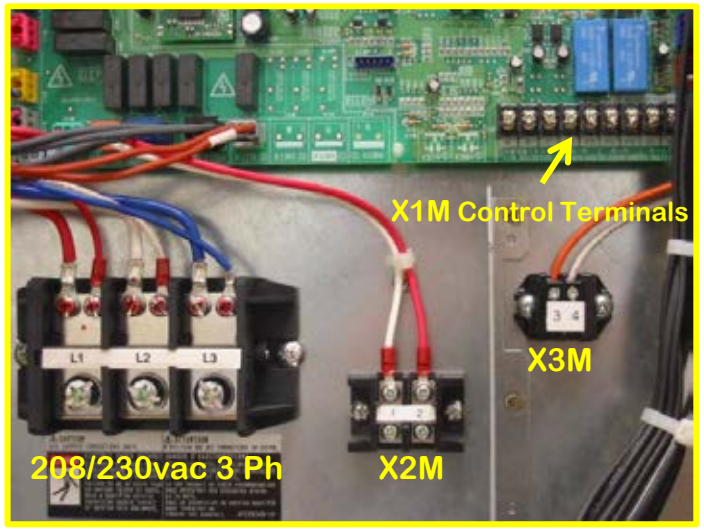
Steps 10-12

VRV-WIII System Commissioning

Condenser Control Wiring

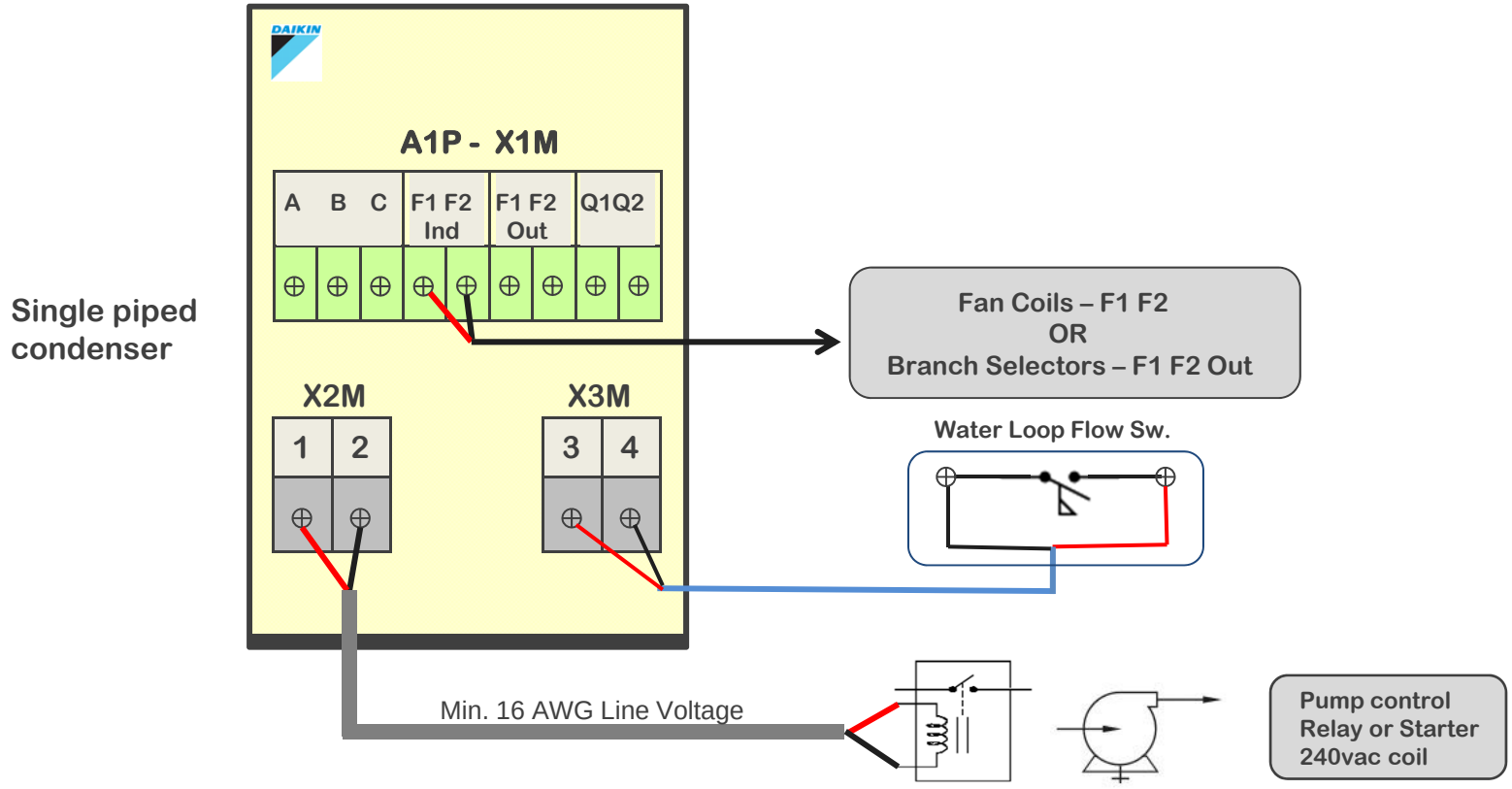
- Line voltage connected - de-energized
- A1P Control PCB **X1M** – *DIII-Net* connections 16vdc. To indoor units and centralized control
- Terminal Block **X2M** - Pump Control Output: 220vac. 3mA to.5A - terminals 1 & 2 (16 awg.)
- Terminal Block **X3M** - Auxiliary contacts Flow Switch: rated 15vdc 1mA – terminals 3 & 4





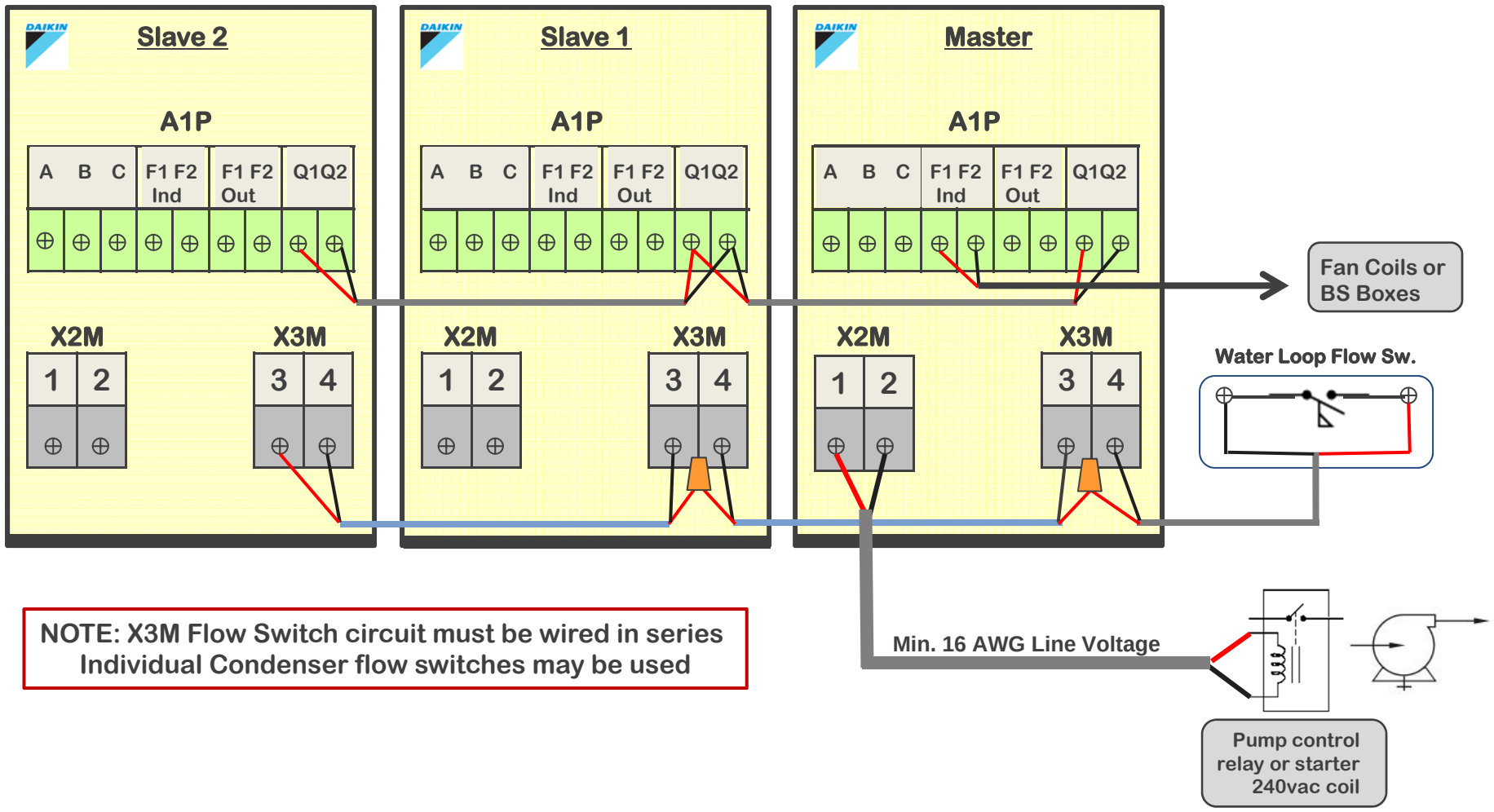
Condenser Control Wiring

- A1P Control PCB Terminal Block **X1M** – *DIII-Net* connections 16vdc. to indoor units
- **X2M** Terminal's **1 & 2** - Pump Operation Output: 220vac. 3mA -.5A (16 AWG wire or greater)
  - Pump must be controlled by a relay or starter from X2M output (Dedicated closed loop only)
- **X3M** Terminals **3 & 4** - Auxiliary contacts: Flow Switch or Differential Pressure Sw. rated 15vdc 1mA



Condenser Control Wiring

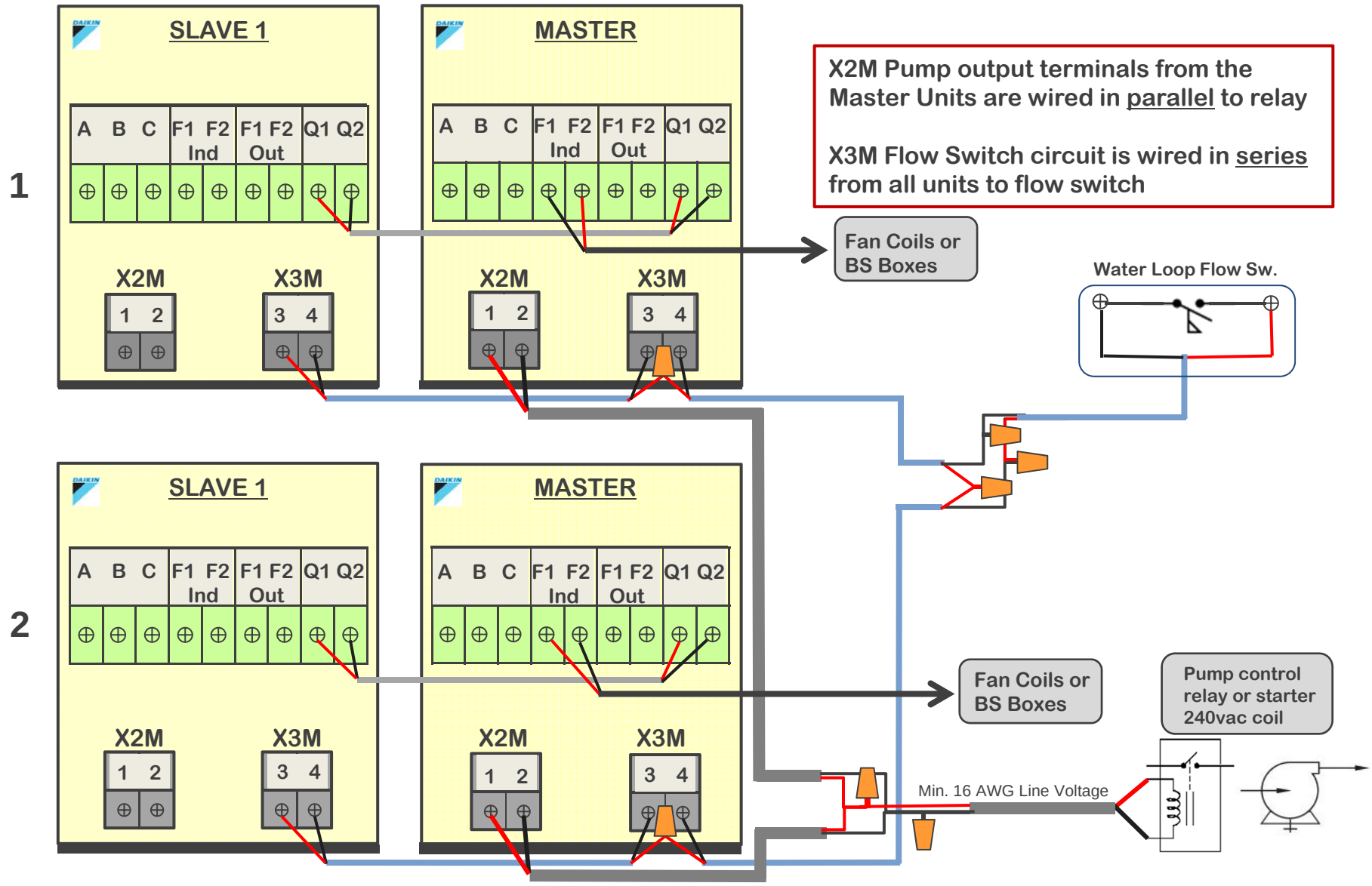
Multi – piped system (12 to 21 Ton) on one water loop



NOTE: X3M Flow Switch circuit must be wired in series
Individual Condenser flow switches may be used

VRV-WIII Pre-Commissioning Checks
10 - 12 Cont.

Two or more multi-piped systems (12 to 21 Ton each) on one water loop



NOTE: Individual flow switches may be used

Final System Checks

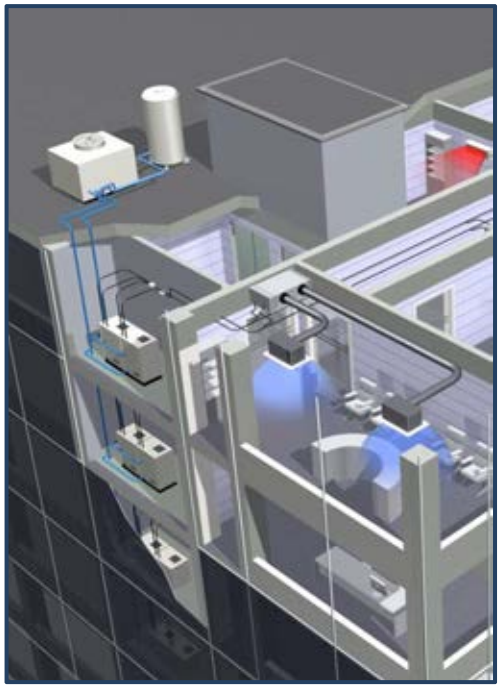
Pre-Commissioning

Steps 13-18

VRV-WIII System Commissioning

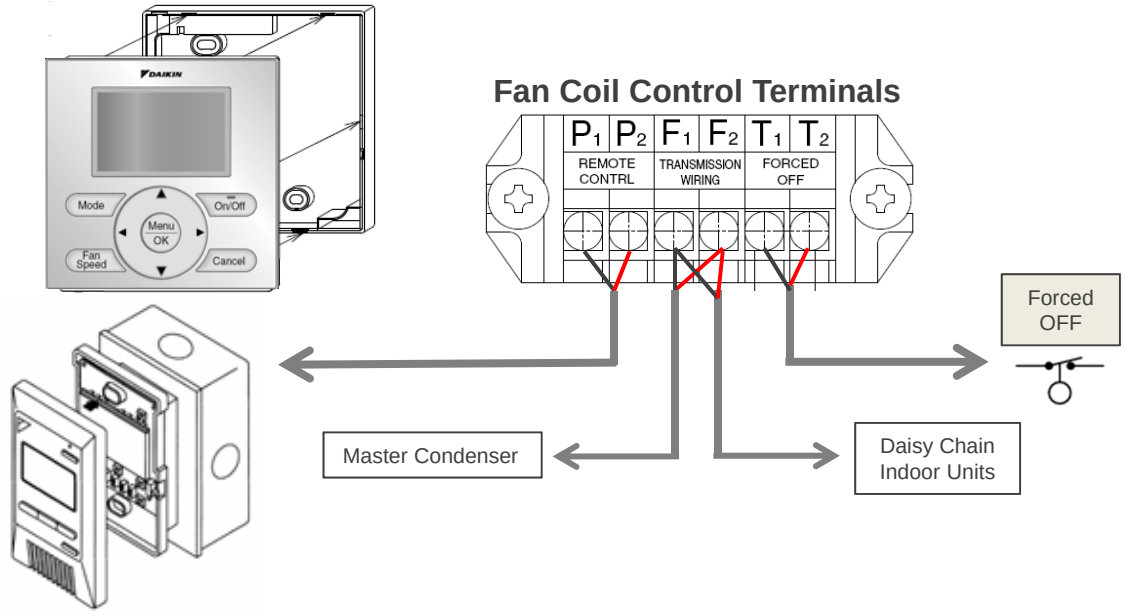
Condenser Water Loop

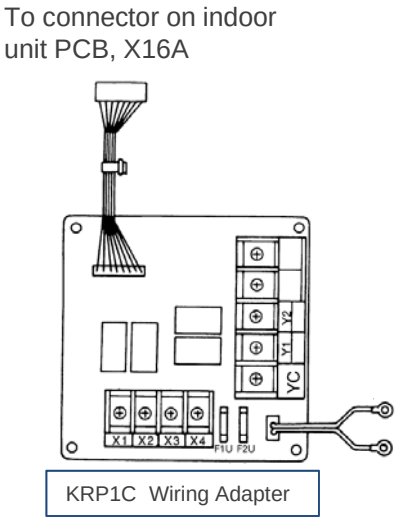
- Water side closed loop circuit to be filled and tested as required
  - Check for leaks
- Start circulator pump manually and verify water flow through loop and heat exchanger(s)
  - Purge all air from closed loop circuit
  - Verify flow rate through plate heat exchanger(s) 13.5 – 39.5 gpm (see *VRV-WIII* Engineering Manual)



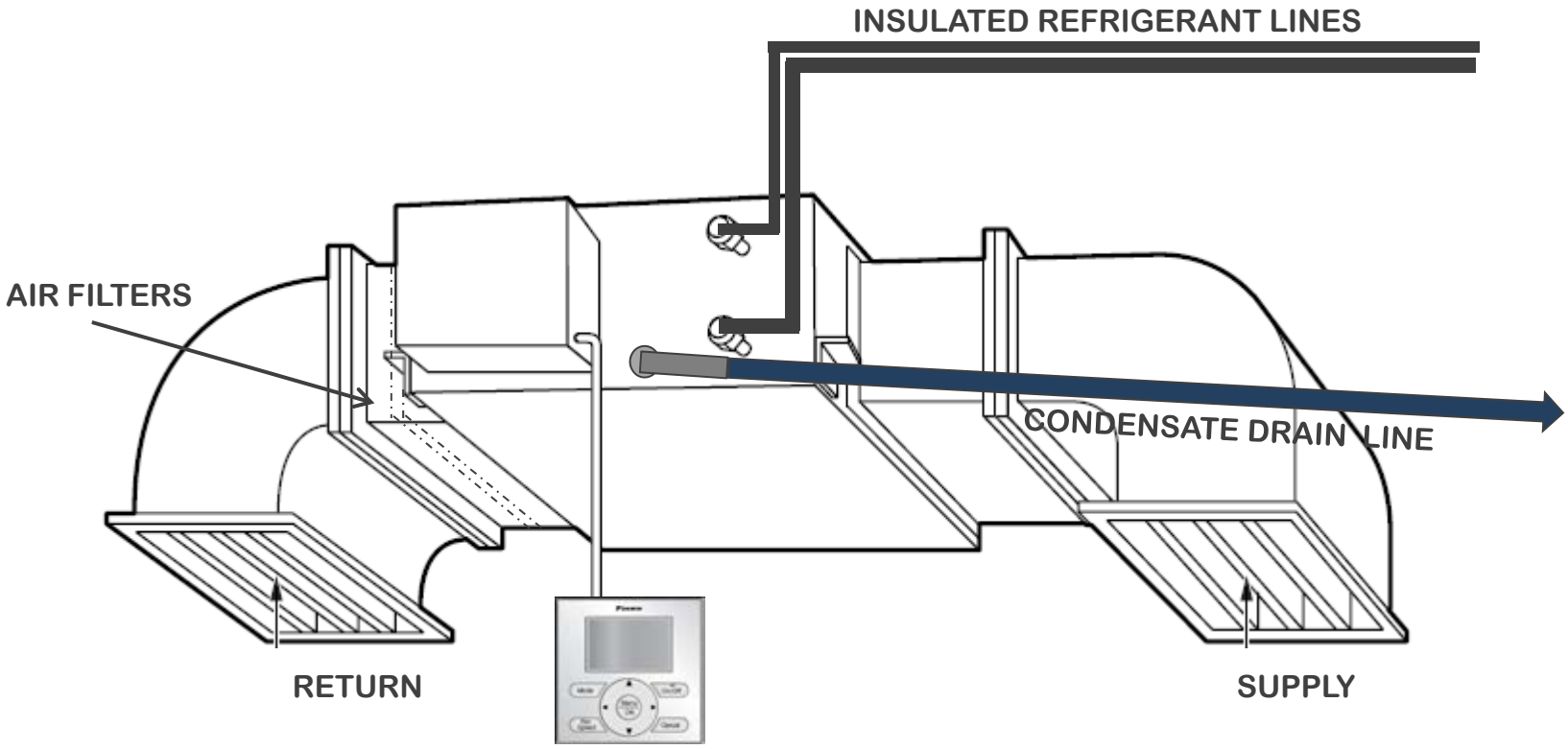
Fan Coil Control Wiring

- Verify all remote controllers are installed and wired to fan coils
- T1 T2 Forced OFF connections N.O. Manual Reset or:
  - Optional condensate pumps installed and float switches wired to fan coils
    - Control connection to **T1 T2**
    - Control connection to **X8A** or **X15A** PCB jumper (select fan coils)
- Optional wiring adapters (KRP1) installed and wired to fan coils





- All condensate piping is installed on condenser(s) as required and all fan coils
- Refrigerant lines are completely insulated including fan coil flare nut connections
- All ductwork is installed and sealed; all air filters are installed



Verify Power Supply Voltage

- Before energizing any of the system components, use a Voltmeter to verify that the line voltage power supply to the Condenser(s) and all Indoor Units corresponds to the equipment nameplate, and within the stated range.
  - 208/230vac 1Ph & 3Ph = 187 – 253vac
  - 460vac 3Ph = 416 – 508vac
- Verify all 3 phase legs to each condenser are in balance within 2%
  - A **"U1"** error code with unit stop can be generated for excessive phase imbalance, or reverse phase
  - A **"U1" or "U7"** error code with unit stop can be generated for an open phase
- All indoor units, fan coils and "BS" boxes are shipped with EEV's open
  - EEV's motor closed when line voltage power is applied to unit

Commissioning Steps
(1-12)

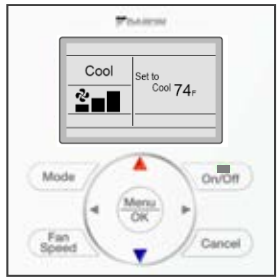
VRV-WIII System Commissioning

Commissioning Steps

1. Power up all indoor units – verify all remote controllers are switched Off but with a display
2. Power up Condenser(s) for 6 hours to energize crankcase heaters, and start Initialization
3. Verify communication status on Condenser control PCBs (manifolded modules)
4. Perform Initial Settings on all BRC1E72 “NAV” Remote Controllers
5. Count Indoor Units: Branch Selectors (HR) and Fan Coil Units
6. Perform selected field settings programmed at remote controllers (Static Pressure & air flow distribution settings)
7. Complete the system refrigerant charge (Additional Refrigerant Charge Mode)
8. Perform Check Operation Mode
9. Configure the remote controller Changeover Master for the Heat Pump systems and the heat pump zones in Heat Recovery systems
10. Complete remaining programming and field settings at remote controllers
11. Verify system operation in Heat and Cool modes from every zone
12. Check and verify water flow rate and ΔT through condenser heat exchanger(s)
13. Inspect and clean “Y” Strainer(s) as needed

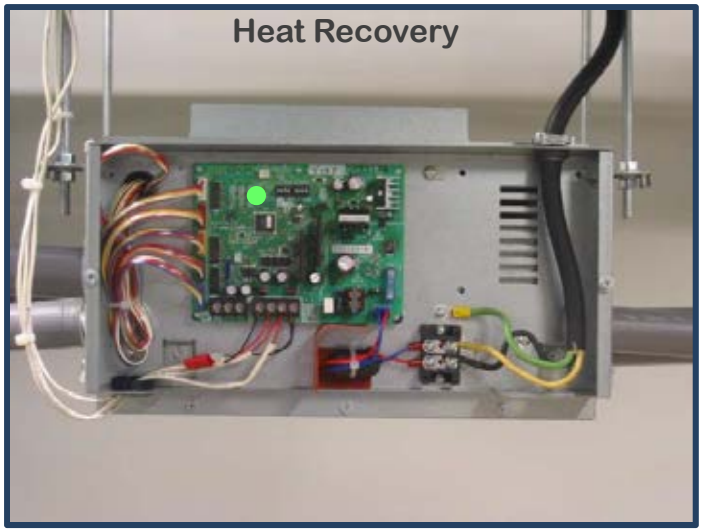
Power up all Indoor Units

- Power up all Fan Coils and Branch Selector Boxes First
  - Verify the Fan Coil and Branch Selector box control PCB's indicate normal operation with the Green blinking status LED on the board
  - Verify all wired Remote Controllers have a display but the status LED's (Green or Red) are OFF



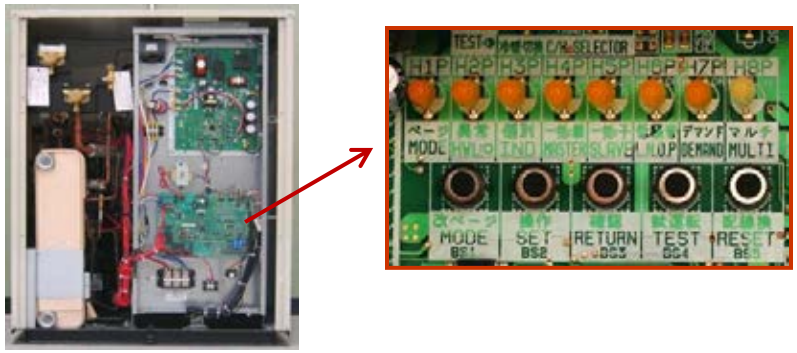
Fan Coil Control PCB

Branch Selector Box PCB



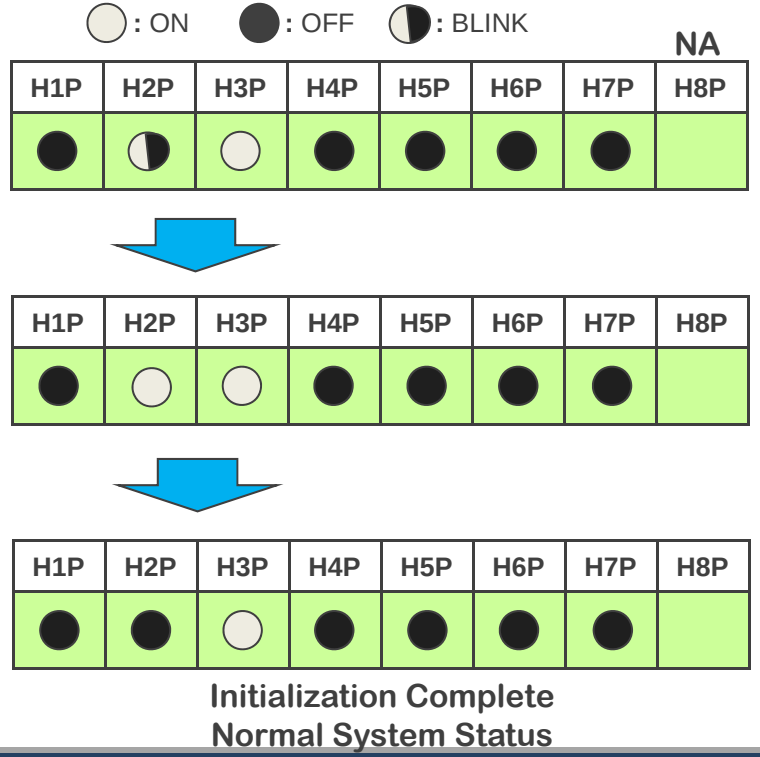
Condenser Power up

Condenser(s) are powered up after the Indoor Units and must not be operated for a period of 6 hours to insure crankcase heaters eliminate any liquid refrigerant in compressor(s). During this time, all of the Navigation Remote Controllers (BRC1E72) can be setup.



Initialization

- Upon power up of the condenser(s), the control PCB will perform the Initialization Operation for approximately 15 minutes. During this operation the addresses are assigned to the indoor units
- This mode is identified by **H2P** blinking and **H3P** solid
  - MASTER PCB on Manifolded systems
- Near completion of Initialization, **H2P** will change from blinking to solid
- When the Initialization Operation is completed **H2P** goes off and **H3P** stays on solid



Initialization Complete
Normal System Status

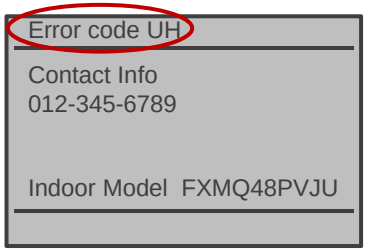
Condenser Power up

Error During Initialization

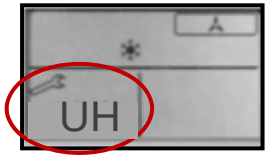
- If after 25 minutes **H2P** remains on solid, there is an error in the system
  - Turn on one of the Remote Controllers and verify the error code and resolve the fault
  - Recycle power on the Condenser (Master) press and hold the **RESET** button for 5 seconds to restart Initialization Operation
- When Initialization operation is complete with no errors, the **H2P** LED goes out and **H3P** LED will be on solid

System Fault

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
●	○	○	●	●	●	●	



BRC1E72



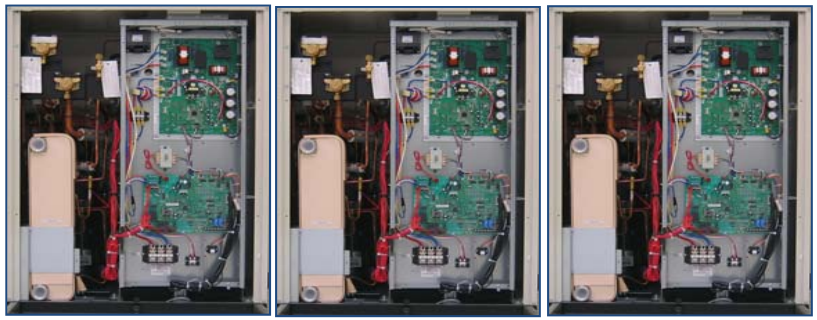
BRC2A71

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
●	●	○	●	●	●	●	

Normal System Status

Condenser A1P Control PCB - Status LED Sequence

- Upon completion of the **Initialization** operation, the LED sequence on the single piped *VRV-WIII* condenser will have a Solid H3P
- Upon completion of **Initialization** on *VRV-WIII* manifolded modules, the following LED sequences will appear on the control PCB's
  - The Master A1P PCB is connected to the indoor units on **F1F2 IN**
  - Master PCB's display a solid H3P & H8P LED's to indicate normal status



SLAVE 2 SLAVE 1 MASTER

○ : ON ● : OFF ◑ : BLINK

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
●	●	○	●	●	●	●	○

Single Piped Condenser

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
●	●	○	●	●	●	●	○

Manifolded Module Master Condenser

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
●	●	●	●	●	●	●	◑

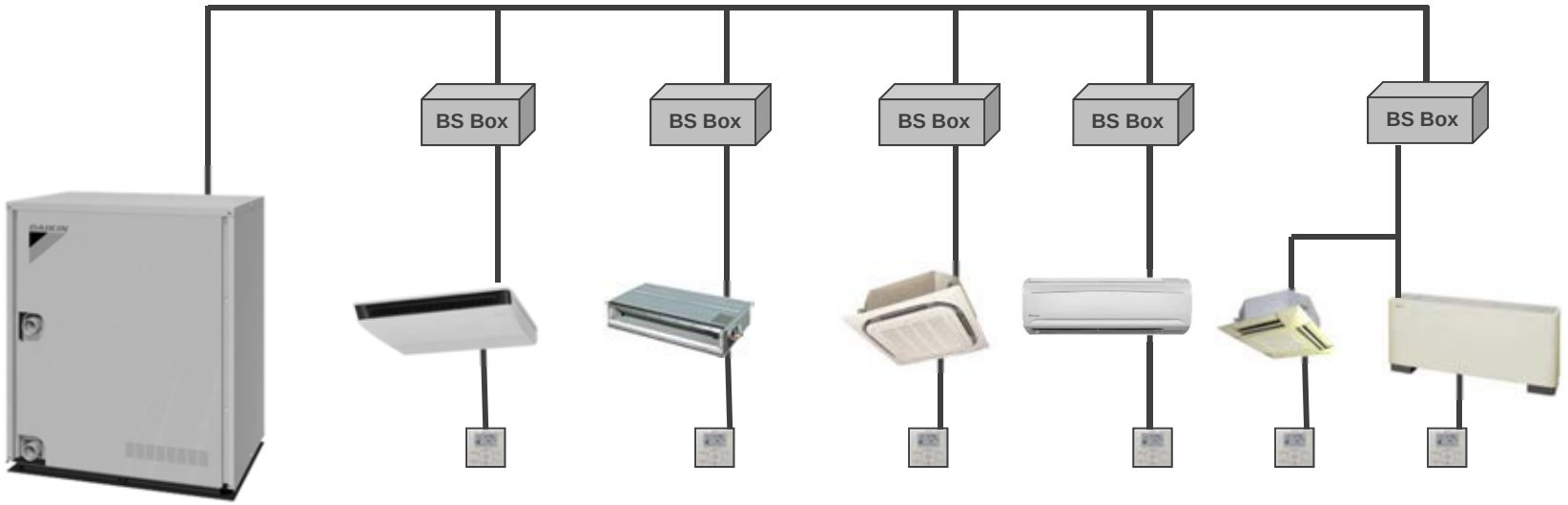
Manifolded Module Slave 1 Condenser

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
●	●	●	●	●	●	●	●

Manifolded Module Slave 2 Condenser

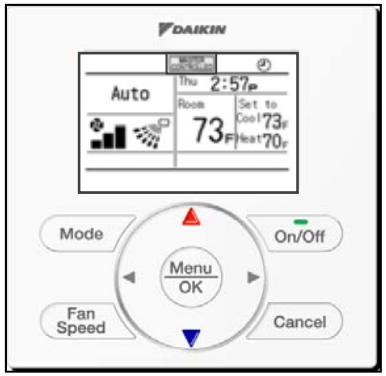
Verify system control communications

- When the **Initialization** operation has been completed the system must be checked to insure that all indoor units in the system are addressed and communicating.
- All system indoor units must communicate with the control system
- Using Monitor Mode 1 on the Master Control PCB on the Condenser, the Fan Coils and Branch Selector boxes in the system can be counted, verifying system communications
  - On a manifolded system, the indoor units are counted from the Control PCB on the Master Condenser

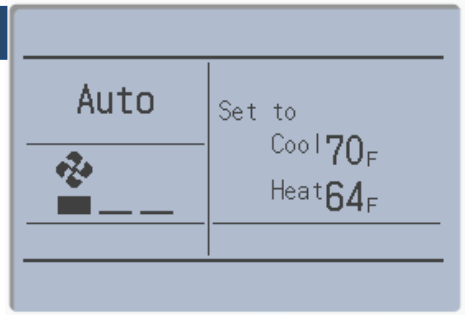


BRC1E72 Navigation Remote Controller Initial Settings

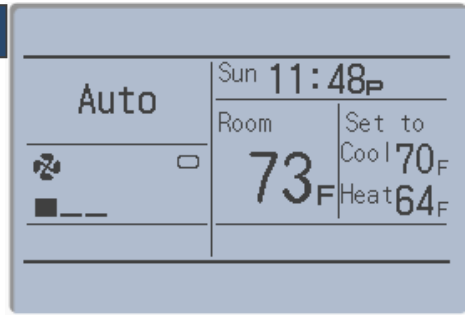
- During the initial condenser power up time, all of the system BRC1E72 Remote Controllers, can be configured with the "Initial Settings" that apply.



Standard



Detailed



Simple

Binary Code Key for Counting Indoor Units (Example)

- Using the Condenser Control PCB status LED's, a binary number is applied to each LED: H1P through H7P as read from right to left
- When in the "Monitor Mode 1" or "Service Mode 2", the LEDs will display, using binary numbers, the number of times the **"SET"** button is pressed
- When counting indoor and outdoor units is enabled, the blinking LED's represent the number of units recognized in the control system

Example of binary value indications

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
0	32	16	8	4	2	1	N/A

● : OFF ◑ : BLINK

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
◑	●	●	●	●	●	●	

Value of "0"

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
◑	●	●	●	●	◑	●	

Value of "2"

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
◑	●	●	●	◑	◑	◑	

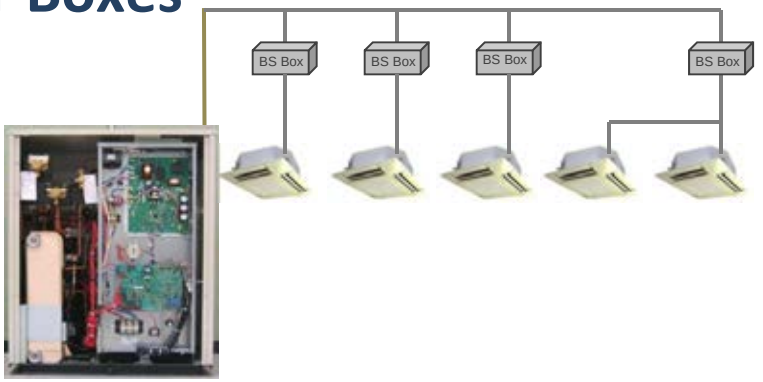
Value of "7"

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
◑	●	●	◑	◑	●	●	

Value of "12"

Counting Branch Selector Boxes

- System Monitor Mode 1 is accessed by pressing the "**MODE"** button one time – **H1P** LED flashing
- The number of times the "**SET"** button is pressed will be indicated by the corresponding binary numbers
- **H1P** to **H7P** LED status is continuously updated when any button is pressed



- Press **"MODE"** once **H1P** blinking →

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
◑	●	●	●	●	●	●	

- Press **"SET"** 6 times →

	0	32	16	8	4	2	1	N/A
H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P	
◑	●	●	●	◑	◑	●		

- Press **"RETURN"** once Count up the blinking LED's →

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
◑	●	●	●	◑	●	●	

- Press **"MODE"** once return to normal status: **H3P** solid →

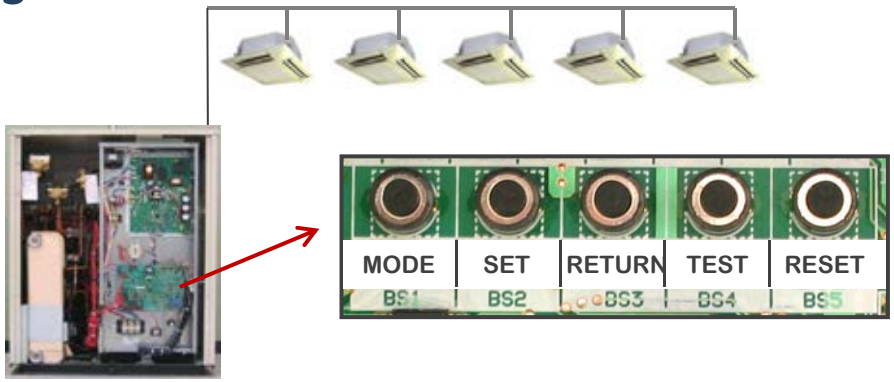
H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
●	●	○	●	●	●	●	

Indoor Fan Coil & BS Box - Communication Troubleshooting Tips

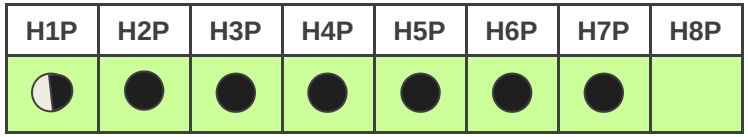
- NOTE: If a branch selector box is not communicating in the DIII-Net system, the connected fan coil(s) will also not communicate
- Verify correct power supply voltage is present at Fan Coil and Branch Selector
  - PCB status: Green LED blinking
- Verify that all Remote Controllers have a display. This will also tell you that power is applied to the indoor units
- If there are Remote Controllers controlling more than one indoor unit, you must check the green LED on each PCB to see if it is flashing green. This will tell you that power is applied to the Indoor unit or BS box. Another method is to use your meter to check for voltage
- Turn on each Remote Controller one at a time. When you turn them on, note the error code if any appears on the display
- After you have turned them all on, you should see a pattern of the error codes. The pattern should show a few of the controllers with different error codes. The remote(s) with a different code is a good place to start checking your control wiring
- Check the control wiring to insure the conductors are connected to the correct terminals and 16vdc is measured
- On installations which have multiple *VRV-WIII* Heat Pump and Heat Recovery systems, Branch Selector boxes should be counted on the Heat Pump systems to verify correct system control wiring with no crossover
- After the issues are corrected, recycle power to the (Master) Condenser (Initialization mode starts) and press and hold the **"RESET"** button for 5 seconds on the Control PCB. This will enable the indoor unit or BS box to have an address assigned.

Counting Indoor Fan Coils

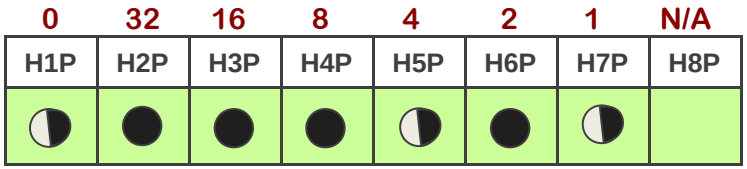
- System Monitor Mode 1 is accessed by pressing the "**MODE**" button one time – **H1P** LED blinking
- The number of times the "**SET**" button is pressed will be indicated by the corresponding binary numbers
- **H1P** to **H7P** LED status is continuously updated when any button is pressed



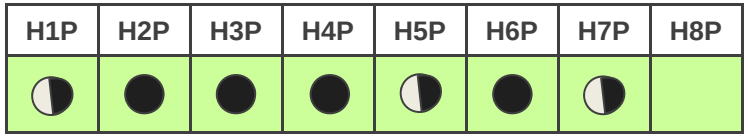
- Press "**MODE**" once
  H1P blinking



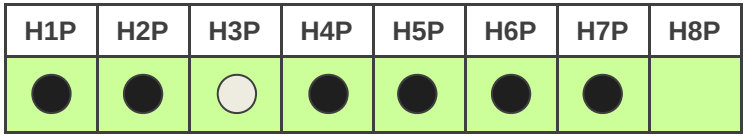
- Press "**SET**" 5 times



- Press "**RETURN**" once
  Count up the blinking LED's



- Press "**MODE**" once
  return to normal status: **H3P** solid



Fan Coil – Forced Fan On Operation

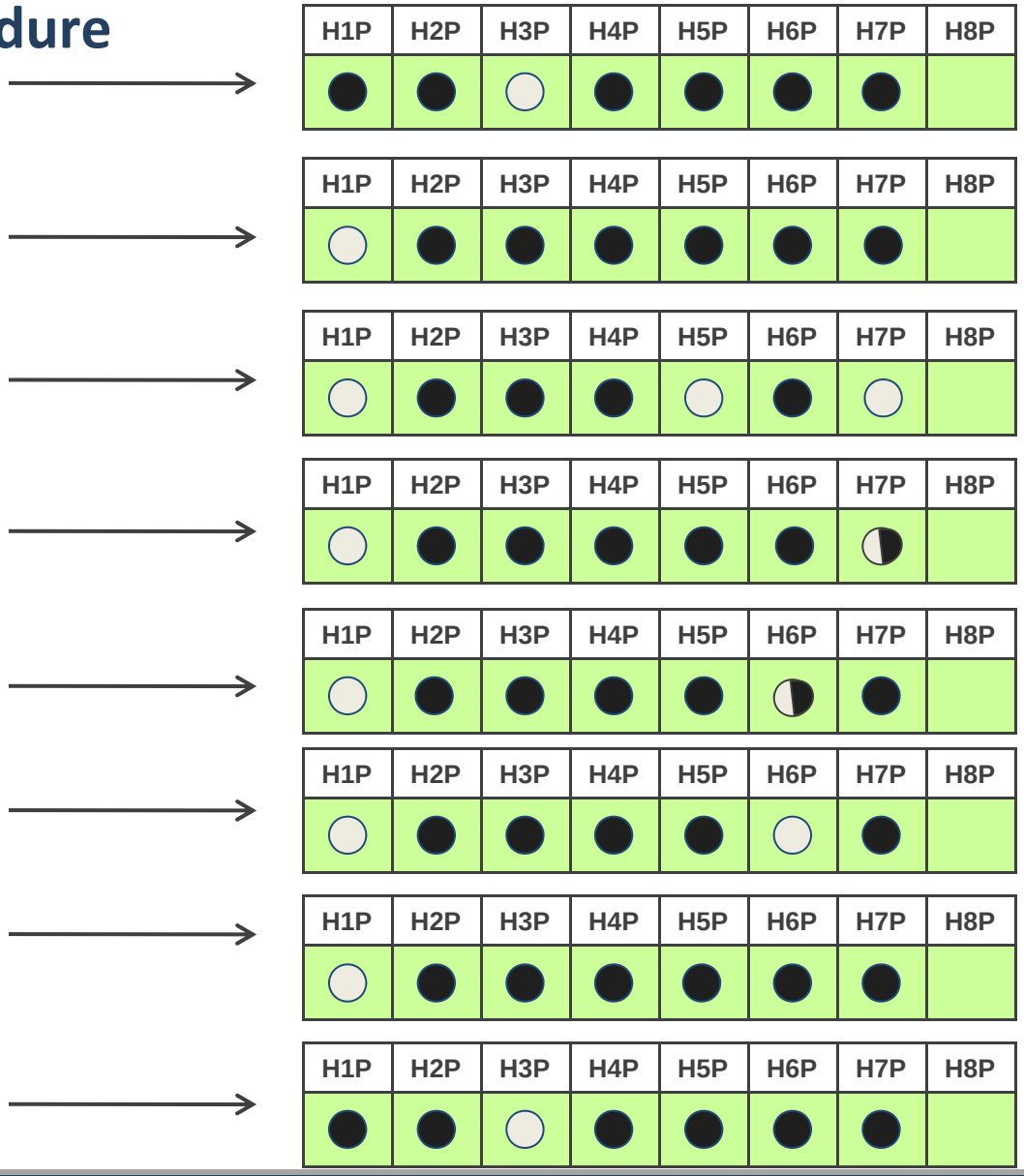
- A very effective procedure to help troubleshoot missing indoor Fan Coil units is to force the fan coil blowers to “ON”. By forcing the blowers on, you will know what indoor units are communicating with that particular system.
- In jobs where you have multiple systems being installed, during the installation occasionally one indoor unit will get wired to the wrong condenser unit. Using the “Forced Fan On” procedure, you will quickly see what units are connected by which fans turn on
- Using the Forced Fan ON operation enables the control system to put the Fan Coil blowers in High fan speed (Service Mode 2)
- The fan coil(s) that do not respond by energizing the blower are the units not communicating with the control system
  - After the issues are corrected, recycle power to the (Master) Condenser (Initialization mode starts) and press and hold the **“RESET”** button for 5 seconds on the Control PCB. This will enable the indoor unit or BS box to have an address assigned.
- Use the following page to put the fan coil blowers into this mode

Forced Fan ON Procedure

- At start - LED status Normal – **H3P** solid

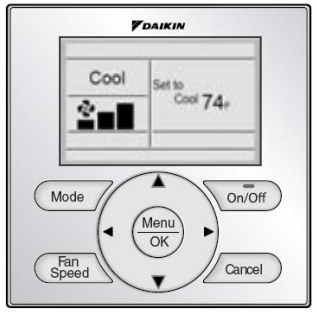
SERVICE MODE 2

- Press and Hold the **"MODE"** button for approx 5 seconds until you see the H1P LED on solid
- Press the **"SET"** button 5 times
- Press the **"RETURN"** button once operation status: OFF
- Press the **"SET"** button once to turn operation ON
- Press the **"RETURN"** button once to Lock the setting
- Press the **"RETURN"** button once to Activate the setting
  - **STOP - Check all the fan coils for the blower(s) that are not running**
- Press the **"MODE"** button once to return to Normal mode



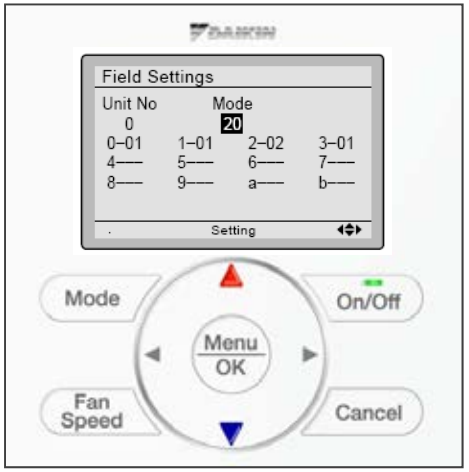
Selected
Indoor Unit Field Settings
Commissioning Step 6

VRV-WIII System Commissioning

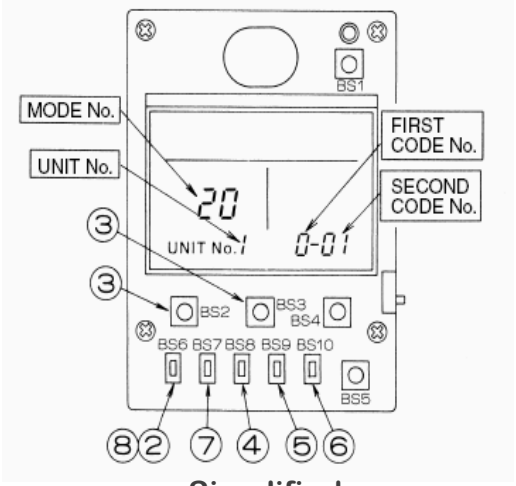


Fan Coil Field Settings

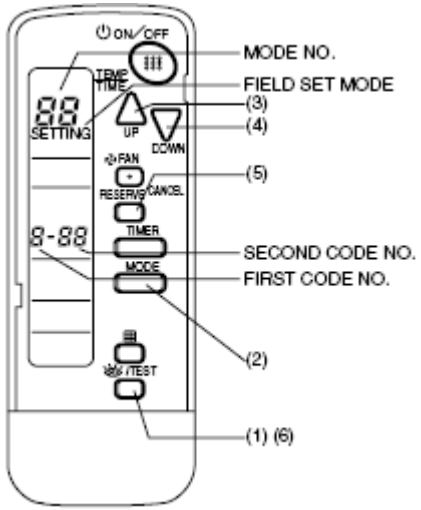
- System communications is now verified and fully operational
- All ductwork is connected and all air filters are installed
- Fan coil Field Settings related to airflow static pressure adjustments can now be programmed at the Remote Controllers, before Check Operation is enabled
  - Ducted fan coils may require the static pressure be adjusted or programmed
  - Ceiling Cassette fan coils must be programmed for 2-way & 3-way supply air distribution and ceiling height (FXFQ), to optimize unit operating parameters
- The field settings for each fan coil are listed in the unit Installation Manual



Navigation Remote



Simplified



Wireless

Fan Coil Field Settings

- Field Setting codes are comprised of 3 segments: Example: **12 -1- 03**
  - **Mode No. –** Program Setting for 1 fan coil or Group of fan coils within Setting Contents
  - **First Code No.** - Setting Contents
  - **Second Code No.** - Specific Operation or Setting
- Specific Field Setting codes for a particular fan coil can be found in the Fan Coil Installation Manual or Engineering Manual
  - Any Field Setting codes that do not apply to the particular fan coil will not appear or be selectable
- Field Settings are programmed to permanent memory in the Fan Coil(s) Control PCB

EXAMPLE: Field Setting for optional condensate pump float switch connected to fan coil T1 T2 Forced Off

Mode No.	First Code No.	Setting Contents	Second Code No 01	02	03	04	Details No
12 (22)	0	Optional accessories output selection (field selection of output for adaptor for wiring)	Indoor unit turned ON by thermostat	—	Operation output	Malfunction output	(5)
	1	ON/OFF input from outside (Set when ON/OFF is to be controlled from outside.)	Forced OFF	ON/OFF control	External protection device input	—	(6)

FXMQ_P Static Pressure Adjustment

Auto Adjust Mode

- Enter the Field Setting into the Remote Controller
  - **11(21) 7-03 Start Auto Adjust**
- Save Field Setting and exit to main display
- Select FAN mode
- Place Remote Controller into the ON operation with solid status LED
- Fan Coil will go into the Auto Adjust mode and run the blower for 8 to 10 mins.
- On completion of the operation, fan will shut down and status LED on the Remote Controller will go Off.
- After unit shuts down check to see that Field Setting 11(21) 7-03 has changed to 11(21) 7-02, this indicates successful completion of Auto Airflow Adjustment

MODE NO.	FIRST CODE NO.	Setting contents
11 (**21**)	7	Airflow adjustment
SECOND CODE NO.		
01	02	03
OFF	Completion of airflow adjustment	Start of airflow adjustment

NOTE: If you choose to manually set static pressure the Field Setting for Auto Adjust must be OFF. Change code to: 11(21) 7-01

FXMQ_P Static Pressure Adjustment

Select ESP

- Specific static pressure can be programmed based on the static pressure codes provided for the specific FXMQ_P capacity model
  - Static pressure codes are listed in the Installation Manual
  - Codes which do not apply to a specific capacity model are not selectable
- Field Setting Code: **13(23) 06- ##**
- "Auto Adjust" must be OFF 11(21)7-01

External Static Pressure	MODE NO.	FIRST CODE NO.	SECOND CODE NO.
0.12 inWG (*1)	13 (23)	06	01
0.20 inWG			02
0.24 inWG			03
0.28 inWG			04
0.32 inWG			05
0.36 inWG			06
0.40 inWG			07
0.44 inWG (*2)			08
0.48 inWG (*2)			09
0.52 inWG (*2)			10
0.56 inWG (*2)			11
0.60 inWG (*2)			12
0.64 inWG (*2)			13
0.72 inWG (*2)			14
0.80 inWG (*2)			15

FXDQ Static Pressure Change

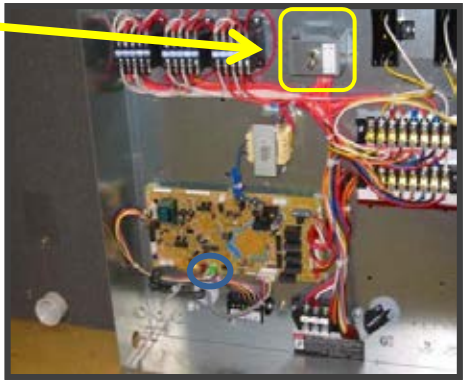
- To change static from “Standard” to “High”, a field setting must be programmed at the remote controller
- Change Field Setting **13(23) 5 – <u>01</u>** to **<u>02</u>**
- This static pressure change to HIGH is recommended for all FXDQ ducted applications

Mode No. Note 2	Setting Switch No.	Setting Contents	Second Code No.(Note 3)			
			01	02	03	04
13(23)	0	Setting of normal air flow	N	H	S	—
	1	Selection of air flow direction (Set when a blocking pad kit has been installed.)	F (4 directions)	T (3 directions)	W (2 directions)	—
	3	Operation of downward flow flap: Yes/No	Equipped	Not equipped	—	—
	4	Field set air flow position setting	Draft prevention	Standard	Ceiling Soiling prevention	—
	5	Setting of static pressure selection	Standard	High static pressure	—	—

FXMQ72/96MVJU Static Pressure Change

- The FXMQ72 and 96 fan coils have a manual toggle switch to increase static pressure from LO to HI
- The fan speed is user selectable from the Remote Controller for Lo or Hi air flow

NOTE: See Engineering Manual for fan performance specifications



FXFQ_P Ceiling Height Setting

- To insure proper air flow delivery, it is recommended to set the actual ceiling height field setting code
- To change setting from “Standard” to “High 1” or “High 2”, a field setting must be programmed at the remote controller
- Go to Field Setting 13(23) 0 - ##
- Second Code: 01 = Standard, 02 = High 1, 03 = High 2

		FXFQ - PVJU		Mode No. Note) 1	FIRST CODE NO.	SECOND CODE NO.
		09 · 12 · 18 · 24 · 30 type	36 · 48 type			
Ceiling height (ft.)	Standard · All round outlet	≤ 8-3/4	≤ 10-1/2	13 (23)	0	01
	High ceiling 1	8-3/4 - 10	10-1/2 - 12			02
	High ceiling 2	10 - 11-1/2	12 - 13-3/4			03

FXFQ_P & FXZQ_M7 Air Discharge Settings

- When the 4-way ceiling cassettes require changes to the discharge positions to 2-way or 3-way, a field setting change is required along with the blank-off kit
- To change setting from the factory default of 4-way discharge 13(23) 1-01, the change must be programmed at the remote controller
- Go to Field Setting 13(23) 1, and change the second code from the default “01” to: 02 = 3-way, 03 = 2-way

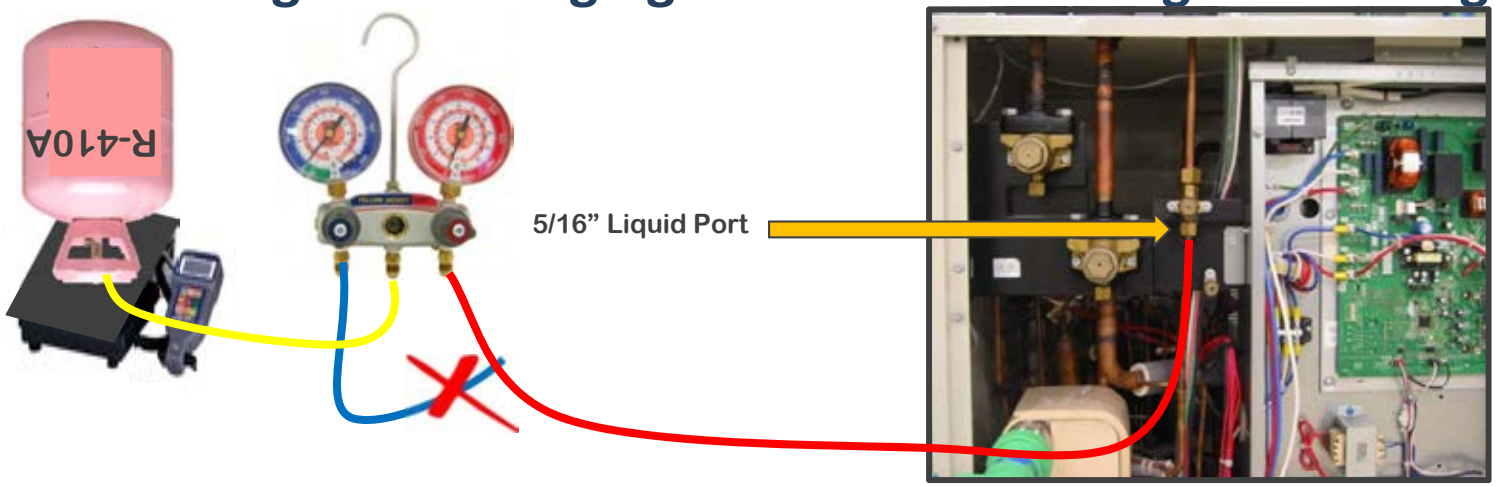
	Mode No.	First Code	Setting Contents	Second Code No.			
				01	02	03	04
	13(23)	1	Selection of airflow direction	F (4 directions)	T (3 directions)	W (2 directions)	-

System Refrigerant Charging

Commissioning Step 7

VRV-WIII System Commissioning

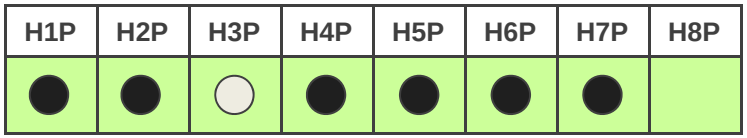
VRV-WIII Refrigerant Charging – "Additional Refrigerant Charge Mode"



- Fan coils and condenser(s) powered up – Remote Controllers OFF – Stop valves open
- Manually start the water circulating pump – Verify flow through heat exchanger
- Digital scale set up with refrigerant bottle set for liquid flow – Hi side hose connected to liquid port and bled
- Close liquid stop valve and open by turning 180° (1/2 turn) – Gas Stop Valve(s) fully open
- Start the "Additional Refrigerant Charge Operation" – Open the Hi side manifold gauge to flow liquid refrigerant into the system
  - The Additional Refrigerant Charge Mode" will automatically terminate after 30 mins. – Restart if required
  - When the remaining amount of liquid refrigerant has been weighed into the system, close off the Hi side manifold gauge first, then press the MODE button on the control PCB to stop the operation.
  - Remove the Hi side hose and fully re-open the Liquid Stop Valve on the condenser
  - Record the total amount of refrigerant charged

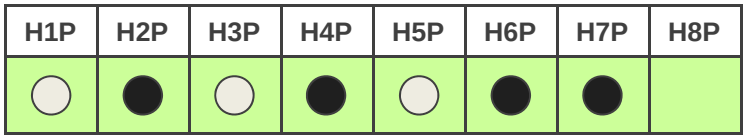
"Additional Refrigerant Charge Mode"

- **START** - Normal Status →

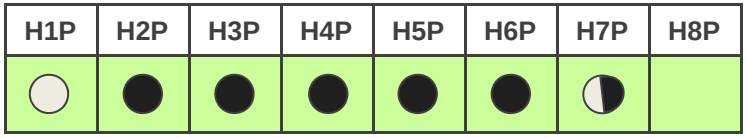


- Press and HOLD **"MODE"** button (Service Mode 2) H1P Solid →

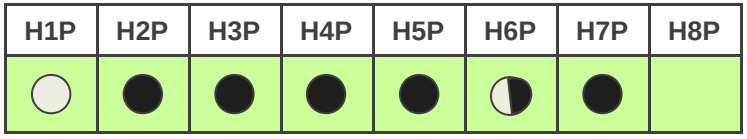
- Press the **"SET"** button 20 times →
  - LED will indicate binary number for every press of the "SET" button 0+16+4



- Press the **"RETURN"** button once →

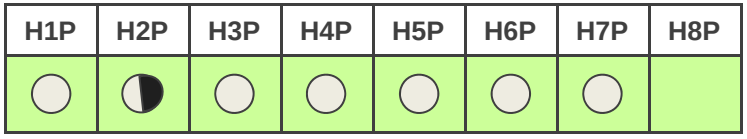


- Press the **"SET"** button once to turn ON →

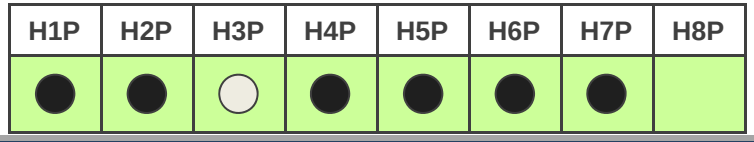


- Press the **"RETURN"** button once to lock on →

- Press the **"RETURN"** button once to activate the setting →



- **Open Liq. Stop valve 180°– HP/LP Gas stop valve(s) open. Add Liquid Refrigerant now thru Liq. Service port**
- Press the **"MODE"** button to return to Normal mode →



NOTE: See Service Tip on next page if system generates a "U1" error code on this mode

Condenser "U1" Error - Single Module System

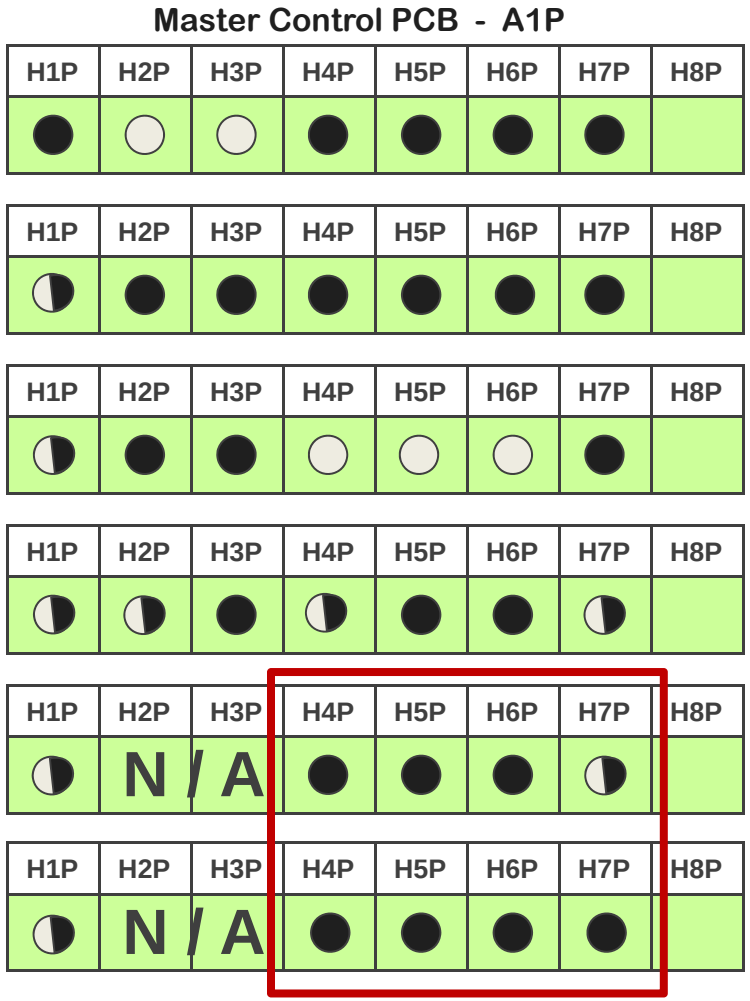
- When trying to start the "Additional Refrigerant Charge" mode or "Check Operation" mode and a **"U1"** or **"U7"**fault code is indicated, the main causes are Reversed Phase or Open Phase
- To correct a Reversed Phase condition on a single module, reverse the wire connections any two line voltage terminals
- Restart condenser

For identifying and correcting **"U1 or U7"** error on a manifolded system see next page

Verify "U1" 3 Phase Error – Manifolded Systems

Monitor "Mode 14" to determine condenser(s) with "U1" fault

- LED status on condenser power up →
- Press **"MODE"** button once →
- Press **"SET"** button 14 times →
- **Confirmation 1** – Press **"RETURN"** once →
  "First Digit" = **"U"**
- **Confirmation 2** – Press **"SET"** once →
  "Second Digit" = **"1"**
- **Confirmation 3** – Press **"SET"** button once →
  Display error location

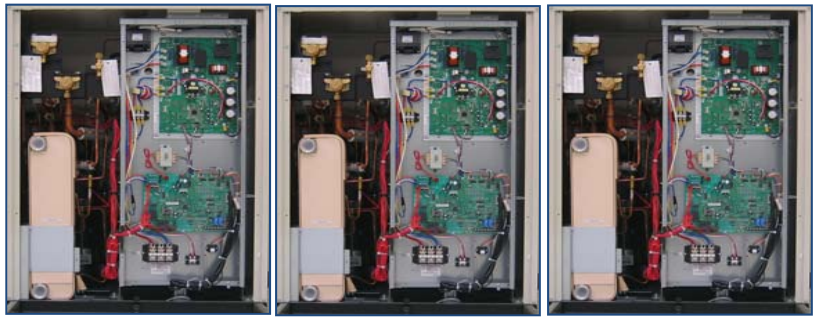


Next page

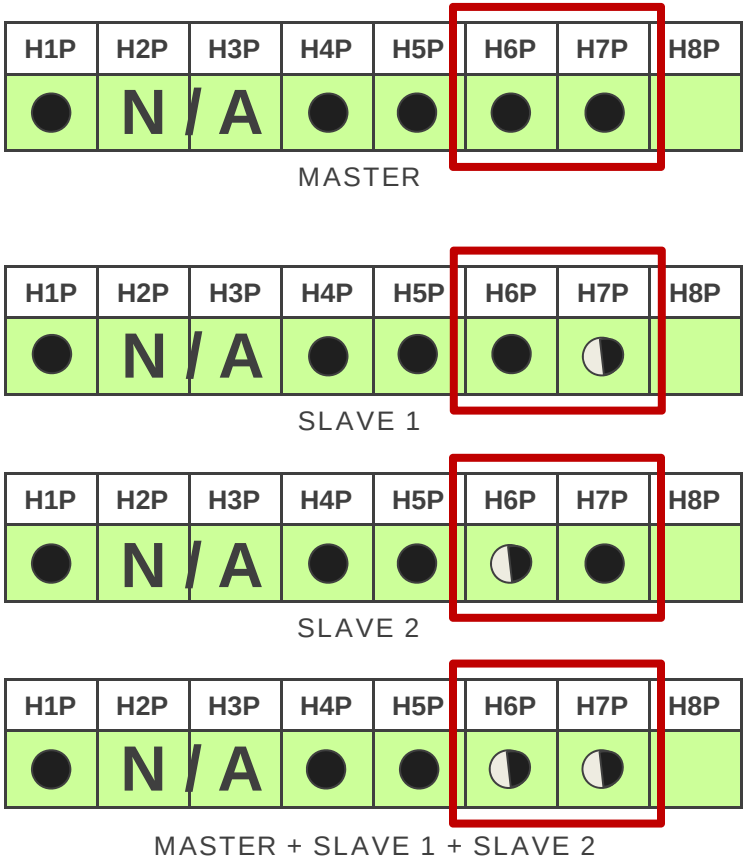
Verify "U1" 3 Phase Error – Manifolded Systems

"Monitor Mode 14" to Determine Condenser(s) with Fault Continued

- **Confirmation 4** – Press **"SET"** button once Display Condenser ID - **H6P** + **H7P** Master/Slave1/Slave 2



SLAVE 2 SLAVE 1 MASTER



Next page

Verify "U1" 3 Phase Error – Manifolded Systems Continued

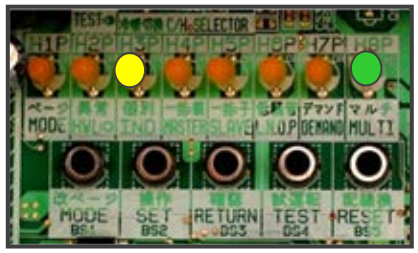
- Press **"RETURN"** button once "Monitor Mode" initial status

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
◑	◑	●	◑	●	●	◑	N/A

- Press **"MODE"** once to return to the original power up display with error.

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
●	○	○	●	●	●	●	N/A

- Power down the condensers and reverse any two line voltage terminals
- Restart all Condensers with no **"U1"** errors



H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
●	●	○	●	●	●	●	○

Normal Status
Master PCB

Check Operation Mode

Commissioning Step 8

VRV-WIII System Commissioning

Check Operation Mode

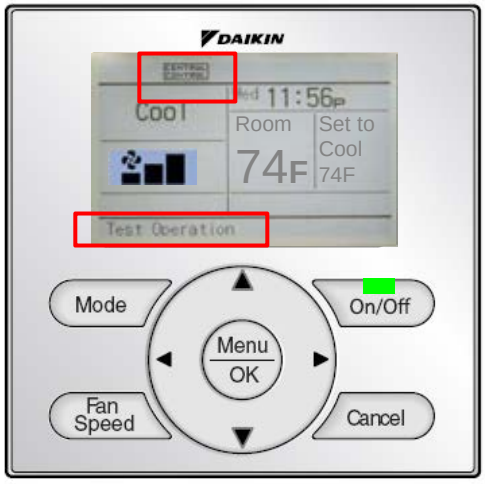
- Verify that all Remote Controllers are "OFF" before starting the Check Operation mode or "U3" error will occur
- To start "Check Operation Mode" Press and HOLD the **"TEST"** button for 5 sec. until LED light sequence changes to H2P blinking & H7P solid

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
●	●	○	●	●	●	●	

→

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
●	◑	●	●	●	●	○	

- Check Operation will take approximately 15 to 40 mins. to complete depending on the size of the system and number of indoor units
- Remote Controllers will indicate "Central Control" with Status LED's on solid
- Check Operation always runs in the COOL mode

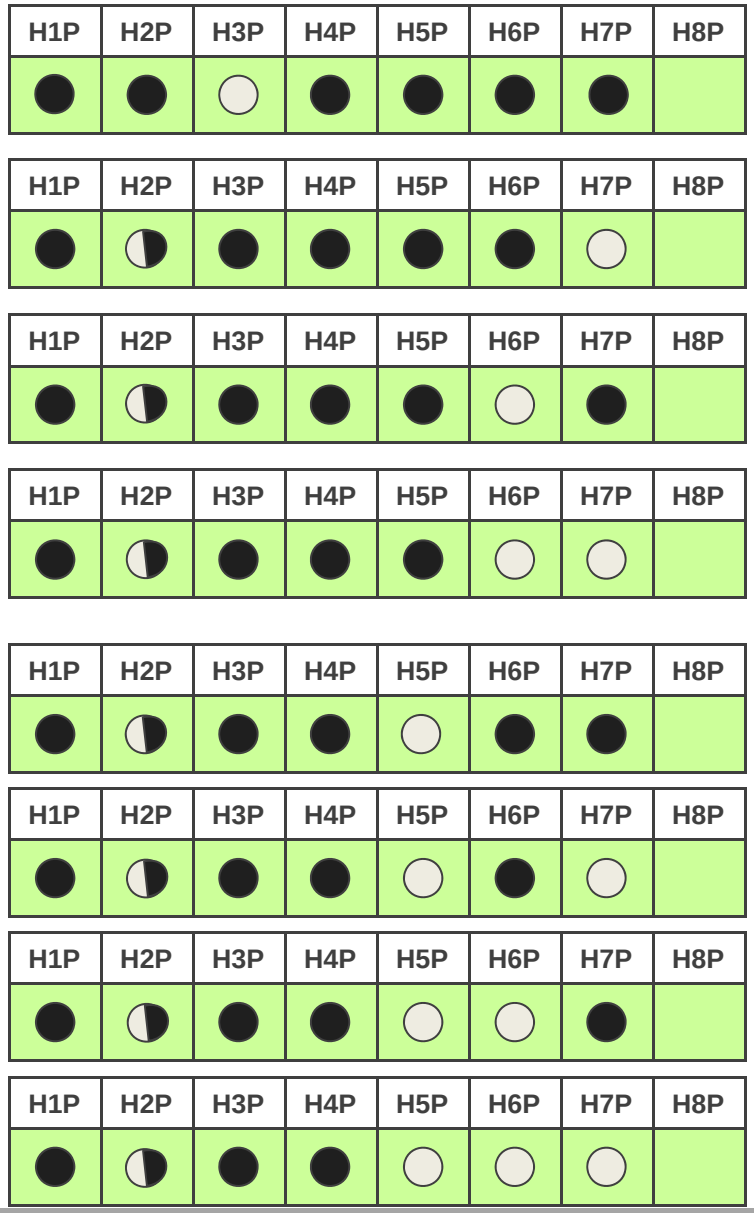


NOTE: See Service Tip on page 65 if system generates a "U1" error code on this mode

Check Operation Mode Sequence

- **START** - Normal Status
  Press and HOLD **"TEST"** button
  5 sec.
- **STEP 1** - Pressure Equalization
  Time: 10 sec. to 10 mins.
- **STEP 2** - Cooling Start Control
  Time: 3 – 5 mins.
- **STEP 3** - Stability waiting operation
  Time: 10 mins.
- **STEP 4 to 6** - Judgement Function
  - Stop valve close check
  - Wrong Wiring check
  - Refrigerant over-charge check
  - Piping Length Check

  Time: 3 mins.



NEXT PAGE

Check Operation Mode Sequence Continued

- **STEP 7** - Pump down residual operation
  Time: 10 sec. – 5 mins.

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
●	◑	●	○	●	●	●	

- **STEP 8** - Standby for restarting
  Time: 5 mins.

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
●	◑	●	○	●	●	○	

- Check Operation Completed
  Return to Normal status

H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
●	●	○	●	●	●	●	

- Remote Controllers revert back to OFF mode with normal display

Potential Error Codes

which could occur during Check Operation Mode

Error Code	Installation Error	Remedial Action
E3, E4, F3, F6, UF	The stop valve on a condenser is left closed.	Open stop valve.
U1	The phases of the power to the condenser(s) are reversed.	Exchange two of the three phases (L1, L2, L3).
U1, U4, LC	No power is supplied to a condenser, BS or indoor unit (including phase interruption).	Check if the power wiring for the condensers, BS or inside units are connected correctly.
UF	There is a conflict on the connection of transmission wiring in the system.	Check if the refrigerant piping line and the unit transmission wiring are consistent with each other.
E3, F6, UF	Refrigerant overcharge.	Recalculate the required amount of refrigerant from piping length and correct the refrigerant charge level by refrigerant recovery machine.
E4, F3	Insufficient refrigerant.	Check to see if additional refrigerant charge has been finished correctly. Recalculate the required amount of refrigerant from piping length and then add the adequate amount of refrigerant.
U3	The check operation has not been preformed.	Perform the check operation.
U7, U4, UF, UH	Field wiring is connected to Q1-Q2 terminals on condenser PC-board when the system is a single condenser	Remove the wire from the Q1-Q2 terminals.

Additional Field Settings

Commissioning Step 9

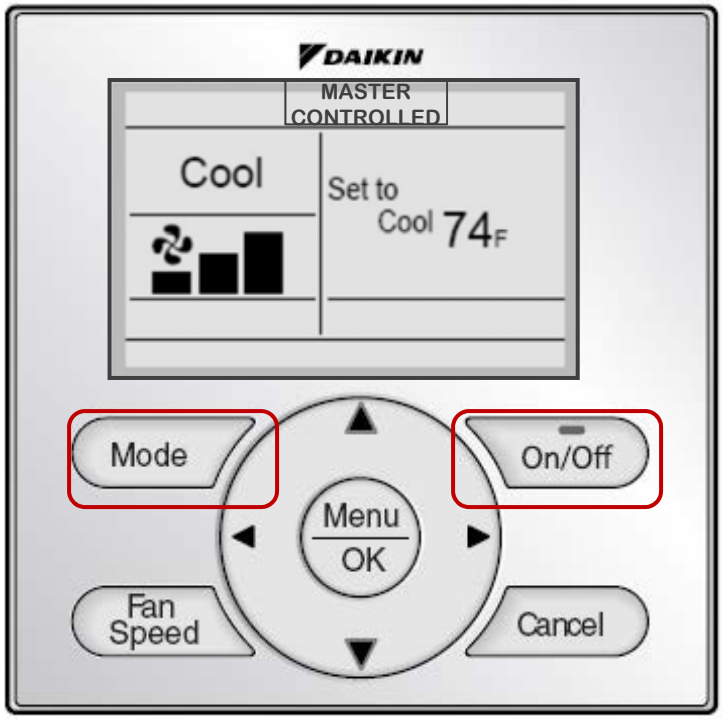
VRV-WIII System Commissioning

Configure Remote Controller *Master* for Heat Pump Applications

- A designated Remote Controller must be configured as the Master in a Heat Pump system, or Heat Recovery where a Branch Selector Box is connected to multiple fan coils with individual Remote Controllers.
- To configure a **BRC1E72** (NAV Remote) as a Master
  - Press any button to bring on the display back light
  - The MASTER CONTROLLED icon will be flashing on all NAV remote controllers
  - Press the "Mode" button once and the Icon will disappear on the Master
  - All other "NAV" Remote Controllers (slaves) will display MASTER CONTROLLED solid
- To configure a **BRC2A72** (Simplified)
  - The Master Controller symbol will be flashing ("Changeover Under Control") on all Simplified RC's
  - Press the "Mode" button once and the symbol will disappear on the Master
  - All other "Simplified" Slave Remote Controllers will display solid
- To change the Master, press & hold the "Mode" button for 5 sec. on the Master RC All RC's go into Master configuration mode

MASTER

BRC1E72 NAV Remote



MASTER

BRC2A71 Simplified

Configure Wireless Remote Controller *Master*

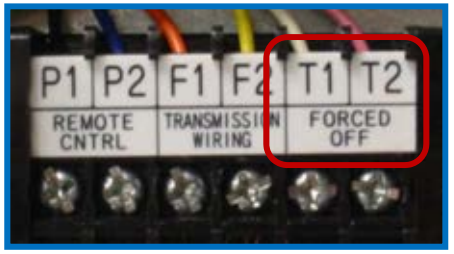
- On power up of indoor units, all “Master Controlled” icons will be flashing on wired controllers ONLY. Wireless controllers will NOT display icon
- Go to the wireless controller you want set as the Master and while pointing the wireless controller at the fan coil
- Press and hold the “MODE” button for approx 4 seconds . You will hear “BEEP BEEP” then another “BEEP BEEP”.
- Press the MODE button a 2nd time and listen for “BEEP BEEP” again; this is the conformation that you have selected this fan coil/Remote Controller as Master
- To change to different zone, go to the Master wireless and hold “MODE” button for 4 seconds. Listen for the “BEEP BEEP” .
- Go to another remote and press “MODE” button

Wireless Hand-Held Remote Controller

Additional Field Settings for Commissioning

- Any remaining system field settings can now be programmed
- Field Settings are listed in the Indoor Unit Installation Manuals and the *VRV-WIII* Service Manual
- Indoor Units (Suggested Examples)
  - T1 T2 Forced OFF configurations – ON/OFF – External Protection Device N.C.
  - Power Louvers Operation (see fan coil Installation Manual)
  - Remote Controller "Main-Sub" Configuration (see controller Installation Manual)
  - NAV remote sensor priority
  - Remote Sensor priority
  - KRP1C Status Output
  - Fan "Auto" Configuration ("P" series fan coils only)
  - Set Point ranges
  - Air Filter Alert

Indoor Unit Field Settings
T1 T2 Forced OFF



- Forced Off is factory programmed for N.O. Manual Reset 12(22) 1-01
  - Field Setting will reprogram dry contact configuration and restart sequence
    - Code 02 - ON-OFF operation (Start/Stop) **12(22) 1-02**
    - Code 03 – N.C. External Field Protection Device Auto Reset (Optional Condensate Pump Float Switch) **12(22) 1-03**

External Input	Mode No.	1st Code No.	2nd Code No.
Forced Off	12(22)	1	**01** – Default Manual Reset
ON/OFF Op	12(22)	1	02
Ext Protection Device	12(22)	1	03 Auto Reset

Fan Coil Field Settings - T1 T2 Forced Off – External Protection Device

- Any fan coils utilizing the optional condensate pumps must have the “Forced Off” field setting changed to accommodate the safety float switch operation (External Protection Device - N.C.)
  - T1 T2 Forced Off has a factory default of N.O. Code 01
  - NOTE: When the float switch is connected to T1 T2 the Remote Controller will display CENTRAL CONTROL or ⅄ and cannot be turned on manually unless the field setting is changed to 03.
- Change the field setting to **12(22) 1-03** for condensate float switch operation: N.C. with automatic reset

EXAMPLE: Field Setting for optional condensate pump float switch connected to fan coil T1 T2 Forced Off

Mode No. Note 2	First Code No.	Setting Contents	Second Code No.(Note 3) 01	02	03	04	Details No
	0	Optional accessories output selection (field selection of output for adaptor for wiring)	Indoor unit turned ON by thermostat	—	Operation output	Malfunction output	(5)
12 (22)	1	ON/OFF input from outside (Set when ON/OFF is to be controlled from outside.)	Forced OFF	ON/OFF control	External protection device input	—	(6)

Indoor Unit Field Settings
Space Sensor Priority

- **Space Sensor priority can be changed for specific applications**
  - Return Air thermistor disabled (Direct fresh air / High ceiling return)
  - FXTQ Air handler with BRC2A71 Simplified Remote Controller
  - BRC1E72 Remote Controller Sensor Priority
  - No Remote Controller used

Mode No. (Note 1)	First Code No.	Description	Second Code No. (Note 2) (Cells in bold are factory default settings)			
			01	02	03	04
10(20)	2	Priority of thermistor sensors for space temperature control	**The return air thermistor is primary and the remote controller thermistor is secondary.**	Only the return air thermistor will be utilized.	Only the remote controller thermistor will be utilized.	--

Indoor Unit Field Settings
FXMQ_MF O.A. Processor Discharge Temperature Setting

- A dedicated BRC1E72 Remote Controller is required to control the O.A. Processor Unit
  - A field Setting programs the operating discharge temperature for Heat and Cool
  - Mode No. 14 (24)
  - First Code No. 3 – Cooling 4 – Heating
  - Second Code No. Heat Discharge Temp
    Cool Discharge Temp

		for cooling	for heating
Mode No.		14 (24)	14 (24)
FIRST CODE NO.		3	4
SECOND CODE NO.	01	55°F	64°F
	02	57°F	66°F
	03	59°F	68°F
	04	61°F	70°F
	05	63°F	72°F
	06	64°F	73°F
	07	66°F	75°F
	08	68°F	77°F
	09	70°F	79°F
	10	72°F	81°F
	11	73°F	82°F
	12	75°F	84°F
	13	77°F	86°F

NOTE: There is no temperature or fan speed displayed on the Remote Controller

Indoor Unit Field Settings
VRV Fan "AUTO" Configuration

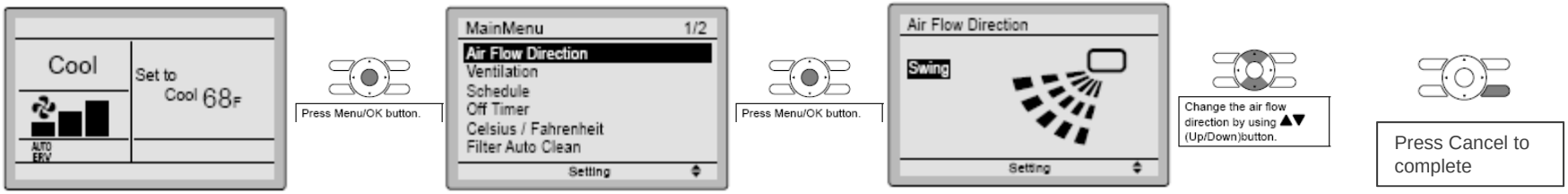
- The VRV fan coils operate with constant fan operation in the Thermo-off mode (zone satisfied)
  - Heat mode fan speed operates in **LL** speed
  - Cool mode fan speed operates on user selected speed: **L – H – HH**
- Fan operation in the Thermo-off mode may be reprogrammed by changing the field setting for Heat or Cool modes ("P" series fan coils)

Fan Auto Configuration	Fan Speed **LL**	Fan Speed **User Set**	Fan Speed **OFF**
Fan Speed **Heat** Thermo-off	**12(22)-3-01 Default**	**12(22)-3-02**	**12(22)-3-03**
Fan Speed **Cool** Thermo-off	**12(22)-6-01**	**12(22)-6-02 Default**	**12(22)-6-03**

Indoor Unit Field Settings
Power Louver Operation




- The VRV fan coils with power louvers (flaps) can be programmed
  - Power Louver settings are programmed from the BRC1E72 Navigation Remote Controller only
  - Factory set operation: louvers oscillate up and down automatically when the fan coil is ON
  - From the Main Menu on the BRC1E72 Remote Controller, the louvers can be programmed to a selected angle when the fan coil is ON



Commissioning Completion

- Before any installation is considered complete, the *VRV-WIII* system should be operated in both the cool mode and the heat mode to insure correct water temperature differential and proper system operation.
- On Heat Recovery systems, every zone should be cycled in Heat & Cool to verify that the Branch Selector Boxes are functioning properly.
- The Condenser "Y" Strainers should be inspected and cleaned as needed, and the flow rate and heat exchanger ΔT should be verified.
- Centralized control systems should be configured and programmed after the *VRV-WIII* system or systems are fully operational.
- Copies of the ***VRV-WIII*** IOM's should be kept by the installing contractor and on the job site with the end user for future reference.

Selected Condenser Service Settings

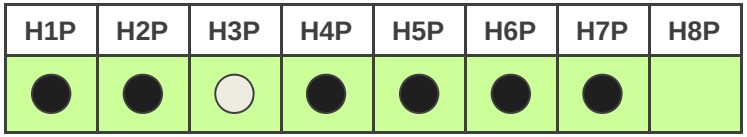
VRV-WIII System Commissioning

Selected Condenser Service Settings

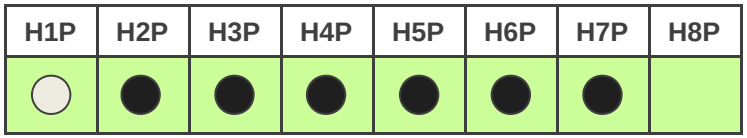
- If during the course of system installation before commissioning, line voltage power was applied to the Fan Coils and Branch Selector Boxes, the *electronic expansion valves* will close. This will impede the pressure testing and evacuation procedures required to prepare the system for commissioning. Under these conditions, a service setting at the condenser for **"Refrigerant Recovery & Evacuation Mode"** can be used to re-open all of the system *electronic expansion valves*.
- The **"Refrigerant Recovery & Evacuation Mode"** is also used when repairing system refrigerant leaks
- **"Monitor Mode 14"** can display all error codes relating to the condenser(s)
- **Central Pump Interlock** – DTA104 (Optional PCB)

"Refrigerant Recovery & Evacuation Mode"

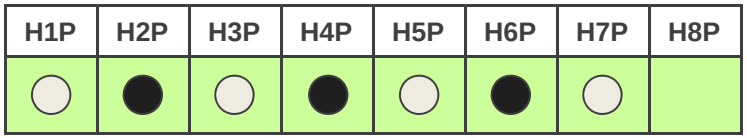
- **START** - Normal Status →



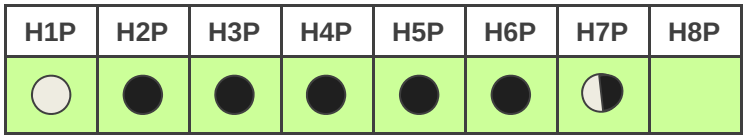
- Press and HOLD **"MODE"** button 5 sec. (Service Mode 2) H1P Solid →



- Press the **"SET"** button 21 times
  - LED will indicate binary number for every press of the "SET" button 16+4+1 →

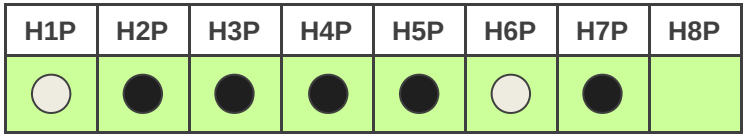


- Press the **"RETURN"** button once →

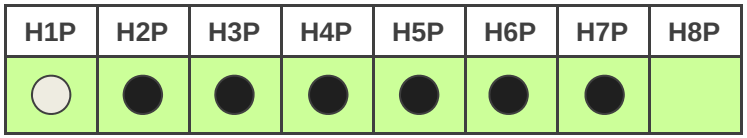


- Press the **"SET"** button once to turn ON →

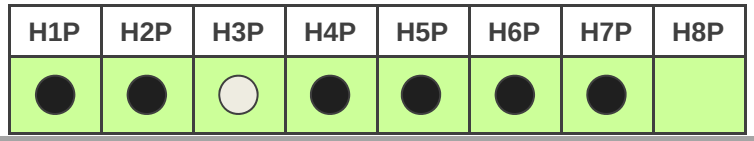
- Press the **"RETURN"** button once to lock on →



- Press the **"RETURN"** button once to activate the setting →

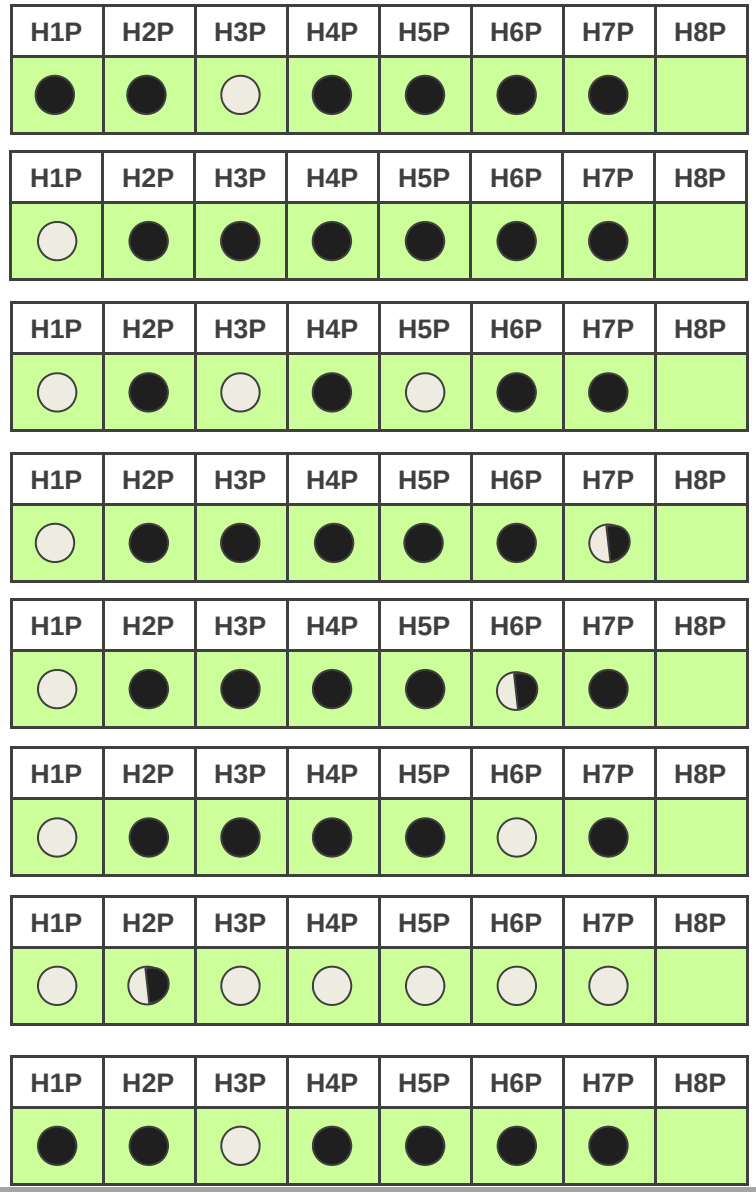


- **Pressurize, Evacuate, or Recover now**
- Press the **"MODE"** button to return to Normal mode →



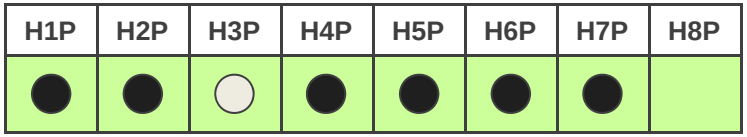
"Additional Refrigerant Charge Mode"

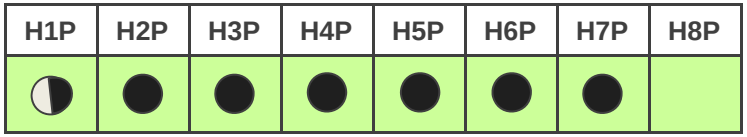
- **START** - Normal Status →
- Press and HOLD **"MODE"** button (Service Mode 2) H1P Solid →
- Press the **"SET"** button 20 times
  - LED will indicate binary number for every press of the "SET" button 0+16+4
- Press the **"RETURN"** button once →
- Press the **"SET"** button once to turn ON →
- Press the **"RETURN"** button once to lock on →
- Press the **"RETURN"** button once to activate the setting →
- **Open Stop valve 180°– HP/LP Gas stop valve(s) open. Add Liquid Refrigerant now thru Liq. Service port**
- Press the **"MODE"** button to return to Normal mode →

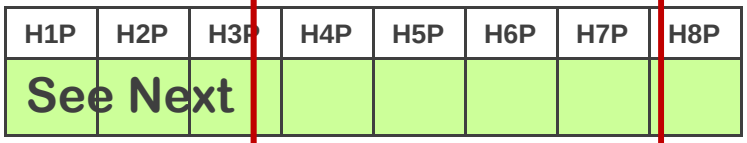


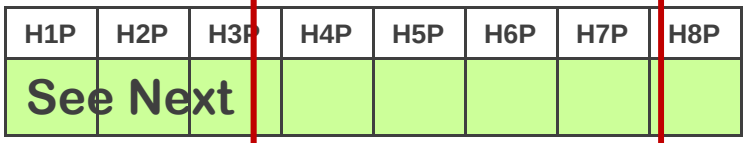
Manifolded Systems "Monitor Mode 14" to determine Condenser(s) with error code

- LED status on condenser
- Press "MODE" button once
- Press "SET" button 14 times
- Confirmation 1 – Press "RETURN" once "First Digit" SEE Page 90
- Confirmation 2 – Press "SET" once "Second Digit" SEE Page 91



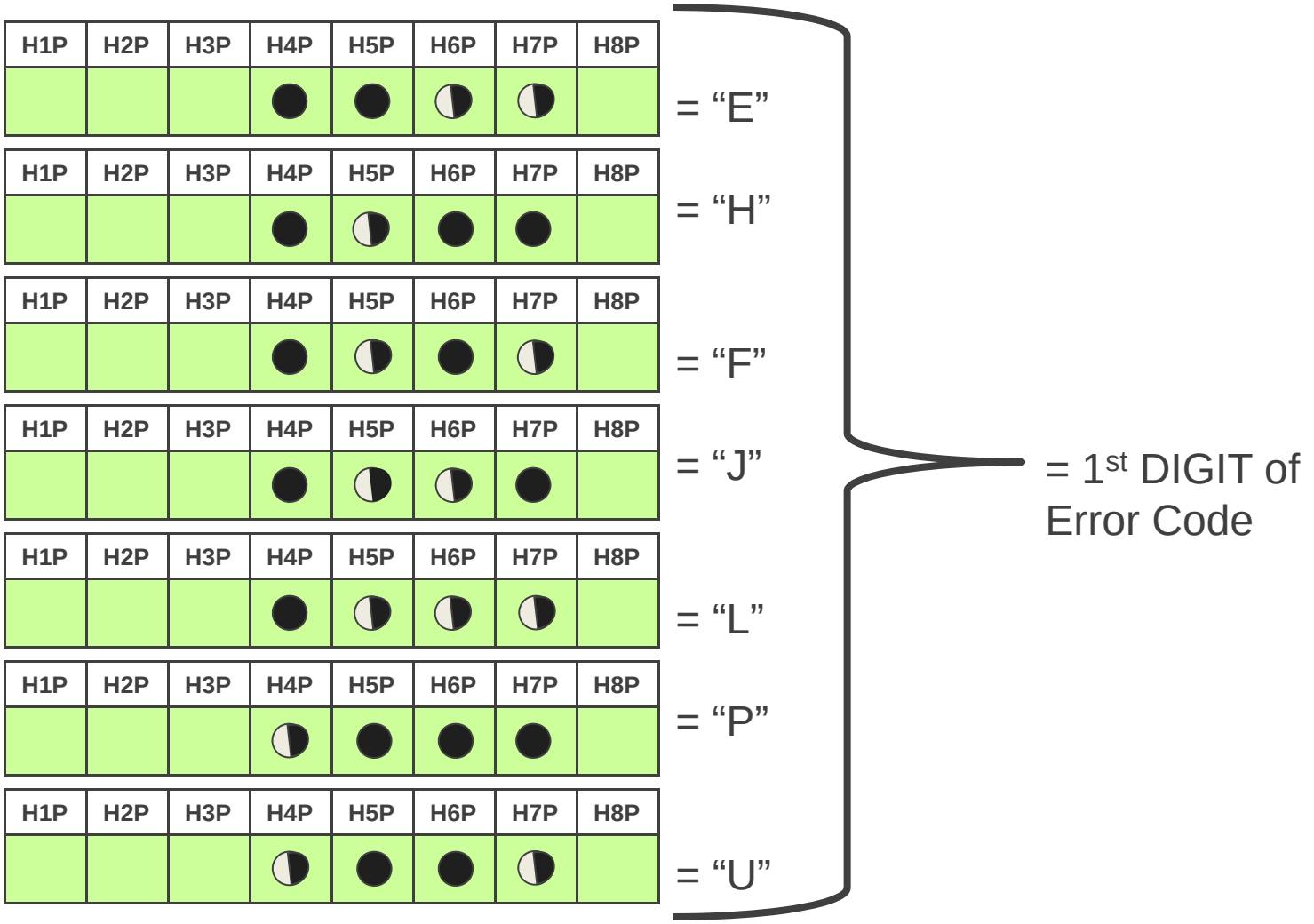






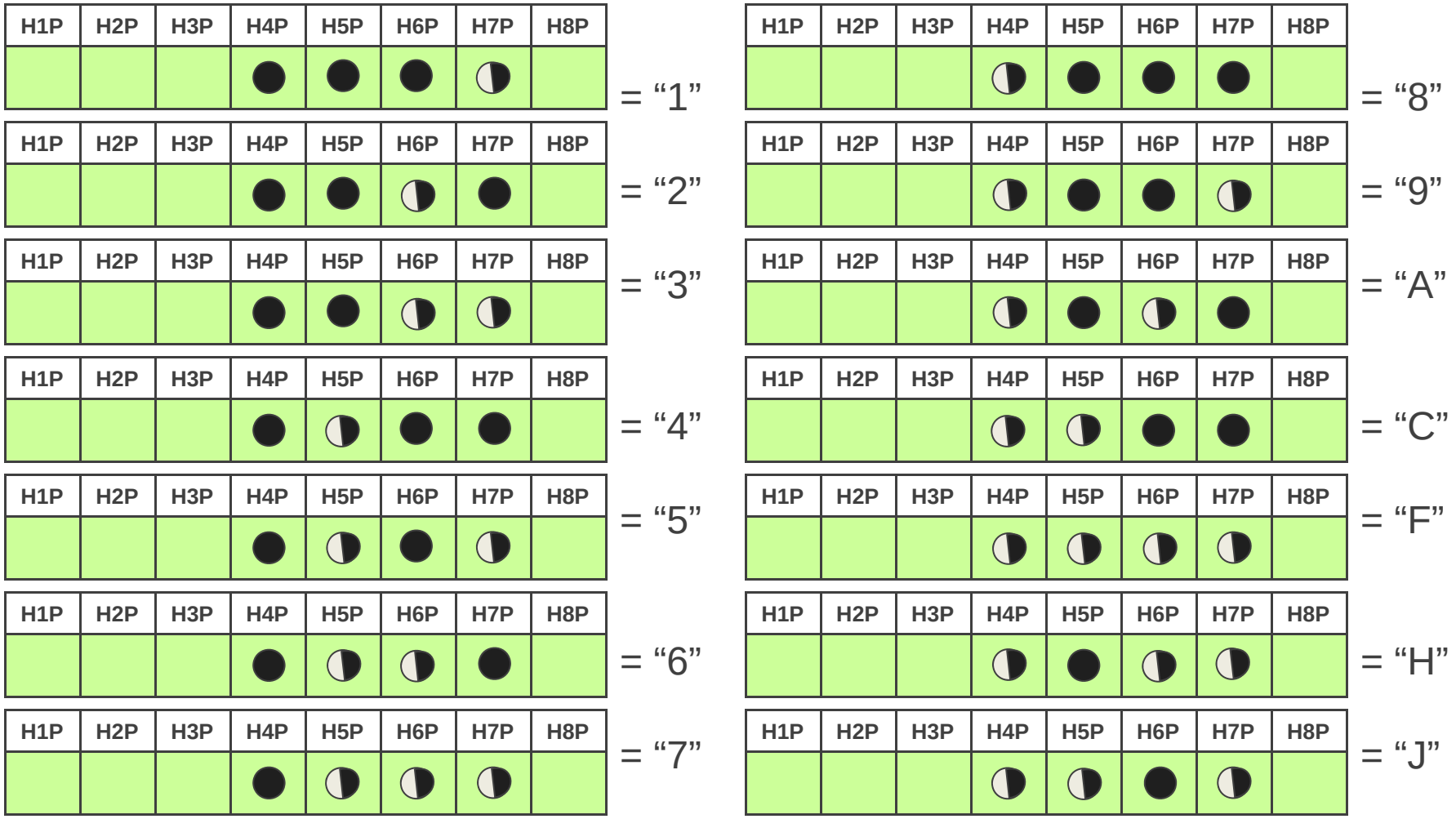
NOTE: This must be used along with the *VRV-WIII* Service Manual so as to accurately determine and interpret the error code

Monitor Mode 1 LED Sequence to Error Code "Confirmation 1"- "RETURN" = 1st Digit of Error Code



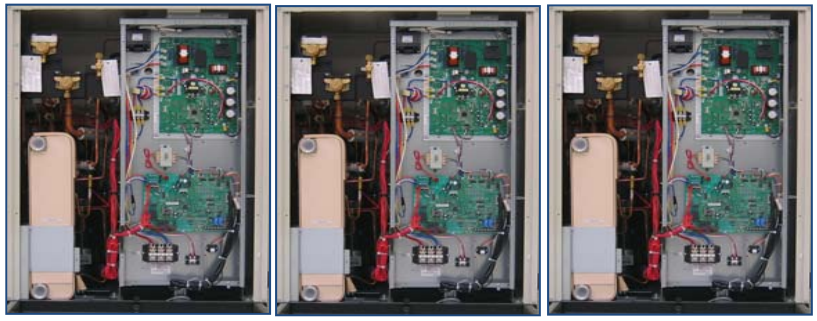
Continue to next page for 2nd Digit of Error Code

Monitor Mode 1 LED Sequence
to Error Code "Confirmation 2" - "SET" = 2nd Digit of Error Code

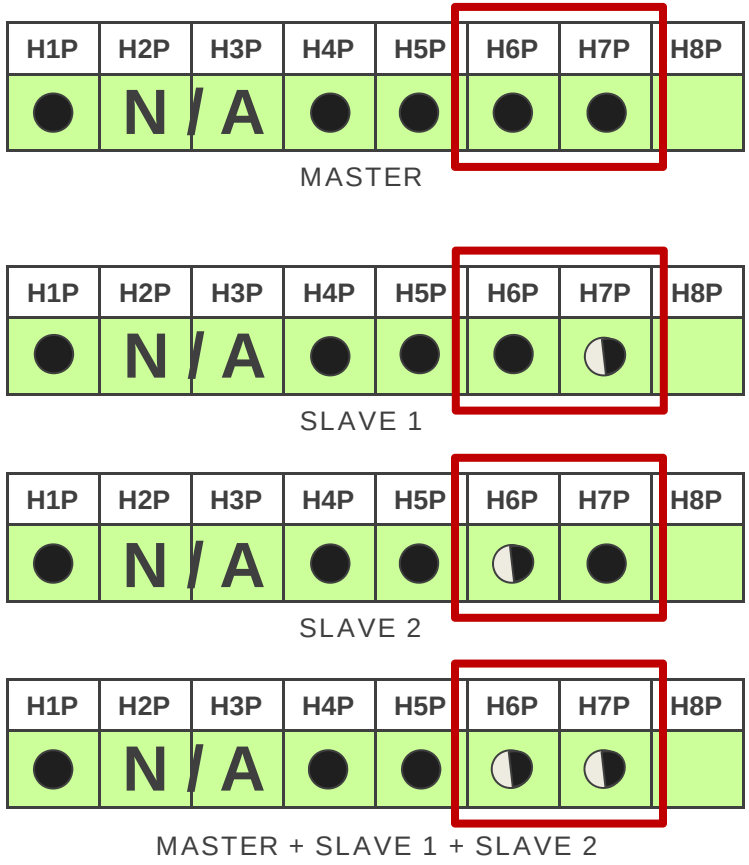


Manifolded Systems
Monitor Mode 1 to Determine Condenser(s) with Fault Continued

- **Confirmation 4** – Press **"SET"** button once
  Display Condenser ID - **H6P** + **H7P**
  Master/Slave1/Slave 2



SLAVE 2 SLAVE 1 MASTER



Next page

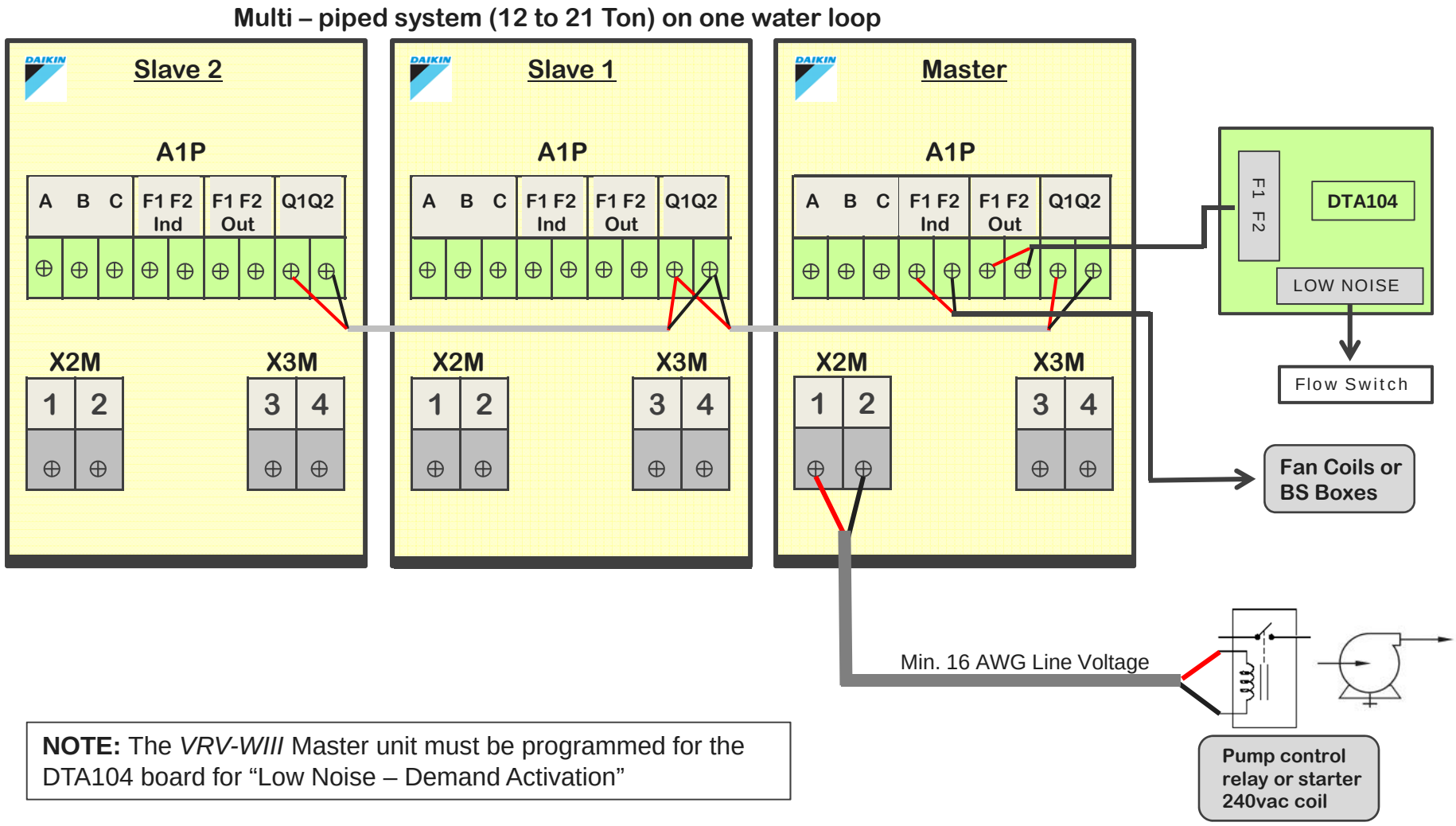
Manifolded Systems "Monitor Mode 1" to Determine Condenser(s) with Error Code Continued

- **Press "RETURN" button once**
  "Monitor Mode" initial status

- **Press "MODE" to return to the original power up display with error.**

- **Power down the condensers and correct the error issues**
- **Restart all Condensers**

Central Pump Interlock – DTA104 PCB



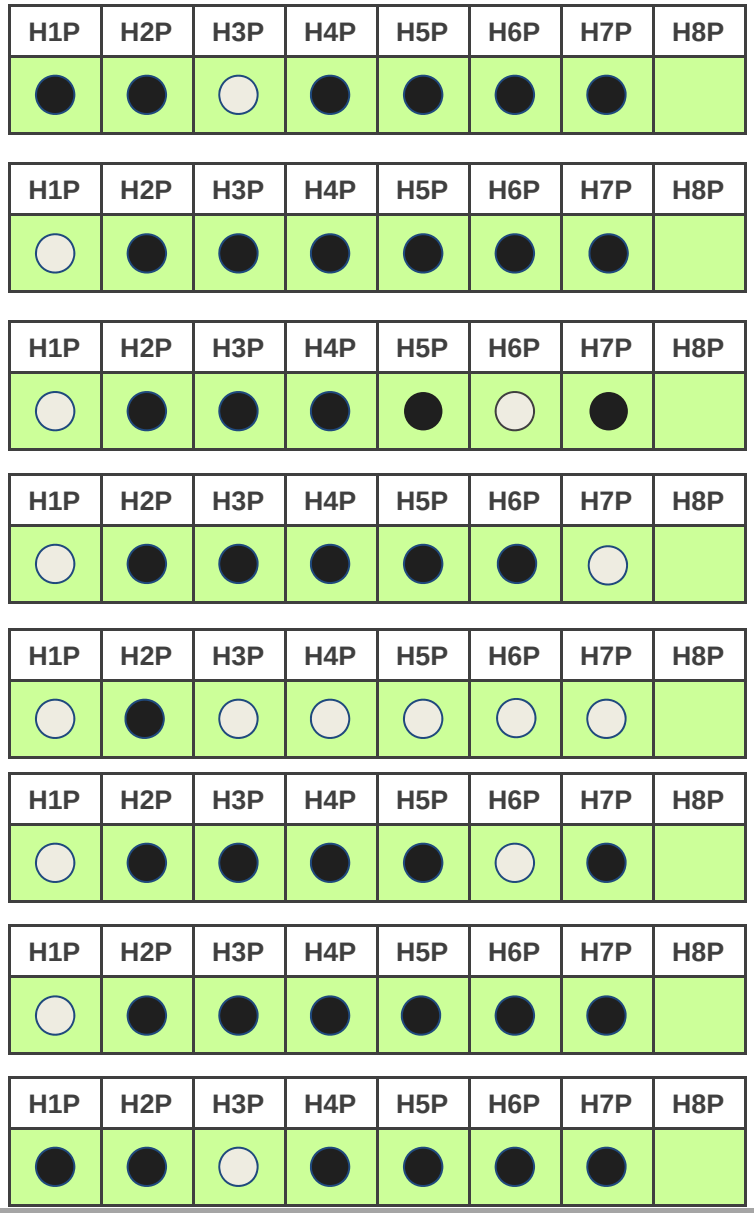
NOTE: The *VRV-WIII* Master unit must be programmed for the DTA104 board for "Low Noise – Demand Activation"

Low Noise / Demand Address Setting

- At start - LED status Normal – **H3P** solid

SERVICE MODE 2

- Press and Hold the **"MODE"** button for approx 5 seconds until you see the H1P LED on solid
- Press the **"SET"** button 2 times
- Press the **"RETURN"** button once
- Press the **"SET"** button once for address 1, twice for 2 up to 31
- Press the **"RETURN"** button once to Lock the setting
- Press the **"RETURN"** button once to Activate the setting
- Press the **"MODE"** button once to return to Normal mode

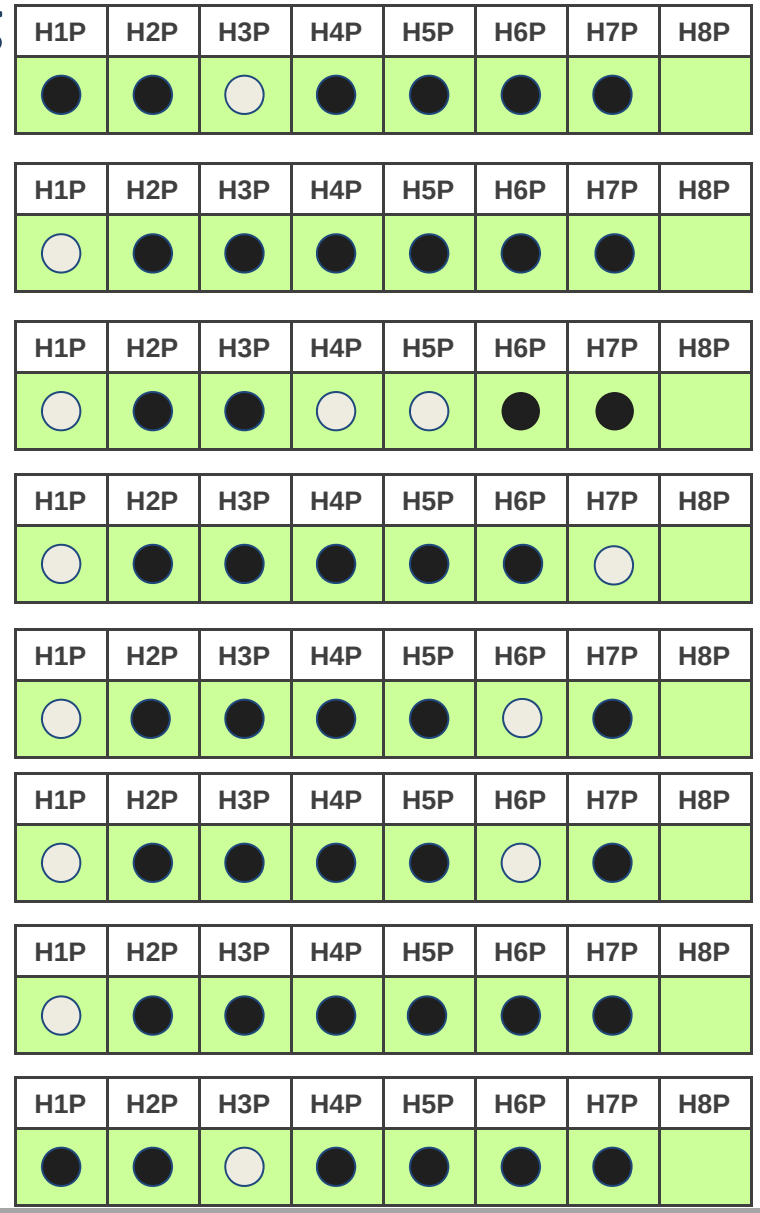


Low Noise / Demand Activation Setting

- At start - LED status Normal – **H3P** solid

SERVICE MODE 2

- Press and Hold the **"MODE"** button for approx 5 seconds until you see the H1P LED on solid
- Press the **"SET"** button 12 times
- Press the **"RETURN"** button once
- Press the **"SET"** button once to turn ON
- Press the **"RETURN"** button once to Lock the setting
- Press the **"RETURN"** button once to Activate the setting
- Press the **"MODE"** button once to return to Normal mode



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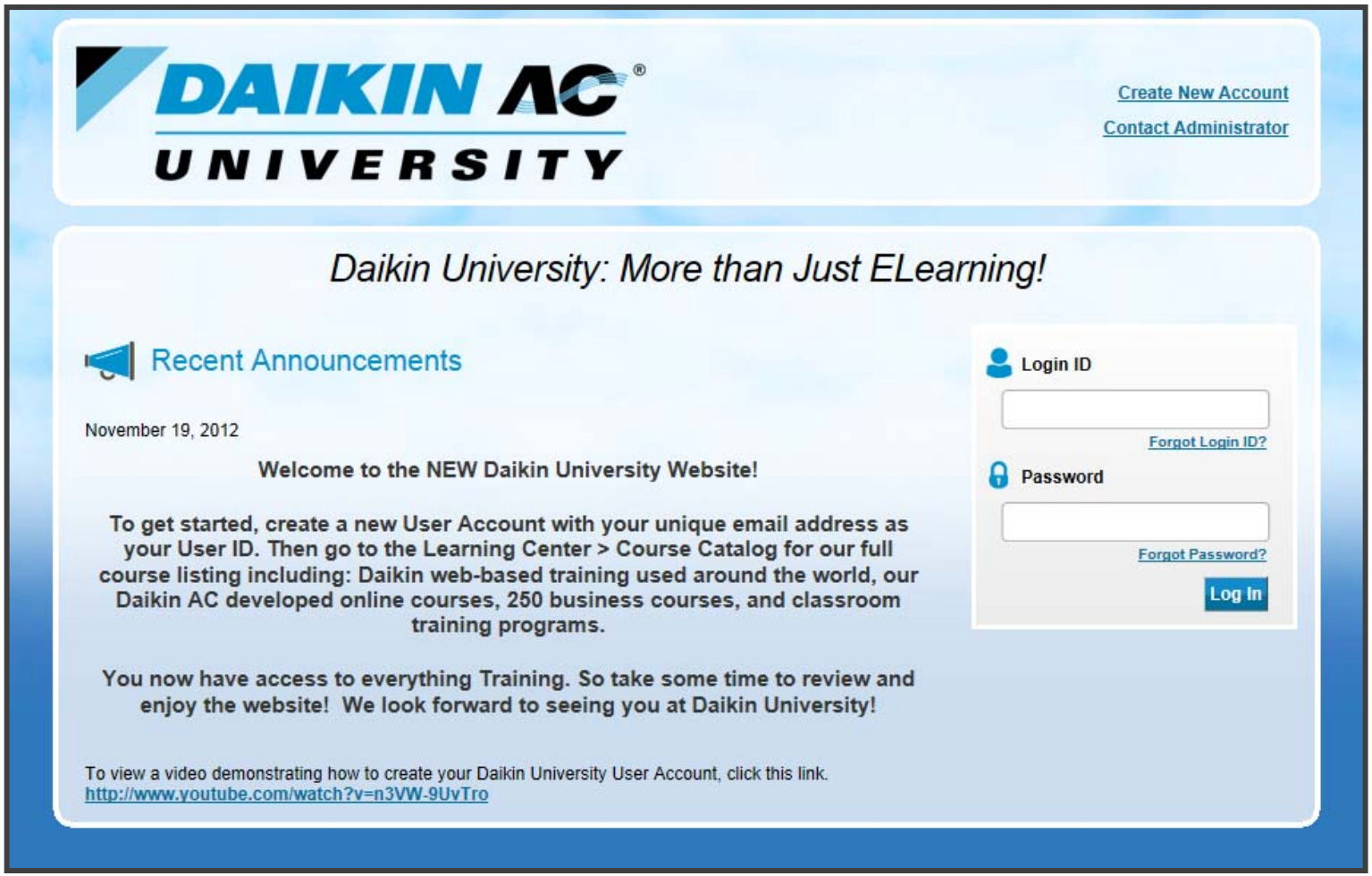

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For more detailed information, refer to the *DAIKIN* ***VRV-WIII*** Service, Installation and Engineering Manuals. These materials are available as electronic copies through www.daikinac.com and TRL.

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