Tritonservices, inc.

8162 Duke Bo
Mason, OH
Phone: 513-67
Fax: 513-67
http://www.tritonservice

Submittal:

Variable Refrigerant Volume

Attention: **Mr. Stanley Meczywor**
Phone: 972-682-1435 Fax:
Cell: 254-432-9924 Email: smeczywor@zconstructors.com

Spec Section: **23 81 29**

Job Name: Cincinnati Rehab Hospital
Job #: 216146 **PM:** Daniel Glover

To:
Z Constructors
Attention: Mr. Stanley Meczywor
201 W. Kaufman Street

Richardson, TX 75081
Phone: 972-682-1435 Fax:

Submittal Notes: **FCU's - PAGE 20**

Comments:

Contacts:

Supplier	Trane - Cincinnati Mr. Nick Brown, Controls Account Manager 10300 Springfield Pike, Cincinnati, OH, 45215-1118 Phone: 513-771-8884 Fax: 513-772-7286 (
Owner	Cincinnati Rehabilitation Hospital , 4291 Parkview Drive, BlueAsh, OH, 45242 Phone: Fax:
Architect	Perkins & Will Mr. Stephen Anson, Unknown 2218 Bryan Street, Suite 200 Dallas, TX, 75201 Phone: 214-283-8700 Fax:
Engineer	SW Associates Mr. Mike Ashcraft, Unknown 1700 Pacific Avenue, Suite 2100 Dallas, TX, 75201 Phone: 214-397-0211 Fax:
Civil Engineer	Cardinal Engineering Mr. Don Stegman, Unknown One Moock Road, Wilder, KY, 41017- Phone: 859-581-9600 Fax: 859-581-96
General Contractor	Z Constructors Mr. David Regelean, Senior Project Manager 201 W. Kaufman Street, Richardson, TX, 75081 Phone: 972-682-1435 Fax:
General Contractor	Z Constructors Mr. Stanley Meczywor, Sr. Project Engineer 201 W. Kaufman Street, Richardson, TX, 75081 Phone: 972-682-1435 Fax:

☐ Reviewed For Submittal ☐ Approved

☐ _____

Review does not relieve supplier from compliance with requirements of the drawings and specifications or conformance with contract documents.

By: _____ Date: _____
Daniel Glover

Submittal

Project Name:

Cincinnati Rehabilitation Hospital (REV 3/16/2021)

Contractor:	Triton
Engineer:	SW Associates
Architect:	Perkins & Will
Rep/Distributor:	Trane

Project Detail:

Customer:	Cincinnati Rehabilitation Hospital
Address:	Carver Woods Drive
City:	Blue Ash
State:	OH
Zip:	45242

Submittal Date:

8/10/2021

Submitted By:

Name:	Christian Melson
Company:	Trane
Email:	Christian.Melson@Trane.com
Phone:	(513) 415-1785
Submittal Stage:	For Approval

Table Of Contents

AutoCAD Piping & Wiring Diagrams

Cincinnati Rehabilitation Hospital

CONT.No | PAGE

CITY MULTI

SYSTEM SCHEMATIC DWG.

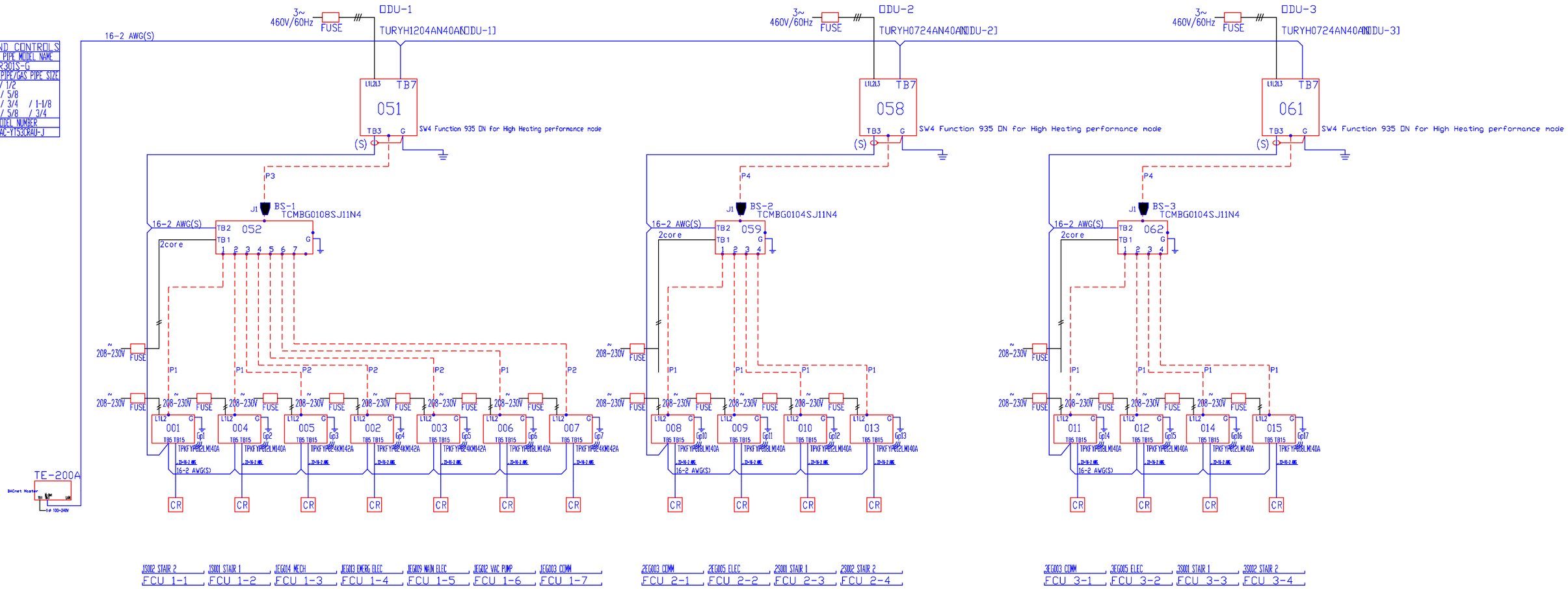
This drawing is schematic in nature. Final routing of piping & wiring shall be determined by the installing contractor and/or designer of record

Additional refrigerant charge is needed depending on the size and length of extended piping. Please refer the amount of pre-charge and the formula of calculation which is mentioned on the data book.

1.25mm²(16 AWG) : 1.25mm²(16 AWG) or more. 0.75mm²(20 AWG) : between 0.5mm²(24 AWG) and 0.75mm²(20 AWG).

DIAGRAM SYMBOL LEGEND	
DISPLAY	DESCRIPTION
——//——	POWER WIRE
———	CONTROL WIRE
———	REF. PIPE

PIPING AND CONTROLS	
SYMBOL	BRANCH PIPE MODEL NAME
J1	CMY-R301S-G
SYMBOL	LIQUID PIPE/GAS PIPE SIZE
P1	1/4 / 1/2
P2	3/8 / 5/8
P3	/ 3/4 / 1-1/8
P4	/ 5/8 / 3/4
SYMBOL	MODEL NUMBER
CR	TAC-YT53CRAU-J



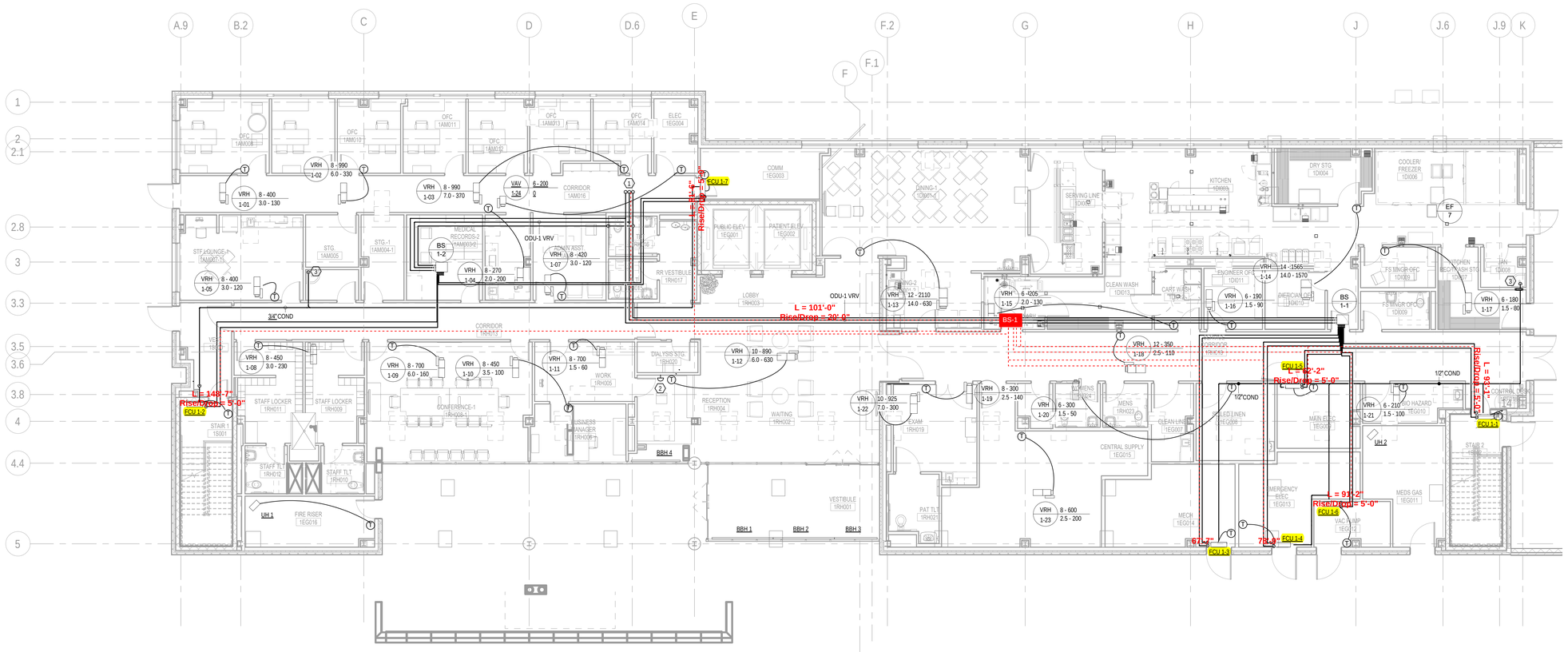
1S002 STAIR 2	1S001 STAIR 1	1EG014 MECH	1EG013 ENERG ELEC	1EG009 MAIN ELEC	1EG012 VAC PUMP	1EG003 COMM	
FCU 1-1	FCU 1-2	FCU 1-3	FCU 1-4	FCU 1-5	FCU 1-6	FCU 1-7	
2EG003 COMM	2EG005 ELEC	2S001 STAIR 1	2S002 STAIR 2				
FCU 2-1	FCU 2-2	FCU 2-3	FCU 2-4				
3EG003 COMM	3EG005 ELEC	3S001 STAIR 1	3S002 STAIR 2				
FCU 3-1	FCU 3-2	FCU 3-3	FCU 3-4				

REMARKS
Originator: Christian Nelson
Comments:

Diamond System Builder
sw: 4.3.1.35
db: 4.3.1.28
8/10/2021
11:45 AM

Refrigerant Piping Materials

Pipe Size (inch)	Total Length (feet)
1/4	989
1/2	989
3/8	292
5/8	497
3/4	390
1 1/8	185



1 LEVEL 01 - FLOOR PLAN - CONTROLS & PIPING

1/8" = 1'-0"

KEYED NOTES:

NOTE: REFERENCE NUMBER INSIDE HEXAGON

1 VRV PIPING UP TO ODU-1. SIZE PER MANUFACTURERS RECOMMENDATIONS.

2 EMERGENCY POWER OFF BUTTON SERVING RTU-1 TO BE LOCATED AT NURSE STATION. SWITCH SHALL BE RED MUSHROOM TYPE PUSH BUTTON WITH HINGED CLEAR PLASTIC COVER. PROVIDE ENGRAVED SIGN THAT READS "HVAC RTU-1 EMERGENCY POWER OFF SWITCH". COORDINATE MOUNTING LOCATION WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN.

3 3/4" CONDENSATE PIPE DOWN TO MOP SINK. TERMINATE 2" AFF.

GENERAL NOTES

A. REFER TO M00-01 FOR GENERAL NOTES AND SYMBOLS.

B. REFER TO M12 SERIES FOR HVAC.

C. REFER TO M13 SERIES FOR CONTROLS.

D. REFER TO M17 SERIES FOR SCHEDULES.

E. REFER TO M18 FOR DETAILS.

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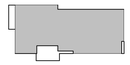
STATE OF OHIO
MIKE L. ASHCRAFT
E-61837
REGISTERED
PROFESSIONAL ENGINEER
04/15/2021
TBD PROJECT

ISSUE FOR CONSTRUCTION 04.15.2021

FACILITY:
CINCINNATI REHABILITATION HOSPITAL
4921 PARKVIEW DRIVE,
BLUE ASH, OH 45242

DEVELOPER:
KENNOR CROSS INVESTMENTS, LLC
4332 MARSH RIDGE ROAD
CARROLLTON, TX 75010

KEYPLAN



ISSUE CHART

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JOB NUMBER	147525.000
DRAWN	WS
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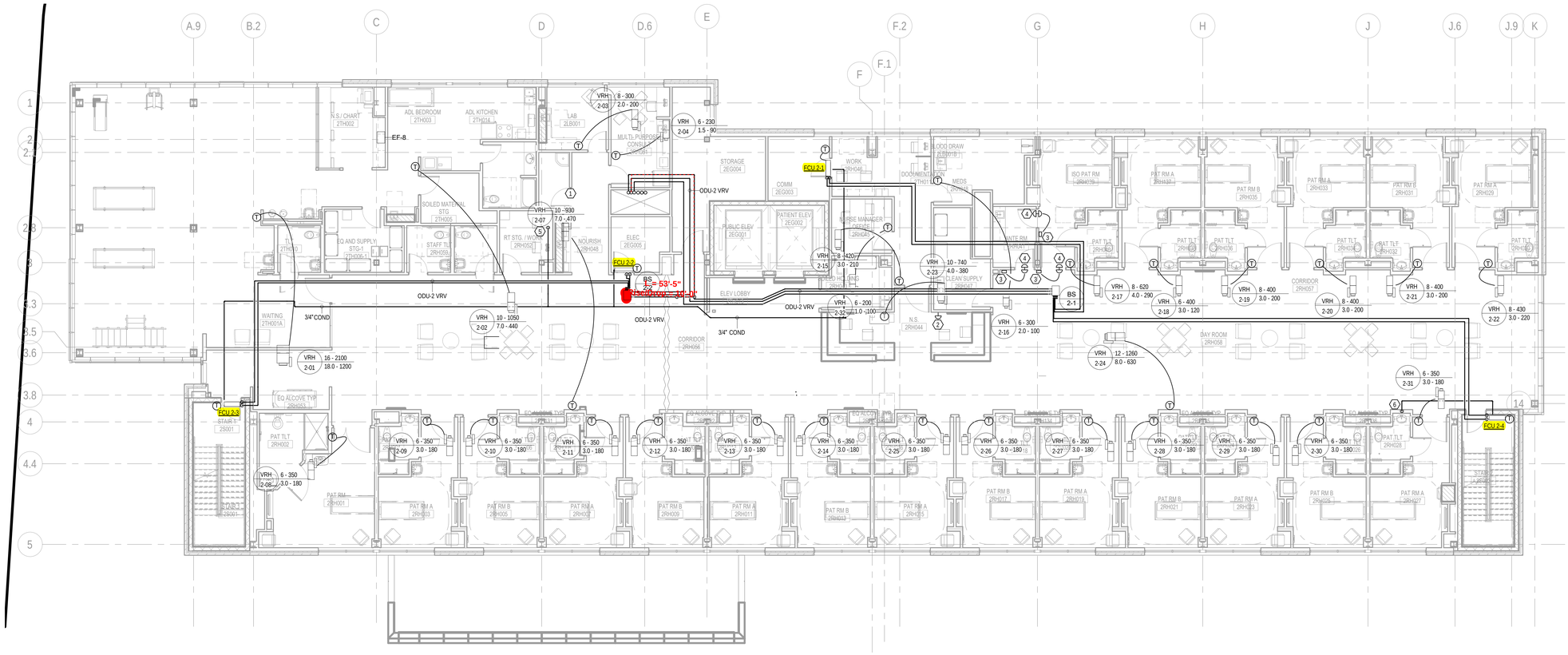
APPROVED	MA

TITLE
FLOOR PLAN - LEVEL 01 - CONTROLS & PIPING

SHEET NUMBER
M13-01

PIPING FROM BS TO FAN COILS SAME AS 3F



1 LEVEL 02 - FLOOR PLAN - CONTROLS & PIPING

1/8" = 1'-0"

KEYED NOTES: (#)

NOTE: REFERENCE NUMBER INSIDE HEXAGON

1 VRF PIPING UP TO ODU-1, ODU-2. PIPING CONTINUES DOWN TO FIRST FLOOR FOR ODU-1.

2 EMERGENCY POWER OFF BUTTON SERVING RTU-2 TO BE LOCATED AT NURSE STATION. SWITCH SHALL BE RED MUSHROOM TYPE PUSH BUTTON WITH HINGED CLEAR PLASTIC COVER. PROVIDE ENGRAVED SIGN THAT READS "HVAC RTU-2 EMERGENCY POWER OFF SWITCH". COORDINATE MOUNTING LOCATION WITH OWNER AND ARCHITECT PRIOR TO ROUSH-IN.

3 ROOM PRESSURE MONITOR TRIATEK MODEL FMS-1650 OR APPROVED EQUAL. SYSTEM SHALL INCLUDE THE FOLLOWING: PRESSURE MONITOR, PRESSURE SENSORS, SENSOR CABLE, TRANSFORMER CABLE, AND TRANSFORMER. MOUNT PRESSURE MONITOR AT 48" A.F.F.

4 ROOM PRESSURE SENSOR, MOUNT PRESSURE SENSOR ABOVE DOOR AND ONE FOOT FORM HINGED SIDE OF THE DOOR.

5 3/4" CONDENSATE PIPE DOWN TO MOP SINK. TERMINATE 2" AFF.

6 3/4" CONDENSATE PIPE DOWN TO SINK DRAIN. TIE IN UPSTREAM OF P-TRAP.

GENERAL NOTES

A. REFER TO M00-01 FOR GENERAL NOTES AND SYMBOLS.

B. REFER TO M12 SERIES FOR HVAC.

C. REFER TO M13 SERIES FOR CONTROLS.

D. REFER TO M17 SERIES FOR SCHEDULES.

E. REFER TO M18 FOR DETAILS.

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MIKE L. ASHCRAFT
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REGISTERED PROFESSIONAL ENGINEER

04/15/2021
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ISSUE FOR CONSTRUCTION 04.15.2021

FACILITY:
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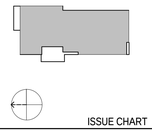
4921 PARKVIEW DRIVE,
BLUE ASH, OH 45242

DEVELOPER:
KENNOR CROSS INVESTMENTS, LLC
4332 MARSH RIDGE ROAD
CARROLLTON, TX 75010

KEYPLAN



ISSUE CHART

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FLOOR PLAN - LEVEL 02 - CONTROLS & PIPING

SHEET NUMBER

M13-02

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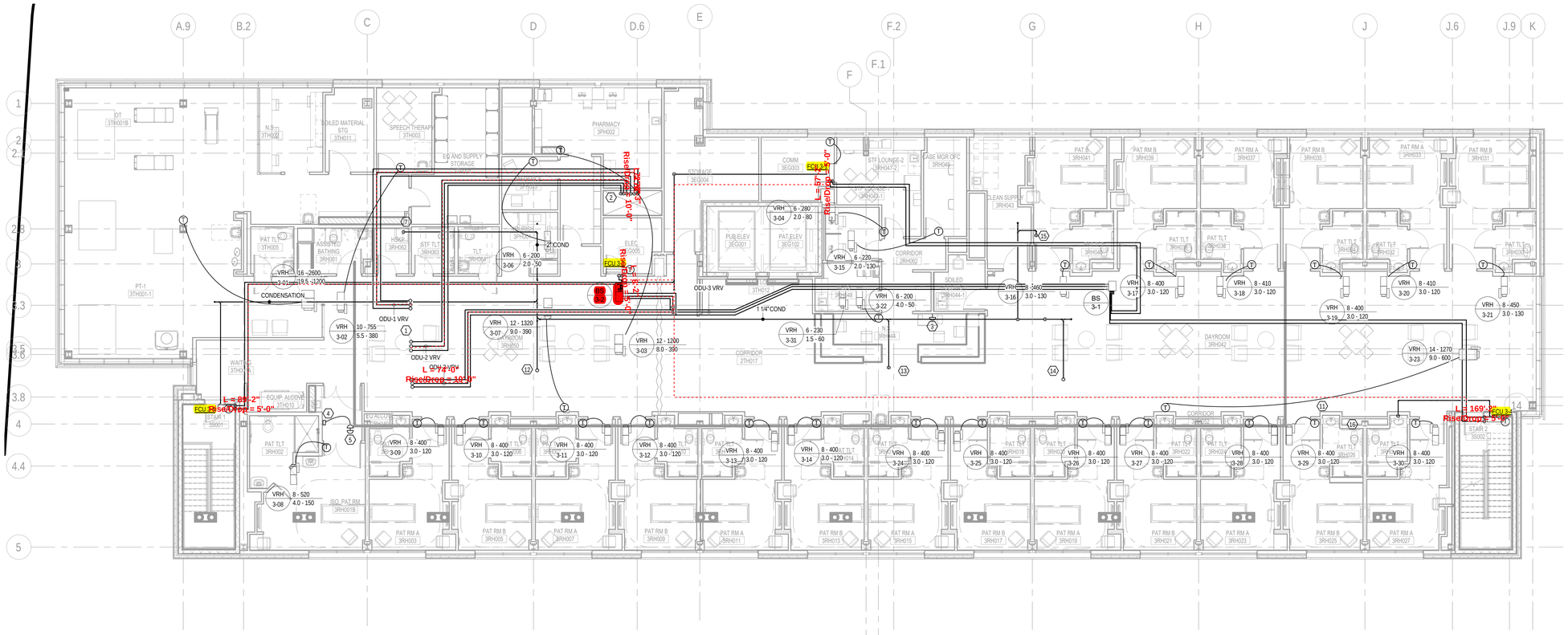

1 LEVEL 03 - FLOOR PLAN - CONTROLS & PIPING

1/8" = 1'-0"

KEYED NOTES:

NOTE: REFERENCE NUMBER INSIDE HEXAGON

1 VRF PIPING UP TO ODU-1, ODU-2, AND ODU-3. SIZE PIPING ACCORDING TO MANUFACTURERS RECOMMENDATIONS.

2 VRF PIPING DOWN TO SECOND FLOOR. SIZE ACCORDING TO MANUFACTURERS RECOMMENDATIONS.

3 EMERGENCY POWER OFF BUTTON SERVING RTU-3 TO BE LOCATED AT NURSE STATION. SWITCH SHALL BE RED MUSHROOM TYPE PUSH BUTTON WITH HINGED CLEAR PLASTIC COVER. PROVIDE ENGRAVED SIGN THAT READS "HVAC RTU-3 EMERGENCY POWER OFF SWITCH". COORDINATE MOUNTING LOCATION WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN.

4 ROOM PRESSURE MONITOR TRIATEK MODEL FMS-1650 OR APPROVED EQUAL. SYSTEM SHALL INCLUDE THE FOLLOWING: PRESSURE MONITOR, PRESSURE SENSORS, SENSOR CABLE, TRANSFORMER CABLE, AND TRANSFORMER. MOUNT PRESSURE MONITOR AT 48" A.F.F.

5 ROOM PRESSURE SENSOR, MOUNT PRESSURE SENSOR ABOVE DOOR AND ONE FOOT FORM HINGED SIDE OF THE DOOR.

7 2" CONDENSATE PIPE DOWN TO MOP SINK. TERMINATE 2" AFF.

11 STEAM PIPE DOWN FROM ROOF H-4. SIZE ACCORDING TO MFG. RECOMMENDATIONS.

12 CONDENSATE DRAIN LINE DOWN FROM RTU-2. SIZE TO MFG RECOMMENDATIONS.

13 CONDENSATE DRAIN LINE DOWN FROM RTU-1. SIZE TO MFG RECOMMENDATIONS.

14 CONDENSATE DRAIN LINE DOWN FROM RTU-3. SIZE TO MFG RECOMMENDATIONS.

15 CONDENSATE DRAIN LINE DOWN FROM MAU-1. SIZE TO MFG RECOMMENDATIONS.

16 HUMIDIFIER DRAIN PIPE DOWN FROM HUMIDIFIER. SIZE PER MFG. RECOMMENDATIONS.

GENERAL NOTES

A. REFER TO M00-01 FOR GENERAL NOTES AND SYMBOLS.

B. REFER TO M12 SERIES FOR HVAC.

C. REFER TO M13 SERIES FOR CONTROLS.

D. REFER TO M17 SERIES FOR SCHEDULES.

E. REFER TO M18 FOR DETAILS.

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REGISTERED PROFESSIONAL ENGINEER

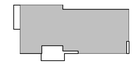
04/15/2021
TBD PROJECT

ISSUE FOR CONSTRUCTION 04.15.2021

FACILITY:
CINCINNATI REHABILITATION HOSPITAL
4921 PARKVIEW DRIVE,
BLUE ASH, OH 45242

DEVELOPER:
KENNOR CROSS INVESTMENTS, LLC
4332 MARSH RIDGE ROAD
CARROLLTON, TX 75010

KEYPLAN



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TITLE
FLOOR PLAN - LEVEL 03 - CONTROLS & PIPING

SHEET NUMBER
M13-03

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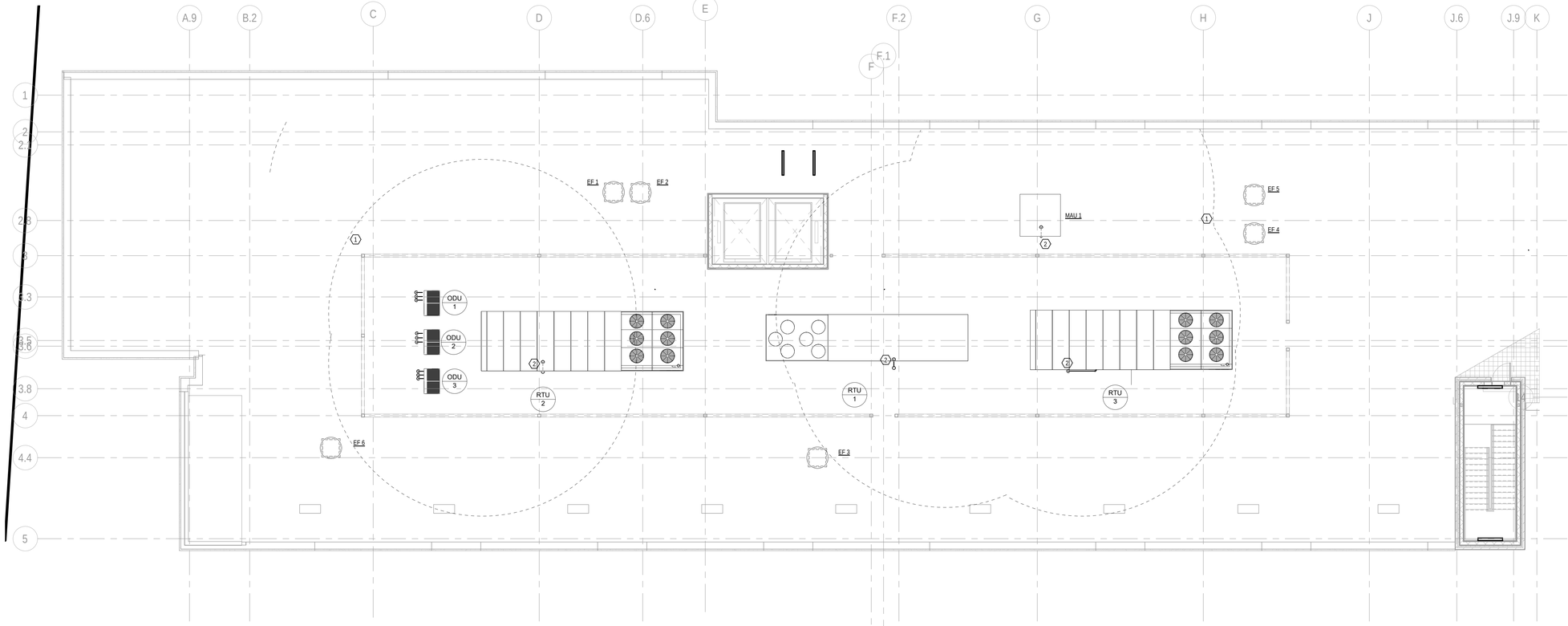

1 ROOF PLAN - MECHANICAL
1/8" = 1'-0"

KEYED NOTES: ⟨#⟩
NOTE: REFERENCE NUMBER INSIDE HEXAGON

1 DO NOT TERMINATE COMBUSTION OR BUILDING EXHAUST WITHIN THIS AREA.

2 CONDENSATE PIPE DOWN THROUGH ROOF. SIZE PER MFG. RECOMMENDATIONS. SEE M12-03 FOR CONTINUATION.

GENERAL NOTES

A. REFER TO M00-01 FOR GENERAL NOTES AND SYMBOLS.

B. REFER TO M12 SERIES FOR HVAC.

C. REFER TO M13 SERIES FOR CONTROLS.

D. REFER TO M17 SERIES FOR SCHEDULES.

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STATE OF OHIO
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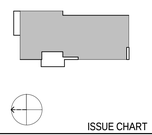
KEYPLAN



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JOB NUMBER	147525.000
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TITLE
ROOF PLAN - MECHANICAL

SHEET NUMBER
M12-04

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Design View Piping Diagrams

Indoor Units:	7 / 1 to 30		
Capacity:	138 / 60 to 180	(115.0%)	
* Connectable capacity is not actual capacity.			
Total Pipe Length:	812.0 / 1585.9	feet	
Furthest Actual:	334.0 / 541.0	feet	
Furthest Equiv.:	334.0 / 623.0	feet	
After 1st Branch Actual:	0.0 / 0.0	feet	
After 1st Branch Equiv.:	0.0 / 0.0	feet	
Furthest IU from BC Actual:	149.0 / 197.0	feet	
Furthest IU from BC Equiv.:	149.0 / 197.0	feet	

Correction Factors

Outdoor Unit Capacity:	1.04	1.01
Temperature:	1.00	0.80
Piping Length:	0.80	0.94
Defrosting:	-	0.95
User Derate:	1.00	1.00
Total Derate:	0.83	0.72

Additional Refrigerant:	44.1	lb
Total Refrigerant Amount:	67.9	lb

Conditions (°F)

Cooling

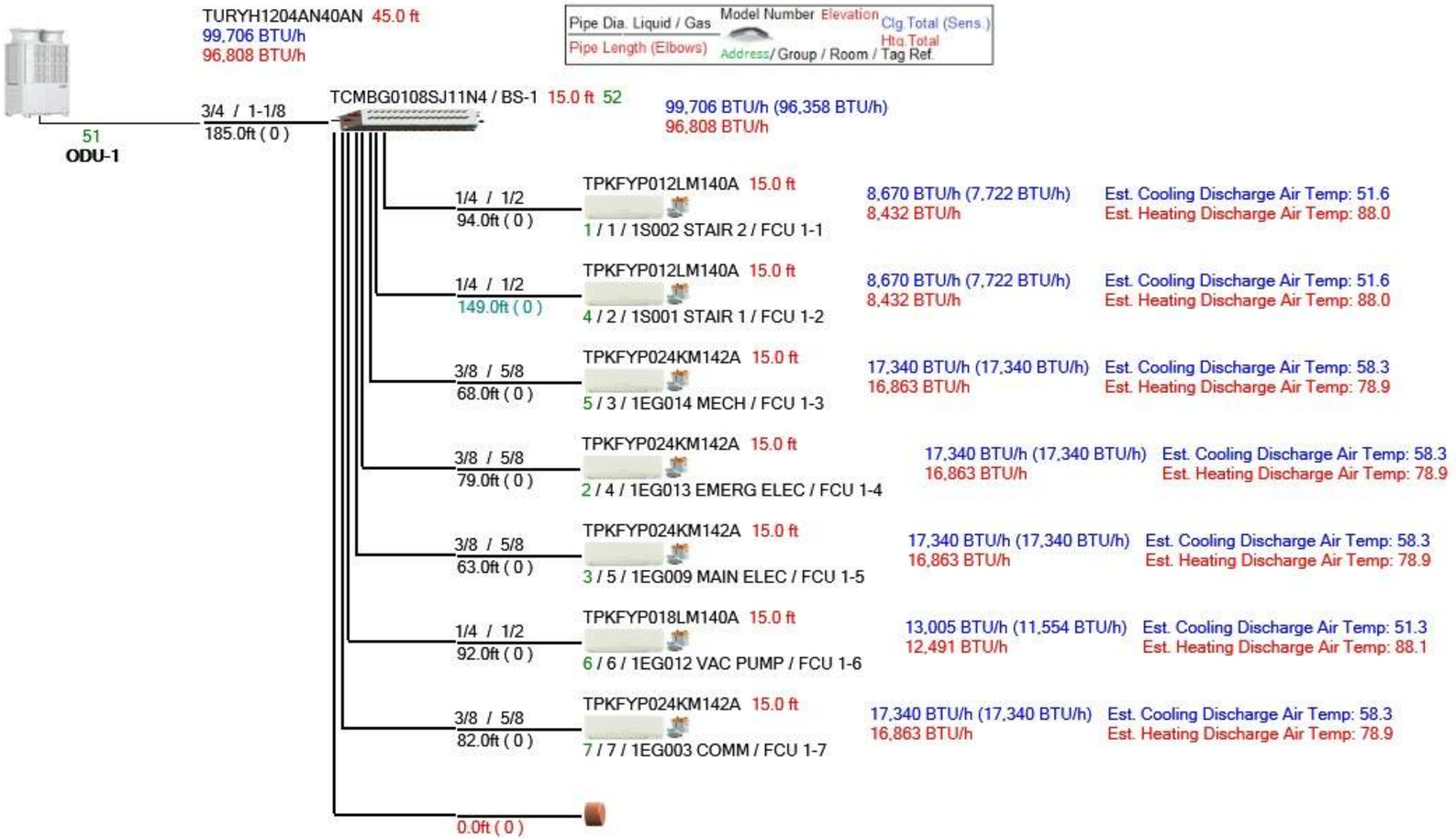
Indoor DB 76.0 Humidity 42.9% Indoor WB 61.2

Outdoor DB 95.0

Heating

Indoor DB 62.1

Outdoor DB -5.0 Humidity 100.0% Outdoor WB -5.0



Indoor Units:	4 / 1 to 18		
Capacity:	60 / 36 to 108	(83.3%)	
* Connectable capacity is not actual capacity.			
Total Pipe Length:	457.0 / 1559.4	feet	
Furthest Actual:	300.0 / 541.0	feet	
Furthest Equiv.:	300.0 / 623.0	feet	
After 1st Branch Actual:	0.0 / 0.0	feet	
After 1st Branch Equiv.:	0.0 / 0.0	feet	
Furthest IU from BC Actual:	170.0 / 197.0	feet	
Furthest IU from BC Equiv.:	170.0 / 197.0	feet	

Correction Factors

Outdoor Unit Capacity:	1.00	1.00
Temperature:	1.00	0.99
Piping Length:	0.89	0.95
Defrosting:	-	0.95
User Derate:	1.00	1.00
Total Derate:	0.89	0.89

Additional Refrigerant:	23.4	lb
Total Refrigerant Amount:	41.0	lb

Conditions (°F)

Cooling

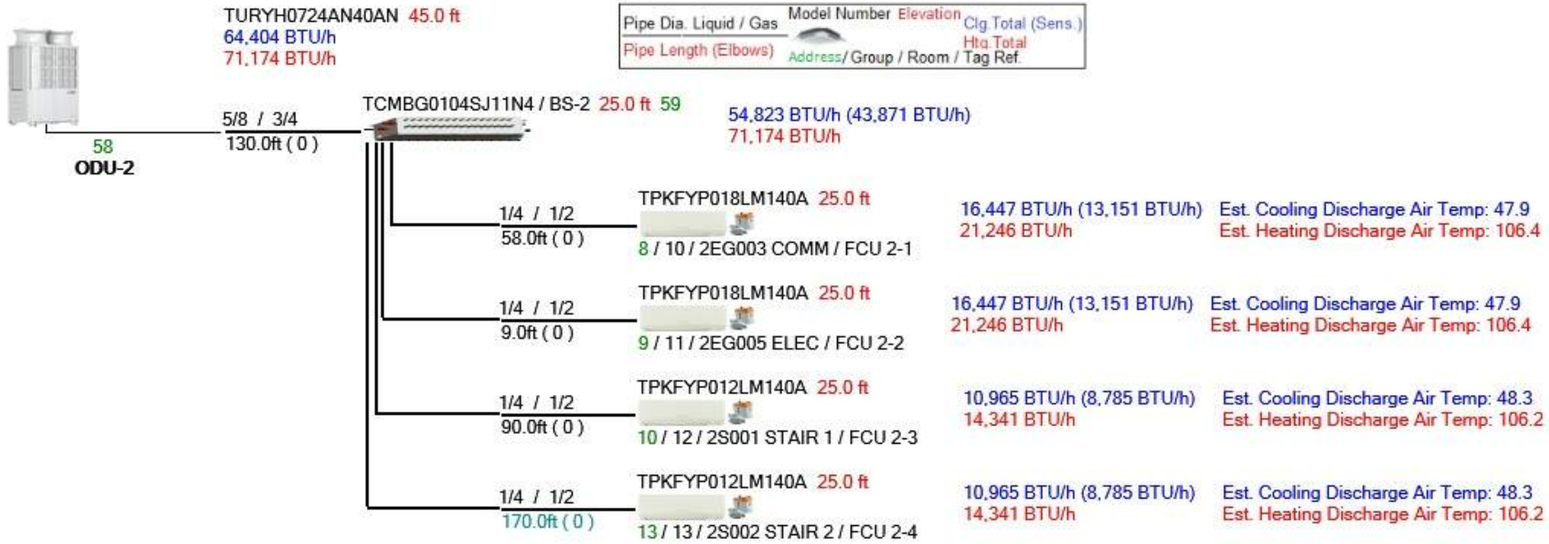
Indoor DB 76.0 Humidity 42.9% Indoor WB 61.2

Outdoor DB 95.0

Heating

Indoor DB 62.1

Outdoor DB -5.0 Humidity 100.0% Outdoor WB -5.0



Indoor Units:	4 / 1 to 18	
Capacity:	60 / 36 to 108	(83.3%)
* Connectable capacity is not actual capacity.		
Total Pipe Length:	402.0 / 1696.9	feet
Furthest Actual:	245.0 / 541.0	feet
Furthest Equiv.:	245.0 / 623.0	feet
After 1st Branch Actual:	0.0 / 0.0	feet
After 1st Branch Equiv.:	0.0 / 0.0	feet
Furthest IU from BC Actual:	170.0 / 197.0	feet
Furthest IU from BC Equiv.:	170.0 / 197.0	feet

Correction Factors

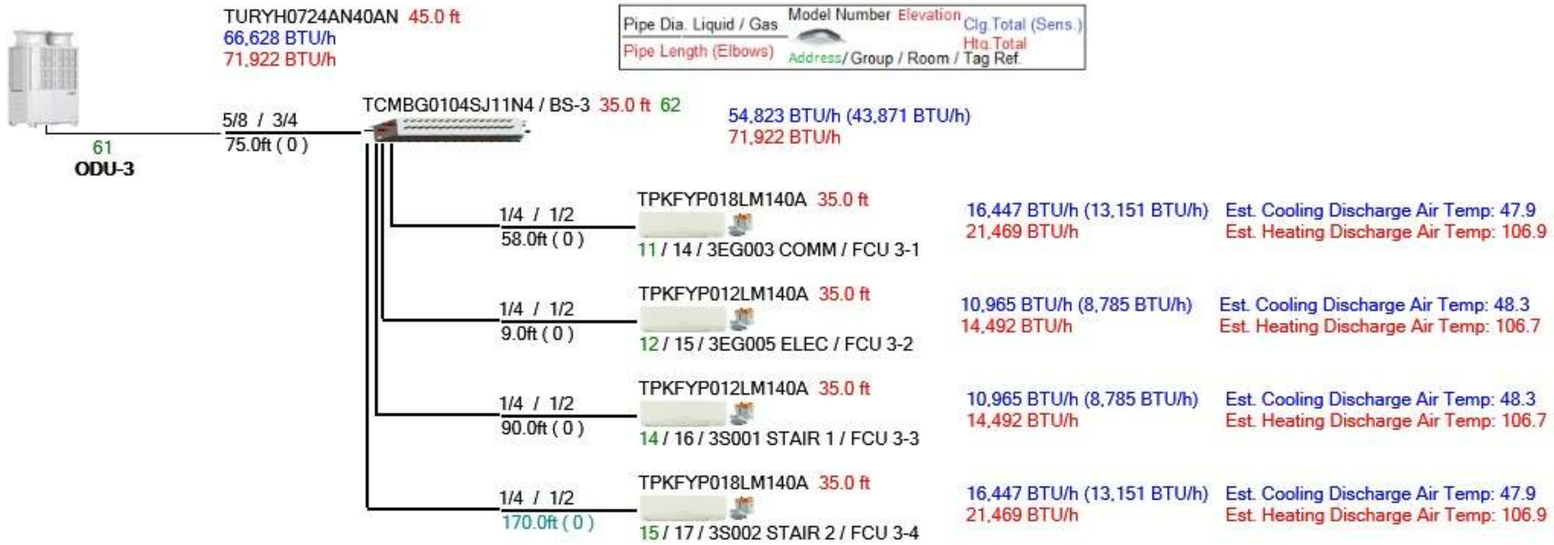
Outdoor Unit Capacity:	1.00	1.00
Temperature:	1.00	0.99
Piping Length:	0.92	0.96
Defrosting:	-	0.95
User Derate:	1.00	1.00
Total Derate:	0.93	0.90

Additional Refrigerant: 19.7 lb
Total Refrigerant Amount: 37.3 lb

Conditions (°F)

Cooling
Indoor DB 76.0 Humidity 42.9% Indoor WB 61.2
Outdoor DB 95.0

Heating
Indoor DB 62.1
Outdoor DB -5.0 Humidity 100.0% Outdoor WB -5.0



Job Name: **Cincinnati Rehabilitation Hospital**
System Reference: **ODU-2, ODU-3** Date: **08/10/2021**

460V OUTDOOR VRF HEAT RECOVERY SYSTEM

ACCESSORIES

- ☑ BC Controller (Required) ..... for details see BC Controller Submittals
- ☐ Joint Kit ..... for details see Pipe Accessories Submittal
- ☐ Panel Heater Kit ..... for details see Panel Heater Kit Submittal
- ☐ Snow/Hail Guards Kit ..... for details see Snow/Hail Guards Kit Submittal

Specifications			System
Unit Type			TURYH0724AN40AN
Cooling Capacity (Nominal)		BTU/H	72,000
Heating Capacity (Nominal)		BTU/H	80,000
Guaranteed Operating Range[1]	Cooling[2]	°F [°C]	23.0~126.0 [-5.0~52.0]
	Heating[3]	°F [°C]	-22~60 [-30.0~15.5]
Extended Operating Range	Heating	°F [°C]	-31.0~60.0 [-35.0~15.5]
External Dimensions (H x W x D)		In. [mm]	71-5/8 x 48-7/8 x 29-3/16 [1818 x 1240 x 407]
Net Weight		Lbs. [kg]	644 [292]
External Finish			Pre-coated galvanized steel sheet <MUNSELL 5Y 8/1>
Electrical Power Requirements	Voltage, Phase, Hertz, Power Tolerance		460V, 3-phase, 60 Hz, ±10%
Minimum Circuit Ampacity		A	17.0
Maximum Overcurrent Protection		A	25
Recommended Fuse Size		A	30
Recommended Minimum Wire Size		AWG [mm]	10 [5.3]
SCCR		kA	5
Refrigerant Piping Diameter	Liquid (High Pressure)	In. [mm]	5/8 [15.88] Brazed
	Gas (Low Pressure)	In. [mm]	3/4 [19.05] Brazed
Max. Total Refrigerant Line Length		Ft.	1804
Max. Refrigerant Line Length (Between ODU & IDU)		Ft.	541
Max. Control Wiring Length		Ft.	1640
Indoor Unit Connectable	Total Capacity		50.0~150.0% of outdoor unit capacity
	Model/Quantity		P05~P96/1.0~18.0
Sound Pressure Levels		dB(A)	56.5–58.0
Sound Power Levels		dB(A)	75.5/77.0
FAN[4]	Type x Quantity		Propeller fan x 2 x 2
	Airflow Rate	CFM	7400
	External Static Pressure	In. WG	Selectable; 0.00, 0.12, 0.24, 0.32 In. WG; factory set to 0 In. WG
Compressor Operating Range			15.0% to 100.0%
Compressor	Type x Quantity		Inverter scroll hermetic x 1
Refrigerant	Type x Original Charge		R410A x 17 lbs + 10 oz [8.0 kg]
Protection Devices	High Pressure Protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter Circuit (Comp./Fan)		Over-heat protection
	Fan Motor		Over-current protection
AHRI Ratings (Ducted/Non-ducted)	EER		11.9/13.1
	IEER		20.9/25.6
	COP		3.76/4.09
	SCHE		25.9/25.5

NOTES:
Nominal cooling conditions (Test conditions are based on AHRI 1230)
Indoor: 80°FD.B./67°FW.B. (26.7°CD.B./19.4°CW.B.), Outdoor: 95°FD.B. (35°CD.B.)
Nominal heating conditions (Test conditions are based on AHRI 1230)
Indoor: 70°FD.B. (21.1°CD.B.), Outdoor: 47°FD.B./43°FW.B. (8.3°CD.B./6.1°CW.B.)

[1]Harsh weather environments may demand performance enhancing equipment. Ask your Mitsubishi Electric representative for more details about your region
[2]For details on extended cooling operation range down to -10° F DB, see Low Ambient Kit Submittal
[3]When applying product below -4°F, consult your design engineer for cold climate application best practices, including the use of a backup source for heating
[4]Unit will continue to operate in extended operating range, but capacity is not guaranteed

OUTDOOR UNIT: TURYH0724AN40AN – DIMENSIONS

TURYH(072/096/120)4AN40AN

Unit: mm (in.)

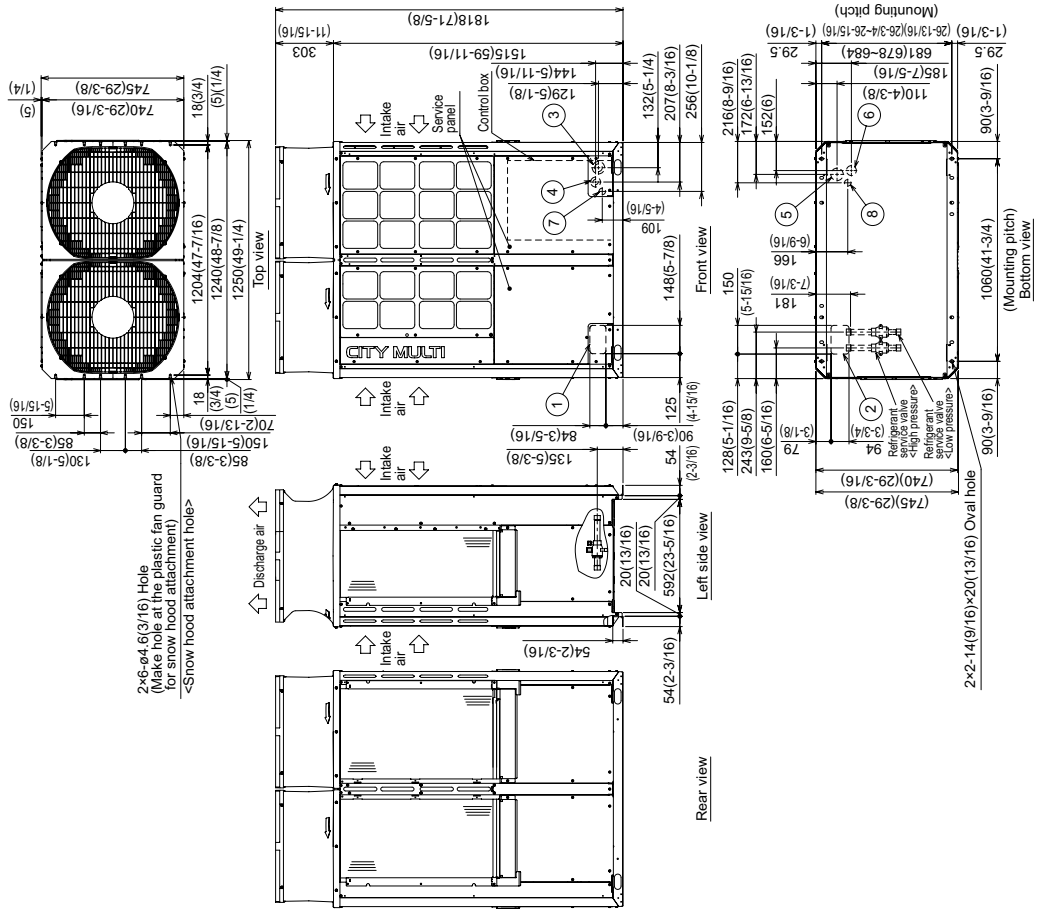
Note 1. At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C(248°F).

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	High pressure	Low pressure	High pressure	Low pressure
H072	ø15.88(5/8) Brazed *1	ø19.05(3/4) Brazed *1	ø28.58(1-1/8)	ø28.58(1-1/8)
H096	ø19.05(3/4) Brazed *1	ø22.2(7/8) Brazed *1		
H120		ø28.58(1-1/8) Brazed		

*1 Connect the refrigerant pipe to the service valve according to the Installation Manual.

NO.	Usage	Specifications
①	For pipes	Front through hole: 148(5-7/8) × 84(3-5/16) Knockout hole
②		Bottom through hole: 150(5-15/16) × 94(3-3/4) Knockout hole
③	For wires	Front through hole: ø62.7(2-1/2) or ø34.5(1-3/8) Knockout hole
④		Front through hole: ø43.7(1-3/4) or ø22.2(7/8) Knockout hole
⑤		Bottom through hole: ø65(2-9/16) Knockout hole
⑥		Bottom through hole: ø52(2-1/16) Knockout hole
⑦	For transmission cables	Front through hole: ø34(1-3/8) Knockout hole
⑧		Bottom through hole: ø34(1-3/8) Knockout hole



FORM# TURYH0724AN40AN - 202011

Submittal Documents

CITYMULTI® **10-TON TURYH1204AN40AN** TRANE MITSUBISHI ELECTRIC

Job Name: **Cincinnati Rehabilitation Hospital**
System Reference: **ODU-1** Date: **08/10/2021**

460V OUTDOOR VRF HEAT RECOVERY SYSTEM

ACCESSORIES

- ☑ BC Controller (Required) ..... for details see BC Controller Submittals
- ☐ Joint Kit ..... for details see Pipe Accessories Submittal
- ☐ Panel Heater Kit ..... for details see Panel Heater Kit Submittal
- ☐ Snow/Hail Guards Kit ..... for details see Snow/Hail Guards Kit Submittal

Specifications			System
Unit Type			TURYH1204AN40AN
Cooling Capacity (Nominal)		BTU/H	120,000
Heating Capacity (Nominal)		BTU/H	135,000
Guaranteed Operating Range[1]	Cooling[2]	ºF [ºC]	23.0~126.0 [-5.0~52.0]
	Heating[3]	ºF [ºC]	-22~60 [-30.0~15.5]
Extended Operating Range	Heating	ºF [ºC]	-31.0~60.0 [-35.0~15.5]
External Dimensions (H x W x D)		In. [mm]	71-5/8 x 48-7/8 x 29-3/16 [1818 x 1240 x 740]
Net Weight		Lbs. [kg]	697 [316]
External Finish			Pre-coated galvanized steel sheet <MUNSELL 5Y 8/1>
Electrical Power Requirements	Voltage, Phase, Hertz, Power Tolerance		460V, 3-phase, 60 Hz, ±10%
Minimum Circuit Ampacity		A	21.0
Maximum Overcurrent Protection		A	35
Recommended Fuse Size		A	25
Recommended Minimum Wire Size		AWG [mm]	8 [8.4]
SCCR		kA	5
Refrigerant Piping Diameter	Liquid (High Pressure)	In. [mm]	3/4 [19.05] Brazed
	Gas (Low Pressure)	In. [mm]	1-1/8 [28.58] Brazed
Max. Total Refrigerant Line Length		Ft.	1968
Max. Refrigerant Line Length (Between ODU & IDU)		Ft.	541
Max. Control Wiring Length		Ft.	1640
Indoor Unit Connectable	Total Capacity		50.0~150.0% of outdoor unit capacity
	Model/Quantity		P05~P96/1.0~30.0
Sound Pressure Levels		dB(A)	64.0–65.0
Sound Power Levels		dB(A)	84.0/85.0
FAN[4]	Type x Quantity		Propeller fan x 2 x 2
	Airflow Rate	CFM	9550
	External Static Pressure	In. WG	Selectable; 0.00, 0.12, 0.24, 0.32 In. WG; factory set to 0 In. WG
Compressor Operating Range			15.0% to 100.0%
Compressor	Type x Quantity		Inverter scroll hermetic x 1
Refrigerant	Type x Original Charge		R410A x 23 lbs + 12 oz [10.8 kg]
Protection Devices	High Pressure Protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter Circuit (Comp./Fan)		Over-heat protection
	Fan Motor		Over-current protection
AHRI Ratings (Ducted/Non-ducted)	EER		12.1/13.2
	IEER		19.7/24.4
	COP		3.61/4.01
	SCHE		25.3/29.1

NOTES:
Nominal cooling conditions (Test conditions are based on AHRI 1230)
Indoor: 80°FD.B./67°FW.B. (26.7°CD.B./19.4°CW.B.), Outdoor: 95°FD.B. (35°CD.B.)
Nominal heating conditions (Test conditions are based on AHRI 1230)
Indoor: 70°FD.B. (21.1°CD.B.), Outdoor: 47°FD.B./43°FW.B. (8.3°CD.B./6.1°CW.B.)

[1]Harsh weather environments may demand performance enhancing equipment. Ask your Mitsubishi Electric representative for more details about your region
[2]For details on extended cooling operation range down to -10° F DB, see Low Ambient Kit Submittal
[3]When applying product below -4°F, consult your design engineer for cold climate application best practices, including the use of a backup source for heating
[4]Unit will continue to operate in extended operating range, but capacity is not guaranteed

OUTDOOR UNIT: TURYH1204AN40AN – DIMENSIONS

TURYH(072/096/120)4AN40AN

Unit: mm (in.)

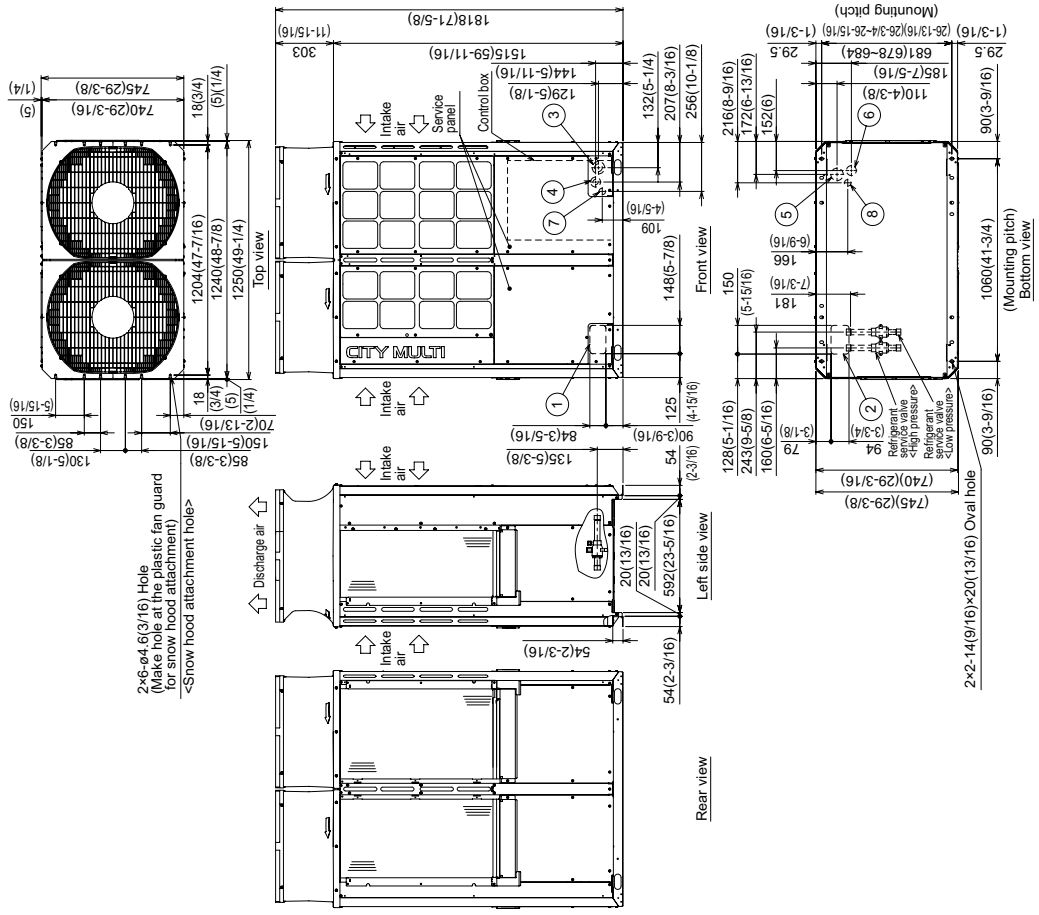
Note 1. At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C(248°F).

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	High pressure	Low pressure	High pressure	Low pressure
H072	ø15.88(5/8) Brazed *1	ø19.05(3/4) Brazed *1	ø28.58(1-1/8)	ø28.58(1-1/8)
H096	ø19.05(3/4) Brazed *1	ø22.2(7/8) Brazed *1		
H120		ø28.58(1-1/8) Brazed		

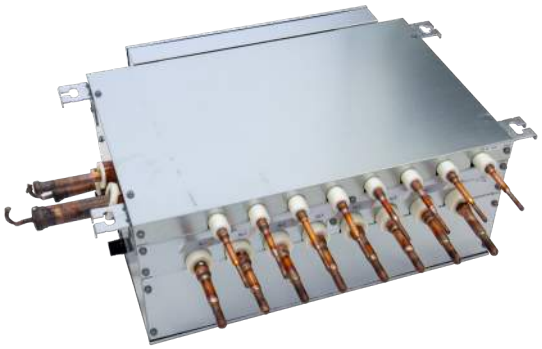
*1 Connect the refrigerant pipe to the service valve according to the Installation Manual.

NO.	Usage		Specifications
①	For pipes	Front through hole	148(5-7/8) × 84(3-5/16) Knockout hole
②		Bottom through hole	150(5-15/16) × 94(3-3/4) Knockout hole
③	For wires	Front through hole	ø62.7(2-1/2) or ø34.5(1-3/8) Knockout hole
④		Front through hole	ø43.7(1-3/4) or ø22.2(7/8) Knockout hole
⑤		Bottom through hole	ø65(2-9/16) Knockout hole
⑥		Bottom through hole	ø52(2-1/16) Knockout hole
⑦	For transmission cables	Front through hole	ø34(1-3/8) Knockout hole
⑧		Bottom through hole	ø34(1-3/8) Knockout hole



FORM# TURYH1204AN40AN - 202011

Job Name: **Cincinnati Rehabilitation Hospital**
System Reference: **BS-2, BS-3** Date: **08/10/2021**



ACCESSORIES

- ☐ Branch Joint (Downstream capacity ≤72,000 Btu/h) CMY-Y102SS-G2*
- ☐ Branch Joint (Downstream capacity 73,000-96,000 Btu/h) CMY-Y102LS-G2*
- ☐ Condensate Pump (Blue Diamond X87-721
- ☐ Condensate Pump (Sauermann) SI3100-230
- ☐ Ball Valve (3/8" SAE Brazed) BV38BBSI
- ☐ Ball Valve (5/8" SAE Brazed) BV58BBSI
- ☑ Reducer (Between ODU and BC) CMY-R301S-G

*See Data Book or Install Manual for more details

SPECIFICATIONS

Indoor Unit Capacity Connectable to 1 Branch	Btu/h	54,000

Number Of Branches	4

Electrical Requirements		
Electrical Power Requirements	208 / 230V, 1 phase, 60Hz	
Minimum Circuit Ampacity (MCA)	A	0.38 / 0.44
Maximum Overcurrent Protection (MOCP)	A	15

Power Input (208 / 230V		
Cooling	kW	0.061 / 0.078
Heating		0.030 / 0.039

Current Input (208 / 230V)		
Cooling	A	0.30 / 0.35
Heating		0.15 / 0.18

External Dimensions	In. (mm)	9-7/8 x 23-1/2 x 15-11/16 (250 x 596 x 398)

Net Weight	Lbs. (kg)	58 (26)

External finish	Galvanized steel plate (Lower part drain pan: Pre-coated galvanized sheets + powder coating)

Connectable Outdoor / Heat Source Unit Capacity	72,000 to 120,000

Refrigerant Piping Diameter to Indoor Unit (Brazed)			
		Liquid	Gas
Less than 18,000 Btu/h	In. (mm)	1/4 (6.35)	1/2 (12.7)
Greater than 18,000 Btu/h	In. (mm)	3/8 (9.52)	5/8 (15.88)
	In. (mm)	3/8 (9.52)	3/4 (19.05)
	In. (mm)	3/8 (9.52)	7/8 (22.2)

Refrigerant Piping Diameter to Outdoor Unit (Brazed)			
		High Pressure	Low Pressure
072	In. (mm)	5/8 (15.88)	3/4 (19.05)
096	In. (mm)	3/4 (19.05)	7/8 (22.2)
120	In. (mm)	3/4 (19.05)	7/8 (22.2) or 1-1/8 (28.58)

Field drain pipe size	In. (mm)	3/4 NPT

Refrigerant	R410A

Sound power level (measured in anechoic room)		
Rated operation	dB(A)	59
Defrost		71

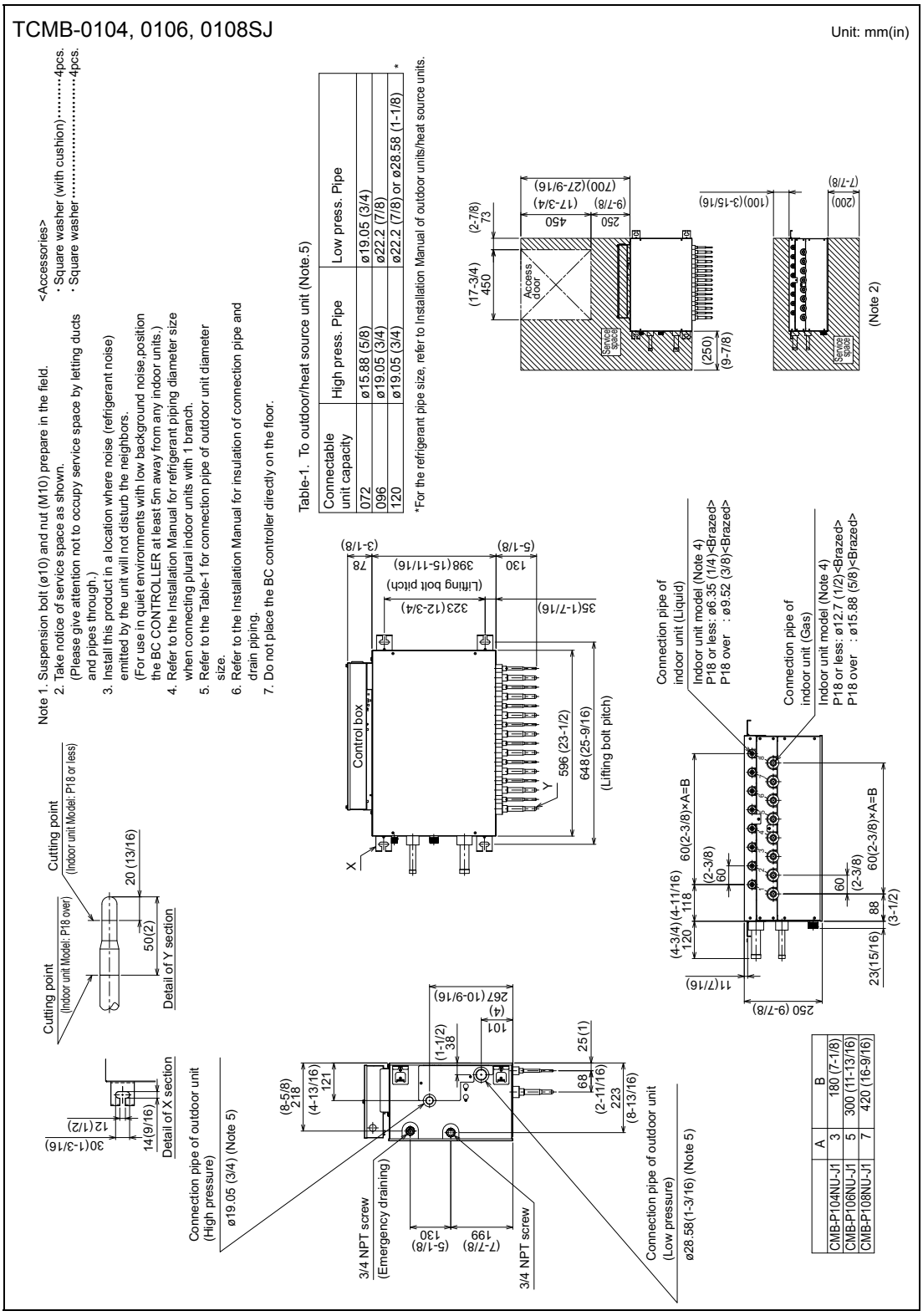
Sound pressure level (measured in anechoic room)		
Rated operation	dB(A)	40
Defrost		53

NOTES:
1. Installation/foundation work, electrical connection work, insulation work, power source switch, and other items shall be referred to the Installation Manual.
2. The equipment is for R410A refrigerant.
3. Install this product in a location where noise (refrigerant noise) emitted by the unit will not disturb the neighbors. (For use in quiet environments with low background noise, position the BC CONTROLLER at least 5m away from any indoor units.)
4. Sound pressure/power level differs depending on the connected outdoor/heat source unit capacity or operation condition. The sound pressure/power level at the rated operation is the value of the cooling mode.
5. The sound pressure/power level values were obtained in an anechoic room. Actual sound pressure level is usually greater than that measured in anechoic room due to ambient noise and deflection sound.
6. The sound pressure level values were obtained at the location below 1.5m from the unit.
7. The solenoid valve switching sound is 56 dB (sound pressure level) regardless of the unit model.
8. Refrigerant piping diameter for connection of plural indoor units with 1 branch shall be referred to the Installation Manual.
9. This unit is not designed for outside installations.
10. When brazing the pipes, be sure to braze, after covering a wet cloth to the insulation pipes of the units in order to prevent it from burning and shrinking by heat.
11. Indoor unit capacity connectable to 1 branch is changed depending on the indoor unit type and connection method. Please refer to the Installation Manual for more information.
12. For the refrigerant pipe size, refer to Installation Manual of outdoor units/heat source units.

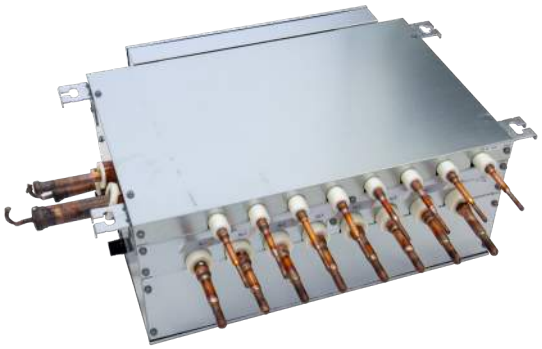
Model: TCMBG0104SJ11N4 - DIMENSIONS

TCMB-0104, 0106, 0108SJ

Unit: mm(in)



Job Name: **Cincinnati Rehabilitation Hospital**
System Reference: **BS-1** Date: **08/10/2021**



ACCESSORIES

- ☐ Branch Joint (Downstream capacity ≤72,000 Btu/h) CMY-Y102SS-G2*
- ☐ Branch Joint (Downstream capacity 73,000-96,000 Btu/h) CMY-Y102LS-G2*
- ☐ Condensate Pump (Blue Diamond X87-721
- ☐ Condensate Pump (Sauermann) SI3100-230
- ☐ Ball Valve (3/8" SAE Brazed) BV38BBSI
- ☐ Ball Valve (5/8" SAE Brazed) BV58BBSI
- ☑ Reducer (Between ODU and BC) CMY-R301S-G

*See Data Book or Install Manual for more details

SPECIFICATIONS

Indoor Unit Capacity Connectable to 1 Branch	Btu/h	54,000

Number Of Branches	8

Electrical Requirements		
Electrical Power Requirements	208 / 230V, 1 phase, 60Hz	
Minimum Circuit Ampacity (MCA)	A	0.74 / 0.87
Maximum Overcurrent Protection (MOCP)	A	15

Power Input (208 / 230V		
Cooling	kW	0.122 / 0.157
Heating		0.061 / 0.078

Current Input (208 / 230V)		
Cooling	A	0.59 / 0.69
Heating		0.30 / 0.35

External Dimensions	In. (mm)	9-7/8 x 23-1/2 x 15-11/16 (250 x 596 x 398)

Net Weight	Lbs. (kg)	73 (33)

External finish	Galvanized steel plate (Lower part drain pan: Pre-coated galvanized sheets + powder coating)

Connectable Outdoor / Heat Source Unit Capacity	72,000 to 120,000

Refrigerant Piping Diameter to Indoor Unit (Brazed)			
		Liquid	Gas
Less than 18,000 Btu/h	In. (mm)	1/4 (6.35)	1/2 (12.7)
Greater than 18,000 Btu/h	In. (mm)	3/8 (9.52)	5/8 (15.88)
	In. (mm)	3/8 (9.52)	3/4 (19.05)
	In. (mm)	3/8 (9.52)	7/8 (22.2)

Refrigerant Piping Diameter to Outdoor Unit (Brazed)			
		High Pressure	Low Pressure
072	In. (mm)	5/8 (15.88)	3/4 (19.05)
096	In. (mm)	3/4 (19.05)	7/8 (22.2)
120	In. (mm)	3/4 (19.05)	7/8 (22.2) or 1-1/8 (28.58)

Field drain pipe size	In. (mm)	3/4 NPT

Refrigerant	R410A

Sound power level (measured in anechoic room)		
Rated operation	dB(A)	59
Defrost		71

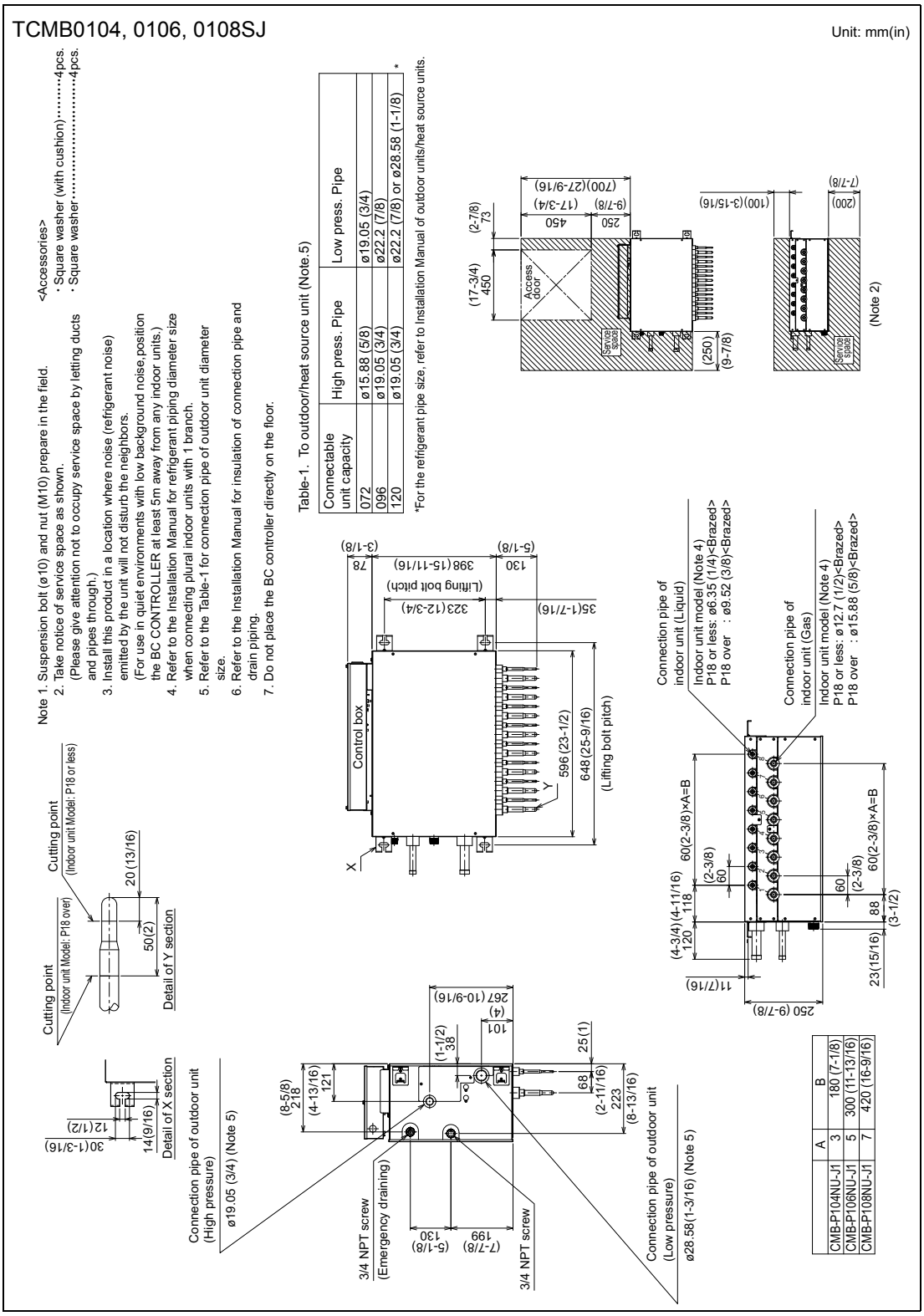
Sound pressure level (measured in anechoic room)		
Rated operation	dB(A)	40
Defrost		53

NOTES:
1. Installation/foundation work, electrical connection work, insulation work, power source switch, and other items shall be referred to the Installation Manual.
2. The equipment is for R410A refrigerant.
3. Install this product in a location where noise (refrigerant noise) emitted by the unit will not disturb the neighbors. (For use in quiet environments with low background noise, position the BC CONTROLLER at least 5m away from any indoor units.)
4. Sound pressure/power level differs depending on the connected outdoor/heat source unit capacity or operation condition. The sound pressure/power level at the rated operation is the value of the cooling mode.
5. The sound pressure/power level values were obtained in an anechoic room. Actual sound pressure level is usually greater than that measured in anechoic room due to ambient noise and deflection sound.
6. The sound pressure level values were obtained at the location below 1.5m from the unit.
7. The solenoid valve switching sound is 56 dB (sound pressure level) regardless of the unit model.
8. Refrigerant piping diameter for connection of plural indoor units with 1 branch shall be referred to the Installation Manual.
9. This unit is not designed for outside installations.
10. When brazing the pipes, be sure to braze, after covering a wet cloth to the insulation pipes of the units in order to prevent it from burning and shrinking by heat.
11. Indoor unit capacity connectable to 1 branch is changed depending on the indoor unit type and connection method. Please refer to the Installation Manual for more information.
12. For the refrigerant pipe size, refer to Installation Manual of outdoor units/heat source units.

Model: TCMBG0108SJ11N4 - DIMENSIONS

TCMB0104, 0106, 0108SJ

Unit: mm(in)



Job Name: **Cincinnati Rehabilitation Hospital**

System Reference: **FCU 1-1, FCU 1-2, FCU 2-3, FCU 2-4, FCU 3-2, FCU 3-3** Date: **08/10/2021**

GENERAL FEATURES

- Dual set point functionality
- Compact, lightweight, flat-white, flat-panel, modern design
- Quiet operation
- Multiple fan speed settings
- Easily removed intake grille filter for cleaning
- Back and right-side wiring take-out
- Wireless receiver on board

Specifications			System
Unit Type			TPKFYP012LM140A
Cooling capacity (Nominal)[1]		BTU/H	12,000
Heating capacity (Nominal)[1]		BTU/H	13,500
Power source	Voltage, Phase, Hertz		208/230V, 1-phase, 60 Hz
Power Consumption	Cooling	kW	0.04
	Heating	kW	0.03
Current	Cooling	A	0.4
	Heating	A	0.3
MCA		A	0.24
Maximum Overcurrent Protection (MOCP)		A	15
Recommended Fuse Size		A	15
External finish			Plastic, MUNSELL (0.7PB 9.2/0.4)
External Dimensions		In. [mm]	30-7/16 x 9-11/32 x 11-25/32 [733 x 237 x 299]
Net weight		Lbs [kg]	24.5 [11.1]
Heat exchanger			Cross fin (Aluminum fin and copper tube)
Fan	Type x quantity		Line flow fan x 1
	Airflow rate	CFM	152–191–244–297
	Motor type		DC Motor
	Motor Output	kW	.03
	Motor FLA	A	0.19
Sound pressure level (Measured in anechoic room)³		dB(A)	24–31–37–41
Air filter			PP honeycomb
Diameter of refrigerant pipe (O.D.)	Liquid (High Pressure)	In. [mm]	1/4 [6.35] Flare
	Gas (Low Pressure)	In. [mm]	1/2 [12.70] Flare
Diameter of drain pipe		In. [mm]	I.D. 5/8 [16]

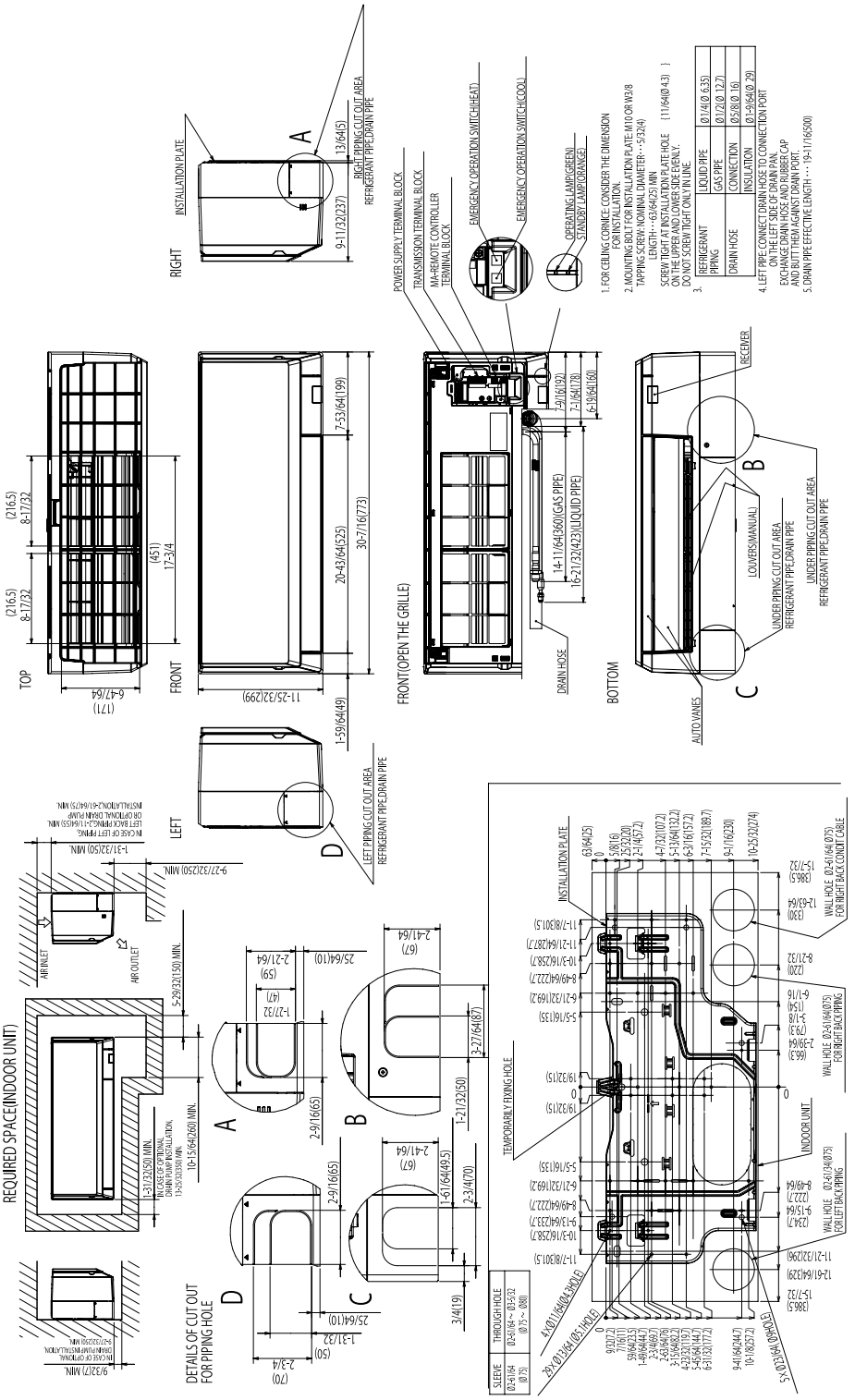
NOTES:
[1]Cooling / Heating capacity indicated at the maximum value at operation under the following conditions:
Cooling | Indoor: 80° F (26.7° C) DB / 67° F (19.4° C) WB; Outdoor 95° F (35° C) DB
Heating | Indoor: 70° F (21.1° C) DB; Outdoor 47° F (8.3° C) DB / 43° F (6.1° C) WB

INDOOR UNIT ACCESSORIES: TPKFYP012LM140A

Control Interface	3-Pin Connector	☐ PAC-715AD
	BACnet® and Modbus Interface	☐ PAC-UKPRC001-CN-1
	CN24 Relay Kit	☐ CN24RELAY-KIT-CM3
	Connector and wire for Operation status/error using CN51	☐ PAC-725AD
	IT Extender	☐ PAC-WHS01IE-E
	kumo station® for kumo cloud®	☐ TAC-WHS01HC-E
	Thermostat Interface	☐ PAC-US444CN-1
	Wireless Interface for kumo cloud®	☐ PAC-USWHS002-WF-2
Remote Sensor	Flush Mount Temperature Sensor	☐ PAC-USSEN001-FM-1
	Remote Temperature Sensor	☐ PAC-SE41TS-E
	Wireless temperature and humitity sensor for kumo cloud®	☐ PAC-USWHS003-TH-1
Terminal Signal Adapter	Terminal Signal Adapter	☐ PAC-IT51AD-E
	Terminal Signal Adapter	☐ PAC-IT52AD-E
Wired Remote Controller	Deluxe Wired MA Remote Controller†	☐ TAR-40MAAU
	Simple MA Remote Controller†	☑ TAC-YT53CRAU-J
	Touch MA Controller†	☐ TAR-CT01MAU-SB
Wireless Remote Controller	kumo touch™ RedLINK™ Wireless Controller	☐ MHK2
	Wireless MA Receiver	☐ PAR-SR32MA-E
Condensate	Blue Diamond MultiTank — collection tank for use with multiple pumps	☐ C21-014
	Blue Diamond Sensor Extension Cable — 15 Ft.	☐ C13-103
	Drain Pan Level Sensor/Control	☐ SS610E
	Fascia Kit for MicroBlue Pump, mounts the MicroBlue and sensor directly beneath indoor unit	☐ T18-016
	Sauermann Condensate Pump	☑ SI30-230
Disconnect Switch	(30A/600V/UL) [fits 2” X 4” utility box] - Black	☐ TAZ-MS303
	(30A/600V/UL) [fits 2” X 4” utility box] - White	☐ TAZ-MS303W

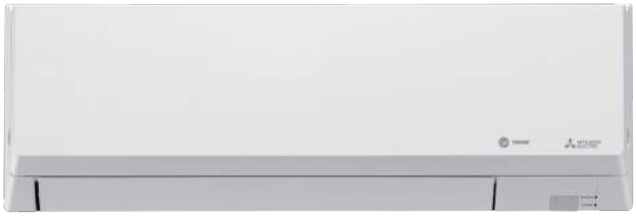
INDOOR UNIT DIMENSIONS: TPKFYP012LM140A

Unit: in(mm)



Job Name: **Cincinnati Rehabilitation Hospital**

System Reference: **FCU 1-6, FCU 2-1, FCU 2-2, FCU 3-1, FCU 3-4** Date: **08/10/2021**



GENERAL FEATURES

- Dual set point functionality
- Compact, lightweight, flat-white, flat-panel, modern design
- Quiet operation
- Multiple fan speed settings
- Easily removed intake grille filter for cleaning
- Back and right-side wiring take-out
- Wireless receiver on board

Specifications			System
Unit Type			TPKFYP018LM140A
Cooling capacity (Nominal)[1]		BTU/H	18,000
Heating capacity (Nominal)[1]		BTU/H	20,000
Power source	Voltage, Phase, Hertz		208/230V, 1-phase, 60 Hz
Power Consumption	Cooling	kW	0.05
	Heating	kW	0.04
Current	Cooling	A	0.5
	Heating	A	0.4
MCA		A	0.24
Maximum Overcurrent Protection (MOCP)		A	15
Recommended Fuse Size		A	15
External finish			Plastic, MUNSELL (0.7PB 9.2/0.4)
External Dimensions		In. [mm]	35-3/8 x 9-11/32 x 11-25/32 [898 x 237 x 299]
Net weight		Lbs [kg]	28.4 [12.9]
Heat exchanger			Cross fin (Aluminum fin and copper tube)
Fan	Type x quantity		Line flow fan x 1
	Airflow rate	CFM	240–293–360–438
	Motor type		DC Motor
	Motor Output	kW	.03
	Motor FLA	A	0.19
Sound pressure level (Measured in anechoic room)³		dB(A)	31–36–41–46
Air filter			PP honeycomb
Diameter of refrigerant pipe (O.D.)	Liquid (High Pressure)	In. [mm]	1/4 [6.35] Flare
	Gas (Low Pressure)	In. [mm]	1/2 [12.70] Flare
Diameter of drain pipe		In. [mm]	I.D. 5/8 [16]

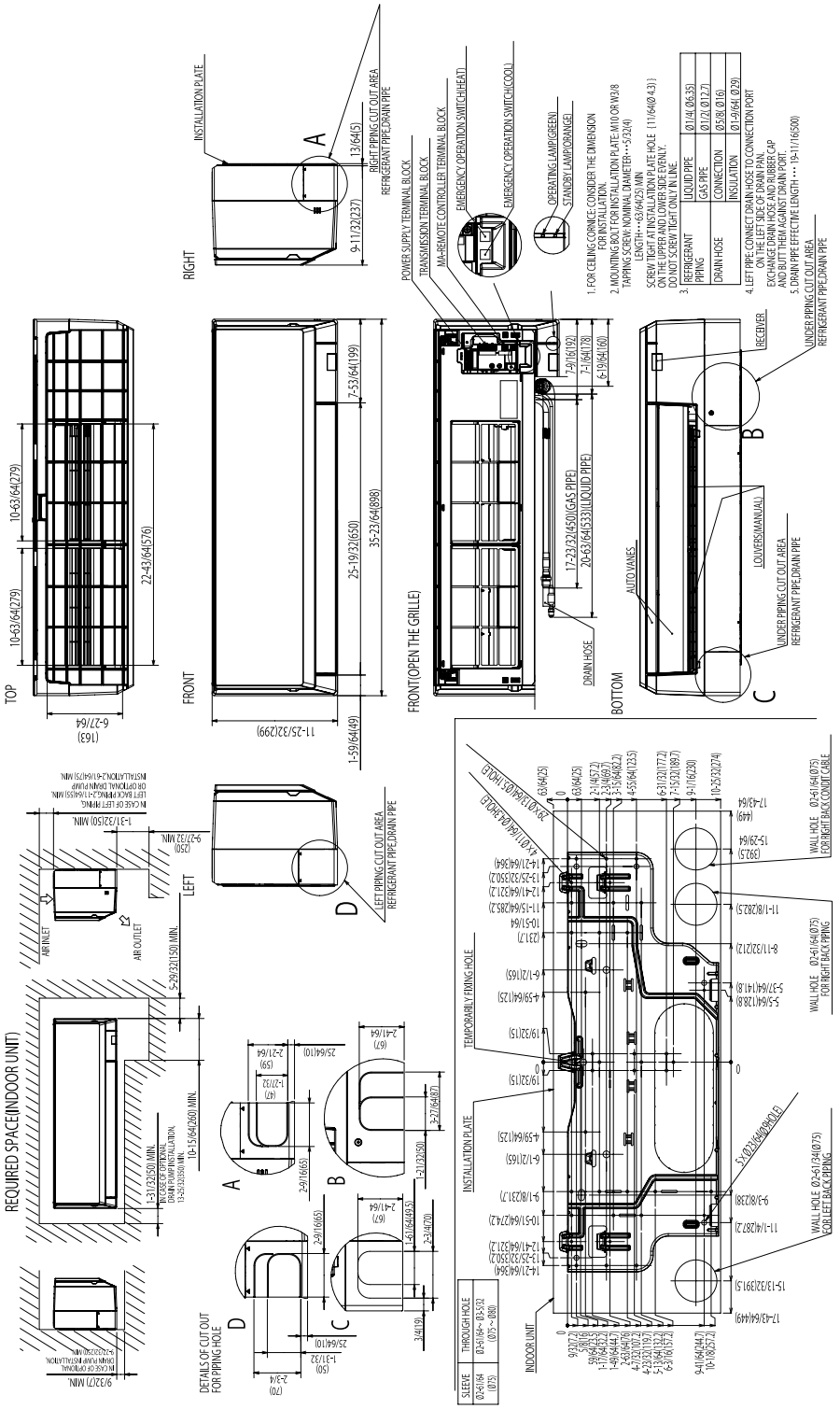
NOTES:
[1]Cooling / Heating capacity indicated at the maximum value at operation under the following conditions:
Cooling | Indoor: 80° F (26.7° C) DB / 67° F (19.4° C) WB; Outdoor 95° F (35° C) DB
Heating | Indoor: 70° F (21.1° C) DB; Outdoor 47° F (8.3° C) DB / 43° F (6.1° C) WB

INDOOR UNIT ACCESSORIES: TPKFYP018LM140A

Control Interface	3-Pin Connector	☐ PAC-715AD
	BACnet® and Modbus Interface	☐ PAC-UKPRC001-CN-1
	CN24 Relay Kit	☐ CN24RELAY-KIT-CM3
	Connector and wire for Operation status/error using CN51	☐ PAC-725AD
	IT Extender	☐ PAC-WHS01IE-E
	kumo station® for kumo cloud®	☐ TAC-WHS01HC-E
	Thermostat Interface	☐ PAC-US444CN-1
	Wireless Interface for kumo cloud®	☐ PAC-USWHS002-WF-2
Remote Sensor	Flush Mount Temperature Sensor	☐ PAC-USSEN001-FM-1
	Remote Temperature Sensor	☐ PAC-SE41TS-E
	Wireless temperature and humitity sensor for kumo cloud®	☐ PAC-USWHS003-TH-1
Terminal Signal Adapter	Terminal Signal Adapter	☐ PAC-IT51AD-E
	Terminal Signal Adapter	☐ PAC-IT52AD-E
Wired Remote Controller	Deluxe Wired MA Remote Controller†	☐ TAR-40MAAU
	Simple MA Remote Controller†	☑ TAC-YT53CRAU-J
	Touch MA Controller†	☐ TAR-CT01MAU-SB
Wireless Remote Controller	kumo touch™ RedLINK™ Wireless Controller	☐ MHK2
	Wireless MA Receiver	☐ PAR-SR32MA-E
Condensate	Blue Diamond MultiTank — collection tank for use with multiple pumps	☐ C21-014
	Blue Diamond Sensor Extension Cable — 15 Ft.	☐ C13-103
	Drain Pan Level Sensor/Control	☐ SS610E
	Fascia Kit for MicroBlue Pump, mounts the MicroBlue and sensor directly beneath indoor unit	☐ T18-016
	Sauermann Condensate Pump	☑ SI30-230
Disconnect Switch	(30A/600V/UL) [fits 2” X 4” utility box] - Black	☐ TAZ-MS303
	(30A/600V/UL) [fits 2” X 4” utility box] - White	☐ TAZ-MS303W

INDOOR UNIT DIMENSIONS: TPKFYP018LM140A

Unit: in(mm)



FORM# TPKFYP018LM140A - 202107

Job Name: Cincinnati Rehabilitation Hospital	
System Reference: FCU 1-3, FCU 1-4, FCU 1-5, FCU 1-7	Date: 08/10/2021

GENERAL FEATURES

- Dual set point functionality
- Compact, lightweight, shiny-white, flat-panel design
- Quiet operation
- Multiple fan-speed settings
- Intake grille filter is easily removed for cleaning
- Wireless receiver on board

OPTIONS

□ Condensate Pump……SI3100-230
□ CN24 Relay Kit……..…CN24RELAY-KIT-CM3

SPECIFICATIONS

Capacity*
Cooling……..24,000 Btu/h
Heating……..27,000 Btu/h

Power
Power Source…….....208 / 230V, 1-phase, 60Hz
Power Consumption
Cooling…….……0.07 kW
Heating…….……0.07 kW
Current
Cooling…….……0.50 A
Heating…….……0.50 A
Minimum Circuit Ampacity (MCA)……...……...0.63 A
Maximum Overcurrent Protection (MOCP) Fuse..…...…..15 A

ExternalFinish……...…..……MunsellNo.1.0Y9.2/0.2

External Dimensions
Inches……..14-3/8 H x 46-1/16 W x 11-5/8 D
mm…….365 H x 1,170 W x 295 D

Net Weight
Unit……..…..……..46 lbs. / 21 kg

Coil Type…….…Cross Fin
(Aluminum Plate Fin and Copper Tube)

Fan
Type x Quantity……..…….…..Line Flow Fan x 1
Airflow Rate (Low-High)...……..…….570 - 920 CFM
Motor Type……..……..…...Direct-drive DC Motor

Air Filter..…….Polypropylene Honeycomb

Refrigerant Piping Dimensions
Liquid (High Pressure)…….....…3/8" / 9.52 mm (Flare)
Gas (Low Pressure)……..…5/8" / 15.88 mm (Flare)

Drainpipe Dimension…….....……..……I.D. 5/8" / 16 mm

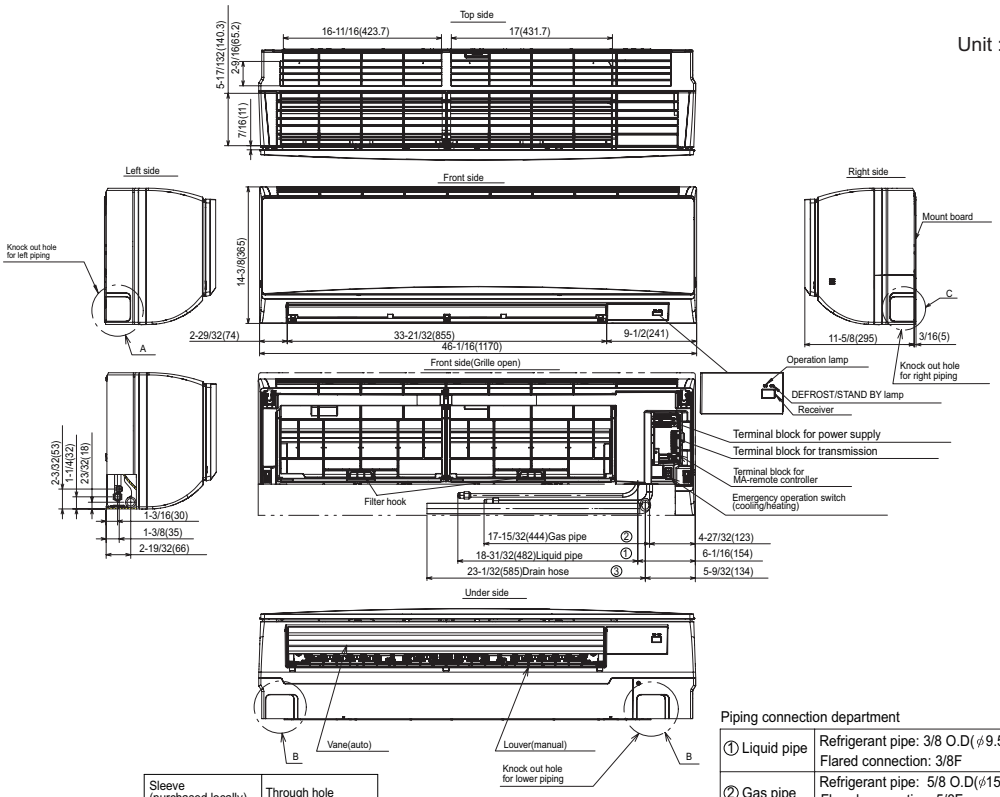
Sound Pressure Levels
Low-High…..……..……39 - 49 dB(A)

* Cooling / Heating capacity indicated at the maximum value at operation under the following conditions:
Cooling | Indoor: 80° F (27° C) DB / 67° F (19° C) WB, Outdoor 95° F (35° C) DB
Heating | Indoor: 70° F (21° C) DB, Outdoor 47° F (8° C) DB / 43° F (6° C) WB

Notes:

Model: TPKFYP024KM142A – DIMENSIONS

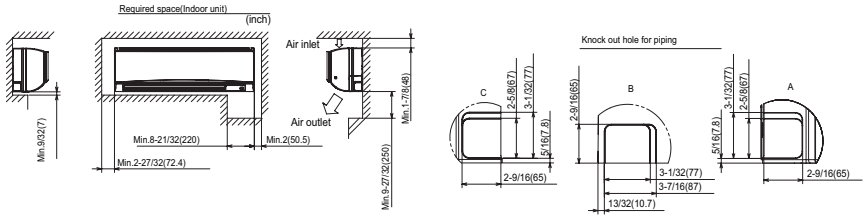
Unit : in(mm)

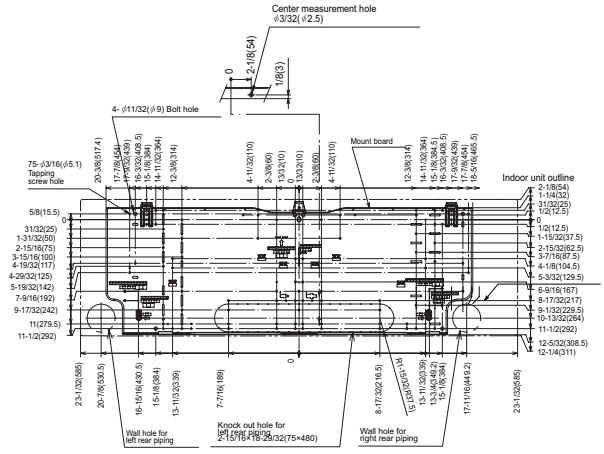


Sleeve (purchased locally)	Through hole
ϕ2-15/16 (ϕ75)	ϕ2-15/16~ ϕ3-5/32 (ϕ75~ ϕ80)

Piping connection department

① Liquid pipe	Refrigerant pipe: 3/8 O.D(ϕ9.52) Flared connection: 3/8F
② Gas pipe	Refrigerant pipe: 5/8 O.D(ϕ15.88) Flared connection: 5/8F
③ Drain hose	5/8(ϕ16) I.D





Sauermann part # : SI3000SIUS11or 23

Si-30

PISTON PUMP

Versatile technology

The high performance Si-30 is suitable for air-conditioning units up to 5.6 tons (67 kBtu - *20 kW*).
The piston technology is specifically designed for removing condensates from air conditioning systems.
The Si-30 is fully reliable, in any kind of environment. Its operating sound level will remain silent whatever the volume of condensates.

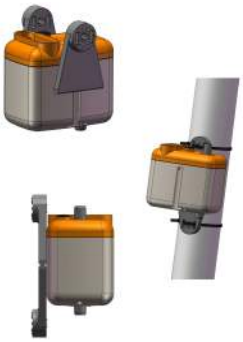
BENEFITS

• « Sauermann inside » : new piston, patented technology

- **Increased performance** – the Si-30 replaces the SI3100 & SI3200
- **High resistance to pollution** created by general environment. Capable of discharging small particles
- **Proven reliability**

• Silent

- Quiet in operation: **20 dBA independently tested**.
- The size of the air-conditioning unit and volume of condensates to be removed does not affect the operational sound level of the pump.
- **New mounting bracket** specifically designed **to reduce vibration transmission to the wall / panel or pipework**



• Easy to install

- **Compact design**
- New mounting bracket : allows the pump to be **wall mounted or hung from ceilings and pipework**
- **Plug-in power cord** to make maintenance and replacement hassle free

• Energy saving

Improved performance and high flow rate **reduce operation time** and energy consumption.

KIT CONTENTS

- Piston pump
- Anti-vibration mounting bracket
- Plug in power cable with 2 safety switch wires (5ft - *1,5 m*)
- 6 tie wraps, 1/10" x 4" *(2.5 x 100mm)*
- Detection unit SI2958, with (5 ft - *1.5m*) cable
- Detection unit installation kit:
  - rubber elbow 90°Øint. 19/32" x 2"3/8 *(Øint. 15 x L 60mm)*,
  - Vent tube Øint. 5/32" x L 2"15/16 *(Øint. 4 x L 75 mm)*, mounting rail, adhesive.

APPLICATIONS

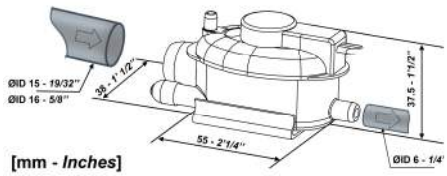
For use with any air-conditioning units, up to 5.6 tons *(67 kBtu - 20 kW)*:

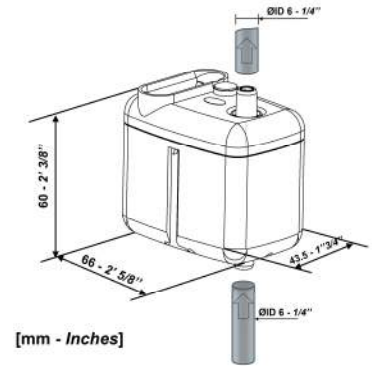
- **Wall mounted**
- **Ceiling suspended**
- **Ducted**
- **Fan-coils**

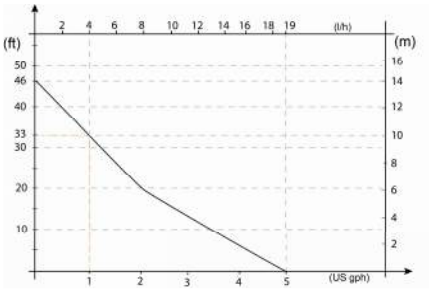


TECHNICAL SPECIFICATION

Max. flow rate	**5.0 gph** *(19 l/h)*
Max. suction head	**10 ft** *(3 m)*
Max. discharge head	33ft *(10 m);* flow rate= 1gph *(4l/h)*
Max pressure	46 ft *(14 m);* flow rate = 0 gph *(0l/h)*
Sound level at 1m according to EN ISO 3744 (Measured at LNE lab, pump operating with water, out of application)	**20 dBA**
Sound level in application at 1m: (Measured in Sauermann acoustic lab, pump operating with water)	≤ 27 dBA
Mains supply	120V ~ 60 Hz - 14 W (SI3000SIUS11) 230 V ~ 50/60 Hz - 14 W (SI3000SIUS23)
Insulation class	⧈ (double insulation)
Detection levels	On=5/8" Off=7/16'' Alarm=3/4'' *(ON: 16mm, OFF: 11mm, AL: 19mm)*
Safety switch	NC 8A resistive - 250 V
Thermal protection (overheating)	194℉ *(90℃)* auto-reset
Intermittent operation cycle	30%: 3s ON – 7s OFF
Protection	IP20
Safety standards	UL/CSA certified by Intertek
RoHS directive	Compliant
DEEE directive	Compliant
Packaging	0.90 lbs *(0.41kg)* L4" 2/5 x W3"3/5 x H3"3/5 *(L112 x W91 x H91 mm)*
Masterpack	25 pieces

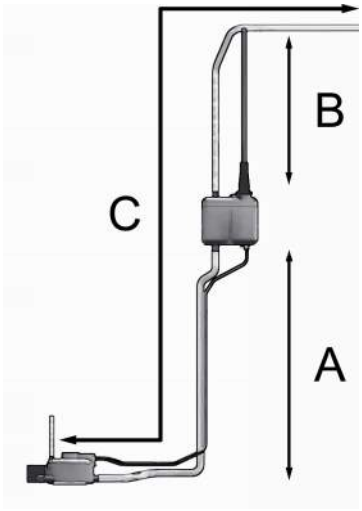




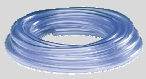


ACTUAL FLOW RATES (in gph)

		Total tube length, 1/4"using *(6 mm)* hose (C)			
Suction head (A)	Discharge head (B)	15 ft	30 ft	60 ft	100 ft
0 ft	0 ft	5.0	4.7	4.5	4.2
	6 ft	4.2	3.9	3.7	3.5
	13 ft	3	2.9	2.8	2.6
	20 ft		2.5	2	1.7
	26 ft		1.6	1.3	1.1
	33 ft		1.1	0.9	0.7
3.3 ft	0 ft	3.7	3.4	3.2	2.9
	6 ft	2.9	2.6	2.4	2.1
	13 ft	0.5	1.8	1.6	1.3
	20 ft		1.2	1.1	
6.6 ft	0 ft	2.9	2.6	2.4	2.1
	6 ft	2.4	2.1	1.8	1.6
	13 ft		1.5	1.3	1.2
10 ft	0 ft	2.6	2.4	2.1	1.8
	6 ft	2.1	1.8	1.6	1.3
	13 ft		1.3	1.1	



RECOMMENDED ACCESSORIES



ACC 00105, ACC 00150
Clear PVC hose, Øint 1/4'' *(6mm)*
ACC 00105 : 16 ft *(5m)*
ACC 00150 : 164 ft *(50m)*
ACC 00151 : reinforced, 164 ft *(50m)*

ACC 00205
6 self-sealing fittings
Øext. 1/4" *(6mm)*

ACC 00214
5 fittings to prevent siphoning

sauermann® P.A. de l'Orée de Chevry, 77173 Chevry-Cossigny. Tél : +33 (0) 1 60 62 06 06 - Fax : +33 (0) 1 60 62 09 09

Creation date : 04/06/2012	Customer : MITSUBISHI	Criteria : 3000	Doc. N° : A 481 – 2

Sauermann part N° : SI3000MIUS23	Customer part : 4564

Technical datas :

Max flowrate : 5 gph
Max discharge : 1 gph @ 33 ft
Max suction : 10 ft
Input power : 14 W
Alarm contact : NC - 250V / 8A resistive
Voltage / Frequency : 230V~ 50/60Hz

Content :

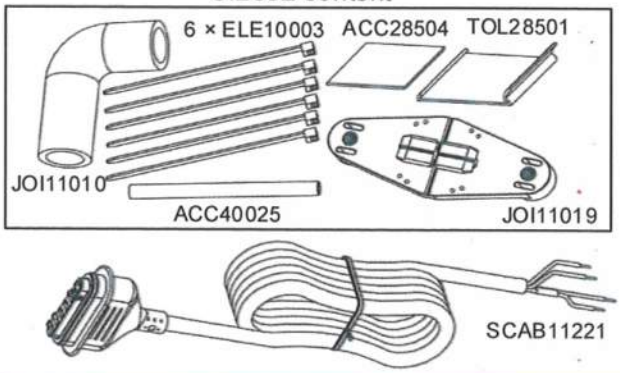
Pump block : SI3009UN-23
Detection block : SI2958.000
Installation leaflet : N729/05 + N005/03

Accessories :

- SCAB11221
- SI2852

Product picture :

SI2852 content



Marking A :

Identification
A □□ □□ □□□□ -F □□□□□
Année Semaine Numéro Série Ordre de fabrication

Marking B :

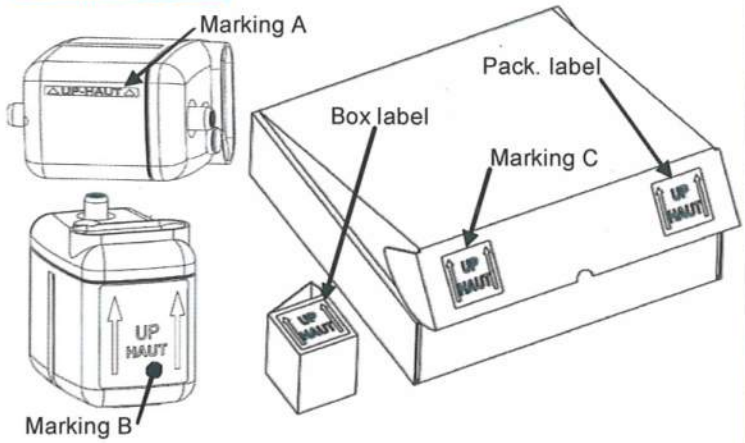
M766/00

Marking C :

CARSON : A52

A52

Marking position:



Box label reference : E765/00

Si-30
230V~ 50/60Hz
SI3000MIUS23
3 700543 245643
Made in France
E765/00
F 00000

Conditionning :

Box ref. : EMB30001
Qty / box : 1
Gross weight : 0,407 kg

Palettisation : CONSO123
Qty. items / Palette : 500
Gross weight : 237 kg

Packaging :

Pack. ref. : EMBS0025
Qty / pack. : 25
Gross weight : 10,880 kg

Packaging label reference : S765/00

Si-30
230V~ 50/60Hz
SI3000MIUS23
Qty: 25
13700543245640
Made in France
S765/00
F 00000

Customer visa :	Sales visa :	Quality Visa :	R & D director visa :	Process visa :	Manufacturing visa :
Date :	Date :	Date : 12.06.12	Date : 12 JUIN 2012	Date : 12 JUIN 2012	Date : 12/06/2012

MODEL: TAC-YT53CRAU-J

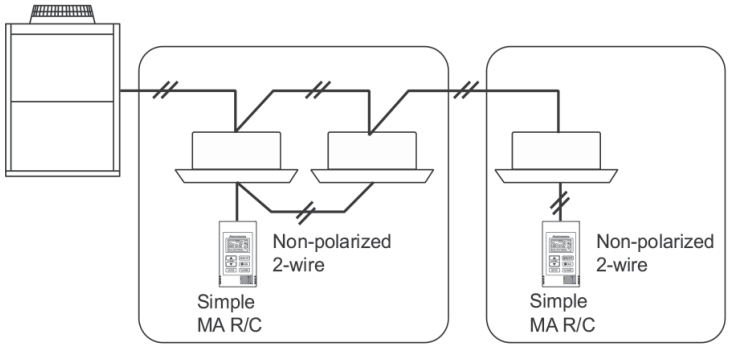
Job Name: **Cincinnati Rehabilitation Hospital**
System Reference: **Thermostats** Date: **08/10/2021**

SIMPLE MA REMOTE CONTROLLER (TAC-YT53CRAU-J) SPECIFICATIONS

- Controls group operation for up to 16 indoor units in a single group
- Supports both Fahrenheit and Celsius
- User defined functions:
  - ON/OFF
  - Operation mode: AUTO (R2-Series only), COOL, HEAT, FAN, DRY, SETBACK, or ADD
  - Set temperature
  - Fan speed setting
  - Air flow direction
  - Set temperature range: depending on operation mode and indoor unit connected.
- Set temperature range limit: Simple MA allowable set temperature range can be reduced for cool and heat modes.
- LOSSNAY®: Simple MA for interlocked system can set high/low/Stop on LOSSNAY.
- Room temperature can be sensed either at the indoor unit (default) or at the remote controller.
- Diagnostics: Displays four-digit error code and error unit address.
- Grouping: Same group use only with other TAC-YT53CRAU-J Simple MA Controllers with up to two remote controllers per group.
- Addressing: No addressing required.
- Wiring: Uses two-wire, stranded, non-polar control wire for connecting TB15 connection terminal on the indoor unit.
- Requires crossover wiring for grouping across indoor units.
- Dimensions: 2-3/4 x 9/16 x 4-3/4" (70 x 14.5 x 120mm).

NOTE: A MAC-334IF-E may be needed in order to connect to the indoor unit. Please see the compatibility charts for more information.

SAMPLE SYSTEM

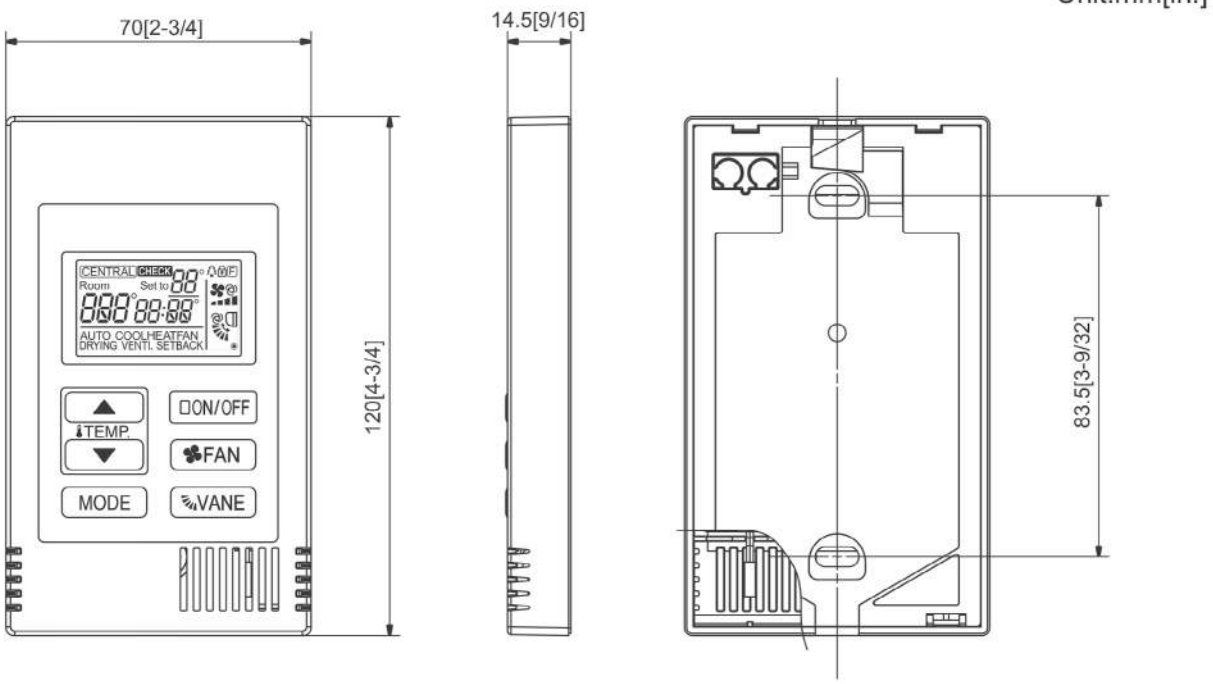


System example

NOTES:

DIMENSIONS: TAC-YT53CRAU-J

Unit:mm[in.]



Specifications are subject to change without notice.

Job Name: Cincinnati Rehabilitation Hospital
System Reference: Central VRF Controller
Date: 08/10/2021

TE-200A

- TE-200A is the Master Controller
- Master Controller can operate and monitor up to 50 indoor units
- Expansion Controllers can expand an TE-200A to operate and monitor up to 50 additional indoor units through the touchscreen or web browser
- Network up to three TE-50A or TW-50A to one TE-200A to allow the TE-200A to manage up to 200 indoor units

OPTIONAL LICENSES

- LIC-BACnet Master: BACnet Function
  - Connected air conditioning units can be monitored and operated not only from the existing web browser or the TE-200/TE-50's LCD, but also from the building management system using the BACnet® communication protocol. See LIC-BACnet Data Sheet for more information.
- LIC-Charge Master: Energy Allocation
  - The apportioned electricity billing function is an electric energy
  - apportionment system that apportions electric energy using input from electricity meters with a pulse generator function. The respective amounts of electric energy can be apportioned based on the operating status and capacity of each tenant. See LIC-Charge Data Sheet for more information.
- LIC-PWeb Master: Online Personal Browser
  - Allows tenant managers and general users to control their respective zone conditions via a networked PC, tablet, or mobile phone with or without local remote controllers installed in the space. See LIC-PWeb Data Sheet for more information.

SPECIFICATIONS

- Supports dual set point functionality (connected equipment dependent)
- Displays:
  - CITY MULTI® compressor speed and hi/low pressure
  - AdvancedHVAC Controller (DC-A2IO) input/output status
  - Indoor unit free contact input/output status
  - Space temperature and humidity (from Smart ME or AI controller)
  - Error code (Can be emailed automatically to specified recipients)
  - Unoccupied setback up temperature range
- Functions
  - Hold function (temporarily disables schedules indoor unit model dependent)
  - Initial setting
  - Operation data back-up
- Permits or prohibits remote controller functions:
  - On/Off
  - Change Operation Mode
  - Change Set Point Temperature
  - Filter Status
  - Change Fan Speed
  - Change Air Direction
- External input/output signals can be used for batch operations such as Start/Stop and Emergency Stop (requires PAC-YG10HA)
- Pulse signal input can obtain watt-hour meter, billing data and energy management data based on the cumulative number of pulse signal pulse signals directly input from a metering device
- Temperature set point range limits can be set for local remote controllers
- User defined indoor unit functions:
  - On/Off
  - Monitoring and Operation
  - Operation mode:
    - Auto* (Dual or Single set point)
    - Heat
    - Fan
    - Drying
    - Setback*

      Note: *R2 Series only (connected equipment dependent)
  - Temperature Setting
  - Fan Speed
  - Airflow Direction
- • Monitoring and Control:
  - CITY MULTI® indoor units
  - Nv- & P-Series units (requires M-Net adapter)
  - Lossnay® units
  - TPWFY hydronic heat pump units
  - DIDO controllers
  - CITY MULTI® DOAS
  - Interlock setting enables integration of general equipment inputs/outputs and indoor units
- Scheduling
  - Daily
  - Annually
  - Five pattern of weekly seasonal schedule
- Twenty four scheduled events per day, indoor unit model dependent:
  - ON/OFF
  - Mode
  - Temperature Setting
  - Vane Direction
  - Fan
  - Speed
  - Operation Prohibits
- Trend data:
  - Fan operation time
  - Thermo-on time
  - Set temperature
  - Room temperature
  - AI Controller temperature and humidity
    (requires PAC-YG63-MCA, 2 inputs total for each controller)
- Memory back up via USB (universal serial bus)
- Memory back up via LAN (local area network) port

TE-200A - SPECIFICATIONS, CONT.

TE-200A CENTRALIZED CONTROLLER

Item	Specifications		
Power Supply	**Rated input**		100–240 VAC ± 10%; 0.3–0.2 A 50/60 Hz Single-phase
	Fuse		250 VAC 6.3 A Time-Lag type (IEC 60127-2S.S.5)
M-NET power feeding capability			No specifications**Only an MN converter can be connected.
Ambient conditions	**Temperature**	**Operating Range**	0° C to +40° C (+32° F to +104° F)
		Non-operating Range	-20° C to +60° C (-4° F to +140° F)
	Humidity		30% to 90% RH (no condensation)
Weight			2.3 kg (5-5/64 lbs)
Dimensions (W x H x D)			11-5/32 × 7-55/64 × 2-17/32 in. (284 × 200 × 65 mm)
Installation conditions			Indoor only **To be used in a business office or similar environment

WEB BROWSER REQUIREMENTS

Item		Requirements
PC	**CPU**	1 GHz or faster (2 GHz or faster recommended)
	Memory	2 GB or more
	Screen Resolution	1024 x 768 or higher recommended
	OS/Java® execution environment	• Microsoft® Windows® 8.1 • Microsoft® Windows® 10 • Mac OS® X10.11 or later (Only CSV File Download Tool is not guaranteed to work.) * Java® execution environment (Oracle® Java or AdoptOpenJDK) is required. Verified to work properly on Oracle® Java8 (https://www.java.com/download/) and AdoptOpenJDK11 HotSpot (https://adoptopenjdk.net/). * The version of the Oracle® Java can be verified by clicking [Java] in the Control Panel. * Install the Java® execution environment that is appropriate for your Air Conditioner Control Tool. When using a 64-bit Air-conditioner Control Tool, install 64-bit Oracle® Java or AdoptOpenJDK
	Browser	• Microsoft® Internet Explorer® 11 • Microsoft® Edge® • Google Chrome™ Ver. 83 • Safari® 13
	Microsoft® Excel®	• Microsoft® Excel® 2010 or later

	Item	Requirements
Smartphone	**Safari® 12**	• iPhone 6s (Plus) (iOS 10.1.1 or later) • iPhone 7 (Plus) (iOS 10.1.1 or later) • iPhone SE (iOS 10.1.1 or later) • iPhone XR (iOS 12.1.1 or later)
	Google Chrome™ Ver. 83	• Galaxy SC-04J (Android™ 8.0.0) • HUAWEI P9 (Android™ 6.0 or later) • Xperia Z5 (Android™ 6.0 or later)
Tablet	**Safari® 13**	• iPad Air 2 (iOS 12.2.2 or later) • 9.7-inch iPad Pro (iOS 10.1.1 or later)
	Google Chrome™ Ver. 83	• MediaPad T2 7.0 Pro (Android™ 5.1.1)

Note: Registered trademarks

- Android is a registered trademark of Google LLC. in the U.S. and other countries.
- Apple is a trademark of Apple Inc., registered in the U.S. and other countries.
- Google is a registered trademark of Google LLC.
- Google Chrome is a registered trademark of Google LLC. in the U.S. and other countries.
- Edge is a trademark or registered trademark of Microsoft Corporation in the U.S. and other countries.
- Internet Explorer is a trademark or registered trademark of Microsoft Corporation in the U.S. and other countries.
- The official name of Internet Explorer is “Microsoft® Internet Explorer Internet browser”.
- iOS is a trademark or registered trademark of Cisco in the U.S. and other countries and is used under license.
- iPad is a trademark of Apple Inc., registered in the U.S. and other countries.
- Mac OS is a trademark of Apple Inc., registered in the U.S. and other countries.
- Microsoft Office Excel is a product name of Microsoft Corporation in the U.S.
- Windows is a trademark or registered trademark of Microsoft Corporation in the U.S. and other countries.
- The official name of Windows is “Microsoft® Windows® Operating System”.
- Safari is a trademark or registered trademark of Apple Inc. in the U.S.
- Nexus is a registered trademark of Google LLC. in the U.S. and other countries.
- Galaxy is a trademark or registered trademark of Samsun Co., Ltd.

Note: Company name or product name that is described in this manual may be a trademark or a registered trademark of each company

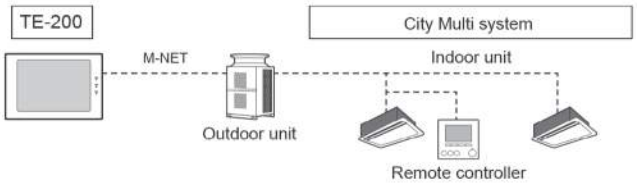
Specifications are subject to change without notice.

MODEL: TE-200A - SYSTEM CONFIGURATION

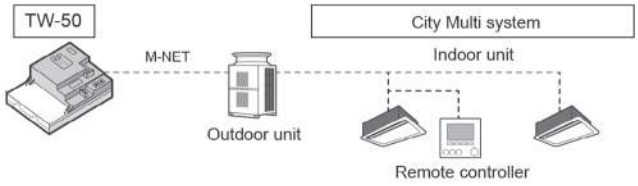
*TE-200A is indicated as TE-200
*TE-50A is indicated as TE-50

CONTROLLING 50 OR FEWER UNITS OF EQUIPMENT

1. TE-200



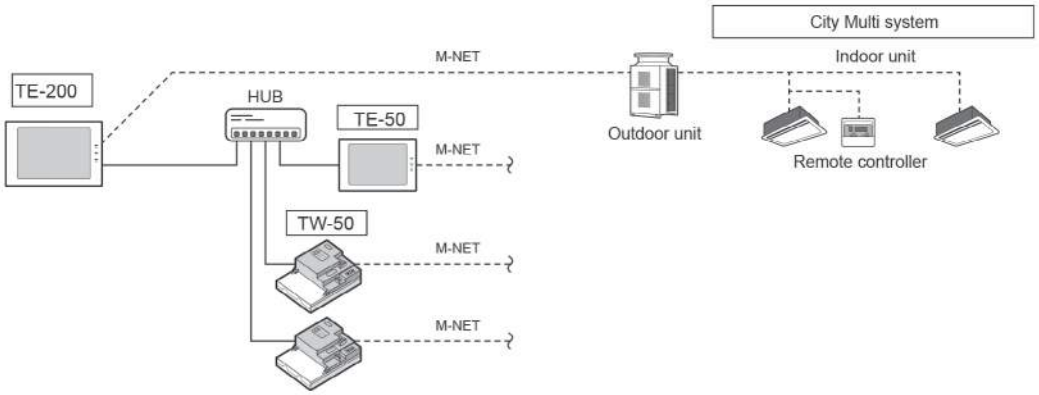
2. TW-50



CONTROLLING MORE THAN 50 UNITS OF EQUIPMENT (WITH CONNECTION TO A TE-200 CONTROLLER)

Note

TE-200 is required when using TE-50



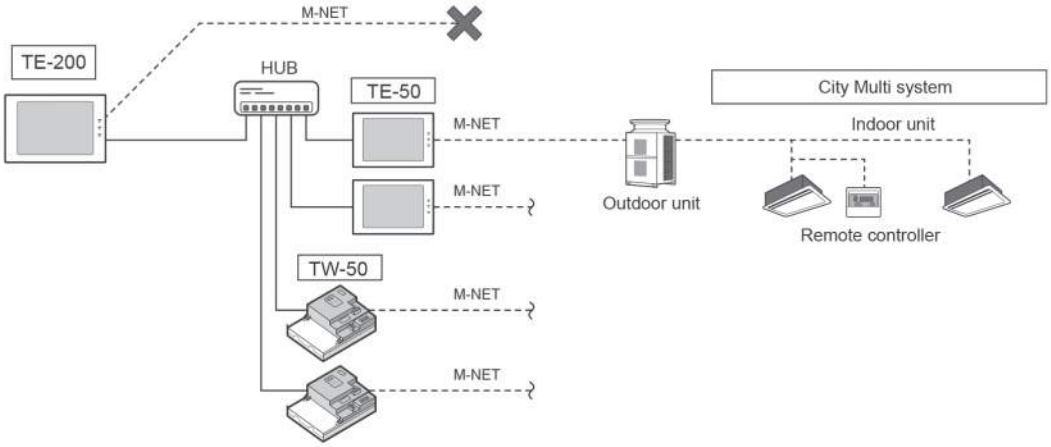
WHEN USING AN APPORTIONED ELECTRICITY BULLING FUNCTION

Notes

TE-200 is required to use a billing function.

TE-200 M-NET cannot be used when a billing function is used

“Charge” license is requited to use a billing function.

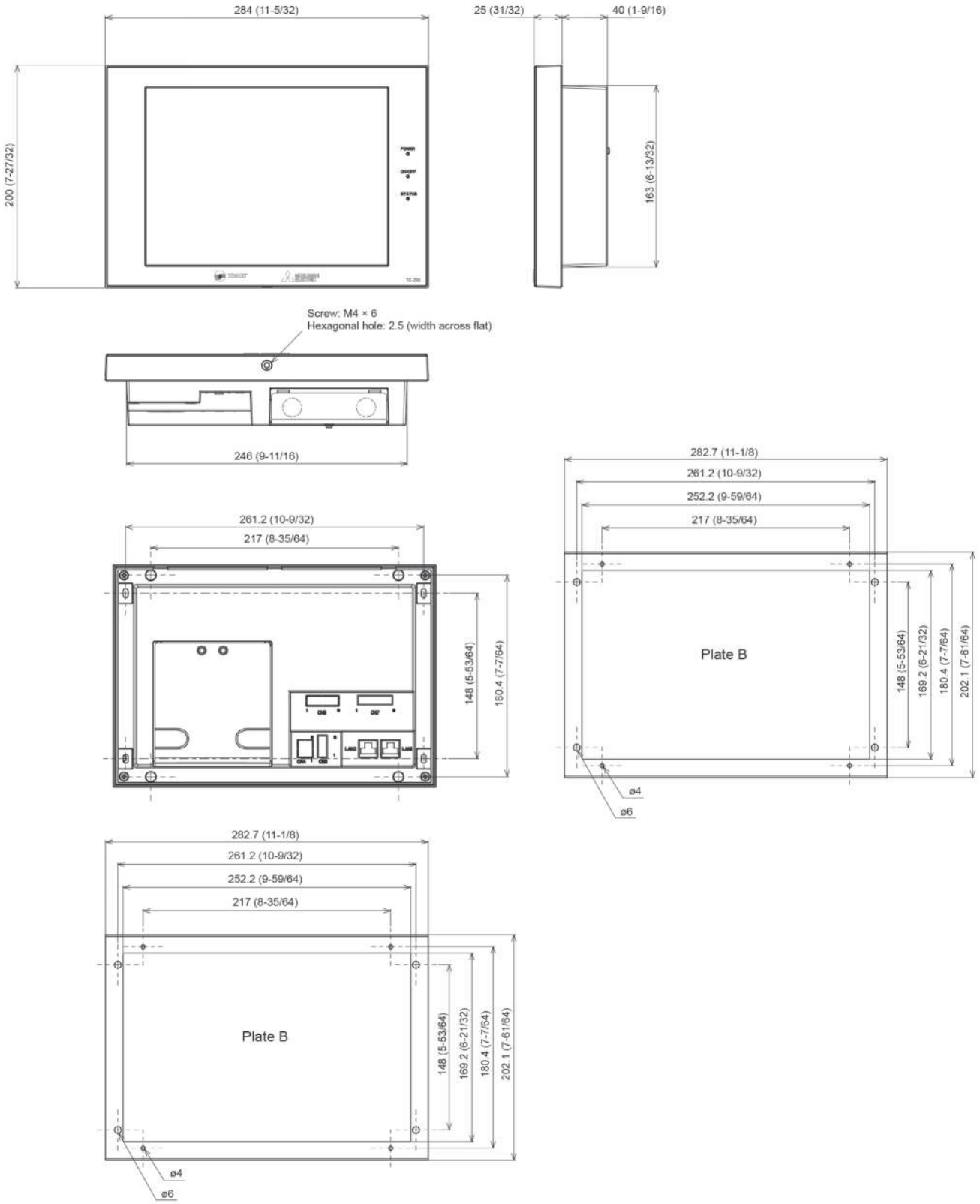


Specifications are subject to change without notice.

TE-200A - DIMENSIONS

*TE-200A is indicated as TE-200
*TE-50A is indicated as TE-50

Unit: mm (inch)



Specifications are subject to change without notice.

Warranty Document

LIMITED WARRANTY STATEMENT

Mitsubishi Electric CITY MULTI® Split Air-conditioner and Heat-pump Systems

Subject to the terms and conditions of this Limited Warranty Statement (the "Limited Warranty"), MITSUBISHI ELECTRIC TRANE HVAC US LLC ("METUS") warrants to the original purchaser of this CITY MULTI system (as used herein, "System" shall mean CITY MULTI outdoor and indoor components connected via refrigerant piping and electrical wiring) purchased on or after **May 1, 2019,** from a licensed HVAC contractor and installed by such contractor in the continental United States, Alaska and Hawaii, that:

A. The parts are warranted to the original owner for a period of one (1) year from the date of installation by a licensed contractor. If it should prove defective due to improper workmanship and/or material for a period of one (1) year from the date of installation, METUS will replace any defective part without charge for the part. Replacement parts are warranted for the remainder of the original 1-year warranty period. Parts used for replacement may be of like kind and quality and may be new or remanufactured. Defective parts must be made available to METUS in exchange for the replacement part and become the property of METUS.

B. The compressor is warranted to the original owner for a period of seven (7) years from the date of installation by a licensed contractor. If the compressor should prove defective due to improper workmanship and/or material for a period of seven (7) years from the date of installation, METUS will replace any defective compressor without charge for the compressor. Replacement compressors are warranted for the remainder of the original 7-year warranty period. Compressors used for replacement may be of like kind and quality and may be new or remanufactured. Defective compressors must be made available to METUS in exchange for the replacement compressor and become the property of METUS.

C. Notwithstanding the foregoing, the parts and compressor will be warranted to the original owner for a period of ten (10) years from the date of installation if (1) the System is designed by a Diamond Designer using the Diamond System Builder™ (2) the installing contractor has successfully completed all METUS-approved CITY MULTI training courses, and (3) the contractor has timely submitted a completed and approved Diamond System Builder™ file per the METUS Extended Warranty Process. If any parts and/or the compressor should prove defective due to improper workmanship and/or material for a period of ten (10) years from the date of installation, METUS will replace any defective parts or compressor without charge for the part or compressor. The replacement parts and/or compressor are warranted for the remainder of the original 10-year warranty period. Parts and/or compressors used for replacement may be of like kind and quality and may be new or remanufactured. Defective parts and/or compressors must be made available to METUS in exchange for the replacement parts and become the property of METUS.

D. NO LABOR. This Limited Warranty does NOT include labor or any other costs incurred for service, maintenance, repair, removing, replacing, installing, complying with local building and electric codes, shipping, handling or replacement of the System, compressors or any other parts. The owner is solely responsible for all labor and other costs of maintaining, installing, replacing, disconnecting or dismantling the System and any parts (such as filters) in connection with owner-required maintenance, including but not limited to cleaning and/or replacing air filters for each indoor unit of the System, and this Limited Warranty does not cover labor or other costs associated with such owner-required maintenance. Please consult the Operations Manual and other applicable technical documentation for air filter cleaning and other maintenance procedures.

E. PROPER INSTALLATION; PROOF OF PURCHASE. This Limited Warranty applies only to Systems that are installed by licensed HVAC contractors who have completed all METUS-required CITY MULTI training classes and who install the Systems in accordance with (i) all applicable building codes and permits; (ii) METUS installation and operation instructions; and (iii) good trade practices. METUS may require satisfactory proof of purchase, proper installation and start-up of the System as a condition to providing replacement parts or compressors under this Limited Warranty.

BEFORE REQUESTING SERVICE, please review the Operations Manual and technical documentation for your System to confirm the electric power supply and that user controls are properly adjusted for the System.

1) TO OBTAIN WARRANTY SERVICE:

a) Contact the licensed HVAC contractor who installed your System or another licensed HVAC contractor or servicer, or an authorized CITY MULTI distributor (whose name and address may be obtained on the METUS website at www.mehvac.com) within the applicable warranty time period.

b) Proof of the installation date is required when requesting warranty service. Present the sales receipt, building permit or other document which establishes the date of installation. In the absence of acceptable proof, this Limited Warranty shall be deemed to begin one hundred twenty (120) days after the date of manufacture stamped on the System.

c) This Limited Warranty applies only to Systems purchased on or after **May 1, 2019**, only while the System remains at the site of the original installation, and only to locations within the continental United States, Alaska and Hawaii.

d) All repairs under this Limited Warranty must be made by a licensed HVAC contractor or servicer.

1) THIS LIMITED WARRANTY DOES NOT COVER: property damages, malfunction or failure of the System, or personal injury caused by or resulting from: (a) accident, abuse, negligence or misuse; (b) operating the System in a corrosive or wet environment, including those containing chlorine, fluorine or any other hazardous or harmful chemicals or environmental factors, including sea- or salt-water; (c) installation, alteration, repair or service by anyone other than a licensed contractor or other than pursuant to the manufacturer's instructions; (d) improper matching of System components; (e) improper sizing of the System; (f) improper or deferred maintenance contrary to the manufacturer's instructions; (g) physical abuse to or misuse of the System (including failure to perform any maintenance as described in the Operation manual such as air filter cleaning, or any System damaged by excessive physical or electrical stress); (h) Systems that have had a serial number or any part thereof altered, defaced or removed; (i) System used in any manner contrary to the Operation Manual; (j) freight damage; or (k) events of force majeure or damage caused by other external factors such as lightning, power surges, fluctuations in or interruptions of electrical power, rodents, vermin, insects, or other animal- or pest-related issues.

2) THIS LIMITED WARRANTY ALSO EXCLUDES: (a) SERVICE CALLS WHERE NO DEFECT IN THE SYSTEM COVERED UNDER THIS WARRANTY IS FOUND: (b) System installation or set-ups; (c) Adjustments of user controls; (d) Systems purchased or installed outside the continental United States, Alaska and Hawaii; or (e) Systems purchased or installed prior to **May 1, 2018**. Consult the Operations Manual for information regarding user controls.

3) This Limited Warranty shall not be enlarged, extended or affected by, and no obligation or liability shall arise or grow out of, METUS providing, directly or indirectly, any technical advice, information and/or service to the original owner, contractor, distributor, or otherwise providing assistance in connection with the System.

4) EXCEPT AS OTHERWISE PROVIDED IN THIS LIMITED WARRANTY, METUS MAKES NO OTHER WARRANTIES OF ANY KIND WHATSOEVER REGARDING THE SYSTEM. METUS DISCLAIMS AND EXCLUDES ALL WARRANTIES NOT EXPRESSLY PROVIDED HEREIN AND ALL REMEDIES WHICH, BUT FOR THIS PROVISION, MIGHT ARISE BY IMPLICATION OR OPERATION OF LAW, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT OF THIRD PARTY RIGHTS, AND OF FITNESS FOR ANY PARTICULAR PURPOSE. NO ONE IS AUTHORIZED TO CHANGE THIS LIMITED WARRANTY IN ANY RESPECT OR TO CREATE ANY OTHER OBLIGATION OR LIABILITY FOR METUS IN CONNECTION WITH THE SYSTEM. METUS DISCLAIMS ALL LIABILITY FOR THE ACTS, OMISSIONS AND CONDUCT OF ALL THIRD PARTIES (INCLUDING, WITHOUT LIMITATION, THE INSTALLING CONTRACTOR) IN CONNECTION WITH OR RELATED TO THE SYSTEM.

5) UNDER NO CIRCUMSTANCES SHALL METUS BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES INCLUDING, WITHOUT LIMITATION, INFRINGEMENT OF THIRD PARTY RIGHTS, LOST GOODWILL, LOST REVENUES OR PROFITS, WORK STOPPAGE, SYSTEM FAILURE, IMPAIRMENT OF OTHER GOODS, COSTS OF REMOVAL AND REINSTALLATION OF THE SYSTEM, LOSS OF USE, INJURY TO PERSONS OR PROPERTY ARISING OUT OR RELATED TO THE SYSTEM WHETHER BASED ON BREACH OF WARRANTY, BREACH OF CONTRACT, TORT OR OTHERWISE, EVEN IF METUS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. IN NO EVENT SHALL METUS' LIABILITY EXCEED THE ACTUAL PURCHASE PRICE OF THE SYSTEM WITH RESPECT TO WHICH ANY CLAIM IS MADE.

6) **SOME STATES DO NOT ALLOW LIMITATIONS ON WARRANTIES OR EXCLUSIONS OR LIMITATION OF DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY.**

7) **DISPUTE RESOLUTION.** For any dispute with METUS, you agree to first contact us by phone (800-433-4822) or e-mail (CustomerCare@hvac.mea.com) or U.S. Mail at MITSUBISHI ELECTRIC TRANE HVAC US LLC ATTN: Customer Care, 1340 Satellite Blvd., Suwanee, GA 30024, and attempt to resolve the dispute with us informally by providing your name, address, and contact information and describing the nature of the dispute. In the unlikely event that METUS has not been able to resolve a dispute with you within 60 days of your original informal claim (or sooner if, in METUS' opinion, a dispute is not likely to be resolved within 60 days), we each agree to resolve any claim, dispute, or controversy arising out of or in connection with or relating to this Limited Warranty, or the breach or alleged breach thereof (collectively, "Claims"), by binding arbitration before an arbitrator from Judicial Mediation and Arbitration Services ("JAMS") located in Gwinnett County, Georgia. JAMS may be contacted at www.jamsadr.com and will require you to pay an initial filing fee set by JAMS (unless you successfully apply for a waiver of this fee from JAMS). All other JAMS costs associated with the arbitration will be borne by METUS. The arbitration will be conducted in Gwinnett County, Georgia, unless you request an in-person hearing where you live, or if you and METUS agree otherwise. If the arbitrator decides in your favor, the award may include your costs of arbitration, your reasonable attorneys' fees and your reasonable costs for any expert and other witnesses, and any judgment on the award rendered by the arbitrator may be entered in any court of competent jurisdiction. If the arbitrator makes an award in your favor greater than METUS's last written offer, METUS will pay you the greater of the award or $500, plus your reasonable attorney's fees, if any, and reimburse any reasonable expenses (including reasonable expert witness fees and costs) that are reasonably accrued for investigating, preparing, and pursuing your claim in arbitration, as determined by the arbitrator or as agreed to by you and METUS. Any judgment on the award rendered by the arbitrator may be entered in any court of competent jurisdiction. You may sue under state law in a small claims court of competent jurisdiction without first engaging in arbitration, but you must engage in arbitration before suing under the Federal Magnuson-Moss Act.

8) All claims must be brought in the parties' individual capacity, and not as a plaintiff or class member in any purported class or representative proceeding. This waiver applies to class arbitration unless such arbitration is necessary to effectuate the enforcement of the court class action waiver or in the event that class arbitration is expressly agreed to by METUS. You agree that you and METUS are each waiving the right to a trial by jury or to participate in a class action.

9) You may opt-out of the foregoing arbitration and class action/jury trial waiver provision of this Limited Warranty by notifying METUS in writing within 30 days of purchase. Such written notification must be sent to MITSUBISHI ELECTRIC TRANE HVAC US LLC ATTN: MEUS Legal Department, 5900-A Katella Avenue, Cypress, CA 90630, and must include (1) your name, (2) your address, (3) your warranted product's serial number, and (4) a clear statement indicating that you do not wish to resolve disputes through arbitration and demonstrating compliance with the 30-day time limit to opt-out.

10) **If any clause herein is found to be illegal or unenforceable, that clause will be severed from this Limited Warranty and the remainder of the Limited Warranty will be given full force and effect. As noted above, if a class action waiver of both court and arbitration class actions is found unenforceable, class arbitration will be expressly allowed under the Limited Warranty.**

11) **This Limited Warranty gives the original owner specific legal rights and the original owner may also have other rights that vary from state to state.**

12) **This Limited Warranty is valid only in the continental United States, Alaska and Hawaii, and it is not transferable.**