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SUBMITTAL REVIEW

CLIENT NAME: Vails Gate Fire Department

PROJECT TITLE: Vails Gate FD - New Firehouse

SUBMITTAL No.: 238126.12-1 **H2M PROJECT No.:** VGFD2001

SUBMITTAL NAME: Split Systems PD SD

SUBMITTAL REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS.
NO RESPONSIBILITY IS ASSUMED FOR CORRECTNESS
OF DIMENSIONS OR DETAILS

- [x] NO EXCEPTIONS TAKEN
- [ ] SUBMIT SPECIFIED ITEM
- [ ] MAKE CORRECTIONS NOTED (RESUBMISSION NOT REQUIRED)
- [ ] NO ACTION TAKEN (REVIEW IS THE RESPONSIBILITY OF ANOTHER PARTY)
- [ ] REVISE & RESUBMIT
- [ ] NO ACTION TAKEN (THIS SUBMITTAL IS NOT REQUIRED BY THE CONTRACT)
- [ ] REJECTED - SEE REMARKS
- [ ] RECEIVED FOR RECORD

Corrections or comments made on the shop drawings during this review do not relieve contractor from compliance with requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating their work with that of all other trades; and performing the work in a safe and satisfactory manner.

H2M architects + engineers

Date: 03/09/2023 By: MJV

Rev.: 2020-05-20

Comments:

Confirm space is available for larger branch control boxes.

Contractor responsible for any modifications due to substituted equipment.

VRF manufacturer shall confirm all piping sizes and lengths prior to installation.

CONTRACTOR'S COMPANY NAME
ADDRESS

SUBMISSION TRANSMITTAL FORM
CLIENT NAME: Vails Gate Fire District
PROJECT TITLE: VGFD2001-New Firehouse

H2M PROJECT NO.: VGFD2001

Product, Item, or System Submitted:	Split System Product Data & Shop Drawings		
Submission Date:	2/13/2023	Submission Log No.:	238126.12-1
Specification Section:	238126.12	Paragraph Reference:	1.06/A
Contract Drawing Reference(s):			
Manufacturer's Name:			
Manufacturer's Mailing Address:			
Manufacturer's Contact Information:	*Name*	( ) *Tel. no.*	*Email*
Supplier's Name:	Joe Lombardo Plumbing & Heating		
Supplier's Mailing Address:			
Supplier's Contact Information:	*Name*	( ) *Tel. no.*	*Email*
This item is a substitution for the specified item:		☑ No	☐ Yes

KEY CONSTRUCTION SERVICES, LLC

Project No: VGFD2001

Reviewed for General Acceptance Only. This review does not relieve the Subcontractors or Suppliers of responsibility for making the work conform to the requirements of the contract. The Subcontractor and Suppliers are responsible for all dimensions, correct fabrication and accurate fit with the work of other trades.

SUBJECT TO ARCHITECT AND OR ENGINEER APPROVAL

Signed *Joseph Manfredi*(PM) **Date: 2/13/2023**

Contractor's Approval Stamp with Signature & Date

Contractor's Brief Comments or Remarks (attach separate letter as needed):

By making this submission, we represent that we have determined and verified all field measurements and dimensions, field construction criteria, site and building constraints in terms of limitations in moving the item into the enclosed space, materials, catalog and model numbers and similar data and that we have checked and coordinated this submission with other work at or adjacent to the installed location in accordance with the requirements contained in the Contract Documents.

END OF SECTION 013300

Joe Lombardo

Plumbing & Heating of Rockland, Inc.

321 Spook Rock Road
Suffern, NY 10901
Ph. 845-357-6537 Fx 845-357-8529
E: info@josephlombardo.com
Website: www.josephlombardo.com

Rockland Cty. Plumbing #1000 *Rockland Cty. Cooling # 1468*
Westchester Cty. Plumbing #460 *New Jersey State Plumbing #12702*

LETTER OF TRANSMITTAL

DATE: 02/09/23	JOB NO.
ATTENTION: Joe Manfredi	
RE: Vails Gate Firehouse	

TO: Key Construction
4246 Albany Post Rd. Suite 1
Hyde Park, NY 12538

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via _____ the following items:

☐ Shop Drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1	02/09/23	238126.12	MULTIPLE EVAPORATOR DIRECT EXPANSION AIR COOLED VARIABLE CAPCITY SPLIT SYSTEMS

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ No Exceptions Taken ☐ Resubmit _____ copies for review
☐ For your use ☐ Make Corrections Noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Rejected ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 20___ ☐ PRINTS RETURNED AFTER LOAN TO US

COPY TO: _____

SIGNED: Ronald J. Lombardo

Submittal

Prepared For:
H2M

Date: December 27, 2022

Job Name:
Vails Gate Fire District

Sold To:
Joe Lombardo Plumbing & Heating
Attn: Ronald Lombardo

Trane U.S. Inc. is pleased to provide the following submittal for your review and approval.

Product Summary

Qty	Product
4	Trane - Mitsubishi VRF Branch Controller (JV_BCU)
18	Trane - Mitsubishi VRF Indoor Unit (JV_IDU)
2	Trane - Mitsubishi VRF Outdoor Unit (JV_ODU)
1	Trane - Mitsubishi Ductless Split (P Series) (JV_P)

Not Included: smoke detectors, refrigeration tees, filter boxes, flow switches, secondary drain pans, secondary condensate overflow sensors, external condensate pumps (unless otherwise noted), disconnects, refrigerant piping specialties, hangers, refrigerant piping, water piping, hose kits/valves, insulation, isolation valves, watt-hour meters, tenant billing software, additional refrigerant, roof rails or curbs, condensing unit mounting brackets, humidity sensors, external vibration isolation, rigging/receiving, spare parts, service labor, installation labor, LEV installation, LEV sensor installation, extended warranty, labor warranty.

Stav Shadmi
Trane U.S. Inc.
19 Chapin Road, Bldg B, Suite 200
Pine Brook, NJ 07058
Office Phone: (973) 244-7000

The attached information describes the equipment we propose to furnish for this project and is submitted for your approval.

Submittal acceptance and return is a critical step, so please ensure submittals are returned with approval to release to production within 14 days of submittal date.

Product performance and submittal data is valid for a period of 6 months from the date of submittal generation. If six months or more has elapsed between submittal generation and equipment release, the product performance and submittal data will need to be verified. It is the customer's responsibility to obtain such verification.

Ductless Warranty/Technical Installation Support

A. Site Review by Ductless Technical Specialist
   1. Pre-construction meeting with Trane Ductless Technical Specialist required to review site conditions, installation requirements, best practices, and pre-startup requirements.
   2. At least (1) jobsite review during installation with Trane Ductless Technical Specialist required.
   3. Installing Contractor must provide updated piping layout required to complete the Diamond System Builder design file.
   4. Owner-Training by Trane Service Department is not included unless otherwise noted.

B. VRF City-Multi Start-Up Assistance by Ductless Technical Specialist
   1. No start-up assistance included on Nv&P-Series Mini-Splits unless otherwise noted.
   2. Trane can provide a Ductless Technical Specialist to supervise the startup of up to 2 systems.
   3. Installing Contractor MUST have technicians on-site to perform mechanical start-up under the supervision of Trane. Technician must be equipped with Maintenance Tool and Laptop.
   4. Installing Contractor must contact Ductless Technical Specialist to schedule VRF Start-Up Supervision no less than 2 weeks before requested start-up date.
   5. Installing contractor must submit completed Component Location Sheet and Prestart Checklist to Ductless Technical Specialist no later than 3-days prior to requested start-up date.
   6. Installing Contractor must verify system installations meet Trane-Mitsubishi requirements including but not limited to service clearances, pressure tests, vacuum tests, electrical power to units, wiring/piping connections, and refrigerant charge prior to start-up.
   7. No installation labor will be completed by Trane personnel unless otherwise noted.
   8. City Multi and Nv&P-Series Service/Maintenance Tools not included unless otherwise noted.
   9. Any additional labor required from Trane to complete start-up procedure will be billed separately.

   Responsibilities of DTS at Assisted Start-Up:
      1. Provide support to installing contractor as system start-up data is pulled into Maintenance Tool
      2. Update Diamond System Builder per marked-up as-built provided by Installing Contractor
      3. Population of TE-200/TW-50 if applicable (any integration and programming by others)

   Responsibilities of Installing Contractor at Assisted Start-Up:
      1. Electrical Testing on outdoor units
      2. Physical inspection of the outdoor units
      3. Troubleshoot indoor units if there is an issue
      4. Handling of additional refrigerant and adding of trim charge
      5. Setting addresses on the Indoor units, Outdoor units, Controllers, and Branch Controllers (if applicable)
      6. Performing of vacuum and pressure tests

C. Warranty
   1. VRF City-Multi Standard Warranty is 1 year parts, 7 year compressor from the time of startup. VRF City-Multi Extended 10-Year Parts/Compressor Warranty will be applied if the following requirements are met:
      a. Installing Contractor completes a certified Trane-Mitsubishi 3-day City-Multi Installation/Service Course, and documents attendees and date of completion.
      b. The system is designed by a certified Diamond Designer using Diamond System Builder™
      c. The contractor generates a complete and approved METUS Extended Warranty Process Report from the Diamond System Builder software.

      (See Trane-Mitsubishi Warranty Policy for details.)
   2. Installing Contractor is responsible for completion of Diamond System Builder warranty filing and final submission to METUS Extended Warranty Department.
   3. Nv&P Series Standard Warranty is 5 year parts, 7 year compressor from the time of startup. Nv&P Series Extended 10-Year Parts/Compressor Warranty will be applied if the product is installed in a residential application and registered within 90 days of installation. See Nv-Series and P-Series Limited Warranty Policies for details.
   4. No labor warranty is included here unless otherwise noted. Please contact your Trane Account Manager for availability.

Supplementary Guidelines

A. Purchasing Contractor and/or Consulting Engineer must validate unit voltages, model numbers, quantities, required accessories, and unit configurations prior to order.
B. Consulting Engineer/Architect and Installing Contractor must approve equipment submittals and system design prior to order, including but not limited to all code/standard compliances, system application (heat pump vs. heat recovery), service clearances, refrigerant concentration compliance, load analysis, unit configuration, and installation requirements.
C. Outdoor condensing units must be installed on stands at a minimum height of 12”. Ground installation or raised pads are not acceptable.
D. Insulation is required on all condensate piping and refrigerant piping including liquid lines, low pressure gas lines, and high pressure gas lines.
E. All M-Net Control Wiring must be 16AWG, 2-conductor, stranded, shielded cable (MA controllers allow 22-16AWG wire)
F. All BC-Controllers must have condensate drain line installed.
G. All Linear Expansion Valve kits require 208V/1ph power.
H. Additional units/accessories not included in the scope will be at an additional cost.
I. All TQ*YP Water Source units require a **field-supplied** flow switch and strainer. Water quality must be adequately maintained. See the METUS installation manual for full details.

Tag Data - Trane - Mitsubishi VRF Branch Controller (JV_BCU) (Qty: 4)

Item	Tag(s)	Qty	Description
B1	BC-1	1	Trane - Mitsubishi VRF Branch Controller
B2	BC-2	1	Trane - Mitsubishi VRF Branch Controller
B3	BC-1	1	Trane - Mitsubishi VRF Branch Controller
B4	BC-2	1	Trane - Mitsubishi VRF Branch Controller

Product Data - Trane - Mitsubishi VRF Branch Controller (JV_BCU)

Item: B1, B3 Qty: 2 Tag(s): BC-1
Accessory 8 Branch Main BC

Item: B2 Qty: 1 Tag(s): BC-2
Accessory 4 Branch Sub BC

Item: B4 Qty: 1 Tag(s): BC-2
Accessory 8 Branch Sub BC

Tag Data - JV_CTRL

Item	Tag(s)	Qty	Description
C1	Trane - Mitsu	1	Trane - Mitsubishi VRF Controls (JV_CTRL

Product Data - JV_CTRL

Item: C1 Qty: 1 Tag(s): Trane - Mitsu
TW-50A

Tag Data - Trane - Mitsubishi VRF Indoor Unit (JV_IDU) (Qty: 18)

Item	Tag(s)	Qty	Description
D1	EU-102, EU-118	2	Trane - Mitsubishi VRF Indoor Unit
D2	EU-114	1	Trane - Mitsubishi VRF Indoor Unit
D3	EU-120	1	Trane - Mitsubishi VRF Indoor Unit
D4	116-1, 116-2, 116-3	3	Trane - Mitsubishi VRF Indoor Unit
D5	EU-125A	1	Trane - Mitsubishi VRF Indoor Unit
D6	EU-202	1	Trane - Mitsubishi VRF Indoor Unit
D7	EU-203, EU-211, EU-212, EU-213, EU-214, EU-215	6	Trane - Mitsubishi VRF Indoor Unit
D8	FCU-203A	1	Trane - Mitsubishi VRF Indoor Unit
D9	FCU-206	1	Trane - Mitsubishi VRF Indoor Unit
D10	EU-210	1	Trane - Mitsubishi VRF Indoor Unit

Product Data - Trane - Mitsubishi VRF Indoor Unit (JV_IDU)
All Units
CN24 Relay Kit for 2nd Stage Heat (Fld)
TAR-CT01MAU-SB 7Day Programmable Touchscreen Wall Controller

Item: D1, D6 Qty: 3 Tag(s): EU-102, EU-118, EU-202
TPLFYP018FM140A 4-Way Ceiling Cassette,
TLP-18FAU (Field Installed)

Item: D2, D7 Qty: 7 Tag(s): EU-114, EU-203, EU-211, EU-212, EU-213, EU-214, EU-215
TPLFYP005FM140A 4-Way Ceiling Cassette,
TLP-18FAU (Field Installed)

Item: D3, D10 Qty: 2 Tag(s): EU-120, EU-210
TPLFYP008FM140A 4-Way Ceiling Cassette
TLP-18FAU (Field Installed)

Item: D4, D9 Qty: 4 Tag(s): 116-1, 116-2, 116-3, FCU-206

TPEFYP036MA144A Ceiling Concealed Ducted

Item: D5 Qty: 1 Tag(s): EU-125A
TPLFYP012FM140A 4-Way Ceiling Cassette
TLP-18FAU (Field Installed)

Item: D8 Qty: 1 Tag(s): FCU-203A
TPEFYP048MA144A Ceiling Concealed Ducted

Tag Data - Trane - Mitsubishi VRF Outdoor Unit (JV_ODU) (Qty: 2)

Item	Tag(s)	Qty	Description
E1	ACCU-1	1	Trane - Mitsubishi VRF Outdoor Unit (JV_
E2	ACCU-2	1	Trane - Mitsubishi VRF Outdoor Unit (JV_

Product Data - Trane - Mitsubishi VRF Outdoor Unit (JV_ODU)
All Units
TURYE1683AN40AN – 14ton 208V Heat Recovery High Efficiency ODU
LAHN-1 Low Ambient Hood (Master) for SM/
LAHN-2 Low Ambient Hood (Sub) for XL
SWDN-1 Side Wind Deflectors
2 WDN-1 Front and Rear Wind DeflectorSM/XL

Tag Data - Trane - Mitsubishi Ductless Split (P Series) (JV_P) (Qty: 2)

Item	Tag(s)	Qty	Description
F1	OU-1	1	Trane - Mitsubishi Ductless Split (P Ser
F2	IU-1	1	Trane - Mitsubishi Ductless Split (P Ser

Product Data - Trane - Mitsubishi Ductless Split (P Series) (JV_P)

Item: F1 Qty: 1 Tag(s): OU-1
TRUZA0121KA70NA Heat Pump
WB-PA4
PAC-SJ96MA-E Converter for MNET

Item: F2 Qty: 1 Tag(s): IU-1
TPKA0A0121LA00A Wall Mounted
SS610E Drain Pan Level Sensor/Control
CN24RELAY-KIT-CM3 Relay Kit (Fld)
TAR-CT01MAU-SB 7Day Programmable Touchscreen Wall Controller

Submittal

Project Name:

Vails Gate - H2M - Submittal Copy (Revision 1)

Contractor:	Lombardo
Engineer:	H2M
Architect:	H2M
Rep/Distributor:	Trane

Project Detail:

Customer:	Vails Gate Fire District
Address:	872 Blooming Grove Turnpike
City:	New Windsor
State:	NY
Zip:	12553

Submittal Date:

12/27/2022

Submitted By:

Name:	
Company:	Trane Technologies
Email:	
Phone:	
Submittal Stage:	For Approval

Equipment Schedules

MITSUBISHI ELECTRIC TRANE HVAC US: CITY MULTI VRF OUTDOOR UNIT SCHEDULE

System Tag	Tag Reference	M-NET Address	Model Number	Modules	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Efficiency IEER/EER [SEER]	Heating COP @ 47°F [HSPF]	Design Cooling Outdoor Temp DB (°F)	Design Heating Outdoor Temp WB (°F)	Corrected Cooling Total Capacity (BTU/h)	Corrected Heating Capacity (BTU/h)	Sound Pressure (dBA)	Electrical-Per Module 208/230 or [460V]				Notes / Options
														Voltage / Phase	MCA 208/230 or [460V]	RFS	MOCP	
System 1	ACCU-1	51	TURYE1683AN40AN	P168	168,000.0	188,000.0	25.7 / 11.55	3.55	94.0	-2.0	148,700.3	105,345.2	62.5/66.5	208/230V / 3-phase 3-wire	57/53	70/70	90/80	1, 2, 3, 4, 5, 6
System 2	ACCU-2	59	TURYE1683AN40AN	P168	168,000.0	188,000.0	25.7 / 11.55	3.55	94.0	-2.0	167,740.6	107,595.2	62.5/66.5	208/230V / 3-phase 3-wire	57/53	70/70	90/80	1, 2, 3, 4, 5, 6
System 3	OU-1	19	TRUZA0121KA70NA		12,000.0	14,000.0	0 [21]	0 [10.2]	94.0	-2.0	10,852.8	8,368.8	44/46	208/230V / 1-phase	11	15	28	1, 2, 3, 4, 5, 6

Notes & Options:

1 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)
2 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)
3 Efficiency values for EER, IEER, COP are based on AHRI 1230 test method for mixture of ducted & non-ducted indoor units.
4 For systems with multiple modules, refrigerant pipe dimensions indicate total system combined piping downstream of module twinning.
5 Added field charge listed is in addition to factory charge, this must be updated based upon final as-built piping layout.
6 Corrected capacities shown are based on lowest guaranteed outdoor temperature, temperatures below this are not guaranteed.

MITSUBISHI ELECTRIC TRANE HVAC US: CITY MULTI VRF INDOOR UNIT SCHEDULE

System Tag	Room Name	Tag Reference	Model	Type	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Design Entering Temp DB/WB (°F) / [Water in temp]	Heating Design Entering Temp DB/WB (°F) / [Water in temp]	Corrected Capacity					Refrig Pipe Dim Liquid/Suction (inch)	Fan Speed Setting	Peak Fan Airflow (cfm) / [Design gpm G(US)/min]	Max Fan ESP Setting 208V/230V (IN WG)	Voltage / Phase	Electrical MCA/MFS	Notes / Options
									Cooling Diversity Full/Partial (See Note 5, 6)	Cooling Total Capacity (BTU/h)	Cooling Sensible Capacity (BTU/h)	Heating Diversity Full/Partial (See Note 5, 6)	Heating Capacity (BTU/h)							
System 1		EU-102	TPLFYP018FM140A	Ceiling-Cassette (Four-Way)	18,000.0	20,000.0	80.0/67.0	70.0	FULL DEMAND	15,837.9	10,988.3	FULL DEMAND	11,201.0	1/4 / 1/2	HIGH	460		208/230V/1-phase	0.5/0.5/15	1, 2, 3, 4, 5, 6
System 1		EU-114	TPLFYP005FM140A	Ceiling-Cassette (Four-Way)	5,000.0	5,600.0	80.0/67.0	70.0	FULL DEMAND	4,399.4	4,161.6	FULL DEMAND	3,136.3	1/4 / 1/2	HIGH	280		208/230V/1-phase	0.24/0.24/15	1, 2, 3, 4, 5, 6
System 1		EU-118	TPLFYP018FM140A	Ceiling-Cassette (Four-Way)	18,000.0	20,000.0	80.0/67.0	70.0	FULL DEMAND	15,837.9	10,988.3	FULL DEMAND	11,201.0	1/4 / 1/2	HIGH	460		208/230V/1-phase	0.5/0.5/15	1, 2, 3, 4, 5, 6
System 1		EU-120	TPLFYP008FM140A	Ceiling-Cassette (Four-Way)	8,000.0	9,000.0	80.0/67.0	70.0	FULL DEMAND	7,039.1	5,847.4	FULL DEMAND	5,040.4	1/4 / 1/2	HIGH	315		208/230V/1-phase	0.28/0.28/15	1, 2, 3, 4, 5, 6
System 1		116-1	TPEFYP036MA144A	Ceiling-Concealed (Ducted)	36,000.0	40,000.0	80.0/67.0	70.0	FULL DEMAND	31,675.8	26,731.7	FULL DEMAND	22,402.0	3/8 / 5/8	HIGH	1271	0.6/0.6	208/230V/1-phase	4.25/15	1, 2, 3, 4, 5, 6
System 1		116-2	TPEFYP036MA144A	Ceiling-Concealed (Ducted)	36,000.0	40,000.0	80.0/67.0	70.0	FULL DEMAND	31,675.8	26,731.7	FULL DEMAND	22,402.0	3/8 / 5/8	HIGH	1271	0.6/0.6	208/230V/1-phase	4.25/15	1, 2, 3, 4, 5, 6
System 1		116-3	TPEFYP036MA144A	Ceiling-Concealed (Ducted)	36,000.0	40,000.0	80.0/67.0	70.0	FULL DEMAND	31,675.8	26,731.7	FULL DEMAND	22,402.0	3/8 / 5/8	HIGH	1271	0.6/0.6	208/230V/1-phase	4.25/15	1, 2, 3, 4, 5, 6
System 1		EU-125A	TPLFYP012FM140A	Ceiling-Cassette (Four-Way)	12,000.0	13,500.0	80.0/67.0	70.0	FULL DEMAND	10,558.6	7,475.5	FULL DEMAND	7,560.7	1/4 / 1/2	HIGH	335		208/230V/1-phase	0.29/0.29/15	1, 2, 3, 4, 5, 6
System 2		EU-210	TPLFYP008FM140A	Ceiling-Cassette (Four-Way)	8,000.0	9,000.0	80.0/67.0	70.0	FULL DEMAND	7,798.3	6,138.9	FULL DEMAND	6,183.6	1/4 / 1/2	HIGH	315		208/230V/1-phase	0.28/0.28/15	1, 2, 3, 4, 5, 6
System 2		EU-211	TPLFYP005FM140A	Ceiling-Cassette (Four-Way)	5,000.0	5,600.0	80.0/67.0	70.0	FULL DEMAND	4,873.9	4,336.4	FULL DEMAND	3,847.6	1/4 / 1/2	HIGH	280		208/230V/1-phase	0.24/0.24/15	1, 2, 3, 4, 5, 6
System 2		EU-212	TPLFYP005FM140A	Ceiling-Cassette (Four-Way)	5,000.0	5,600.0	80.0/67.0	70.0	FULL DEMAND	4,873.9	4,336.4	FULL DEMAND	3,847.6	1/4 / 1/2	HIGH	280		208/230V/1-phase	0.24/0.24/15	1, 2, 3, 4, 5, 6
System 2		EU-213	TPLFYP005FM140A	Ceiling-Cassette (Four-Way)	5,000.0	5,600.0	80.0/67.0	70.0	FULL DEMAND	4,873.9	4,336.4	FULL DEMAND	3,847.6	1/4 / 1/2	HIGH	280		208/230V/1-phase	0.24/0.24/15	1, 2, 3, 4, 5, 6
System 2		EU-214	TPLFYP005FM140A	Ceiling-Cassette (Four-Way)	5,000.0	5,600.0	80.0/67.0	70.0	FULL DEMAND	4,873.9	4,336.4	FULL DEMAND	3,847.6	1/4 / 1/2	HIGH	280		208/230V/1-phase	0.24/0.24/15	1, 2, 3, 4, 5, 6
System 2		EU-215	TPLFYP005FM140A	Ceiling-Cassette (Four-Way)	5,000.0	5,600.0	80.0/67.0	70.0	FULL DEMAND	4,873.9	4,336.4	FULL DEMAND	3,847.6	1/4 / 1/2	HIGH	280		208/230V/1-phase	0.24/0.24/15	1, 2, 3, 4, 5, 6
System 2		FCU-203A	TPEFYP048MA144A	Ceiling-Concealed (Ducted)	48,000.0	54,000.0	80.0/67.0	70.0	FULL DEMAND	46,789.6	33,083.1	FULL DEMAND	37,101.8	3/8 / 5/8	HIGH	1306	0.6/0.6	208/230V/1-phase	4.38/15	1, 2, 3, 4, 5, 6
System 2		EU-202	TPLFYP018FM140A	Ceiling-Cassette (Four-Way)	18,000.0	20,000.0	80.0/67.0	70.0	FULL DEMAND	17,546.1	11,709.5	FULL DEMAND	13,741.4	1/4 / 1/2	HIGH	460		208/230V/1-phase	0.5/0.5/15	1, 2, 3, 4, 5, 6
System 2		EU-203	TPLFYP005FM140A	Ceiling-Cassette (Four-Way)	5,000.0	5,600.0	80.0/67.0	70.0	FULL DEMAND	4,873.9	4,336.4	FULL DEMAND	3,847.6	1/4 / 1/2	HIGH	280		208/230V/1-phase	0.24/0.24/15	1, 2, 3, 4, 5, 6
System 2		FCU-206	TPEFYP036MA144A	Ceiling-Concealed (Ducted)	36,000.0	40,000.0	80.0/67.0	70.0	FULL DEMAND	35,092.2	28,038.0	FULL DEMAND	27,482.8	3/8 / 5/8	HIGH	1271	0.6/0.6	208/230V/1-phase	4.25/15	1, 2, 3, 4, 5, 6
System 3		IU-1	TPKA0A0121LA00A	Wall -Mounted	12,000.0	14,000.0	80.0/67.0	70.0	FULL DEMAND	10,852.8	10,122.5	FULL DEMAND	8,368.8	1/2 / 1/4	HIGH	385		208/230V/1-phase	Powered by Outdoor	1, 2, 3, 4, 5, 6

Notes & Options:

1 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)

2 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)

3 See outdoor unit schedule for outdoor ambient conditions, connected capacity, and other factors associated with corrected capacities

4 See schematic piping/control diagram for indication of required indoor unit remote controllers, system controllers, and integration devices.

5 Full demand corrected capacity includes de-rate associated with indoor vs. outdoor connected capacity indicated on outdoor unit schedule for associated system.
Partial corrected capacity assumes sufficient diversity exists such that the connected capacity de-rate does not apply.
It is the designer's responsibility to ensure "Diamond System Builder" is set in the appropriate output capacity setting (full demand/partial demand) prior to generating this schedule.

6 It is recommended to always base heating corrected capacity on full demand.

VRF HEAT RECOVERY BRANCH CIRCUIT CONTROLLER

System Tag	Tag Reference	M-NET Address	Model Number	Type (double / Main / Sub)	Number of Ports	Connected Capacity to BC	Voltage / Phase	MCA 208/230	Notes / Options
System 1	BC-1	52	TCMBM0108JA11N4	Main	8	169,000.0	208/230V/1-phase		1, 2
System 1	BC-2	55	TCMBS0104KB11N4	Sub	4	120,000.0	208/230V/1-phase		1, 2
System 2	BC-4	60	TCMBM0108JA11N4	Main	8	140,000.0	208/230V/1-phase		1, 2
System 2	BC-3	65	TCMBS0108KB11N4	Sub	8	107,000.0	208/230V/1-phase		1, 2

Notes & Options:

1 Include Diamondback Ball Valves BV-Series, 700PSIG working pressure, full port, 410A rated.

2 For sub BC controller CMB-P-NU-GB1 or -GB, the total connectable indoor unit capacity can be 126,000 BTUs or less. If two sub BC controllers are used, the total indoor unit capacity connected to BOTH sub BC controllers also cannot exceed 126,000 BTUs. For sub BC controller CMB-P1016NU-HB1 the total connectable indoor unit capacity can be 126,000 BTUs or less. However, if two sub controllers are used, and one of them is CMB-1016NU-HB1, the total indoor unit capacity connected to BOTH sub controllers must NOT exceed 168,000 BTUs.

Design View Piping Diagrams

Indoor Units:	8 / 1 to 42		
Capacity:	169 / 84 to 252	(100.6%)	
* Connectable capacity is not actual capacity.			
Total Pipe Length:	472.0 / 1911.0	feet	
Furthest Actual:	245.0 / 541.0	feet	
Furthest Equiv.:	245.0 / 623.0	feet	
Furthest IU from BC Actual:	190.0 / 197.0	feet	
Furthest IU from BC Equiv.:	190.0 / 197.0	feet	
Furthest IU from BC Thru Sub BC Actual:	91.0 / 295.0	feet	
Furthest IU from BC Thru Sub BC Equiv.:	91.0 / 295.0	feet	

Correction Factors

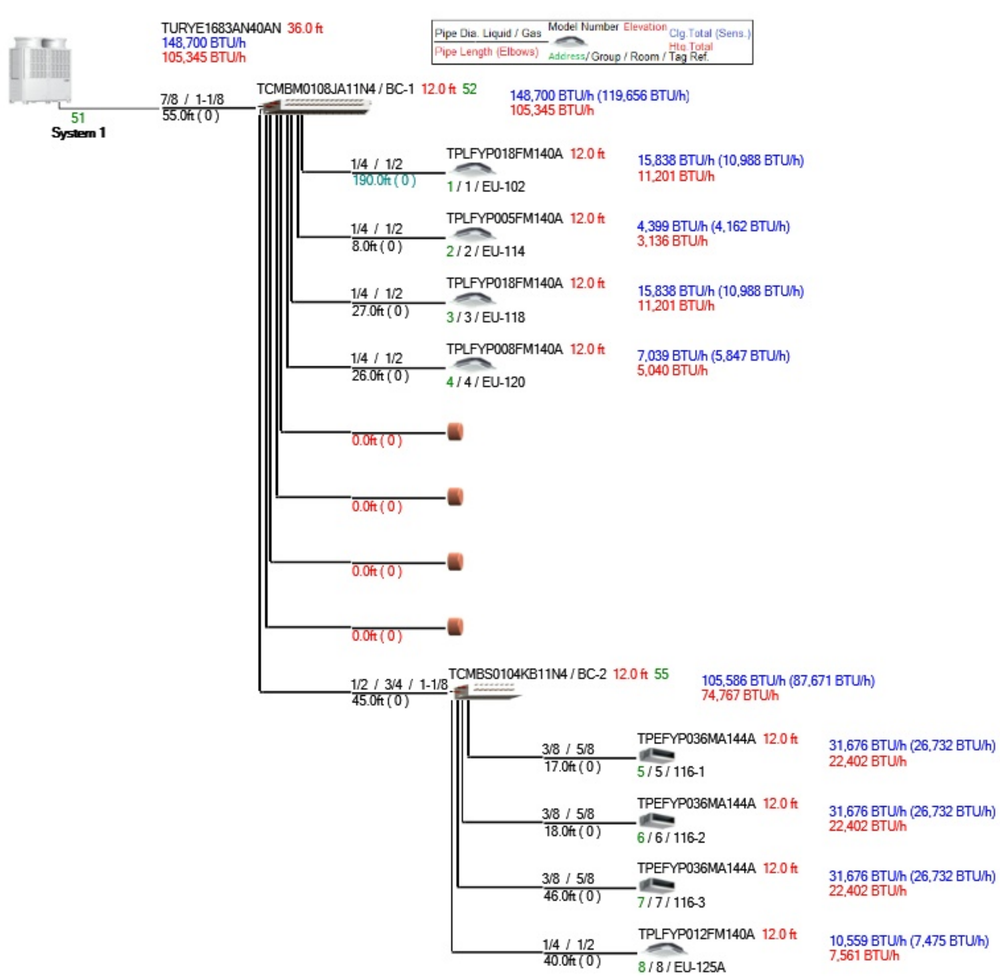
Outdoor Unit Capacity:	1.00	1.00
Temperature:	1.01	0.62
Piping Length:	0.89	0.95
Defrosting:	-	0.95
User Derate:	1.00	1.00
Total Derate:	0.89	0.56

Additional Refrigerant: 35.72 lb
Total Refrigerant Amount: 59.53 lb

Conditions (°F)

Cooling
Indoor DB 80.0 Humidity 51.8% Indoor WB 67.0
Outdoor DB 94.0

Heating
Indoor DB 70.0
Outdoor DB 0.0 Humidity 32.5% Outdoor WB -2.0



Indoor Units:	10 / 1 to 42	
Capacity:	140 / 84 to 252	(83.3%)
* Connectable capacity is not actual capacity.		
Total Pipe Length:	417.0 / 1948.5	feet
Furthest Actual:	141.0 / 541.0	feet
Furthest Equiv.:	141.0 / 623.0	feet
Furthest IU from BC Actual:	68.0 / 197.0	feet
Furthest IU from BC Equiv.:	68.0 / 197.0	feet
Furthest IU from BC Thru Sub BC Actual:	101.0 / 295.0	feet
Furthest IU from BC Thru Sub BC Equiv.:	101.0 / 295.0	feet

Correction Factors

Outdoor Unit Capacity:	1.00	1.00
Temperature:	1.01	0.62
Piping Length:	1.00	0.97
Defrosting:	-	0.95
User Derate:	1.00	1.00
Total Derate:	1.00	0.57

Additional Refrigerant: 28.90 lb

Total Refrigerant Amount: 52.71 lb

Conditions (°F)

Cooling

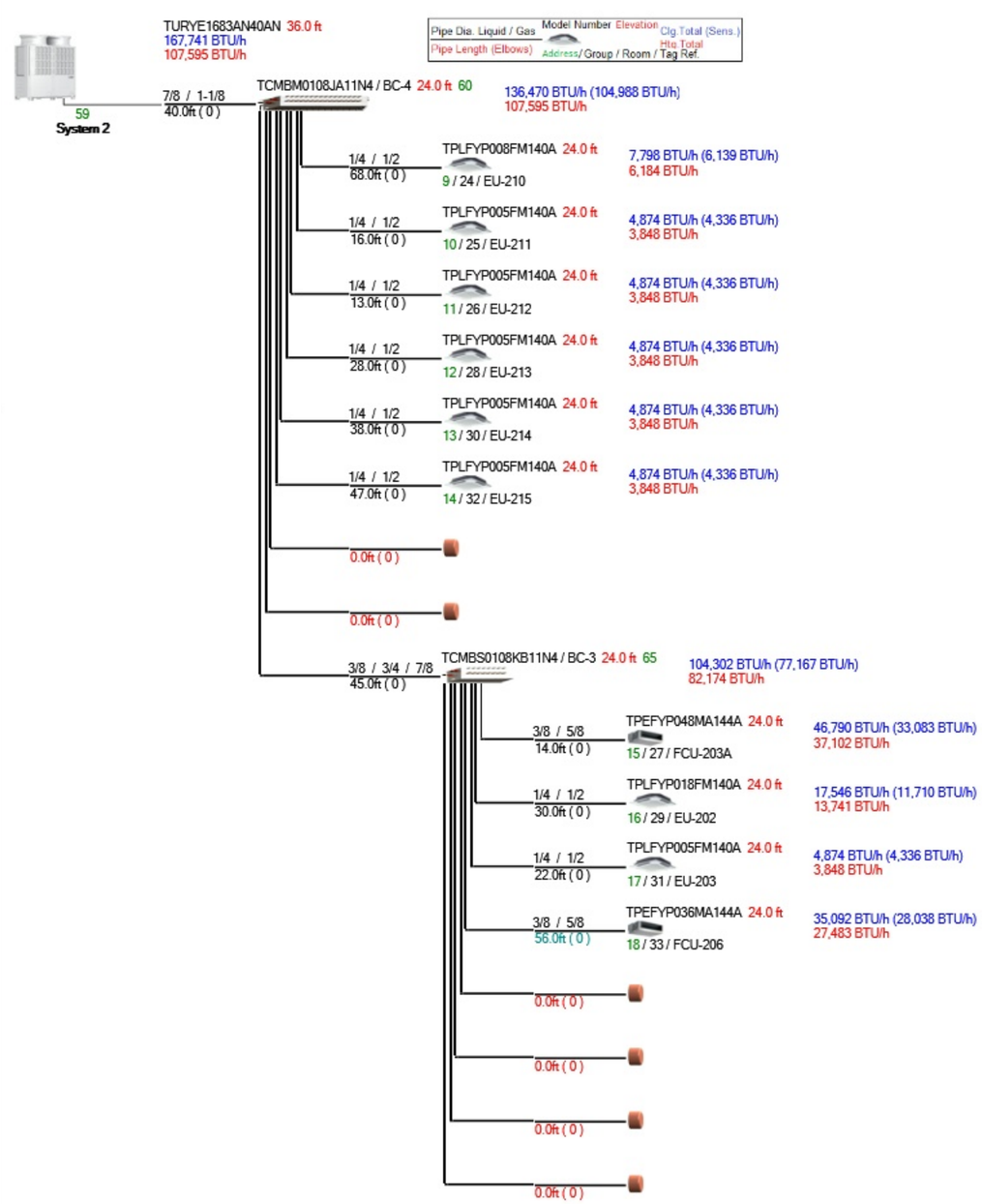
Indoor DB 80.0 Humidity 51.8% Indoor WB 67.0

Outdoor DB 94.0

Heating

Indoor DB 70.0

Outdoor DB 0.0 Humidity 32.5% Outdoor WB -2.0



Indoor Units:		1 / 1 to 1	
Capacity:		12 / 6 to 12	(100.0%)
* Connectable capacity is not actual capacity.			
Total Pipe Length:		70.0 / 100.0	feet

Correction Factors

Temperature:	1.01	0.62
Piping Length:	0.92	0.99
Defrosting:	-	1.00
User Derate:	1.00	1.00
Total Derate:	0.90	0.60

Additional Refrigerant: 0.00 lb

Total Refrigerant Amount: 4.44 lb

Conditions (°F)

Cooling

Indoor DB 80.0 Humidity 51.8% Indoor WB 67.0

Outdoor DB 94.0

Heating

Indoor DB 70.0

Outdoor DB 0.0 Humidity 32.5% Outdoor WB -2.0

⚠ Outdoor Unit Heating Range Error: This unit is only rated to 14.0F, but derates are based upon minimum values. May need auxiliary heat.

19

System 3

TRUZA0121KA70NA 1.0 ft

1/4 / 1/2

70.0ft (0)

TPKA0A0121LA00A 1.0 ft

19 / 19 / IU-1

Pipe Dia. Liquid / Gas | Model Number | Elevation | Clg.Total (Sens.)

Pipe Length (Elbows) | Address / Group / Room / Tag Ref. | Htg.Total

10,853 BTU/h (10,123 BTU/h)

8,369 BTU/h

AutoCAD Piping & Wiring Diagrams

Vails Gate Fire District

CONT.No | PAGE

CITY MULTI

SYSTEM SCHEMATIC DWG.

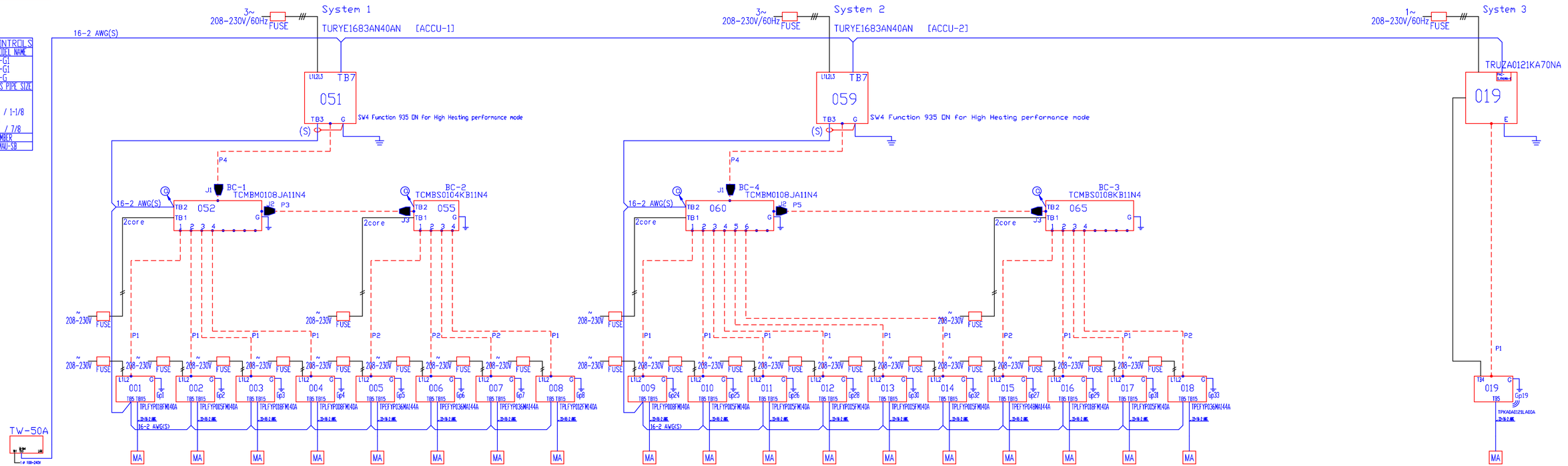
This drawing is schematic in nature. Final routing of piping & wiring shall be determined by the installing contractor and/or designer of record

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-R302S-G1	
J2	CMY-R303S-G1	
J3	CMY-R306S-G	
SYMBOL	LIQUID PIPE/GAS PIPE SIZE	
P1	1/4	/ 1/2
P2	3/8	/ 5/8
P3	1/2	/ 3/4 / 1-1/8
P4	7/8	/ 1-1/8
P5	3/8	/ 3/4 / 7/8
SYMBOL	MODEL NUMBER	
MA	TAR-CT01MAU-SB	



EU-102 | EU-114 | EU-118 | EU-120 | J16-1 | J16-2 | J16-3 | EU-125A | EU-210 | EU-211 | EU-212 | EU-213 | EU-214 | EU-215 | FCU-203A | EU-202 | EU-203 | FCU-206 | JU-1

REMARKS
Comments:

Diamond System Builder
sw: 4.4.3.44
dlo: 4.4.3.13
12/27/2022
9:54 AM

Submittal Documents

CITYMULTI® **14-TON TURYE1683AN40A(N/B)** TRANE MITSUBISHI ELECTRIC

Job Name:

System Reference: Date:

208/230V OUTDOOR VRF HEAT RECOVERY SYSTEM

UNIT OPTION

Standard Model TURYE1683AN40AN
Seacoast (BS) Model TURYE1683AN40AB

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			TURYE1683AN40A(N/B)
Cooling Capacity (Nominal)		BTU/H	168,000
Heating Capacity (Nominal)		BTU/H	188,000
Guaranteed Operating Range	Cooling	°F [°C]	23~126 [-5.0~52.0]
	Heating	°F [°C]	-13~60 [-25.0~15.5]
Extended Operating Range	Heating	°F [°C]	-27.4~60 [-33.0~15.5]
External Dimensions (H x W x D)		In. [mm]	71-5/8 x 68-15/16 x 29-3/16 [1,818 x 1,750 x 740]
Net Weight		Lbs. [kg]	777 [352]
External Finish			Pre-coated galvanized steel sheet (+powder coating for -BS type) [MUNSELL 5Y 8/1]
Electrical Power Requirements	Voltage, Phase, Hertz, Power Tolerance		208/230V, 3-phase, 60 Hz, ±10%
Minimum Circuit Ampacity		A	57.0/53.0
Maximum Overcurrent Protection		A	90/80
Recommended Fuse Size		A	70/70
Recommended Minimum Wire Size		AWG [mm]	4/4 [21.2/21.2]
SCCR		kA	5
Refrigerant Piping Diameter	Liquid (High Pressure)	In. [mm]	7/8 [22.2] Brazed
	Gas (Low Pressure)	In. [mm]	1-1/8 [28.58] Brazed
Max. Total Refrigerant Line Length		Ft.	1,968
Max. Refrigerant Line Length (Between ODU & IDU)		Ft.	541
Max. Control Wiring Length		Ft.	1,640
Indoor Unit Connectable	Total Capacity		50.0~150.0% of outdoor unit capacity
	Model/Quantity		P04~P96/1.0~42.0
Sound Pressure Levels		dB(A)	62.5/66.5
Sound Power Levels		dB(A)	81.0/85.5
FAN[4]	Type x Quantity		Propeller fan x 2
	Fan Motor Output	kW	0.92+0.92
	Airflow Rate	CFM	14,850
	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 compressor x 1
Refrigerant	Type x Original Charge		R410A x 23 lbs + 12.0 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-current protection
AHRI Ratings (Ducted/Non-ducted)	EER		11.2/11.9
	IEER		23.4/28.0
	COP		3.3/3.8
	SCHE		24.7/28.3

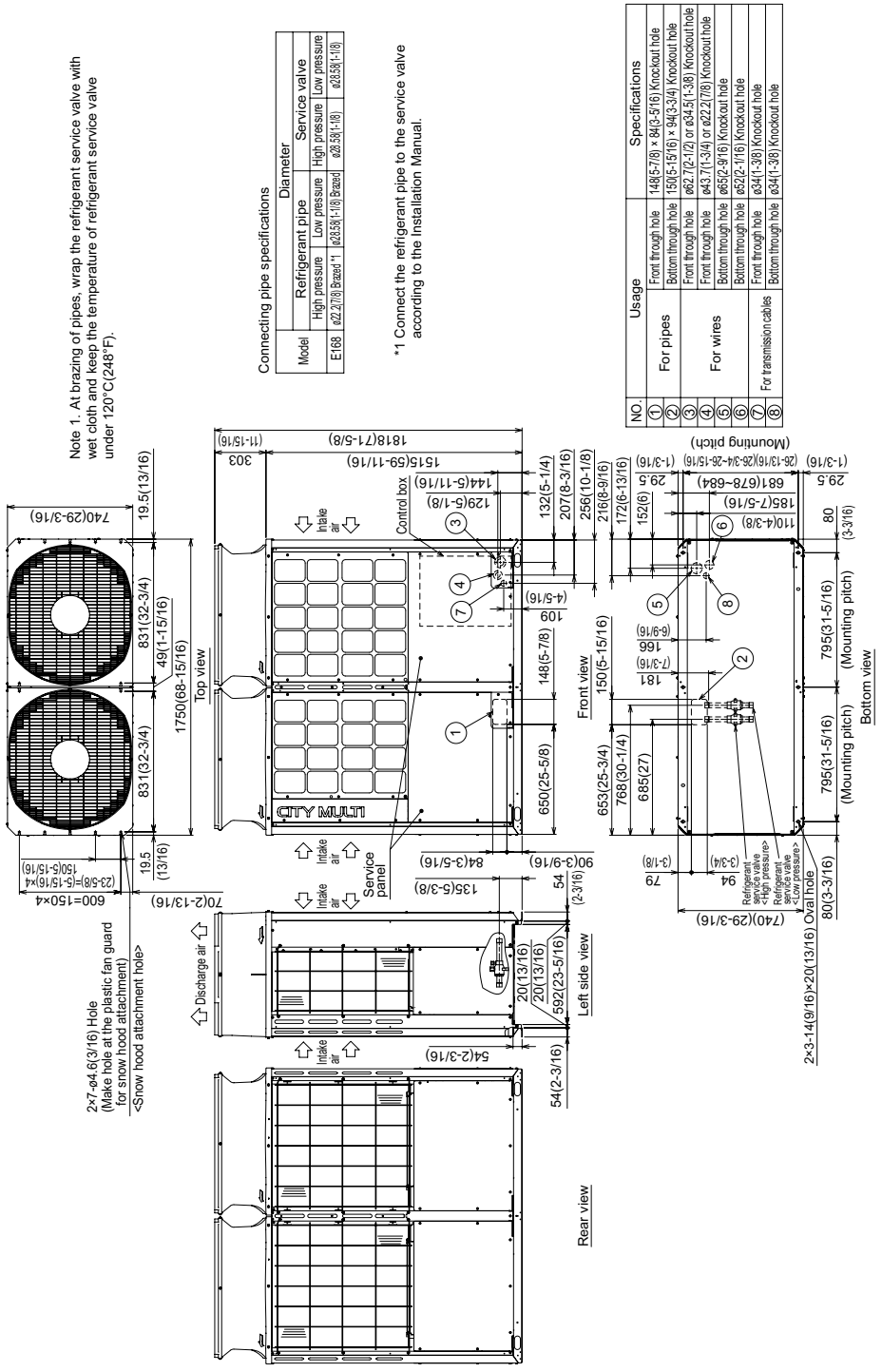
NOTES:
Nominal cooling conditions (Test conditions are based on AHRI 1230)
Indoor: 80°FD.B./67°FW.B. (26.7°CD.B./19.4°CW.B.), Outdoor: 95°FD.B. (35°CD.B.)
Nominal heating conditions (Test conditions are based on AHRI 1230)
Indoor: 70°FD.B. (21.1°CD.B.), Outdoor: 47°FD.B./43°FW.B. (8.3°CD.B./6.1°CW.B.)

[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: TURYE1683AN40A(N/B) – DIMENSIONS

TURYE1683AN40A(N/B)

Unit: mm(in)

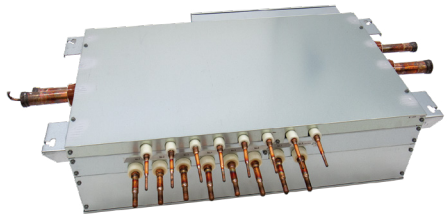


NOTES:
SEACOAST PROTECTION
Anti-corrosion Protection: A coating treatment is applied to condenser coil for protection from air contaminants.
Standard: Salt Spray Test Method - no unusual rust development to 480 hours.
Sea Coast (BS): Salt Spray Test Method (JRA 9002) - no unusual rust development to 960 hours.

FORM# TURYE1683AN40A(N/B) - 202204

Job Name:

System Reference: Date:



Specifications			System
Unit Type			TCMBM0108JA11N4
Indoor Unit Capacity Connectable to 1 Branch		BTU/H	54,000
Number Of Branches			8
Electrical Power Requirements			208/230V, 1-phase, 60 Hz
Minimum Circuit Ampacity (MCA)		A	0.8/1.0
Maximum Overcurrent Protection (MOCP)		A	20
Power Input (208 / 230V)	Cooling	kW	0.66 / 0.77
Power Input (208/230V)	Heating	kW	0.37 / 0.43/
Current Input (208/230V)	Cooling	A	0.137 / 0.176/
	Heating	A	0.076 / 0.098
External Dimensions		In. [mm]	9-7/8 x 35-7/8 x 21-1/2 [250 x 911 x 545]
Net Weight		Lbs. [kg]	106 [48]
External finish			Galvanized steel plate (Lower part drain pan: Pre-coated galvanized sheets + powder coating) ()
Connectable Outdoor / Heat Source Unit Capacity			72,000 to 336,000
Field drain pipe size		In. [mm]	3/4 NPT
Refrigerant			R410A
Sound power level (measured in anechoic room)	Defrost	dB(A)	50
Sound pressure level (measured in anechoic room)	Rated operation	dB(A)	68.0
	Defrost	dB(A)	74

NOTES:
1. The equipment is for use with R410A refrigerant only.
2. When possible, avoid installing the BC controller within 15 Ft. of sound sensitive areas.
3. Rated operation sound data is based on cooling mode. Sound data may vary depending on outdoor unit capacity and operation mode.
4. Sound pressure/power levels obtained via testing in an anechoic chamber. Actual sound pressure levels may be greater due to ambient noise and/or deflection
5. Sound pressure values were obtained at a test location approximately 5 Ft. from the unit
6. The solenoid valve switching sound pressure value is 56 dB(A) for all units
7. The unit is intended for installation in an indoor environment only
8. For details regarding installation specifics, please refer to the product's Installation Manual.

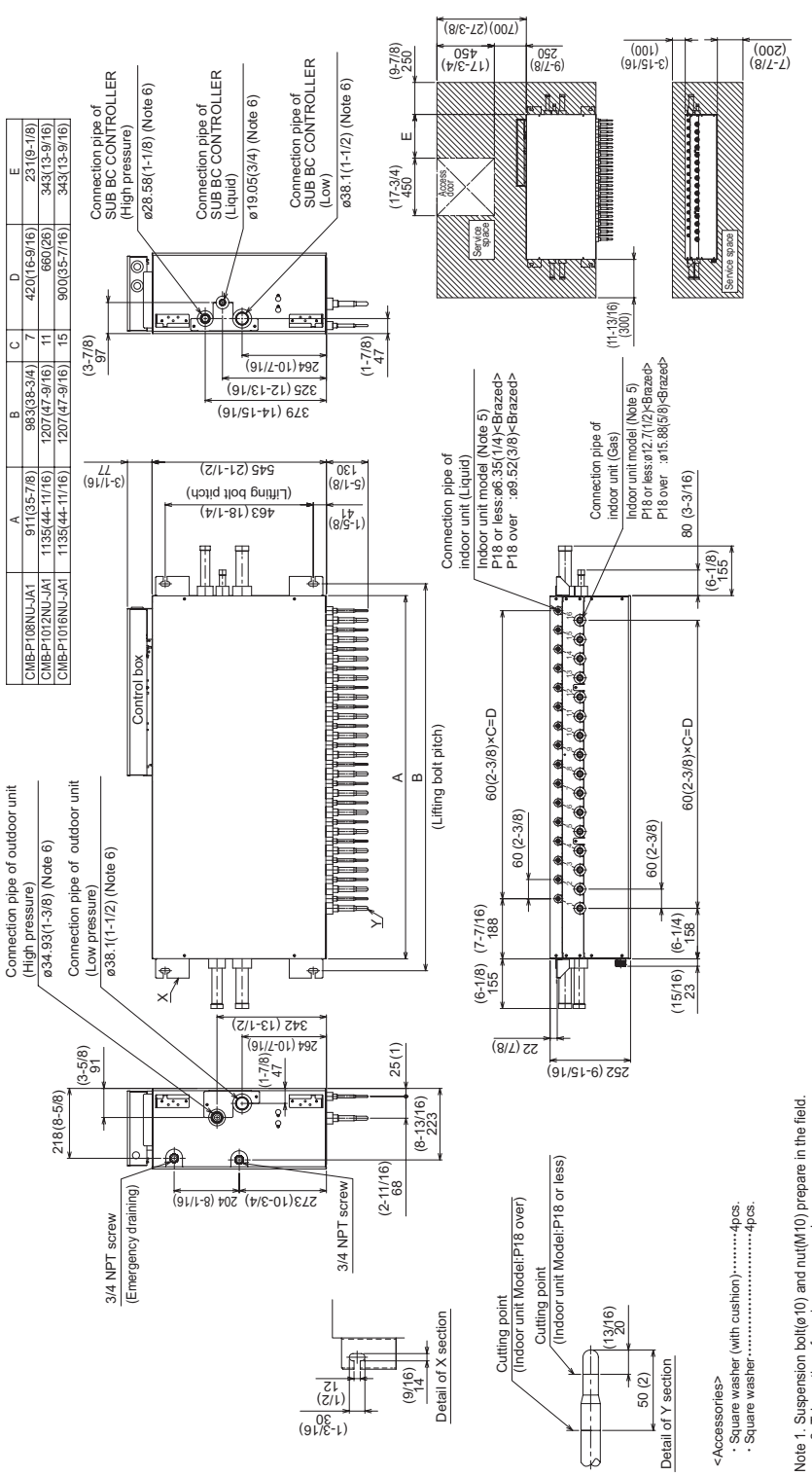
INDOOR UNIT ACCESSORIES: TCMBM0108JA11N4

Ball Valve	Ball Valve (3/8” SAE Brazed)	BV38BBSI
	Ball Valve (5/8” SAE Brazed)	BV58BBSI
Condensate	Blue Diamond (Advanced) Mini Condensate Pump w/ Reservoir & Sensor (208/230V) [recommended]	X87-721
	Blue Diamond (MicroBlue) Mini Condensate Pump (110/208/230V) up to 18,000 BTU/H	X86-003
	Sauermann Condensate Pump	SI30-230
Control Wire	M-Net Control Wire, 1,000’ Roll (16-AWG, Standard, Twisted Pair, Shielded, Jacketed- Plenum rated)	CW162S-1000
	M-Net Control Wire, 250’ Roll (16-AWG, Standard, Twisted Pair, Shielded, Jacketed- Plenum rated)	CW162S-250
Port Adapter	Joint Pipe Adapter	CMY-R160-J1
Valves Adaptors & Headers	Branch Joint (Downstream capacity 127,000-216,000 BTU/H)	CMY-R202S-G
	Branch Joint (Downstream capacity 217,000-234,000 BTU/H)	CMY-R203S-G
	Branch Joint (Downstream capacity 235,000-360,000 BTU/H)	CMY-R204S-G
	Branch Joint (Downstream capacity 73,000-96,000 BTU/H)	CMY-Y102LS-G2
	Branch Joint (Downstream capacity ≤126,000 BTU/H)	CMY-R201S-G
	Branch Joint (Downstream capacity ≤126,000 BTU/H)	CMY-Y202S-G2
	Branch Joint (Downstream capacity ≤72,000 BTU/H)	CMY-Y102SS-G2
	Branch Joint (Downstream capacity ≥316,000 BTU/H)	CMY-R205S-G
	Reducer (Between Main and Sub BC)	CMY-R303S-G1
	Reducer (Between ODU and BC)	CMY-R302S-G1

INDOOR UNIT DIMENSIONS: TCMBM0108JA11N4

TCMB0108, 1012, 1016JA

Unit: mm(in)



	A	B	C	D	E
CMB-P108NU-JA1	911(35-7/8)	983(38-3/4)	7	420(16-9/16)	231(9-1/8)
CMB-P1012NU-JA1	1135(44-11/16)	1207(47-9/16)	11	660(26)	343(13-9/16)
CMB-P1016NU-JA1	1135(44-11/16)	1207(47-9/16)	15	900(35-7/16)	343(13-9/16)

Table-1. To outdoor/heat source unit (Note.6)

Connectable unit capacity	High press. Pipe	Low press. Pipe	
072	ø15.88(5/8)	ø19.05(3/4)	
096	ø19.05(3/4)	ø22.2(7/8)	
120	ø19.05(3/4)	ø22.2(7/8) or ø28.58(1-1/8)	*
144 to 192	ø22.2(7/8)	ø28.58(1-1/8)	
216	ø22.2(7/8) or ø28.58(1-1/8)	ø28.58(1-1/8)	*
240	ø22.2(7/8) or ø28.58(1-1/8)	ø34.93(1-3/8)	*
264 to 288	ø28.58(1-1/8)	ø34.93(1-3/8)	*
312	ø28.58(1-1/8)	ø34.93(1-3/8) or ø41.28(1-5/8)	*
336	ø28.58(1-1/8)	ø41.28(1-5/8)	*

Table-2. To other BC controller (Note.6)

Total downstream Indoor unit capacity	High press. Pipe	Liquid Pipe	Low press. Pipe
~072	ø15.88(5/8)	ø9.52(3/8)	ø19.05(3/4)
073~108	ø19.05(3/4)	ø9.52(3/8)	ø22.2(7/8)
109~126	ø19.05(3/4)	ø12.7(1/2)	ø28.58(1-1/8)
127~144	ø22.2(7/8)	ø12.7(1/2)	ø28.58(1-1/8)
145~216	ø22.2(7/8)	ø15.88(5/8)	ø28.58(1-1/8)
217~234	ø28.58(1-1/8)	ø15.88(5/8)	ø28.58(1-1/8)
235~288	ø28.58(1-1/8)	ø19.05(3/4)	ø34.93(1-3/8)
289~360	ø28.58(1-1/8)	ø19.05(3/4)	ø41.28(1-5/8)
361~	ø34.93(1-3/8)	ø19.05(3/4)	ø41.28(1-5/8)

*For the refrigerant pipe size, refer to Installation Manual of outdoor units/heat source units.

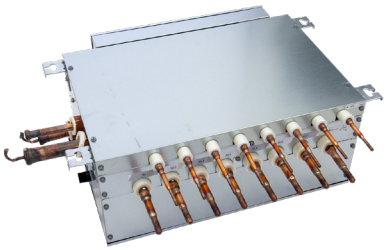
Note 1. Suspension bolt(ø10) and nut(M10) prepare in the field.
2. Take notice of service space as shown.
(Please give attention not to occupy service space by letting ducts and pipes through.)
3. Please take service space for connection pipe of SUB BC CONTROLLER.
4. Install this product in a location 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.)
5. Refer to the Installation Manual for refrigerant piping diameter size when connecting plural indoor units with 1 branch.
6. Refer to the Table-1,2 connection pipe of outdoor unit or SUB BC CONTROLLER diameter size.
7. Refer to the Installation Manual for insulation of connection pipe and drain piping.
8. Do not place the BC controller directly on the floor.

<Accessories>
· Square washer (with cushion)·····4pcs.
· Square washer·····4pcs.

FORM# TCMBM0108JA11N4 - 202209

Job Name:

System Reference: Date:



Specifications			System
Unit Type			TCMBS0104KB11N4
Indoor Unit Capacity Connectable to 1 Branch		BTU/H	54,000
Number Of Branches			4
Electrical Power Requirements			208/230V, 1-phase, 60 Hz
Minimum Circuit Ampacity (MCA)		A	0.4/0.4
Maximum Overcurrent Protection (MOCP)		A	20
Power Input (208 / 230V)	Cooling	kW	0.30 / 0.35
Power Input (208/230V)	Heating	kW	0.15 / 0.18/
Current Input (208/230V)	Cooling	A	0.061 / 0.078/
	Heating	A	0.030 / 0.039
External Dimensions		In. [mm]	9-7/8 x 23-1/2 x 15-11/16 [250 x 596 x 398]
Net Weight		Lbs. [kg]	51 [23]
External finish			Galvanized steel plate (Lower part drain pan: Pre-coated galvanized sheets + powder coating) ()
Connectable Outdoor / Heat Source Unit Capacity			126,000 to
Field drain pipe size		In. [mm]	3/4 NPT
Refrigerant			R410A
Sound power level (measured in anechoic room)	Defrost	dB(A)	40
Sound pressure level (measured in anechoic room)	Rated operation	dB(A)	59.0
	Defrost	dB(A)	71

NOTES:
1. The equipment is for use with R410A refrigerant only.
2. When possible, avoid installing the BC controller within 15 Ft. of sound sensitive areas.
3. Rated operation sound data is based on cooling mode. Sound data may vary depending on outdoor unit capacity and operation mode.
4. Sound pressure/power levels obtained via testing in an anechoic chamber. Actual sound pressure levels may be greater due to ambient noise and/or deflection
5. Sound pressure values were obtained at a test location approximately 5 Ft. from the unit
6. The solenoid valve switching sound pressure value is 56 dB(A) for all units
7. The unit is intended for installation in an indoor environment only
8. For details regarding installation specifics, please refer to the product's Installation Manual.

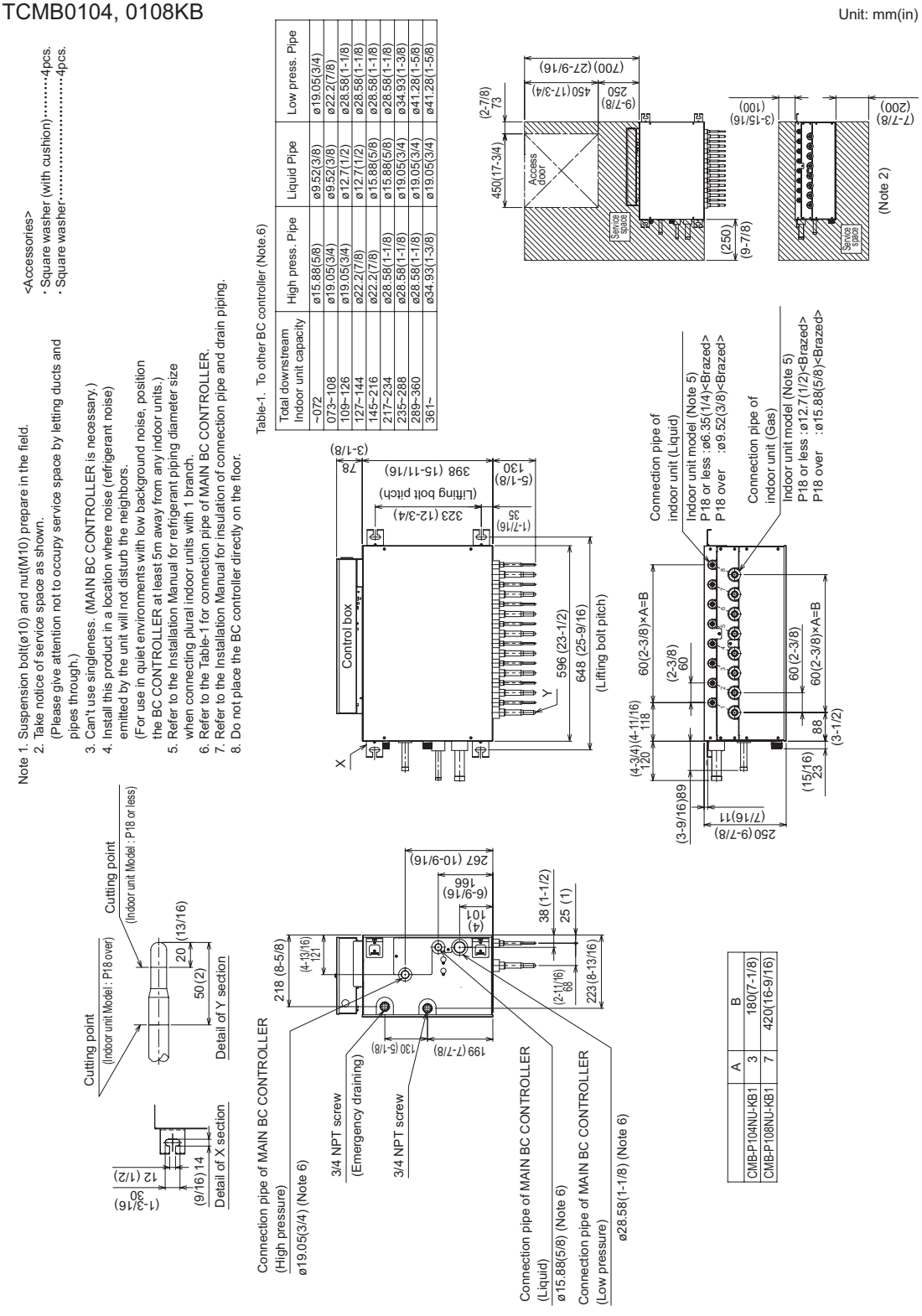
INDOOR UNIT ACCESSORIES: TCMBS0104KB11N4

Ball Valve	Ball Valve (3/8” SAE Brazed)	BV38BBSI
	Ball Valve (5/8” SAE Brazed)	BV58BBSI
Condensate	Blue Diamond (Advanced) Mini Condensate Pump w/ Reservoir & Sensor (208/230V) [recommended]	X87-721
	Blue Diamond (MicroBlue) Mini Condensate Pump (110/208/230V) up to 18,000 BTU/H	X86-003
	Sauermann Condensate Pump	SI30-230
Control Wire	M-Net Control Wire, 1,000’ Roll (16-AWG, Standard, Twisted Pair, Shielded, Jacketed- Plenum rated)	CW162S-1000
	M-Net Control Wire, 250’ Roll (16-AWG, Standard, Twisted Pair, Shielded, Jacketed- Plenum rated)	CW162S-250
Port Adapter	Joint Pipe Adapter	CMY-R160-J1
Valves Adaptors & Headers	Branch Joint (Downstream capacity 127,000-216,000 BTU/H)	CMY-R202S-G
	Branch Joint (Downstream capacity 217,000-234,000 BTU/H)	CMY-R203S-G
	Branch Joint (Downstream capacity 235,000-360,000 BTU/H)	CMY-R204S-G
	Branch Joint (Downstream capacity 73,000-96,000 BTU/H)	CMY-Y102LS-G2
	Branch Joint (Downstream capacity ≤126,000 BTU/H)	CMY-R201S-G
	Branch Joint (Downstream capacity ≤126,000 BTU/H)	CMY-Y202S-G2
	Branch Joint (Downstream capacity ≤72,000 BTU/H)	CMY-Y102SS-G2
	Branch Joint (Downstream capacity ≥316,000 BTU/H)	CMY-R205S-G
	Reducer (Between Main and Sub BC)	CMY-R303S-G1
	Reducer (Between ODU and BC)	CMY-R302S-G1

INDOOR UNIT DIMENSIONS: TCMBS0104KB11N4

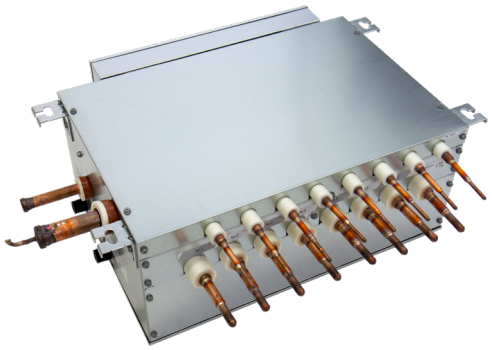
TCMB0104, 0108KB

Unit: mm(in)



FORM# TCMBS0104KB11N4 - 202209

Job Name:
System Reference: Date:



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 Main and Sub BC)	CMY-R306S-G1

*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)	69 (31)

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

Maximum Connectable Sub BC Controllers	11

Maximum Connectable Capacity of Indoor Units	126,000

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)

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

Refrigerant	R410A

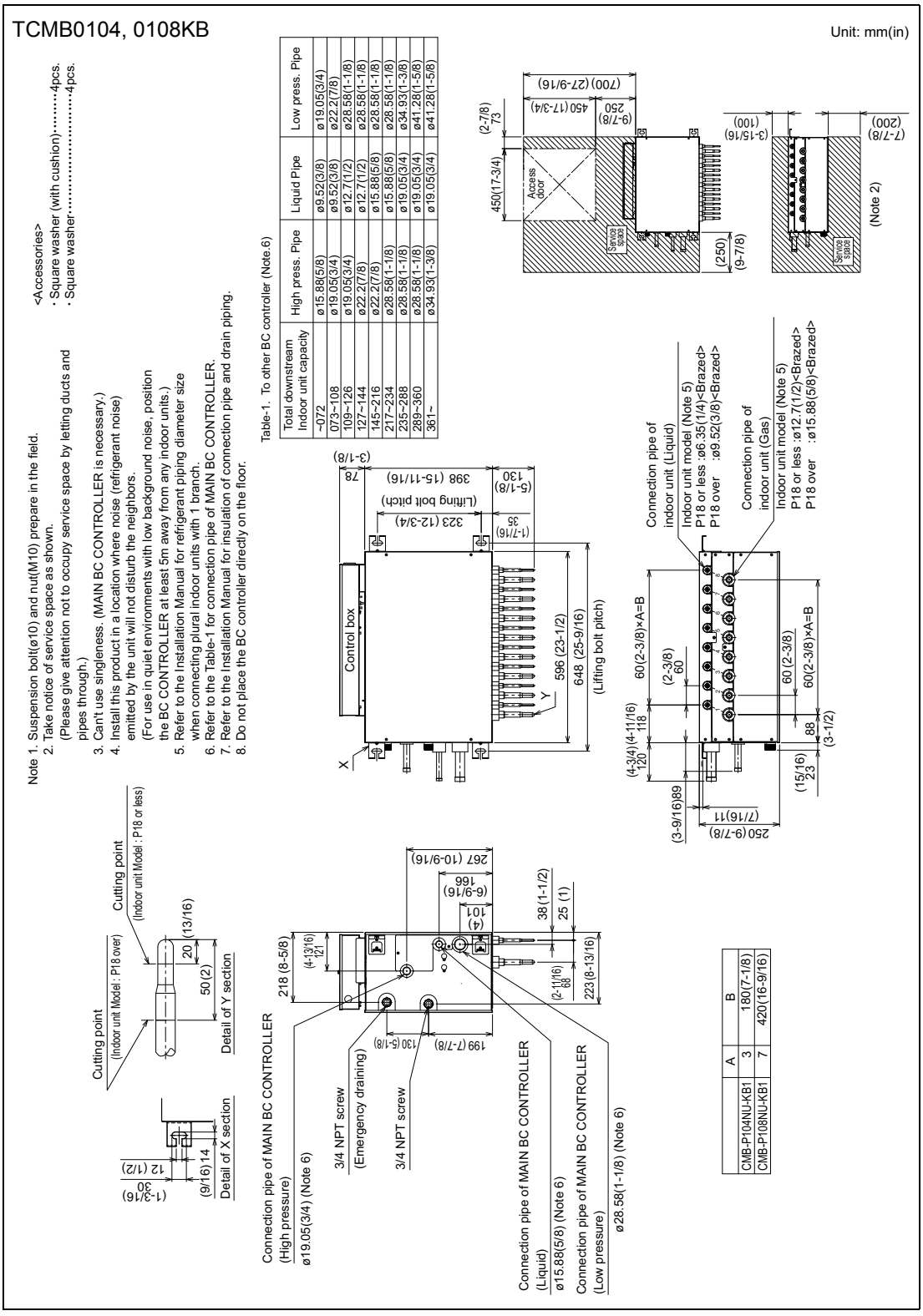
Refrigerant Piping Diameter to other BC Controller				
		High Pressure	Liquid Pipe	Low Pressure Pipe
072	In. (mm)	5/8 (15.88)	3/8 (9.52)	3/4 (19.05)
073 to 108	In. (mm)	3/4 (19.05)	3/8 (9.52)	7/8 (22.2)
109 to 126	In. (mm)	3/4 (19.05)	1/2 (12.7)	1-1/8 (28.58)
127 to 144	In. (mm)	7/8 (22.2)	1/2 (12.7)	1-1/8 (28.58)
145 to 216	In. (mm)	7/8 (22.2)	5/8 (15.88)	1-1/8 (28.58)
217 to 234	In. (mm)	1-1/8 (28.58)	5/8 (15.88)	1-1/8 (28.58)
235 to 288	In. (mm)	1-1/8 (28.58)	3/4 (19.05)	1-3/8 (34.93)
289 to 360	In. (mm)	1-1/8 (28.58)	3/4 (19.05)	1-5/8 (41.28)
361 or above	In. (mm)	1-3/8 (34.93)	3/4 (19.05)	1-5/8 (41.28)

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.
13. Sub BC Controllers cannot be used alone or with a Single BC Controller. They must be used in conjunction with a main BC Controller

Model: TCMBS0108KB11N4 - DIMENSIONS



TPEFYP036MA144A
36,000 BTU/H MEDIUM STATIC DUCTED

Job Name:

System Reference: Date:

GENERAL FEATURES

- Dual set point functionality
- Multiple fan speed settings
- Auto fan mode
- 9-7/8” (250mm) high for low ceiling heights
- Built-in condensate lift; lifts to 27-9/16” (700 mm)
- Ducted fan coil supporting multiple configurations for flexible installation

Specifications			System
Unit Type			TPEFYP036MA144A
Cooling capacity (Nominal)[1]		BTU/H	36,000
Heating capacity (Nominal)[1]		BTU/H	40,000
Power source		Voltage, Phase, Hertz	208/230V, 1-phase, 60 Hz
Power Consumption	Cooling	kW	0.222
	Heating	kW	0.22
Current	Cooling	A	2.01/1.82
	Heating	A	2.01/1.82
MCA		A	4.3
Maximum Overcurrent Protection (MOCP)		A	15
External finish			Galvanized steel sheet
External Dimensions		In. [mm]	55-1/8 x 28-7/8 x 9-7/8 [1,400 x 732 x 250]
Net weight		Lbs [kg]	84 [38]
Heat exchanger			Cross fin (Aluminum fin and copper tube)
Fan	Type x quantity		Sirocco fan x 3
	External Static pressure	in.WG	0.14, 0.2, 0.28, 0.4, 0.6 factory set to 0.2 In. WG
	Airflow rate	CFM	883–1,077–1,271
	Motor type		DC Motor
	Motor Output	kW	0.3
	Motor FLA	A	3.4
Sound pressure level (Measured in anechoic room)		dB(A)	35–39–43
Air filter			PP Honeycomb fabric
Refrigerant	Type		R410A
Diameter of refrigerant pipe (O.D.)	Liquid (High Pressure)	In. [mm]	3/8 [9.52] Brazed
	Gas (Low Pressure)	In. [mm]	5/8 [15.88] Brazed
Diameter of drain pipe		In. [mm]	O.D. 1-1/4 [32]

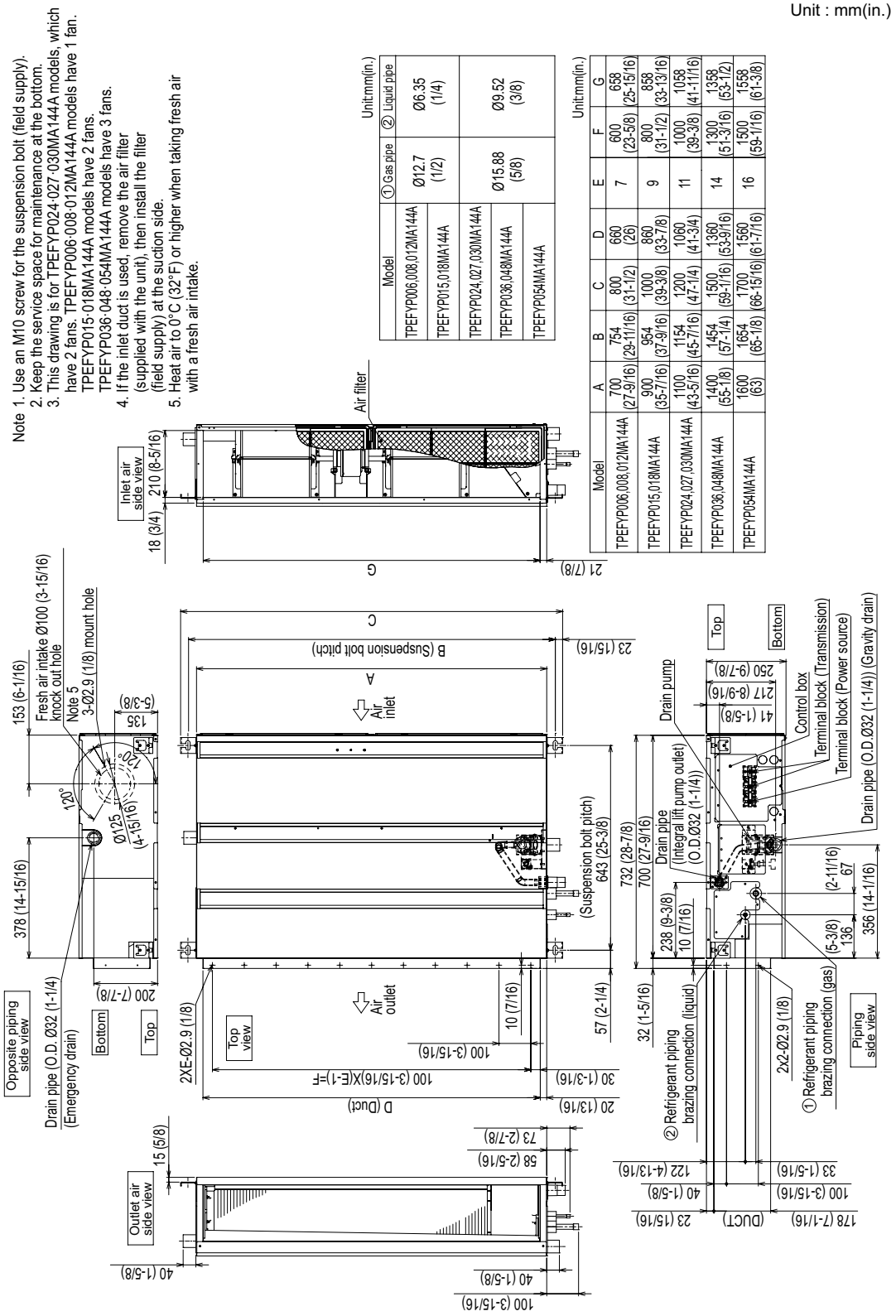
NOTES:
[1]Cooling / Heating capacity indicated at the maximum value at operation under the following conditions:
Cooling | Indoor: 80° F (26.7° C) DB / 67° F (19.4° C) WB; Outdoor 95° F (35° C) DB
Heating | Indoor: 70° F (21.1° C) DB; Outdoor 47° F (8.3° C) DB / 43° F (6.1° C) WB

INDOOR UNIT ACCESSORIES: TPEFYP036MA144A

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
	Thermostat Interface	PAC-US445CN-1
	Wireless Interface for kumo cloud®	PAC-USWHS002-WF-2
Remote Sensor	Flush Mount Remote Temperature Sensor	PAC-USSEN002-FM-1
	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
Wired Remote Controller	Deluxe Wired MA Remote Controller†	TAR-40MAAU
	Simple MA Remote Controller†	TAC-YT53CRAU-J
	Smart ME Remote Controller - Backlit touchscreen	TAR-U01MEDU-K
	Touch MA Controller†	TAR-CT01MAU-SB
Wireless Remote Controller	kumo touch™ RedLINK™ Wireless Controller	MHK2
	Wireless MA Receiver	PAR-SR32MA-E
	Wireless MA Remote Controller	TAR-FL32MA-E
Condensate	Blue Diamond (Advanced) Mini Condensate Pump w/ Reservoir & Sensor (208/230V) [recommended]	X87-721
	Blue Diamond (MegaBlue Advanced) Condensate Pump w/ Reservoir & Sensor	X87-835
	Blue Diamond MultiTank — collection tank for use with multiple pumps	C21-014
	Blue Diamond Sensor Extension Cable — 15 Ft.	C13-103
	Refco Condensate Pump (100-240 VAC) up to 120,000 BTU/H	COMBI
	Sauermann Condensate Pump	SI30-230
Filter Box	Filter Box with MERV 13 Filter	FBM2-4-A
Lineset	10’ x 3/8” x 10’ x 5/8” Lineset (Twin-Tube Insulation)††	MPLS385812T-10
	100’ x 3/8” x 100’ x 5/8” Lineset (Twin-Tube Insulation)††	MPLS385812T-100
	15’ x 3/8” x 15’ x 5/8” Lineset (Twin-Tube Insulation)††	MPLS385812T-15
	30’ x 3/8” x 30’ x 5/8” Lineset (Twin-Tube Insulation)††	MPLS385812T-30
	50’ x 3/8” x 50’ x 5/8” Lineset (Twin-Tube Insulation)††	MPLS385812T-50
	65’ x 3/8” x 65’ x 5/8” Lineset (Twin-Tube Insulation)††	MPLS385812T-65

INDOOR UNIT DIMENSIONS: TPEFYP036MA144A

Unit : mm(in.)



FORM# TPEFYP036MA144A - 202209

CITYMULTI®

TPEFYP048MA144A
48,000 BTU/H MEDIUM STATIC DUCTED

TRANE MITSUBISHI ELECTRIC

Job Name:

System Reference: Date:

GENERAL FEATURES

- Dual set point functionality
- Multiple fan speed settings
- Auto fan mode
- 9-7/8” (250mm) high for low ceiling heights
- Built-in condensate lift; lifts to 27-9/16” (700 mm)
- Ducted fan coil supporting multiple configurations for flexible installation

Specifications			System
Unit Type			TPEFYP048MA144A
Cooling capacity (Nominal)[1]		BTU/H	48,000
Heating capacity (Nominal)[1]		BTU/H	54,000
Power source		Voltage, Phase, Hertz	208/230V, 1-phase, 60 Hz
Power Consumption	Cooling	kW	0.242
	Heating	kW	0.24
Current	Cooling	A	2.06/1.87
	Heating	A	2.06/1.87
MCA		A	4.4
Maximum Overcurrent Protection (MOCP)		A	15
External finish			Galvanized steel sheet
External Dimensions		In. [mm]	55-1/8 x 28-7/8 x 9-7/8 [1,400 x 732 x 250]
Net weight		Lbs [kg]	86 [39]
Heat exchanger			Cross fin (Aluminum fin and copper tube)
Fan	Type x quantity		Sirocco fan x 3
	External Static pressure	in.WG	0.14, 0.2, 0.28, 0.4, 0.6 factory set to 0.2 In. WG
	Airflow rate	CFM	918–1,112–1,306
	Motor type		DC Motor
	Motor Output	kW	0.3
	Motor FLA	A	3.5
Sound pressure level (Measured in anechoic room)		dB(A)	35–40–44
Air filter			PP Honeycomb fabric
Refrigerant	Type		R410A
Diameter of refrigerant pipe (O.D.)	Liquid (High Pressure)	In. [mm]	3/8 [9.52] Brazed
	Gas (Low Pressure)	In. [mm]	5/8 [15.88] Brazed
Diameter of drain pipe		In. [mm]	O.D. 1-1/4 [32]

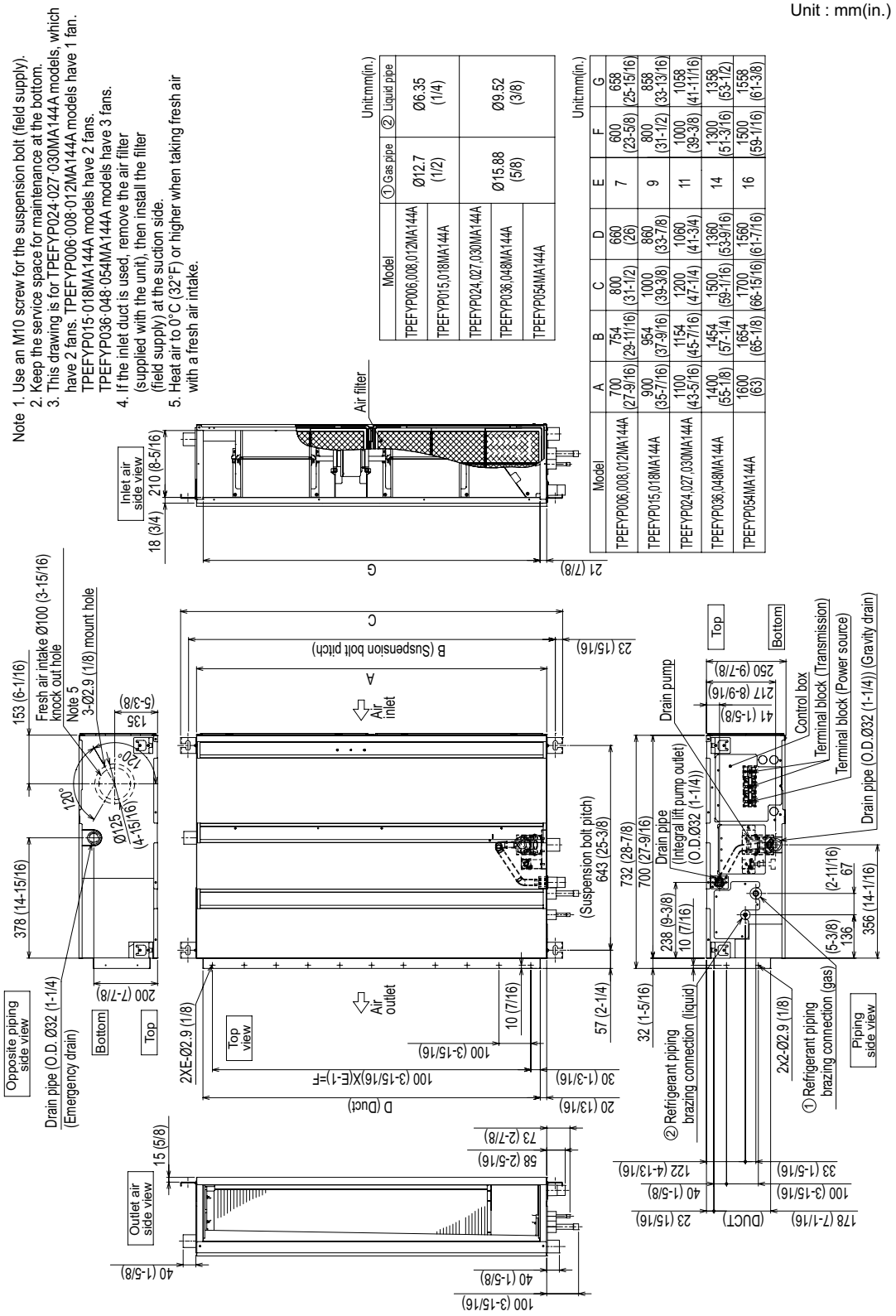
NOTES:
[1]Cooling / Heating capacity indicated at the maximum value at operation under the following conditions:
Cooling | Indoor: 80° F (26.7° C) DB / 67° F (19.4° C) WB; Outdoor 95° F (35° C) DB
Heating | Indoor: 70° F (21.1° C) DB; Outdoor 47° F (8.3° C) DB / 43° F (6.1° C) WB

INDOOR UNIT ACCESSORIES: TPEFYP048MA144A

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
	Thermostat Interface	PAC-US445CN-1
	Wireless Interface for kumo cloud®	PAC-USWHS002-WF-2
Remote Sensor	Flush Mount Remote Temperature Sensor	PAC-USSEN002-FM-1
	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
Wired Remote Controller	Deluxe Wired MA Remote Controller†	TAR-40MAAU
	Simple MA Remote Controller†	TAC-YT53CRAU-J
	Smart ME Remote Controller - Backlit touchscreen	TAR-U01MEDU-K
	Touch MA Controller†	TAR-CT01MAU-SB
Wireless Remote Controller	kumo touch™ RedLINK™ Wireless Controller	MHK2
	Wireless MA Receiver	PAR-SR32MA-E
	Wireless MA Remote Controller	TAR-FL32MA-E
Condensate	Blue Diamond (Advanced) Mini Condensate Pump w/ Reservoir & Sensor (208/230V) [recommended]	X87-721
	Blue Diamond (MegaBlue Advanced) Condensate Pump w/ Reservoir & Sensor	X87-835
	Blue Diamond MultiTank — collection tank for use with multiple pumps	C21-014
	Blue Diamond Sensor Extension Cable — 15 Ft.	C13-103
	Refco Condensate Pump (100-240 VAC) up to 120,000 BTU/H	COMBI
	Sauermann Condensate Pump	SI30-230
Filter Box	Filter Box with MERV 13 Filter	FBM2-4-A
Lineset	10’ x 3/8” x 10’ x 5/8” Lineset (Twin-Tube Insulation)††	MPLS385812T-10
	100’ x 3/8” x 100’ x 5/8” Lineset (Twin-Tube Insulation)††	MPLS385812T-100
	15’ x 3/8” x 15’ x 5/8” Lineset (Twin-Tube Insulation)††	MPLS385812T-15
	30’ x 3/8” x 30’ x 5/8” Lineset (Twin-Tube Insulation)††	MPLS385812T-30
	50’ x 3/8” x 50’ x 5/8” Lineset (Twin-Tube Insulation)††	MPLS385812T-50
	65’ x 3/8” x 65’ x 5/8” Lineset (Twin-Tube Insulation)††	MPLS385812T-65

INDOOR UNIT DIMENSIONS: TPEFYP048MA144A

Unit : mm(in.)



FORM# TPEFYP048MA144A - 202209

Job Name:	
System Reference:	Date:

GENERAL FEATURES

- Square edge, sleek design
- 3D i-see Sensor™ available as an option
- Improved installation features[1]
- Occupancy detection[1]
- Energy saving features[1]
- Improved occupant comfort
- Four fan speed settings including auto-fan
- Individual vane settings
- 2' x 2' size matches size of many ceiling tiles
- Corner-pocket design for simplified installation
- Built-in condensate lift mechanism designed to provide up to 33" of lift
- Ventilation air intake supported

[1]Requires a PAR-33MAA-J controller

SPECIFICATIONS: TPLFYP012FM140A

Model		TPLFYP012FM140A
Nominal Capacity[1]		
Cooling	Btu/h	12,000
Heating	Btu/h	13,500
Electrical		
Electrical Power Requirements		1-phase 208-230V 60Hz
Minimum Circuit Ampacity (MCA)	A	0.29
Recommended Fuse Size	A	15
External Dimensions (H x W x D)		
Unit	in. (mm)	8-3/16 x 22-7/16 x 22/7-16 (208 x 570 x 570)
Grill (SLP-18FAU)	in. (mm)	13/32 x 24-19/32 x 24-19/32 (10 x 625 x 625)
Net Weight		
Unit	lbs (kg)	31.3 (14.2)
Grill (SLP-18FAU)	lbs (kg)	5.3 (2.4)
External Finish		
Unit		Galvanized steel sheet
Grill (SLP-18FAU)		Munsell 1.0Y 9.2/0.2
Coil Type		Cross fin (Aluminum fin and copper tube)
Fan		
Type x Quantity		Turbo fan x 1
Airflow rate	CFM	245-280-335
Motor Type		DC motor
Motor Output	kW	0.05
Motor F.L.A.	A	0.23
Air Filter		PP honeycomb fabric (long life type)
Refrigerant Piping Diameter		
Liquid (High Pressure)	in. (mm)	1/4 (6.35) Flare
Gas (Low Pressure)	in. (mm)	1/2 (12.7) Flare
Field Drain Pipe Size	in. (mm)	O.D. 1-1/4 (32)
Sound Pressure Level (Low-Mid-High)	dB(A)	26-30-34

[1] Cooling / Heating capacity indicated at the maximum value at operation under the following conditions:
Cooling | Indoor: 81° F (27° C) DB / 66° F (19°C) WB; Outdoor 95° F (35° C) DB
Heating | Indoor: 68° F (20° C) DB; Outdoor 45° F (7° C) DB / 43° F (6° C) WB

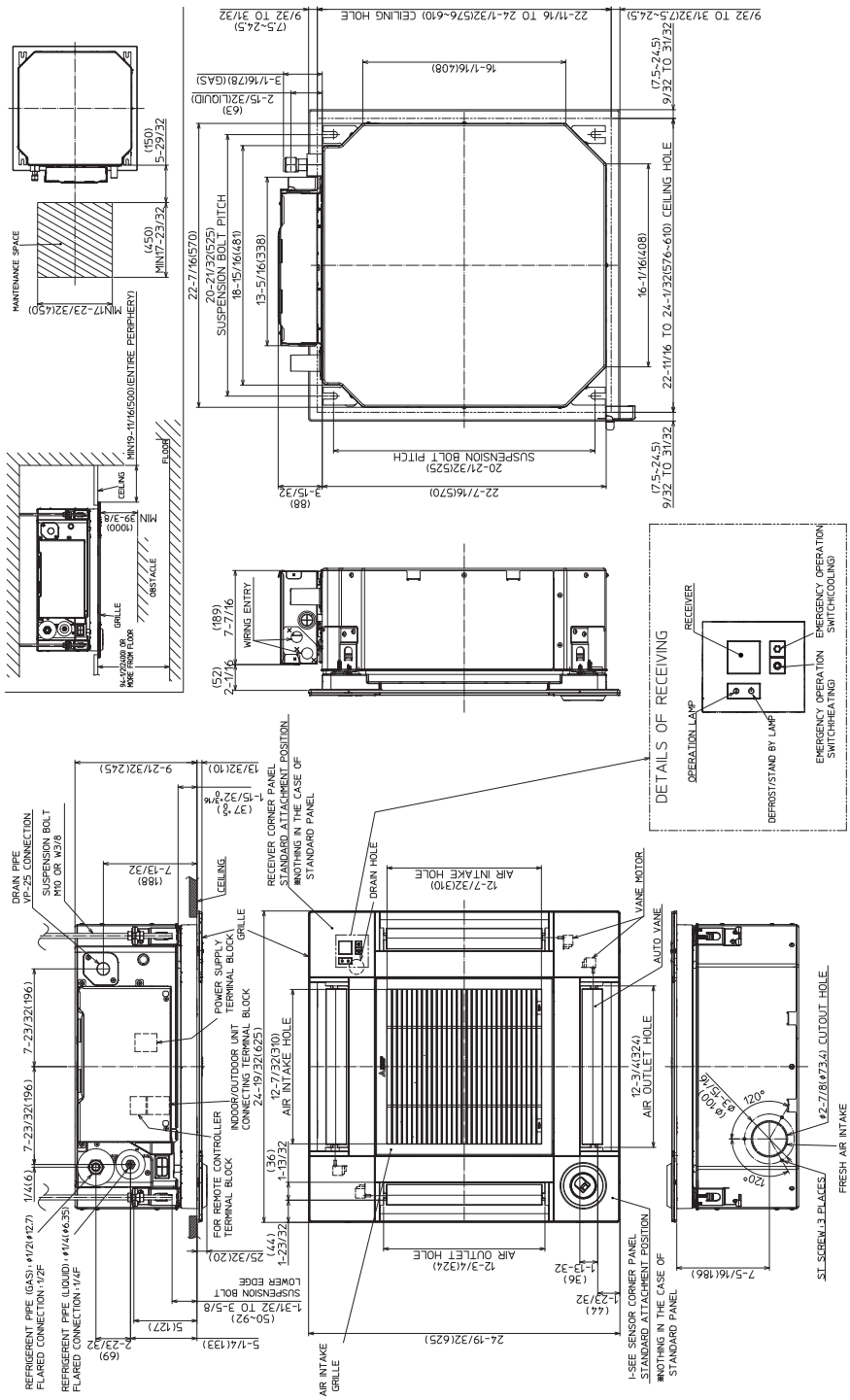
ACCESSORIES: TPLFYP012FM140A

Grille (required)	□ TLP-18FAU
Grille with 3D i-see Sensor™	□ TLP-18FAEU
Corner Panel with 3D i-see Sensor™	□ PAC-SF1ME-E
Signal Receiver Corner Panel	□ PAR-WSC009FA-E
Wireless Remote Controller	□ TAR-FL32MA-E
Wireless Remote Controller	□ PAR-SL100A-E
Wireless Remote Receiver	□ PAR-FA32MA-E
Wired MA Controller	□ PAR-33MAA-J
Simple MA Controller	□ TAC-YT53CRAU-J
Smart ME Remote Controller	□ TAR-U01MEDU-K
Wired Remote Sensor	□ PAC-SE41TS-E
Thermostat Interface	□ PAC-US444CN-1
Wireless Interface	□ PAC-WHS01WF-E
Connector cable for remote display	□ PAC-SA88HA-EP
Connector for CN32 (remote on/off)	□ PAC-SE55RA-E
Remote Operation Adapter (with wire terminals for remote ON/OFF and operation status/ error)	□ PAC-SF40RM-E[1]
External Fan / Heater Control Relay Adapter	□ CN24RELAY-KIT-CM3
Drain Pan Level Sensor (Control for indoor unit shut off to prevent drain pan overflow)	□ DPLS2

[1] Unable to use with wireless remote controller

Model: TPLFYP012FM140A – DIMENSIONS

Unit: inch(mm)



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CITYMULTI®

TPLFYP005FM140A
5,000 BTU/H 22” X 22” 4-WAY CEILING CASSETTE

TRANE MITSUBISHI ELECTRIC

Job Name:

System Reference: Date:

GENERAL FEATURES

- Square edge, sleek design
- 3D i-see Sensor™ available as an option
- Improved installation features*
- Occupancy detection*
- Energy saving features*
- Improved occupant comfort
- Four fan speed settings including auto-fan
- Individual vane settings
- 2’ x 2’ size matches size of many ceiling tiles
- Corner-pocket design for simplified installation
- Built-in condensate lift mechanism designed to provide up to 33” of lift
- Ventilation air intake supported

*Requires a PAR-33MAA-J controller

Specifications			System
Unit Type			TPLFYP005FM140A
Cooling capacity (Nominal)[1]		BTU/H	5,000
Heating capacity (Nominal)[1]		BTU/H	5,600
Power source		Voltage, Phase, Hertz	208/230V, 1-phase, 60 Hz
Power Consumption	Cooling	kW	0.02
	Heating	kW	0.02
Current	Cooling	A	0.19
	Heating	A	0.14
MCA		A	0.24
Maximum Overcurrent Protection (MOCP)		A	15
External finish			Galvanized steel sheet
External Dimensions		In. [mm]	22-7/16 x 22-7/16 x 8-3/16 [570 x 570 x 208]
Net weight		Lbs [kg]	28.9 [13.1]
Heat exchanger			Cross fin (Aluminum fin and copper tube)
Fan	Type x quantity		Turbo fan x 1
	Airflow rate	CFM	230–265–280
	Motor type		DC motor
	Motor Output	kW	0.05
	Motor FLA	A	0.19
Sound pressure level (Measured in anechoic room)		dB(A)	26–28–30
Air filter			PP honeycomb fabric (long life type)
Refrigerant	Type		R410A
Diameter of refrigerant pipe (O.D.)	Liquid (High Pressure)	In. [mm]	3/8 [9.52] Flare
	Gas (Low Pressure)	In. [mm]	5/8 [15.88] Flare
Diameter of drain pipe		In. [mm]	O.D. 1-1/4 [32]

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

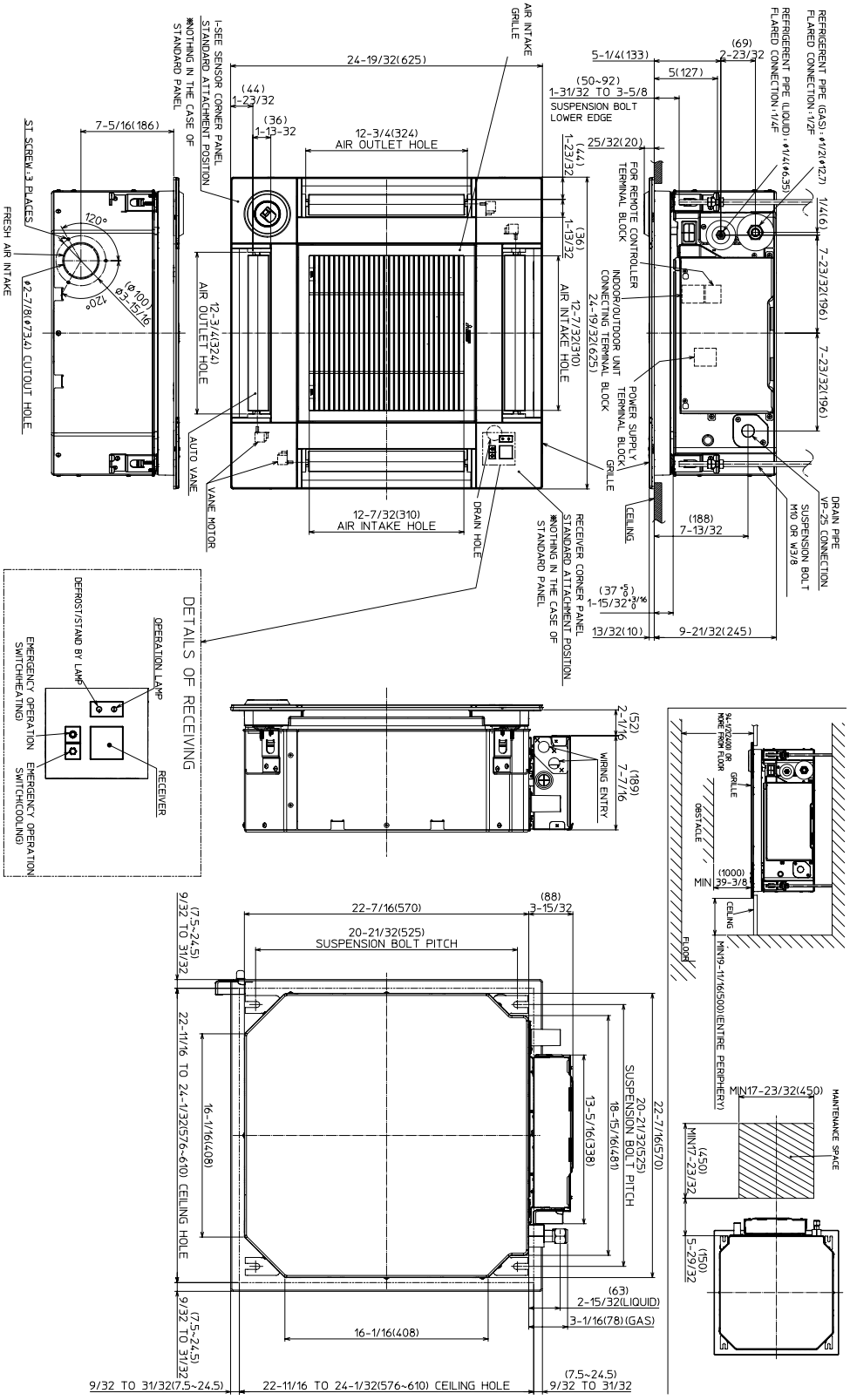
INDOOR UNIT ACCESSORIES: TPLFYP005FM140A

Control Interface	BACnet® and Modbus® Interface	PAC-UKPRC001-CN-1
	Connector cable for remote display	PAC-SA88HA-EP
	IT Extender	PAC-WHS01IE-E
	kumo station® for kumo cloud®	TAC-WHS01HC-E
	Thermostat Interface	PAC-US444CN-1
	Thermostat Interface	PAC-US445CN-1
Remote Sensor	Flush Mount Remote Temperature Sensor	PAC-USSEN002-FM-1
	Flush Mount Temperature Sensor	PAC-USSEN001-FM-1
	Remote Temperature Sensor	PAC-SE41TS-E
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
	Smart ME Remote Controller - Backlit touchscreen	TAR-U01MEDU-K
	Touch MA Controller†	TAR-CT01MAU-SB
Wireless Remote Controller	kumo touch™ RedLINK™ Wireless Controller	MHK2
	Wireless MA Receiver	PAR-SR32MA-E
	Wireless MA Remote Controller	TAR-FL32MA-E
	Wireless Receiver	PAR-WSC009FA-E
	Wireless Remote Contoller	PAR-SL101A-E
	Wireless Signal Receiver Panel	PAR-SR4LU-E
Condensate	Blue Diamond (Advanced) Mini Condensate Pump w/ Reservoir & Sensor (208/230V) [recommended]	X87-721
	Blue Diamond (MicroBlue) Mini Condensate Pump (110/208/230V) up to 18,000 BTU/H	X86-003
	Refco Condensate Pump (100-240 VAC) up to 120,000 BTU/H	COMBI
Control Interface	CN24 Relay Kit	CN24RELAY-KIT-CM3
	Remote Operation Adapter‡	PAC-SF40RM-E
Grille	Grille	TLP-18FAU
i-see Sensor® Panel	3D i-see Sensor® Corner Panel	PAC-SF1ME-E
	Grille with 3D i-see Sensor®	TLP-18FAEU

NOTES:
‡PAC-SF40RM-E (Unable to use with wireless remote controller)

INDOOR UNIT DIMENSIONS: TPLFYP005FM140A

Unit: inch



CITYMULTI®

TPLFYP008FM140A
8,000 BTU/H 22” X 22” 4-WAY CEILING CASSETTE

TRANE MITSUBISHI ELECTRIC

Job Name:

System Reference: Date:

GENERAL FEATURES

- Square edge, sleek design
- 3D i-see Sensor™ available as an option
- Improved installation features*
- Occupancy detection*
- Energy saving features*
- Improved occupant comfort
- Four fan speed settings including auto-fan
- Individual vane settings
- 2’ x 2’ size matches size of many ceiling tiles
- Corner-pocket design for simplified installation
- Built-in condensate lift mechanism designed to provide up to 33” of lift
- Ventilation air intake supported

*Requires a PAR-33MAA-J controller

Specifications			System
Unit Type			TPLFYP008FM140A
Cooling capacity (Nominal)[1]		BTU/H	8,000
Heating capacity (Nominal)[1]		BTU/H	9,000
Power source		Voltage, Phase, Hertz	208/230V, 1-phase, 60 Hz
Power Consumption	Cooling	kW	0.02
	Heating	kW	0.02
Current	Cooling	A	.22
	Heating	A	0.17
MCA		A	0.28
Maximum Overcurrent Protection (MOCP)		A	15
External finish			Galvanized steel sheet
External Dimensions		In. [mm]	22-7/16 x 22-7/16 x 8-3/16 [570 x 570 x 208]
Net weight		Lbs [kg]	28.9 [13.1]
Heat exchanger			Cross fin (Aluminum fin and copper tube)
Fan	Type x quantity		Turbo fan x 1
	Airflow rate	CFM	230–280–315
	Motor type		DC motor
	Motor Output	kW	0.05
	Motor FLA	A	0.22
Sound pressure level (Measured in anechoic room)		dB(A)	26–30–33
Air filter			PP honeycomb fabric (long life type)
Refrigerant	Type		R410A
Diameter of refrigerant pipe (O.D.)	Liquid (High Pressure)	In. [mm]	1/4 [6.35] Flare
	Gas (Low Pressure)	In. [mm]	1/2 [12.7] Flare
Diameter of drain pipe		In. [mm]	O.D. 1-1/4 [32]

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

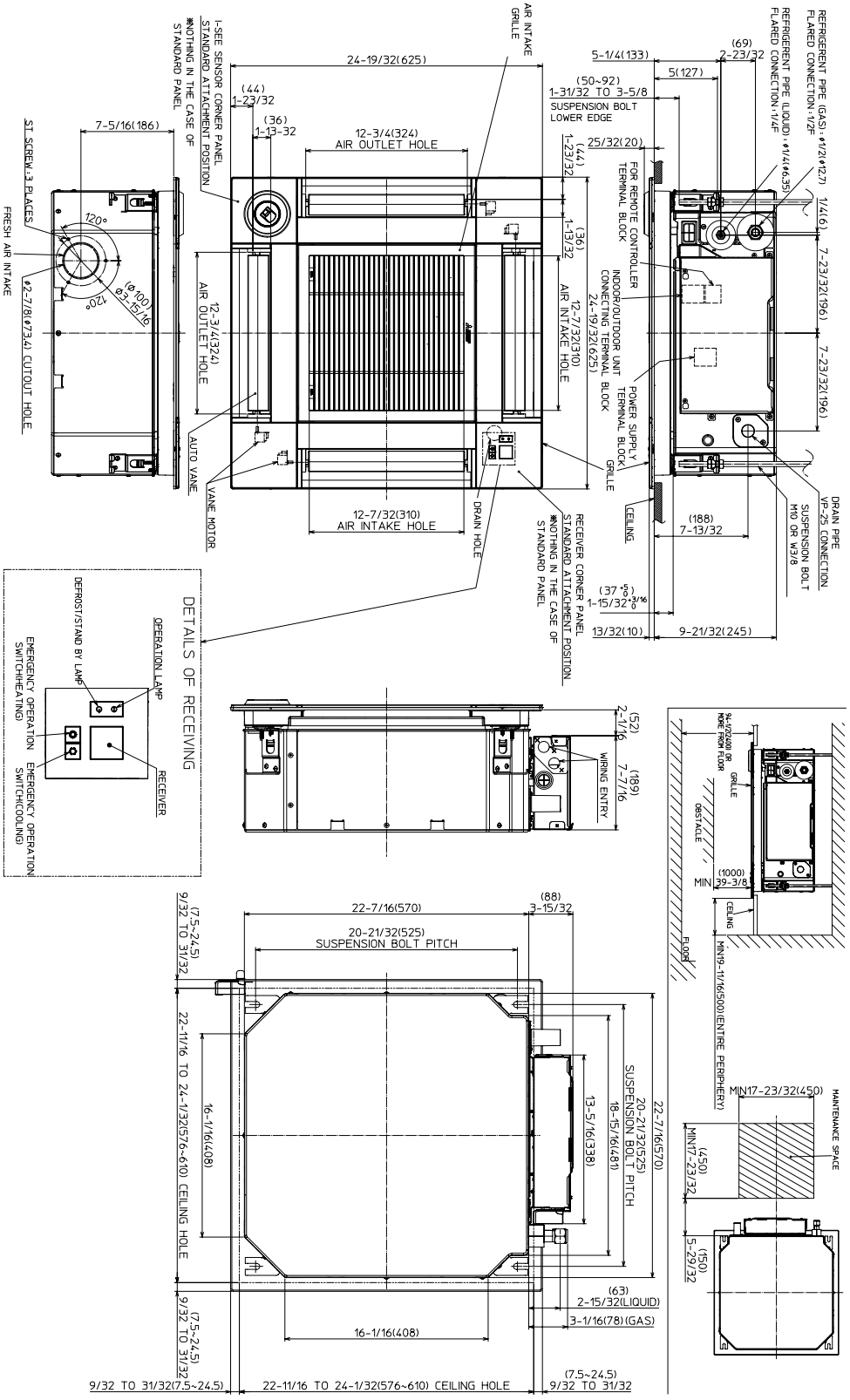
INDOOR UNIT ACCESSORIES: TPLFYP008FM140A

Control Interface	BACnet® and Modbus® Interface	PAC-UKPRC001-CN-1
	Connector cable for remote display	PAC-SA88HA-EP
	IT Extender	PAC-WHS01IE-E
	kumo station® for kumo cloud®	TAC-WHS01HC-E
	Thermostat Interface	PAC-US444CN-1
	Thermostat Interface	PAC-US445CN-1
Remote Sensor	Flush Mount Remote Temperature Sensor	PAC-USSEN002-FM-1
	Flush Mount Temperature Sensor	PAC-USSEN001-FM-1
	Remote Temperature Sensor	PAC-SE41TS-E
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
	Smart ME Remote Controller - Backlit touchscreen	TAR-U01MEDU-K
	Touch MA Controller†	TAR-CT01MAU-SB
Wireless Remote Controller	kumo touch™ RedLINK™ Wireless Controller	MHK2
	Wireless MA Receiver	PAR-SR32MA-E
	Wireless MA Remote Controller	TAR-FL32MA-E
	Wireless Receiver	PAR-WSC009FA-E
	Wireless Remote Contoller	PAR-SL101A-E
	Wireless Signal Receiver Panel	PAR-SR4LU-E
Condensate	Blue Diamond (Advanced) Mini Condensate Pump w/ Reservoir & Sensor (208/230V) [recommended]	X87-721
	Blue Diamond (MicroBlue) Mini Condensate Pump (110/208/230V) up to 18,000 BTU/H	X86-003
	Refco Condensate Pump (100-240 VAC) up to 120,000 BTU/H	COMBI
Control Interface	CN24 Relay Kit	CN24RELAY-KIT-CM3
	Remote Operation Adapter‡	PAC-SF40RM-E
i-see Sensor® Panel	3D i-see Sensor® Corner Panel	PAC-SF1ME-E
	Grille with 3D i-see Sensor®	TLP-18FAEU

NOTES:
‡PAC-SF40RM-E (Unable to use with wireless remote controller)

INDOOR UNIT DIMENSIONS: TPLFYP008FM140A

Unit: inch



FORM# TPLFYP008FM140A - 202212

CITYMULTI®

TPLFYP018FM140A
18,000 BTU/H 22” X 22” 4-WAY CEILING CASSETTE

TRANE MITSUBISHI ELECTRIC

Job Name:

System Reference: Date:

GENERAL FEATURES

- Square edge, sleek design
- 3D i-see Sensor™ available as an option
- Improved installation features*
- Occupancy detection*
- Energy saving features*
- Improved occupant comfort
- Four fan speed settings including auto-fan
- Individual vane settings
- 2’ x 2’ size matches size of many ceiling tiles
- Corner-pocket design for simplified installation
- Built-in condensate lift mechanism designed to provide up to 33” of lift
- Ventilation air intake supported

*Requires a PAR-33MAA-J controller

Specifications			System
Unit Type			TPLFYP018FM140A
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	0.04
	Heating	kW	0.04
Current	Cooling	A	0.4
	Heating	A	0.35
MCA		A	0.5
Maximum Overcurrent Protection (MOCP)		A	15
External finish			Galvanized steel sheet
External Dimensions		In. [mm]	22-7/16 x 22-7/16 x 8-3/16 [570 x 570 x 208]
Net weight		Lbs [kg]	31.3 [14.2]
Heat exchanger			Cross fin (Aluminum fin and copper tube)
Fan	Type x quantity		Turbo fan x 1
	Airflow rate	CFM	315–390–460
	Motor type		DC motor
	Motor Output	kW	0.05
	Motor FLA	A	0.4
Sound pressure level (Measured in anechoic room)		dB(A)	33–39–43
Air filter			PP honeycomb fabric (long life type)
Refrigerant	Type		R410A
Diameter of refrigerant pipe (O.D.)	Liquid (High Pressure)	In. [mm]	1/4 [6.35] Flare
	Gas (Low Pressure)	In. [mm]	1/2 [12.7] Flare
Diameter of drain pipe		In. [mm]	O.D. 1-1/4 [32]

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

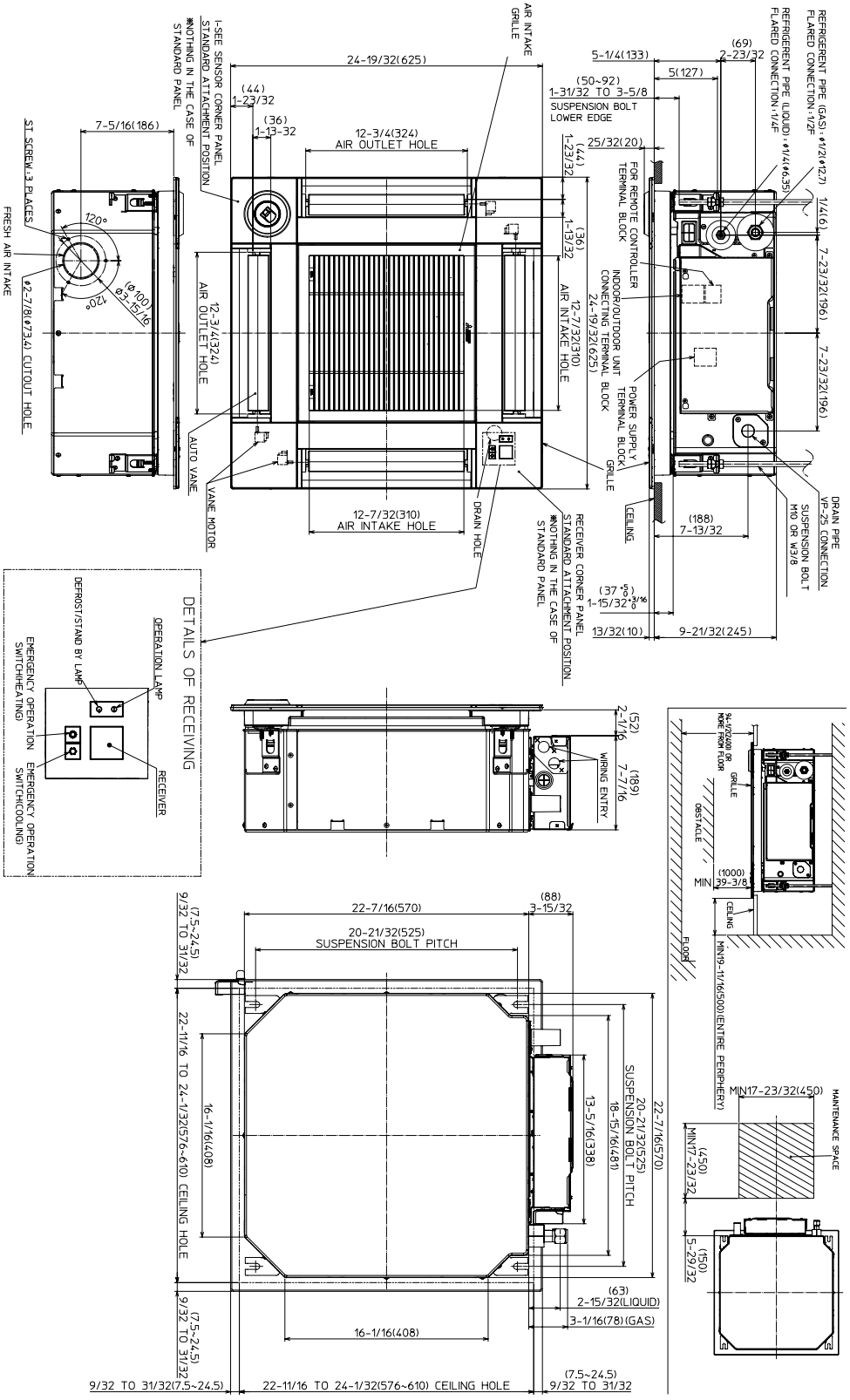
INDOOR UNIT ACCESSORIES: TPLFYP018FM140A

Control Interface	BACnet® and Modbus® Interface	PAC-UKPRC001-CN-1
	Connector cable for remote display	PAC-SA88HA-EP
	IT Extender	PAC-WHS01IE-E
	kumo station® for kumo cloud®	TAC-WHS01HC-E
	Thermostat Interface	PAC-US444CN-1
	Thermostat Interface	PAC-US445CN-1
Remote Sensor	Remote Temperature Sensor	PAC-SE41TS-E
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
	Smart ME Remote Controller - Backlit touchscreen	TAR-U01MEDU-K
	Touch MA Controller†	TAR-CT01MAU-SB
Wireless Remote Controller	kumo touch™ RedLINK™ Wireless Controller	MHK2
	Wireless MA Receiver	PAR-SR32MA-E
	Wireless MA Remote Controller	TAR-FL32MA-E
	Wireless Receiver	PAR-WSC009FA-E
	Wireless Remote Contoller	PAR-SL101A-E
	Wireless Signal Receiver Panel	PAR-SR4LU-E
Condensate	Blue Diamond (Advanced) Mini Condensate Pump w/ Reservoir & Sensor (208/230V) [recommended]	X87-721
	Blue Diamond (MicroBlue) Mini Condensate Pump (110/208/230V) up to 18,000 BTU/H	X86-003
	Refco Condensate Pump (100-240 VAC) up to 120,000 BTU/H	COMBI
Control Interface	CN24 Relay Kit	CN24RELAY-KIT-CM3
	Remote Operation Adapter‡	PAC-SF40RM-E
i-see Sensor® Panel	3D i-see Sensor® Corner Panel	PAC-SF1ME-E
	Grille with 3D i-see Sensor®	TLP-18FAEU

NOTES:
‡PAC-SF40RM-E (Unable to use with wireless remote controller)

INDOOR UNIT DIMENSIONS: TPLFYP018FM140A

Unit: inch



TPKA0A0121LA00A & TRUZA0121KA70BA
12,000 BTU/H WALL MOUNT
12,000 BTU/H HEAT PUMP UNIVERSAL OUTDOOR

Job Name:

System Reference: Date:

Indoor Unit TPKA0A0121LA00A

Outdoor Unit TRUZA0121KA70BA

INDOOR UNIT FEATURES

- Selectable high sensible vs high latent capacity mode
- UL 60335-2-40 compliant
- Sleek, compact design
- Simple installation
- Airflow direction control
- Auto fan mode
- Suitable for: server rooms, daycare centers, classrooms, churches, small offices, and more
- Multiple control options available:
  - kumo cloud® smart device app for remote access
  - Third-party interface options
  - Wired or wireless controllers

OUTDOOR UNIT FEATURES

- Variable speed INVERTER-driven compressor
- Power receiver pre-charged with refrigerant volume for piping length up to 70 ft
- Low ambient cooling down to 0°F providing 100% capacity
- 24-hour continuous operation (cooling mode)
- High pressure protection
- Fast restart
- Superior energy and operational efficiency
- Seacoast protection on heat exchanger and base panel (rated for 2,000 hours in accordance with ASTM B117 testing)

SPECIFICATIONS: TPKA0A0121LA00A & TRUZA0121KA70BA

Cooling at 95°F[1]	Maximum Capacity	BTU/H	12,000
	Rated Capacity	BTU/H	12,000
	Minimum Capacity	BTU/H	4,400
	Maximum Power Input	W	900
	Rated Power Input	W	900
	Moisture Removal	Pints/h	2.7
	Sensible Heat Factor		0.88
	Power Factor [208V / 230V]	%	92.5 / 92.5
Heating at 47°F[2]	Maximum Capacity	BTU/H	18,000
	Rated Capacity	BTU/H	14,000
	Minimum Capacity	BTU/H	4,400
	Maximum Power Input	W	1,600
	Rated Power Input	W	1,030
	Power Factor [208V / 230V]	%	92.5 / 92.5
Heating at 17°F[3]	Maximum Capacity	BTU/H	10,600
	Rated Capacity	BTU/H	10,600
	Maximum Power Input	W	1,190
	Rated Power Input	W	1,190
Heating at 5°F[4]	Maximum Power Input	W	1,120
Efficiency	SEER		21.0
	EER[1]		13.3
	HSPF [IV]		10.2
	COP at 47°F[2]		3.9
	COP at 17°F at Maximum Capacity[3]		2.6
	ENERGY STAR® Certified		Yes
Electrical	Voltage, Phase, Frequency		208/230, 1, 60
	Guaranteed Voltage Range	V AC	198 - 253
	Voltage: Indoor - Outdoor, S1-S2	V AC	208/230
	Voltage: Indoor - Outdoor, S2-S3	V DC	24
	Short-circuit Current Rating [SCCR]	kA	5
	Recommended Fuse/Breaker Size (Oudoor)	A	15
	Recommended Wire Size [Indoor - Outdoor]	AWG	14
	Power Supply		Indoor unit is powered by the outdoor unit
Indoor Unit	MCA	A	1.0
	Fan Motor Full Load Amperage	A	0.19
	Fan Motor Type		DC Motor
	Airflow Rate at Cooling, Dry	CFM	265–310–385–455
	Airflow Rate at Cooling, Wet	CFM	215–255–320–375
	Airflow Rate at Heating, Dry	CFM	265–290–325–385
	Sound Pressure Level [Cooling]	dB[A]	34–39–44–48
	Sound Pressure Level [Heating]	dB[A]	34–37–40–43
	Drain Pipe Size	In. [mm]	5/8 [16]
	Condensate Lift Mechanism, Maximum Distance	In. [mm]	19-11/16 [850]
	Coating on Heat Exchanger		—
	External Finish Color		White Munsell 0.7PB 9.2/0.4
	Unit Dimensions	W x D x H: In. [mm]	35-23/64 x 9-11/32 x 11-25/32 [898 x 237 x 299]
	Package Dimensions	W x D x H: In. [mm]	38-3/16 x 13-25/64 x 14-11/64 [970 x 340 x 360]
	Unit Weight	Lbs. [kg]	28 [12.7]
	Package Weight	Lbs. [kg]	32 [14.5]
Indoor Unit Operating Temperature Range	Cooling Intake Air Temp [Maximum / Minimum]*	°F	90 DB, 73 WB / 66 DB, 59 WB
	Heating Intake Air Temp [Maximum / Minimum]	°F	82 DB / 50 DB

NOTES:
AHRI Rated Conditions
(Rated data is determined at a fixed compressor speed)

[1]Cooling (Indoor // Outdoor) °F 80 DB, 67 WB // 95 DB, 75 WB
[2]Heating at 47°F (Indoor // Outdoor) °F 70 DB, 60 WB // 47 DB, 43 WB
[3]Heating at 17°F (Indoor // Outdoor) °F 70 DB, 60 WB // 17 DB, 15 WB

Select high sensible versus high latent capacity mode via function setting mode 08, “Fan speed” (accessible through Touch MA, Deluxe MA, kumo touch and kumo cloud app control options):
- ”High ceiling” mode = high sensible capacity
  - » Mode 08, setting 3 (factory default)
- ”Standard” mode = high latent capacity
  - » Mode 08, setting 2

*Outdoor Unit Operating Temperature Range (Cooling Air Temp (Maximum / Minimum)):
- Wind baffles required to operate below 23°F DB in cooling mode.
- Heat pump system with wind baffle: 0°F - 115°F.
- Refer to wind baffle documentation for further information.

**Outdoor Unit Operating Temperature Range (Cooling Thermal Lock-out / Re-start Temperatures; Heating Thermal Lock-out / Re-start Temperatures):
- System cuts out in heating mode to avoid thermistor error and automatically restarts at these temperatures.

SPECIFICATIONS: TPKA0A0121LA00A & TRUZA0121KA70BA

Outdoor Unit	MCA	A	11.0
	MOCP	A	28
	Fan Motor Full Load Amperage	A	0.5
	Fan Motor Output	W	46
	Airflow Rate [Cooling / Heating]	CFM	1590 / 1590
	Refrigerant Control		LEV
	Defrost Method		Reverse Cycle
	Coating on Heat Exchanger		Blue Fin Coating (BS Model only)
	Sound Pressure Level, Cooling[1]	dB(A)	44
	Sound Pressure Level, Heating[2]	dB(A)	46
	Compressor Type		INVERTER-driven twin rotary
	Compressor Model		SNB092FQCMC
	Compressor Rated Load Amps	A	7
	Compressor Locked Rotor Amps	A	12.0
	Compressor Oil [Type // Charge]	oz.	FV50S // 12
	External Finish Color		Ivory Munsell 3Y 7.8/1.1
	Base Pan Heater		N/A
	Unit Dimensions	W x D x H: In. [mm]	31-13/16 (2+7/16) x 11-13/16 x 24-13/16 [809 (+62) x 300 x 630]
	Package Dimensions	W x D x H: In. [mm]	37-1/16 x 16-3/16 x 27-7/16 [941 x 411 x 697]
	Unit Weight	Lbs. [kg]	93 [42]
	Package Weight	Lbs. [kg]	104 [47]
Outdoor Unit Operating Temperature Range	Cooling Air Temp [Maximum / Minimum]*	°F	115 DB / 0 DB
	Heating Air Temp [Maximum / Minimum]	°F	70 DB, 59 WB / 12 DB, 14 WB
	Heating Thermal Lock-out / Re-start Temperatures**	°F	8 / 12
Refrigerant	Maximum Charge Quantity	Lbs, oz	4.0, 7.0
	Initial Charge Quantity	Ft. [m]	70.0 [21.0]
	Additional Refrigerant Charge Per Additional Piping Length	oz./Ft. [g/m]	0.2 [19]
Piping	Gas Pipe Size O.D. [Flared]	In.[mm]	1/2 [12.7]
	Liquid Pipe Size O.D. [Flared]	In.[mm]	1/4 [6.35]
	Maximum Piping Length	Ft. [m]	100 [30]
	Maximum Height Difference	Ft. [m]	100 [30]
	Maximum Number of Bends		15

NOTES:
AHRI Rated Conditions
(Rated data is determined at a fixed compressor speed)

[1]Cooling (Indoor // Outdoor) °F 80 DB, 67 WB // 95 DB, 75 WB
[2]Heating at 47°F (Indoor // Outdoor) °F 70 DB, 60 WB // 47 DB, 43 WB
[3]Heating at 17°F (Indoor // Outdoor) °F 70 DB, 60 WB // 17 DB, 15 WB

Select high sensible versus high latent capacity mode via function setting mode 08, “Fan speed” (accessible through Touch MA, Deluxe MA, kumo touch and kumo cloud app control options):
- ”High ceiling” mode = high sensible capacity
  - » Mode 08, setting 3 (factory default)
- ”Standard” mode = high latent capacity
  - » Mode 08, setting 2

*Outdoor Unit Operating Temperature Range (Cooling Air Temp (Maximum / Minimum)):
- Wind baffles required to operate below 23°F DB in cooling mode.
- Heat pump system with wind baffle: 0°F - 115°F.
- Refer to wind baffle documentation for further information.

**Outdoor Unit Operating Temperature Range (Cooling Thermal Lock-out / Re-start Temperatures; Heating Thermal Lock-out / Re-start Temperatures):
- System cuts out in heating mode to avoid thermistor error and automatically restarts at these temperatures.

INDOOR UNIT ACCESSORIES: TPKA0A0121LA00A

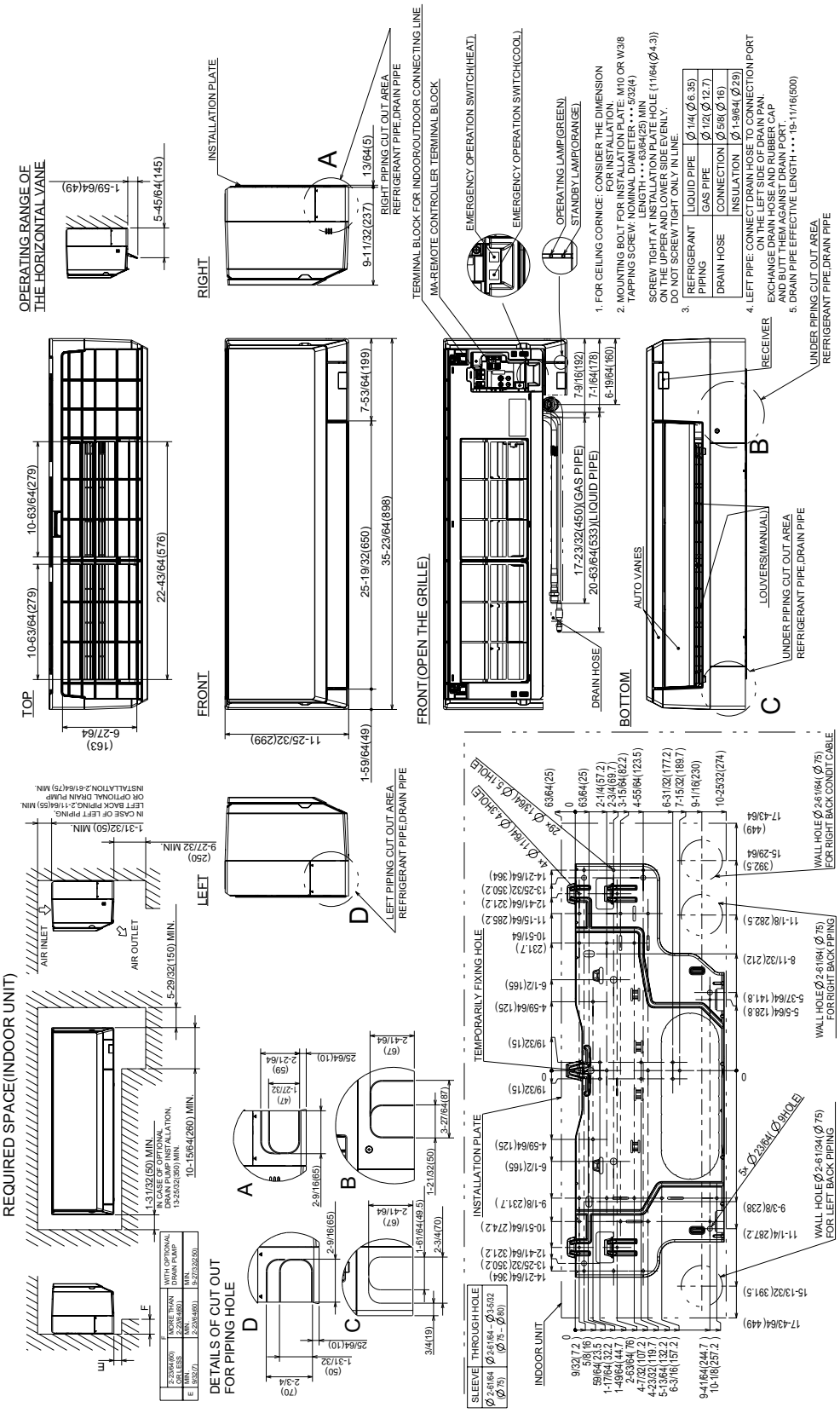
Control Interface	3-Pin Connector	PAC-715AD
	BACnet® and Modbus® Interface	PAC-UKPRC001-CN-1
	IT Extender	PAC-WHS01IE-E
	kumo station® for kumo cloud®	TAC-WHS01HC-E
	Lockdown bracket for remote controller	RCMKP1CB
	Thermostat Interface	PAC-US444CN-1
	Thermostat Interface	PAC-US445CN-1
	USNAP Adapter	PAC-WHS01UP-E
	Wireless Interface for kumo cloud®	PAC-USWHS002-WF-2
Remote Sensor	Flush Mount Remote Temperature Sensor	PAC-USSEN002-FM-1
	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
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 Remote Controller	TAR-FL32MA-E
Condensate	Blue Diamond (Advanced) Mini Condensate Pump w/ Reservoir & Sensor (208/230V) [recommended]	X87-721
	Blue Diamond (MicroBlue) Mini Condensate Pump (110/208/230V) up to 18,000 BTU/H	X86-003
	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
	Refco Condensate Pump (100-240 VAC)	GOBI-II
	Refco Condensate Pump (100-240 VAC) up to 120,000 BTU/H	COMBI
	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
Drain Hose	Flexible Mini-Split Drain Hose	DRX-16
Lineset	100’ x 1/4” x 100’ / 1/2” Lineset (Twin-Tube Insulation)	MLS141212T-100
	15’ x 1/4” x 15’ / 1/2” Lineset (Twin-Tube Insulation)	MLS141212T-15
	30’ x 1/4” x 30’ / 1/2” Lineset (Twin-Tube Insulation)	MLS141212T-30
	50’ x 1/4” x 50’ / 1/2” Lineset (Twin-Tube Insulation)	MLS141212T-50
	65’ x 1/4” x 65’ / 1/2” Lineset (Twin-Tube Insulation)	MLS141212T-65

OUTDOOR UNIT ACCESSORIES: TRUZA0121KA70BA

Air Outlet Guide	Air Outlet Guide	PAC-SJ07SG-E
Centralized Drain Pan	Centralized Drain Pan	PAC-SG63DP-E
	Drain Pan	PAC-SG64DP-E
Control/Service Tool	Control/Service Tool	PAC-SK52ST
	M- & P-Series Maintenance Tool Cable Set	M21EC0397
	USB/UART Conversion Cable (Required for all laptop connection)	M21EC1397
Drain Socket	Drain Socket	MAC-871DS
Hail Guards	Hail Guard	HG-A5
M-NET Converter	M-NET Converter	PAC-SJ96MA-E
Mounting Pad	Condensing Unit Mounting Pad: 16” x 36” x 3”	ULTRILITE1
Stand	18” Single Fan Stand	QSMS1801M
	24” Single Fan Stand	QSMS2401M
	Condenser Wall Bracket	QSWB2000M-1
	Condenser Wall Bracket - Stainless Steel Finish	QSWBSS
	Outdoor Unit Stand — 12” High	QSMS1201M
Wind Baffle	Front Wind Baffle	WB-PA4
	Rear Wind Baffle	WB-RE4
	Side Advanced Wind Baffle	WB-SD4

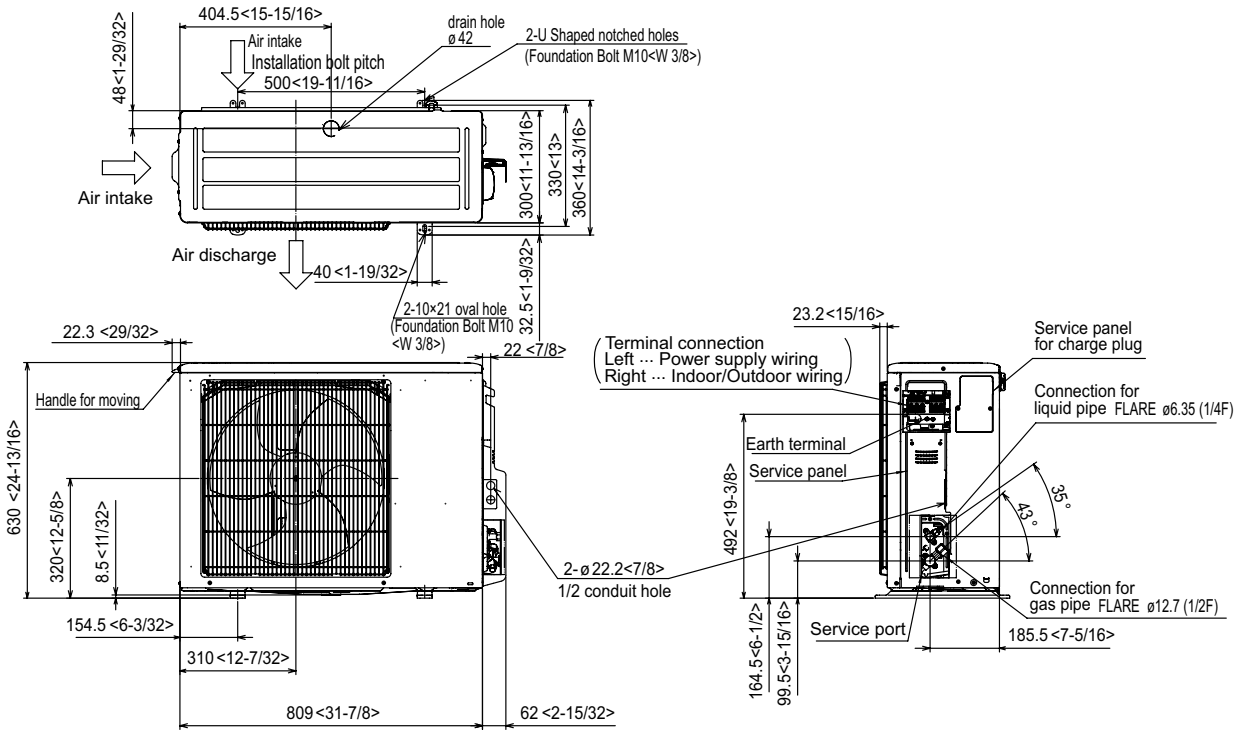
INDOOR UNIT DIMENSIONS: TPKA0A0121LA00A

Unit: inch (mm)

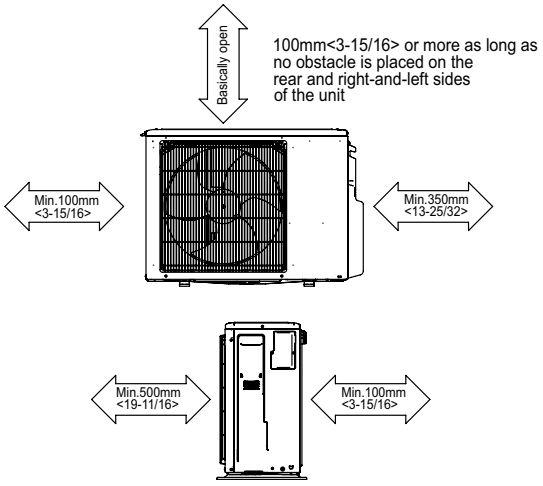


OUTDOOR UNIT DIMENSIONS: TRUZA0121KA70BA

Unit: mm<in>



Free space around the outdoor unit (basic example)

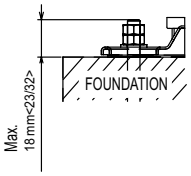


2 sides should be open in the right, left and rear side.

FOUNDATION BOLTS

Please secure the unit firmly with 4 foundation (M10<W3/8>) bolts. (Bolts, washers and nut must be purchased locally).

<Foundation bolt height>



PIPING-WIRING DIRECTION

Piping and wiring connection can be made from the rear direction only.

Job Name:

System Reference: Date:

TW-50A

- TW-50A can be a Master Controller or Expansion Controller
- Master Controller can operate and monitor up to 50 indoor
- units
- Expansion Controller can expand an TE-200A to operate and monitor up to 50 additional indoor units through the touch screen or web browser
- Network up to three TW-50A to one TE-200A to allow the TE-200A to manage up to 200 indoor units.

OPTIONAL LICENSES

- LIC-BACnet Master or LIC-BACnet Expansion: 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-ChargeExpansion: 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 or LIC-PWeb Expansion: 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 (Error codes are able to 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- and P-Series units (requires M-Net adapter)
  - Lossnay® units
  - PWFY 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

TW-50A - SPECIFICATIONS, CONT.

TW-50A EXPANSION CONTROLLER

Item	Specifications		
Power Supply	**Rated input**		100–240 VAC ± 10%; 0.3–0.2 A 50/60 Hz Single-phase
M-NET power feeding capability			1.5
Ambient conditions	**Temperature**	**Operating Range**	-10°C to +55°C (+14°F to +131°F)
		Non-operating Range	-20°C to +60°C (-4°F to +140°F)
	Humidity		30% to 90% RH (no condensation)
Weight			1.7 kg (4 lbs)
Dimensions (W x H x D)			172 × 209 × 92 mm (6-13/16 × 8-4/16 × 3-10/16 in) **253 × 172 × 92 mm (10 × 6-13/16 × 3-10/16 in) when using L-fittings
Installation conditions			Only in a metal control box indoors

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

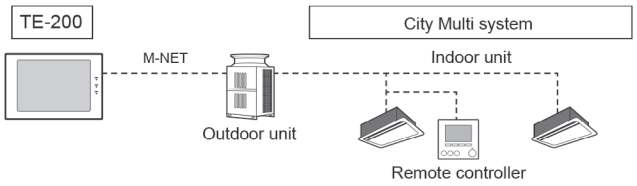
Specifications are subject to change without notice.

MODEL: TW-50A - SYSTEM CONFIGURATION

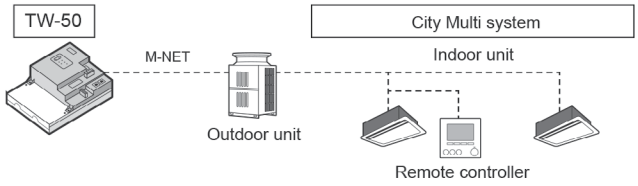
*TE-200A is indicated as TE-200
*TE-50A is indicated as TE-50

CONTROLLING 50 OR FEWER UNITS OF EQUIPMENT

1. TE-200



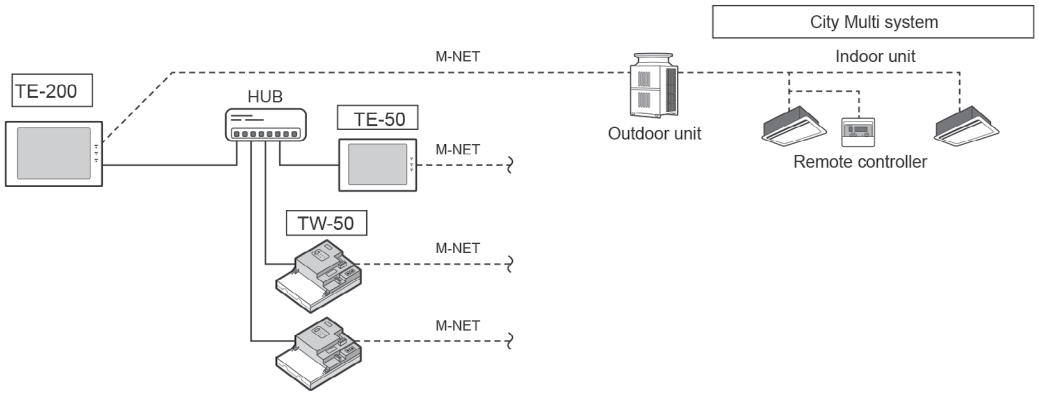
2. TW-50



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

Note

TE-200 is required when using TE-50



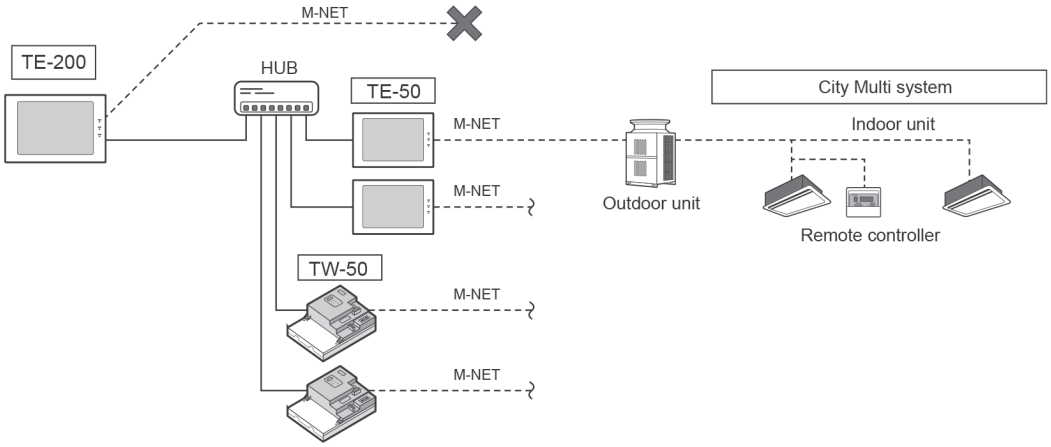
WHEN USING AN APPORTIONED ELECTRICITY BULLING FUNCTION

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.

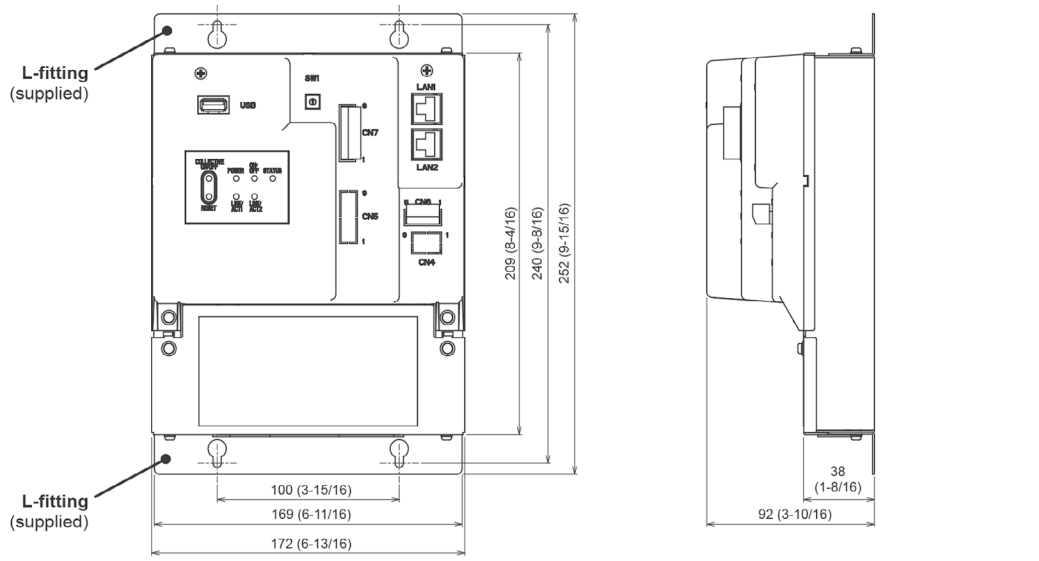


Specifications are subject to change without notice.

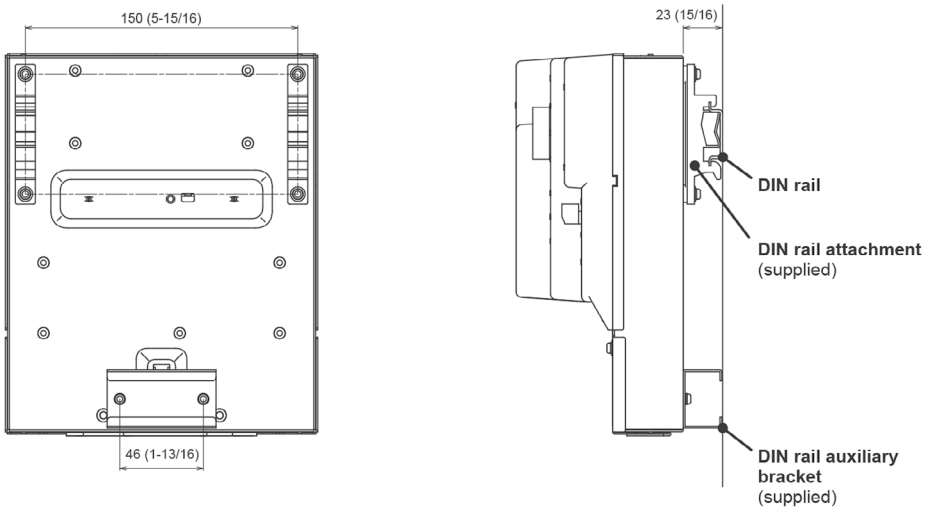
TW-50A - DIMENSIONS

(1) WHEN USING L-FITTINGS

Unit: mm (in)



(2) WHEN USING DIN RAIL



FORM# T_SUBMITTAL_TW-50A - 202104

Specifications are subject to change without notice.

TAR-CT01MAU-SB
TOUCH MA CONTROLLER

Job Name:

System Reference: Date:

CAPABILITIES

- Supports both Fahrenheit and Celsius
- Basic functions:
  - ON/OFF
  - Operation mode: AUTO, COOL, HEAT, FAN
  - Vane Setting: Auto, Step 1-5, Swing
  - Airflow direction
  - Daylight Savings Time (DST)
- Restriction
  - Set temperature range limits (dependent on system connected):
    - Cooling from 67°F to 95°F
    - Heating from 40°F to 83°F
    - Auto (Single Set Point) from 67°F to 83°F
  - Operation lock: On/Off, Mode, Set Temperature, Vane, Menu, Fan, Louver, Hold
  - Home screen display icon
- Ventilation (Lossnay): Off, Low, High
  - Manual vane angle: No Setting, Step 1-5, Draft Reduction, All outlet
  - Draft reduction mode keeps the vane angle more horizontal than the angle of Step 1
  - Room Temperature can be sensed either at the indoor unit (default) or the remote controller
  - CITY MULTI® units only
- Error code notification
  - Displays error code and error unit address
  - Error time occurrence
  - Contact information is accessible
- Grouping:
  - Only one remote controller can be connected to a group made up of indoor units
  - The MA Touch Remote Controller cannot be used in combination with other MA remote controllers
- Addressing: No addressing required
- Customizable display
  - Customizable Text and background color
  - Logo Transmission: load a custom image onto the screen using the smartphone app.
- Main Display
  - Full: Shows all icons and values
  - Basic: Limited to Mode, Set Temperature, Fan, Time & Day
  - Temporarily disable display for cleaning (30 seconds)
  - Adjustable contrast level
  - Language - English, French, Spanish

- Bluetooth connection to remotely control settings on Touch MA controller
  - Logo transmission
  - Clock synchronization
  - Copy settings from one controller to others
- Wiring: Uses two-wire, stranded, non-polar control wire for connecting TB15 connection terminal on the indoor unit
- High Power
  - Operate at higher-than-normal capacity to bring the room to set temperature quickly for up to 30 minutes
- On/Off Timer
  - Set On Time (5-minute increments)
  - Set Off Time (5-minute increments)
  - Repeat daily
  - Home screen display icon
- Auto-Off Timer
  - Automatically turns unit off after preset time is reached
  - Time range: 30 to 240 minutes (10-minute increments)
  - Home screen display icon
- Weekly Timer
  - Schedulable: Mon, Tue, Wed, Thu, Fri, Sat, Sun
  - 1 to 8 time periods per day (5-minute increments)
- Set Mode: On/Off/Auto (Dual set point)
  - Set Temperature
- Outdoor Unit silent mode
  - Schedulable: Mon, Tue, Wed, Thu, Fri, Sat, Sun
  - Start/Stop times (5-minute increments)
  - Silent levels: Normal, Middle, Quiet
- Energy saving features:
  - Automatic return to the preset temperature set point if the set point is changed from the remote controller after a preset time range
  - Cool preset temperature: Cool, Dry, Auto-Cool
  - Heat preset temperature: Heat, Auto-Heat
  - Range: 30 to 120 minutes (10-minute increments)
  - Energy-saving Operation Schedule
    - Schedulable: Mon, Tue, Wed, Thu, Fri, Sat, Sun
    - 1 to 4 time periods per day (5-minute increments)
    - Four daily patterns with time periods (5 minute increments) and energy-saving rate 0% to 90%
- Home screen display icon
  - Night setback
  - Starts Heat/Cool operation when room temperature exceeds preset temperature range
  - Adjustable time range (5-minute increments)
- Requires crossover wiring for grouping across indoor units
- Filter maintenance notification
- Dimensions W x H x D: 2-9/16 x 4-3/4 x 9/16 Inches
  (65 x 120 x 14.1 mm)

COMPATIBILITY CHART

CITY MULTI®		Nv-Series	P-Series	
TPMFYP: YES	Yes	FKS: YES [1]	TPCA: YES	Yes
TPEFYP: YES	Yes	WST: YES [1]	TPEAD: YES	Yes
TPEFYP: YES	Yes	WST: YES [1]	TPKA: YES	Yes
TPEFYP: YES	Yes	WPH: YES [1]	TPLA: YES	Yes
TPEFYP: YES	Yes	WMT: NO	TPVA: YES	Yes
TPLFYP: YES	Yes	AMT: YES		

[1] Requires MAC-334IF-E

Specifications are subject to change without notice.

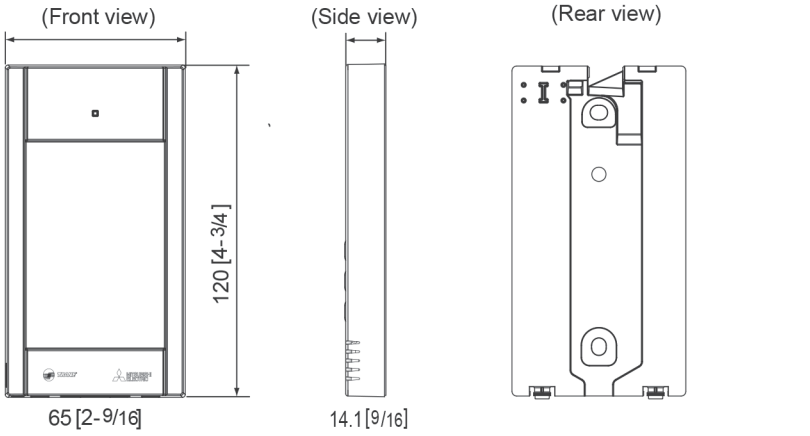
SPECIFICATIONS, DIMENSIONS, MOUNTING DIAGRAM, INSTALLATION SPACE: TAR-CT01MAU-SB

SPECIFICATIONS

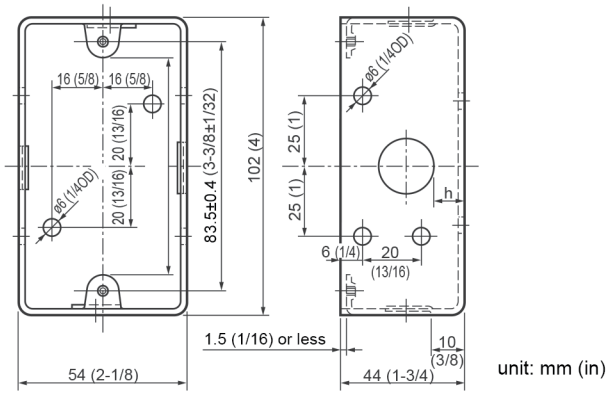
Product Size (W x H x D)	In. (mm)	2-9/16 x 4-3/4 x 9/16 (65 x 120 x 14.1)
Net Weight	Lbs. (kg)	13/64 (0.09)
Rated Power Supply Voltage		12 VDC (supplied from indoor units)
Power Consumption	W	0.6
Usage Environment		Temperature: 32 ~ 104°F (0 – 40°C) Humidity: 25 ~ 90%RH (with no dew condensation)
Material		Main Body: ABS

DIMENSIONS

Unit: mm[in.]

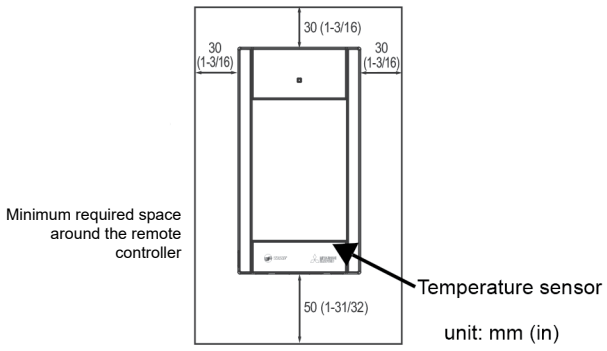


MOUNTING DIAGRAM



INSTALLATION SPACE

External dimensions of remote controller



Minimum required space around the remote controller

FORM# T_SUBMITTAL_TAR-CT01MAU-SB - 202103

Specifications are subject to change without notice.

Warranty Document

MITSUBISHI ELECTRIC TRANE HVAC US LLC

1340 Satellite Boulevard
Suwanee, GA 30024

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.**