# SUBMITTAL DATA
## V3MSBB06HR
## 6 Port Mode Selection Box

Job Name: _____ Location: _____

Purchaser: _____ Engineer: _____

Submitted to: _____ Reference: ☐ Approval ☐ Construction ☐

Unit designation: _____ Schedule #: _____

Product image for 8 port shown

Mode Selection Box (MSB) are required for VRF Heat Recovery systems, enabling simultaneous heating and cooling while supporting refrigerant leak mitigation.

## Compatibility

- The Mode Selection Box shall be compatible with R-32 VRF Heat Recovery Systems.

## Operation

- The unit shall allow for simultaneous heating and cooling on a single system.
- The MSB shall have a pressure equalization valve (480 steps) to reduce refrigerant sounds during mode changing of connected indoor units.
- Using electronic expansion valves (EEV), the MSB shall control the path of refrigerant to the indoor unit(s) based on the mode of operation required.
- The unit shall contain an internal subcooler with an electronic expansion valve to maximize performance of connected units and reduce refrigerant sounds.

## Construction and Installation

- Cabinet shall be constructed of galvanized steel.
- Most internal components shall be accessible for service via a bottom access panel. The PCB and wiring shall be accessible from the rear.
- MSB shall be installed indoors, level, with refrigerant piping entering and exiting in a horizontal orientation.
- No condensate drain connection shall be required.

## Refrigerant Leak Mitigation

**The MSB (Mode Selection Box) shall be equipped with:**

- Factory built-in Refrigerant Detection Sensors (RDS) to continuously monitor and respond to potential refrigerant leaks within or in proximity to the unit.
- Shut-off valve at each outlet port to enable isolation of the downstream refrigerant circuit upon leak detection.
- Exhaust and inlet air duct connections, with factory built-in motorized dampers, to ventilate the MSB enclosure as required based on project application and regulatory needs. Dampers and wiring can be relocated in the field, and block-off plates are included for unused openings.
- Contact output signal for external exhaust fan upon leak detection to create negative pressure at the MSB for ventilation.
- R-32 check plug terminals for optional integration with third-party devices. These terminals can be used to trigger alarms, activate external ventilation, or initiate other responses in the event of refrigerant leak detection. A2L leak management, including error code handling, is managed natively by the VRF system.
- Emergency power supply stores electrical charge in capacitors to ensure shutoff valves closes automatically in the event of power outage.
- Release mitigation function that conducts individual port pump-down operation when leak is detected at a connected indoor unit, prior to closing off the shut-off valve for that port.
- Meets ETRS requirements, ensuring superior system integrity, leak prevention, and compliance with A2L safety standards.

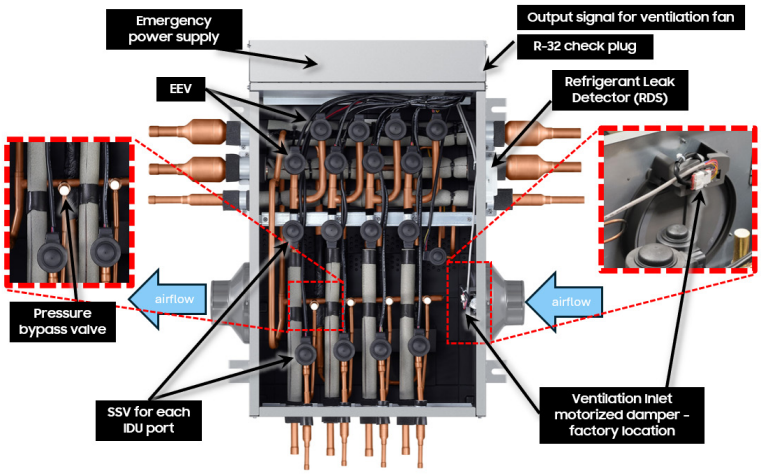
## Controls

- Control wiring shall be 16 AWG x 2 shielded wire.
- The unit shall be operated via a DDC type signal.
- The unit shall support auto pairing.
- Contains 2 X control PBAs. The address of the PBS shall be set differently. The outdoor unit shall count as two (2) MCUs.

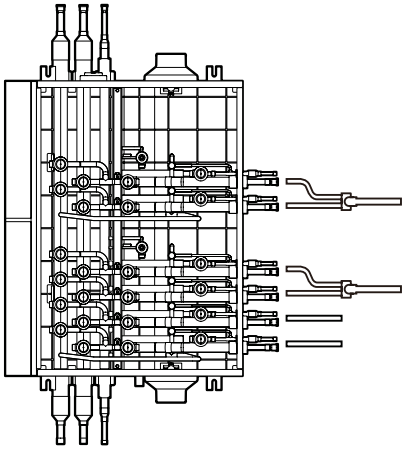
Intertek

## Key Components MSB

Key components of 4-port MSB is shown below.

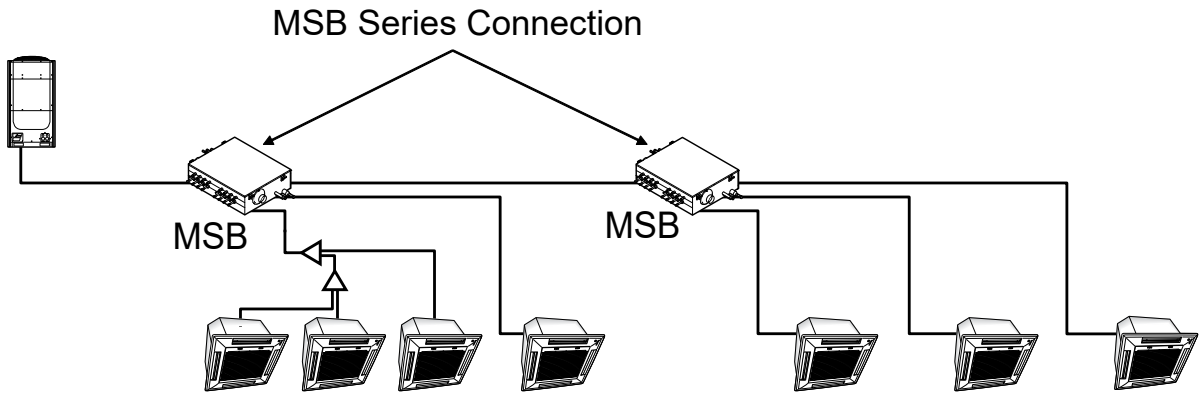



## Accessory Y-Joint - Combining Two Ports



Y-joint accessory V1MSBP01HR is needed to connect to an indoor unit > 54,000 Btu/h and ≤ 108,000 Btu/h. Twinned ports cannot connect to multiple indoor units.

## MSB Series Connection



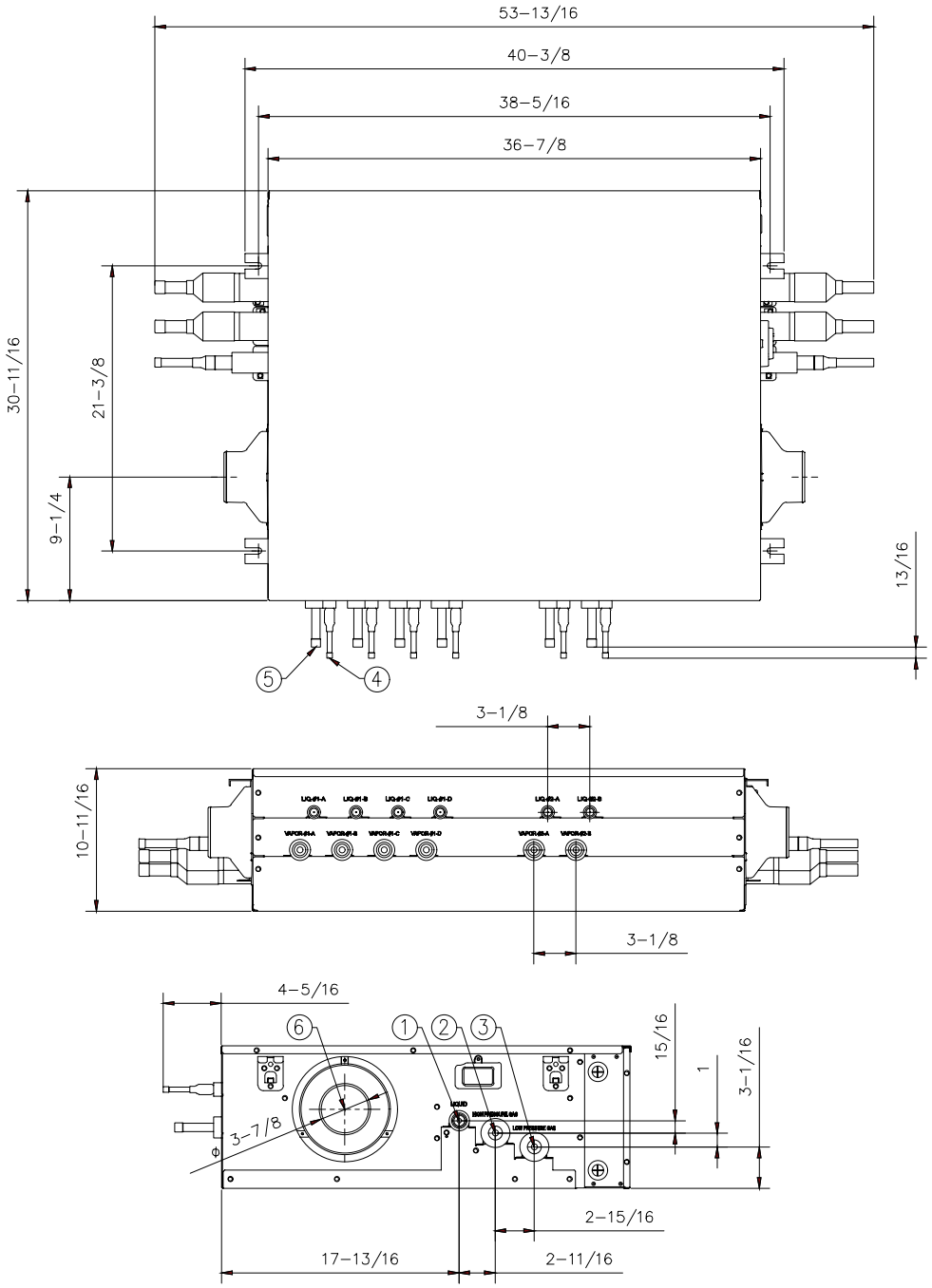
# SPECIFICATIONS V3MSBB06HR

| | | | | |
|---|---|---|---|---|
| Model Name | | | | V3MSBB06HR |
| Power Supply | | | Φ, V, Hz | 1/208~230/60 |
| Mode | | | - | HEAT PUMP |
| Maximum number of connectable indoor units | | | EA | 32 |
| Number of branches | | | EA | 6 |
| Maximum capacity of connectable indoor units | | | Btu/h | 216,000 |
| Maximum capacity of connectable indoor units per branch | | - | Btu/h | 54,000 |
| | | Y-Joint | Btu/h | 108,000 |
| Electrical | | MCA | A | 1.0 |
| | | MOP | A | 15 |
| Sound Pressure | | Stable cooling Operation | dB(A) | 38 |
| | | Heating-to-Cooling Change over | | 38 |
| Additional refrigerant charging | | | kg/unit | 0.65 |
| Ventilation | | Duct Connection | Φ, inch | 4.0 |
| Piping Connections | Outdoor unit | Liquid Pipe | Φ, inch | 5/8 |
| | | Gas Pipe | Φ, inch | 7/8 |
| | | Discharge gas | Φ, inch | - |
| | Indoor unit | Liquid Pipe | Φ, inch | 3/8 |
| | | Gas Pipe | Φ, inch | 5/8 |
| External Dimension | Net Weight | | lbs | 70 |
| | New Dimensions (WxHxD) | | inch | 36-7/8 × 10-11/16 x 30-11/16 |
| Operating Limit | Cooling | | °F | 5~126 |
| | Heating | | °F | -22~75.2 |

*If continuous cooling operation is required at outdoor temperatures below 23°F (-5°C), enable the outdoor option “Expand operational temperature range for cooling operation (HR only)”. With this option enabled, continuous cooling is supported down to 5°F (-15°C). For indoor unit capacities of 18–54 kBtu/h, connect 2 ports using a Y-joint on the liquid and gas pipes.

# DIMENSIONAL DRAWING V3MSBB06HR

Unit: Inches




| No | Name | Description |
|---|---|---|
| 1 | Refrigerant Liquid Pipe | - |
| 2 | Refrigerant High Pressure Gas Pipe | - |
| 3 | Refrigerant Low Pressure Gas Pipe | - |
| 4 | LIQ (Indoor) | - |
| 5 | VAPOR (Indoor) | - |
| 6 | Duct | Φ4 |