TOSHIBA

TCTC-E21-VRF004-5

Engineering Data Book

# High Static Pressure Duct Type

**MMD-UP0181HP-E / TR**
**MMD-UP0241HP-E / TR**
**MMD-UP0271HP-E / TR**
**MMD-UP0361HP-E / TR**
**MMD-UP0481HP-E / TR**
**MMD-UP0561HP-E / TR**
**MMD-UP0721HP-E / TR**
**MMD-UP0961HP-E / TR**

# Contents

# 1. Specifications

| Model name | | MMD - | UP0181HP-E / TR | UP0241HP-E / TR | UP0271HP-E / TR | UP0361HP-E / TR |
|---|---|---|---|---|---|---|
| Power supply | | | 1 ph 230V (220-240V) ~ 50 Hz & 1 ph 220V (208-230V) ~ 60 Hz | | | |
| Cooling capacity (*1) | | (kW) | 5.6 | 7.1 | 8.0 | 11.2 |
| Heating capacity (*1) | | (kW) | 6.3 | 8.0 | 9.0 | 12.5 |
| Running current | | (A) | 0.82 | 0.92 | 1.16 | 1.39 |
| Power consumption | | (kW) | 0.125 | 0.140 | 0.190 | 0.230 |
| Starting current | | (A) | 1.12 | 1.22 | 1.46 | 1.89 |
| FCU dimension | Main unit | Height (mm) | 298 | | | 298 |
| | | Width (mm) | 1000 | | | 1400 |
| | | Depth (mm) | 750 | | | 750 |
| Total weight | Main unit | (kg) | 34 | | | 43 |
| Heat exchangere | | | Finned tube | | | |
| Soundproof / Heat-insulation material | | | Polyethylene foam | | | |
| Fan | | | Centrifugal fan (Sirocco fan) | | | |
| Air flow volume | Indoor unit (H/M/L) | (m³/h) | 1100 / 990 / 900 | 1200 / 1050 / 960 | 1500 / 1350 / 1200 | 1920 / 1560 / 1340 |
| Sound pressure | Indoor unit (H/M/L) | dB(A) | 37 / 33 / 31 | 38 / 34 / 32 | 43 / 41 / 38 | 41 / 37 / 34 |
| Motor | | | 250 | | | 350 |
| Static pressure factory set (Max) | | (Pa) | 100 (200) | | | |
| Conecting pipe | Gas side | (mm) | Ø 12.7 | Ø 15.88 | | |
| | Liquid side | (mm) | Ø 6.35 | Ø 9.52 | | |
| | Drain pipe | (mm) | 25 (Polyvinyl chloride tube) | | | |
| Drain pump | | | Equiped | | | |
| Operating Range for SMMS-u | Cooling | (°C) | 5 ~ 46 to 52 (*2) | | | |
| | Heating | (°C) | -10 ~ 46 | | | |

Note (*1) : Rated conditions Cooling: Indoor air temperature 27 ˚DB / 19 ˚WB, Outdoor air temperature 35 ˚DB

Heating: Indoor air temperature 20 ˚DB, Outdoor air temperature 7 ˚DB / 6 ˚WB

(*2) : 46 to 52 °C is also available but temporary operate.

| Model name | | MMD - | UP0481HP-E / TR | UP0561HP-E / TR | UP0721HP-E / TR | UP0961HP-E / TR |
|---|---|---|---|---|---|---|
| Power supply | | | 1 ph 230V (220-240V) ~ 50 Hz & 1 ph 220V (208-230V) ~ 60 Hz | | | |
| Cooling capacity (*1) | | (kW) | 14.0 | 16.0 | 22.4 | 28.0 |
| Heating capacity (*1) | | (kW) | 16.0 | 18.0 | 25.0 | 31.5 |
| Running current | | (A) | 1.81 | 2.48 | 2.83 | 3.77 |
| Power consumption | | (kW) | 0.300 | 0.400 | 0.540 | 0.790 |
| Starting current | | (A) | 2.41 | 3.08 | 7.80 | 7.80 |
| FCU dimension | Main unit | Height (mm) | 298 | | 448 | |
| | | Width (mm) | 1400 | | 1400 | |
| | | Depth (mm) | 750 | | 900 | |
| Total weight | Main unit | (kg) | 43 | | 97 | |
| Heat exchangere | | | Finned tube | | | |
| Soundproof / Heat-insulation material | | | Polyethylene foam | | | |
| Fan | | | Centrifugal fan (Sirocco fan) | | | |
| Air flow volume | Indoor unit (H/M/L) | ($m^3$/h) | 2340 / 1980 / 1695 | 2760 / 2340 / 1920 | 3800 / 3200 / 2500 | 4800 / 4200 / 3500 |
| Sound pressure | Indoor unit (H/M/L) | dB(A) | 44 / 41 / 38 | 46 / 44 / 41 | 44 /40 / 36 | 46 / 42 / 38 |
| Motor | | | 350 | | 1000 | |
| Static pressure factory set (Max) | | (Pa) | 100 (200) | | 150 (250) | |
| Conecting pipe | Gas side | (mm) | Ø 15.88 | | Ø 22.23 | |
| | Liquid side | (mm) | Ø 9.52 | | Ø 12.7 | |
| | Drain pipe | (mm) | | | | |
| Drain pump | | | Equiped | | Option | |
| Operating Range for SMMS-u | Cooling | (°C) | 5 ~ 46 to 52 (*2) | | | |
| | Heating | (°C) | -10 ~ 46 | | | |

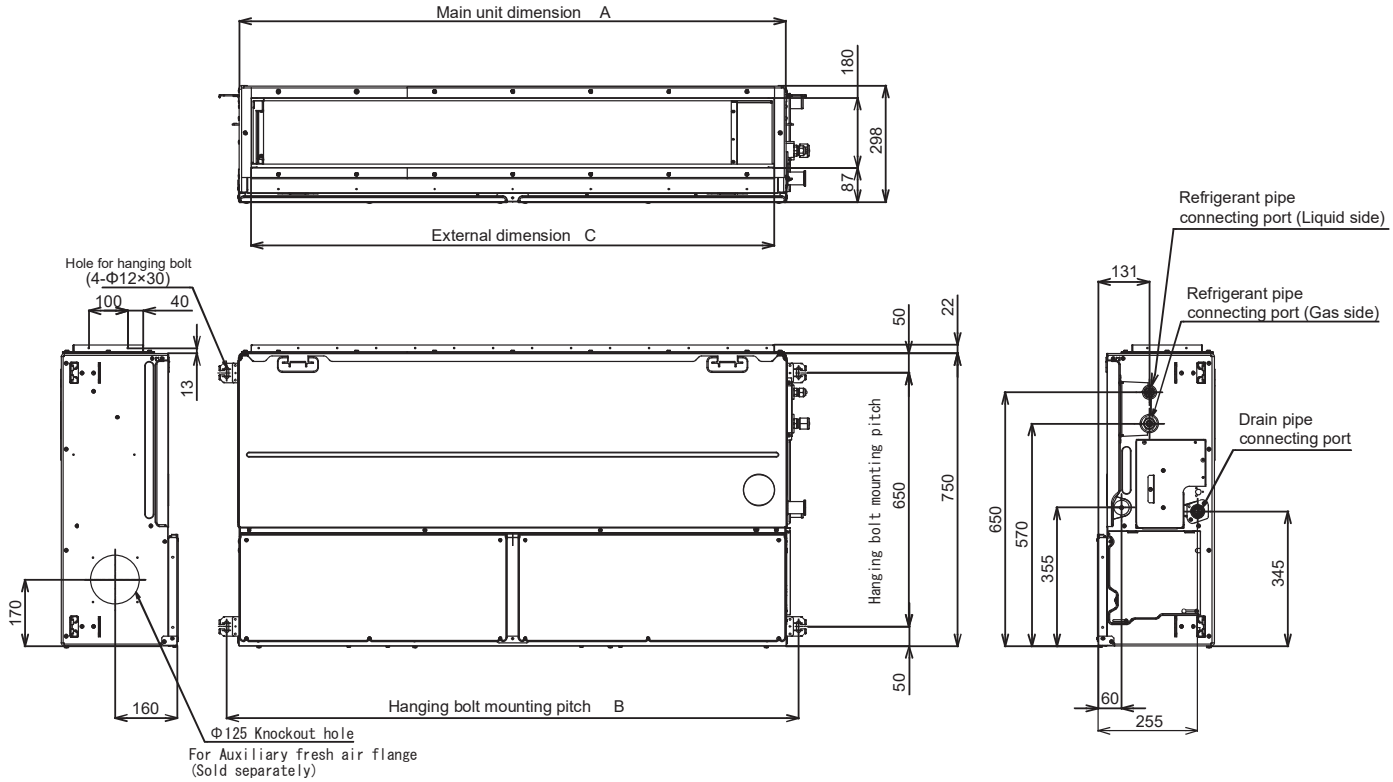
Note (*1) : Rated conditions Cooling: Indoor air temperature 27 ˚DB / 19 ˚WB, Outdoor air temperature 35 ˚DB

Heating: Indoor air temperature 20 ˚DB, Outdoor air temperature 7 ˚DB / 6 ˚WB

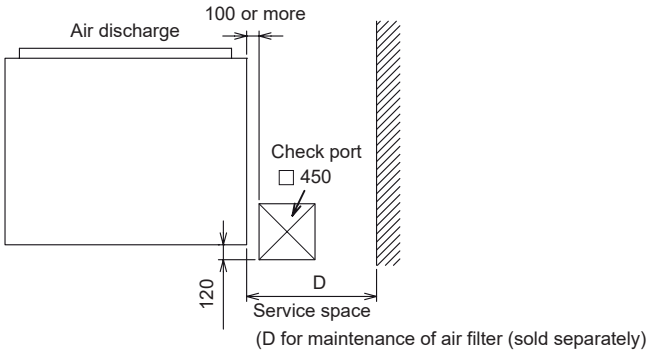
(*2) : 46 to 52 °C is also available but temporary operate.

# 2. Dimensions

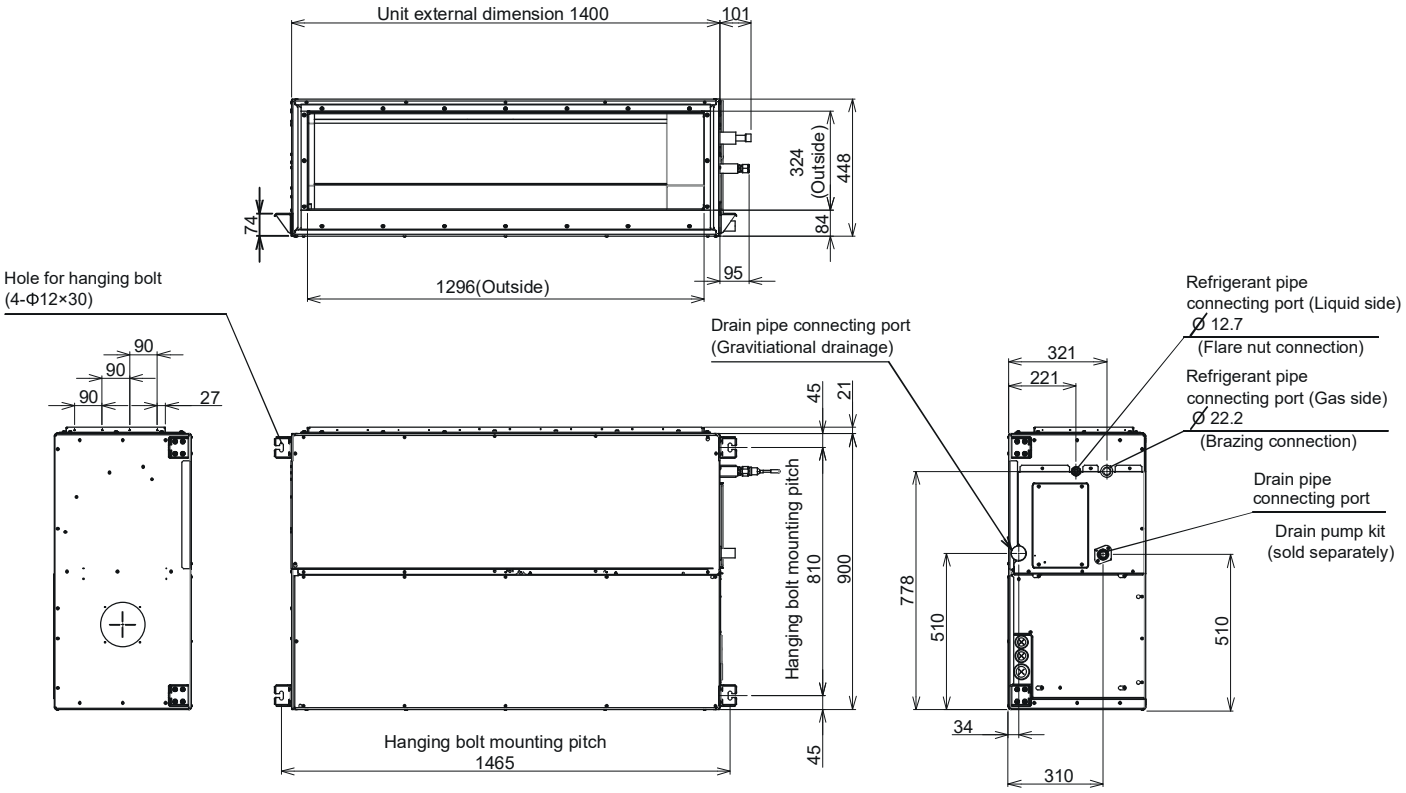
### MMD-UP__*1HP-E / TR ( *018 / 024 / 027 / 036 / 048 / 056 )



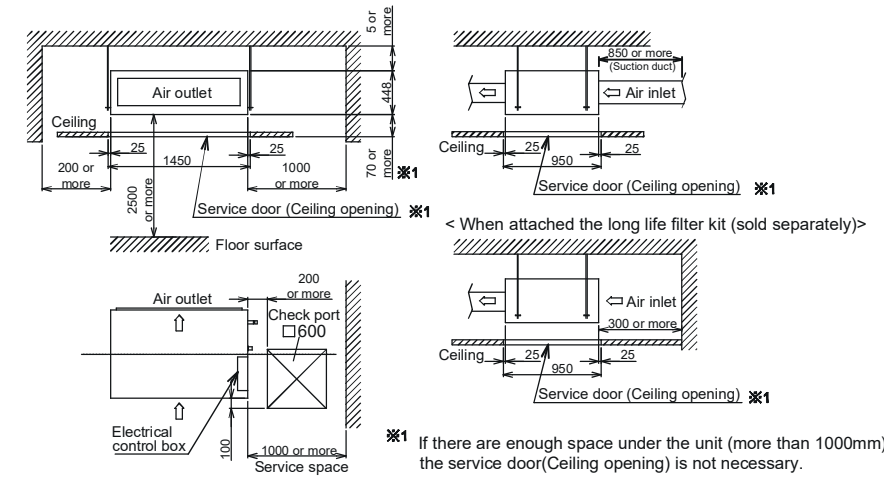

| Unit dimension | A | B | C | D |
|---|---|---|---|---|
| UP018 ~ 027 type | 1000 | 1065 | 940 | 500 |
| UP0 36~ 056 type | 1400 | 1465 | 1340 | 700 |



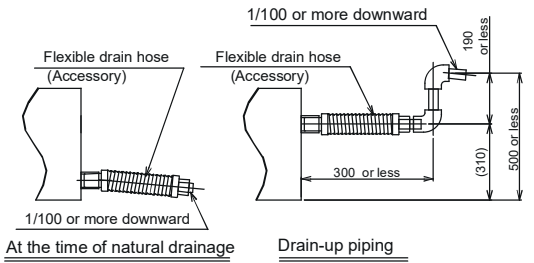
## MMD-UP__*1HP-E / TR ( *072 / 096 )




Space required for installation and servicing




※1 If there are enough space under the unit (more than 1000mm) the service door(Ceiling opening) is not necessary.




At the time of natural drainage

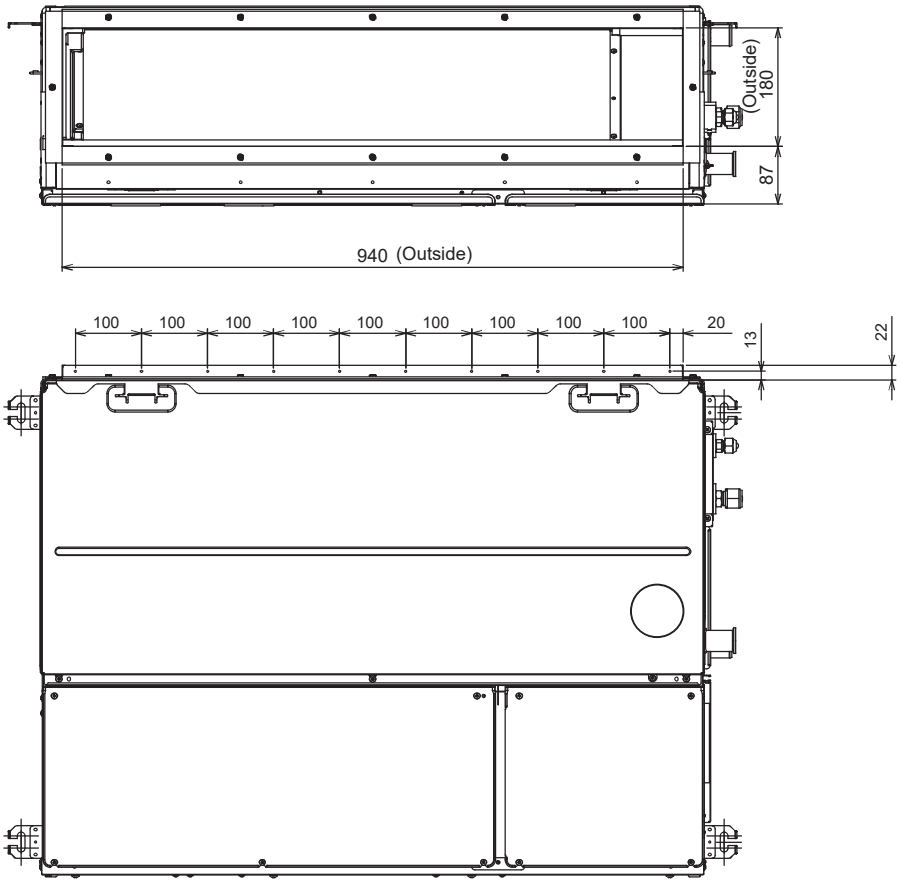
Drain-up piping

When attached the drain pump kit (sold separately)

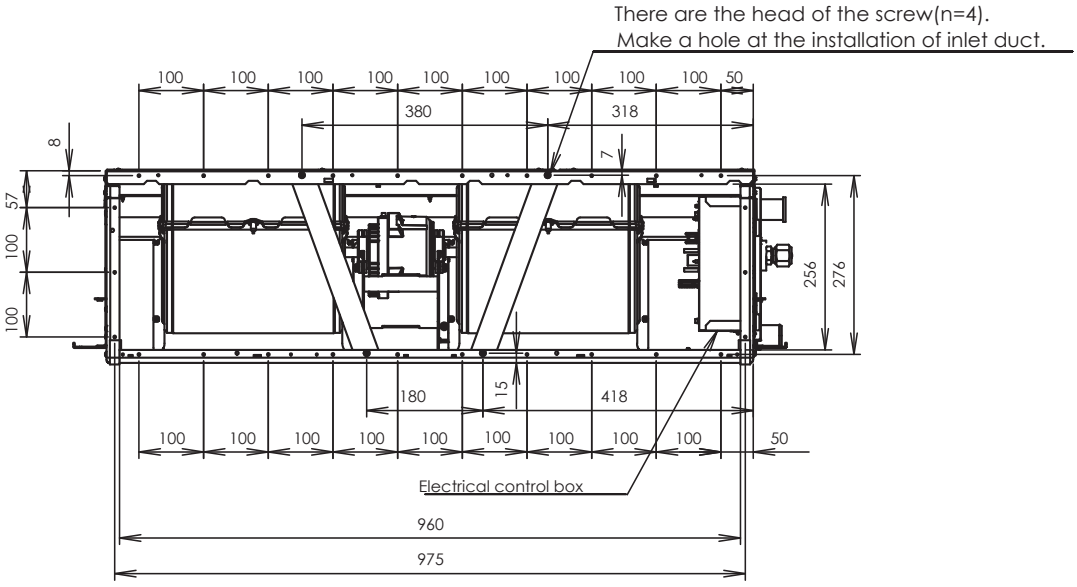
Unit : mm

For duct design MMD-UP0181 / 0241 / 0271

<Air outlet>

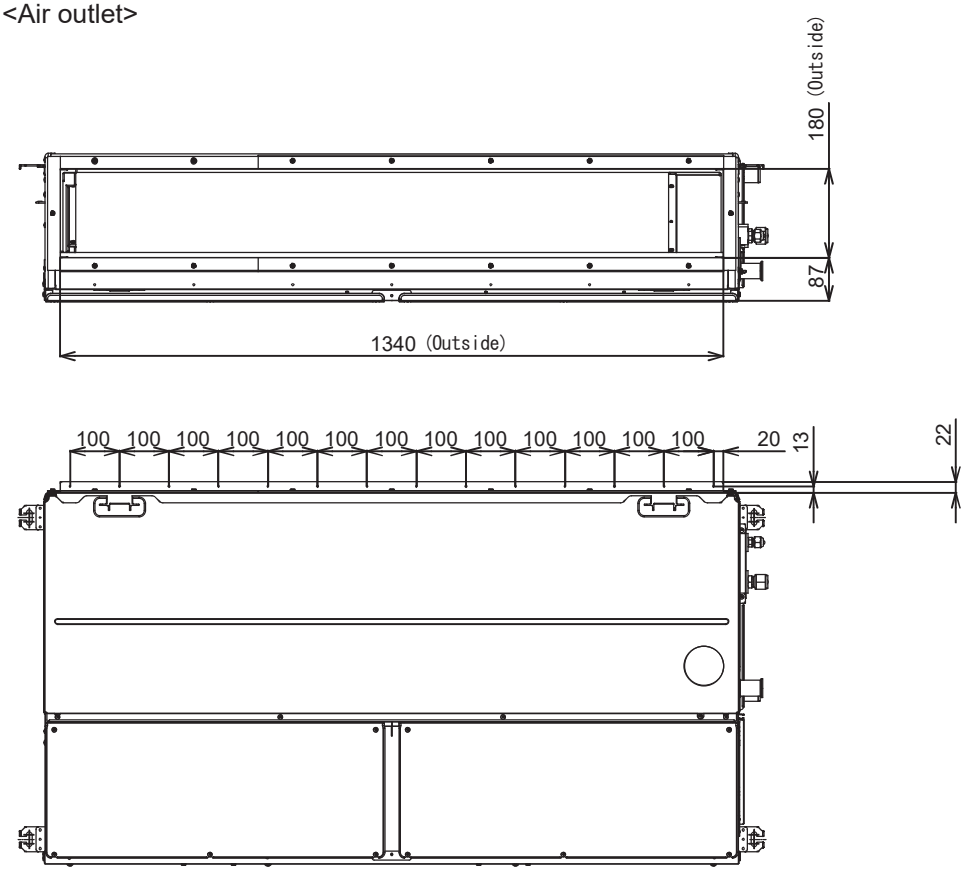



<Air inlet>

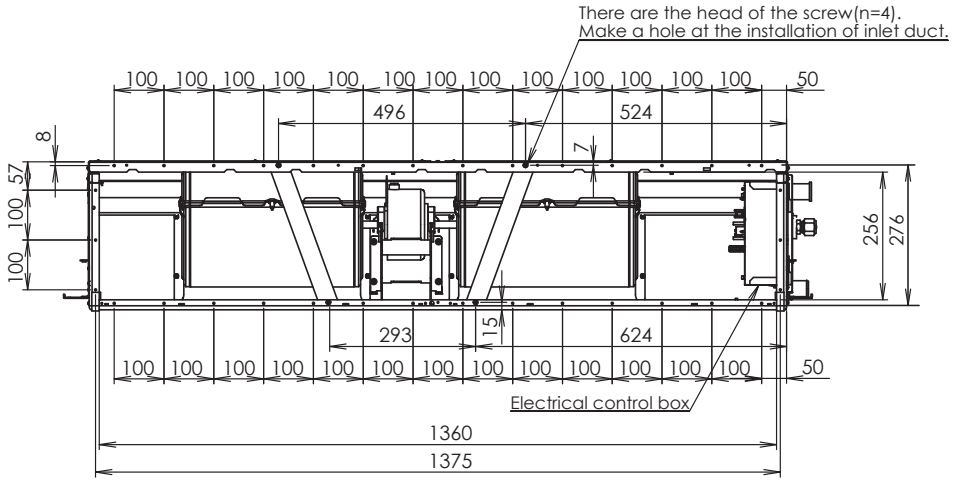


For duct design MMD-UP0361 / 0481 / 0561

<Air outlet>

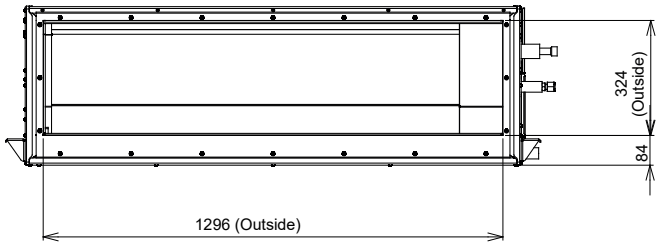


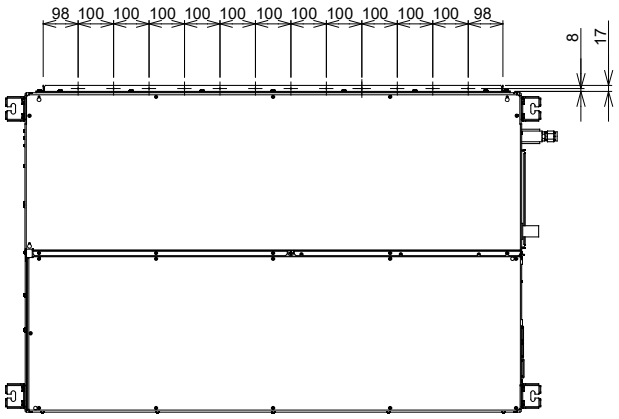

<Air inlet>

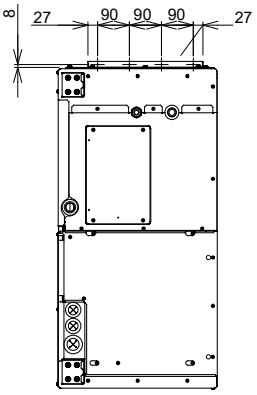


For duct design MMD-UP0721/ 0961

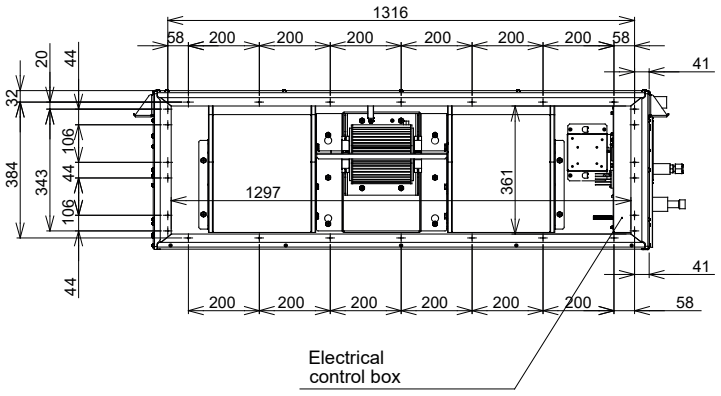
<Air outlet>



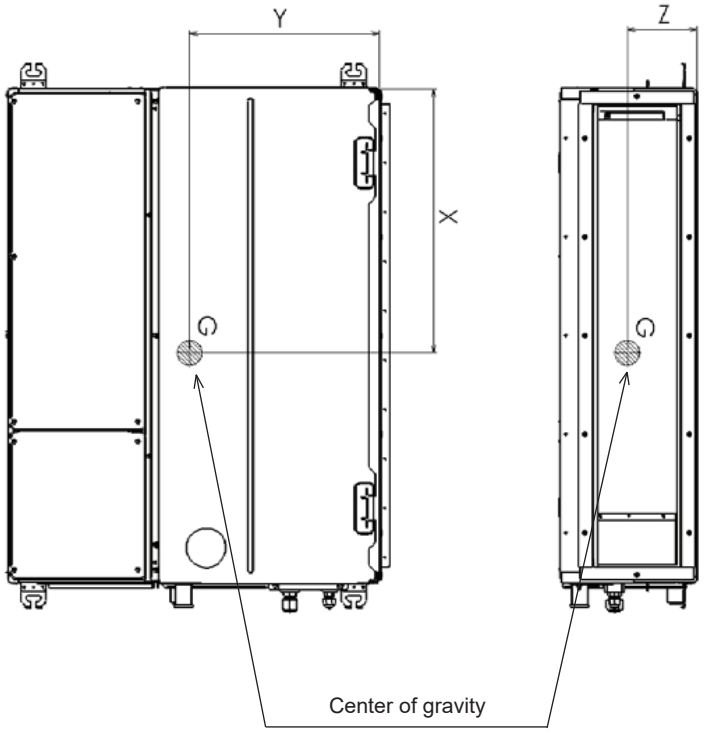



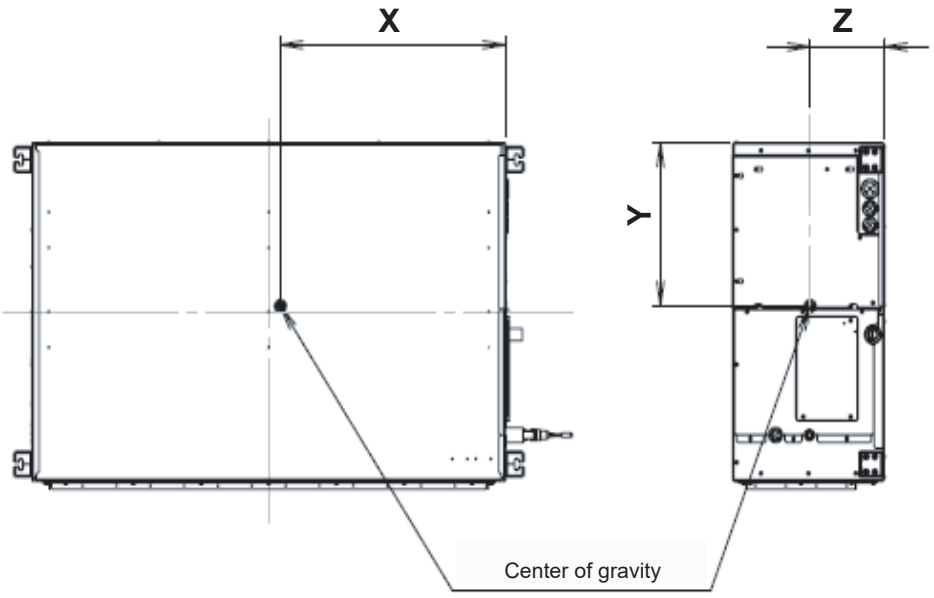

<Air inlet>



# 3. Center of gravity

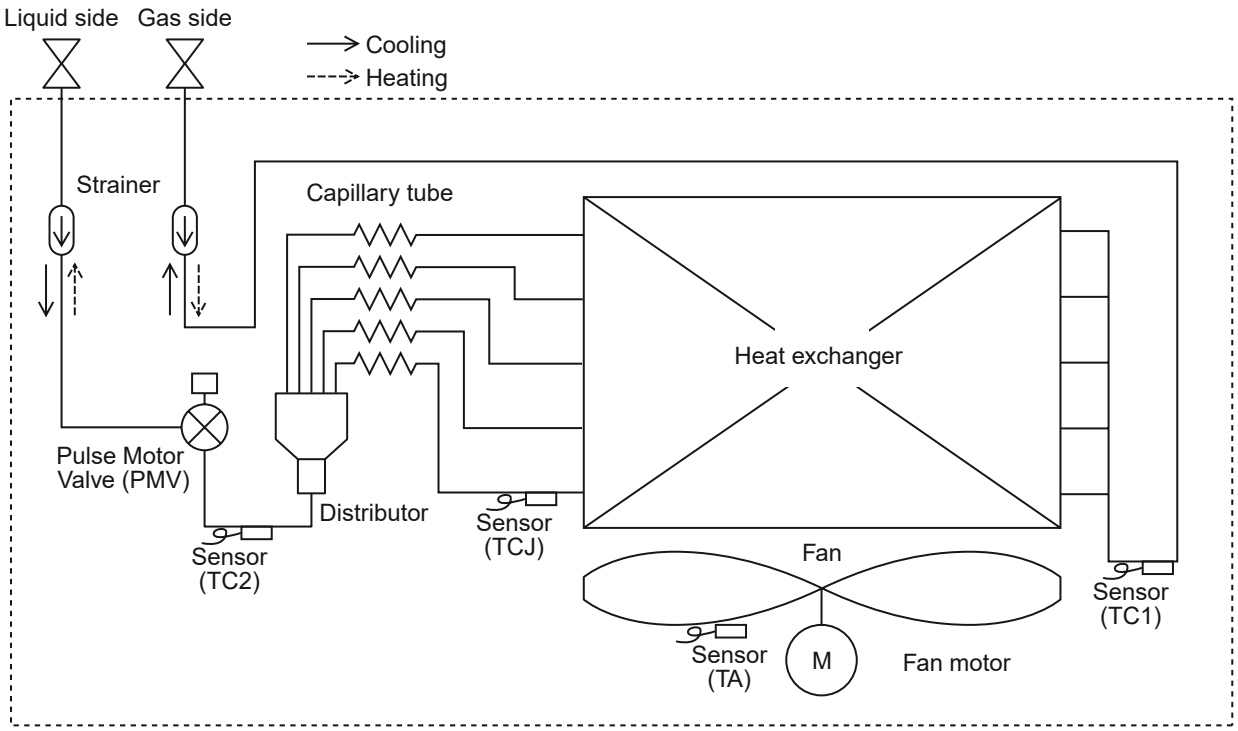
| Model name | X (mm) | Y (mm) | Z (mm) | Total weight (kg) |
|---|---|---|---|---|
| MMD-UP0181HP-E / TR | 535 | 387 | 142 | 34 |
| MMD-UP0241HP-E / TR | | | | |
| MMD-UP0271HP-E / TR | | | | |
| MMD-UP0361HP-E / TR | 744 | 387 | 142 | 43 |
| MMD-UP0481HP-E / TR | | | | |
| MMD-UP0561HP-E / TR | | | | |
| MMD-UP0721HP-E / TR | 29.3 | 655 | 435 | 97 |
| MMD-UP0961HP-E / TR | | | | |



# 4. Piping diagram

**MMD-UP__*1HP-E / TR ( *018 / 024 / 027 / 036 / 048 / 056 / 072 / 096 )**

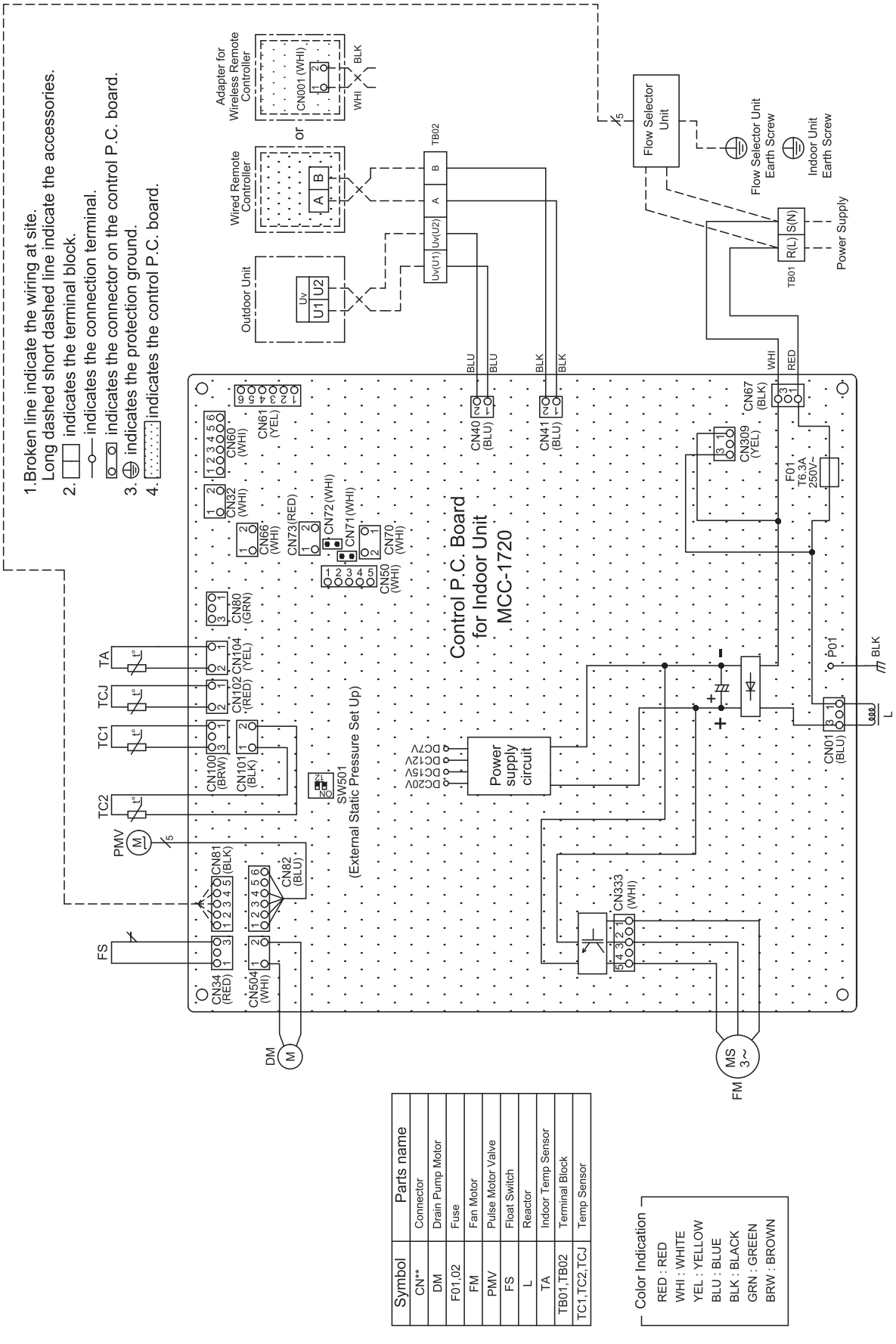



Explanation of functional parts in indoor unit

| Functional part name | | Functional outline |
|---|---|---|
| Pulse Motor Valve | PMV | (Connector CN082 (6P): Blue)<br>1) Controls super heat in cooling operation<br>2) Controls sub cool in heating operation<br>3) Recovers refrigerant oil in cooling operation<br>4) Recovers refrigerant oil in heating operation |
| Temp. sensor | 1. TA | (Connector CN104 (2P): Yellow)<br>1) Detects indoor suction temperature |
| | 2. TC1 | (Connector CN100 (3P): Brown)<br>1) Controls PMV super heat in cooling operation |
| | 3. TC2 | (Connector CN101 (2P): Black)<br>1) Controls PMV sub cool in heating operation |
| | 4. TCJ | (Connector CN102 (2P): Red)<br>1) Controls PMV super heat in cooling operation |

# 5. Wiring diagram

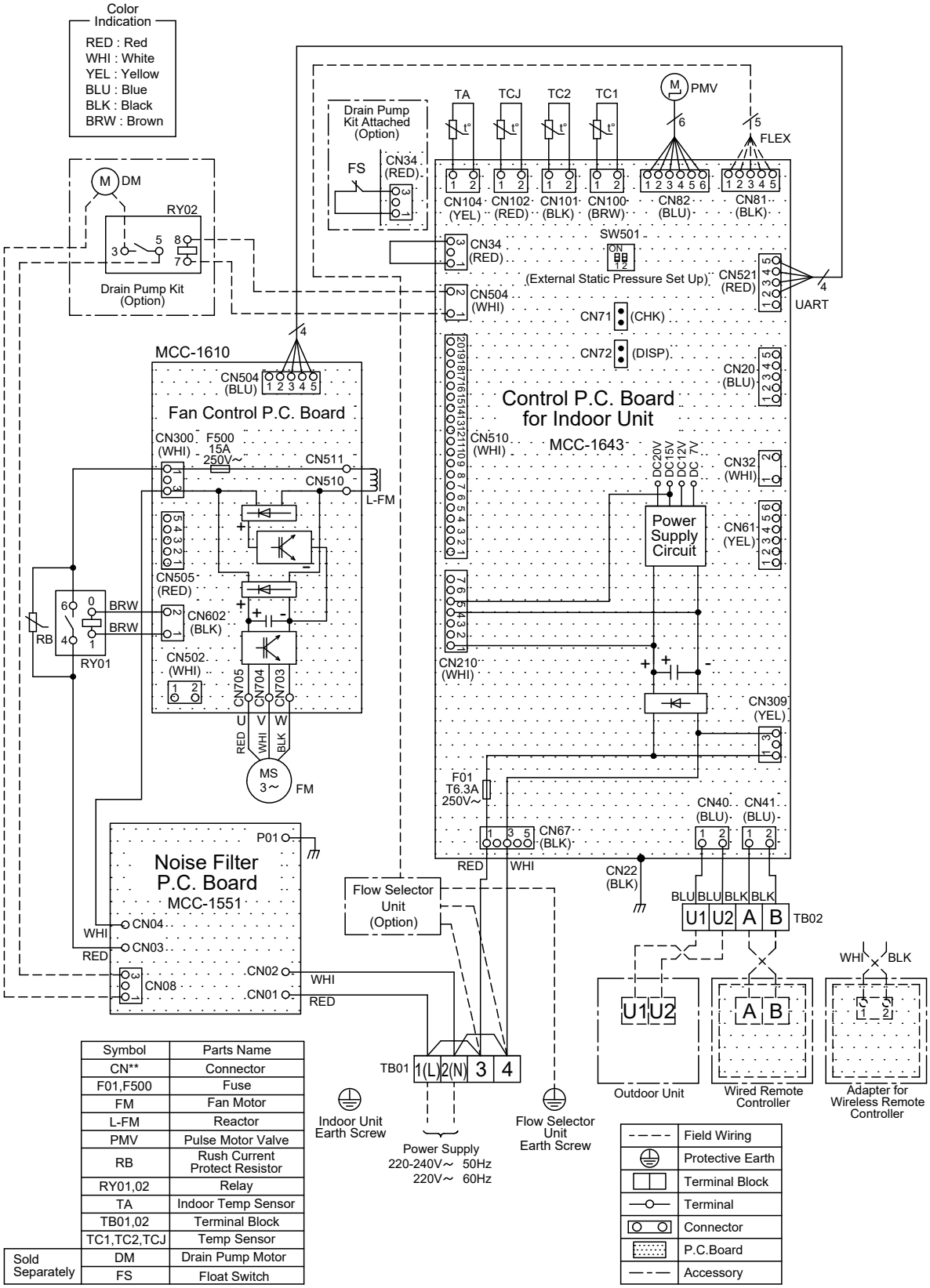
## MMD-UP__*1HP-E / TR ( *018 / 024 / 027 / 036 / 048 / 056 )




| Symbol | Parts name |
|---|---|
| CN** | Connector |
| DM | Drain Pump Motor |
| F01,02 | Fuse |
| FM | Fan Motor |
| PMV | Pulse Motor Valve |
| FS | Float Switch |
| L | Reactor |
| TA | Indoor Temp Sensor |
| TB01,TB02 | Terminal Block |
| TC1,TC2,TCJ | Temp Sensor |

Color Indication
RED : RED
WHI : WHITE
YEL : YELLOW
BLU : BLUE
BLK : BLACK
GRN : GREEN
BRW : BROWN

## MMD-UP__*1HP-E / TR ( *072 / 096 )




| Symbol | Parts Name |
|---|---|
| CN** | Connector |
| F01,F500 | Fuse |
| FM | Fan Motor |
| L-FM | Reactor |
| PMV | Pulse Motor Valve |
| RB | Rush Current Protect Resistor |
| RY01,02 | Relay |
| TA | Indoor Temp Sensor |
| TB01,02 | Terminal Block |
| TC1,TC2,TCJ | Temp Sensor |
| Sold Separately | DM Drain Pump Motor |
| | FS Float Switch |

| | |
|---|---|
| | Field Wiring |
| | Protective Earth |
| | Terminal Block |
| | Terminal |
| | Connector |
| | P.C.Board |
| | Accessory |

# 6. Electrical characteristics

50 Hz

| Type | Model | Normal Voltage | Voltage Range | | Fan Motor | | Power Supply | |
|---|---|---|---|---|---|---|---|---|
| | | (V-Ph-Hz) | Min. | Max. | kW | FLA | MCA | MOCP |
| Concealed Duct High Static Pressure Type | MMD-UP0181HP-E / TR | 220-1-50 | 198 | 242 | 0.250 | 1.02 | 1.28 | 15 |
| | MMD-UP0241HP-E / TR | 220-1-50 | 198 | 242 | 0.250 | 1.33 | 1.66 | 15 |
| | MMD-UP0271HP-E / TR | 220-1-50 | 198 | 242 | 0.250 | 1.33 | 1.96 | 15 |
| | MMD-UP0361HP-E / TR | 220-1-50 | 198 | 242 | 0.350 | 2.22 | 2.78 | 15 |
| | MMD-UP0481HP-E / TR | 220-1-50 | 198 | 242 | 0.350 | 2.40 | 2.99 | 15 |
| | MMD-UP0561HP-E / TR | 220-1-50 | 198 | 242 | 0.350 | 2.57 | 3.22 | 15 |
| | MMD-UP0721HP-E / TR | 220-1-50 | 198 | 242 | 1.000 | 4.30 | 5.40 | 15 |
| | MMD-UP0961HP-E / TR | 220-1-50 | 198 | 242 | 1.000 | 5.50 | 6.90 | 15 |

MCA : Minimum Circuit Amps FLA : Full Load Amps
MOCP : Maximum Overcurrent Protection (Amps) kW : Fan Motor Rated Output (kW)

60 Hz

| Type | Model | Normal Voltage | Voltage Range | | Fan Motor | | Power Supply | |
|---|---|---|---|---|---|---|---|---|
| | | (V-Ph-Hz) | Min. | Max. | kW | FLA | MCA | MOCP |
| Concealed Duct High Static Pressure Type | MMD-UP0181HP-E / TR | 220-1-60 | 198 | 242 | 0.250 | 1.43 | 1.79 | 15 |
| | MMD-UP0241HP-E / TR | 220-1-60 | 198 | 242 | 0.250 | 1.55 | 1.94 | 15 |
| | MMD-UP0271HP-E / TR | 220-1-60 | 198 | 242 | 0.250 | 1.86 | 2.33 | 15 |
| | MMD-UP0361HP-E / TR | 220-1-60 | 198 | 242 | 0.350 | 2.02 | 2.53 | 15 |
| | MMD-UP0481HP-E / TR | 220-1-60 | 198 | 242 | 0.350 | 2.57 | 3.21 | 15 |
| | MMD-UP0561HP-E / TR | 220-1-60 | 198 | 242 | 0.350 | 3.25 | 4.06 | 15 |
| | MMD-UP0721HP-E / TR | 220-1-60 | 198 | 242 | 0.800 | 4.90 | 6.13 | 15 |
| | MMD-UP0961HP-E / TR | 220-1-60 | 198 | 242 | 0.800 | 6.74 | 8.43 | 15 |

MCA : Minimum Circuit Amps FLA : Full Load Amps
MOCP : Maximum Overcurrent Protection (Amps) kW : Fan Motor Rated Output (kW)

• Wiring size

Must be independent from the outdoor unit power supply.

| Item / Model | Power supply wiring | |
|---|---|---|
| | Wire size | |
| All models of indoor units | 2.0 $mm^2$ (AWG#14) Max. 20 m | 3.5 $mm^2$ (AWG#12) Max. 50 m |

NOTE:

The above connecting lengths stated in the table, indicate the length from the isolator to the outdoor unit. When the power supply of the indoor units are connected in parallel, it is assumed that no more than a 2% voltage drop will occur. If the connecting length is to exceed the stated lengths, select a suitable wire in accordance with the local wiring standards.

# 7. Sensible capacity table

## High static duct type ( MMD-UP___1HP-E / TR )

| unit size | outdoor air temp. | Indoor air temp. | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 14 ˚CWB | | 16 ˚CWB | | 18 ˚CWB | | 19 ˚CWB | | 20 ˚CWB | | 22 ˚CWB | | 24 ˚CWB | |
| | | 20 ˚CDB | | 23 ˚CDB | | 26 ˚CDB | | 27 ˚CDB | | 28 ˚CDB | | 30 ˚CDB | | 32 ˚CDB | |
| | ˚CDB | TC | SHC | TC | SHC | TC | SHC | TC | SHC | TC | SHC | TC | SHC | TC | SHC |
| 018 | 10 | 4.64 | 4.45 | 4.99 | 4.70 | 5.44 | 5.01 | 5.60 | 5.04 | 5.70 | 5.06 | 6.06 | 4.99 | 6.31 | 4.81 |
| | 12 | 4.64 | 4.45 | 4.99 | 4.70 | 5.44 | 5.01 | 5.60 | 5.04 | 5.70 | 5.06 | 6.06 | 4.99 | 6.31 | 4.81 |
| | 14 | 4.64 | 4.45 | 4.99 | 4.70 | 5.44 | 5.01 | 5.60 | 5.04 | 5.70 | 5.06 | 6.06 | 4.99 | 6.31 | 4.81 |
| | 16 | 4.64 | 4.45 | 4.99 | 4.70 | 5.44 | 5.01 | 5.60 | 5.04 | 5.70 | 5.06 | 6.06 | 4.99 | 6.31 | 4.81 |
| | 18 | 4.64 | 4.45 | 4.99 | 4.70 | 5.44 | 5.01 | 5.60 | 5.04 | 5.70 | 5.06 | 6.06 | 4.99 | 6.31 | 4.81 |
| | 20 | 4.64 | 4.45 | 4.99 | 4.70 | 5.44 | 5.01 | 5.60 | 5.04 | 5.70 | 5.06 | 6.06 | 4.99 | 6.31 | 4.81 |
| | 21 | 4.64 | 4.45 | 4.99 | 4.70 | 5.44 | 5.01 | 5.60 | 5.04 | 5.70 | 5.06 | 6.06 | 4.99 | 6.31 | 4.81 |
| | 23 | 4.64 | 4.45 | 4.99 | 4.70 | 5.44 | 5.01 | 5.60 | 5.04 | 5.70 | 5.06 | 6.06 | 4.99 | 6.31 | 4.81 |
| | 25 | 4.64 | 4.45 | 4.99 | 4.70 | 5.44 | 5.01 | 5.60 | 5.04 | 5.70 | 5.06 | 6.06 | 4.99 | 6.31 | 4.81 |
| | 27 | 4.64 | 4.45 | 4.99 | 4.70 | 5.44 | 5.01 | 5.60 | 5.04 | 5.70 | 5.06 | 6.06 | 4.99 | 6.31 | 4.81 |
| | 29 | 4.64 | 4.45 | 4.99 | 4.70 | 5.44 | 5.01 | 5.60 | 5.04 | 5.70 | 5.06 | 6.06 | 4.99 | 6.31 | 4.81 |
| | 31 | 4.64 | 4.45 | 4.99 | 4.70 | 5.44 | 5.01 | 5.60 | 5.04 | 5.70 | 5.06 | 6.06 | 4.99 | 6.31 | 4.81 |
| | 33 | 4.64 | 4.45 | 4.99 | 4.70 | 5.44 | 5.01 | 5.60 | 5.04 | 5.70 | 5.06 | 6.06 | 4.99 | 6.31 | 4.81 |
| | 35 | 4.64 | 4.45 | 4.99 | 4.70 | 5.44 | 5.01 | 5.60 | 5.04 | 5.70 | 5.06 | 6.06 | 4.99 | 6.31 | 4.81 |
| | 37 | 4.51 | 4.32 | 4.85 | 4.56 | 5.28 | 4.86 | 5.44 | 4.89 | 5.53 | 4.91 | 5.88 | 4.85 | 6.13 | 4.67 |
| | 39 | 4.40 | 4.22 | 4.73 | 4.46 | 5.16 | 4.75 | 5.31 | 4.78 | 5.40 | 4.80 | 5.74 | 4.73 | 5.98 | 4.56 |
| 024 | 10 | 5.89 | 4.96 | 6.32 | 5.22 | 6.90 | 5.58 | 7.10 | 5.61 | 7.22 | 5.62 | 7.68 | 5.55 | 7.99 | 5.34 |
| | 12 | 5.89 | 4.96 | 6.32 | 5.22 | 6.90 | 5.58 | 7.10 | 5.61 | 7.22 | 5.62 | 7.68 | 5.55 | 7.99 | 5.34 |
| | 14 | 5.89 | 4.96 | 6.32 | 5.22 | 6.90 | 5.58 | 7.10 | 5.61 | 7.22 | 5.62 | 7.68 | 5.55 | 7.99 | 5.34 |
| | 16 | 5.89 | 4.96 | 6.32 | 5.22 | 6.90 | 5.58 | 7.10 | 5.61 | 7.22 | 5.62 | 7.68 | 5.55 | 7.99 | 5.34 |
| | 18 | 5.89 | 4.96 | 6.32 | 5.22 | 6.90 | 5.58 | 7.10 | 5.61 | 7.22 | 5.62 | 7.68 | 5.55 | 7.99 | 5.34 |
| | 20 | 5.89 | 4.96 | 6.32 | 5.22 | 6.90 | 5.58 | 7.10 | 5.61 | 7.22 | 5.62 | 7.68 | 5.55 | 7.99 | 5.34 |
| | 21 | 5.89 | 4.96 | 6.32 | 5.22 | 6.90 | 5.58 | 7.10 | 5.61 | 7.22 | 5.62 | 7.68 | 5.55 | 7.99 | 5.34 |
| | 23 | 5.89 | 4.96 | 6.32 | 5.22 | 6.90 | 5.58 | 7.10 | 5.61 | 7.22 | 5.62 | 7.68 | 5.55 | 7.99 | 5.34 |
| | 25 | 5.89 | 4.96 | 6.32 | 5.22 | 6.90 | 5.58 | 7.10 | 5.61 | 7.22 | 5.62 | 7.68 | 5.55 | 7.99 | 5.34 |
| | 27 | 5.89 | 4.96 | 6.32 | 5.22 | 6.90 | 5.58 | 7.10 | 5.61 | 7.22 | 5.62 | 7.68 | 5.55 | 7.99 | 5.34 |
| | 29 | 5.89 | 4.96 | 6.32 | 5.22 | 6.90 | 5.58 | 7.10 | 5.61 | 7.22 | 5.62 | 7.68 | 5.55 | 7.99 | 5.34 |
| | 31 | 5.89 | 4.96 | 6.32 | 5.22 | 6.90 | 5.58 | 7.10 | 5.61 | 7.22 | 5.62 | 7.68 | 5.55 | 7.99 | 5.34 |
| | 33 | 5.89 | 4.96 | 6.32 | 5.22 | 6.90 | 5.58 | 7.10 | 5.61 | 7.22 | 5.62 | 7.68 | 5.55 | 7.99 | 5.34 |
| | 35 | 5.89 | 4.96 | 6.32 | 5.22 | 6.90 | 5.58 | 7.10 | 5.61 | 7.22 | 5.62 | 7.68 | 5.55 | 7.99 | 5.34 |
| | 37 | 5.72 | 4.82 | 6.14 | 5.07 | 6.70 | 5.42 | 6.89 | 5.45 | 7.01 | 5.46 | 7.46 | 5.39 | 7.76 | 5.19 |
| | 39 | 5.58 | 4.70 | 5.99 | 4.95 | 6.54 | 5.29 | 6.73 | 5.32 | 6.84 | 5.33 | 7.28 | 5.26 | 7.57 | 5.06 |
| 027 | 10 | 6.63 | 6.36 | 7.12 | 6.70 | 7.77 | 7.16 | 8.00 | 7.20 | 8.14 | 7.22 | 8.65 | 7.13 | 9.01 | 6.86 |
| | 12 | 6.63 | 6.36 | 7.12 | 6.70 | 7.77 | 7.16 | 8.00 | 7.20 | 8.14 | 7.22 | 8.65 | 7.13 | 9.01 | 6.86 |
| | 14 | 6.63 | 6.36 | 7.12 | 6.70 | 7.77 | 7.16 | 8.00 | 7.20 | 8.14 | 7.22 | 8.65 | 7.13 | 9.01 | 6.86 |
| | 16 | 6.63 | 6.36 | 7.12 | 6.70 | 7.77 | 7.16 | 8.00 | 7.20 | 8.14 | 7.22 | 8.65 | 7.13 | 9.01 | 6.86 |
| | 18 | 6.63 | 6.36 | 7.12 | 6.70 | 7.77 | 7.16 | 8.00 | 7.20 | 8.14 | 7.22 | 8.65 | 7.13 | 9.01 | 6.86 |
| | 20 | 6.63 | 6.36 | 7.12 | 6.70 | 7.77 | 7.16 | 8.00 | 7.20 | 8.14 | 7.22 | 8.65 | 7.13 | 9.01 | 6.86 |
| | 21 | 6.63 | 6.36 | 7.12 | 6.70 | 7.77 | 7.16 | 8.00 | 7.20 | 8.14 | 7.22 | 8.65 | 7.13 | 9.01 | 6.86 |
| | 23 | 6.63 | 6.36 | 7.12 | 6.70 | 7.77 | 7.16 | 8.00 | 7.20 | 8.14 | 7.22 | 8.65 | 7.13 | 9.01 | 6.86 |
| | 25 | 6.63 | 6.36 | 7.12 | 6.70 | 7.77 | 7.16 | 8.00 | 7.20 | 8.14 | 7.22 | 8.65 | 7.13 | 9.01 | 6.86 |
| | 27 | 6.63 | 6.36 | 7.12 | 6.70 | 7.77 | 7.16 | 8.00 | 7.20 | 8.14 | 7.22 | 8.65 | 7.13 | 9.01 | 6.86 |
| | 29 | 6.63 | 6.36 | 7.12 | 6.70 | 7.77 | 7.16 | 8.00 | 7.20 | 8.14 | 7.22 | 8.65 | 7.13 | 9.01 | 6.86 |
| | 31 | 6.63 | 6.36 | 7.12 | 6.70 | 7.77 | 7.16 | 8.00 | 7.20 | 8.14 | 7.22 | 8.65 | 7.13 | 9.01 | 6.86 |
| | 33 | 6.63 | 6.36 | 7.12 | 6.70 | 7.77 | 7.16 | 8.00 | 7.20 | 8.14 | 7.22 | 8.65 | 7.13 | 9.01 | 6.86 |
| | 35 | 6.63 | 6.36 | 7.12 | 6.70 | 7.77 | 7.16 | 8.00 | 7.20 | 8.14 | 7.22 | 8.65 | 7.13 | 9.01 | 6.86 |
| | 37 | 6.44 | 6.18 | 6.91 | 6.51 | 7.54 | 6.95 | 7.77 | 6.99 | 7.90 | 7.01 | 8.40 | 6.92 | 8.75 | 6.66 |
| | 39 | 6.29 | 6.03 | 6.75 | 6.35 | 7.37 | 6.79 | 7.58 | 6.83 | 7.72 | 6.84 | 8.20 | 6.76 | 8.54 | 6.50 |
| 036 | 10 | 9.28 | 7.51 | 9.97 | 7.92 | 10.88 | 8.46 | 11.20 | 8.51 | 11.39 | 8.53 | 12.11 | 8.42 | 12.61 | 8.11 |
| | 12 | 9.28 | 7.51 | 9.97 | 7.92 | 10.88 | 8.46 | 11.20 | 8.51 | 11.39 | 8.53 | 12.11 | 8.42 | 12.61 | 8.11 |
| | 14 | 9.28 | 7.51 | 9.97 | 7.92 | 10.88 | 8.46 | 11.20 | 8.51 | 11.39 | 8.53 | 12.11 | 8.42 | 12.61 | 8.11 |
| | 16 | 9.28 | 7.51 | 9.97 | 7.92 | 10.88 | 8.46 | 11.20 | 8.51 | 11.39 | 8.53 | 12.11 | 8.42 | 12.61 | 8.11 |
| | 18 | 9.28 | 7.51 | 9.97 | 7.92 | 10.88 | 8.46 | 11.20 | 8.51 | 11.39 | 8.53 | 12.11 | 8.42 | 12.61 | 8.11 |
| | 20 | 9.28 | 7.51 | 9.97 | 7.92 | 10.88 | 8.46 | 11.20 | 8.51 | 11.39 | 8.53 | 12.11 | 8.42 | 12.61 | 8.11 |
| | 21 | 9.28 | 7.51 | 9.97 | 7.92 | 10.88 | 8.46 | 11.20 | 8.51 | 11.39 | 8.53 | 12.11 | 8.42 | 12.61 | 8.11 |
| | 23 | 9.28 | 7.51 | 9.97 | 7.92 | 10.88 | 8.46 | 11.20 | 8.51 | 11.39 | 8.53 | 12.11 | 8.42 | 12.61 | 8.11 |
| | 25 | 9.28 | 7.51 | 9.97 | 7.92 | 10.88 | 8.46 | 11.20 | 8.51 | 11.39 | 8.53 | 12.11 | 8.42 | 12.61 | 8.11 |
| | 27 | 9.28 | 7.51 | 9.97 | 7.92 | 10.88 | 8.46 | 11.20 | 8.51 | 11.39 | 8.53 | 12.11 | 8.42 | 12.61 | 8.11 |
| | 29 | 9.28 | 7.51 | 9.97 | 7.92 | 10.88 | 8.46 | 11.20 | 8.51 | 11.39 | 8.53 | 12.11 | 8.42 | 12.61 | 8.11 |
| | 31 | 9.28 | 7.51 | 9.97 | 7.92 | 10.88 | 8.46 | 11.20 | 8.51 | 11.39 | 8.53 | 12.11 | 8.42 | 12.61 | 8.11 |
| | 33 | 9.28 | 7.51 | 9.97 | 7.92 | 10.88 | 8.46 | 11.20 | 8.51 | 11.39 | 8.53 | 12.11 | 8.42 | 12.61 | 8.11 |
| | 35 | 9.28 | 7.51 | 9.97 | 7.92 | 10.88 | 8.46 | 11.20 | 8.51 | 11.39 | 8.53 | 12.11 | 8.42 | 12.61 | 8.11 |
| | 37 | 9.01 | 7.29 | 9.68 | 7.69 | 10.56 | 8.21 | 10.88 | 8.26 | 11.06 | 8.28 | 11.76 | 8.18 | 12.24 | 7.87 |
| | 39 | 8.80 | 7.12 | 9.45 | 7.51 | 10.31 | 8.02 | 10.62 | 8.07 | 10.80 | 8.09 | 11.48 | 7.98 | 11.95 | 7.69 |

TC : Total capacity [kW] SHC : Sensible capacity [kW]

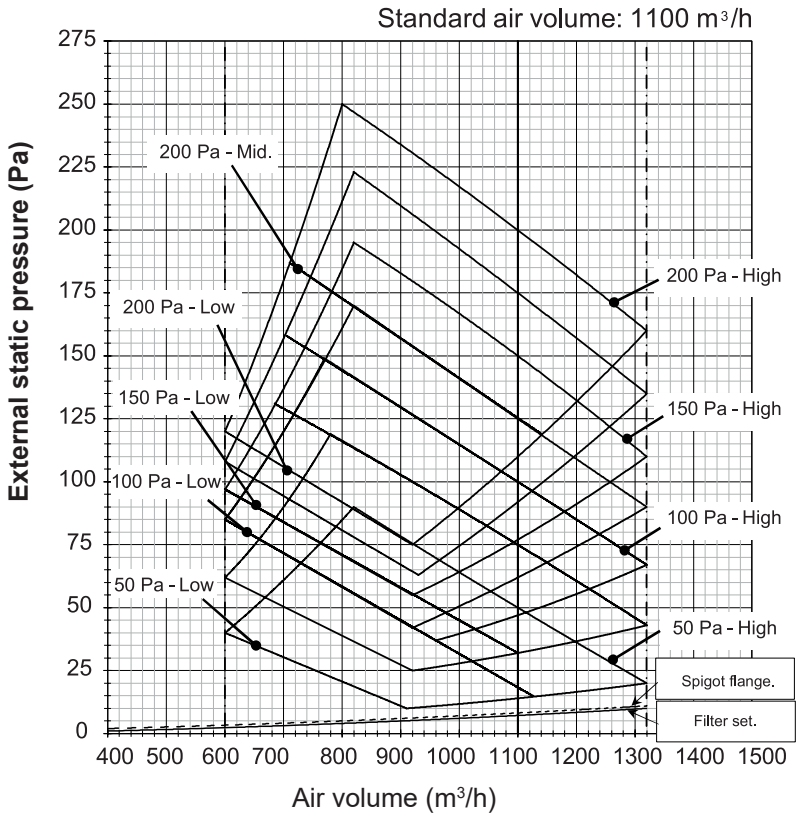
## High static duct type ( MMD-UP___1HP-E / TR )

| unit size | outdoor air temp. ˚CDB | Indoor air temp. 14 ˚CWB / 20 ˚CDB | | 16 ˚CWB / 23 ˚CDB | | 18 ˚CWB / 26 ˚CDB | | 19 ˚CWB / 27 ˚CDB | | 20 ˚CWB / 28 ˚CDB | | 22 ˚CWB / 30 ˚CDB | | 24 ˚CWB / 32 ˚CDB | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | TC | SHC | TC | SHC | TC | SHC | TC | SHC | TC | SHC | TC | SHC | TC | SHC |
| 048 | 10 | 11.61 | 9.65 | 12.47 | 10.17 | 13.61 | 10.87 | 14.00 | 10.92 | 14.24 | 10.95 | 15.14 | 10.81 | 15.76 | 10.40 |
| | 12 | 11.61 | 9.65 | 12.47 | 10.17 | 13.61 | 10.87 | 14.00 | 10.92 | 14.24 | 10.95 | 15.14 | 10.81 | 15.76 | 10.40 |
| | 14 | 11.61 | 9.65 | 12.47 | 10.17 | 13.61 | 10.87 | 14.00 | 10.92 | 14.24 | 10.95 | 15.14 | 10.81 | 15.76 | 10.40 |
| | 16 | 11.61 | 9.65 | 12.47 | 10.17 | 13.61 | 10.87 | 14.00 | 10.92 | 14.24 | 10.95 | 15.14 | 10.81 | 15.76 | 10.40 |
| | 18 | 11.61 | 9.65 | 12.47 | 10.17 | 13.61 | 10.87 | 14.00 | 10.92 | 14.24 | 10.95 | 15.14 | 10.81 | 15.76 | 10.40 |
| | 20 | 11.61 | 9.65 | 12.47 | 10.17 | 13.61 | 10.87 | 14.00 | 10.92 | 14.24 | 10.95 | 15.14 | 10.81 | 15.76 | 10.40 |
| | 21 | 11.61 | 9.65 | 12.47 | 10.17 | 13.61 | 10.87 | 14.00 | 10.92 | 14.24 | 10.95 | 15.14 | 10.81 | 15.76 | 10.40 |
| | 23 | 11.61 | 9.65 | 12.47 | 10.17 | 13.61 | 10.87 | 14.00 | 10.92 | 14.24 | 10.95 | 15.14 | 10.81 | 15.76 | 10.40 |
| | 25 | 11.61 | 9.65 | 12.47 | 10.17 | 13.61 | 10.87 | 14.00 | 10.92 | 14.24 | 10.95 | 15.14 | 10.81 | 15.76 | 10.40 |
| | 27 | 11.61 | 9.65 | 12.47 | 10.17 | 13.61 | 10.87 | 14.00 | 10.92 | 14.24 | 10.95 | 15.14 | 10.81 | 15.76 | 10.40 |
| | 29 | 11.61 | 9.65 | 12.47 | 10.17 | 13.61 | 10.87 | 14.00 | 10.92 | 14.24 | 10.95 | 15.14 | 10.81 | 15.76 | 10.40 |
| | 31 | 11.61 | 9.65 | 12.47 | 10.17 | 13.61 | 10.87 | 14.00 | 10.92 | 14.24 | 10.95 | 15.14 | 10.81 | 15.76 | 10.40 |
| | 33 | 11.61 | 9.65 | 12.47 | 10.17 | 13.61 | 10.87 | 14.00 | 10.92 | 14.24 | 10.95 | 15.14 | 10.81 | 15.76 | 10.40 |
| | 35 | 11.61 | 9.65 | 12.47 | 10.17 | 13.61 | 10.87 | 14.00 | 10.92 | 14.24 | 10.95 | 15.14 | 10.81 | 15.76 | 10.40 |
| | 37 | 11.27 | 9.37 | 12.11 | 9.88 | 13.22 | 10.55 | 13.59 | 10.60 | 13.83 | 10.63 | 14.70 | 10.50 | 15.30 | 10.10 |
| | 39 | 11.01 | 9.15 | 11.82 | 9.64 | 12.90 | 10.30 | 13.27 | 10.35 | 13.50 | 10.38 | 14.35 | 10.25 | 14.94 | 9.86 |
| 056 | 10 | 13.26 | 11.02 | 14.25 | 11.63 | 15.55 | 12.42 | 16.00 | 12.48 | 16.27 | 12.51 | 17.30 | 12.35 | 18.02 | 11.90 |
| | 12 | 13.26 | 11.02 | 14.25 | 11.63 | 15.55 | 12.42 | 16.00 | 12.48 | 16.27 | 12.51 | 17.30 | 12.35 | 18.02 | 11.90 |
| | 14 | 13.26 | 11.02 | 14.25 | 11.63 | 15.55 | 12.42 | 16.00 | 12.48 | 16.27 | 12.51 | 17.30 | 12.35 | 18.02 | 11.90 |
| | 16 | 13.26 | 11.02 | 14.25 | 11.63 | 15.55 | 12.42 | 16.00 | 12.48 | 16.27 | 12.51 | 17.30 | 12.35 | 18.02 | 11.90 |
| | 18 | 13.26 | 11.02 | 14.25 | 11.63 | 15.55 | 12.42 | 16.00 | 12.48 | 16.27 | 12.51 | 17.30 | 12.35 | 18.02 | 11.90 |
| | 20 | 13.26 | 11.02 | 14.25 | 11.63 | 15.55 | 12.42 | 16.00 | 12.48 | 16.27 | 12.51 | 17.30 | 12.35 | 18.02 | 11.90 |
| | 21 | 13.26 | 11.02 | 14.25 | 11.63 | 15.55 | 12.42 | 16.00 | 12.48 | 16.27 | 12.51 | 17.30 | 12.35 | 18.02 | 11.90 |
| | 23 | 13.26 | 11.02 | 14.25 | 11.63 | 15.55 | 12.42 | 16.00 | 12.48 | 16.27 | 12.51 | 17.30 | 12.35 | 18.02 | 11.90 |
| | 25 | 13.26 | 11.02 | 14.25 | 11.63 | 15.55 | 12.42 | 16.00 | 12.48 | 16.27 | 12.51 | 17.30 | 12.35 | 18.02 | 11.90 |
| | 27 | 13.26 | 11.02 | 14.25 | 11.63 | 15.55 | 12.42 | 16.00 | 12.48 | 16.27 | 12.51 | 17.30 | 12.35 | 18.02 | 11.90 |
| | 29 | 13.26 | 11.02 | 14.25 | 11.63 | 15.55 | 12.42 | 16.00 | 12.48 | 16.27 | 12.51 | 17.30 | 12.35 | 18.02 | 11.90 |
| | 31 | 13.26 | 11.02 | 14.25 | 11.63 | 15.55 | 12.42 | 16.00 | 12.48 | 16.27 | 12.51 | 17.30 | 12.35 | 18.02 | 11.90 |
| | 33 | 13.26 | 11.02 | 14.25 | 11.63 | 15.55 | 12.42 | 16.00 | 12.48 | 16.27 | 12.51 | 17.30 | 12.35 | 18.02 | 11.90 |
| | 35 | 13.26 | 11.02 | 14.25 | 11.63 | 15.55 | 12.42 | 16.00 | 12.48 | 16.27 | 12.51 | 17.30 | 12.35 | 18.02 | 11.90 |
| | 37 | 12.88 | 10.70 | 13.84 | 11.29 | 15.10 | 12.06 | 15.54 | 12.12 | 15.80 | 12.15 | 16.80 | 11.99 | 17.50 | 11.55 |
| | 39 | 12.57 | 10.45 | 13.51 | 11.03 | 14.74 | 11.77 | 15.17 | 11.83 | 15.42 | 11.86 | 16.40 | 11.71 | 17.08 | 11.28 |
| 072 | 10 | 18.57 | 16.62 | 19.95 | 17.53 | 21.77 | 18.73 | 22.40 | 18.82 | 22.78 | 18.87 | 24.23 | 18.64 | 25.22 | 17.93 |
| | 12 | 18.57 | 16.62 | 19.95 | 17.53 | 21.77 | 18.73 | 22.40 | 18.82 | 22.78 | 18.87 | 24.23 | 18.64 | 25.22 | 17.93 |
| | 14 | 18.57 | 16.62 | 19.95 | 17.53 | 21.77 | 18.73 | 22.40 | 18.82 | 22.78 | 18.87 | 24.23 | 18.64 | 25.22 | 17.93 |
| | 16 | 18.57 | 16.62 | 19.95 | 17.53 | 21.77 | 18.73 | 22.40 | 18.82 | 22.78 | 18.87 | 24.23 | 18.64 | 25.22 | 17.93 |
| | 18 | 18.57 | 16.62 | 19.95 | 17.53 | 21.77 | 18.73 | 22.40 | 18.82 | 22.78 | 18.87 | 24.23 | 18.64 | 25.22 | 17.93 |
| | 20 | 18.57 | 16.62 | 19.95 | 17.53 | 21.77 | 18.73 | 22.40 | 18.82 | 22.78 | 18.87 | 24.23 | 18.64 | 25.22 | 17.93 |
| | 21 | 18.57 | 16.62 | 19.95 | 17.53 | 21.77 | 18.73 | 22.40 | 18.82 | 22.78 | 18.87 | 24.23 | 18.64 | 25.22 | 17.93 |
| | 23 | 18.57 | 16.62 | 19.95 | 17.53 | 21.77 | 18.73 | 22.40 | 18.82 | 22.78 | 18.87 | 24.23 | 18.64 | 25.22 | 17.93 |
| | 25 | 18.57 | 16.62 | 19.95 | 17.53 | 21.77 | 18.73 | 22.40 | 18.82 | 22.78 | 18.87 | 24.23 | 18.64 | 25.22 | 17.93 |
| | 27 | 18.57 | 16.62 | 19.95 | 17.53 | 21.77 | 18.73 | 22.40 | 18.82 | 22.78 | 18.87 | 24.23 | 18.64 | 25.22 | 17.93 |
| | 29 | 18.57 | 16.62 | 19.95 | 17.53 | 21.77 | 18.73 | 22.40 | 18.82 | 22.78 | 18.87 | 24.23 | 18.64 | 25.22 | 17.93 |
| | 31 | 18.57 | 16.62 | 19.95 | 17.53 | 21.77 | 18.73 | 22.40 | 18.82 | 22.78 | 18.87 | 24.23 | 18.64 | 25.22 | 17.93 |
| | 33 | 18.57 | 16.62 | 19.95 | 17.53 | 21.77 | 18.73 | 22.40 | 18.82 | 22.78 | 18.87 | 24.23 | 18.64 | 25.22 | 17.93 |
| | 35 | 18.57 | 16.62 | 19.95 | 17.53 | 21.77 | 18.73 | 22.40 | 18.82 | 22.78 | 18.87 | 24.23 | 18.64 | 25.22 | 17.93 |
| | 37 | 18.03 | 16.14 | 19.37 | 17.02 | 21.14 | 18.19 | 21.75 | 18.27 | 22.12 | 18.32 | 23.53 | 18.10 | 24.49 | 17.41 |
| | 39 | 17.60 | 15.76 | 18.91 | 16.62 | 20.64 | 17.76 | 21.24 | 17.84 | 21.60 | 17.89 | 22.97 | 17.67 | 23.91 | 17.00 |
| 096 | 10 | 23.21 | 20.77 | 24.93 | 21.90 | 27.21 | 23.40 | 28.00 | 23.52 | 28.48 | 23.59 | 30.28 | 23.28 | 31.53 | 22.41 |
| | 12 | 23.21 | 20.77 | 24.93 | 21.90 | 27.21 | 23.40 | 28.00 | 23.52 | 28.48 | 23.59 | 30.28 | 23.28 | 31.53 | 22.41 |
| | 14 | 23.21 | 20.77 | 24.93 | 21.90 | 27.21 | 23.40 | 28.00 | 23.52 | 28.48 | 23.59 | 30.28 | 23.28 | 31.53 | 22.41 |
| | 16 | 23.21 | 20.77 | 24.93 | 21.90 | 27.21 | 23.40 | 28.00 | 23.52 | 28.48 | 23.59 | 30.28 | 23.28 | 31.53 | 22.41 |
| | 18 | 23.21 | 20.77 | 24.93 | 21.90 | 27.21 | 23.40 | 28.00 | 23.52 | 28.48 | 23.59 | 30.28 | 23.28 | 31.53 | 22.41 |
| | 20 | 23.21 | 20.77 | 24.93 | 21.90 | 27.21 | 23.40 | 28.00 | 23.52 | 28.48 | 23.59 | 30.28 | 23.28 | 31.53 | 22.41 |
| | 21 | 23.21 | 20.77 | 24.93 | 21.90 | 27.21 | 23.40 | 28.00 | 23.52 | 28.48 | 23.59 | 30.28 | 23.28 | 31.53 | 22.41 |
| | 23 | 23.21 | 20.77 | 24.93 | 21.90 | 27.21 | 23.40 | 28.00 | 23.52 | 28.48 | 23.59 | 30.28 | 23.28 | 31.53 | 22.41 |
| | 25 | 23.21 | 20.77 | 24.93 | 21.90 | 27.21 | 23.40 | 28.00 | 23.52 | 28.48 | 23.59 | 30.28 | 23.28 | 31.53 | 22.41 |
| | 27 | 23.21 | 20.77 | 24.93 | 21.90 | 27.21 | 23.40 | 28.00 | 23.52 | 28.48 | 23.59 | 30.28 | 23.28 | 31.53 | 22.41 |
| | 29 | 23.21 | 20.77 | 24.93 | 21.90 | 27.21 | 23.40 | 28.00 | 23.52 | 28.48 | 23.59 | 30.28 | 23.28 | 31.53 | 22.41 |
| | 31 | 23.21 | 20.77 | 24.93 | 21.90 | 27.21 | 23.40 | 28.00 | 23.52 | 28.48 | 23.59 | 30.28 | 23.28 | 31.53 | 22.41 |
| | 33 | 23.21 | 20.77 | 24.93 | 21.90 | 27.21 | 23.40 | 28.00 | 23.52 | 28.48 | 23.59 | 30.28 | 23.28 | 31.53 | 22.41 |
| | 35 | 23.21 | 20.77 | 24.93 | 21.90 | 27.21 | 23.40 | 28.00 | 23.52 | 28.48 | 23.59 | 30.28 | 23.28 | 31.53 | 22.41 |
| | 37 | 22.54 | 20.17 | 24.21 | 21.26 | 26.42 | 22.72 | 27.19 | 22.84 | 27.65 | 22.91 | 29.40 | 22.60 | 30.62 | 21.76 |
| | 39 | 22.00 | 19.69 | 23.63 | 20.76 | 25.80 | 22.18 | 26.54 | 22.30 | 27.00 | 22.36 | 28.71 | 22.07 | 29.89 | 21.24 |

TC : Total capacity [kW] SHC : Sensible capacity [kW]

# 8. Fan static characteristics

### MMD-UP0181HP-E / TR

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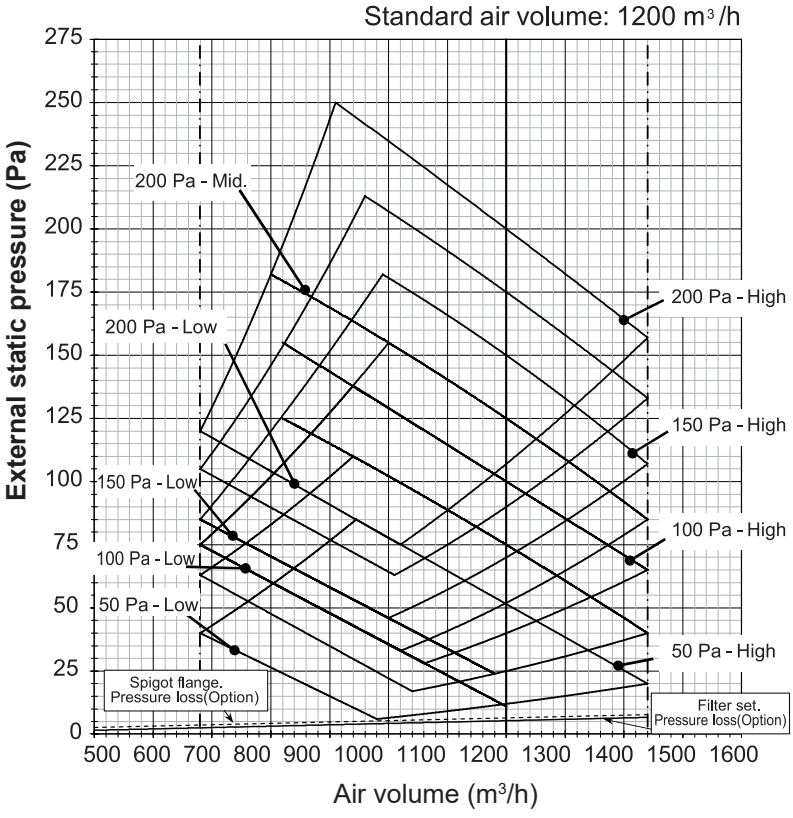

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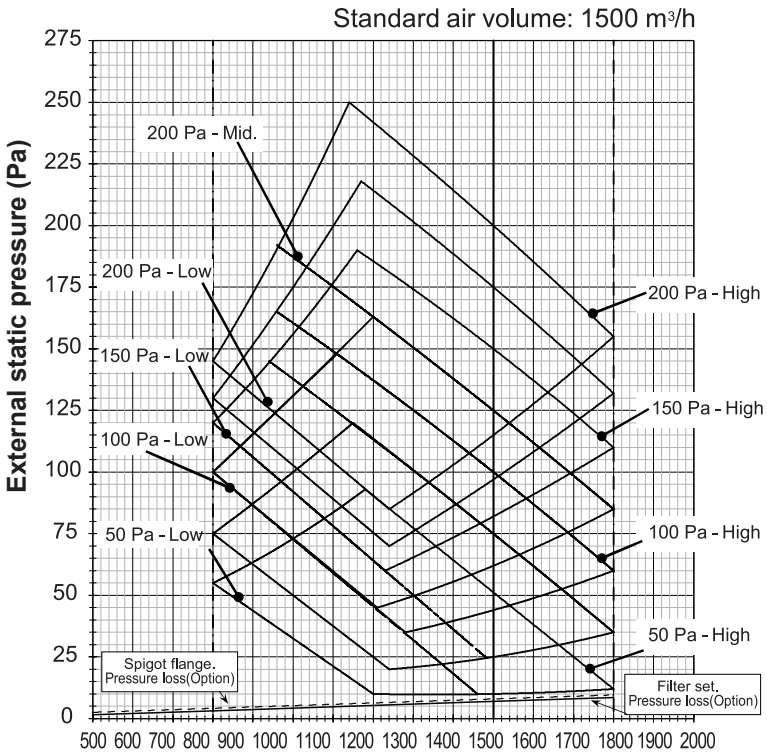


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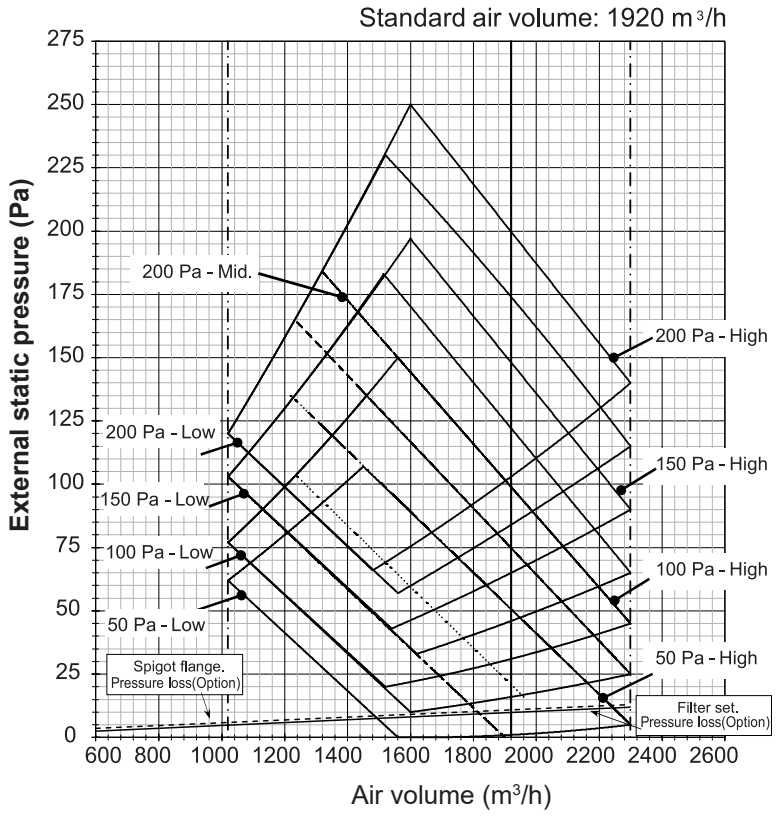

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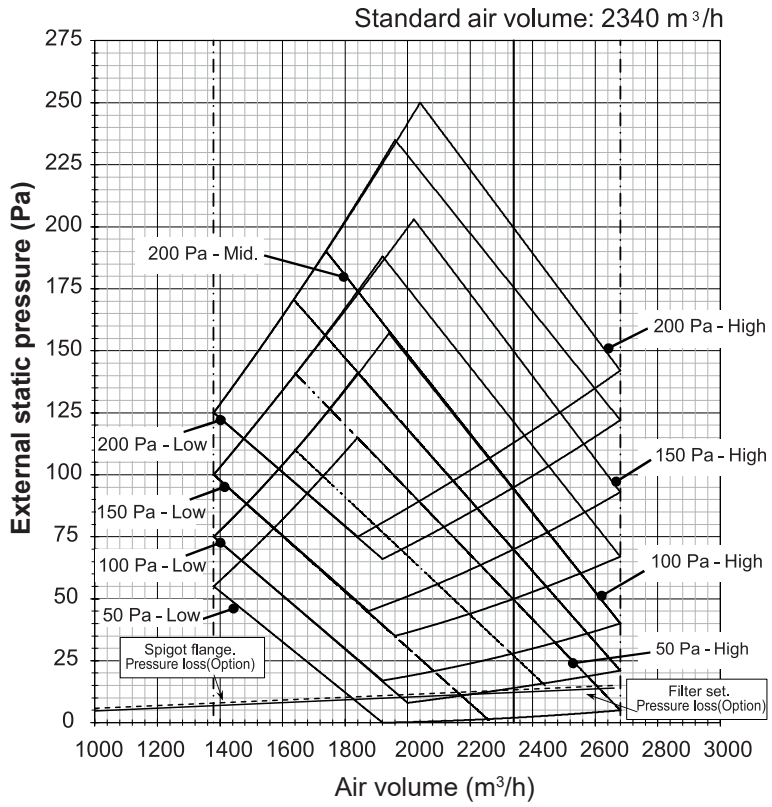


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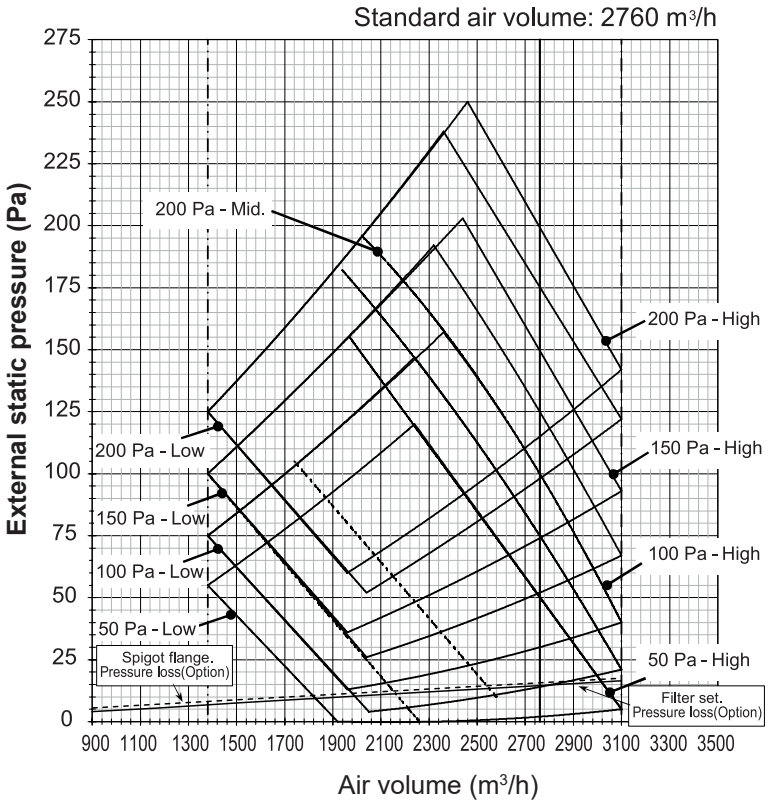
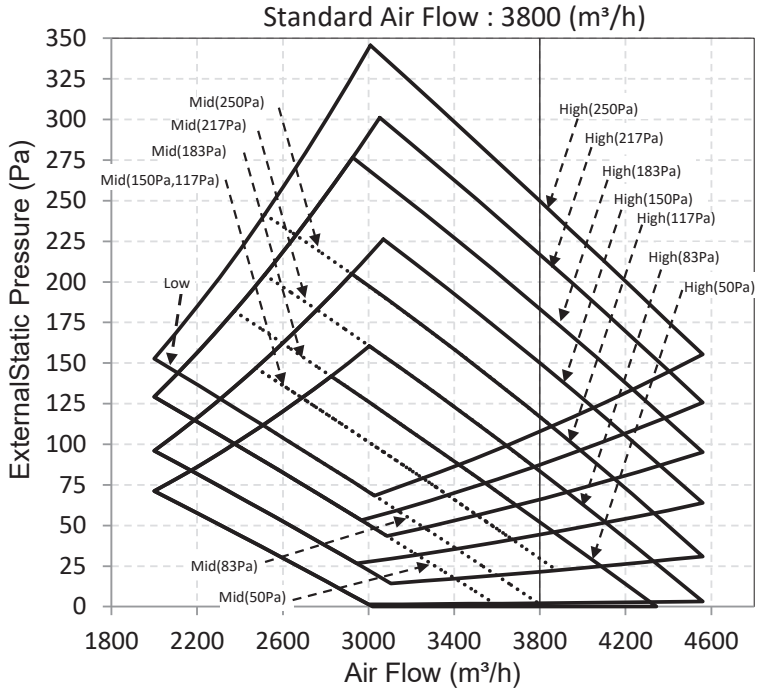
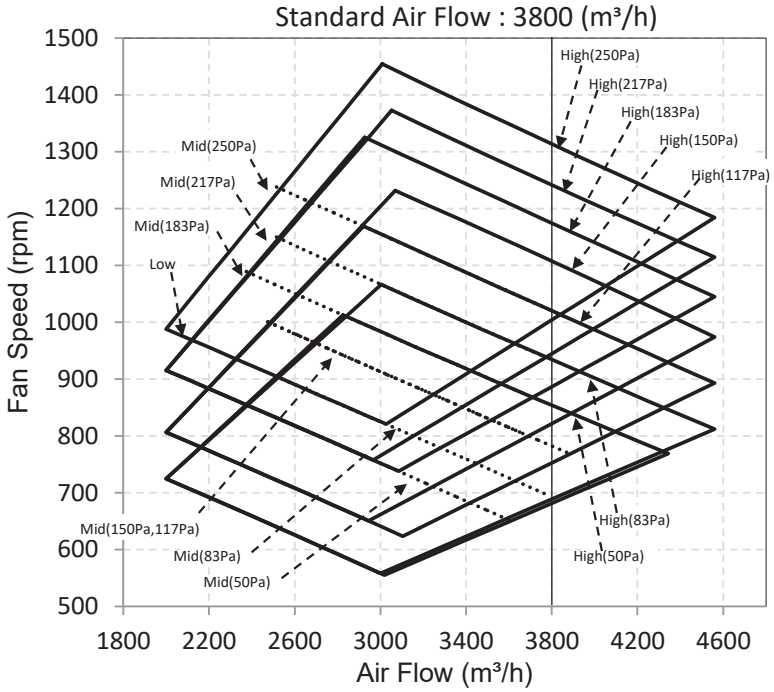


## MMD-UP0721HP-E / TR



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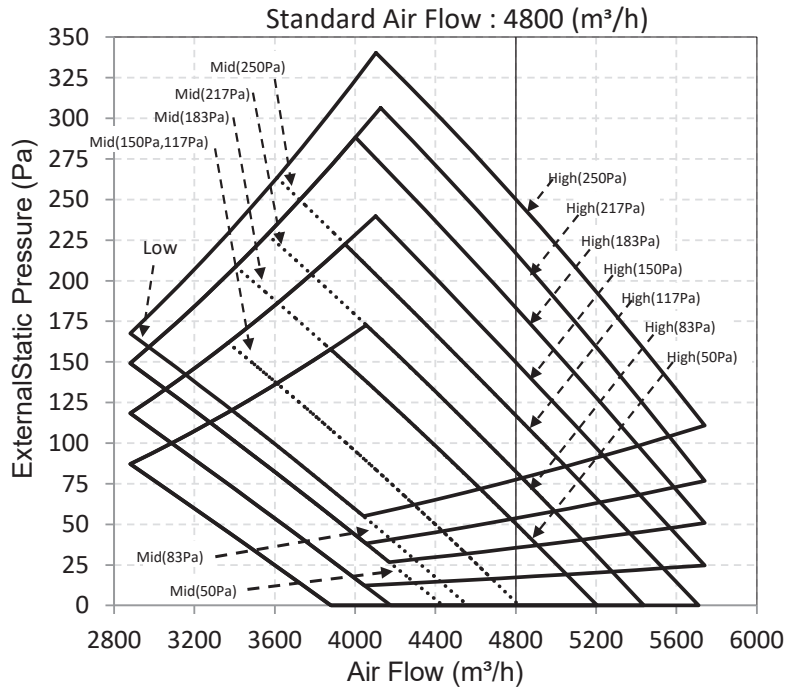
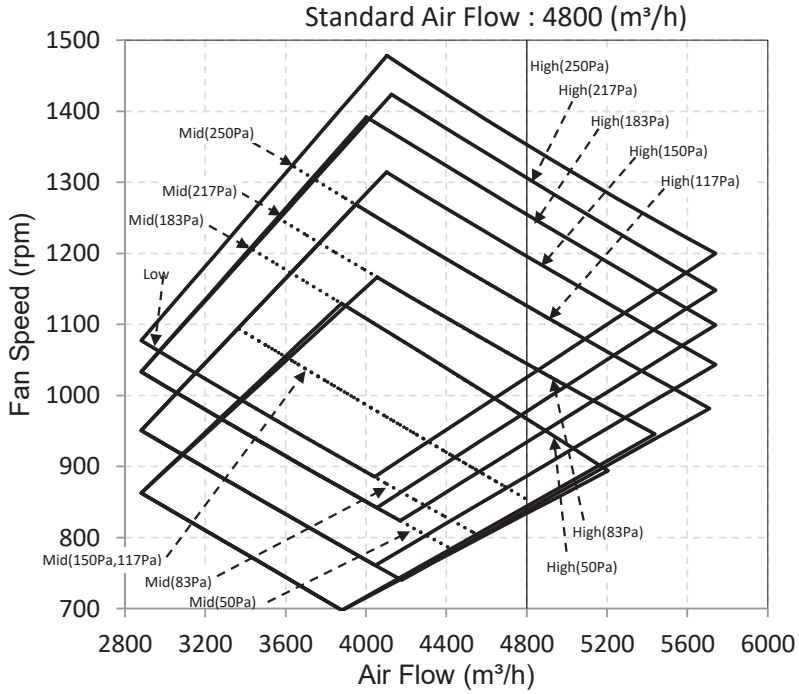
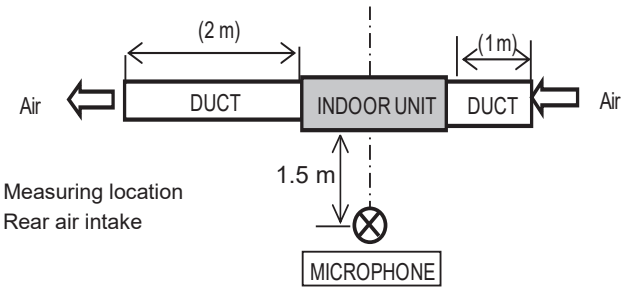


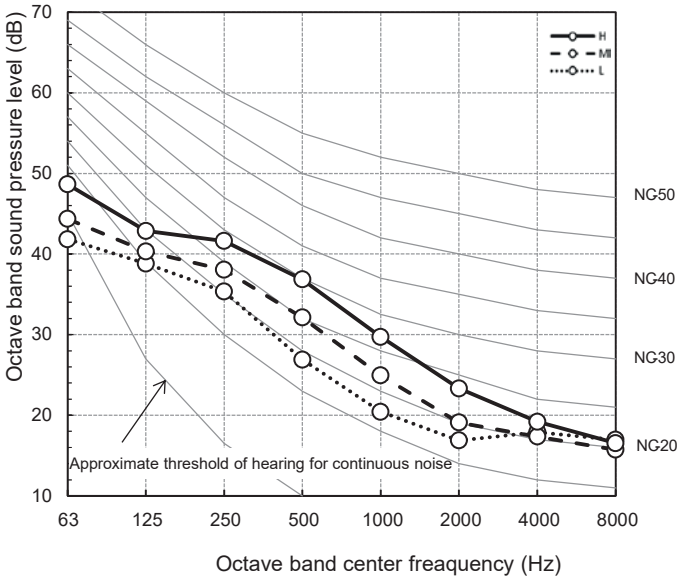
# 9. Sound characteristics (NC Curve)

## MMD-UP0181HP-E / TR



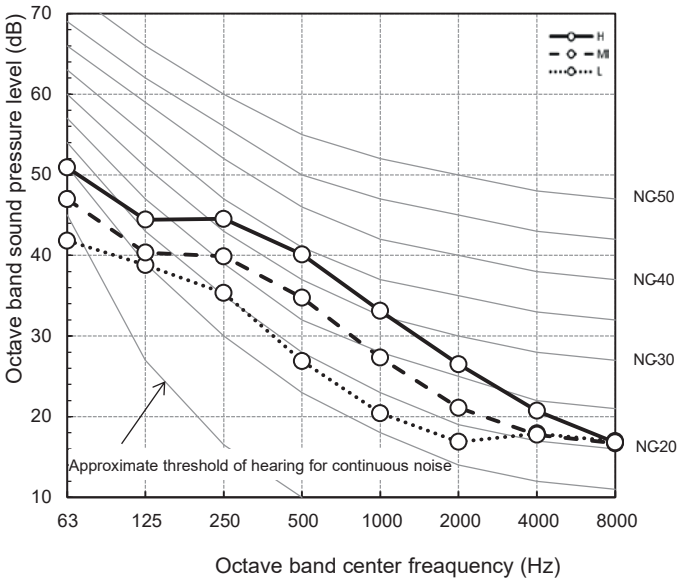

Extarnal static pressure 50Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 33.0 | 29.0 | 26.0 |



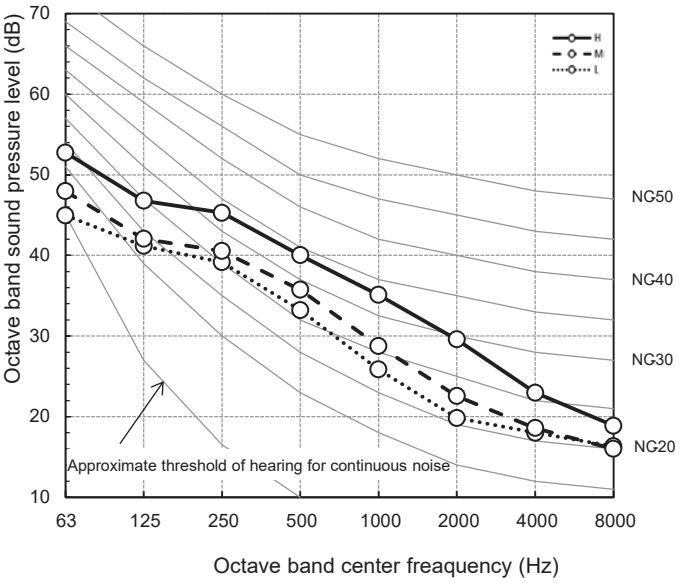

Extarnal static pressure 75Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 36.0 | 31.0 | 26.0 |




Extarnal static pressure 100Pa

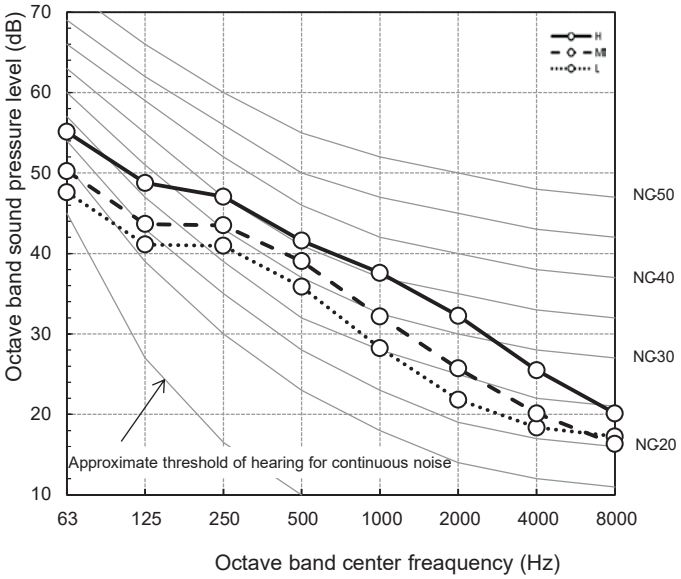
| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 37.0 | 33.0 | 31.0 |



## MMD-UP0181HP-E / TR

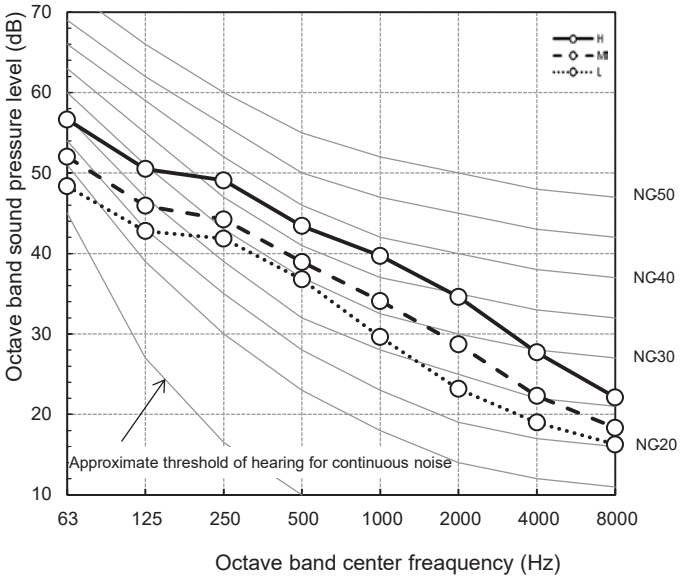
Extarnal static pressure 125Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 39.0 | 35.0 | 32.0 |



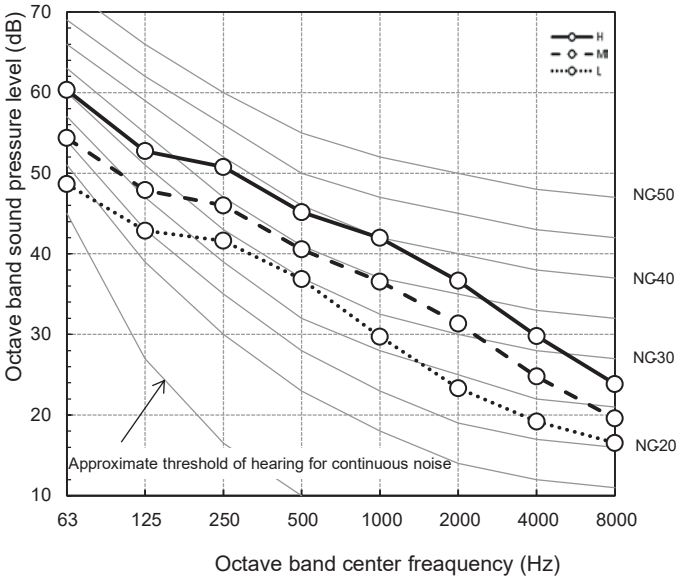

Extarnal static pressure 150Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 41.0 | 36.0 | 33.0 |



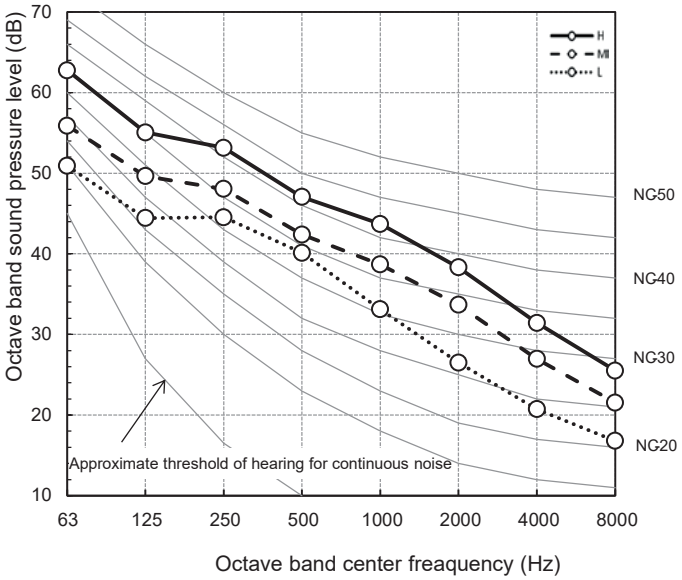

Extarnal static pressure 175Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 43.0 | 38.0 | 33.0 |

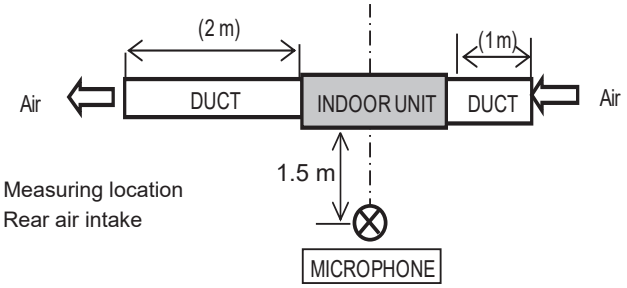



Extarnal static pressure 200Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 45.0 | 40.0 | 36.0 |

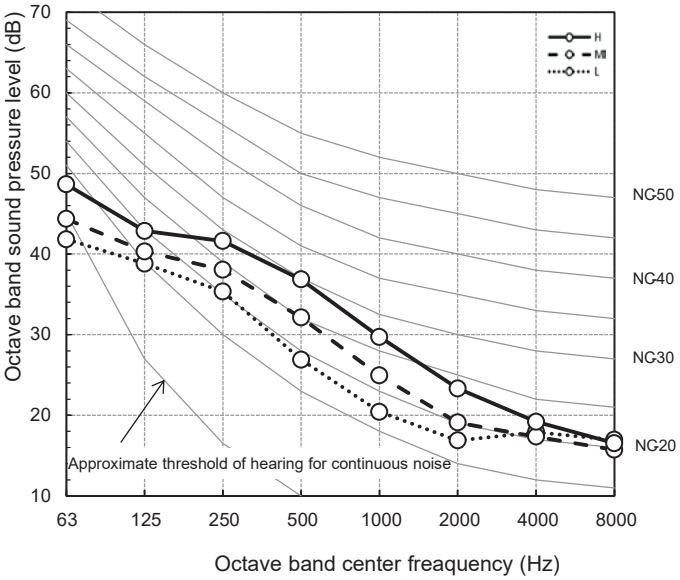


## MMD-UP0241HP-E / TR



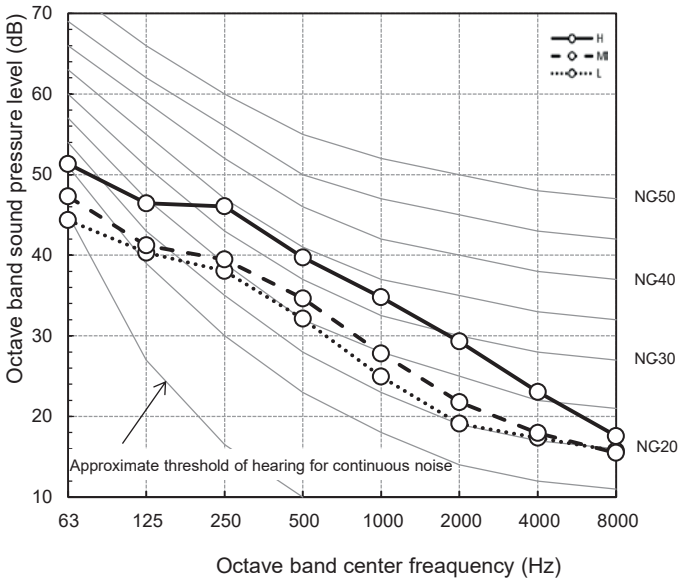

Extarnal static pressure 50Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 35.0 | 30.0 | 26.0 |



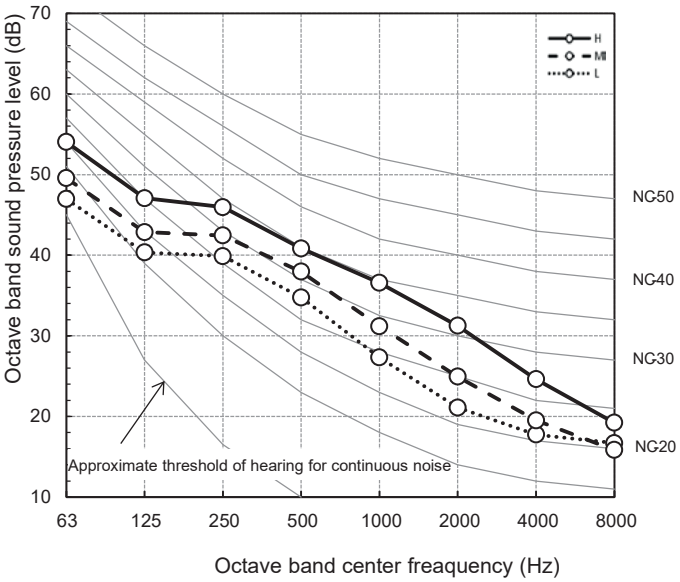

Extarnal static pressure 75Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 37.0 | 31.0 | 29.0 |




Extarnal static pressure 100Pa

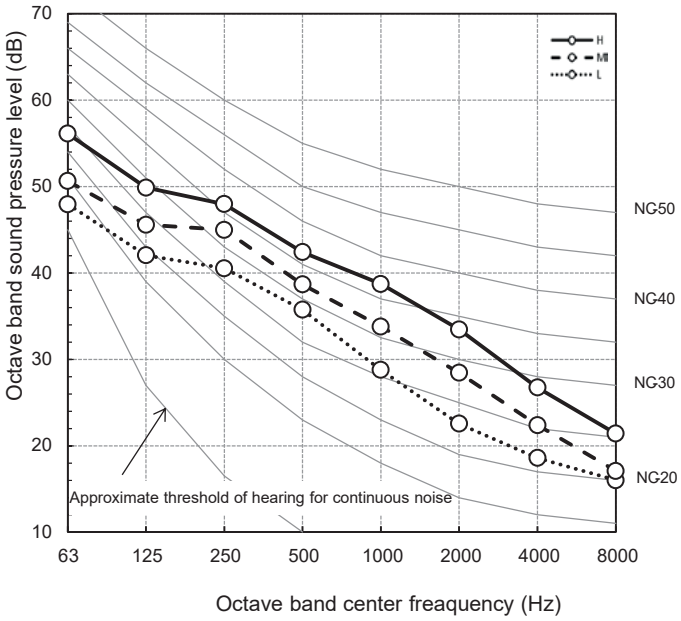
| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 38.0 | 34.0 | 32.0 |



## MMD-UP0241HP-E / TR

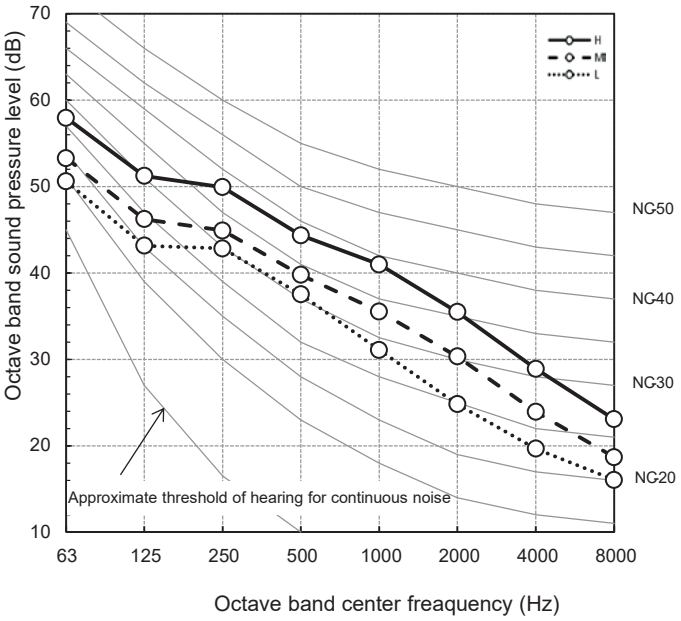
Extarnal static pressure 125Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 40.0 | 36.0 | 32.0 |



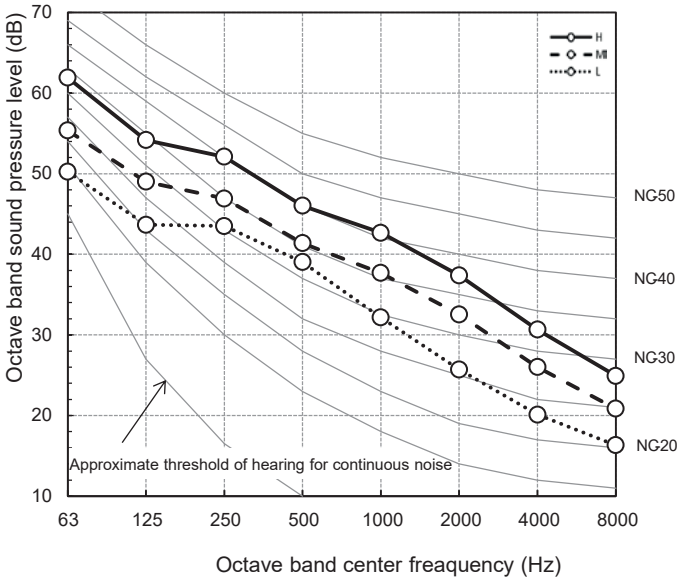

Extarnal static pressure 150Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 42.0 | 37.0 | 34.0 |



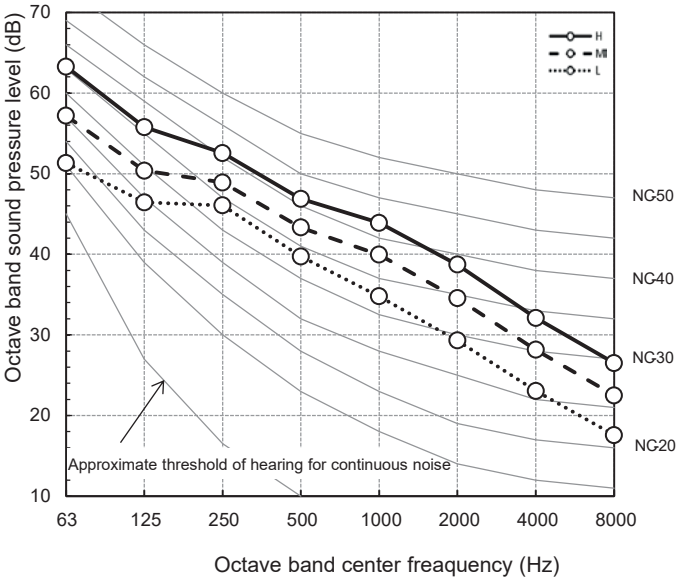

Extarnal static pressure 175Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 44.0 | 39.0 | 35.0 |

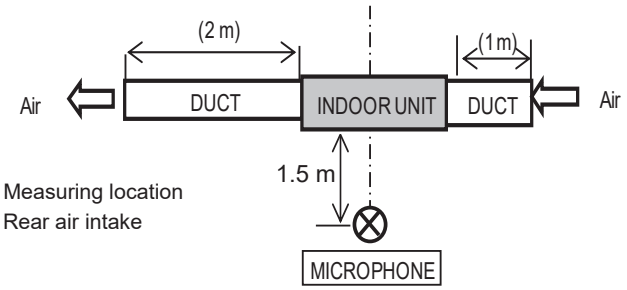



Extarnal static pressure 200Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 45.0 | 41.0 | 37.0 |



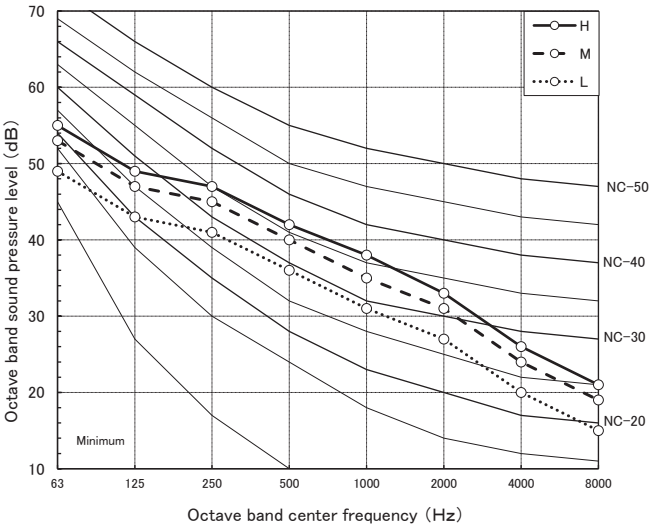
## MMD-UP0271HP-E / TR




Measuring location
Rear air intake

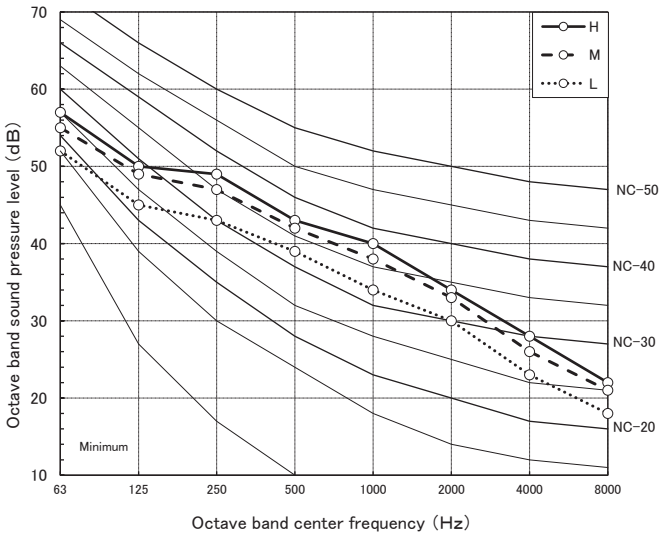
Extarnal static pressure 50Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 39.0 | 37.0 | 33.0 |



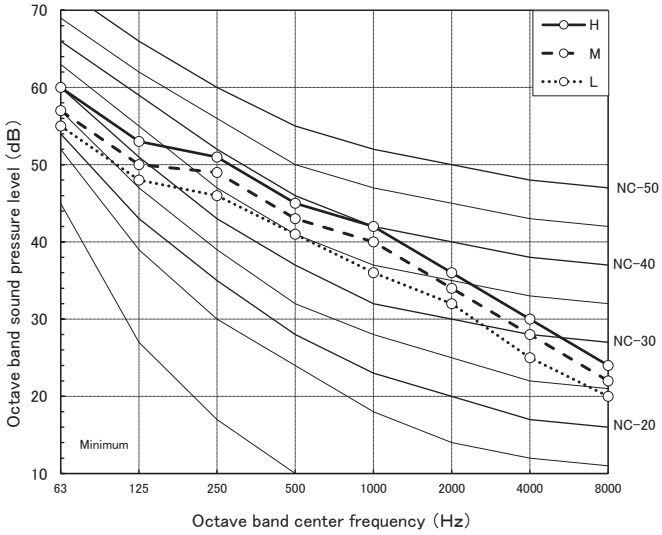

Extarnal static pressure 75Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 41.0 | 39.0 | 36.0 |




Extarnal static pressure 100Pa

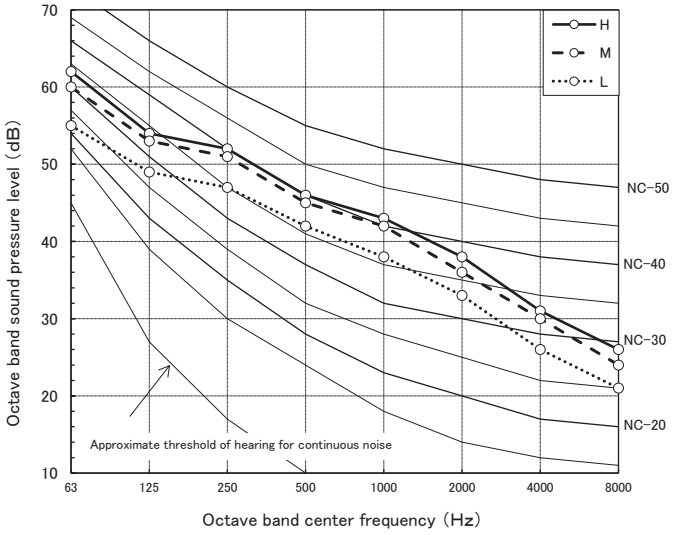
| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 43.0 | 41.0 | 38.0 |



## MMD-UP0271HP-E / TR

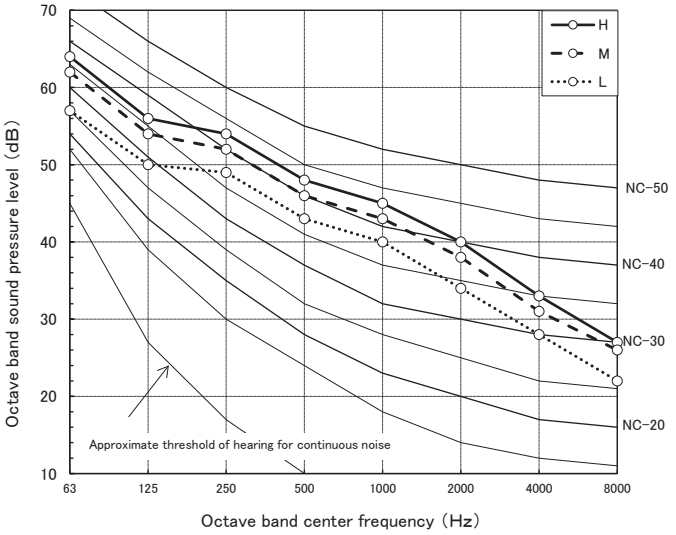
Extarnal static pressure 125Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 44.0 | 43.0 | 39.0 |



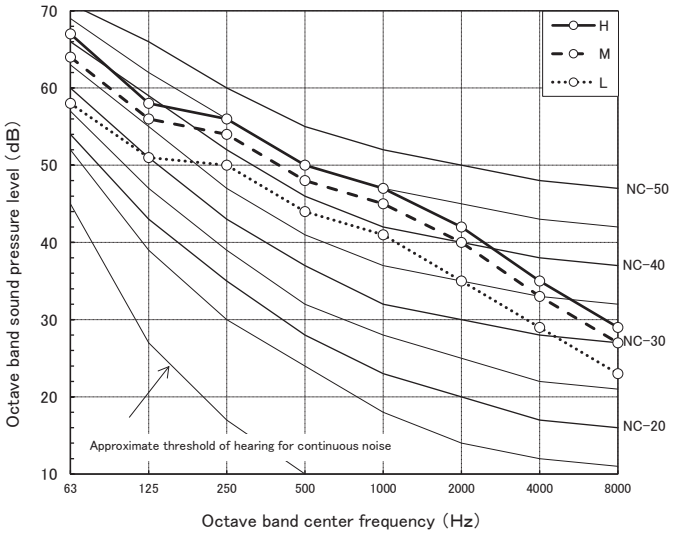

Extarnal static pressure 150Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 46.0 | 44.0 | 41.0 |



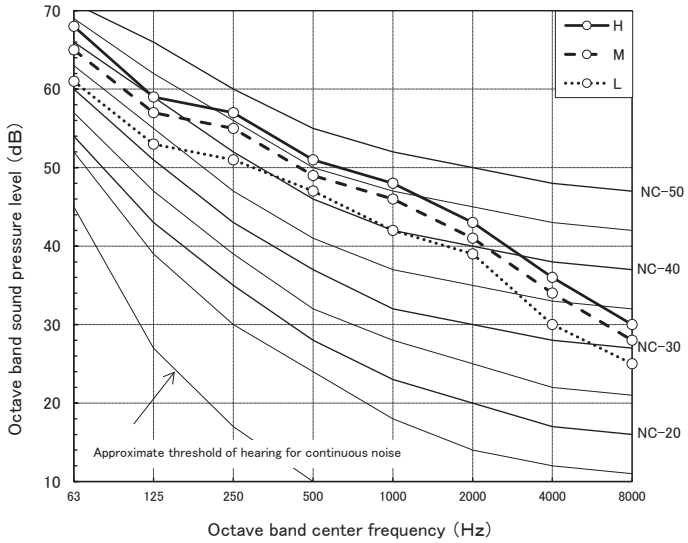

Extarnal static pressure 175Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 48.0 | 46.0 | 42.0 |

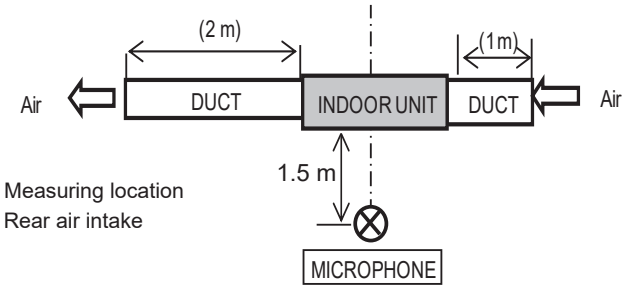



Extarnal static pressure 200Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 49.0 | 47.0 | 44.0 |

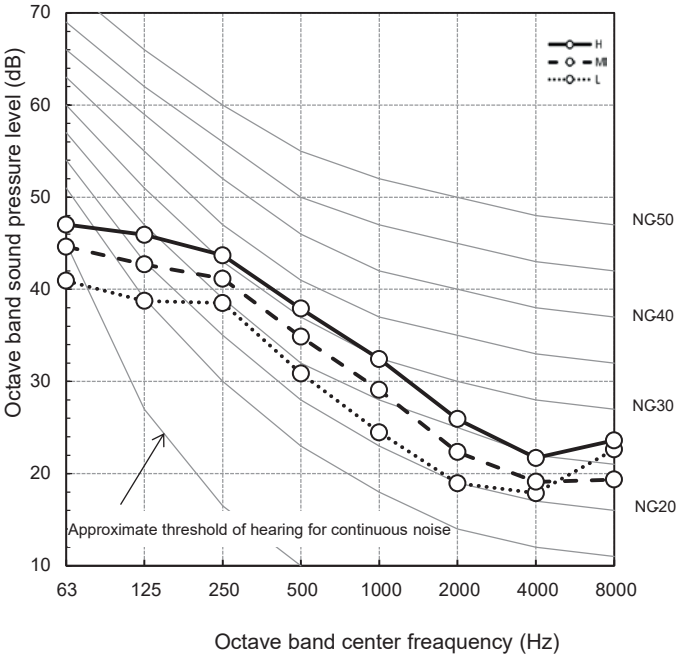


## MMD-UP0361HP-E / TR



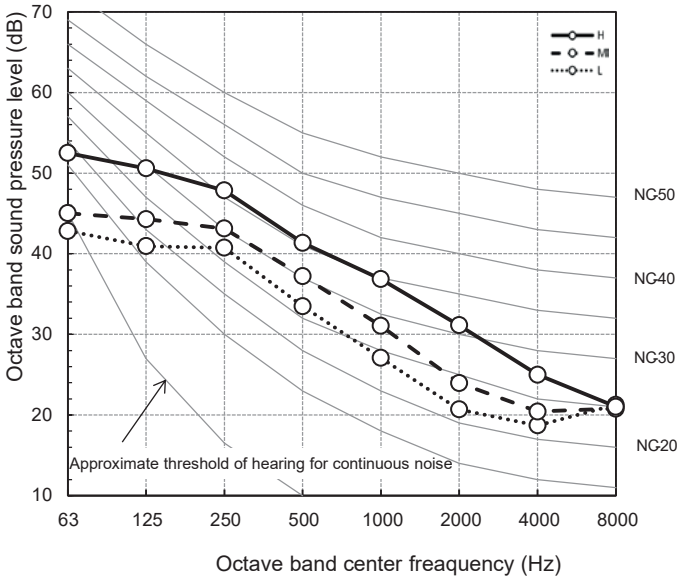

Extarnal static pressure 50Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 35.0 | 32.0 | 29.0 |



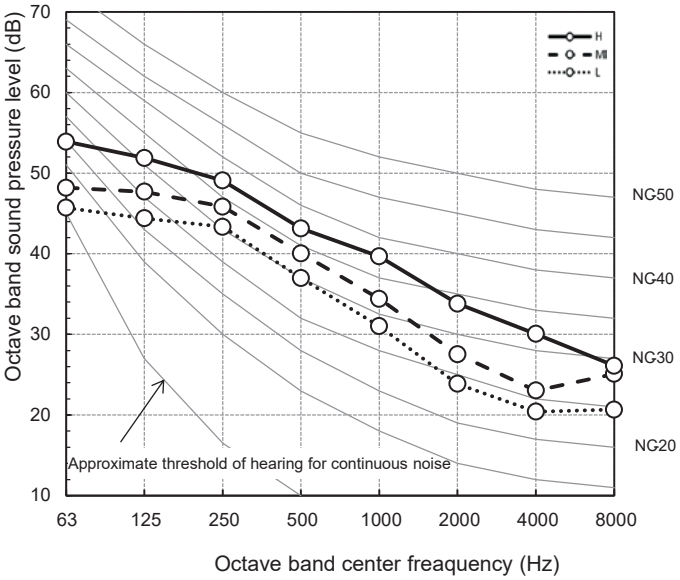

Extarnal static pressure 75Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 39.0 | 34.0 | 31.0 |




Extarnal static pressure 100Pa

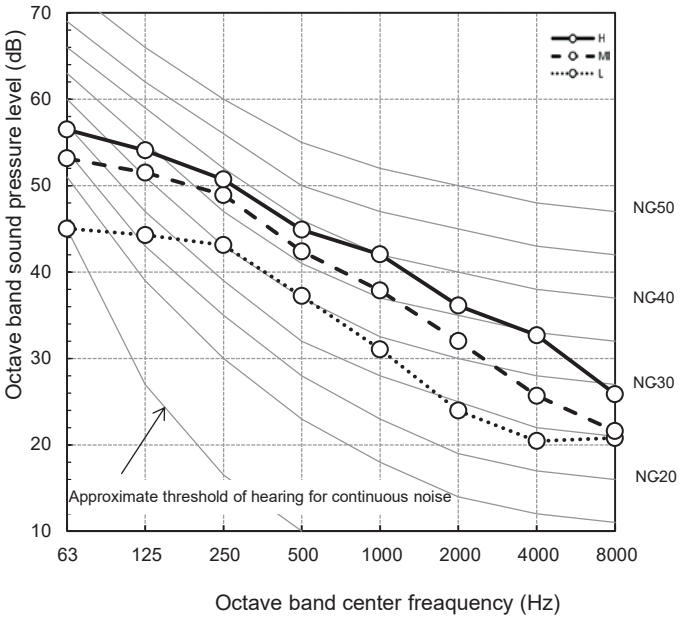
| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 41.0 | 37.0 | 34.0 |



## MMD-UP0361HP-E / TR

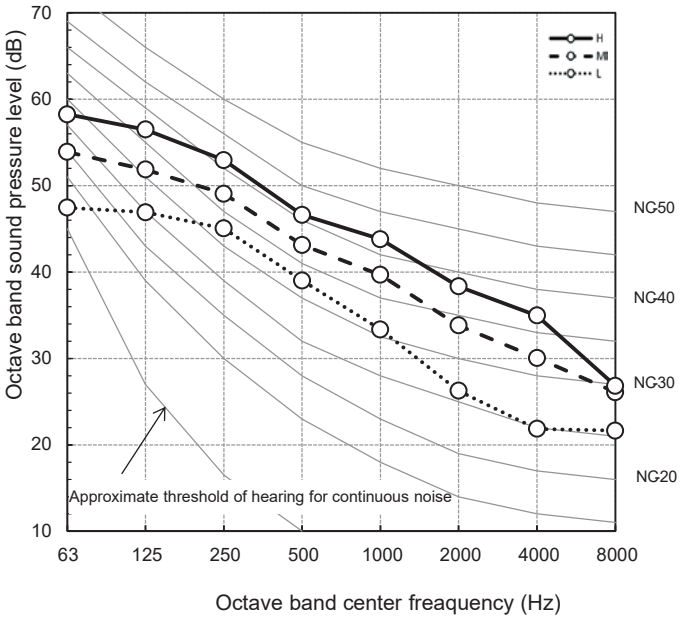
Extarnal static pressure 125Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 43.0 | 40.0 | 34.0 |



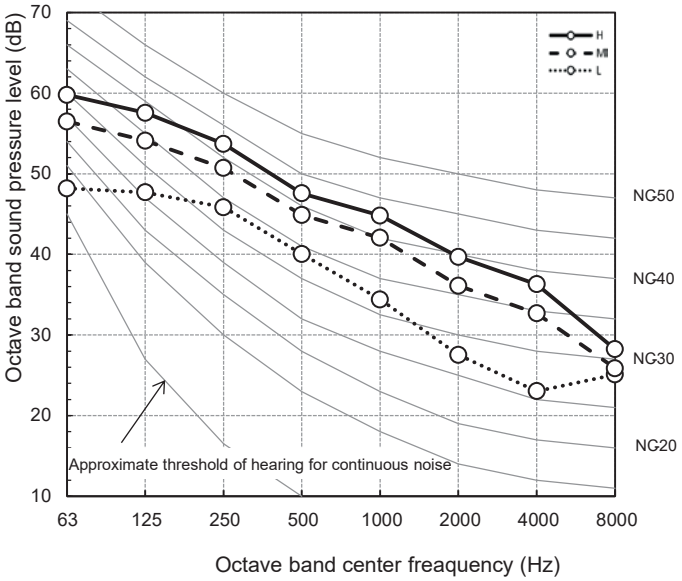

Extarnal static pressure 150Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 45.0 | 41.0 | 36.0 |



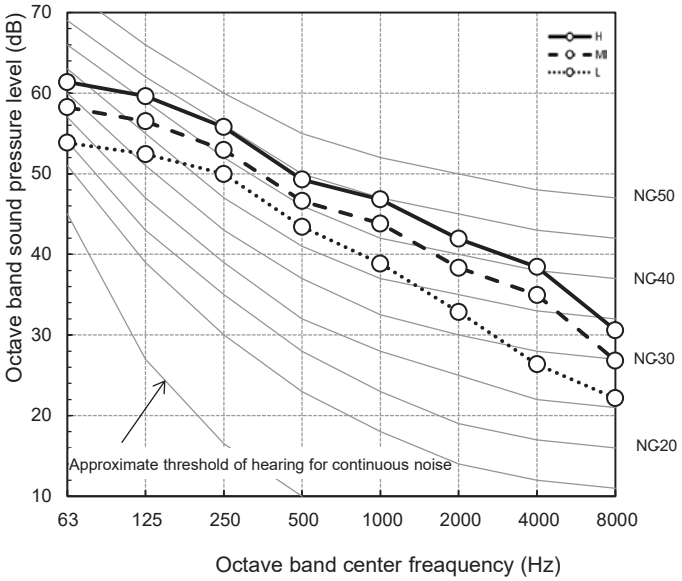

Extarnal static pressure 175Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 46.0 | 43.0 | 37.0 |

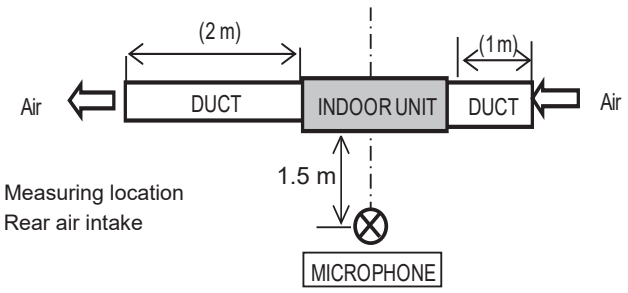



Extarnal static pressure 200Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 48.0 | 45.0 | 41.0 |

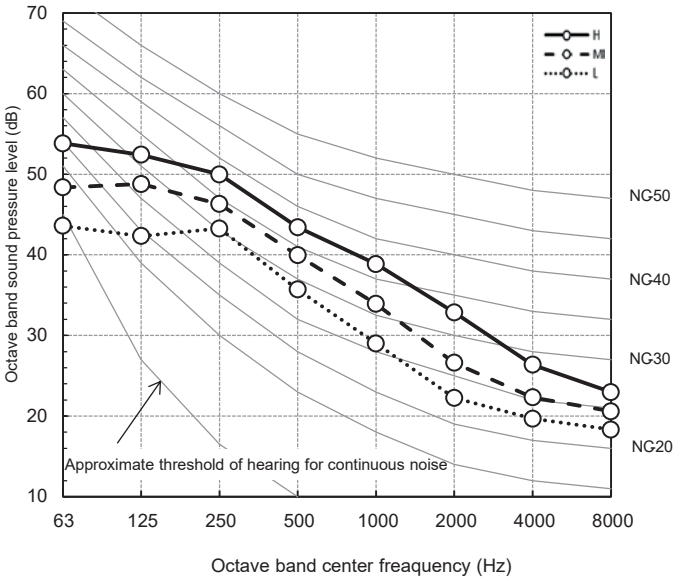


## MMD-UP0481HP-E / TR



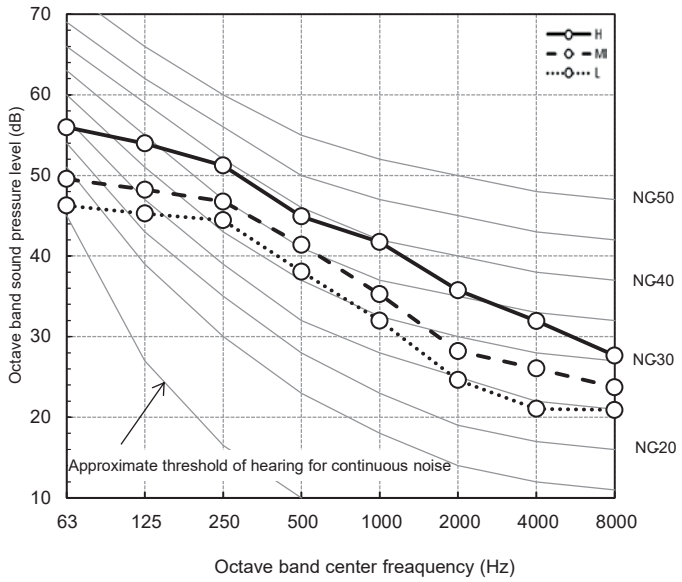

Extarnal static pressure 50Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 41.0 | 37.0 | 33.0 |



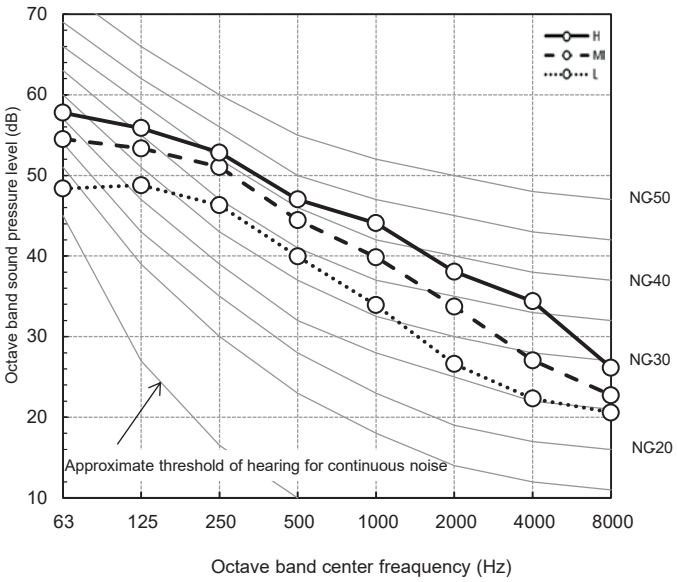

Extarnal static pressure 75Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 43.0 | 38.0 | 35.0 |




Extarnal static pressure 100Pa

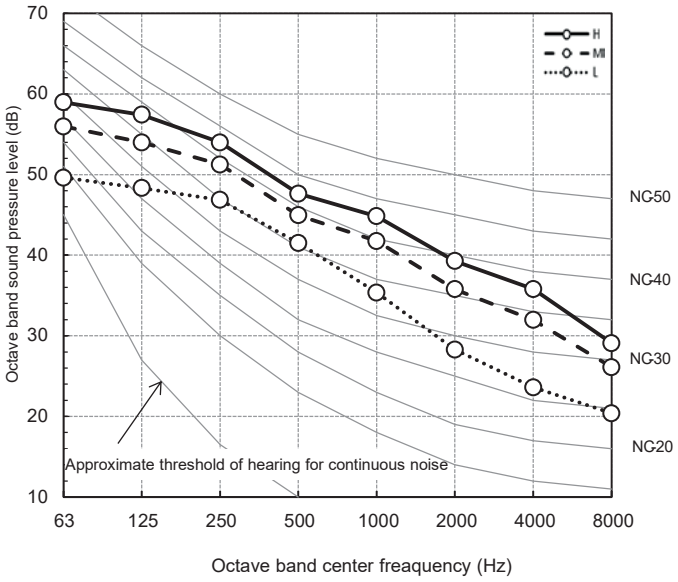
| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 44.0 | 41.0 | 38.0 |



## MMD-UP0481HP-E / TR

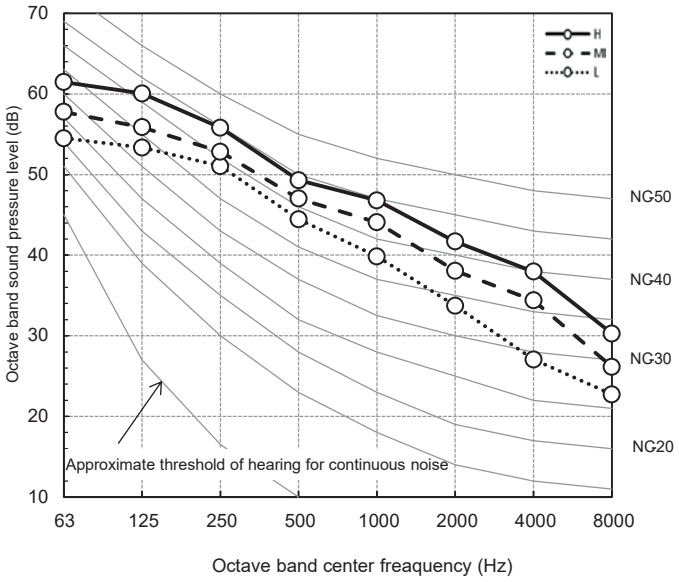
Extarnal static pressure 125Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 46.0 | 43.0 | 38.0 |



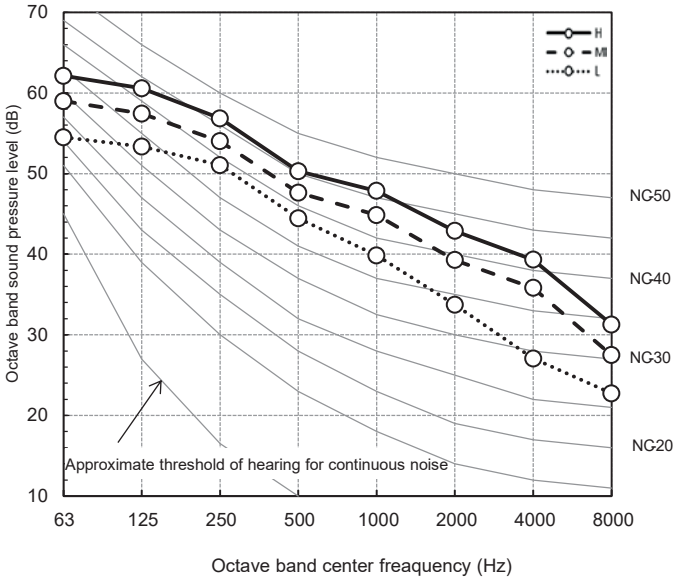

Extarnal static pressure 150Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 48.0 | 45.0 | 42.0 |



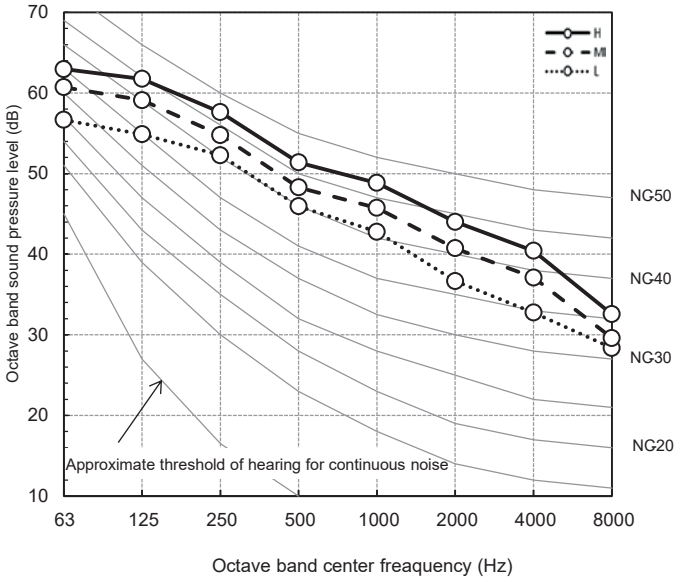

Extarnal static pressure 175Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 49.0 | 46.0 | 42.0 |

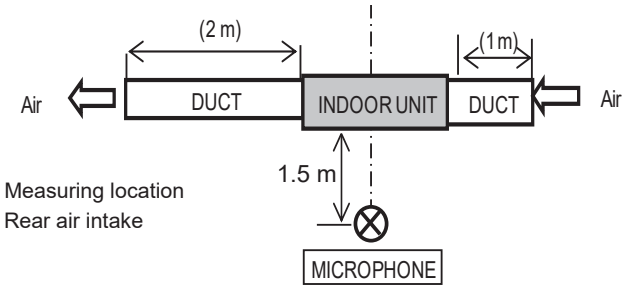



Extarnal static pressure 200Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 50.0 | 47.0 | 44.0 |

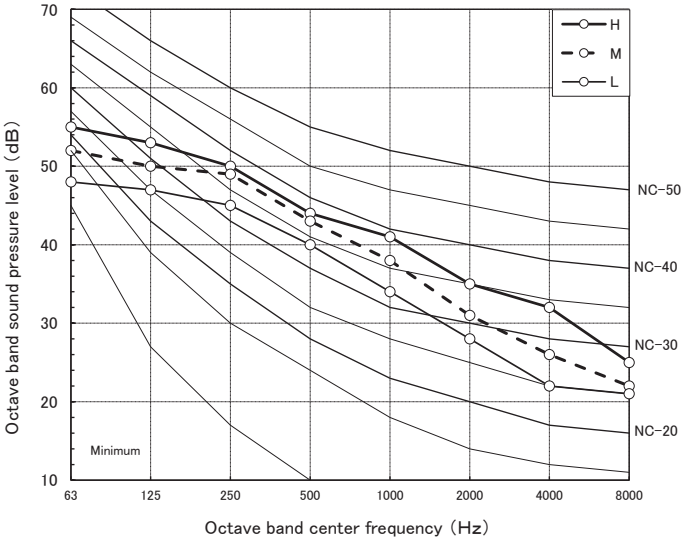


## MMD-UP0561HP-E / TR



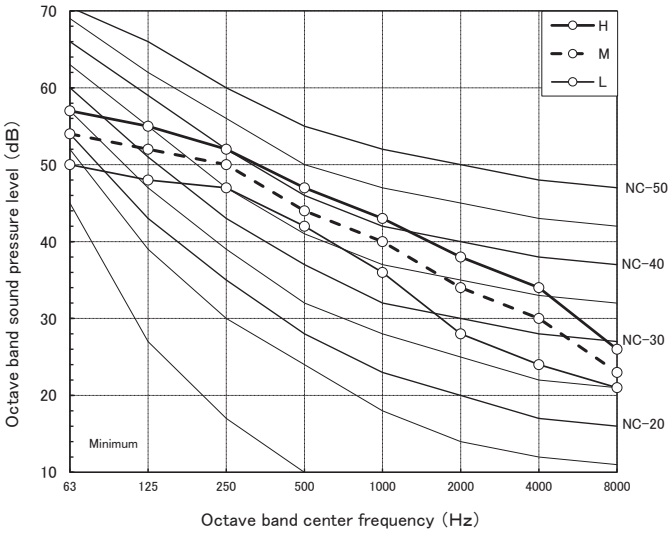

Extarnal static pressure 50Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 42.0 | 40.0 | 37.0 |



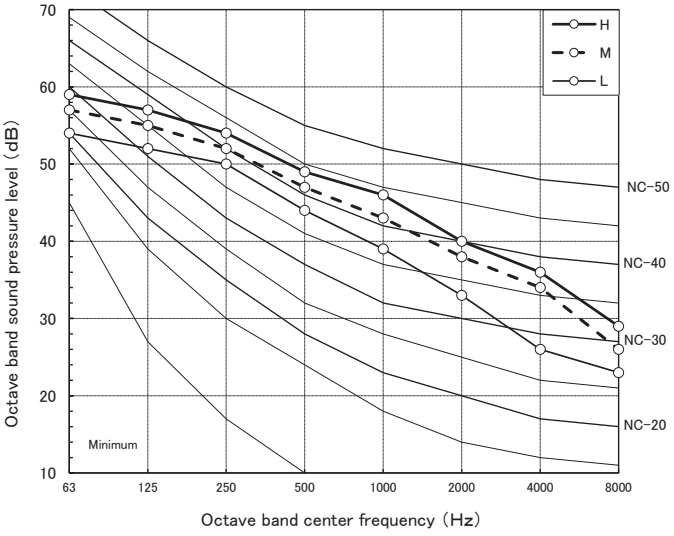

Extarnal static pressure 75Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 44.0 | 41.0 | 39.0 |




Extarnal static pressure 100Pa

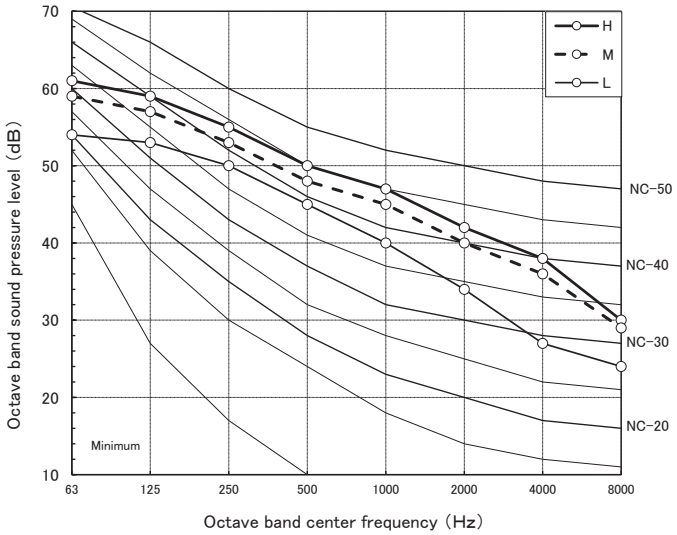
| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 46.0 | 44.0 | 41.0 |



## MMD-UP0561HP-E / TR

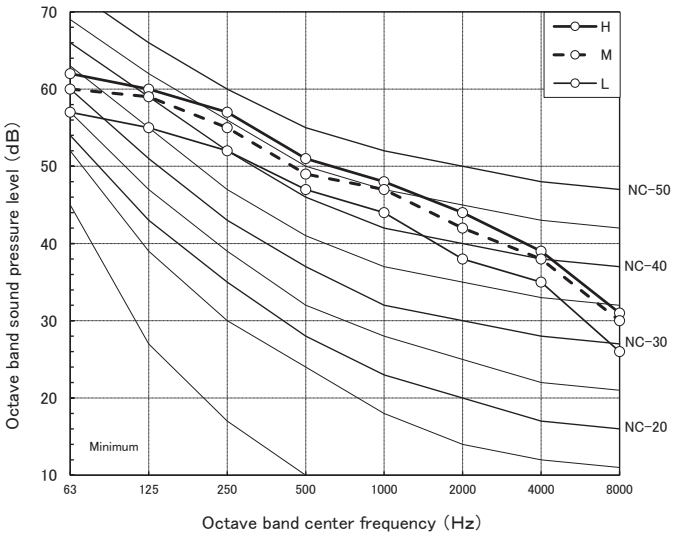
Extarnal static pressure 125Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 47.0 | 46.0 | 42.0 |



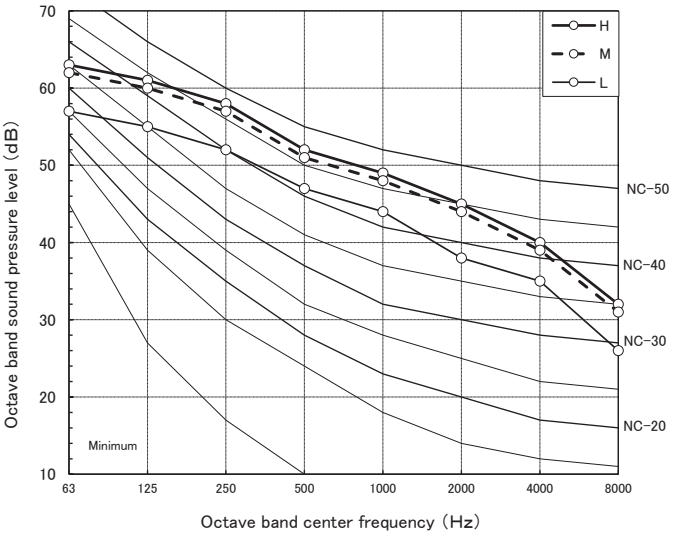

Extarnal static pressure 150Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 49.0 | 48.0 | 45.0 |



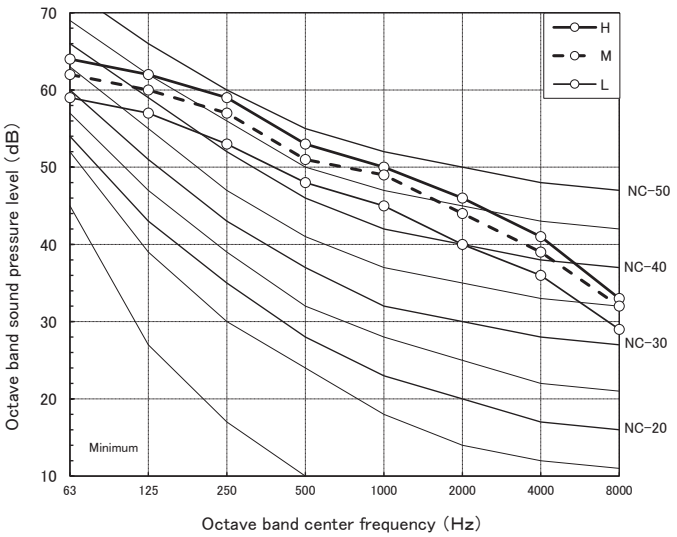

Extarnal static pressure 175Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 50.0 | 49.0 | 45.0 |

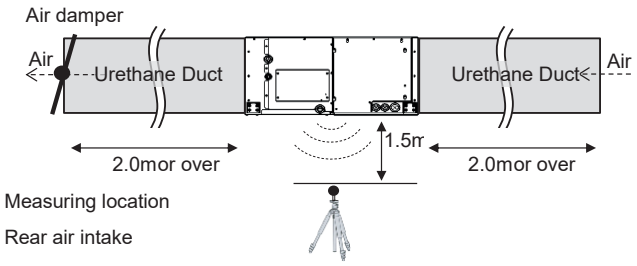



Extarnal static pressure 200Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 51.0 | 50.0 | 47.0 |

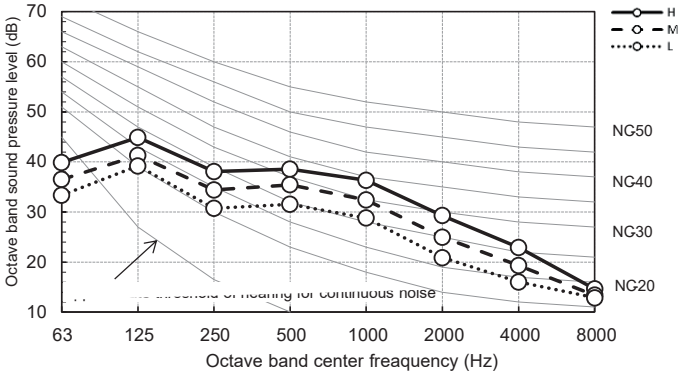


## MMD-UP0721HP-E / TR



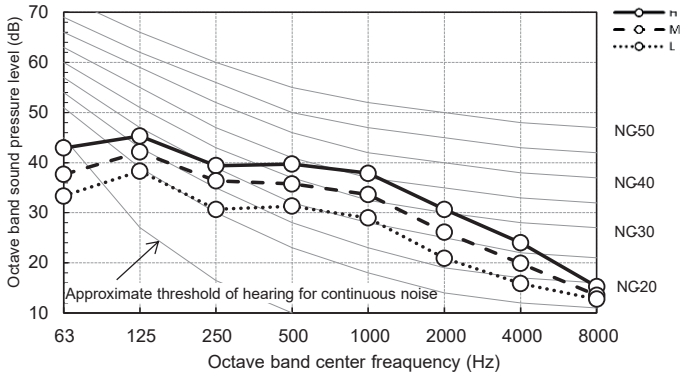

Extarnal static pressure 50Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 42.5 | 38.5 | 34.5 |



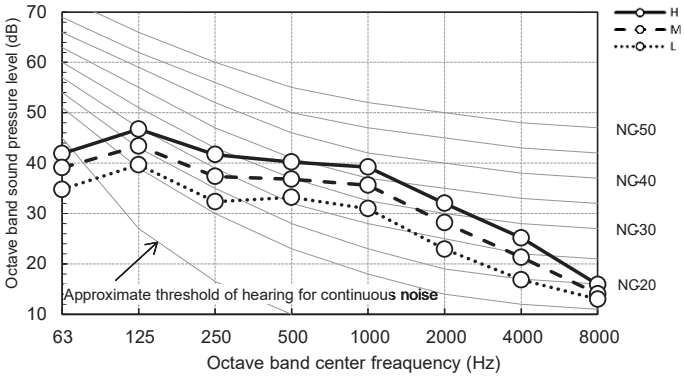

Extarnal static pressure 83Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 43.0 | 39.0 | 35.0 |



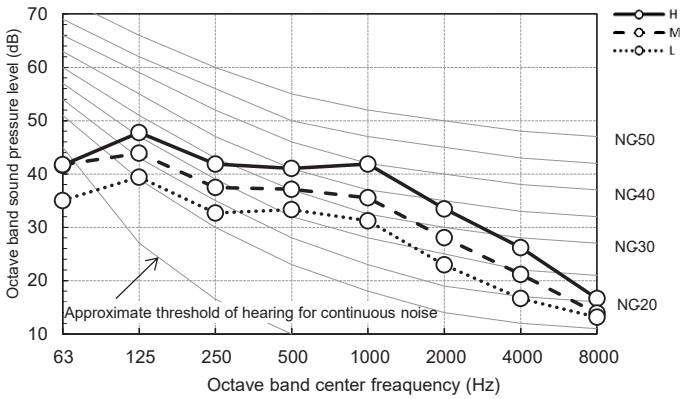

Extarnal static pressure 117Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 43.5 | 39.5 | 35.5 |



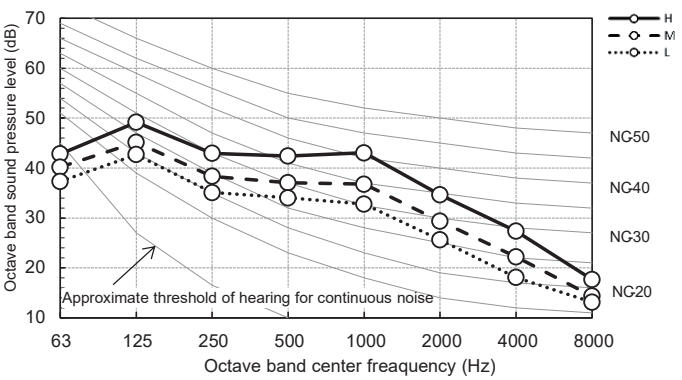

Extarnal static pressure 150Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 44.0 | 40.0 | 36.0 |




Extarnal static pressure 183Pa

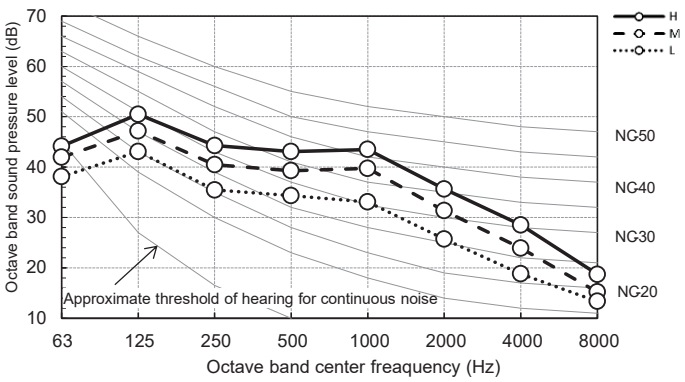
| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 45.0 | 41.0 | 37.0 |



## MMD-UP0721HP-E / TR

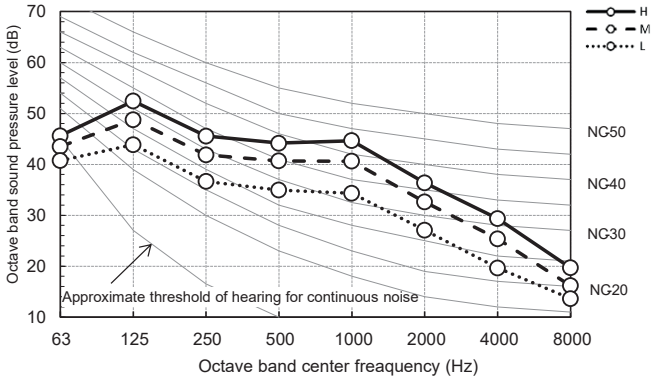
Extarnal static pressure 217Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 46.0 | 42.0 | 38.0 |

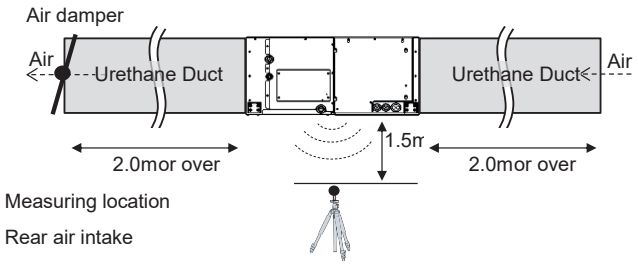



Extarnal static pressure 250Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 47.0 | 43.0 | 39.0 |

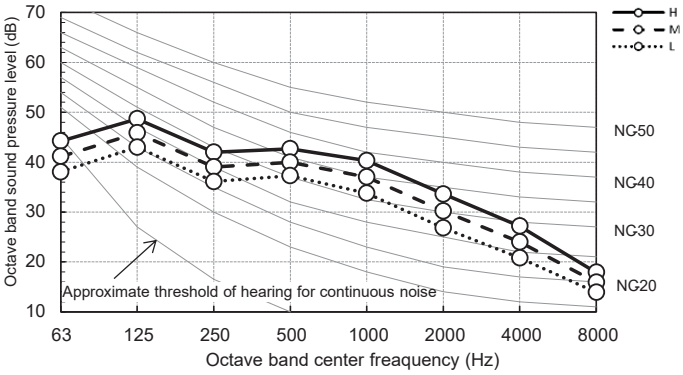


## MMD-UP0961HP-E / TR



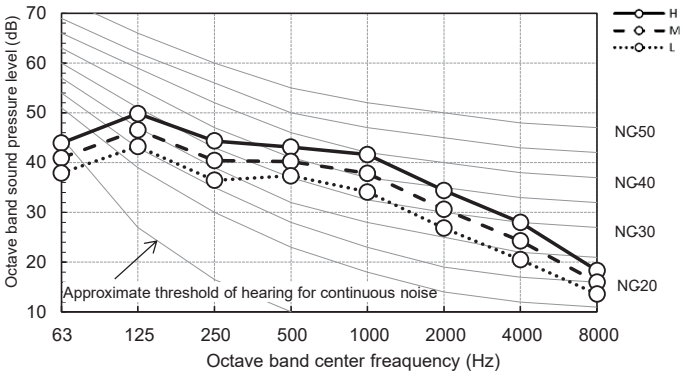

Extarnal static pressure 50Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 44.5 | 40.5 | 36.5 |



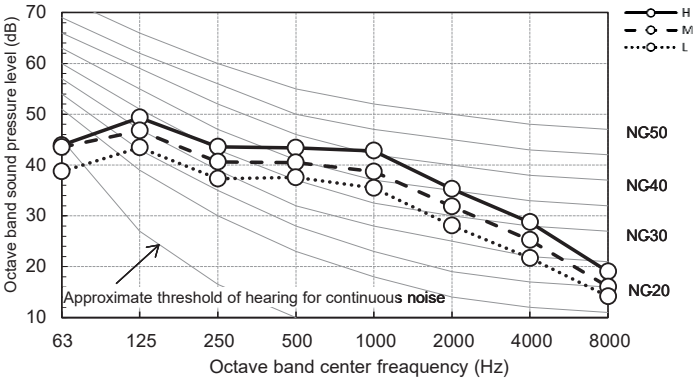

Extarnal static pressure 83Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 45.0 | 41.0 | 37.0 |



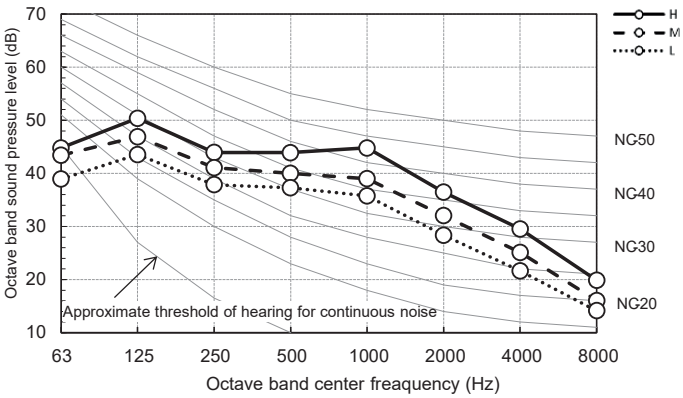

Extarnal static pressure 117Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 45.5 | 41.5 | 37.5 |



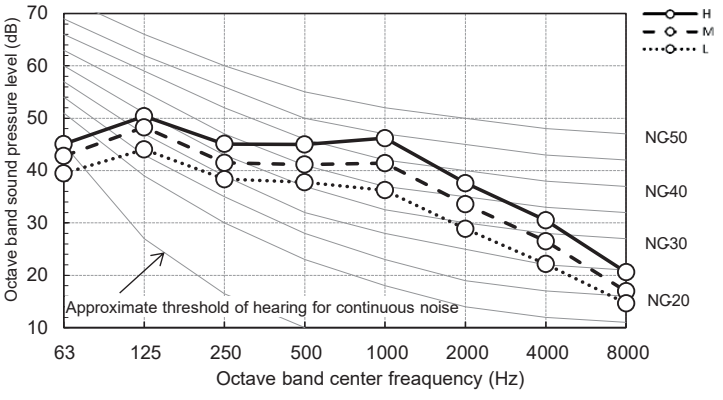

Extarnal static pressure 150Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 46.0 | 42.0 | 38.0 |




Extarnal static pressure 183Pa

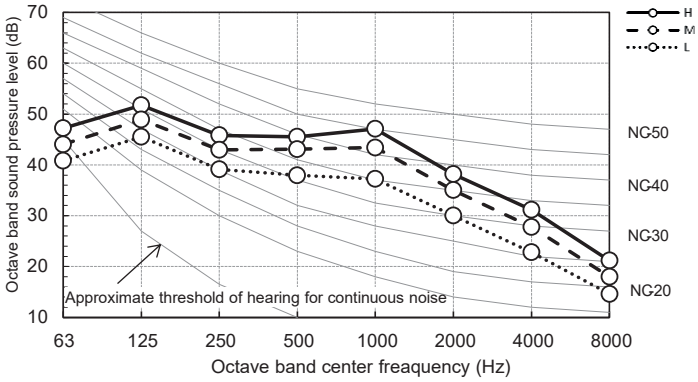
| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 47.0 | 43.0 | 39.0 |



## MMD-UP0961HP-E / TR

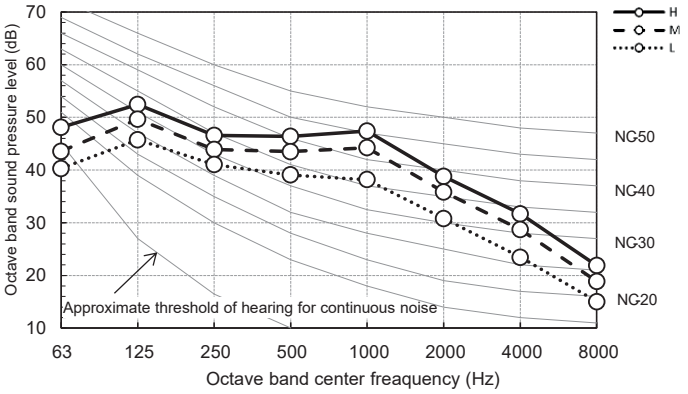
Extarnal static pressure 217Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 48.0 | 44.0 | 40.0 |




Extarnal static pressure 250Pa

| Fan tap | H | M | L |
|---|---|---|---|
| Sound pressure (dBA) | 49.0 | 45.0 | 41.0 |



# 10. Accessories

| Option Parts | Model Name | Applicable FCU |
|---|---|---|
| Long life filter kit | TCB-LK801D-E | MMD-UP0181 / AP0241 / 0301HP - E / TR |
| | TCB-LK1401D-E | MMD-UP0361 / 0481 / 0561HP - E / TR |
| | TCB-LK2801DP-E | MMD-UP0721 / 0961HP - E / TR |
| Spigot shaped flange | TCB-SF80C6BE | MMD-UP0181 / 0241 / 0301HP - E / TR |
| | TCB-SF160C6BE | MMD-UP0361 / 0481 / 0561HP - E / TR |
| Drain pump kit | TCB-DP40DPE | MMD-UP0721 / 0961HP - E / TR |
| Auxiliary fresh air flange | TCB-FF151US-E | For Duct type |

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