

# MXZ-SM60NL

## 60,000 BTU/H HEAT PUMP OUTDOOR UNIT



Job Name:

System Reference:

Date:



### GENERAL FEATURES

- Compatible with M- and P-Series and CITY MULTI® indoor units (branch box required for connection with M- and P-Series)
- Compressor overcurrent detection
- Compressor thermal protection
- Fan motor overheating/voltage protection
- High pressure protection
- INVERTER-driven compressor: Compressor generates the precise capacity needed to maintain a temperature set point.
- Quiet operation: Outdoor units are as quiet as a typical conversation, and most indoor units are whisper quiet.
- Seacoast protection: Seacoast protection on heat exchanger and base panel (rated for 2,000 hrs. in accordance with ASTM B117 testing)
- Thermal Differential 1°F

| Specifications                                               |                                              |       | System                     |
|--------------------------------------------------------------|----------------------------------------------|-------|----------------------------|
| Unit Type                                                    |                                              |       | MXZ-SM60NL                 |
| Cooling at 95F <sup>1</sup> (Non-Ducted // Mixed // Ducted)  | Maximum Capacity                             | Btu/h | 60,000 // 60,000 // 60,000 |
|                                                              | Rated Capacity                               | Btu/h | 60,000 // 60,000 // 60,000 |
|                                                              | Minimum Capacity                             | Btu/h | 16,000 // 16,000 // 16,000 |
|                                                              | Maximum Power Input                          | W     | 5,000 // 5,610 // 6,385    |
|                                                              | Rated Power Input                            | W     | 5,000 // 5,610 // 6,385    |
|                                                              | Power Factor (208V)                          | %     | 98.10 // 98.10 // 98.10    |
|                                                              | Power Factor (230V)                          | %     | 98.10 // 98.10 // 98.10    |
| Heating at 47F <sup>2</sup> (Non-Ducted // Mixed // Ducted)  | Maximum Capacity                             | Btu/h | 66,000 // 66,000 // 66,000 |
|                                                              | Rated Capacity                               | Btu/h | 66,000 // 66,000 // 66,000 |
|                                                              | Minimum Capacity                             | Btu/h | 13,500 // 13,500 // 13,500 |
|                                                              | Maximum Power Input                          | W     | 4,720 // 5,230 // 5,865    |
|                                                              | Rated Power Input                            | W     | 4,720 // 5,230 // 5,865    |
|                                                              | Power Factor (208V)                          | %     | 98.10 // 98.10 // 98.10    |
|                                                              | Power Factor (230V)                          | %     | 98.10 // 98.10 // 98.10    |
| Heating at 17F <sup>3</sup> (Non-Ducted // Mixed // Ducted)  | Maximum Capacity                             | Btu/h | 65,000 // 65,000 // 65,000 |
|                                                              | Rated Capacity                               | Btu/h | 41,500 // 41,000 // 40,500 |
|                                                              | Maximum Power Input                          | W     | 8,740 // 8,820 // 8,820    |
|                                                              | Rated Power Input                            | W     | 4,195 // 4,450 // 4,750    |
| Heating at 5F <sup>4</sup> (Non-Ducted // Mixed // Ducted)   | Maximum Capacity                             | Btu/h | 46,500 // 46,500 // 46,500 |
|                                                              | Maximum Power Input                          | W     | 6,815 // 7,175 // 7,575    |
| Heating at -13F <sup>5</sup> (Non-Ducted // Mixed // Ducted) | Maximum Capacity                             | Btu/h | 30,000 // 30,000 // 30,000 |
|                                                              | Maximum Power Input                          | W     | 6,765 // 6,765 // 6,765    |
| Efficiency (Non-Ducted // Mixed // Ducted)                   | SEER <sup>2</sup> <sup>1</sup>               |       | 20 // 18.20 // 16.40       |
|                                                              | EER <sup>2</sup> <sup>1</sup>                |       | 12 // 10.70 // 9.40        |
|                                                              | HSPF <sup>2</sup> (IV) <sup>2</sup>          |       | 10.50 // 10 // 9.50        |
|                                                              | COP at 47°F <sup>2</sup>                     |       | 4.10 // 3.70 // 3.30       |
|                                                              | COP at 17°F at Maximum Capacity <sup>3</sup> |       | 2.18 // 2.16 // 2.16       |
|                                                              | COP at 5°F at Maximum Capacity <sup>4</sup>  |       | 2 // 1.90 // 1.80          |
|                                                              | ENERGY STAR® Certified                       |       | Yes // No // No            |

### NOTES

<sup>1</sup>Cooling at 95°F (Indoor: 80°F DB, 67°F WB // Outdoor: 95°F DB, 75°F WB)

<sup>2</sup>Heating at 47°F (Indoor: 70°F DB, 60°F WB // Outdoor: 47°F DB, 43°F WB)

<sup>3</sup>Heating at 17°F (Indoor: 70°F DB, 60°F WB // Outdoor: 17°F DB, 15°F WB)

<sup>4</sup>Heating at 5°F (Indoor: 70°F DB, 60°F WB // Outdoor: 5°F DB, 4°F WB)

<sup>5</sup>Heating at -13°F (Indoor: 70°F DB, 60°F WB // Outdoor: -13°F DB, -14°F WB)

• Applications should be restricted to comfort cooling only; equipment cooling applications are not recommended for low ambient temperature conditions.

• A Maximum connected units reduced when PLA connected. Refer to manual for details

• B Branch box should be placed within the level between the outdoor unit and indoor units

• C 5°F DB - 115°F DB when optional wind baffles are installed

For actual capacity performance based on indoor unit type and number of indoor units connected, please refer to MXZ Operational Performance.

Although the maximum connectable capacity is 130%, the outdoor unit cannot provide more than 100% of the rated capacity.

Please utilize this over capacity capability for load shedding or applications where it is known that all connected units will NOT be operating at the same time.

\*\* 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 and automatically restarts at these temperatures.

# SPECIFICATIONS: MXZ-SM60NL

| Specifications            |                                                                                 |                                  | System                                     |
|---------------------------|---------------------------------------------------------------------------------|----------------------------------|--------------------------------------------|
| Unit Type                 |                                                                                 |                                  | MXZ-SM60NL                                 |
| Electrical                | Electrical Power Requirements                                                   | V AC / V AC, , Hz                | 208 / 230, 1, 60                           |
|                           | Guaranteed Voltage Range                                                        | V AC                             | 198 - 253                                  |
|                           | Voltage: Indoor - Outdoor, S1-S2                                                | V AC                             | 230                                        |
|                           | Short-circuit Current Rating (SCCR)                                             | kA                               | 5                                          |
|                           | Recommended Fuse/Breaker Size if Branch Box Powered by Outdoor Unit             | A                                | 50                                         |
|                           | Recommended Fuse/Breaker Size without Branch Box or Branch Box Powered Separate | A                                | 40                                         |
|                           | MCA if Branch Box Powered by Outdoor Unit                                       | A                                | 55                                         |
|                           | MOCP if Branch Box Powered by Outdoor Unit                                      | A                                | 90                                         |
|                           | MCA without Branch Box or Branch Box Powered Separate                           | A                                | 45                                         |
|                           | MOCP without Branch Box or Branch Box Powered Separate                          | A                                | 80                                         |
| Outdoor Unit              | Fan Motor Output                                                                | W                                | 200+200                                    |
|                           | Defrost Method                                                                  |                                  | Reverse Cycle                              |
|                           | Blue Fin Heat Exchanger Coating                                                 |                                  | Yes                                        |
|                           | Sound Pressure Level, Cooling <sup>1</sup>                                      | dB (A)                           | 58                                         |
|                           | Sound Pressure Level, Heating <sup>2</sup>                                      | dB (A)                           | 59                                         |
|                           | Compressor Type                                                                 |                                  | Twin Rotary                                |
|                           | Compressor Model                                                                |                                  | MRB53FEJMC-L                               |
|                           | Compressor Motor Output                                                         | kW                               | 4.1                                        |
|                           | Compressor Oil Type // Charge                                                   | Type // oz                       | RM68EH // 78                               |
|                           | External Finish Color                                                           |                                  | Munsell 3Y 7.8/1.1                         |
|                           | Base Pan Heater                                                                 |                                  | Optional                                   |
|                           | Unit Dimensions (W x D x H)                                                     | inch [mm] inch [mm]<br>inch [mm] | 41-11/32 [1,050] 13 [330] 52-11/16 [1,338] |
|                           | Package Dimensions (W x D x H)                                                  | inch [mm] inch [mm]<br>inch [mm] | 43 [1,090] 18 [450] 58-5/16 [1,480]        |
|                           | Unit Weight                                                                     | lbs [kg]                         | 278 [126]                                  |
|                           | Package Weight                                                                  | lbs [kg]                         | 304 [138]                                  |
| ODU Operating Temp. Range | Cooling Intake Air Temp (Maximum / Minimum <sup>c</sup> )                       | °FDB                             | 115 / 23                                   |
|                           | Cooling Thermal Lock-out / Re-start Temperatures                                | °FDB                             | N/A / N/A                                  |
|                           | Heating Intake Air Temp (Maximum / Minimum)                                     | °FDB                             | 70 / -13                                   |
|                           | Heating Thermal Lock-out / Re-start Temperatures**                              | °FDB                             | -24 / -14                                  |
| Refrigerant               | Type                                                                            |                                  | R454B                                      |
|                           | Pre-Charged Refrigerant Amount                                                  | lbs, oz                          | 6, 10                                      |
| IDU Connection            | Maximum Number of Connected IDU with Branch Box <sup>A</sup>                    |                                  | 8                                          |
|                           | Maximum Number of Connected IDU without Branch Box                              |                                  | 12                                         |
|                           | Minimum Connected Capacity with Branch Box                                      | Btu/h                            | 12,000                                     |
|                           | Minimum Connected Capacity without Branch Box                                   | Btu/h                            | 30,000                                     |
|                           | Maximum connected capacity                                                      | Btu/h                            | 78,000                                     |
| Piping                    | Liquid Pipe Size O.D. (Flared)                                                  | inch [mm]                        | 3/8 [9.52]                                 |
|                           | Gas Pipe Size O.D. (Flared)                                                     | inch [mm]                        | 3/4 [19.05]                                |
|                           | Total Piping Length when using Branch Box                                       | ft [m]                           | 492 [150]                                  |
|                           | Total Piping Length without Branch Box                                          | ft [m]                           | 492 [150]                                  |
|                           | Maximum Height Difference <sup>B</sup> , ODU above IDU                          | ft [m]                           | 164 [50]                                   |
|                           | Maximum Height Difference <sup>B</sup> , ODU below IDU                          | ft [m]                           | 131 [40]                                   |
|                           | Maximum Height Difference <sup>B</sup> , between branch boxes                   | ft [m]                           | 39 [12]                                    |
|                           | Maximum Height Difference between IDU and IDU without branch box                | ft [m]                           | 49 [15]                                    |
|                           | Maximum Piping Length between ODU and Branch Box                                | ft [m]                           | 180 [55]                                   |
|                           | Farthest Piping Length from ODU to IDU with Branch Box                          | ft [m]                           | 262 [80]                                   |
|                           | Farthest Piping Length from ODU to IDU without Branch Box                       | ft [m]                           | 262 [80]                                   |
|                           | Farthest Piping Length after Branch Box                                         | ft [m]                           | 82 [25]                                    |
|                           | Total Piping Length between Branch Boxes and IDU                                | ft [m]                           | 312 [95]                                   |
|                           | Maximum Number of Bends for IDU                                                 |                                  | 15                                         |

## NOTES

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<sup>2</sup>Heating at 47°F (Indoor: 70°F DB, 60°F WB // Outdoor: 47°F DB, 43°F WB)

<sup>3</sup>Heating at 17°F (Indoor: 70°F DB, 60°F WB // Outdoor: 17°F DB, 15°F WB)

<sup>4</sup>Heating at 5°F (Indoor: 70°F DB, 60°F WB // Outdoor: 5°F DB, 4°F WB)

<sup>5</sup>Heating at -13°F (Indoor: 70°F DB, 60°F WB // Outdoor: -13°F DB, -14°F WB)

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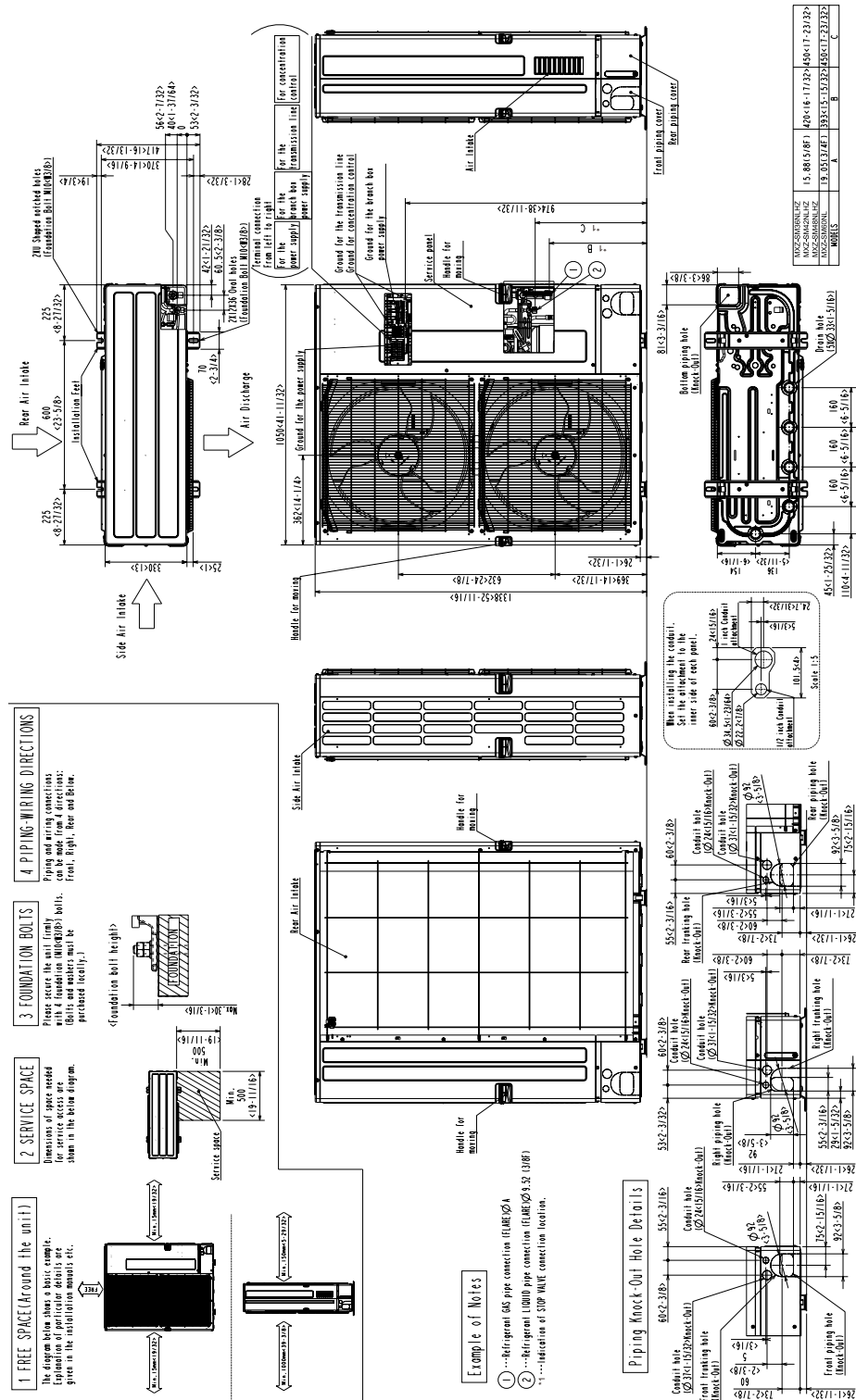
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## OUTDOOR UNIT ACCESSORIES: MXZ-SM60NL

|                                       |                                                                                           |                                        |
|---------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------|
| Mini-Split Wire                       | 14 Gauge 4 wire Armored MiniSplit Cable250 ft roll                                        | SW144-250                              |
|                                       | 14 Gauge 4 wire Armored MiniSplit Cable50 ft roll                                         | SW144-50                               |
|                                       | 14 Gauge 4 wire MiniSplit Cable250 ft roll                                                | S144-250                               |
|                                       | 14 Gauge 4 wire MiniSplit Cable50 ft roll                                                 | S144-50                                |
|                                       | 16 Gauge 4 wire Armored MiniSplit Cable250 ft roll                                        | SW164-250                              |
|                                       | 16 Gauge 4 wire Armored MiniSplit Cable50 ft roll                                         | SW164-50                               |
|                                       | 16 Gauge 4 wire MiniSplit Cable250 ft roll                                                | S164-250                               |
| Control Wire                          | M-Net Control Wire 1000 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                             |
| Branch Box                            | 3 Port Branch Box                                                                         | PAC-LMA30BC                            |
|                                       | 5 Port Branch Box                                                                         | PAC-LMA50BC                            |
|                                       | Branch Box Enclosure                                                                      | BBE-1                                  |
| Air Outlet Guide                      | Air Outlet Guide 1 Piece                                                                  | PAC-SH96SG-E (two pieces are required) |
| Mounting Pad                          | Condensing Unit Mounting Pad 24 x 42 x 3                                                  | ULTRILITE2                             |
| Centralized Drain Pan                 | Centralized Drain Pan                                                                     | PAC-SH97DP-E                           |
| Port Adaptor                          | Adaptor 1/4 x 3/8                                                                         | PAC-SJ87RJ-E                           |
|                                       | Adaptor 12 x 38                                                                           | PAC-SK88RJ-E                           |
|                                       | Adaptor 12 x 58                                                                           | PAC-SK89RJ-E                           |
|                                       | Adaptor 38 x 12                                                                           | ADP3812                                |
|                                       | Adaptor 38 x 58                                                                           | PAC-SK90RJ-E                           |
| Alarm Kit                             | Alarm Kit                                                                                 | PAC-SL54AL-E                           |
|                                       | Alarm Kit Interface                                                                       | PAC-IF55AL-E                           |
| Stand                                 | 18 Dual Fan Stand                                                                         | QSMS1802M                              |
|                                       | 24 Dual Fan Stand                                                                         | QSMS2402M                              |
|                                       | Condenser Wall Bracket                                                                    | QSWB2000M-1                            |
|                                       | Condenser Wall Bracket - Stainless Steel Finish                                           | QSWBSS                                 |
|                                       | Outdoor Unit 3-14 inch Mounting Base Pair - Plastic                                       | DSD-400P                               |
|                                       | Outdoor Unit Stand 12 High                                                                | QSMS1202M                              |
| Power Supplies & Auxiliary Components | 3-Pin Wiring Harness                                                                      | PAC-715AD                              |
|                                       | 5-Pin Wiring Harness                                                                      | PAC-725AD                              |
| Ball Valve                            | Refrigeration Ball Valve - 1/2                                                            | BV12FFSI2                              |
|                                       | Refrigeration Ball Valve - 1/4                                                            | BV14FFSI2                              |
|                                       | Refrigeration Ball Valve - 3/8                                                            | BV38FFSI2                              |
|                                       | Refrigeration Ball Valve - 5/8                                                            | BV58FFSI2                              |
| Control/Service Tool                  | Maintenance Tool Interface                                                                | PAC-USCMS-MN-1                         |
| Distribution pipe                     | Brazed Connection                                                                         | MSDD-50BR-E                            |
|                                       | Flare Connection                                                                          | MSDD-50AR2-E                           |
| Optional Defrost Heater               | Optional Defrost Heater                                                                   | PAC-SJ20BH-E                           |
| Drain Socket                          | Drain Socket                                                                              | PAC-SG60DS-E                           |
| Air Deflector                         | Vertical Air Deflector                                                                    | ADV-1                                  |
| Snow/Rain Diverter                    | SnowRain Diverter                                                                         | SRD-5                                  |
| Hail Guards                           | Hail Guard                                                                                | HG-A2                                  |
| Wind Baffle                           | Front Wind Baffle                                                                         | WB-PA3 (two pieces are required)       |
| NOTES                                 |                                                                                           |                                        |

# OUTDOOR UNIT DIMENSIONS: MXZ-SM60NL



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