

Application Note 1029: Allowable configurations of MVZ air handling units with MXZ multi-zone outdoor units

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Version **1.2** | 08/19/2016

Table of Contents

Introduction..... 3

MVZ indoor unit connection to MXZ: standard configuration (without SPTB1) 3

 Summary 3

MVZ indoor unit connection to MXZ: using the separate power terminal block (with SPTB1)..... 4

 Summary 4

Separate power terminal block (SPTB1) 4

Introduction

This application note defines the maximum number of MVZ multi-position air handling units that can be connected to the various MXZ multi-zone outdoor units in standard configuration and with the use of the separate power terminal block (SPTB1).

This document is a supplement to the MVZ and MXZ installation & service manuals as well as the SPTB1 data sheet and manual. For additional details please consult these manuals.

MVZ indoor unit connection to MXZ: standard configuration (without SPTB1)

The following table displays the maximum number of MVZ units and additional indoor units that may be connected to the various models of the MXZ multi-zone outdoor units. The table summarizes the limitations when not using the separate power terminal block (SPTB1) to power the MVZ.

Table 1: MXZ and MVZ standard configuration combination rules

		Connection method	One MVZ	Two MVZ	More than two MVZ	Additional M/S-series indoor unit	Additional P-series indoor unit	Total allowed capacity of outdoor unit (%)
MXZ-C Standard	MXZ-3C24NA/2	Port	✓ ¹	-	-	✓	-	100 ³
	MXZ-3C30NA/2	Port	✓ ¹	-	-	✓	-	100 ³
	MXZ-4C36NA/2	Port	✓ ¹	-	-	✓	-	100 ³
	MXZ-5C42NA/2	Port	✓ ¹	-	-	✓	-	100 ³
	MXZ-8C48NA	Branch box	✓ ⁴	✓	-	✓ ²	✓ ²	25 – 130
MXZ-C Hyper heat	MXZ-2C20NAHZ/2	Port	✓ ¹	-	-	✓	-	100 ³
	MXZ-3C24NAHZ/2	Port	✓ ¹	-	-	✓	-	100 ³
	MXZ-3C30NAHZ/2	Port	✓ ¹	-	-	✓	-	100 ³
	MXZ-4C36NAHZ	Branch box	✓ ⁴	✓	-	✓ ²	✓ ²	33 – 130
	MXZ-5C42NAHZ	Branch box	✓ ⁴	✓	-	✓ ²	✓ ²	29 – 130
	MXZ-8C48NAHZ	Branch box	✓ ⁴	✓	-	✓ ²	✓ ²	25 - 130

¹ MVZ 1:1 connection is not allowed.

² Additional indoor units cannot be connected when there are two MVZ indoor units connected.

³ The minimum installed capacity cannot be less than 12,000 Btu/h.

⁴ MVZ single connection is possible; however, it is NOT AHRI listed nor tested.

Summary

MXZ-3C24NA/2, 3C30NA/2, 4C36NA/2, 5C42NA/2. 2C20NAHZ/2, 3C24NAHZ/2, 3C30NAHZ/2:

- No more than one MVZ indoor unit may be connected.
- When the MVZ indoor unit is connected, the total capacity must not exceed 100%.
- When the MVZ indoor unit is connected, a P-series indoor unit may not be connected.
- MVZ single connection is not allowed.

MXZ-8C48NA, 4C36NAHZ, 5C42NAHZ, 8C48NAHZ:

- No more than two MVZ indoor units may be connected.
- When two MVZ indoor units are connected, no other indoor unit may be connected.
- When at least one MVZ indoor unit is connected, the total capacity must not exceed 130%.

All MXZ-B series multi-zone outdoor units may not be connected with MVZ indoor unit.

MVZ indoor unit connection to MXZ: using the separate power terminal block (with SPTB1)

The following table displays the maximum number of MVZ units and additional indoor units that may be connected to the various models of the MXZ multi-zone outdoor units. The table summarizes the limitations when the MVZ is powered by the separate power terminal block (SPTB1).

Table 2: MXZ and MVZ combination rules with the use of the SPTB1

		Connection method	One MVZ	Two MVZ	More than two MVZ	Additional M/S-series indoor unit	Additional P-series indoor unit	Total allowed capacity of outdoor unit (%)
MXZ-C Standard	MXZ-3C24NA/2	Port	✓ ¹	-	-	✓	-	100 ³
	MXZ-3C30NA/2	Port	✓ ¹	-	-	✓	-	100 ³
	MXZ-4C36NA/2	Port	✓ ¹	-	-	✓	-	100 ³
	MXZ-5C42NA/2	Port	✓ ¹	-	-	✓	-	100 ³
	MXZ-8C48NA	Branch box	✓ ⁴	✓	✓	✓	✓	25 – 130
MXZ-C Hyper heat	MXZ-2C20NAHZ/2	Port	✓ ¹	-	-	✓	-	100 ³
	MXZ-3C24NAHZ/2	Port	✓ ¹	-	-	✓	-	100 ³
	MXZ-3C30NAHZ/2	Port	✓ ¹	-	-	✓	-	100 ³
	MXZ-4C36NAHZ	Branch box	✓ ⁴	✓	✓	✓	✓	33 – 130
	MXZ-5C42NAHZ	Branch box	✓ ⁴	✓	✓	✓	✓	29 – 130
	MXZ-8C48NAHZ	Branch box	✓ ⁴	✓	✓	✓	✓	25 - 130

¹ MVZ 1:1 connection is not allowed.

³ The minimum installed capacity cannot be less than 12,000 Btu/h.

⁴ MVZ single connection is possible; however, it is NOT AHRI listed nor tested.

Summary

MXZ-3C24NA/2, 3C30NA/2, 4C36NA/2, 5C42NA/2. 2C20NAHZ/2, 3C24NAHZ/2, 3C30NAHZ/2:

- Standard limitations apply regardless of the using the separate power terminal block (SPTB1).
 - The SPTB1 provides a single point of power for the MVZ and an attached electric heat kit.

MXZ-8C48NA, 4C36NAHZ, 5C42NAHZ, 8C48NAHZ:

- No limitation to the number of MVZ units connected, except that the total connected capacity must not exceed 130% of the outdoor unit's nominal capacity.

When using the SPTB1, first turn on power to MVZ/SPTB1, then the branch box and then the outdoor unit, within 5 minutes. (This will avoid possibility of a communication error).

Separate power terminal block (SPTB1)

The SPTB1 provides a separate power supply to the MVZ and PVA indoor units when connected with select outdoor units. The benefits are:

- Additional indoor units may be connected to specific outdoor unit (see limitations/rules).
- Electric heat operation may remain functional when power to outdoor unit is interrupted or in error.

Note: S2 & S3 must still be connected from the outdoor unit for communication to the indoor unit. Refer to the installation manual and submittal document for more information.