

Application Note 1029: Allowable configurations for MXZ multi- zone outdoor units with ducted indoor units

Author **Mitul Patel** | Product Manager, Residential

Contributors

Version **1.3** | 05/22/2017

Table of Contents

Introduction.....	3
MVZ indoor unit connection to MXZ: standard configuration - without SPTB1	4
MVZ indoor unit connection to MXZ: with SPTB1	5
MXZ 8C60NA combination rules with ducted indoor units	6
Separate power terminal block (SPTB1)	7

Introduction

This application note defines the allowable configurations of MXZ multi-zone systems with ducted indoor units (MVZ, PEAD, SEZ). It covers:

- 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) – covers all models except the MXZ-8C60NA.
- Additional combination rules for the MXZ-8C60NA.

This document serves only as a supplement. Please refer to the following documents for additional details in order to correctly configure the entire system:

- MXZ installation, & service manuals
- SPTB1 (Separate Power Terminal Block) data sheet and manual
- [MXZ compatibility chart](#)

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 configuration combination rules – MVZ without 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	✓	-	✓ 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.

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 the MVZ indoor unit.

MVZ indoor unit connection to MXZ: 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 – MVZ with 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.

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, all within 5 minutes - this will avoid possibility of a communication error.

MXZ 8C60NA combination rules with ducted indoor units

The following rules and table explain the allowable configurations of ducted indoor units (MVZ, PEAD, SEZ) and additional indoor units that may be connected to the MXZ-8C60NA multi-zone outdoor unit.

Constraints on indoor unit and branch box installation

- The total rated capacity (cooling) of the connected indoors units must not exceed 130% of the outdoor unit capacity unless the combination falls into the categories below.
- When 2 MVZ units are connected (**not** powered by the SPTB1), other indoor units cannot be connected.
- When 1 MVZ unit is connected (**not** powered by the SPTB1), only 1 SEZ unit or 1 PEAD unit can be connected among the remaining indoor units and the total rated capacity of the connected indoors units, including the MVZ unit, must not exceed 100% of the outdoor unit capacity.
- When a 5-port branch box is connected with 1 or more SEZ units or PEAD units, the total rated capacity of the connected indoors units, including the SEZ units and PEAD units, must not exceed 100% of the outdoor unit capacity (not applicable to 3-port branch boxes)

Table 3: MXZ 8C60NA combination rules with ducted indoor units – **MVZ without SPTB1**

3-port Branch Box	5-port Branch Box	MVZ Quantity	PEAD/SEZ Quantity	Additional non-ducted indoor unit	Max. Connectable Capacity - Without SPTB1
✓		2	0	1 or more	N/A
✓		2	1 or more	0	N/A
✓		1	2 or more	0	N/A
✓		2	0	0	100%
✓		1	0	1 or more	130%
✓		1	1	1 or more	100%
✓		0	1 or more	1 or more	130%
	✓	2	0	1 or more	N/A
	✓	2	1 or more	0	N/A
	✓	1	2 or more	0	N/A
	✓	2	0	0	100%
	✓	1	0	1 or more	130%
	✓	1	1	1 or more	100%
	✓	0	1	1 or more	100%

Table 4: MXZ 8C60NA combination rules with ducted indoor units – **MVZ with SPTB1**

3-port Branch Box	5-port Branch Box	MVZ Quantity	PEAD/SEZ Quantity	Additional non-ducted indoor unit	Max. Connectable Capacity - With SPTB1
✓		2 or more	0	1 or more	130%
✓		2 or more	1 or more	0	130%
✓		1	2 or more	0	130%
✓		2 or more	0	0	130%
✓		1	0	1 or more	130%
✓		1	1 or more	1 or more	130%
✓		0	1 or more	1 or more	130%
	✓	2 or more	0	1 or more	130%
	✓	2 or more	1 or more	0	100%
	✓	2 or more	0	0	130%
	✓	1	0	1 or more	130%
	✓	1	1 or more	1 or more	100%
	✓	0	1 or more	1 or more	100%

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.