

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

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Introduction

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

- The maximum number of MVZ/SVZ 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/SVZ indoor unit connection to MXZ: standard configuration - without SPTB1

The following table displays the maximum number of MVZ/SVZ 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/SVZ.

Table 1: MXZ and MVZ/SVZ configuration combination rules – **MVZ/SVZ without SPTB1**

		Connection method	One MVZ/SVZ	Two MVZ/SVZ	More than two MVZ/SVZ	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/SVZ 1:1 connection is not allowed.

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

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

⁴ MVZ/SVZ 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/SVZ indoor unit may be connected.
- When the MVZ/SVZ indoor unit is connected, the total capacity must not exceed 100%.
- When the MVZ/SVZ indoor unit is connected, a P-series indoor unit may not be connected.
- MVZ/SVZ single connection is not allowed.

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

- No more than two MVZ/SVZ indoor units may be connected.
- When two MVZ/SVZ indoor units are connected, no other indoor unit may be connected.
- When at least one MVZ/SVZ 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/SVZ indoor unit.

MVZ/SVZ indoor unit connection to MXZ: with SPTB1

The following table displays the maximum number of MVZ/SVZ 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/SVZ is powered by the separate power terminal block (SPTB1).

Table 2: MXZ and MVZ/SVZ combination rules – **MVZ/SVZ with SPTB1**

		Connection method	One MVZ/SVZ	Two MVZ/SVZ	More than two MVZ/SVZ	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/SVZ 1:1 connection is not allowed.

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

⁴ MVZ/SVZ 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/SVZ and an attached electric heat kit.

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

- No limitation to the number of MVZ/SVZ 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/SVZ/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/SVZ, 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/SVZ units are connected (**not** powered by the SPTB1), other indoor units cannot be connected.
- When 1 MVZ/SVZ 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/SVZ 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/SVZ without SPTB1**

3-port Branch Box	5-port Branch Box	MVZ/SVZ 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	Not allowed
	✓	2	1 or more	0	Not allowed
	✓	1	2 or more	0	Not allowed
	✓	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/SVZ with SPTB1**

3-port Branch Box	5-port Branch Box	MVZ/SVZ 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/SVZ 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.