Application Note 1037

Variable Evaporating Temperature in MXZ Systems

Table of Contents

Introduction 3
How to Change the Evaporating Temperature in MXZ Branch Box Systems 3
How to Change the Evaporating Temperature in MXZ Ported Systems 4
Additional Effect of Lowering the Evaporating Temperature 4

Introduction

In some applications, it may be necessary to lower the evaporating temperature in order to provide a better regulation of humidity, especially in climates with high humidity. The purpose of this document is to show how to configure the settings on the control boards of MXZ units to achieve this change in equipment performance.
The use of the lower evaporating temperature mode should only be used in conjunction with correct sizing and installation practices. Please be sure to conduct a Manual J load calculation, utilize DSB to properly size and select equipment taking into account temperature and piping correction factors, and to install equipment following the best industry practices.

How to Change the Evaporating Temperature in MXZ Branch Box Systems

In MXZ branch box systems, namely the following model numbers: MXZ-4C36NAHZ, MXZ-5C42NAHZ, MXZ-8C48NA, MXZ-8C48NAHZ, and MXZ-8C60NA; this change can be accomplished by setting DIP switches SW6-7 and SW6-8 on the outdoor control board according to the table below.
It must be noted that the Target Evaporating Temperature for these systems depends on whether all the indoor units connected are P-Series or not, as shown in Table 1. The default initial settings, with both DIP switches in the OFF position, correspond to a Target Evaporating Temperature of 48.2°F (9°C) when only P-Series indoor units are connected, and 53.6 °F (12°C) when one or more M-Series indoor units are connected.

SW6-7			OFF	OFF	ON	ON
SW6-8			ON	OFF	OFF	ON
Target Evaporating Temperature	When only P-Series indoor units are connected	°F	42.8	48.2	51.8	57.2
		°C	6	9	11	14
	When one or more M-Series indoor units are connected	°F	42.8	53.6	53.6	57.2
		°C	6	12	12	14

Table 1. DIP-switch settings to change the evaporating temperature in MXZ branch box systems.

How to Change the Evaporating Temperature in MXZ Ported Systems

In MXZ ported systems, namely the following model numbers: MXZ-2C20NA(2), MXZ-2C20NAHZ(2), MXZ-3C24NA(2), MXZ-3C24NAHZ(2), MXZ-3C30NA(2), MXZ-3C30NAHZ(2), MXZ-4C36NA(2), and MXZ-5C42NA(2); this change can be accomplished by setting DIP switch SW2-3 on the outdoor control board to ON, as shown in Table 2 (the default setting is OFF).

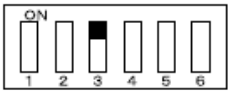
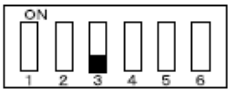
SW2	2C20NA 2C20NAHZ 3C24NA 3C24NAHZ 3C30NA 3C30NAHZ 4C36NA 5C42NA	2C20NA2 2C20NAHZ2 3C24NA2 3C24NAHZ2 3C30NA2 3C30NAHZ2 4C36NA2 5C42NA2	2C20NA2 2C20NAHZ2 3C24NA2 3C24NAHZ2 3C30NA2 3C30NAHZ2 4C36NA2 5C42NA2
		Before March 2019	In or After March 2019
	48.2°F (9°C)	48.2°F (9°C)	42.8°F (6°C)
	51.8°F (11°C)	51.8°F (11°C)	51.8°F (11°C)

Table 2. DIP-switch settings to change the evaporating temperature in MXZ ported systems.

Firmware upgrades are not available for units manufactured before March 2019. Please consult your local Mitsubishi Trane HVAC representative to confirm date of manufacture based upon equipment serial numbers.

Additional Effect of Lowering the Evaporating Temperature

It should be considered that lowering the evaporating temperature improves humidity removal and increases the rate of cooling, but also raises the power consumption and increases condensation on the indoor unit heat exchanger. When changing the target evaporating temperature from default settings, performance cannot be guaranteed to match AHRI ratings and there may be a need to upsize condensate pumps, if applicable.