

## **Application Note 1014: M-Series Dry Mode Description**

Author **Rey Bartra** | Engineer, M&P Applications and IBU

Contributors **Matt Sooy** | Sr. Engineer, Applications Tools

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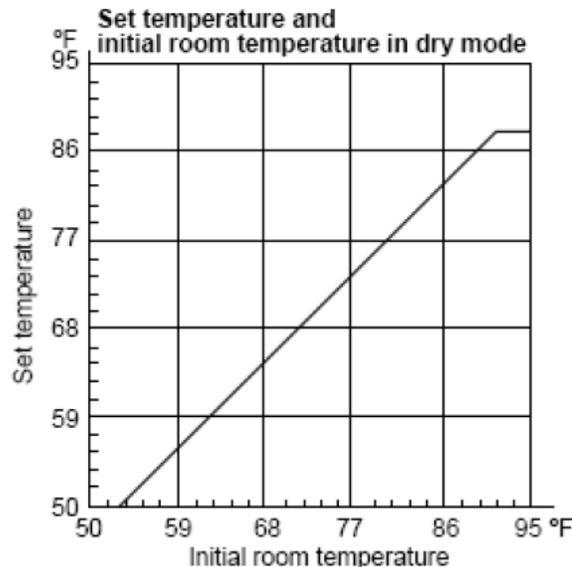
## Dry Mode Description

Mitsubishi Electric Trane HVAC US offers air conditioning equipment specifically for thermal comfort conditioning. While the units are designed for cooling and in the case of Heat Pumps for heating and not for humidity control there is a function to reduce the latent content in the air. Dry Mode is the operating mode for M & P Series and CITY MULTI indoor units used to reduce the moisture content of the air in the conditioned space served by the indoor unit – without significantly reducing the room temperature.

The reduction is accomplished by reducing the airflow across the indoor coil and controlling the temperature of the coil surface so that the surface remains slightly below the dew point of the return air. The coil temperature is maintained by a combination of time based compressor or LEV – Linear Expansion Valve – operation, temperature output information from the smart coil and room temperature sensor input.

Dry Mode is available on all of the Mitsubishi Electric Trane HVAC US indoor units and is selectable on M & P Series via the unit’s Remote Controller (Wired or Wireless) or in the case of CITY MULTI by the local controller or central controller.

Dry Mode is selected by pressing the MODE button until the display reads “Dry”. In M-Series, the set temperature is then determined based on the initial room temperature, according to the chart in Figure 1.

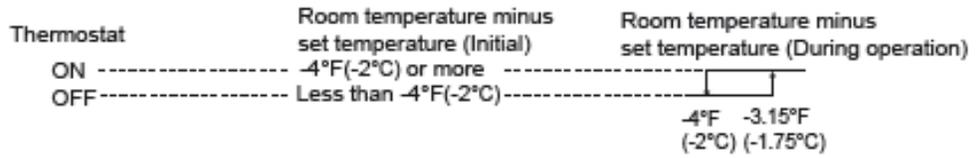


**Figure 1.** The relationship between room temperature and set temperature

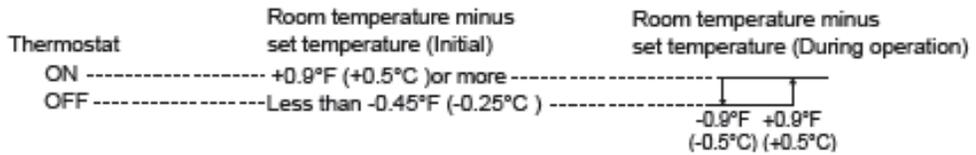
The compressor, the LEV and the indoor fan are controlled by the room temperature. By such controls, the indoor air flow will be reduced in order to lower humidity without much room temperature decrease.

The thermostat turns ON or OFF by the difference between room temperature and set temperature, as indicated in Figure 2 (this is different in MLZ series depending on connected outdoor units).

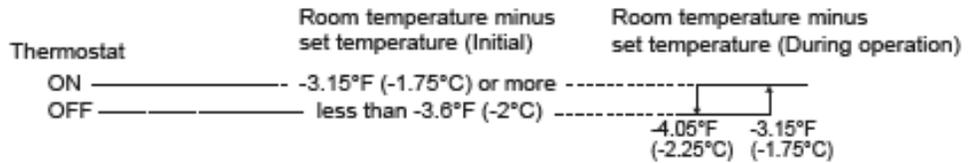
<MSZ-EF09/12/15/18NA, MSZ/MSY-GL18NA>



<MFZ-KJ-NA>



<Other models>



**Figure 2.** Thermo ON and OFF targets in Dry Mode.

Dry Mode uses the same refrigerant circuit and the same coil frost prevention (defrost) as the Cool Mode.