APPLICATION NOTES

MITSUBISHI ELECTRIC
COOLING & HEATING
Live Better

Application Note 3022:

Automation System Interfaces

CITY MULTI has the capability to be controlled by an external automation system using either LonWorks® or BACnet®. LonWorks® and BACnet® are the only two protocols that can be used to interface with the CITY MULTI equipment and an automation system (BMS/EMS/*Home Automation).

The LonWorks® interface requires LMAP03U. The BACnet® interface requires the SW-BACnet software license for the AG-150/GB-50ADA and a field-supplied PC with 2 LAN ports running the BACnet IF software.

Using the M-NET converter (PAC-SF81MA) will allow the Mr. Slim P-Series to also be controlled by an automation system via the LonWorks® or BACnet® interfaces.

CITY MULTI and Mr. Slim P-Series can also receive an external Enable/Disable signal through the connectors (CN32 or CN51) on the indoor unit. These connectors allow for applications such as enabling the indoor unit based on an occupancy sensor, disabling the indoor unit when a window is open, etc.

Using the M-NET converter (MAC-399IF) will allow the Mr Slim M-Series to also be controlled by an automation system via LonWorks® or BACnet® interfaces.

The Mr. Slim M-Series can receive an external Enable/Disable signal by breaking S1, S2, and S3 at the indoor unit or at L1 & L2 of the outdoor unit. Breaking these terminals would allow an automation system the ability to schedule (On/Off) the Mr. Slim M-Series units.

The following are some items for consideration when determining the control strategy when using either the LonWorks® or BACnet® interfaces.

Local control

The integration is typically the last milestone associated with a project. The systems will typically be in operation long before the LonWorks® or BACnet® control is connected. Often the automation system's front end workstation will be remote (i.e. across campus) from the equipment. Local control allows the system to be controlled from the location in which it is installed. Without local control some functions may not be available if they are not under the control of the automation system (ex: vane direction, fan speed, etc).

Both Remote Controllers and Centralized Controllers are recommended for use with LonWorks® or BACnet® interfaces.

Scheduling

For ease of use and troubleshooting it is best to pick one method of scheduling and only use that method for scheduling. We recommend allowing the automation system to handle the scheduling functions. With the "last command wins" architecture of the CITY MULTI controls it will be possible to change the operational parameters (On/Off, Mode, Set Temperature) from the Remote Controller level, Centralized Controller level, or via the automation system through the LonWorks® or BACnet® interface. The system will return to the scheduled parameters the next time the automation system sends a scheduled set of commands.

The automation system should also manage the prohibiting and permitting of functions.

*Note:
Home Automation integration possible with Crestron and AMX with their field supplied integration modules.