

# The Control Zone

Total Solution for all your Control Needs



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From the Desk of the President:

Typical Florida, hot weather months are approaching fast in the sunshine state. While we enjoy warmer winters, we do have to pay in the summer months. It's a good time to think about how well your Building Control System handles these temperature humidity changes. MCS provides specifications sheets outlining the necessary information concerning temperature and humidity for our Boards, LCDs and Touchscreens. Consider a larger enclosure with more open space to give the hardware more breathing room.



## MODBUS PROTOCOL

### EXACTLY WHAT IS MODBUS?

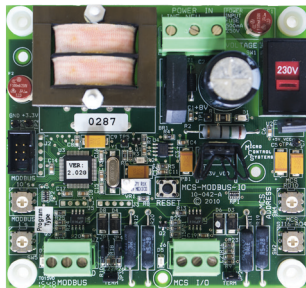
Modbus is a communication protocol developed in 1979. In simple terms, it is a method used for transmitting information over serial lines between electronic devices. The device requesting the information is called the Modbus Master and the devices supplying information are Modbus Slaves.

Modbus is an open protocol, meaning that it's free for manufacturers to build into their equipment without having to pay royalties.

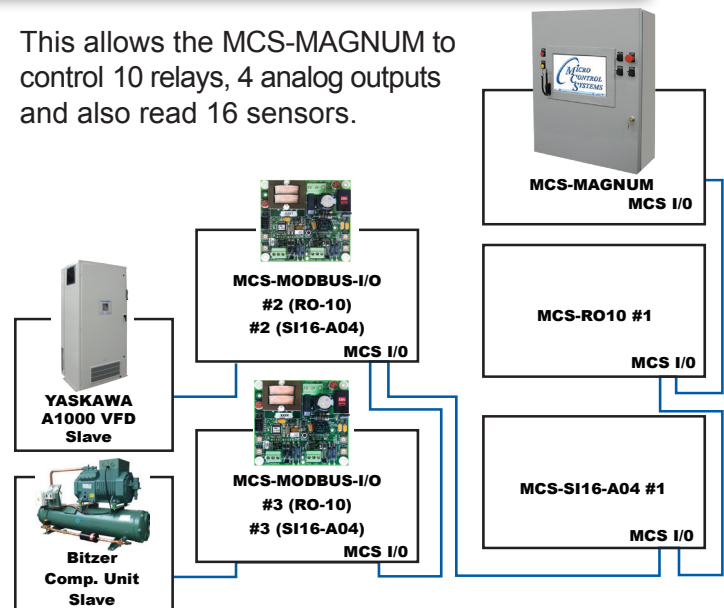
### MODBUS AND MCS

The MCS-MODBUS-I/O gives the MCS-MAGNUM the ability to act as a Modbus Master using the Modbus RTU Protocol. This allows the MCS-MAGNUM to communicate to Modbus slave devices (such as Variable Frequency Drives, Compressors, etc.) to send and access parameters from the slave devices.

The MCS-MODBUS-I/O performs like an MCS-RO10 and an MCS-SI16-AO4 to the MCS-MAGNUM.



This allows the MCS-MAGNUM to control 10 relays, 4 analog outputs and also read 16 sensors.



Multiple MCS-MODBUS-I/O boards may be connected to the MCS-MAGNUM following MCS-I/O standards.

MCS-MODBUS-I/O has the capability to be configured with MCS-Connect to communicate with any Modbus slave devices that support Modbus RTU Protocol.

The MCS-MODBUS I/O has 99 'PROGRAM SELECT TYPES'. Ten (10) slave devices have been pre-programmed into the firmware for common slave devices. Number 9 has been set aside for 'USER' to set up custom configurations for slave devices that have not been pre-programmed. The balance of the program switches are for future use and development on the MODBUS I/O.

### In this Issue . . .

- **MODBUS PROTOCOL**
- **MCS FAST SSH**
- **HUMIDITY CONTROL**
- **MCS FAMILY**

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## MCS FAST SSH

In addition to the Standard Suction Superheat Control MCS has just released a new Fast Suction Superheat Algorithm designed to react quickly to system changes as well as teach itself valve opening position.

Fast SSH can be used with Direct Expansion systems: (Chiller Barrels, Plate heat exchangers, Remote evaporators, Roof top units, etc.)

### Maintains Suction Superheat and Anticipates Changing Conditions

- Holds Superheat to a Target
- Can teach itself valve starting position
- Reduces Config Setup time
- Fine Tuning using only 3 Adjustable Set Points
- Eliminate Low Superheat Safeties
- Eliminate Low PSI Safeties
- Designed to handle Condenser Capacity changes
- Designed to handle Compressor Capacity changes



### Other Fast Superheat Algorithms Under Development at MCS

- |              |                          |
|--------------|--------------------------|
| Fast DSH     | DISCHARGE SSH CONTROL    |
| Fast EVPLVL  | EVAPORATOR LEVEL CONTROL |
| Fast CNDLVL  | CONDENSER LEVEL CONTROL  |
| FAST SUBCOOL | ECONOMIZER SSH CONTROL   |

(Fast DSH, Fast EVPLVL and Fast SUBCOOL are currently being field tested)

#### *Inspiration for today . . .*

Opportunity is missed by most people because it is dressed in overalls and looks like work.

There is no substitute for hard work.

Thomas A. Edison

## Did you Know?

### HUMIDITY

#### MCS-CONTROLS OPERATING HUMIDITY 0-95% RH NON-CONDENSING

“Non-condensing” a vapor that is not changing to a liquid. Does not undergo or cause condensation.

#### Enclosure Temperatures Rise

Research has shown for every 18° F (10° C) rise above normal room temperature 72° - 75° F (22° - 24° C), the reliability of electronic components is cut in half.

The size of the enclosure and the number of electronic boards installed plays an important part in what the overall temperature of the enclosure will be.

When designing niche environmental control units, it's important to know the typical and extreme conditions the system will be operating in. Water forming inside a system can obviously cause a lot of problems.

Larger enclosures with room around the electronic components help decrease the heat build up in the enclosure.

Consult with sales@mcscontrols to help with building of your enclosures.

## MCS Family

*Our employees are one of the greatest assets we have.*



**Jonathan Narvaez**

Jonathan joined the MCS team in 2010 and is part of the MCS Technical Support group responsible for the MCS micro controller's support and field installation.

Education: Associate of Science degree in Electrical Engineer, Graduated from ITT in 2016.

#### *Jonathan's thoughts on MCS:*

*Great Company, beautiful family, they give you the opportunity to grow if you are willing to dedicate your time. MCS is a very progressive and growing company, which provides the best environment for every employee.*



**MCS Energy Efficient  
and RoHS Compliant**

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