mCerberus™

MCB-400 Delta T Air Conditioning Monitoring System

RT Automation

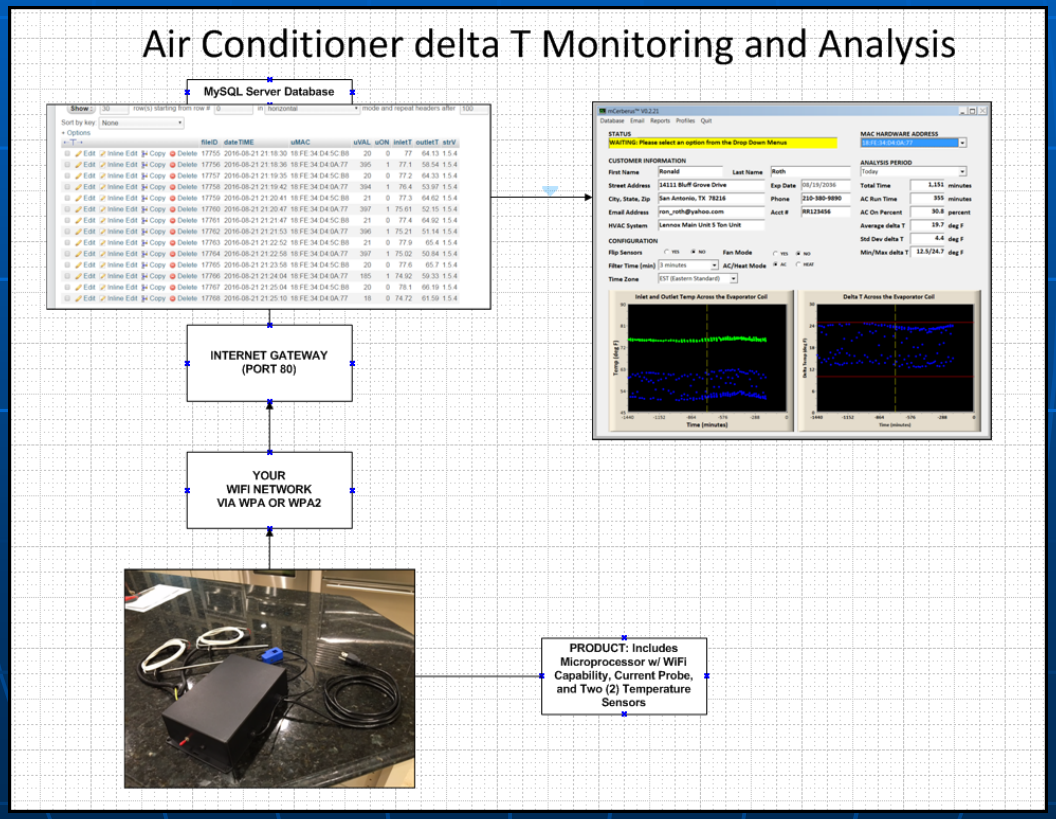
September 14th, 2016

Application

- As part of an Air Conditioner install or maintenance check – it is common for the delta T across the evaporator coil to be measured
- The general rule of thumb is that the delta T across the evaporator coil should be 10 to 25 degrees F at steady state
- The product developed is a kit that can be installed on any air conditioning system. It consists of the following:
  - Microprocessor w/ WiFi capabilities
  - Two temperature sensors
  - One current probe (determines if the AC is running or off)
  - MySQL database
- The Product takes measurements every one minute.
- A backend application analyzes the data and determines the current state of the equipment
- Filtering of the data is required in order to determine when the AC is at a “steady state” condition
- If the filtered data “delta T” mean is above or below some established set point – then maintenance of the system is indicated

Flowchart of Application

- Hardware System records/stores AC data on MySQL Server
- Backend Office Program is used to analyze data



Installation of Hardware

- Install Inlet Temp Sensor
- Install Outlet Temp Sensor
- Connect AC Current Clamp to Incoming Power to Air Handler
- Connect Power Cord to 120VAC
- Turn ENABLE switch to ON

mCerberus™ V0.3.160 ADMIN MODE

Database Reports Profiles Rise Time Quit

STATUS

WAITING: Please select an option from the Drop Down Menus

MAC HARDWARE ADDRESS

18:FE:34:D4:0A:77 [Homeowner, Jo

CUSTOMER INFORMATION

First Name	John	Last Name	Homeowner
Street Address	1234 Homeowner Address	Exp Date	08/19/2036
City, State, Zip	San Antonio, TX 78216	Phone	210-555-1212
Email Address	homeowner@yahoo.com	Acct #	RR123456
HVAC System	Lennox Main Unit 5 Ton Unit		

CONFIGURATION

Flip Sensors ○ YES ◉ NO

Fan Mode ○ YES ◉ NO

Filter Time (min) None

AC/Heat Mode ◉ AC ○ HEAT

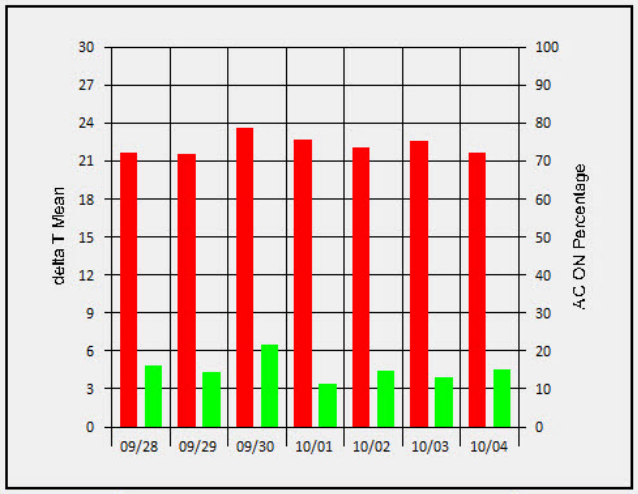
Time Zone CST (Central Standard)

ANALYSIS PERIOD

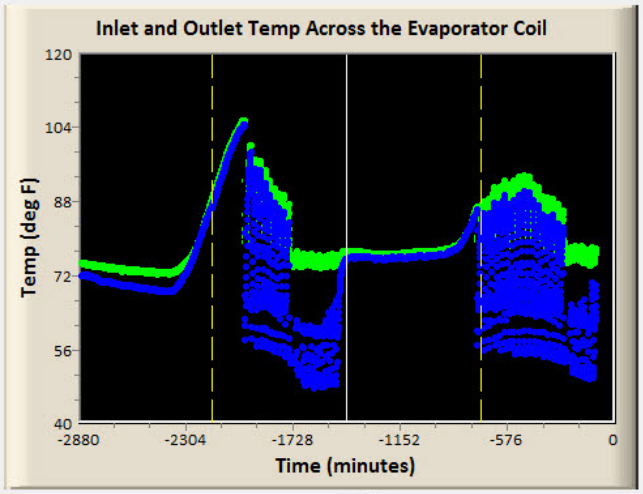
Today/Yesterday

Total Time	2,786	minutes
AC Run Time	388	minutes
AC On Percent	13.9	percent
Average delta T	22.1	deg F
Std Dev delta T	3.1	deg F
Min/Max delta T	11.2/26.4	deg F

AC Monitoring Status

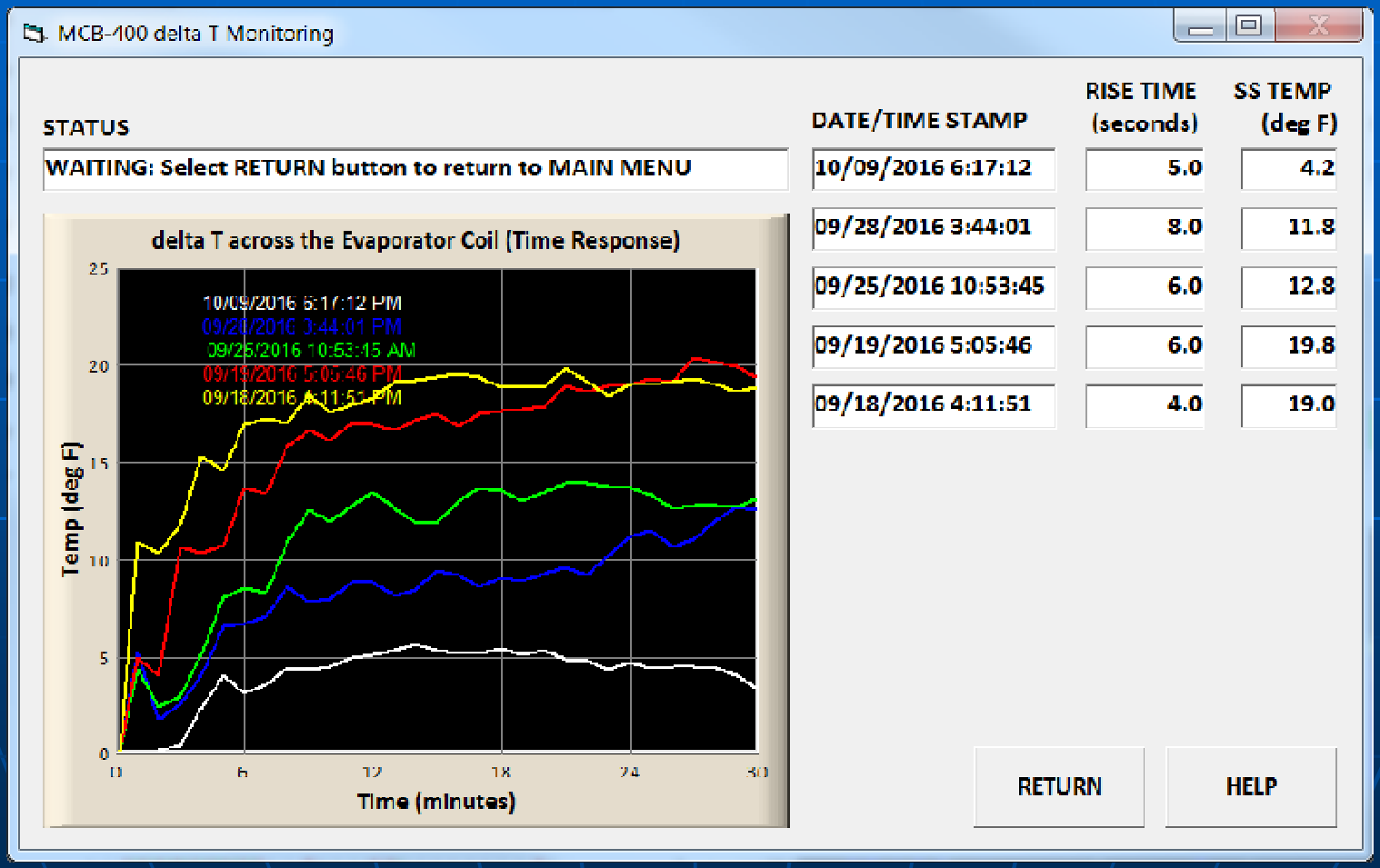


delta T AC ON %



Inlet and Outlet Temps

Rise Time Analysis



Contact Info

RT Automation
210-380-9890
sales@mcerberus.com