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MCS-CONNECT

Manual and Installation Guide Includes Graphics

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See Appendix section in back of Manual for quick steps for some MCS-CONNECT functions



Energy Efficient and RoHS Compliant

MCS Total Solution for all your Control Needs

The MCS Commitment is to provide practical solutions for the industries needs and to be both a leader and partner in the effective use of microprocessor controls.

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Chapter - 1. Introduction

<u>MCS-CONNECT</u> software is part of the MCS Support System. Its purpose is to provide both local and remote communication for MCS micro controllers either by themselves or as part of a network.

MCS-CONNECT supports the following controllers:

- MCS-MAGNUM controller
- MicroMag controller
- MCS-8 controller with firmware version # (call MCS-SUPPORT)
- MCS-6 controller (limited with firmware)

MCS-CONNECT permits the user to monitor the status of the micro controller in real time and, with proper authorization, changes can be made to the system. In as fast as 10 seconds configuration files can be transmitted to or received from a MCS micro controller.

Another powerful feature of MCS-CONNECT is its ability to graph event history. Since MCS controllers automatically perform history logging, the user can select which inputs or outputs to graph and view the results either in real time or over a user selectable period of time.

MCS-CONNECT supports the SAVE of history data in the GRAPH function as a *.txt file. This allows the user to bring the data up in MCS-CONNECT offline or in a spreadsheet program such as Microsoft Excel.

Updates for MCS-CONNECT can be downloaded directly from the MCS website under "Support", PC Software.

The program is available as Microsoft Windows based software or as Linux based software.

This manual was created using Adobe Indesign. An approved OEM of MCS may obtain a copy of this manual in PDF format and make copies or change sections of this manual to develop custom documentation for a site where an MCS controller is installed. In this way, MCS supports the documentation requirements of individual customer sites.

1.1. About MCS Controllers

The MCS controllers are rugged microprocessor based controllers that are designed for the hostile environment of the HVAC/R industry. They are designed to provide primary control, no mechanical controls; interface with building management systems; communicate both locally and remotely.

The MCS controllers provide flexibility with set points and control options that can be selected prior to commissioning a system or when the unit is live and functioning. Displays, alarms and other interfaces are accomplished in a clear and simple language that informs the user as to the status of the controller.

The MCS controllers are designed to safeguard the system that is being controlled, eliminate the need for manual intervention and to provide a simple but meaningful man-machine-interface.



Additional information on the setup and using MCS-CONNECT can be found on our web site. A Powerpoint presentation can be found at:

https://mcscontrols.com/Documents/MCS/Presentations/MCS%20Connect.pps

Chapter - 2. PC Requirements & Product Features

To install and run the program we suggest the following minimum system requirements:

- PC with a Pentium2-class or higher processor
- Windows 7 or later operating system or Linux operating system
- Minimum 1GB of RAM
- Minimum 4GB Drive
- 14.4k baud modem or higher for remote communications
- 1280 x 800 pixel or higher display
- Ethernet 10/100/1000
- USB port 2.0 or higher

MCS-CONNECT PRODUCT FEATURES

- Java application runs on Windows/Linux
- Local communication @ 19200 baud
- Local Ethernet @ 10/100 MBPS
- Remote communication via phone or Internet
- Email/Test Message alarm alerts
- Auto Print to file on alarms
- Daily Scheduled Print to Files
- Temperature and PSI Conversion Wizard
- Extended History File Save (MCS-MAGNUM 1008 Samples) (MCS-MICROMAG 300 Samples)
- Interactive P/T Chart
- Lookup Tables
- Hide / Show Applicable Data
- Diagnostic Save/Auto-Send
- Window/Grids auto sizing based on screen resolution
- Customizable Workspace saving allow easy recall of window position & sizing
- Algorithm control states display
- Static & dynamic graphing / trending data
- Alarm retrieval & handling these items can be printed and saved to PC for analysis and backup
- Manual / Auto mode control
- Setpoint modification
- Schedule modification
- Multiple authorization levels for security
- Runtime / Cycle count information
- Transmit / Receive configuration in as fast as 10 seconds
- Sensor Diagnostics
- Graphic Interface Sub List
 - 1. Customized to application
 - 2. User Customizable Gauges
 - 3. State Based Color and Image changes
 - 4. Animated device—pump rotating, comp moving, fan spin, etc.
 - 5. Easy view and access via graphic interface

Chapter - 3. Setting up Communication with Controllers

The MCS 485 Network can support up to 20 MCS controllers. Access to the network can be local or remote via a 14.4K Baud modem. The PC connected to the network should be running at least Windows 7 or higher with MCS-CONNECT V17 or higher.

Each MCS controller in the network must be assigned a unique software network address. With proper authorization, this can be setup using a MCS controller and LCD/Keypad. This address will be the key in establishing communications with the appropriate MCS controller. This address can be changed from the LCD / keypad. (It is suggested that network addresses start with 1. This will allow any unit that has not had the address changed since leaving the factory to be accessible at address 0, which is the default.)

3.1. REMOTE - DIALUP - USING MCS-WIRELESS MODEM

(Note, MCS controllers can be on the same network. Network addresses must be unique)



See Label for actual settings

3.2. LOCAL CONNECTION USING CROSSOVER ETHERNET CABLE



3.3. NETWORK RS-485 CONNECTION



Chapter - 4. Installing MCS-CONNECT

4.1. Downloading from our Website

The latest versions of MCS-CONNECT can be downloaded from our website by going to: http://www.mcscontrols.com/software.html

Navigate to MCS-CONNECT and choose the Windows or Linux version of the software.

MCS-CONNECT-WINDOWS and LINUX communicates with MCS-8, MCS-MAGNUM, and MicroMag micro controllers.

4.1.1 **• VIEW ONLY VERSION**

This version is available to all OEM, Contractors, Installers and their personnel for downloading to their computers or laptop.

Changes <u>cannot</u> be made to a system when using this version. It is used for 'VIEW' only.

4.1.2 **AUTH CODE VERSION**

If you are an authorized OEM, Contractor, or Installer using Mirco Control Systems, you can be authorized to download this version of the software.

Changes can be made to your system when using this version.

Contact MCS for the authorization code needed.



The software contained on our website is the latest official release of MCS-CONNECT for Windows and Linux versions.

We post 'BETA' versions of the software here also. This is software that is being tested in our plant and is made available for testing in the field before its general release to OEM's, Contractors and Installers.

These are full install versions and does not require previous versions to have been installed. To install the software, first download (Save) the file to your computer or flash drive.

If installing on our Touchscreens, move the installer to the touchscreen via network or flash drive. Then run it by clicking on the downloaded file and following the instructions given.



IMPORTANT!!

Prior to making any changes to your Touchscreen, read the application notes which are posted to our website on upgrading.

CLICK

APP113-UPGRADING MCS-CONNECT ON TOUCHSCREEN

Prior to upgrading MCS-CONNECT make sure your firmware and Graphics are up to date Consult MCS for support





Once downloaded, locate that file and run it. You will then see a dialog box similar to the following:

Now click the 'Next' button. Simply follow the instructions presented in order to complete the installation.



4.2. Competing Installation

Once installed, MCS-CONNECT is ready to be executed. The PC must be connected to an MCS controller or a MCS network by one of the following:

- Locally with a MCS-USB-RS485 cable connected from a USB port on the PC to the RS-485 port on the MCS controllers.
- MCS-485-GATEWAY with MCS-USB-RS-232 cable to USB port on PC
- Ethernet port using crossover cable connection
- Remotely with a PC that has a 14.4-baud modem and a phone line that is available to the PC.

NOTE: TO MAKE FIRMWARE CHANGES TO A CONTROLLER FROM MCS-CONNECT, YOU MUST BE LOCALLY COMMUNICATING WITH THE CONTROLLER.

4.2.1 MCS-CONNECT Icon - Window's Start Menu

Find the MCS-CONNECT Icon on your desktop or in the Window's Start Menu to launch the program.

This is the Main user interface for MCS-CONNECT.

Setup Offline Help			
Castal	-Local Netwo	rk Connections	Ethomat
Senai			Ethemet
Site Name	-Remote Netw	ork Connections—	
vew Site	-	Conn	ect Remotely
	O Dialup	O IP (Internet)	O IP Lantronix



Chapter - 5. Setup Options for MCS-CONNECT

5.1. Finding your Communication Ports on your PC.

MCS-CONNECT defaults to COM1 for Local communications and COM2 for Remote communications. Local communication refers to a direct connection between your PC and the Unit, whereas Remote communication refers to communication via your modem. If your PC uses a different port, use the button to select the appropriate port.

To find your PC's com port before starting setup for MCS-CONNECT:

For Microsoft Windows 7:

- 1. At your desktop, left click on Start.
- 2. Left click on Control Panel button.
- 3. Click on Device Manager.

(

4. Left click on Ports (COM & LPT) to see Port information.



5.2. MCS-PC-CONNECT Communication Setup

Before a serial connection can be made to an MCS controller the COM (communication) PORT must be selected. To select a COM PORT for communication, choose the Setup menu option and then choose Communication,

General Options			Ethernet
Network Options	Remote Network Connections		
Extended History Alarm Alerts		Conne	ect Remotely
Schedule Diagnostic Save) Dialup	O IP (Internet)	O IP Lantronix

Next screen shows com ports - make changes as per your computer's communication ports and save these changes.

mmunications General	Tables Network Exte	ded History Alarm Auto-Print Alarm Alerts
LOCAL Comm.	COM Port Selection	REMOTE Comm. COM Port Selecton
Use the arrow keys to select t COM Port for LOCAL commun through Com 99 are supporte	he appropriate ications. Com 1 d.	Use the arrow keys to select the appropriate COM Port for REMOTE communications. Com 1 through Com 99 are supported.
Communication Time	rs and Message Indicators —	Baud Rate
Base Timer	EOM Timer	19200 Magnum Message Sizes (Max=1024)-
250	1.000	38400 Serial Comm
7 250	1,000	O 57600 1.000 - 650 -
		0 115200
Modem Delay	SOM Timer	
500	1.000	Initialization of the Modem's Dialing Command String
*	*	AT&F&C1&D2I 300V1X4M150=057=60
1		
Course		Cancel

5.3. PC Communication Speed & Wait Timers

Base Timer: Time is length of wait before windows activates the main program loop where the normal communications occur. (Mouse clicks also cause an interrupt to the program to handle that function.)

SOM Timer: Timer is used to perform two functions:

When the system is scanning the network for active MCS controllers, this is the wait time before that address is considered not to have an active controller. When a controller is found or this amount of time has expired the system moves to the next network address.

Once communication has been established, the system will wait this length of time for a valid start of message (SOM) from the controller in response to a message request. If none is received, the system will retry and extend this time. Three retries are attempted before an error is reported. (Note that when communicating with an MCS-8 controller you should set this value to 1000 or greater to ensure proper communication.)

EOM Timer: Once a valid SOM has been received, the system will wait this length of time to receive a valid end of message (EOM) from the communicating controller.

5.4. PC Communication Modem - Remote

Modem Delay: Used only with remote communications. Once the PC's modem has been

verified that it is active, on the COM PORT specified and the dial string has been sent to it, the system will wait this length of time for the response from the called modem. This is used only

for the first response after communications has been established the SOM and EOM timers are used. The SOM timer will be extended with remote communications.

5.5. Initialization Dial String

If you have a standard "Hayes" compatible modem, no changes are required. If not, you must locate (your modem's manual) and enter the equivalent values.

Note: Try AT&F if default string does not work.

Once you have set the modem initialization command string you should select the 'Save'

button. If you want to abandon the change you should select the 'Cancel' button.



Communications can now be established.

5.5.1 Local Communication Errors

No modem detected or Comm Port initialization error - Can occur in either the

local or remote modes. The COM PORT cannot be initialized. Check the COM PORT setting to determine if the correct port, base address and IRQ has been selected. A malfunctioning COM PORT on the PC can also cause this error.

This can be checked by executing a Windows terminal program and then shorting pins 2 and 3 together on the cable. Any characters that are typed at the PC will appear on the screen of the PC if the port is functioning. The following message will be displayed:

Failed To Open Comm Port				
Please Check Comm Port Number				
ок				

COM PORT is in use - Can occur in either the local or remote modes.

COM PORT is not available, it is busy - This can occur if another MCS-CONNECT is running on the network or another program is using the requested COM PORT. When this condition occurs the above message will be displayed:

MCS-CONNECT

5.6.

The site name can be up to 20 characters. The comment field, which is 20 characters, is used to store additional information about that site.

New sites can be added by entering the site name, filling in all information based on

connection type and then clicking on the 'Save Site' button.

Existing sites can be modified by selecting the site; the telephone number and

comments field will be displayed for that site.

The information in any of these fields can be modified. Once the fields have been updated, click on the 'Save Site' button. The site information will be updated. Existing sites can be deleted by selecting the site and then clicking on the 'Delete Site' button.

Site Name

DONS SITE

Print

Clear

MCS-Connect 17.09.00 Beta

Serial

le Setup Offline Hel

site Na

MCS SITE

Save Site

Delete Site

Print

Clear

5.7. **DIALUP** -

If you are setting up communications with a controller using a modem, click on the button 'DIALUP'. Setup your 'SITE NAME', 'PHONE NUMBER', and 'SITE COMMENTS', click 'SAVE SITE'.

Up to 200 phone numbers are supported. Each phone number is accessed via the Site Name drop down list.

The phone number can be up to 30 characters, thus enabling phone cards to be used.

Once the 'Connect Remotely button' is selected the following pop-up appears: (only if 'Dial up'.) There is an opportunity to hang-up the modem's phone line by clicking the 'Cancel' button at anytime during this procedure.

A "Successful Connection!" message will be displayed if the PC modem successfully connects to the MCS controller.

5.7.1.1. **Remote Communication Errors**

No modem detected or COM PORT initialization error – Can occur in either the local or remote modes. The COM PORT cannot be initialized. Check the COM PORT setting to determine if the correct port, base address and IRQ has been selected.

A malfunctioning COM PORT on the PC can also cause this error. This can be checked by executing a Windows terminal program and then shorting pins 2 and 3 together on the cable. Any characters that are typed at the PC will appear on the screen of the PC if the port is functioning.

The following message will display:



Local Network Connections

Remote Network Connections

-

192.000.000.1

O IP (Internet)

eth3

O Dialur

Port Number 5001

te Comments



Dialing 33	4-8871	Call Failed
ОК		

Ethernet

Connect Remotely

. IP Lantronix

To establish remote communication select the option 'DIALUP', 'IP (INTERNET)' or 'IP LANTRONIX'.

5.7.1.2. IP (Internet)

You can setup a remote Network connection using the IP address of the controller you are communicating with. Click on 'IP (Internet)', enter the 'IP Address', 'Port Range', (if you know the range is within a set of numbers, click on 'Default Port Range' to search that range of numbers only). Add any comments about the site, click on 'Save Site'.

5.7.1.3. IP LANTRONIX

If you are setting up communicating with a controller that has a RS-232 port, you can use a MCS-ETHERNET (Lantronix) .

Site Name	Remote Network C	Connections
MCS SITE	eth3	Connect Remotely
Save Site	O Dialup @	P IP (Internet) O IP Lantronox
Delete Site	IP Address: 19	2.000.00.0 to none
Print	Site Comments	
Clear		REMOTE USING IP ADDRESS & PORT RANGE

The MCS-ETHERNET is a single-port RS-232 to Ethernet device server (pre-programmed at MCS) that allows MCS-CONNECT to communicate with a MicroMag or MCS-8 over a LAN or the Internet (requires a static IP). Click on 'IP LANTRONIX, setup 'Site Name', 'IP address of controller', and any comments about this controller, click 'Save Site'

Site Name	Remote Netw	ork Connections	
MCS using IP Lantronix		Connect Remotely	
Save Site	O Dialup	O IP (Internet) IP Lantronix	
Delete Site	IP Address: Port Number 500	192.000.00.0)
Print	Site Comments		
Clear	Special setup using Llantro	nix, connecting to MicroMag or MCS-8	
		REMOTE, CONVERTING ETHERNET TO RS-232 IP ADDRESS & PORT RANG	E

5.8. General Setup Options

Authorization Keypad

Default 'Hide Keypad' - option to 'Show Keypad' If you are using a computer to communicate with MCS-CONNECT you can use the computer keypad and hide MCS-CONNECT keypad.

Exception Popups

Default 'Exception popups OFF'

Inactivity Shutdown Timer

Allows the user to set a time when MCS-CONNECT will shut down due to "INACTIVITY'. Time can be set from 5 to 30 minutes.

Turbo Download

Default "ON' - (provides Faster baud rate communication during firmware transmission

Default Workspace Selector

You have an option when working with different controllers to setup a custom workspace. You can choose this option in the 'MENU BAR' once connected to a controller. See additional information under 'MENU BAR SETUP.

Options Setup Screen	
Communications General Tables	Network Extended History Alarm Alerts
Authorization Keypad	Exception Popups
Inactiv	ity Shutdown Timer Turbo Download
Default Workspace : Dons Quad	Graphic Device Info Screen
Auth	MCS-PC Connect Communication Setup Screen MCS-PC Connect Communication Setup Screen Communications General Tables Network Extended History Alarm Auto-Print Authorization Keypad Exception Popups Exception Popups Exception popups OFF
	Inactivity Shutdown Timer
OPTION FOR CHOOSING CUSTOM WORKSPACE THAT WAS SETUP WHEN CONNECTIN TO A CONTROLLER	IG
	Save

Authorization Reset Timer

This allows the user to set a 'timeout', time to revert to a View Only authorization level.

Authorizati	on Keypad V Hide Keypad	Exceptio	n Popups Exception popups OFF
Enabled Disal	Inactivity Shutdo	wn Timer-	Turbo Download-
Default Workspace :	efault Workspace Selecto Default	r	
🗹 Enabled 🛛 Disal	Authorization Re Ded Minutes before	eset Timer Authorization Reset 5	

5.9. Tables Options

Alarm Table	Show All Alarms	Table Font Size
Spare Row Display in Tables	Default RO Table	This Setting only affects Magnum V14 and MicroMag SW versions.
	Default SI Table	
	Default AO Table	

5.9.1 Alarm Table

Choose to show 'ONLY LOCK-OUT ALARMS' or 'SHOW ALARMS'

5.9.2 Table Font Size

Only affects Magnum V14 MicroMag SW versions.

Default 'Small'

	Alarm	Date	Tme	Addition:						
1	COMPUTER RESET	DEC 09	16:34:19			Alarma Statistics				
2	SI MANUAL #M-16	DEC 07	20:07:27							
3	LOCKOUT RESET	DEC 07	20:05:49							
4	SI MANUAL #M-2	DEC 07	20:05:44							A
5	HIGH LEV TMP #1	DEC 07	20:05:21		#	Alarm		Date	Time	
6	SI MANUAL #M-2	DEC 07	20:05:12			7.041111		Date	1005	
7	ALARM HiTmpWarn	DEC 07	20:03:03		1	CHW LOW FLOW	#1-A	OCT 18	18:09:37	
8	SI MANUAL #M-2	DEC 07	20:03:02							
9	SI MANUAL #M-5	DEC 07	20:02:42							
0	LOCKOUT RESET	DEC 07	19:58:20							
11	SI MANUAL #M- 2	DEC 07	19:58:15							
12	HIGH LEV TMP #1	DEC 07	19:58:02	100 million (1990)				(ΟΠΤ ΔΙ Δ	RMS'	
13	ALARM HiTmpWarn	DEC 07	19:56:54	1 mar 1 mar			LOOP			
14	LOCKOUT RESET	DEC 07	19:56:49							
15	HIGH LEV TMP #1	DEC 07	19:46:08	1.1			•	UNLY		
16	ALARM HiTmpWarn	DEC 07	19:45:00							
17	LOCKOUT RESET	DEC 07	19:44:54							
18	HIGH LEV TMP #1	DEC 07	19:44:17							
19	ALARM HiTmpWarn	DEC 07	19:43:09							
20	LOCKOUT RESET	DEC 07	19:43:03							
21	HIGH LEV TMP #1	DEC 07	19:41:46							
22	ALARM HiTmpWarn	DEC 07	19:40:38							
23	SI MANUAL #M-16	DEC 07	19:40:37							
24	SI MANUAL #M-16	DEC 07	19:40:32							
25	ALARM HiTmpWarn	DEC 07	19:40:18							
26	SI MANUAL #M-16	DEC 07	19:40:17	-						
27	SI MANUAL #M-16	DEC 07	19:40:02							
28	ALARM HiTmpWarn	DEC 07	19:39:41			I SHOWS 'A		ARMS' I		
29	SI MANUAL #M-2	DEC 07	19:39:41			1 5.15110 /1	/			
80	SI MANUAL #M-14	DEC 07	19:32:24					/NI		
						то ог		.e 🖌	•	
						■ 10 SF	FIVIOR	'F 🚩		

5.9.3 Spare Row Display

Screen below shows 'Hide Spare Rows' -

'Default Show Spares'

•	RO#	Relay Outputs	Value	Manual Status	Last On	Last Off	Run Today	Cycles Today	Run Ydy	Cycles Ydy	Total Run Hrs	Total Cycles
T	M-1	COMP 1	OFF	AUTO	00:00:00	16:18:29	00:00:00	0	00:00:00	0	0.00	0
	M-2	HG INJECT	OFF	AUTO	00:00:00	16:18:29	00:00:00	0	00:00:00	0	0.00	0
1	M- 3	RUN LIGHT (ul)	OFF	AUTO	00:00:00	16:18:29	00:00:00	0	00:00:00	0	0.00	0
	M-4	COMP 2	OFF	AUTO	00:00:00	16:18:29	00:00:00	0	00:00:00	0	0.00	0
	M-5	CHW VALVE	OFF	AUTO	20:33:22	20:35:31	00:00:00	0	00:00:00	0	0.32	3
]	M- 8	COND PUMP (OFF	AUTO	00:00:00	16:18:29	00:00:00	0	00:00:00	0	0.00	0
1	M-9	ChIWtrPump	OFF	AUTO	17:06:35	17:07:04	00:00:00	0	00:00:00	0	0.29	3
1	M-10	ALARM	OFF	AUTO	17:03:20	17:06:35	00:00:00	0	00:00:00	0	0.77	3
1	1-1	RS OFF (ul)	ON	AUTO	09:03:19	09:02:38	20:03:53	0	23:58 28	2	218.85	8
1	1-2	Valve Open(ul)	OFF	AUTO	20:34:23	20:35:32	00:00:00	0	00:00:00	0	0.30	3
	1-3	VIvFlowDly(ul)	ON	AUTO	09:02:49	09:02:38	20:03:53	0	23:59:28	2	215.89	9
									'SPA ARI	re ro E hidd	DWS' DEN	
									ARE	E HIDD	DEN	

5.9.4 Basic and Advanced Display of Tables

- Default RO Table Default 'Basic' option 'Advanced'
- Default SI Table Default 'Basic' option 'Advanced'
- Default AO Table Default 'Basic' option 'Advanced'

Defau Basic	It RO Table ————————————————————————————————————
Defai	ult SI Table
Defau Basic	It AO Table



	Senso	or Inputs												o d	ø
Ba	sic	Advanced													
-	SI#	Sensor Inputs	Value	Manual Status	Offset	Sensor Type	Last On/ MAX TDY	Last Off/ MIN TDY	Run TDY/ Avg TDY	Cycles TDY	Run YDY/ Max YDY	Cycles YDY Min YDY	Ttl Run HRS/ Avg YDY	Tot Cycl	
	M-1	SUCT PSI 1	67.2P	AUTO	0.0P	MCS-200	67.2P	67.2P	67.2P		67.2P	67.2P	67.2P		
	M-2	DISC PSI 1	160.9P	AUTO	4.3P	MCS-500	160.9P	160.9P	160.9P		160.9P	160.9P	160.9P		
	M-3	OIL PSI 1	534.0P	AUTO	0.0P	MCS-500	534.0P	534.0P	534.0P		534.0P	534.0P	534.0P		
	M-4	SUCT TMP 1	57.8F	AUTO	0.0F	MCST100	58.0F	57.8F	57.9F		58.0F	57.8F	57.9F		=
	M-5	DISC TMP 1	76.7F	AUTO	0.0F	MCST100	76.7F	76.7F	76.7F		76.7F	76.7F	76.7F		
	M-6	AMPS 1	94.7A	AUTO	0.0A	CT-250	94.7A	94.7A	94.7A		94.7A	94.7A	94.7A		
	M-7	OIL FLT 1	TRIP	AUTO	0	DIGITAL	25:-4:15	39:00:00	11:49:13	0	23:59:35	0	383.55	0	
	M-8	MTR FLT 1	TRIP	AUTO	0	DIGITAL	25:-4:15	39:00:00	11:49:13	0	23:59:35	0	383.55	0	
	M- 9	SPAREM-9		AUTO	0	SPARE	-999	-999	-999		-999	-999	-999		
	M-10	SPAREM-10		AUTO	0	SPARE	-999	-999	-999		-999	-999	-999		
	M-11	SPAREM-11		AUTO	0	SPARE	-999	-999	-999	-	-999	-999	-999		
	M-12	SPAREM-12		AUTO	0	SPARE	-999	-999	-999		-999	-999	-999		

5.10. Network Options - Make any changes, click save.

 'Show all Network Interfaces' - Default unchecked - User can have more than one network in which to connect to at some installations. If you need to search for more network interfaces, check this box.

	Alaum Auto Drint	
Show ALL Network Interfaces (Advanced Users only)		
Utable Natwork Interfa		
1) Realtek PCIe GBE Family Controller - eth3 - /192.168.10.199	es	
Local Communication Network Interface Name	ath?	
Local Communication Network Interface Name:	eth3	
Local Communication Network Interface Name: Remote Communication Network Interface Name:	eth3 eth3	

- 5.11. Extended History Option Make any changes, click save.
 - Option Enable Extended History Save allows user to specify location where to save the file, setup minutes of inactivity before disabling status updates and begin saving history.
 - Default 'Disable Extended History Save

MCS-PC Connect Communication Setup Screen	twork Extended History Alarm Auto	-Print
Enable Extended History Save	O Disable Extended	l History Save
Select Save Location	File Location Selection	POPUP FOR SETTING MINUTES OF INACTIVITY FOF STATUS UPDATES.
Minutes of inactivity before disablin	g status updates and begin saving hi	story: 1 -
This feature is no longer dependent on the user inactivity for the specified number of r pullback and resume updating the currently state.	presence of a screensaver to trigger the star ninutes. Once user activity resumes MCS-Co y displayed screen. Any incomplete history file	t of the save. It 2 nnect will ceas 3 es will be saved 4 5 6
Save		Cance

NOTE: 'CREATE SCHEDULED PRINT' WAS DISCOUNTED IN RELEASE #17.03.11 of MCS-CONNECT. SEE DIAGNOSTIC SAVE FOR PRINT OUT.

5.12. Create Scheduled Print (prior to 17.03)

If you need to receive information from a unit to check what is happening at certain times, you can Click on 'Setup' at the main menu screen- 'Create Scheduled Print' to setup a schedule of 'HIS-TORY PULLBACK' or 'PRINT TO FILE THE STATUS SCREEN OF THE UNIT. This is helpful if you suspect or you believe something is happening at a certain time of the day.

Setup the 'CONNECTION TYPE', 'SCHEDULE NAME' or specify the Local MCS address. Enter an 'AUTHORIZED CODE' is necessary.

You can have different Schedule Files to print, click on tab to 'Load a Schedule' to change files to print and time to print. After setting up a new schedule of files to print, click on 'SAVE THE CUR-RENT SCHEDULE'

MCS-Connect 17.09.00 Beta File Setup Offline Help				
Serial	Local Network C	connectionsEth	ernet	
Site Name MCS SITE Save Site Delete Site	Connection Type Coal Serial Remote Site Name Coals stre Delete Selected Setup	Schedule Name Auth Code	Local M Retriev Histo Print	CS Address
Print	Schedule Name Connection Type TEST Local Ethernet	Connection Key Auth Code 192.165.1.1	History? true t	Print?
	Current Time : 11:04:0 Run Current Schedule	8 Start Time	: 00 - : 00 Save Current Se) ↓ : 00 ↓ chedule

YOU DO NOT NEED TO BE CONNECTED TO THE UNIT TO PRINT THESE REPORTS- BUT YOU MUST HAVE A NETWORK CONNECTION TO PRINT/SAVE THESE FILES TO YOUR COMPUTER

5.13. Alarm Alerts - VERSION 17.12

With Ver 17.12, clicking on Alarm Alerts will bring up the new setup screen below.

5.13.1 Enter the information for your 'OUTGOING SERVER'

There are two types of accounts available - You can setup a new 'Office 365' account or support at MCS to establish an MCS email account.

Fill in your 'USER NAME' and 'PASSWORD'



Clck on 'OK' to move to next setup screen

5.13.2 Enter Recipient Contact Info

Fill in the necessary information to have a text sent to your cell number and also to the email account you have setup.

Click 'OK' to proceed to next setup screen.



NOTE: Click here to view revised APP118 'ALARM ALERT SETUP'



commu	ications (General	Tables	Network	Extended History Alarm Ale
Server	Login		Phon	E 41	T
Gmail		null		Enter Alari	m Types that send Al 23
				Se Se	Alarms (A) Istem Alarms (B) Itpt Safety Trips (C) Alarms (D)
				RO	Alarms (E)

5.13.3 Setup which alarms you want sent

Click on 'OK' when you have completed this screen.

5.13.4 Enable

Next Screen - Enable the completed setup. Click 'OK'



5.13.5 Save new Alarm Alert Setup

Server Login Phone Info Primary Email Cc Email Alarm Type Enabled Gmail dew@gmail.com 239-123-1234@vted.com dew@gmail.com anyone@gmail.com A Image: Common Comm		ications	Seneral	Tables	Network	Extended History	Alarm Alerts		
Gmail dew@gmail.com 239-122-1234@vtext.com dew@gmail.com anyone@gmail.com A	Server	Login		Phon	e Info	Primary Email	Cc Email	Alarm Type	Enabled
	Gmail	dew@gmail.cor	239-	123-1234@vte	xt.com	dew@gmail.com	anyone@gmail.com	A	V
	Crea	ate New Setu	p	Edit	Selected Set	up. Test S	elected Setup	Delete Selected	Setup

5.13.6 Alarm Alert Types

S**YSTEM ALARMS** HVAC SETPOINT SAFETIES REF SETPOINT SAFETIES

5.14. Diagnostic Save Setup

NOTE: This utility will schedule a Diagnostic Save. The Diagnostic save will perform a full History Pullback, a config pullback, a status print to file, and lockout history prints of the last 5 lockout alarms. The files will be saved to the MCS/DIAGNOSTICS directory.

1. Click in "Schedule Name" - add the name you want for this diagnostic report.

hedule Name	-	This utilit Diagnosti save will	Summary y will schedule a c Save. The Diagnostic perform a full History	
ite Information Connection Ty Local Ethernet Remote Site Nar	ype Local IP A 192.168.1 ne Auth Code 1234	ddress ddress history pi alarms. Th the MCS/ Assign th fill in the Once the list, select the sched saved as a reuse.	a config pullback, a int to file, and lockout ints of the last 5 lockout he files will be saved to DIAGNOSTICS directory. e Schedule a name and Site Info to proceed. setup is added to the t a Start time and Run lule. A Schedule can be a XML file and loaded for	
Delete Selected S	Setup	Add	Current Setup to List	
Schedule Name	Connection Type	Connection Key	Auth Code	
pressor One Diagnostic	Local Ethernet	192.168.1	1234	
urrent Time :	15:17:05	Start Time : 07	▼ : 00 ▼ : 00 ▼	

- 2. Click on 'Site Information- and choose the connection type to communicate with this controller.
- 3. Add the 'Local IP Address if Local Ethernet.
- 4. Add the Auth Code if needed.
- 5. Click 'Add Current Setup to List
- 6. Click on 'Load a Schedule setting the time of day you want to generate the report.
- 7. Save current schedule
- 8. Run the Schedule if you want a report right now, otherwise the report will print at the scheduled time.

5.15. OFFLINE MENU BAR

Setup	Offline Help		
	Load an Offline GRAPH File Load an Offline XML File	ocal Network Connect	ions
	Load an Offline MODBUS .cfg File Edit Autostart File		Ethernet
_			
Site Na	ame R	emote Network Connec	tions
Site Na New Sit	ame R	emote Network Connec	ctions Connect Remotely

There are four options when you click on 'OFFLINE'

- Load an Offline GRAPH File this allows you to load a 'GRAPH' file while offline which was saved to your local hard drive while connected to a controller.
- Load an Offline XML file clicking on this tab allows the user to 'Enable or Disable Auto Screen Refresh'. If you are using the 'MCS-Graphic Builder' program, you can set your screen to auto refresh each time a change is made to your graphics.

	MCS-Co	onnect 18.12.15		
File	Setup	Offline Help		USED ONLY ON
		Load an Offline GRAPH File		TOUCHSCREEN
Г		Load an Offline XML File	Enable Auto Screen Refresh	See ADD#127 for information
		Load an Offline MODBUS .cfg File	Disable Auto Screen Refresh	See APP#127 for information
		Edit Autostart File		at www.mcscontrols.com

- Load an Offline MODBUS.cfg File You can setup a MODBUS communication port using MCS-CONNECT and re-save the file once changes are made. Below is a sample of the screen.
- For more detail on setting up MODBUS control for a slave device, see MCS-MODBUS manual.

	_		-				MUS	-	-	1	1		diam'r	
etup Offline ReschClade Wothdow	the West Butte	in Bar Time Holp	kin Dragh Esta	stant History - Institut	ALARM ALER	RTS-INACTIVE		-		-			-11	
Disconnect	Stat	Gind		Thereare Clg		Security City	View Only	Lund Fit	The state of the s	Gagoe	stit: Sayli	Paus	0rm	191
nto OFFLINE MODBUS														
ervice Pasel						o" [3"	Write Analog Outp	ets						
							Node Registe	Fundam	Sciences	Revenue	Materia	Dista	Uath	Residen
ModBus Co	nnection Setu	p	1.1				1 1 2	(W)Not Used	Not Used	05535	1	1	0	1
Baud Rate		3840	10 ⁻¹				2 1 3	(W)NOE Used	Not Used	65535	1	1	0	1
	-		-				A 1 70	COMMON USED	Not Used	600.00	1	1		1
arity		No Par	N-					1 Julian area						
			11											
Atop Bits			1-											
								_	_	_		_	_	
Poll Delay (mis)		3	10				-							
			-	Save	ModBus .cfn Fil		Write Relay Output	ts						
Poll Timeout (ma)		60	10 .		Lave Changes		Node Registe					-	Nam	-
			10				# Address Number	Function Contract land	Special Met Head	Dismask.	Shullspeer	Divider	Chast	ancegister
							2 1 22	(W)Not Used	Not Used	65535	1	1	0	1
							3 1 23	(W/Wot Used	Not Used	65535	1	1	0	1
							4 1 24	(W)Not Used	Not Used	05535	1	1	0	1
lead Sensor Inputs						n, (),	5 1 25	(W)Nut Used	Nut Used	05535	t	1	0	1
Node Register					Math	A DECEMBER OF A	6 1 26	(W)NuLUsed	Not Used	65555	1	1	0	1
Address Number Function	Special	Bitmask	Mutticaier	Divder	Offset.	#Registers	1 1 11	bield scelevy)	Not Used	00000	1	1		1
1 33 (R) Hold Registers	Not Used	1	1	4	0	1	8 1 28	(W)NOCUSED	NotUsed	63933	-	-		1
1 RA. (R) Hold Registers	a Motlised	21223	1	10	0	1	44 4 30	Albitot Lined	Not lined	65515	1		0	1
1 d0 (R) Hold Registers	Not Used	65535	1	1	0	1		(allian gang	This of Pass	00000				-
1 39 (R) Hold Registers	Not Used	65535	1.	1	0	-								
1 38 (R) Hold Registers	Sangle Dit	65535	1	1	0									
1 50 (K) Hold Register	Mot Used	45535		-	735	-								
4 479 (Di Ibid Decister)	Not lland	86636	4		0									
1 34 III Hold Desintern	Notlined	85535			0									
1 45 (R) Hold Register	Single Bit	705	1	1	0	1								
1 38 (R) Huld Registers	Nut Used	05025	1	1	0	1								
1 76 (R) Hold Registers	s Nut Used	05535	1	1	0	1								
1 79 (R) Hold Registers	Not Used	65535	1	10	0	1	Write General Och	reats						
1 80 (K) Hold Registers	Not Used	60035	1	10	U	1	tere in the second second second	1			1			1
1 44 (K) Hold Registers	Not Used	85535	1	1	0	1	Node Registe	1	deland	and and a second second	At sectors	and and	MUR	
1 10 (H) not Used	not Used	60030	1	1	0		- Augress Numbe	All Alat Hand	Notlined	64414	enumprier.	Unider	Uther	arcepister
							3 4 33	Without Used	Mot Used	03535	-		0	
							3 1 33	Withot Used	Not lised	65535	1	1	0	1
							4 1 34	(Williot Used	NotUsed	65535	1	1	0	1
							5 1 35	(Williot Used	Not Used	65535		- i -		1
							4 4 74	(Withof Used	Not Used	65535	1	1	0	4
							0 1 20							

Chapter - 6. System Information Screen

Once you have completed your setup of MCS-CONNECT, click on the communications button for MCS-CONNECT program to start scanning for MCS-controllers.

6.1. SCAN FOR CONTROLLERS

MCS-CONNECT will search for up to 60 MCS controllers that could be connected on the network.

Once all of the units are displayed or when the unit you want is displayed you may select that unit from the tab at the top of the grid or double click anywhere on that row to load up the controller's status.

You can use the horizontal or vertical arrows to scroll for more controllers tabs in the site info.

🎥 17.04.00 Beta									_ D X
File Setup Offline Reset	/Clear Workspace Vie	W Button Bar Time	Help						
Disconnect	Scan Gra	aph Tr	ansmit Cfg	Receive Cfg	View Only	Diagnostic Save	Print	Graphics	Alarms
Site Info 0 - Plant I	Manager 82 - ZAM	IL CH#2 1 - MS02	9FF 0 - Master Co	ntrol 1 - GAMI PRO	1-RTU-4 1-	One Pierce Pl Invali	d Config 0 - 2nd	Indus City 81 - F	
Address	HW Serial #	Cfg Name	Company Name	Unit Model #	Unit Serial #	Installed Date	Cfg Vers.	Firmware Vers.	Cfg Date
192.168.10.141 (0)	005370	Plant Manager	ZAMIL AC	15 CHILLER CPM		01/09/2015	17	CPM 17.16aF	06/30/2015
192.168.10.170 (82)	006806	ZAMIL CH#2				04/03/2014	17	HVAC 17.16-A	07/23/2015
192.168.10.143 (1)	004792	MS029FF	MULTISTACK	2 Turbocors		03/19/2015	17	HVAC 17.14yA	07/14/2015
192.168.10.101 (0)	001205	Master Control	Napps	NAPPS CPM	123	02/19/2015	17	CPM 17.14-I	03/13/2015
192.168.10.146 (1)	001910	GAMI PRO	GAMI	RC2-410 2CMP	GAMI	07/01/2013	14	HVAC 14.07-A	07/28/2015
192.168.10.249 (1)	000894	RTU-4	AAON	RL-155-3-0-8B2Z	BLWS00286	05/03/2013	11	RTUM 17.16-A	07/23/2015
192.168.10.180 (1)	004701	One Pierce Pl	AirComfortCorp.	Chiller 1 -19DK	35559	02/06/2015	17	CENT 17.12-I	07/20/2015

Serial Network Connection: If MCS-CONNECT does not find any MCS controllers, the Scan Finished message will be displayed in the title bar and no units will be displayed in the grid.

In the info grid MCS-CONNECT version and scanning information is displayed in the title bar.

Once in the Status Screen MCS-CONNECT version, day, date and time, plus the company name will be displayed.

If a MCS Controller has an invalid configuration, its entire row will have a RED background. Installer needs to Transmit a new configuration file to this controller before continuing with setup. The installer is authorized at 'View' level to 'Transmit Cfg' and 'Receive Cfg'.

r Workspace View B	Sutton Bar Help				Author 'Grayed ou	ization Level It' Invalid Config	
Scan	Gra	iph Transmit Cfg	Receive Cfg	View Only	Edit Time	Print	Graphics
hiller 1 Stone 1 - I	INDELSA 1-3 CMP 1	- AC Turbocor Invalid Config	1 - CUSANOS BAKERY	81 - FWC 410A 2 - SRD	2 - WashingtonTrust	1 - HOT ROOM 1 - ACU	1 - RI Cnvtn. C
HW Serial #	Cfg Name	Company Name	Unit Model #	Unit Serial #	Installed Date	Cfg Vers,	Firmware Vers
007706	Grove Hotel	AmericanChiller	19XR Chiller #2	1797356015	04/01/2015	17	CENT 17.14-
004611	Chiller 1 Stone	DUNHAM-BUSH	WCFX41S	E4896	03/04/2014	14	HVAC 16.10-
000419	INDELSA	LEANO	2 102 11001	THE STOLE	02/20/2015	17	HVAC 17.14-
006592	5 CMP	Indust. Vent.	REV CYC DEFROST		12/12/2014	14	REFR 16.10-
200009	AC Turbocor	AAON	LZA-120-C-0-3-J	BBCM00003	04/21/2014	17	HVAC 1714
002193	A5Y2308F 01	ZAMILAC	ASY230BF 01	CH8139-03(N)	03/10/2015	17	RTUM 17.14
012797	CUSANOS BAKERY	DUNHAM-BUSH	AUDS010-6Q	E5467	03/06/2015	17	HVAC 17.14
001082	FWC 410A	NAPPS	FWC 20	PROTO B	02/23/2015	17	IIVAC 17.14
004701	SRD	in a second lormotic	2 RC-15I	HVAC 08 03-E	00/00/2010		HVAC 08.06-
001330	WashingtonTrust	Sno Valley	Chir 2 - 19DG	and the first of the second	03/18/2015	17	CENT 17.14-
000884	HOT ROOM	STI	HOT ROOM		10/02/2014	11	HVAC 09.11/

Chapter - 7. Function Screens Connected to Controller

7.1. Getting Authorized

VIEW ONLY MCS-CONNECT SOFTWARE CANNOT BE AUTHORIZED TO A HIGHER LEVEL OEM'S, CONTRACTORS and INSTALLERS MUST DOWNLOAD THE 'AUTH CODE' VERSION OF MCS-CONNECT TO BE ABLE TO MAKE CHANGES. CONSULT MCS SUPPORT.

At any time while connected to a MCS controller the user can get authorized to a higher level by clicking on the '**View Only**' button located at the top of the screen. Higher levels of Authorization may be necessary to make changes to the controller you are connected to.

See levels below:

ACS-Connect 17.09.00) Beta		TL	IE DEC 8, 15 15:36:30	0		MCS RS	
File Setup Offline Reset/ Disconnect	Clear Workspace View	Button Bar Tim Graph	e Help Transmit Cfg	Receive Cfg	View Only	Diagnostic Save	Print	
Site Info 1 - Plant R	apdStart							

Note: The color of the Authorization button indicates what level you are authorized, and the current level of authorization. The system default is 'View' only.

YOU MUST HAVE AUTHORIZATION TO MAKE CHANGES TO THE SYSTEM HIGHER THAN VIEW. CONSULT YOUR SUPERVISOR FOR WHAT AUTHORIZATION LEVEL IS NEEDED FOR MAKING CHANGES TO THE SYSTEM.

Red	=	VIEW ONLY
Light Blue	=	USER LEVEL
Fuscia	=	SERVICE
Blue	=	SUPERVISOR
Green	=	FACTORY

When you select the Authorization button the following pop up will be displayed: Enter the 4 digit authorization code in the space provided and press the 'enter' button. The **Cancel** button will return the user to the previous screen with no changes made to the authorization level. *Note: That the code that is entered is not visually displayed*. If an invalid authorization code is entered, no message is displayed. The Authorization color and level will remain unchanged.

ter Autho	orization Code		Enter Authorization Code
	CLEAR VALUE		OK Cancel
1	2	3	
4	5	6	Authorization popup showing with keypad display and without keypad display.
7	8	9	This is set in the 'General Options' in the setup.
-	0		

On each screen at the top there is a button bar with the following menu of buttons that will access all of the available screens and functions.

-	MCS-Connect 17.09.0	00 Beta	-		TUE DEC 8, 15 15:36:3	0		MCS RS		-	
File	e Setup Offline Rese Disconnect	et/Clear Workspace	View Button Bar Graph	Time Help Transmit Cfg	Receive Cfg	View Only	Diagnostic Save	Print	Graphics		Alarms
s	ite Info 1 - Plant	RapdStart									

If a button is grayed out that function is disabled, and that screen cannot be viewed. See the button explanations below for access availability of the various screens or functions. To access some of the above buttons you must first select the MCS controller you wish to view from the System Information Screen. Clicking on the associated address tab will select the controller.

Exiting MCS-CONNECT

To end the communications link with the MCS controllers click on the '**DISCONNECT**' tab. If remote connection is underway, the PC's modern will receive a hang up command to terminate the live session. Control will be returned to the main user interface.

7.2. To Re-scan the Network for MCS Controllers

To force MCS-CONNECT to re-scan the network press the 'Scan' button.

RCS-Connect 17.09.00 Beta	π	JE DEC 8, 15 15:36:30			MCS RS			
File Setup Offline Respectear Workspace View Bu	itton Bar Time Help		_		-	1.	-	
Disconnect Scan	Graph Transmit Cfg	Receive Cfg	View Only	Diagnostic Save	Print	Graphics		Alarms
Site Info 1 - Plant RapdStart	Graph Transmit Ctg	Receive Ctg	view Only	Diagnostic Save	Print	Graphics		Ataritis

7.3. Accessing the Graph Screen

To access the Graph Screen, select the 'Graph' button. This screen displays data in a graphical form. The MAGNUM has 1008 history samples of every input & output for trending purposes. At a 10 minute sample rate this is 7 days of data. The user can also purchase an optional MCS-COMPACT card for extended history. On the 'Extended History' setup screen you have the option of naming a destination file for saving 'the Extended History' on your PC.

The MicroMag has 300 history samples of all points.

7.4. Accessing the Transmit Function

(NOTE: The 'RUN/STOP' should be put in stop before transmitting a new CFG file).

To Initiate a Configuration File Transmission the user must be authorized at a level greater than view only. (If there is an invaid config file on a controller, 'View Only' level will allow you to transmit a new config file).

This option enables a configuration file to be transmitted to the MCS controller. Once transmission begins, the MCS controller will immediately turn OFF all output points. The transmission time is 40 seconds to 90 seconds. During this time the MCS controller LCD will display the message "CFG DOWNLOAD". When the transmission is completed, the MCS controller will reset and enter the STARTUP state.

Look In: CFG			
Name	Size Item type	Date modified	
ile <u>N</u> ame:	g Files		1

Note: The configuration file (cfg) will be sent to you from the factory for your controller. Locate the directory where you have stored the downloaded file to start to transmit.

7.5. Accessing the Receive Function

When the '**Receive Cfg'** tab is clicked, the following file popup will appear:

Select the directory where the configuration file is to be written and then enter a name for the file. Click on the 'Receive' button to begin retrieval.

During retrieval a status popup screen will appear that is updated as the retrieval progresses.

Look In: CFG			8-
Name	Size Item type 6.57 KB CFG File	Date modified 1/13/2015 9:	
File <u>N</u> ame:			

Note: If the user is connected to an MCS

controller with an invalid configuration file, the only options that will be accessible for that controller will be the Transmit and Receive buttons. The user must transmit a valid configuration file to communicate with the controller. Make sure when transmitting configuration files that the address is correct.

7.6. Understanding the Authorization Screen

To access the Authorization Screen, click the '**View Only**' button. See section in this manual on how 'GETTING AUTHORIZED' to a higher level.

File Setup Load	a Graph File Rese	t/Clear Works	pace View But	ton Bar Help			Unit in red sho	ows bad	
Disconneo	ct	Scan	Graph	ansmit Cfg R	eceive Cfg View	w Only Load	highlighted co	ontroller It Gra	hics
Site Info 0 -	ACU								
Address	HW Serial #	Cfg Name	Company Name	Unit Model #	Unit Serial #	Installed Date	Cfg Vers.	Firmware Vers.	Cfg E
(0)	015133	ACU	CONTROLL	CAT/55-G.	ACU 09.11-X	08/07/2013	2 17	ACU 17.14	04/22/

7.7. Diagnostic Save

Saves the config, history printout, last 5 lockout alarm printouts and the status printouts to a zip file.

1 N	ACS-Co	nnect 1	7.09.00 Beta					т	JE DEC 8, 15 15:36:3	0		MCS RS	
File	Setup	Offline	Reset/Clear	Workspace	View	Button Bar	Time	Help					
	Dise	connect		Scan		Graph		Transmit Cfg	Receive Cfg	View Only	Diagnostic Save	Print	Graphics

7.8. Accessing the Print Function

To access the Print to File function, click the 'PRINT' BUTTON.

This screen allows the user to save to a .TXT file that can be viewed in Excel, Notepad or printed.



7.9. Edit Time/Date Screen

Allows MCS-CONNECT to correct the time in the controller to conform with actual time. User can enter a time manually or use the "Update from PC" button to sync the controller with the PCs time and date.

Time / Date Editor		_25	
Ionth October 👻	Hour	11 💌	
Day 26 💌	Minute	23 💌	NOTE: ALL UNITS
Year 20 38 💌	Seconds	24 💌	ARE SHIPPED WITH
	Day of Week	Monday	CURRENT USA
	Day of Week	monuay	EASTERN TIME
CANCEL	OK Upda	ate From PC	

7.10. Graphics Screen

The Graphics feature allows the user to have a graphical interface of MCS-Connect.



Additional information on MCS-GRAPHICS is discussed later in this manual.

Chapter - 8. Menu Bar Descriptions

Below is a pull down list of functions for the Menu Bar Tabs. The tabs allows the user to make fast screen changes, save custom workspaces, etc. See a description for each item below.



8.1. FILE BAR - Allows user to exit MCS-CONNECT and or print BMS points lists.

File	Setup	Offline Reset/C	Clear Workspace	View	Button Bar	Time I
Exit		t	Scan			Graph
Prin	t BMS P	oints MCS-MAG	GNUM(BACnet IP & M	lodbus)		
		MCS-BMS	GATEWAY(BACnet	MSTP,J	ohnson N2,L	ontalk)
		MCS-MAG	SNUM & MCS-BMS-G	ATEWA	Y	
		MCS-MAG	NUM Unit & Compre	essor St	ates	



See Appendix in back on BMS print samples.

8.2. SETUP BAR - Toggle lockout alarms

Setup	Offline	Reset/Cl
Comm	unication	IS-
Toggle	Lockout	Alarms

8.3. **OFFLINE - Load an offline Graph**

Load offline graph file gives you the ability to load a 'GRAPH FILE' that has been saved to your hard drive without being connected to your controller. See appendix in back section of this manual.



8.4. RESET/CLEAR BAR - The following screen will appear when the RESET button is selected. To clear lockouts, click on the button '**RESET LOCKOUTS**'

Reset/Clear	
Reset Lockouts	
Reset Manuals to Auto 🕨	Reset ALL Manuals to Auto
	Reset Relay Output Manuals ONLY
	Reset Analog Output Manuals ONLY
	Reset Sensor Input Manuals ONLY

To clear lockouts the user must be authorized at a level greater than view.

If not the 'NOT AUTHORIZED MESSAGE WILL BE DISPLAYED'.

NOTE:

Prior to doing a lockout reset, YOU MUST review the alarm grid to verify what caused the lockout. When the cause is corrected you can press 'RESET LOCKOUTS' and a message will appear stating that the controller has received lockout reset and an alarm notification will be logged.

This feature allows the user to reset all lockouts.

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If you have a circuit or the entire package is in lockout, clicking the Reset Lockout button through MCS-CONNECT will clear all lockouts. If the lockout condition still has not been corrected, the system will lockout instantly and not run.

YOU ARE LIMITED TO 6 LOCKOUT RESETS PER DAY.

AFTER 6 LOCKOUTS, YOU NEED FACTORY OR HIGHER AUTHORIZATION TO CLEAR LOCKOUTS

8.5. WORKSPACE BAR

Workspace
Switch Workspace
Save Current Workspace
Update Workspace
Delete Single Workspace
Delete All Other Workspaces
Center All Internal Frames
Resolution Based Quad Frames

- A workspace is a custom layout of moved and re-sized frames.
- Your current workspace can be saved in the Workspace menu in the Menu Bar
- The Workspace menu is also used for managing or switching workspaces



8.5.1 CREATING A NEW WORKSPACE

- 1. Decide which items you wish to monitor in your workspace.
- 2. In the sample below, we have selected the following items for viewing for this workspace.
 - Relay Outputs frame
 - Analog Outputs frame
 - Sensors frame
 - Status frame

Drag each frame and position in your computer's window for best fit and viewing.

 Click on 'SAVE CURRENT WORKSPACE' -YOU WILL PROMPTED FOR A NAME.

	Relay	Outputs				Analo	g Outputs		ត់ 🗹	E Se	nsor	Inputs			oʻ 🖸
Bes	it (Advanced				Basic	Advanced			Rasie	A	Ivanced			
-	RO	Relay Outputs	Value	Manu	8	· A0 #	Analog Outputs	Value	Manual Status		SI #	Sensor Inputs	Value	Manual Status	
	M-1	COMP4	OFF	AUTO	1-	M-1	FANSPEED	0.0%	AUTO	M	-1	SAP-PT9	18.0*	IAMUAN	-
	M-2	HOTGAS4	OFF	AUTO							-2 1	Mode SW3	COOL	IMINA	
	M-3	LLSV4	OFF	AUTO						M	3	TargTemp	43F	MUMUAL	
	M-4	COMP3	OFF	AUTO						M	4	TargFlow	20%	MAMUAL	
	M-5	LLSV3	OFF	AUTO						M	.5 (Cmp1-CT1	22.1A	MAMUAL	
	M-6	COMP2	OFF	AUTO						M	6	Suct1PT1	35.1P	LAMUAL	
	M-7	LLSV2	OFF	AUTO						M	-7 0	Disc1PT2	130.0P	AMAMA	
	M-8	COMP1	OFF.	OTUA						M	.8 0	Cmp2CT2	21.3A	MANUAL.	
	M-9	LLSV1	OFF	AUTO						M	.9	Suct2PT3	34.8P	MAMUAL	
	M-10	CONDFAN1	OFF	AUTO						M	-10 0	Disc2PT4	122.6P	AUNUAL	
	1-1	CONDFAN2	OFF	AUTO						M	13	PhasPFR1	OK	MAKIT	
	1-2	CONDFAN3	OFF	AUTO						M	14	FLT MCS1	OK	MANOFF	
	1.3	CONDFAN4	OFF	AUTO						M	-15	RunSw1-1	STOP	AUTO	1 [
	1-4	CONDFAN5	OFF	AUTO						M	16 0	OffSw1-2	NO	MANOFF	
	1.5	CONDFAN6	OFF	AUTO						1	1 0	Cmp3-CT3	20.9A	MANUAL	
	1.6	ALARM	ON	AUTO						1.	2 !	Suct3PT5	35.7P	MANUAL	
	1-7	STG1HEAT	OFF	AUTO						1-	3 1	Disc3PT6	125.3P	MANUAL	
	1-8	STG2HEAT	OFF	AUTO						1	4 0	Cmp4-CT4	20.6A	MANUAL	
	1.9	STG3HEAT	OFF	OTUA						1.	5 1	Suct4PT7	33.5P	MANNAL	
	1-10	STG4HEAT	OFF	AUTO						1.	6 1	Disc4PT8	129.0P	MANUAL	
	2-1	STG5HEAT	OFF	AUTO	-					1	7	CF1-CT05	0.0A	MANUAL	
4		3.								1.	8 0	CF2-CT06	0.0A	LIMILL	-

Unit Mode	Actual Flow	Target Flow	Actual Temp	Targel Temp	Evap Delay	Sp Wa	anted
STOPPED	19%	20%	46.0F	43F	5		1%
Capacity Control State	Time	Compre Wanted /	essor Actual	Compro Step D	elay	Stages Wanted / On	Condense Stage Dela
OFF-READY TO RUN	03;46:39	0/1	0	24)	0/0	0
Compr State	State Timer	Suction PSI		Disc PSI		Compr Amps	
4) CMP OFF-READY	03:46:39	33.5P		129.0P		20.6A	
3) CMP OFF-READY	03:46:39	35.7P		125.3P		20.9A	
2) CMP OFF-READY	03:46:39	34.8P		122.6P		21.3A	
1) CMP OFF-READY	03:46:39	35.1P		130.0P		22.1A	

ACU CUSTOM FRAMES	windt would you	like to name this workspace? (30 char ma
	ACU CUSTOM F	RAMES

After creating and saving a workspace, continue to view other options under the 'Workspace Menu Bar'

8.5.2 Switch Workspace

User can select different 'SAVED WORKSPACES'

8.5.3 Save Current Workspace

Choose the items you wish to view and save the current workspace.

NOTE: At the 'GENERAL SETUP SCREEN' in MCS-CONNECT you can choose a workspace as your default workspace so each time you connect to your controller, your custom workspace will appear. You can change back to the default workspace or create a new workspace.

8.5.4 Update Workspace

If you make changes to your saved workspace, click to 'Update' the workspace.

8.5.5 Delete Single Workspace

Click to delete a single workspace.

8.5.6 Delete All Other Workspaces

Deletes all workspaces except the current workspace

8.5.7 Center all Internal Frames

Click here and each open frame will be centered in your viewing area.

8.5.8 Resolution Based Quad Frames

Click here and four frames will center within your viewing area.

8.6. VIEW BAR

Short cuts to additional frames not currently showing (items grayed out are already being viewed or do not pertain to this controller):

'ANALOG OUTPUTS' 'ALARMS WINDOW' 'INFORMATION WINDOW' 'RELAY OUTPUTS' 'SERVICE WINDOW' 'SCHEDULE / HOLIDAY WINDOW' 'SCHEDULE / HOLIDAY WINDOW' 'SETPOINTS' 'SYSTEM STATUS WINDOW' User can also view and use the: 'INTERACTIVE P/T CHART' 'TEMP AND PSI CONVERTER' 'USER LOGIC STATE TABLES' 'LOOKUP TABLES' 'HIDE SPARE ROWS' View Button Bar Time Help Analog Outputs Alarms Window Information Window **Relay Outputs** Service Window Schedule / Holiday Window Setpoints Sensor Inputs System Status Window Unit Status Window Heat Status Window **Boiler Status Window** Damper Status Window **Cooling Tower Window** Interactive P/T Chart Temp and PSI Converter

User Logic State Tables Edit Lookup Tables

Show Spare Rows Clear RO Table Hide/Show column

Clear SI Table Hide/Show column

Clear AO Table Hide/Show column
8.7. HIDE/SHOW ROWS

The 'Hide/Show' icon toggles the visibility of inputs/ outputs displayed on the screen.

- In this example things relating to circuit #1 are selected.
- Then click the "eye" and all unselected items will be hidden.
- Click the "eye" again to bring all unselected items back into view.
- The Hide/Show column is located in the:
 - Analog Outputs frame
 - Relay Output frame
 - Sensor Inputs frame

Ba	sic 🚺	Advanced		
•	AO #	Analog Outputs	Value	Manual Status
/	M- 1	COMP1 SPD%	83.0%	AUTO
	M-2	COMP2 SPD%	0.0%	AUTO
1	M-3	EXV 1%	48.5%	AUTO
	M-4	EXV 2%	0.0%	AUTO
1	1-1	CND1 VFD%	100.0%	AUTO
	1-2	CND2 VFD%	0.0%	AUTO
	1-3	WTR PUMP1%	100.0%	AUTO
	1-4	WTR PUMP2%	0.0%	AUTO
1	2-1	SubClrExv1	0.0%	AUTO
7	2-2	SubClrExv2	0.0%	AUTO

M-1 COMP1 SPD% 81.0% AUTO	
M-3 EXV 1% 46.1% AUTO	
1-1 CND1 VFD% 100.0% AUTO	-
2-1 SubCirExv1 0.0% AUTO	

8.7.1 USER LOGIC STATE TABLES - P/T CHART CONVERTER

Chiller States					
Index	State Name				
0	UNIT IN POWER UP				
1	POWER LOSS DELAY				
2	NO RUN- I/O LOST				
3	UNIT IN LOCKOUT				
4	UNIT IS OFF				
5	UNIT IS HOLDING				
6	UNIT UNLOADING				
7	UNIT IS LOADING				
8	OFF-SMOKE ALARM				
9	RUN/STOP SW OFF				
10	SCHEDULED OFF				
11	OFF-NO FLOW(s)				
12	OFF-NO COND FLOW				
13	AMBIENT OFF				
14	PROCESS HEAT OFF				
15	UNIT IS UNLOADED				
16	UNIT IS LOADED				
17	OFF TMP-ICE MADE				
18	ECONOMIZER ONLY				
19	SWITCHING MODES				
20	UNIT SMOKE UNLDG				
21	UNIT OFF UNLDING				
22	UNIT DMD UNLDING				
23	UNIT HEAT UNLONG				
24	UNLDING RUN CMPS				
25	OPENING BYP VLV				
26	CMP RAMPING UP				
27	CLOSING BYP VLV				
28	FACTORY STARTUP				
29	MAXIMUM RUN TIME				
30	RTU RUN NORMAL				
31	OFF-FIRE ALARM				
32	UNIT HEAT HOLDG				
33	CMP SPD OPTIMIZE				
34	UNUSED STATE				
35	RS-STARTING COMP				
36	RS-LOADING				
37	RS-HOLDING				
38	UNIT IS OFF/TEMP				

frigerant Used	R134a		
PSI	Temperature (F		
7.2	-40		
4.8	-30		
3.3	-20		
.9	-10		
.5	0		
2.0	10		
8.4	20		
6.1	30		
5.0	40		
5.3	50		
7.3	60		
0.9	70		
6.4	80		
03.9	90		
23.6	100		
45.6	110		
70.3	120		
97.6	130		
27.9	140		
65.4	150		
02.8	160		
PSI to Pressure	Temp Converter Temperature =		
Calcul	= ate Temperature		

State Table above shows different states of the compressor

8.7.2 Viewing the Lookup Table in MCS-Connect

In MCS-Connect we can view the sensor example as shown in Screen 4 and view the same information that we setup in MCS-Config. Changes can be made if you are authorized to view or make changes. We setup the authorization as 'FACTORY' in MCS-Config for this sensor example.



8.7.2.1. Using as Control Temperature Sensor

The example sensor has been specified in MCS-Config as providing the control value reading. It will normally be the entering temperature, leaving temperature, or suction pressure. The Setpoints must be adjusted according to the type of control measurement selected.

8.8. BUTTON BAR - Click to hide/show Button Bar, short cuts to 'Scan', 'Graph', 'Transmit',

'Receive Ctg', 'Authorization Level', 'Print' and 'Graphics'.

8.9. ALARM ALERTS -

If you chose to use the 'Alarm Alerts' in the initial setup, Clicking on this tab allows the user to 'Suspend Alarm Alerts' or 'Reactivate Alarm Alerts'. Note, the choices will be grayed out if you did not setup in the General Setup screen.

8.10. TIME -

You must be authorized to make changes to the time feature.

Month		July 🖓	Hour		9	-
Day		28 👻	Minut	e	38	-
Year	20	16 👻	Secon	nds	44	-
			Day of	Week	Thursday	-

8.11. HELP BAR

About MCS-CONNECT - provides current version# and provides information on MCS.

Check MCS website for updates - allows the user to check for latest updates.

8.12. LIVE GRAPH

	ACS-Co	onnect 1	18.01.00	* •						THU	J JUL 28, 16	09:20:57	
File	Setup	Offline	Reset/Clear	Workspace	View	Button Bar	Alarm Ale	rts Ti	me	Help	Live Graph		
	Discor	nnect	Scan	Gra	nh	Transm	it Cfn	Receiv	e Cfr		View Only	Load Firmware	Diagnostic S

Click here to setup a 'Live Graph'.

'Live Graph' allows the user to view a graph in '*Real Time*' while connected to the controller. The system will grab data from the controller you are connected to and display it in graph format.

Live Graph					
Add Live Graph					
Save A Live Graph					
Save A Live Graph Group					
Load A Graph					
Load A Graph	•				
Load A Graph Load A Graph Group	*				
Load A Graph Load A Graph Group Remove A Saved Live Graph	* *				

8.12.1 ANALOG GRAPH (DEFAULT)

When clicked, Live Graph will default to **'Analog Data'** for setting up your Graph. If you are going to use 'Live Graph" to graph a Digital Point, proceed to the next section on how to set up for 'Digital Points'.

🔲 Graph setup for Gracedale #1 🛛 🗖
Number of Points: one 💌 🔿 Digital Data 💿 Analog Data
Point 1: Sensor Inputs 💌 ChilWtr In 💌
X and Y Axis Setup
Interval (s): 60
Y-Min: 0
Y-Max: 100

The points can be 'Sensor input' or 'Analog output'.

Sensor Inputs	•
Sensor Inputs	
Analog Outputs	

The User can select up to six (6) points to graph when 'Analog Data' is selected.

umber of Poin	ts: four 💌 🤇	Digital Data	Analog Da	ata
Point 1:	Sensor Inputs	- OPERATIO	N 🔻	
Point 2:	Sensor Inputs	PWR SOU	RCE 💌	
Point 3:	Sensor Inputs	✓ SupplyTar	g 🔽	
Point 4:	Sensor Inputs	FLOW TAR	G	
and Y Axis Se terval (s): 60 Min: 0 Max: 100	tup Submit Cle	ar Cance		

PAO S	YST	EM G	D
one	•	0)igita
one			_
two		-	OP
three			_
four			
five			



A drop down menu next to the point you are graphing will show all the available sensor inputs and outputs configured to the controller you are connected to.

NOTE: Sensor inputs have digital and analog points that can be selected . Refer to your controller to graph the correct sensor information.

8.12.1.1. X AND Y AXIS SETUP

- 1. Interval (s) Sets the X axis up with the given amount of seconds (time) you wish to graph
- 2. Y-Min Lowest point of the graph
- 3. Y-Max Highest point of the graph
- 4. Submit will create the graph
- 5. Clear will erase the info in the text boxes

X and Y Ax	is Setup						
Interval (s):	60						
Y-Min: 0							
Y-Max: 100							
	Submit	Clear	Cancel				

6. Cancel - will dispose of the frame and not create a graph



Example of Analog Graph running for 60 seconds

8.12.2 DIGITAL GRAPH

User can select up to two (4) points to graph when 'Digital Data' is selected.

The points can be 'Sensor input' or 'Relay output'.



Drop down will show all the available inputs and outputs configured to the controller you are connected to.

NOTE: Sensor inputs have digital and analog points that can be selected . Refer to your controller to graph the correct sensor information.

ChilWtr In	-
ChilWtr In	
ChilWtrOut	
Suct Psi	
Disc Psi	
OilFeedPsi	
OilSumpPsi	
Suct Tmp	
Disc Tmp	-

8.12.2.1. **AXIS SETUP**

Digital OFF

Value

ON

09:33:15

- 1. Interval (s) Sets the X axis up with the given amount of seconds (Time) you wish to graph.
- 2. Off Shows Digital Point is off
- 3. ON Shows Digital Point is on
- 4. Submit will create the graph
- 5. Clear will erase the info in the text boxes

6 .	Cancel - will dispose of the frame and
	not create a graph

ose oh	e of the fra	ame and			
				٥	X

X Axis Setup Interval (s): 60

Submit

Clear

09:34:10

09:34:05

Cancel



09:33:40

39:33:35

09:33:30

X Axis shows just 'ON and OFF'

8.13. SAVING YOUR GRAPH (S) SETUP FILE

09:33:20

09:33:25

Click on 'Save a Live Graph" in the drop down window as shown below to save this graph setup. When you open the Graph Setup file again, it will be a 'LIVE VIEW IN REAL TIME'

09:33:45

Time

09:33:50

09:33:55

09:34:00



NOTE: MAKE SURE AF-TER CREATING YOUR 'LIVE GRAPH', YOU CLICK AND 'SAVE THE LIVE GRAPH SETUP'

Live Graph	
Add Live Graph	
Save A Live Graph	
Save A Live Graph Group	
Load A Graph	¥
Load A Graph Load A Graph Group))
Load A Graph Load A Graph Group Remove A Saved Live Graph	• •

Don Graph 1

Don Graph 2

MCS GRAPH 1

.

.

When prompted, select your graph and click ok to save this SETUP to your computer.





Live Graph

Add Live Graph

Load A Graph

Save A Live Graph Save A Live Graph Group

Load A Graph Group

Remove A Saved Live Graph Remove A Saved Graph Group >

If you create a series of graphs for a controller, you have the ability to save the graphs as a group.

To create and save a group of graphs 8.13.1 setup files for a controller:

- 1. Click on "Load a Graph'.
- 2. Choose the first graph which will open in your status window.
- 3. Choose the next graph that will open in your status window. You will need to move the second graph in order to view both in your status window.
- 4. Next, in your Live Graph drop down menu, click on 'Save a Live Graph Group'.

ect 17.16.00 Beta .	IGW		HLY N/A 0, 00 00:00:00		H.T. Lyons Inc.					
line Reset/Clear N sconnect	Norkspace View Button Bar A Scan	Alarm Alerts Time Help Graph	Live Graph	_	tive Cfg	View Only	Diagnostic Save	Print		
1 - Gracedale #1	1 - Gracedale #1 1 - H0	OT ROOM 4 - BREE	Add Live Graph		0 - Dow ISO	PAR 1 - 2 CMP				
Don Graph 1			Save A Live Graph		iph 2			o" 🛛		
100			Save A Live Graph Group							
80			Load A Graph	•						
70 - 60 -			Load A Graph Group	•						
Value 05			Remove A Saved Live Grap	h≯						
40 -			Remove A Saved Graph Gro	oup 🕨						
20 -				20						
10				10						

5. Name the Group for these graphs

Name	Graph	
?	Enter a title for the graph. Don Graph 1	I
	OK Cancel	

8.13.2 Remove a Saved Live Graph

If you have saved Live Graph files, you can delete the files.

- 1. Click on the Live Graph Menu Tab and use your arrow keys to highlight '**REMOVE A SAVED LIVE GRAPH**'.
- 2. Click on the file you want to remove.
- 3. You will be prompted 'Are you sure we want to delete this Live Graph Setup?

Confirm			X
1	Are you sure we wa	nt to delete this	s Live Graph set up?
	OK	Cancel	

Live Graph	
Add Live Graph	
Save A Live Graph	
Save A Live Graph Group	
Load A Graph	
Load A Graph Group	
Remove A Saved Live Graph 🔸	Don Graph 1
Remove A Saved Graph Group •	Don Graph 2
Remove A Saved Graph Group	Don Graph 2 MCS GRAPH 1

4. Click 'OK', the setup file highlighted will be permanently deleted.



8.13.3 Remove a 'Saved Graph Group'

Removing a 'Saved Graph Group' will remove the association of the group of Live Graph Files but will not remove the actual setup of the Live Graphs. Those files will remain saved on your computer until you remove each file.

LT N/A 0, 00 00.00.00		
Live Graph		1
Add Live Graph		
Save A Live Graph		
Save A Live Graph Group		
Load A Graph		
Load A Graph Group		
Remove A Saved Live Graph		
Remove A Saved Graph Group	• •	Dons Group

- 1. Click on the Live Graph Menu Tab and use your arrow keys to highlight '**REMOVE A SAVED GRAPH GROUP**'.
- 2. Click on the 'GROUP' file you want to remove.
- 3. You will be prompted 'Are you sure we want to delete this Live Graph Setup?

Confirm	X
1	Are you sure we want to delete this Live Graph set up?
	OK Cancel

4. Click 'OK', the setup file for the group highlighted will be permanently deleted.



8.14. Save a 'WORKSPACE FOR THE LIVE GRAPH'

Setup your workspace, sized for the 'Live Graph'

1. Drag your 'Relay, Analog, Status' screens, etc. so you can place the 'LIVE GRAPH' screen to fit in your workspace. Below, you will see a sample workspace allowing room for your 'LIVE GRAPH'.

Relay Outputs						a'	0 0	Sensor Inputs	6								
R0 II Outputs M-1 COMP1 M-2 10401	Value Status Off Control of Contr	Last On Last Of Toda 02:09:22 02:10:22 00:00 01:47:03 01:47:04 00:00	y Cycles y Today k00 0 k01 0	Run Ydy 00:00:00 00:00:00	Cycles T Ydy Ru 0	otal Tol n Hrs Cyc 0.51 10 0.01 61		SII D	iensor inputs Ar In	Value Ita St. S9.01 so or 4	nual Filter/ atus Offset	Sensor Type MCST100	Last On/ MAX TDY 59.00	Last Off MIN TDY 59.01 sin 65	Run TDY/ Aug TDY 59.0F 50.0F	Cycles TDY	Run YDY/ Cyd Max YDY Me 59.0F 5 Foler F
		System Status Capacity	Turne	Wanted	Slep	Wanted	Rate of	Central	400	Mote	RefTin					e" 12"	
		Capady Constant Control State UNT 15 LOADED	Time 07:17:22	Wanted Actual 2/1	Shep Delay 60	Wanted % 100.0	Rules of Change 0.0	Control	4 On = 50.0F	Mode	Bel Typ R22	9				° 10 •	
		System States Capacity Cores State UTT State	Tume 07:17:22 Tunie	Wanted Actual 2/1 PSI Diff	Step Delay 60 FLA %	Wanted 56 100.0 Steps	Rate of Change 0.0 Lead?	Control ChiWtrOut Manual Chi Mtrout	é On = 50.0F	Media COOLING	Ref Typ R22	u				o' 2'	
		System Status Capacity Control State UNIT IS LOADED State	Time 07:17:22 Time 94:39:56	Wantedr Actual 2/1 PSI Diff 310.0P	Skep Delay 60 FLA % 60%	Wanted % 100.0 Steps 0	Rate of Change 0.0 Lead?	Centrol ChiWtirOut Manual FLA S N/A	#On = 50.0F	Mode COOLING	Rof Typ R22	<u>.</u>				° 13 •	
		Cepedy Cector State Control State UNIT IS LOADED State 2)(239 15 LOADED Expension	Time 07:17:22 Time 94:39:56 07:19:23	Wanted/ Actual 2/1 PSI Diff 310.0P 256.0P	3kep Delay 60 FLA % 60% 51% Cores(De	Wanted % 100.0 Steps 0 1 Supplication	Rate of Change Lead? Yes	Centrol ChilWtrOut Manual FLA S N/A N/A FL/ Tonel	i On = 50,0F	Mote COOLING	Ref Typ R22	•]			_	o' 12' +	
		States Consoly Consoly UNIT IS LOADED State DEPENDENCES 2)CHT IS LOADED DOV Glab	Time 07:17:22 Time 94:39:56 07:19:23 Time	Wanted/ Actual 2/11 PSIDiff 310.0P 256.0P Valve %	Step Delay 60 FLA % 60% 51% Control for Suct Supti	Wanted % 100.0 Steps 0 1 SupotHes ROC	Rate of Change Lead? Ves # ADJ Detay	Centrol ChilWtrOut Manual FLA 36 N/A N/A N/A N/A N/A	# Om = 50.0F	Mose COOLING	RetTyp R22	•]				o' 2'	
		Capacity Convoit Status Outro State UNIT IS LOADED State 2(249 IS LOADING Dep 2) (249 Value) 1) JOY V RADO 2) (249 Value)	Time 07:17:22 Time 94:39:56 07:19:23 Time 07:21:35 07:19:45	Wanted/ Actual 2/1 PSLD# 330.0P 256.0P Valve % 0.0%	38rp Delay 60 FLA % 60% 51% Control Dn Sud Suppt 78.4 19.4	Wanted % 100.0 8 8 9 1 1 5 1 9 1 8 0 0 0 0 0 0 0 0	False of Change 0.0 Lead? Yes d ADJ Detay 0 60	Control ChildVisOut Manual FLA% FV/A FV/A EXV Target (Adjusted) 10.067 10.067	# On = 50.0F	Mode CODUING	Ref Typ R22	•			_	o' 2'	
		Capady Capady Control State WIT IS LOADED State Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event Event	Time 07:17:22 Time 94:39:56 07:19:25 07:19:45 07:19:45 Sabrated	Wanted/ Actual 2/1 PSIDIF 310.0P 256.0P Valve % 0.0% Studion	3kp Delay 60 FLA % 60% 51% 51% Control On Suct Supth 78.4 78.4 Disc	Wanted % 100.0 Sheps 0 1 SuperHea ROC 0.0 0.0 Saburated 0.0	Falle of Change 0.0 Lead? Yes d ADJ Detay 0 60 Disc	Control ChildVisOut Manual FLA% N/A N/A EXY Tangel (Adjusted) 10.07 10.07 50	# On = 50.0F	Moas COOLING	Ref Typ R22	*		Salara		o' 2) •	

 Click on a 'LIVE GRAPH' file that was saved and place the 'Live Graph' setup file into your saved workspace. The next time you open the saved workspace, the 'Live Graph' will be placed in the exact location you specify in your workspace.



3. You can experiment with different workspace setups to allow room for two 'Live Graph setups'.

8.15. UNITS

Micro Control Systems announces support for . . .

"Field Selectable Units"

Option #1 - Ability to TEMPORARILY CHANGE UNITS DISPLAYED

Change the **Temperature** and **Pressure** readings <u>**TEMPORARILY**</u>, when viewing MCS-CONNECT with TOUCHSCREEN or on your Computer.

and o	Change the EMPERATURE	2	Units Temperature Pressure	•	Fahre	nheit Is	Units - Fahrenl Celsius Kelvin d	Temperature heit, or'
7 7	EMPORARII V		Use config un	iits 🛛 🔾	Kelvir		Use cor	nfig units
File Setup Disconn Site Info	Res Jr v be Vie Scan Graph Tra	ew Button Bar Time I ansmit Cfg Receive C	Help Live Graph E	Extended H	listory - I mware	Disable ALAR Diagnostic	M ALERT Save P	S-ACTIVI Analysis Units rint Graphics Aname
			Units					
🗍 Sens	or Inputs		Temperat	ure •	0 PSI		PSI, Bar,	Pressure
Basic	Advanced		Use confi	g units	Bar		Kilopas	cals or'
	Soncor				O Kilo	pascals	Use cor	ntig units
SI 🕐 SI	# Inputs	Value	Status	Off	set	Typ)e	
M- 1	ChilWtr In	25.2C	AUTO	0/-17	7.8C	MCST	100	
M- 2	ChilWtrOut	24.8C	AUTO	0/-17	7.8C	MCST	100	
M- 3	SUCT PSI 1	-6.9B	AUTO	0/0.0)B	MCS-2	200	
M- 4	DISC PSI 1	-6.9B	AUTO	0/0.0)B	MCS-	500	

Option #2 - ABILITY TO PERMANENTLY CHANGE UNITS DISPLAYED

Choose the Temperature Unit or Pressure Unit you want as your default or 'Use Config Units' that is setup in MCS Controllers.



continued to next page

Both Option #1 and Option #2



<u>'UNITS' WILL DISPLAY RED</u> when you are connected to MCS-MAGNUM controller showing that the original configuration file is being overridden, **TEMPORARILY** or by **Default Display Units** set in General Options.



Change Configuration file for Differential Temperature

TO TAKE ADVANTAGE OF THE **FIELD SELECTABLE UNITS** THE FIRMWARE AND CONFIGURATION MUST BE UPDATED FOR THE DIFFERENTIAL TEMPERATURES TO BE DISPLAYED CORRECTLY.

The following Firmware and Software tools are needed for these new features:

MCS-CONFIG:	VER 18.04.06 or higher
MCS-CONNECT:	VER 18.39.16 or higher
MCS-MAGNUM FIRMWARE:	XXXX V17.90 or higher (XXXX=HVAC, CENT, etc)

New MCS-CONNECT VER 18.39.16, MCS-CONFIG 18.04.06, MCS-MAGNUM FIRMWARE 17.90 or higher releases are on the MCS WEBSITE: https://mcscontrols.com/

New Feature added in new Firmware (XXXX V17.90) and MCS-CONFIG V18.04.06 and higher:

• Added new option, DELTA_TMP in drop-down menu of setpoints tab and SI screens

Contact your OEM or MCS for existing MCS-MAGNUMS in the field that will require a configuration update to use the new software and firmware.

8.16. DIAGNOSTIC SAVE (POPUP)

(available in MCS-CONNECT Version 18.22.20)

The Diagnostic Save Popup can be activated when you are connected to a controller either by 'Serial', 'Ethernet' or connect 'Remotely'.

18.22.20								-	
File Setup Offline	e Reset/Clear	Workspace	View Button	Bar Time H	elp Live Graj	ph Extended n	Story Activ	ALARM AL	ERTS-INACT
Disconn	Scan	Graph	Transmit Cfg	Receive Cf	View On	ly Diagnost	ic Save	Print Graphic	s Alarms
Address	HW Serial #	1 - Nalco Cfg Name	1 - HOT F	Unit Model #	Montego Ba Unit Serial #	Installed Date	Cfg Vers.	Firmware Ve	Cfg Date
192.168.10 192.168.10	000080	MCS-Test Nalco	CRR	Job 20284		08/22/2	17	HVAC 17	10/22/2
192.168.10	000884	HOT RO	STI	HOT RO		10/02/2	17	HVAC 17	10/02/2
	000001	1101110111							

Once you scan for all controllers in MCS-CONNECT you can click on the 'DIAGNOSTIC SAVE' button at the top. The Diagnostic Save Popup will appear.

Disconnect	Scan	Graph	Transm	iit Cfg Receive	Cfg View Only	Diagno	ostic Save	Print	Graphics	Alarms
Site Info 1 - Nak	0 1 - MCS	Test 1 - HOT	ROON	Diagnostic Save	Рорир			×		
Address	HW Serial #	Cfg Name	Comp	0					Vers.	Cfg Date
2.168.10.131	005017	Nalco	- (1)					1.27-D	10/22/2018
2.168.10.189	080000	MCS-Test		A Diagnostic Sa	ve has been activated	ι.			7.36	10/22/2018
2.168.10.240	000884	HOT ROOM		The current Gra	ph interval is set to 0	seconds.			.23-H	10/02/2014
2.168.10.116	012114	Montego Bay	F	Select in the tal	le below the options t	o complete.			1.38-C	10/23/2018
				Thank you for y	OK Canc	el				
			_	Unit	Config	Print	Lockout	History		
				Name	Pullback?	To File?	Info?	File?		
			Na	lco	V	K	V			
			MC	CS-Test						
			HC	DT ROOM						

If you have multiple controllers connected to the network, you can choose a 'Diagnostic Save' for each controller, again you have the option of what information you want saved.

A second popup will appear showing the file has been saved to your hard drive.

You have the option to email the zip saved file to: <u>support@MCScontrols.com</u> or to a custom email address (Internet connection required).

Below shows file that was emailed as per the setup in the 'Diagnostic Save'.

Network Notifications Diagnostic for HW Serial # This email contains the Diagnostic package	0 11:19 AM
MultipleDiagnostics.zip	

7 KB

Diagnostic Save is COMPLETE.
Diagnostic zip file created.
Files Created:
HOT ROOM_OCT-25-18 1111am-StatusPrint.ht
HOT ROOM_OCT-25-18 1111am-Diagnostic.cdg
placed in a Diagnostics.zip
These files are located in the 'MCS/DIAGNOSTICS/ Directory
Auto Email zip file to support@mcscontrols.com
(Internet connection required).
Email zip file to custom email (Internet connection required).
Email Address.
Email Message (Jobsite, contact info, company, etc.) Limit 200 chars.
OK

8.16.1 MCS-CONNECT - Version release 18.26.11 changes

With the release of MCS-CONNECT Version 18.226.11, the 'Live Graph' section has been upgraded to include the following:

GRAPHS - LEFT TO RIGHT READING - Graphs now move from left to right as shown in screen shot below: This makes it easier when viewing the graph to see changes aligned with the legend on the left.

20 10	 ~				
30					
50 Ag					
e 60					
70					
80 -					
00					

'FIXED VAL' - When adding a new Live Graph you now can set 'Fixed Val' for setting up you zones for plotting a point. Each new Live Graph can contain 2 fixed values on the graph. These fixed values or lines help in seeing the movement of the plotted point (see above screen shot).

Graph setup	for LL125-PID Rev ts: three 💌 C	/C4) Digital Data (D) 💿 A	nalog Data (A)	
Point 1:	Sensor Inputs	SUCT SH 1 (A)	-	
Point 2	Fixed Val	▼ 13.5		
Point 3	Fixed Val	▼ 10.5		
X and Y AXIS Se X Axis span (see Y-Min: 0 Y-Max: 30	tup c.): 300 Submit	Clear Cancel		

- OVERWRITE A SAVED LIVE GRAPH Live Graphs now can be overwritten.
- EDIT and RE-SAVE A LIVE GRAPH with this change a technician can now edit a saved Live Graph.
 - 1. OPEN THE LIVE GRAPH YOU WANT TO EDIT
 - 2. MAKE CHANGES, CLICK 'SUMMIT'
 - 3. ONCE THE EDIT IS CORRECT, CLICK SAVE, overwriting the Live Graph or saving as a new graph.

Chapter - 9. Various Screens connected to a Controller

The Status screen contains information on Relay Outputs, Sensor Inputs, Analog Outputs, Current States, Set points, Alarms, Service Info, Schedule Info, Information/Help Box. The different parts of this screen are explained in other sections. Use the navigation arrows to move between frames.

The Basic/Advanced mode is only for the RO, SI and AO grids. Advanced mode setting on

tables will display additional information as shown in the status screen 'ADVANCED MODE below.

Column 1 on all frames have a 'Hide/Show' icon I which allows the user to only show the items which are 'Clicked to show'.

This allows user to see critical information on sensors, relays, etc.



9.1. Relay Output Information

This window displays a grid which contains relay outputs. It shows the number, name, value, manual status, last on, last off, run today, cycles today, run yesterday, cycles yesterday, total run hours, and total cycles. The fields are explained in more detail below. Use the horizontal scroll bars to view all data for all the relays.

To assist in identifying an item, the background color can be toggled between 'WHITE '(unsettled), 'GREEN' or 'BLUE' (color alternated by line), by clicking on the item's Name cell. The highlighting will remain active clicked off or until MCS-CONNECT is exited OR THE USER SELECTS A

DIFFERENT CONTROLLER.

RO # - This is the number of the Relay Outputs. M-1 shows the data for RO #1 on the Master board and a 1-1 would show data for RO #1 on I/O board #1 and so on.

	MC:	S-Conne	ect 17.00U	-	-	-	_	TUE O	CT 20, 38 04	6:37:52	-	-		
	File S	Setup	Load a Graph File	e Rese	t/Clear W	orkspace	View Butte	on Bar He	elp					
			Disconnect				Scan			Graph		Trar	smit Cfg	-
	Site	Info	1 - LC 26 T	ON	1 - PACT	171D3-T4	-ZT 1-	SAIC	1 - Chiller	1 Stone	1 - MP	1 - STER		2 - SI
		Relay (Dutputs											เ้ ⊠ี
	Ba	isic /	Advanced	-										
	-	RO #	Relay Outputs	Value	Manual Status	Last On	Last Off	Run Today	Cycles Today	Run Ydy	Cycles Ydy	Total Run Hrs	Total Cycles	
Status Screen shows		M-1	COMP 1M	OFF	AUT 🔻	00:00:00	10:49:18	00:00:00	0	00:00:00	0	0.00	0	-
backgrounds on POWS		M- 2	COMP 1SD	OFF	AUTO	00:00:00	10:49:18	00:00:00	0	00:00:00	0	0.00	0	
		M- 3	LOAD 1	OFF	MANON	00:00:00	10:49:18	00:00:00	0	00:00:00	0	0.00	0	
in alternated colors,		M-4	UNLOAD 1	OFF	MANOFE	00:00:00	10:49:18	00:00:00	0	00:00:00	0	0.00	0	
WHITE, GREEN, BLUE		M-5	LLS 1	OFF	LOCKON	00:00:00	10:49:18	00:00:00	0	00:00:00	0	0.00	0	
		M-6	SPAREM-6	OFF	LOCKON	00:00:00	10:49:18	00:00:00	0	00:00:00	0	0.00	0	
		M-7	SPAREM-7	OFF	LOCKOFF	00:00:00	10:49:18	00:00:00	0	00:00:00	0	0.00	0	_
		M- 8	SPAREM-8	OFF	AUTO	00:00:00	10:49:18	00:00:00	0	00:00:00	0	0.00	0	
		M-9	SPAREM-9	OFF	AUTO	00:00:00	10:49:18	00:00:00	0	00:00:00	0	0.00	0	
		M-10	SPAREM-10	OFF	AUTO	00:00:00	10:49:18	00:00:00	0	00:00:00	0	0.00	0	

Relay Outputs - This is the name of the Relay Output. Click on this cell to toggle highlight function Double clicking on Controller's RO brings up FLA popup. (for compressor relay outputs)

				COMP 1M		23	1	_
Bas	Relay O	outputs dvanced			COMP 1M			
•	RO #	Relay Outputs COMP 1M	Value	Name	FLA Calc. Constants Range	Value	Total Run Hrs 0.00	Total Cycles 0
	M-2 M-3	COMP 1SD LOAD 1	OFF OFF	Slide Multiply	-32,768 to 32,767	78	0.00	0
	M-4 M-5	UNLOAD 1 LLS 1	OFF	Slide Divide	-32,768 to 32,767	10	9.75	2
	M-7 M-8	SPAREM-7 SPAREM-8	OFF	Design Suct. PSI	-3,276.8 to 3,276.7	68	0.00	0
	M-9 M-10	SPAREM-9 SPAREM-10	OFF	Design Disch. PSI	-3,276.8 to 3,276.7	320	0.00 174.14	0
	1-1 1-2 1-3	COMP 2M COMP 2SD	OFF	Nom. Tonnage(of Step)	-3,276.8 to 3,276.7	0	0.00	0
	1-4 1-5	UNLOAD 2 LLS 2	OFF	EXV Start(when lead)	-3,276.8 to 3,276.7	25.0	0.00	0
	1-6	SPARE1-6 SPARE1-7	OFF	EXV OFF Adjust	-32,768 to 32,767	-1	0.00	0
	1-8 2-1 2-2	COND PMP	OFF	OK		Cancel	0.00	0

Value – This is the value of the Relay Output. A value of On or Off shows the value as a normal digital RO. This field can be changed, see Relay Output Manual Status Change.

Manual Status – This is the status of the device, i.e. AUTO, MANON, MANOFF, LOCKOFF, LOCKOFF AND MANCMP%. If the status is other than AUTO, the background for that cell will be RED. This is to highlight a condition that is not normal operations.

Last On – Last time the relay was turned on.

Last Off – Last time the relay was turned off.

Run Today – The time (hours: minutes, seconds) the relay has run today.

Cycles Today – The total times the relay has cycled today.

Run Yesterday – The time (hours: minutes, seconds) the relay had run yesterday.

Cycles Yesterday – The total times the relay had cycled yesterday.

Total Run Hours – The accumulated time (hours: minutes) the relay has run.

Total Cycles – The accumulated number of times the relay had cycled.

Relay Output Manual Status Change

To change the status of a RO, single click on the MANUAL STATUS cell for that RO. A drop down menu will appear and user slects new value. The arrow keys will scroll through the options: AUTO, MANON, MANOFF, LOCKON, LOCKOFF and MANCMPS: When the status desired is highlighted, single click on that entry. The information is transmitted to the MCS controllers. The following message will appear in the information frame "Change has been made to the MCS controller and acknowledged" if the transmission is successful. You must be properly authorized to make these changes. If you do not have proper authorization, refer to the section "Getting Authorized" in this manual.

	Relay O	utputs										רׂם
Det	RO#	Relay Outputs	Value	Manual Status	Last On	Last Off	Run Today	Cycles Today	Run Ydy	Cycles Ydy	Total Run Hrs	Total Cycles
	M-1	DisclsoVIv(ul)	OF		00:00:00	22:21:52	00:00:00	0	00:00:00	0	0.00	0
	M- 2 M- 3	BldPmp2	ON	MANON	00:00:01	00:00:01	19:44:32	1	00:00:00	0	67.75	3
	M-4 M-5	CondFan VestCool (ul)	OF	MANOFF	00:00:00 00:00 Sci	22:21:52	00:00:00	0 hange the	00:00:00	0	0.00	0
	M-6 M-7	Alarm Economizer(ul)	ON	LOCKOFF	22:2 sta	tus of an R	RO from Au	ito, etc.	24:00:07 00:00:00	0	141.38	1
	M-8	SPAREM-8	OF	MANCMP9	00:00 wis	ck on Manu	ual Status je.	row you	00:00:00	0	0.00	0
	M-9 M-10	SPAREM-9 SPAREM10	OFF	AUTO	00:00:00	22:21:52	00:00:00	0	00:00:00	0	0.00	0
	1-1	Comp1 EconoCtrl	OFF	LOCKOFF	00:00:00	22:21:52 22:21:52	00:00:00	0	00:00:00	0	0.00	0
				•								•

9.1.1 Relay Output Manual Percentage Value Change

If you are controlling with a pulsed output, (any relay output that would utilize a pulsed output such as a slide valve or inlet guide valve) a screen will appear that allows the user to enter a manual percentage value. If the status is already set to Manual, the user can click on the percentage value and the screen will also appear. Enter the desired change, the following message will appear in the information frame "Change has been made to the MCS controller and acknowledged" if the transmission is successful. You must be properly authorized to make these changes. If you do not have proper authorization, refer to the "Getting Authorized" in this manual.

COMP SETTING SCREEN shows changing the speed on a slide valve or inlet guide valve

sic A	dvanced											
RO#	Relay Outputs	Value	Manual Status	Last On	Last Off	Run Today	Cycles Today	Run Ydy	Cycles Ydy	Total Run Hrs	Total Cycles	Min. Run Time
M-1	Comp 1	OFF	MA 🔻	22:31:02	00:23:08	00:00:00	0	00:00:00	0	1.87	1	-1
M-2	Comp 2	OFF	AUTO	22:32:50	00:23:07	00:00:00	0	00:00:00	0	1.84	1	-1
M-3	Comp 3	OFF	AUTO		10 11		X	00:00:00	0	1.81	1	-1
M-4	Comp 4	OFF	AUTO Ple	ease Enter Ma	nual Speed	%		00:00:00	0	1.78	1	-1
M-5	HeatStg1Lo	OFF	AUTO					00:00:00	0	0.00	1	0
M-6	HeatStg1Hi	OFF	AUTO	? .	lanual Spee	d %		00:00:00	0	0.00	0	0
M-7	Heat Stg 2	OFF	AUTO					00:00:00	0	0.00	0	0
M-8	Heat Stg 3	OFF	AUTO	-		and a second		00:00:00	0	0.00	0	0
M-9	CndFn1	OFF	AUTO		UN	ancer		00:00:00	0	1.23	5	-1
M-10	CndFn2	OFF	AUTO	_				00:00:00	0	0.95	5	-1
1-1	CndFn3	OFF	AUTO	23:50:45	00:23:08	00:00:00	0	00:00:00	0	0.76	3	-1
1-2	CndFn4	OFF	AUTO	23:51:50	00:23:08	00:00:00	0	00:00:00	0	0.57	2	-1
1-3	SupplyFan	ON	AUTO	22:23:03	22:21:56	14:27:12	0	24:00:06	0	1241.16	1	-1
1-4	Spare1-4	OFF	AUTO	00:00:00	22:21:56	00:00:00	0	00:00:00	0	0.00	0	-1
1-5	Spare1-5	OFF	AUTO	00:00:00	22:21:56	00:00:00	0	00:00:00	0	0.00	0	-1
1-6	Spare1-6	OFF	AUTO	00:00:00	22:21:56	00:00:00	0	00:00:00	0	0.00	0	-1
1-7	CoolCall (ul)	ON	AUTO	22:30:58	22:25:53	14:27:12	0	24:00:06	0	1241.04	2	0

RELAY OUTPUT USER LOGIC SETTING SCREEN Click on a Relay with a (ul) to see these popups. make changes, apply and click ok.

Button Bar Help			~~~				
n	Graph	Transmit Cfg	Receive Cfg	Supervisor	Edit Time	Print	
Furbocor 1 - Chiller Relay Outputs Basic	1 Stone 1 - STER	LING 1 - ACU 1 - LC	26 TON 2 - SRD 1 - MP	2 - ASY230BF_01	1 - SAIC 1 - RTU# 2	25 Rev. F	
RO # Relay Outputs M-1 Comp 1	Value Status L	ast Q User Defined Relay O	Cycles Run Cycles utput Pulsing/Delay Alarm	Total Total Min	Run	×	
■ * Comp 2 M-3 Comp 3 M-4 Comp 3 M-5 HeatSigt10 M-6 HeatSigt10 M-7 HeatSigt10 M-7 HeatSigt10 M-8 HeatSigt10 M-9 Codfn1 M-9 Codfn1 M-10 Codfn3 1-2 Codfn1 1-3 Supplyfan 1-4 Spare1-6 ℓ 1-7 CoolCall (ci)	OFF AUTO 2 OFF AUTO 2 OFF AUTO 1 OFF AUTO 1 OFF AUTO 1 OFF AUTO 1 OFF AUTO 2 OFF AUTO 2	2233 2230 0000 0000 0000 2232 2255 51 2255 51 DmndLimSp 0000 0000 0000 0000	Vices Defined Relay Day Operands/Links Operands/Links Deby Before ON Fude Count Fud Fude Count	CoolCall Publing/Delay Alarm Publing/Delay Alarm CoolCall Turne of the set Apply	Limit #1 Publing adv for the # of Seconds I were Operands/Limits Public Operands/Limits Public Operands/Limits Public Vice	n tennış O're Palaiş (S - 31.728). Sing / Delay Alarm User Defi tiş when Rekişi harış O.87 O No	ned RO Alarm

Apply

OK

9.1.2 Relay Output Manual Resetting Run Hours\Cycles Today

If equipment is changed in your system - pumps, fans, etc., you can reset the

'RUN TODAY HOURS' by double clicking on the 'RELAY' in that row.

Clicking 'OK' will clear that cell allowing you to reset the hours to '0'.

The 'CYCLES TODAY' can be changed the same way resetting that to '0'.

Double clicking "TOTAL RUN HOURS' for that unit allows you to reset the total run hours and total cylces of the unit. If the replacement unit has been running elsewhere, you can enter values in this screen if they are known. SEE SCREEN BELOW.

'You must be properly authorized to make these changes. If you do not have proper authorization, refer to the 'Getting Authorized' in this manual.



9.2. Sensor Input Information

This window displays a grid which contains the number, name, value, manual status, offset, sensor type, last on or maximum today, last off or minimum today, run today or average today, cycles today, run yesterday or maximum yesterday, cycles yesterday or minimum yesterday, total run hours or average yesterday and total cycles. The value and manual status are updated on every cycle. The fields are explained further below. Use the scroll bars to view all data.

To assist in identifying an item, the background color can be toggled between WHITE(unselected) and GREEN or BLUE (color alternated by line), highlighted, by clicking on the items Name cell. The highlighting will remain active until clicked off or MCS-CONNECT is exited. Individual MCS

	Advanced		_										
SI#	Sensor	Value	Manual Status	Filter/ Offset	Sensor Type	Last On/ MAX TDY	Last Off/ MIN TDY	Run TDY/ Avg TDY	Cycles TDY	Run YDY/ Max YDY	Cycles YDY/ Min YDY	Ttl Run HRS/ Avg YDY	Total Cycles
M-1	WTRIN	51.5F	AUTO	0/0.0F	MCST100	74.3F	47.2F	64.0F		71.7F	47.0F	64.8F	
M-2	WTR OUT	45.2F	AUTO	0/0.0F	MCST100	74.3F	44.3F	61.7F		73.2F	44.1F	64.6F	
M-3	SUCT PSI 1	30.1P	AUTO	3/0.0P	MCS-200	85.6P	15.8P	63.4P		112.0P	15.7P	85.7P	
M-4	DISC PSI 1	135.6P	AUTO	3/0.0P	MCS-500	160.9P	75.0P	97.3P		156.0P	68.3P	93.6P	
M-5	OIL PSI 1	135.4P	AUTO	0/0.0P	MCS-500	165.3P	33.5P	92.3P		156.8P	32.9P	91.1P	
M-6	AMPS 1	31.4A	AUTO	3/0.0A	CT300	59.7A	A0.0	10.7A		57.8A	0.0A	2.1A	
M-7	VOLTS 1	393	AUTO	3/0	USER DEF	519	28	140		520	28	50	
M- 8	DISC TMP 1	142.0F	AUTO	0/0.0F	MCST100	144.5F	73.1F	95.2F		137.6F	68.9F	87.4F	
M-9	MTR TMP 1	108.8F	AUTO	0/0.0F	PT 1000	108.8F	57.9F	98.9F		108.8F	64.8F	100.6F	1
M-10	MTR FLT 1	OK	AUTO	0/0	DIGITAL	00:00:00	09:47:49	00:00:00	0	00:00:00	0	0.00	1
M-11	OIL LVL 1	OK	AUTO	0/0	DIGITAL	06:35:56	06:36:46	00:00:00	0	00:00:00	0	0.06	6
M-12	Cmp1VfdFlt	OK	AUTO	0/0	DIGITAL	00:00:00	09:47:49	00:00:00	0	00:00:00	0	0.00	1
M-13	HIPSI SW1	OK	AUTO	0/0	DIGITAL	00:00:00	09:47:49	00:00:00	0	00:00:00	0	0.00	1
M-14	DISABLE 1	NO	AUTO	0/0	DIGITAL	14:24:51	14:36:07	00:00:00	0	00:00:00	0	2.97	6
M-15	RUN/STOP	RUN	AUTO	0/0	DIGITAL	08:49:32	08:47:25	09:41:38	1	24:00:09	0	766.39	5
M-16	EMG/STOP	NO	AUTO	0/0	DIGITAL	00:00:00	09:47:49	00:00:00	0	00:00:00	0	0.00	1
1-1	SUCT PSI 2	30.4P	AUTO	3/0.0P	MCS-200	86.1P	13.9P	62.1P		115.2P	14.8P	88.3P	
1-2	DISC PSI 2	131.2P	AUTO	3/0.0P	MCS-500	154.4P	78.7P	99.0P		151.3P	74.4P	94.0P	
1-3	OIL PSI 2	132.4P	AUTO	0/0.0P	MCS-500	155.0P	26.2P	98.7P		151.9P	21.9P	93.2P	
1-4	AMPS 2	32.8A	AUTO	5/0.0A	CT300	59.0A	0.0A	13.2A		50.9A	A0.0	2.5A	
1-5	VOLTS 2	375	AUTO	3/0	USER DEF	499	28	168		468	28	54	
1-6	DISC TMP 2	149.3F	AUTO	0/0.0F	MCST100	153.1F	81.6F	108.8F	1	145.5F	73.8F	90.3F	-
1-7	MTR TMP 2	115.8F	AUTO	0/0.0F	PT 1000	125.0F	85.7F	106.6F	1.1.1.1	118.1F	83.4F	103.5F	
1-8	MTR FLT 2	OK	AUTO	0/0	DIGITAL	16:31:58	16:39:57	00:00:00	0	00:00:00	0	0.13	2
1-9	OIL LVL 2	OK	AUTO	0/0	DIGITAL	01:40:02	01:40:05	00:00:00	0	00:00:00	0	0.00	2
1-10	Cmp2VfdFlt	OK	AUTO	0/0	DIGITAL	00:00:00	09:47:49	00:00:00	0	00:00:00	0	0.00	1
1-11	HIPSI SW2	OK	AUTO	0/0	DIGITAL	00:00:00	09:47:49	00:00:00	0	00:00:00	0	0.00	1
1-12	DISABLE 2	NO	AUTO	0/0	DIGITAL	13:19:46	14:44:19	00:00:00	0	00:00:00	0	121.77	5
1-13	PHASELOSS	OK	AUTO	0/0	DIGITAL	00:00:00	09:47:49	00:00:00	0	00:00:00	0	0.00	1
1-14	AMBIENT	82.9F	AUTO	0/0.0F	MCST100	83.5F	75.2F	77.3F		96.4F	71.7F	82.8F	
1-15	VestbulTmp	82.6F	AUTO	0/0.0F	MCST100	91.3F	73.1F	85.3F		99.7F	74.0F	90.3F	

controllers's can have different items highlighted.

SI # – This is the number of the Sensor Input. M-1 shows the data for SI #1 on the Master board and a 1-1 would show data for SI #1 on I/O board #1 and so on.

Sensor Input Name - This is the descriptive name of the Sensor Input.

Value – This is the value of the Sensor Input. If the sensor is an analog, the value plus a character will be displayed. If the sensor is a digital, the status will be displayed as per this popup:

Manual Status – Auto or Manual, if manual and an analog, the value displayed will be the manual value. If digital then it can be 'MANON' on or 'MANOFF'. This field can be changed, see Sensor Input Manual Status Change. If the status is something other than AUTO, the background for that cell will be RED. This is to highlight a condition that is not normal operations.



Filter/Offset – Is the amount of adjustment that has been made to the actual value of an analog input. This field can be changed, see Sensor Input Offset Change.

Sensor Type – Displays the type of sensor. This field can be changed, see Sensor Input Type Change.

Last On / Maximum Today -

IF DIGITAL INPUT - Time that it was last on

IF ANALOG INPUT – Maximum value today

Last Off / Minimum Today

IF DIGITAL INPUT – Time that it was last off IF ANALOG INPUT – Minimum value today

Run Today / Average Today

IF DIGITAL INPUT – Total time on today IF ANALOG INPUT – Average today value of sensor

Cycles Today - Digital only, total number of time the sensor cycled today

Run YESTERDAY / Maximum YESTERDAY

IF DIGITAL INPUT – Total time yesterday IF ANALOG INPUT – Maximum value of sensor

Cycles YESTERDAY / Minimum YESTERDAY

IF DIGITAL INPUT – Total cycles yesterday IF ANALOG INPUT – Minimum value of sensor

Total Run Hours / Average YESTERDAY

IF DIGITAL INPUT – Total time on yesterday IF ANALOG INPUT – Average value of sensor

Total Cycles - - Digital only, total number of times the sensor cycled

9.2.1 Sensor Input Manual Status Change

Changing the status of an <u>analog input</u> to manual will cause the following screen to appear. Enter the desired sensor and press **ENTER**. or click 'OK'

Overide	23
1	F
CLEAR VALUE	
2	3
5	6
8	9
0	
CANCE	iL.
	CLEAR VALUE 2 5 8 0 CANCE

9.2.2 Sensor Input Filter/Offset Change

To change the offset of an analog input, double click on the OFFSET cell that is to be changed. The screen below will appear. Enter the desired offset then press 'ENTER' or 'OK' button to transmit the change to the MCS controller.



9.2.3 Sensor Input Sensor Type Change

To change the type of sensor on the input, click on the Sensor Type. The following screen will appear: Scroll down to the appropriate sensor type, and select the desired change. The following message will appear in the information frame "Change has been made to the MCS controller and acknowledged" if the transmission is successful. You must be properly authorized to make these changes. If you do not have proper authorization, refer to the section "Getting Authorized" in this manual.



9.2.4 Clearing of a 'Last On/ MAX TDY' and 'Last Off/ MIN TDY' cell

Double click the column and row you wish to clear.

sas	SIC /	Advanced			T	1				_		1		_
	SI#	Sensor Inputs	Value	Manual Status	Filter/ Offset	Sensor Type	Last On/ MAX TDY	Last Off/ MIN TDY	Run TDY/ Avg TDY	Cycles TDY	Run YDY/ Max YDY	Cycles YDY Min YDY	Ttl Run HRS/ Avg YDY	Total Cycles
	M-1	ChilWtr In	56.6F	AUTO	0/0.0F	MCST100	56.6F	56.6F	56.6F		56.6F	56.6F	56.6F	_
	M-2	ChilWtrOut	48.6F	AUTO	0/0.0F	MCST100	51.5F	6.6F	48.0F		53.4F	32.6F	49.2F	
	M-3	SUCT PSI	159.6p	AUTO	0/0.0p	TI-150A	159.8p	159.6p	159.6p		159.8p	159.6p	159.6p	
	M-4	DISC PSI	51.4p	AUTO	0/0.0p	TI-150A	51.6p	51.2p	51.3p		51.6p	51.2p	51.3p	
	M-5	HI OIL PSI	74.1p	AUTO	0/0.0p	TI-150A	74.1p	74.1p	74.1p		74.3p	60.2p	73.8p	
	M- 6	LO OIL PSI	40.2p	AUTO	0/0.0p	TI-150A	40.2p	40.2p	40.2p		40.2p	40.2p	40.2p	
Ī	M-7	OIL TEMP	71.4F	AUTO	0/0.0F	MCST100	71.4F	63.7F	71.3F		71.4F	52.2F	70.9F	
	M- 8	EVAP TEMP	-99.9F	AUTO	0/0.0F	MCST100	104.4F	-99.9F	-12.4F		104.4F	-99.9F	-30.4F	
	M- 9	CND IN	93.0F	AUTO	0/0.0F	MCST100	93.0F	92.8F	92.9F		93.0F	92.8F	92.9F	
1	M-10	CND OUT	114.3F	AUTO	0/0.0F	MCST100	114.3F	114.3F	114.3F		114.3F	114.3F	114.3F	
	M-11	LIQ TEMP	66.7F	AUTO	0/0.0F	MCST100	71.0F	65.4F	69.9F		71.4F	44.8F	68.2F	
	M-12	DISC TEMP	146.5F	AUTO	0/0.0F	MCST100	146.5F	146.5F	146.5F		146.5F	146.5F	146.5F	_
Ī	M-13	CHW FLOW	NO	AUTO	0/0	DIGITAL	00:00:00	12:41:52	00:00:00	0	00:00:00	0	172.53	-1
1	M-14	PHASELOSS	TRIP	AUTO	0/0	DIGITAL	12:41:55	08.09.52			-		87	1
1	M-15	RUN/STOP	STOP	AUTO	0/0	DIGITAL	00:00:00	08:26:13-	Sensor Last	Off/Min F	leset		7	1
	M-16	EMG/STOP	YES	AUTO	0/0	DIGITAL	00:00:00	00:00:00				_	40	0
	1-1	AMPSA	0.0A	AUTO	0/0.0A	CT500	0.0A	0.0A					A	
	1-2	AMPS B	0.0A	AUTO	0/0.0A	CT500	0.0A	0.0A	2				A	
	1-3	AMPSC	0.0A	AUTO	0/0.0A	CT500	0.0A	0.0A-		Do you wa	nt to reset	this Cell?	A	
	1-4	SPARE1-4		AUTO	0/0	SPARE	-999	-999	-				9	
	1-5	SPARE1-5		AUTO	0/0	SPARE	-999	-999		-		1	9	
Ē	1-6	SPARE1-6		AUTO	0/0	SPARE	-999	-999 -		Yes	No		9	

click ok.

Sensor Input - 'User Logic'

To make changes to this type of sensor, double click on name of user logic sensor, the screen above will appear, make changes, click 'Apply', then click on 'OK"



9.3. **Analog Output Information**

This window displays the #, name, value, manual status, type, and maximum today, minimum today, average today, maximum yesterday, minimum yesterday and average yesterday. The fields are explained further below. Use the scroll bar to view all data.

Analog Output - Linear Control

To make changes to this type analog output device, click twice on the name and the below screen will appear. Make changes and click ok.



To assist in identifying an item, the background color can be toggled between WHITE, normal, and GREEN or BLUE (color alternated by line), highlighted, by clicking on the items Name cell. The highlighting will remain active until clicked off or MCS-CONNECT is exited. Individual MCS controllers's can have different items highlighted and this will not be lost when moving between units.

- AO # This is the number of the Analog Output. M-1 shows the data for the 1st AO on the Master board. The MCS-8 has 1 AO on the master. The Magnum has 4 AO's on the master. A 1-1 would show data for AO #1 on I/O board #1 and so on.
- Analog Output Name This is the name of the Analog Output. Click on this cell to toggle highlight function.
- Value This is the current percentage value of the analog output.
- Manual Status This is the status of the device, i.e. auto, manual. If the device is in 'Manual'. then the information in the value field is for the manual setting. If the device is not in AUTO status, the background for this cell will be RED.

Maximum Today – This is the maximum value that has occurred in the value field today.

Minimum Today - This is the minimum value that has occurred in the value field today.

Average Today - This is the average value that has occurred in the value field today.

Maximum Yesterday - This is the maximum value that occurred in the value field yesterday.

Minimum Yesterday - This is the minimum value that occurred in the value yesterday.

Average Yesterday - This is the average value that occurred in the value field yesterday.

9.4. Status Information

This window displays the status of the system being controlled. The information will vary

depending on the system. Detailed definitions of this screen and the information displayed are contained in the specific operating manuals for each set of MCS controller firmware manual.

The windows shown is for the MCS-MAGNUM HVAC VERSION 17 FIRMWARE.

This window displays the capacity control state, time, steps wanted on, steps on, sensitivity, slope, variable %, compressor number, state, time, oil differential, lead/lag and steps on. The window is for the standard HVAC firmware. The fields are explained further below. Use the scroll bar on the right to view data vertically and the scroll bar on the bottom right to view data horizontally.

Capacity Control State	Time	Wanted/ Actual	Step Delay	Wanted %	Rate of Change	Control On	Mode	Ref Type
INIT IS LOADING	00:18:41	2/2	139	61.0	0.0	WTR OUT = 46.9F	COOLING	R134a
State	Time	PSIDiff	FLA %	Stens	Lead?	1		
CMP IS RUNNING	02:12:58	115.6P	54%	1	Ves	-		
2)CMP IS RUNNING	02:04:12	110.1P	50%	1				
			r	r		-		
Evap EXV State	Time	Valve %	Control On Suct. Supht	SuperHeat ROC	ADJ Delay	EXV Target (Adjusted)		
1) EXV IS HOLDING	00:03:35	37.3%	9.9	-0.2	60	N/A		
2) EXV IS HOLDING	00:02:40	38.9%	9.9	0.1	60	N/A		
Suction Temp	Saturated Suction	Suction Superheat	Disc Temp	Saturated Discharge	Disc Superheat	Subcooling	Liquid Temp	Saturated Liguid Temp
L) 47.9	38.0	9.9	147.2	111.5	35.7	9.3	99.7F	109.0
48.6	38.7	9.9	151.7	108.7	43.0	7.7	100.1F	107.8

9.4.1 Capacity Information

Capacity		Wanted/	Step	Wanted	Rate of			Martine
Control State	Time	Actual	Delay	%	Change	Control On	Mode	RefType
NTT IS LOADING	00:18:41	2/2	139	61.0	0.0	WTR OUT = $46.9F$	COOLING	R134a

- **Capacity Control State** State of the chiller. (Startup, disabled, lockout, lost I/O, off, holding, step-, and step+) See the MCS controller manual for your application for descriptions of each state.
- Time The time the chiller has been in the state
- Steps Wanted On Number of steps wanted on

Steps On – Actual steps on

Step Delay – Sensitivity of control temperature. The set point (step sensitivity) value assigned to limit or dampen the rate of change between compressor steps. If sensitivity = 1, then 1 degree of difference from target accumulators 1 second worth of delay. If sensitivity = 2, then 1 degree of difference from target accumulators .5 seconds worth of delay.

Wanted FLA % - Percentage of FLA if variable steps

Rate of Change – Slope of the control temperature.

Control On – Sensor input that is being used to determine the needed capacity of the system, background color based on if it is above or below the Control On value.

Mode - Cooling, Heating, Dehum

Ref type - Type of Refrigeration used in the system

State	Time	PSI Diff	FLA %	Steps	Lead?	
1)CMP IS RUNNING	02:12:58	115.6P	54%	1	Yes	
2)CMP IS RUNNING	02:04:12	110.1P	50%	1		

9.4.2 Compressor Information

State – State of the compressor and compressor # (Off, lube, st unload, loading, holding,

unloading, discharge hold, discharge unload, suction unload, unloaded, suction hold, hot gas load, U1 load, loaded, pump down, anti-cycle, disable, safety, lock out and lost I/O) See the MCS controller manual for your application for descriptions of each state.

Time – Time the compressor has been in the state

PSI DIFFERENTIAL – Oil differential pressure

FLA % (Full Load Amps.)- actual FLA % for compressor

Steps On - Indicates number of steps associated with this compressor that are turned on.

Lead? - Lead compressor - Will display 'YES' others remain blank

9.4.3 Compressor/Superheat Info

	Suction Temp	Saturated Suction	Suction Superheat	Suction Disc Superheat Temp		Disc Superheat	Subcooling	Liquid Temp	Saturated Liquid Temp
1)	47.9	38.0	9.9	147.2	111.5	35.7	9.3	99.7F	109.0
2)	48.6	38.7	9.9	151.7	108.7	43.0	7.7	100.1F	107.8

Suction Temp – Compressor number and current valve of the Suction Temperature, if available.

Saturated Suction – Calculated Suction Saturated Temperature, if available. The Suction

Pressure is converted into temperature based upon the type of refrigerant (R22, R134a, R407c, and R410a are supported.)

Suction Superheat - Calculated Suction SUPERHEAT, only available if both the Suction

Temperature and the Suction Pressure are used. The calculation is Suction Temperature minus the Suction Saturated Temperature.

Disc Temp – Discharge Temperature, if available

Saturated Discharge – Calculated Discharge Saturated Temperature, if available. The

Discharge pressure is converted into temperature based upon the type of refrigerant (R22, R134a, R407c, and R410a are supported.)

Disc Superheat - Calculated Discharge SUPERHEAT, only available if both the Discharge

Temperature and the Discharge Pressure are used. The calculation is Discharge Temperature minus the Discharge Saturated Temperature.

Subcooling – the amount of heat removed below the refrigerants condensing temperature at a particular pressure measured in deg. F

Liquid Temp – The temperature of the refrigerant.

Saturated Liquid Temp. - Temperature and pressure of refrigerant.

9.4.4 EXV Info

Evap EXV State	Time	Valve %	Control On Suct. Supht	SuperHeat ROC	ADJ Delay	EXV Target (Adjusted)
1) EXV IS HOLDING	00:03:35	37.3%	9.9	-0.2	60	N/A
2) EXV IS HOLDING	00:02:40	38.9%	9.9	0.1	60	N/A

Evap EXV State - Compressor number and current valve of the EXV.

Time – The time the valve has been in this state.

Valve % – This is the current valve % opening. While 0 to 100 % is the range, there are set points that limit the range to avoid unnecessary movement outside the required operating range.

Control on Suction Superheat – The current superheat for this circuit.

SuperHeat ROC – The rate of change of superheat based on the time defined in the superheat target setpoint.

ADJ Delay – When this value reaches zero the controller will adjust the EXV based on the current status.

EXV Target (Adjusted) - The adjusted value of the EXV based on setpoints.

9.5. Alarm Information

This window will display the alarm name, date alarm occurred, time alarm occurred. The fields are explained further below. Use the scroll bar to view all data.

#	Alarm	Date	Time	Value	Additiona Info	al		
1	NO CMP PROOF #1	NOV 22	20:37:49		Info)
2	NO CMP PROOF #1	NOV 22	20:27:40		Info			
3	LOCKOUT RESET	NOV 22	Lockout History Frame				Print	NO CMP I
4	SI MANUAL #42	NOV 22	TIME SUCT DISC OPD 0 5.9p 21.0p 33.0p	AMPS SUCT TH 310.0A 50.0F	IP DISCTMP OILTMP O 97.0F 120.0F	OIL PSI REF TMP 40.0p 40.0F	FLA 54%	SSH 17.9F
5	NO CMP PROOF #1	NOV 22	-1 5.9p 21.0p 33.0p -2 5.9p 21.0p 33.0p -3 5.9p 21.0p 33.0p	310.0A 50.0F 310.0A 50.0F 310.0A 50.0F	97.0F 120.0F 97.0F 120.0F 97.0F 120.0F	40.0p 40.0F 40.0p 40.0F 40.0p 40.0F	54% 54% 54%	17.9F 17.9F 17.9F
6	LOCKOUT RESET	NOV 22	-4 5.9p 21.0p 33.0p -5 5.9p 21.0p 33.0p -6 5.9p 21.0p 33.0p -7 5.9p 21.0p 33.0p	310.0A 50.0F 310.0A 50.0F 310.0A 50.0F	97.0F 120.0F 97.0F 120.0F 97.0F 120.0F 97.0F 120.0F	40.0p 40.0F 40.0p 40.0F 40.0p 40.0F	54% 54% 54%	17.9F 17.9F 17.9F 17.9F
7	SI MANUAL #13	NOV 22	8 5.9p 21.0p 33.0p -9 5.9p 21.0p 33.0p -10 5.9p 21.0p 33.0p -10 5.9p 21.0p 33.0p	310.0A 50.0F 310.0A 50.0F 310.0A 50.0F	97.0F 120.0F 97.0F 120.0F 97.0F 120.0F 97.0F 120.0F	40.0p 40.0F 40.0p 40.0F 40.0p 40.0F	54% 54% 54%	17.9F 17.9F 17.9F
8	SI MANUAL #14	NOV 22	-11 5.9p 21.0p 33.0p -12 5.9p 21.0p 33.0p -13 5.9p 21.0p 33.0p	310.0A 50.0F 310.0A 50.0F 310.0A 50.0F	97.0F 120.0F 97.0F 120.0F 97.0F 120.0F	40.0p 40.0F 40.0p 40.0F 40.0p 40.0F	54% 54% 54%	17.9F 17.9F 17.9F
9	SI MANUAL #15	NOV 22	-14 5.9p 21.0p 33.0p -15 5.9p 21.0p 33.0p -16 5.9p 21.0p 33.0p -16 5.9p 21.0p 33.0p	310.0A 50.0F 310.0A 50.0F 310.0A 50.0F	97.0F 120.0F 97.0F 120.0F 97.0F 120.0F 97.0F 120.0F	40.0p 40.0F 40.0p 40.0F 40.0p 40.0F	54% 54%	17.9F 17.9F 17.9F
10	PHASE LOSS	NOV 22	18 5.9p 21.0p 33.0p 19 5.9p 21.0p 33.0p 20 5.9p 21.0p 33.0p	310.0A 50.0F 310.0A 50.0F 310.0A 50.0F 310.0A 50.0F	97.0F 120.0F 97.0F 120.0F 97.0F 120.0F 97.0F 120.0F	40.0p 40.0F 40.0p 40.0F 40.0p 40.0F 40.0p 40.0F	54% 54% 54%	17.9F 17.9F 17.9F
		Alarm Additional Info Pop up screen	-21 5.5p 21.0p 33.0p -22 5.5p 21.0p 33.0p -23 5.5p 21.0p 33.0p -24 5.5p 21.0p 33.0p -24 5.5p 21.0p 33.0p -26 5.5p 21.0p 33.0p -26 5.5p 21.0p 33.0p -27 5.5p 21.0p 33.0p -27 5.5p 21.0p 33.0p -26 5.5p 21.0p 33.0p -27 5.5p 21.0p 33.0p -28 5.5p 21.0p 33.0p -27 5.5p 21.0p 33.0p -28 5.5p 21.0p 33.0p -28 5.5p 21.0p 33.0p	310.0A 50.0F 310.0A 50.0F 310.0A 50.0F 310.0A 50.0F 310.0A 50.0F 310.0A 50.0F 310.0A 50.0F 310.0A 50.0F 310.0A 50.0F	97.0F 120.0F 97.0F 120.0F 97.0F 120.0F 97.0F 120.0F 97.0F 120.0F 97.0F 120.0F 97.0F 120.0F 97.0F 120.0F 97.0F 120.0F	40.0p 40.0F 40.0p 40.0F 40.0p 40.0F 40.0p 40.0F 40.0p 40.0F 40.0p 40.0F 40.0p 40.0F 40.0p 40.0F	54% 54% 54% 54% 54% 54% 54% 54%	17.9F 17.9F 17.9F 17.9F 17.9F 17.9F 17.9F 17.9F 17.9F

There are three types of alarms that are generated by the MCS controller control logic (See your MCS controller manual for your application for more details regarding types of alarms generated):

Information only alarms

- System generated alarms
- Alarms as a result of individual action
- Alarms generated by the control algorithm

MCS controller system alarms

- Configuration problem alarms
- MCS local network problem alarms
- Key sensor problem alarms
- Emergency stop alarm

Chiller set point safety alarms

- Sensor inputs used in conjunction with MCS controller set point safeties
- Set point safeties
- # This is the number of the alarm generated by the MCS controller.

Alarm Name - This is the name of the alarm generated by the MCS controller.

- Date Date the alarm was generated.
- Time Time alarm occurred.

Alarm Additional Information

Additional information column allows the tech to view all information for the alarm.

9.6. Alarm Alerts - Active/Inactive Button

A feature has been added in MCS-CONNECT version 18.07.04 (and later) on the status screen that shows whether the **ALARM ALERTS** are 'ACTIVE' or 'INACTIVE'.

If you have enabled the 'ALARM ALERTS' in the MCS-CONNECT setup, the button will show: 'ALARM ALERTS-ACTIVE' and will be 'GREEN'.

😹 MCS-Connect 18.08	.13				1	WED FEB 1	17 16:45:51	7 16:45:51 💻 💻		
File Setup Offline Res	et/Clear Work	space View Bu	tton Bar Time	Help Live G	Graph	ALARM AL	ERTS-ACTIVE	Drint	Craphian	Alarma
Disconn Scan	Graph	Transmit Cig	Receive cig	view Only	Lua	uEnniware	Diagnostic save	Print	Graphics	Alarms
Site Info 1 - 2 CM	P									

Clicking on the 'ALARM ALERTS ACTIVE BUTTON' will open the following screen:

You can choose to 'SUSPEND' the Alarm Alerts here on the status screen or Reactivate Alarm

Offline Reset/Clear Workspace						
Crank Tre	View Button Bar	Time Help Live Gra	ipi	ALARM ALERTS-ACTIVE	-	
Scan Graph Tra	ansmit Cfg Receive	e Cfg Factory Lo	ac F	Suspend Alarm Alerts	Print	Graphics

Alerts if they were previously suspended without going back to the setup screen at the startup.

Clicking on '**SUSPEND ALARM ALERTS**' brings up a sub menu screen allowing you to choose the amount of time you wish to suspend the **Alarm Alerts**. The time period can be from <u>1 hour to 8 hours</u>.

ct 18.08.13	3						WED FE	B 1, 17 16:58:56	
ine Reset/C	Clear V	/orkspace	View But	ton Bar Ti	me Help	Live	Graph ALARN	ALERTS-ACTIVE	
Scan	Grap	h Tr	ansmit Cfg	Receive C	fg Facto	Ŋ	Load Firmware	Diagnostic Save	Print Gra
L - 2 CMP	1						Alarm Alert	s Suspension	×
outs							? How	w many HOURS do you	u want
inced							to s	upend the Alarm Aler	ts?
Relay Outputs	Value	Manual Status	Last On	Last Off	Run Today	C			-
MP 1	OFF	AUTO	00:00:00	12:05:47	00:00:00		o l		E I
S 1-1	OFF	AUTO	00:00:00	12:05:47	00:00:00		0 2	_	
S 1-2	OFF	AUTO	00:00:00	12:05:47	00:00:00		0 00.0		
SDM 1	OFF	AUTO	00:00:00	12:05:47	00:00:00		0 00:04		
GD 1-1	OFF	AUTO	00:00:00	12:05:47	00:00:00		0 00:05		
GD 1-2	OFF	AUTO	00:00:00	12:05:47	00:00:00		0 00:06		
GD BLD 1	OFF	AUTO	00:00:00	12:05:47	00:00:00		0 00:07		
ID FAN 1	OFF	AUTO	00:00:00	12:05:47	00:00:00		0 00:08		-
ID FAN 3	OFF	AUTO	00:00:00	12:05:47	00:00:00		0 00.0000		

Once you '**SUSPEND**' the '**ALARM ALERTS**' and set the time you want them suspended for, the button at the top will read '**ALARM ALERTS-SUSPENDED**' and turn '**RED**' as shown below.

🔮 MCS-Cor	nnect 18.08.13	3			WED FEB 1, 17 17:09:49							
File Setup	Offline Reset/	Clear Works	pace View But	tton Bar Time	Help Live	Graph ALARM	ALERTS-SUSPEN	DED				
Disconn	Scan	Graph	Transmit Cfg	Receive Cfg	Factory	Load Firmware	Diagnostic Save	Print	Graphics	Alarms		
Site Info	1 - 2 CMP	1										

After the time has expired, the 'ALARM ALERTS' button will show 'ACTIVE' and turn 'GREEN'. The Alarm Alerts are now active again and will save a Diagnostic Save once an alarm occurs.

9.6.1 Suspending 'ALARM ALERTS' after they occur

If an alarm occurs and the 'ALARM ALERTS' is enabled, the screen below will pop up allowing you 10 seconds to **Cancel** the Diagnostic Save, **Suspend** the save or **Complete** the save:

- 1. **COMPLETE THE SAVE** MCS-CONNECT will continue with the Diagnostic Save.
- 2. CANCEL the Diagnostic Save will be canceled.
- 3. **CANCEL AND SUSPEND** the Diagnostic Save will be canceled and can be suspended for a set time (one to 8 hours).

Alarm A	Alert 10) Second	Choice				X		
You n	ow hav If then	e 10 Sec you do n a full dia	onds to c lot choose gnostic sa	hoose a b e a button ave will oc	outton bel , cur	OW.			
Comple ct 18.08.13	te Save	/orkspace	Cancel View But	ton Bar Tii	Cancel and	d Sus Live G	wed FEE	1, 17 16:58:56 ALERTS-ACTIN	5
Scan	Grap	h Tra	insmit Cfg	Receive C	fg Facto	ny 🗖	vaurninware	Diagnostic sa	C Fint
L - 2 CMP	1					1	Alarm Alerts	Suspension	X
outs							How to su	many HOURS do	you want
uts nced Relay		Manual			Run	Gvc	How to su	many HOURS do pend the Alarm A	you want Alerts?
nuts nced Relay Outputs	Value	Manual Status	Last On	Last Off	Run Today	C vc 1 pc	How to su	many HOURS do	you want Alerts?
nuts Relay Outputs	Value	Manual Status AUTO	Last On 00:00:00	Last Off 12:05:47	Run Today 00:00:00	C /C 1 DC	How to su	many HOURS do ppend the Alarm A	you want Alerts?
nuts Relay Outputs DMP 1 .S 1-1	Value OFF OFF	Manual Status AUTO AUTO	Last On 00:00:00 00:00:00	Last Off 12:05:47 12:05:47	Run Today 00:00:00 00:00:00	C /C 1 oc 0	How to su 1 1 2 3	many HOURS do	you want Alerts?
Relay Outputs OMP 1 .S 1-1 .S 1-2	Value OFF OFF	Manual Status AUTO AUTO AUTO	Last On 00:00:00 00:00:00 00:00:00	Last Off 12:05:47 12:05:47 12:05:47	Run Today 00:00:00 00:00:00 00:00:00	C /C 1 00 0 0	P How to su	many HOURS do	you want Alerts?
niced Relay Outputs DMP 1 .S 1-1 .S 1-2 SDM 1	Value OFF OFF OFF	Manual Status AUTO AUTO AUTO AUTO	Last On 00:00:00 00:00:00 00:00:00 00:00:00	Last Off 12:05:47 12:05:47 12:05:47 12:05:47 12:05:47	Run Today 00:00:00 00:00:00 00:00:00 00:00:00		How to su 1 1 2 3 00:0 4	many HOURS do	you want Alerts?
nuts Relay Outputs DMP 1 S 1-1 S 1-2 SDM 1 SD 1-1	Value OFF OFF OFF OFF	Manual Status AUTO AUTO AUTO AUTO AUTO	Last On 00:00:00 00:00:00 00:00:00 00:00:00 00:00:	Last Off 12:05:47 12:05:47 12:05:47 12:05:47 12:05:47 12:05:47	Run Today 00:00:00 00:00:00 00:00:00 00:00:00 00:00:	C /c 1 oc 0 0 0 0	How to su 1 1 2 00:0 4 00:0 5	many HOURS do	you want \lerts?
Nuts Inced Relay Outputs DMP 1 S 1-1 S 1-2 DMN 1 DD 1-1 DD 1-2	Value OFF OFF OFF OFF OFF	Manual Status AUTO AUTO AUTO AUTO AUTO AUTO	Last On 00:00:00 00:00:00 00:00:00 00:00:00 00:00:	Last Off 12:05:47 12:05:47 12:05:47 12:05:47 12:05:47 12:05:47 12:05:47	Run Today 00:00:00 00:00:00 00:00:00 00:00:00 00:00:		How to su 1 1 2 00:0 4 00:0 5 00:0 6	many HOURS do	you want Alerts?
Nuts Inced Relay Outputs DMP 1 S 1-1 S 1-2 DM 1 DD 1-1 DD 1-2 DD BLD 1	Value OFF OFF OFF OFF OFF OFF	Manual Status AUTO AUTO AUTO AUTO AUTO AUTO	Last On 00:00:00 00:00:00 00:00:00 00:00:00 00:00:	Last Off 12:05:47 12:05:47 12:05:47 12:05:47 12:05:47 12:05:47 12:05:47	Run Today 00:00:00 00:00:00 00:00:00 00:00:00 00:00:		How to su 1 1 2 00:0 4 00:0 5 00:0 6 00:0 7	many HOURS do	you want Verts?
Relay Outputs DMP 1 S 1-1 S 1-2 DM 1 DM 1 DD 1-2 DD 1-2 DD BLD 1 ID FAN 1	Value OFF OFF OFF OFF OFF OFF	Manual Status AUTO AUTO AUTO AUTO AUTO AUTO AUTO AUTO	Last On 00:00:00 00:00:00 00:00:00 00:00:00 00:00:	Last Off 12:05:47 12:05:47 12:05:47 12:05:47 12:05:47 12:05:47 12:05:47 12:05:47	Run Today 00:00:00 00:00:00 00:00:00 00:00:00 00:00:		How to su 1 2 00:0 00:0 00:0 00:0 00:0 00:0 00:0 00:0 00:0 00:0	many HOURS do	you want Nerts?

9.7. Set Point Information

Displays the set point name, value, time and type. The fields are explained further below. Use the scroll bar on the right to view all data.

#	SetPoints	Value	Time	SEC Ignore	window EXT	safety EXT	Туре	
1	CW OUT TRGT	42.0F					SETPOINT	1
2	CTRL ZONE+	1.0F					SETPOINT	T
3	CTRL ZONE-	1.0F					SETPOINT	1
9	SUPERHT TRGT	5.0F	155	0	0	0	ALM ONLY	
10	SPRHT ZONE+-	2.0F					SETPOINT	1
11	EXV LOAD ADJ	0.5%					SETPOINT	1
12	EXV FINE ADJ	0.3%					SETPOINT	-
13	EXV COURSE	0.8%					SETPOINT	1
14	EXV Load DIV	3					SETPOINT	1
15	EXV MIN%	10.0%					SETPOINT	1
16	EXV MAX%	90.0%					SETPOINT	1

– This is the Set Point number.

Set points – This is the name of the set point.

Value – This is the value or target of the set point.

Time – This is the time that the set point must be true before it will trip, e.g. a high discharge safety must have its value exceeded for this length of time before it will trip. This time is always in seconds.

SEC Ignore (Sec. to Ignore Safety)- Time delay that the safety will be ignored upon compressor startup.

Window EXT (Window to Extend Safety Time) - The amount of time after compressor startup (or "Sec to Ignore Safety" if used) in which the "Safety Time Extension" field is added to the "Time (sec)" field.

Safety EXT (Safety Time Extension)- The amount of time added to the "Time (sec)" field during the "Window to Extend Safety Time".

9.7.1 Set Point Value Change

To change the value of a set point you must be authorized at a level that will accept a change to the set point in question. If your authorization is not sufficient the system does not respond to the request

If the authorization is sufficient then the following screen will appear:

Setpoint Value adj	Setpoint Value adjustment			
Adj. Range 1.0F	to 15.0F			
1	CLEAR VALUE			
1	2	3		
4	5	6		
7	8	9		
	0			
SEND CHANGE		CANCEL		

Type in the desired value within the range allowed.Click 'Send Change" when complete.

The request will be acknowledged in the information frame screen.

9.7.2 Set Point Time Change

To change the time of a set point click on the appropriate set point cell and the following screen will appear. Type in the values wanted then press OK. The value will change in the setpoint screen.

Setpoint Time adjustment	🛃 Insufficient Authorization
LowSuctSprht Time 300 - S	Insufficient Authorization Level. In order to make this change you must use a higher Authorization Level.
Max Safety Time Value = 600 S	
SEC Ignore 0 S	OK
Window Ext 0 S	
Safety Ext 0 S	YOU NEED A HIGHER AUTHORIZATION LEVEL TO MAKE CHANGES
OK CANCEL	

Chapter - 10. Schedule Window for MCS Controller

This screen displays and supports updates to the current schedules. Time is displayed in the

Military Time format, HH:MM where HH is a value from zero to 24. A schedule is always true if the Time ON is 00:00 and Time Off is 24:00. If a system is not running, check to make sure that the schedule for that day and time is true.

The schedules on the left of the screen are normal operating schedules. The number of schedules per day can be either one or two depending on the software in the controller. Some versions of software in the MCS-8 do not support Holidays.

Day	#1 Time On	#1 Time Off	#2 Time On	#2 Time Off
Holiday	0:00	24:00	0:00	24:00
Sunday	0:00	24:00	0:00	24:00
Monday	0:00	24:00	0:00	24:00
Tuesday	0:00	24:00	0:00	24:00
Wednesday	0:00	24:00	0:00	24:00
Thursday	0:00	24:00	0:00	24:00
Friday	0:00	24:00	0:00	24:00
Saturday	0:00	24:00	0:00	24:00
2 3 4 5 6 7	N/A N/A N/A N/A N/A	1 1 1 1 1	H #1 Time On #1 Time Off	oliday $0 \stackrel{\bullet}{} : 0$ $24 \stackrel{\bullet}{} : 0$
8	N/A	1	#2 Time On #2 Time Off OK	0 - : 0 24 - : 0 CANCEL

To change a schedule, click on any cell tin the row to be changed and enter the new values. When all changes have been made, click on the OK button to update the system.

The CANCEL button will keep the schedules as their original values.

Note different types of control software may product a different schedule format.

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r 🛛

Chapter - 11. Service Windows

The main Service windows shows the different setup for com ports, graphics and site info for the controller you are connected to as shown below. Click on the button at the top to view the information for that frame and make changes.

- 1. RS485- allows the installer to choose a different Protocol, address and baud rate for communicating.
- 2. BACNET if you know the range for the BACNET, set the address and than click on the limit address to MCS Bacnet Device Range to show only that range of numbers (100).
- 3. ETHERNET click YES/NO for Dynamic IP, change the MCS Port. If you click no to the Dynamic IP, you must manually add the IP Address, Subnet Mask, and the defaut Gateway.
- 4. GRAPHICS allows the installer to change the file path where the Graphic files will be stored on PC running MCS-CONNECT.
- 5. SITE INFO shows information for the controller you are connected to.

D D	net anapints aternito artika	9.	RS48 BACNET Ethernet Graphics Site	1110 SI Dk	
-	S485 Network		BACNET ID		
Protocol MCS	-		Limit Address to MCS Bachet Device Range		
Address			the second s		
			Address 18170 (0 to 4194302))	
Rate 19200	-				
Lances			Bacnet Port 47808 (47000 to 4	7999)	
Send Comm	n. Changes to Controller		Send Comm. Changes to Control	ller	
ervice S485 BACNE Ether	rnet Graphics Site Info SI Dia	ت ک عو.	Service RS485 [BACNFT] Etherner Granhirs Life	Info SI Di	
-	lanet Network		Graphic Location	IIIO DI DI	
Dynamic IP? 🔾 Yes	• No		The following file path is preceded by the default Graphics directory.		
ddress 192 168	11 70				
net Mask 255 255	255 0		CHL/SystemOverview.html	Brow	
Gatoway 192 168	11 1				
It Gateway 192 168			Send Graphics File Changes to Con	troller	
It Gateway 192 168 CS Port 5001 5001			Send Graphics File Changes to Con	troller	
ult Gateway 192 168 ICS Port			Send Graphics File Changes to Con	troller	
fault Gateway 192 168 MCS Port 5001 Send Comr	n. Changes to Controller		Send Graphics File Changes to Con Send Comm. Changes to Control	ler	
efault Gateway 192 168 MCS Port 5001 Send Comr	n. Changes to Controller		Send Graphics File Changes to Control	ier	
MCS Port 5001 Send Comr	n. Changes to Controller	n d	Send Graphics File Changes to Con Send Comm. Changes to Control	ier	
Ault Gateway 192 168 MCS Port 5001 Send Comr Acce 185 BACNET Ether Dev	n. Changes to Controller	n' 12 Ig.	Send Graphics File Changes to Con Send Comm. Changes to Control	Inf SI Dia	
ICS Port 5001 Send Comr Send Comr BS BACNET Ethern Der Information Type	n. Changes to Controller		Send Graphics File Changes to Con Send Comm. Changes to Control Service RS485 BACNET Ethernet Graphics Site Sensor Diagnostics Sit# Inputs Value Voltage	Infer SI Dia	
ice Information Type Type Type Type Type Type Type Type	net Graphic Site Info 51 Dia ovice Information 002135 11/23/2015	p" p"	Send Graphics File Changes to Con Send Comm. Changes to Control Service RS485 BACNET Ethernet Graphics Site Sensor Diagnostics Sensor Value Voltage M-1 WTR IN 49.95 0.000 Voltage	itroller ier	
fault Gateway 192 168 MCS Port 5001 Send Comr vice 485 BACNET Ether Dev Information Type Serial # Vers. Koodel #	n. Changes to Controller net Graphic Site Info SI Dia vice Information 002135 11/23/2015 11/25 Top	n° 2°	Send Graphics File Changes to Con Send Comm. Changes to Control Service RS485 BACNET Ethernet Graphics Site Sensor Diagnostics Site Sensor Diagnostics	itroller ier	
efault Gateway 192 168 MCS Port 5001 Send Comr ervice 5485 BACNET Ethern Information Type Fortal # Date) Date) Date) Date) Date) Date) Date) Date) Date) Date) Date	n. Changes to Controller net Graphic Site Info 51 Dia vice Information 002135 11/23/2015 11/25 11/25 TON	 g▲	Send Graphics File Changes to Con Send Comm. Changes to Control Service RS485 BACNET Ethernet Graphics Site Sensor Diagnostics Site Input Value Voltage M-1 WTR IN 99.9F 0.00V M-3 SUCT PSI 1.99.9F 0.00V M-4 DISCEPSI 1.99.9F 0.00V	ier	
efault Gateway 192 168 MCS Port 5001 Send Comr Send Comr 1485 BACNET Ether Der Information Type Serial # Date Vers. t Model # t Senail # tail Date	net Graphice Site Info vice Information 002135 11/22/2015 12/27/2012	p° d'	Send Graphics File Changes to Con Send Comm. Changes to Control Service RS485 BACNET Ethernet Graphics Site Sensor Diagnostics Sit# Inputs Value Voltage M-1 M-1 M-1 M-1 M-1 WIR NOUT -99.9F 0.00V M-3 M-5 DISC F811 -99.9P 0.00V	ier	
efault Gateway 192 168 MCS Port 5001 Send Comr Send Comr Prvice Send S BACNET Ether Information Type I Serial # 1 Vers. t Hodel # t Serial #	net Graphic Site Info SI Dia vice Information 002135 11/23/2015 17 LL 125 TON L1/227/2012 HVAC 17.21-C	rr r∂ gg	Send Graphics File Changes to Control Send Comm. Changes to Contro	ier	
Ault Gateway 192 168 MCS Port 5001 Send Comr Send Comr Vice BAS BACNET Ether Der Information Type Serial # Serial #	n. Changes to Controller net Graphic Site Info 51 Dia vice Information 002135 11/23/2015 11/23/2015 12/27/2012 HVAC 17.21-C HVAC 17.21	p° d° g.	Send Graphics File Changes to Con Send Comm. Changes to Control Service RS485 BACNET Ethernet Graphics Site Sensor Diagnostics Site Site Sensor M-1 WTR NU M-2 WTR OUT M-3 Succession M-4 Disc Service M-5 Disc Psi 1 M-6 Psi Ppi M-7 VCITS 2 OROV DOV M-8 TioOxP M-8 DioXP	ier	
t Gateway [192] [168 S Port 5001 Send Comr BACNET Ether Dev Information Type a e t del # dal # dal # fremware Firmware	net Graphic Site Info 31 Dia vice Information 002135 11/23/2015 12/27/2012 12/27/2012 12/27/2012 12/27/2012 12/27/2012 12/27/2012 12/27/2012 12/27/2012		Send Graphics File Changes to Con Send Comm. Changes to Control Send Comm. Changes to Control R5485 BACNET Ethernet Graphics Site Sensor Diagnostics Sit Sensor Diagnostics Sit Suppose M-1 Ville Value Voltage M-2 With Out M-3 SUCT PSI 1 99 P 0.00V M-5 OLPSI 1 M-6 MICS 2 M-7 VOLTS 2 0.00V M-8 M-8 TIR TIMP 1 M-9 99 SF 0.00V M-9	ier	
i BACNET Ethern BACNET Ethern Dev Information Type Ial # e s. dial # faile Firmware Firmware	n. Changes to Controller net Graphic Site Info 51 Dia vice Information 002135 11/23/2015 12/27/2012 HVAC 17.21-C HVAC 17.	o ^r ∂'	Send Graphics File Changes to Control Send Comm. Changes to Control Service RS485 BACNET Ethernet Graphics Service RS485 BACNET Ethernet Graphics Sensor Diagnostics Sit# Sensor Diagnostics Sit# Sensor Diagnostics Sit# Sensor Diagnostics M-1 VITR NU 99.9F M-3 SUCT PSI 1 99.9P M-6 AMES 1 0.04 M-7 VOLTS 2 0.00V M-8 TioOXP 0.0F M-9 MTR TIMP 1 99.9F 0.00V M-9 MTR TMP 1 99.9F 0.00V	ier	
t Gateway [192] [168] s Port 5001 Send Comr BACNET Ether Dev Information Type al # b b c c firmware ne Firmware Send Comm	net Graphic Site Info 31 Dia vice Information 002135 11/23/2015 11/23/2015 12/27/2012 HVAC 17.21-C HCS 12/27/2012 HVAC 17.21-C HCS 12/00A 00 00	pře g	Send Graphics File Changes to Control Send Comm. Changes to Control Send Comm. Changes to Control Service RS485 BACNET Sensor Diagnostics Site Service N=1 M=1 M=1 <td c<="" td=""><td>er</td></td>	<td>er</td>	er

Chapter - 12. Graph Capabilities of MCS Controllers

The MCS controller captures history of the status for all RO, AO and SI points based on the setup of your configuration file. Through MCS-Config, the user is also able to setup additional "USER LOGIC' statements to capture additional internal information for plotting.

For example, you might want to capture and 'graph' information on the Unit States, Compressor States, EXV States, Number of compressors Wanted on and Actual on, Suction and Discharge Superheat, Saturated Suction and Discharge, etc. The insert on the right shows an example of setting up EXV State.

When the GRAPH button is selected, the screen below will appear. On the MCS-8 the # of samples is 144 and can be retrieved in about 1 minute. In the MAGNUM the number of samples is 1008 and will take about 3 + minutes to pull back.





The above screen contains the following:

The Relay Outputs and the Digital Inputs are graphed across the top of the screen with line bars. The ON/OFF status coding is indicated to the left of the line bars and the name of the set points

being graphed is on the right. The items being graphed can be changed in the SETUP screen.

The Analog Inputs are charted on the graph grid. The name of the points being graphed is to the right of the grid, note the color-coding. The slide bar on the bottom of grid is used to move the portion of the graph being displayed. The X-axis contains the time intervals, and Y-axis, contains the value range. Items be graphed can be changed in the SETUP function.

The following pages will show you how to setup for seeing and saving the Graph History for your unit.

Interval

08

09

0 10

Hour Interval

07

08

09

01

02

03

Minute Interval

01

02

3

SIs & DIs

ROs

AOs

Seconds Interval

Seconds

20

12.1. Graph Setup Tabs

When you click on the Graph button, the screen will display the following, plus if you have a saved 'GRAPH FILE', MCS-CONNECT will begin pulling back the history for the points you have saved for that graph file. Click on 'STOP HISTORY PULLBACK' to setup a new 'GRAPH'.



12.1.1 **Graph Setup Button**

This function allows changes to be made to the graph setup function.

When the SETUP button is clicked on, the following screen will appear. Here you will pick the points you want to graph, the 'INTERVAL(time)', and the 'Y-AXIS values'

12.1.1.1. **Interval and Y AXIS SETUP**

- 1. Interval (s) Sets the given amount of seconds (time) you wish to graph
- 2. Y-Axis Max Highest point of the graph
- 3. Y-Axis Min Lowest point of the graph



This Graph setup screen displays in tabbed pane at top of the screen: the RELAY OUTPUTS(RO), ANALOG OUTPUT(AO), SENSOR INPUT(SI's) or DIGITAL INPUT(DI's) of all the points in this configuration file.

To add a point to the list that will be graphed, move the cursor to the check box next to the point you wish to graph, and click. The name will be added to the Points to Graph list in the right screen of the popup and a check mark will appear in the box. To remove an item from the list, click on the box to remove the check mark. The item will be removed from the Points to Graph list.

When you are finished adding the points, you can click 'Save Selected', which will save all points for the controller you are viewing. If you view another MCS controller you can setup the graph points so each time you view the MCS controller your points for the graph will be loaded for that MCS controller.

Clicking 'Graph Selected' will plot the current selections in the graph.

The Y-Axis section contains the maximum and minimum setting for the Y-axis. The axis is divided proportionally between these two points divided by the # of lines specified.

YOU ARE LIMITED TO A MAXINUM OF EIGHT(8) DIGITALS AND EIGHT (8) ANALOGS ON A GRAPH

Click on Interval to see the setup for the sampling times.

The Interval tab enables the interval to be changed. The time is recorded in seconds. Click on the

appropriate radio buttons in minutes or hours. The Seconds History Interval Box automatically updates in seconds. (You may double click on the seconds box and put in a value as small as 2 seconds).

Save Selected- Clicking on this button will enable the current settings to be saved. If the settings are saved, they will be active when the system is again accessed.

Cancel - Clicking on this button will return control to the GRAPH screen. None of the changes that were made will be reflected on this screen. The original settings will be used.

12.1.2 Refresh Data Button

This function will reread the history data that is being accumulated, thus providing fresh data to be graphed.

12.1.3 Save History Button

This function will save the current history data with sensor names as a '.Txt' formatted file.

The standard Window <u>SAVE AS</u> screen will appear. Specify the name of the file and where it is to be saved. The file can be read into a spread-sheet program such as EXCEL and then graphs, charts etc can be produced using the graphing capabilities of the spreadsheet program. The Magnum supports 1008 History Samples for all inputs & outputs.

Graph
Graph Setup
Refresh Data
Save History
Print Graph

By adding the MCS-COMPACT (which uses Flash 2G cards) to the Magnum this increases the storage history up to a year+ of run data.

SEE APPENDIX IN BACK SECTION ON Viewing History/Graph Files Offline

12.1.4 Print Graph

Prints the current Graph on the screen.

Chapter - 13. Diagnostic Save 'EASY BUTTON'

13.1. Diagnostic Save

Clicking on '**DIAGNOSTIC SAVE**' allows the users to save files which can be viewed in a txt program such as Notepad or better yet in Excel.

MCS-Connect 17.09.00	Beta		π	JE DEC 8, 15 15:36:30	0		MCS
File Setup Offline Reset/C	lear Workspace Vi	ew Button Bar Time	Help				_
Disconnect	Scan	Graph	Transmit Cfg	Receive Cfg	View Only	Diagnostic Save	Print
Site Info 1 - Plant Ra	pdStart		(Diagno	ostic Save		

The screen on right appears alerting the user that MCS-CONNECT is ready to perform a diagnostic save of the unit that is being monitored.

Diagnostic Save			
🍝 Dia	gnostic Save Popup		
(i)	A Diagnostic Save has been activated.		
-	Please wait while MCS-Connect performs some or all of the following:		
	1. A config Recieve.		
	2. A Print to file of current status. 3. Drintouts of the last 5 Lockout Alarm Info tables		
	4. A full History Pullback		
	This could take up to 10 minutes to complete. Thank you for your patience.		
	OK Cancel		

PAO SYSTEM GD_OCT-11-16 1502pm-Diagnostics.zip
PAO SYSTEM GD_OCT-11-16 1502pm-HistoryPrint.txt

PAO SYSTEM GD_OCT-11-16 1502pm-StatusPrint.txt

Saves a Zip file to your computer and can Auto Email zip file to: support@mcscontrols.com

'The Easy Button' for MCS-CONNECT

-	Stic Save IS COMFLETE.
Diagnostic .zip file crea	ted.
Files Created:	and the second second second second second second
PAO SYSTEM GD_OCT	-11-16 1502pm-StatusPrint.txt
PAO SYSTEM GD_OCT	-11-16 1502pm-Diagnostic.ctg
PAO SYSTEM GD_OCT	-11-16 1502pm-HistoryPrint.txt
These files are located	in the "MCS/DIACNOSTICS" Directory
nese mes are rocateu	in the moorphonoorloor preduly
Auto Email zip f	ile to support@mcscontrols.com
(Internet conne	ection required).
Email zip file to	custom email (Internet connection
	ous contract (internet connection
required)	
required).	
required).	
Chapter - 14. Graphics and MCS-Connect

14.1. GRAPHICS

With the new Graphical Interface and MCS-Connect, you now have a better view of your controller's many functions.

If you purchased a MCS-MAGNUM Control Cabinet with a Touchscreen, a MCS-MAGNUM and Touchscreen, or a MCS-REMOTE with Touchscreen your graphics has been pre-installed based on the information you supplied the factory at the time of purchase.

If you have a MCS-MAGNUM Control Cabinet with a MCS-Keypad, MCS-Connect is available to be purchased along with a Graphic package which can be pre-installed for your controller(s).

MCS-Connect can also communicate with other control boards sold by MCS.

MicroMag Controller



MCS-MAGNUM NEMA4-15.4 CONTROL CABINET



MCS-MAGNUM 15.4 TOUCHSCREEN



MCS-REMOTE 15.4 CONTROL CABINET



PC LAPTOP RUNNING MCS-CONNECT with the option to communicate using an MCS-485-USB cable direct to your controller or you can communicate remotely using a MCS-WIRELESS-MODEM cabled to your controller using the internet.

Chapter - 15. MCS-CONNECT PC Requirements & Product

To install and run the program we suggest the following minimum system requirements:

- PC with a Pentium2-class or higher processor
- Windows 7 or later operating system or Linux operating system
- Minimum 1GB of RAM
- Minimum 4GB Drive
- 14.4k baud modem or higher for remote communications
- 1280 x 800 pixel or higher display
- Ethernet 10/100/1000
- USB port 2.0 or higher

MCS-CONNECT PRODUCT FEATURES

- Java application runs on Windows/Linux
- Local communication @ 19200 baud
- Local Ethernet @ 10/100 MBPS
- Remote communication via phone or Internet
- Email/Test Message alarm alerts
- Auto Print to file on alarms
- Daily Scheduled Print to Files
- Temperature and PSI Conversion Wizard
- Extended History File Save
- Interactive P/T Chart
- Lookup Tables
- Hide / Show Applicable Data
- Diagnostic Save/Auto-Send
- Window/Grids auto sizing based on screen resolution
- Customized Workspace saving, allow easy recall of window position & sizing
- Algorithm control states display
- Static & dynamic graphing / trending data
- Alarm retrieval & handling these items can be printed and saved to PC for analysis and backup
- Manual / Auto mode control
- Setpoint modification
- Schedule modification
- Multiple authorization levels for security
- Runtime / Cycle count information
- Transmit / Receive configuration in as fast as 10 seconds
- Sensor Diagnostics
- Graphic Interface Sub List
 - 1. Customized to application
 - 2. User Customized Gauges
 - 3. State Based Color and Image changes
 - 4. Animated device—pump rotating, comp moving, fan spin, etc.
 - 5. Easy view and access via graphic interface

Chapter - 16. About MCS-Graphical Interface

The Graphical interface is a combination of computer programs, Javascript, HTML, CSS, and XML which builds the screens showing your compressors in real time graphics.

Graphical user interfaces are build to show the important status information for your controller.

Multiple screens can be built to help you see and monitor the operation of the compressor, its sensors, and relays.

Better knowledge of your installations before a service visit is a big help as a service technician.

It is just like being there with your laptop.

It provides customers with an easy-to-grasp overview of their systems and keeps costs for maintenance down.



Remote monitoring using MCS-Connect and the 'Graphical user interface' will increase the value of your installation. It enables the user to change system settings without the need to call the customer or send out a technician. It enables the user to troubleshoot failures and have the appropriate repair parts on site as a technician arrives.

MCS-Connect and the 'Graphic Interface' can reduce a lot of service trips which mean savings in time and money, but more importantly you have better control of your compressors and can monitor all parameters in real time through MCS-CONNECT.

Each 'Graphic Package' screen is different depending on how you wanted the setup to be and what compressor(s) you are viewing.



Graphic screens are for viewing only.

Changes to setpoints, relays, etc. can be made at the MCS-Connect status screen if you have the proper authorization.

Chapter - 17. Building of the Graphic Screens

MCS builds basic graphic packages based on the compressor(s) that you will be monitoring. Optional custom graphic packages can be designed to fit your customer's needs.

17.1. BACKGROUND

The background we use is kept to a simple design which does not interfere with the buttons, images, animation and widgets used to show the status of your compressor(s).

17.2. IMAGES USED

Images used are graphics of your chillers, compressors, or created images to show the status of your sensors, relays, etc. The background screen above, shows the customer's logo.







17.3. BUTTONS

Buttons are used to show a feature as '**Stop**, **Start**, and so forth. Examples of buttons are shown below.



17.4. SENSOR INPUTS AND ANALOG OUTPUTS

Sensor and Analog outputs receive information from the compressors as to 'Suct PSI, Oil Diff, Amps, Targets for 'Chill water in' Chill water out'.



17.5. ANIMATION GRAPHICS

Animation is used to show motion. A fan graphic would depict whether the air handler or furnace is running or not. Fan blades on the fan graphic would spin faster depending on the amount of air flow (expressed in cubic feet per minute, or CFM) that the blower is delivering at a particular point in time.



17.6. GAUGES

A gauge used in our graphic package is "a device for measuring a physical quantity", [1] pressure of flow", [2] or "a device that displays the measurement of a monitored system by the use of a needle or pointer that moves along a calibrated scale".

There are two types of gauges soon to be available in the Graphic Package:

Threshold indicator Max. measured Frame value design Threshold LED Background color 50 Track 20 60 start Title 300 20 Pointer color unit 20 08 40.0 Track 00 0, section LCD 0 00 Track Min. measured stop value

Radial gauges





Chapter - 18. Sample Graphic Interface Screen

Below, you will see a breakdown of a typical graphic screen including buttons, images and Input of sensors, relays.



On this grapic package, there are three different screens available, 'System Overview',

'Comp Overview', 'Evap & Cond Overview'.

The screen above shows the 'Compressor Overview'. Clicking on the left button would show 'System overview', clicking on the right button would display the 'Evap and Cond overview'.

Chapter - 19. MCS-GRAPHICS with MCS-CONNECT

Graphic packages are available thru your OEM supplier or thru a contractor who sells MCS controllers. Below assumes you are installing MCS-Connect and your graphic package for the first time on your PC.

19.1. MCS-Connect and MCS-Graphics - Installed on your PC hard drive

MCS-Connect and the Graphic package can be installed direct onto your PC as long as your computer meets the requirements as shown on the beginning pages.

19.2. Installing MCS-Connect

- 1. Navigate to www.mcscontrols.com using your computer's browser.
- Once on the web site, go to 'Support PC Software MCS-Connect' and download the latest version of the software. ALLOW THE INSTALLER TO PLACE THE FILES WHERE IT SHOWS IN THE INSTALLER PROGRAM.
- 3. Once MCS-Connect is installed, proceed to install the MCS-Graphic package.

19.2.1 Installing MCS-Graphics Files

If you purchased a MCS-Graphics package for your controller or was supplied a file from your installer or OEM supplier, you will need to follow the instructions below to load the Graphic package into the MCS-Connect program.

It's a simple matter of placing the supplied files into 'MCS' directory, than into 'Graphics' and telling MCS-Connect where to find the graphic package.

- 1. Navigate to your 'Desktop' click on the window icon to view your program files loaded on your hard drive.
- 2. The **'Graphics folder**' should be located in the 'root directory" of your computer under **'MCS'** where the installer wanted to place the files. If you overrode this location, you will need to change where you are going to place the new graphic package.
- 3. Open the 'MCS' folder and place the supplied 'Graphic Files' into the folder labeled 'Graphics'.
- 4. If the file was supplied as a 'zip' file, unzip the file and than place the contents into the 'Graphics folder.



5. Below is a sample of what Graphic Files you will have depending on the configuration of your system.



19.3. Whats inside your Graphics files?



- 1. **CFG** this sub directory contains your configuration files which tells your compressor what to do. These files are used by your installer.
- 2. **images -** sub directory of the images used for your 'graphics'.
- XML the next five files ending with .xml are the actual 'build' files for presenting your graphics while in MCS-Connect for this compressor.
- 4. **SystemOverview.xml** is the main screen used by 'Graphics' to display the status of your compressor. The remaining

Name	A	Date modified
CFG		3/26/2015 1:53 PM
👃 images		3/26/2015 1:53 PM
comp10vervie	ew.xml	11/10/2014 2:46 PM
comp2Overvie	ew.xml	11/10/2014 2:46 PM
EvapAndConc	Overview.xml	11/10/2014 1:17 PM
GraphicsTemp	plate.xml	11/7/2014 2:40 PM
SystemOvervie	ew.xml	11/10/2014 2:43 PM

- .xml files are **'graphic builds'** of additional screens which show diffenence information of the compressor, its sensors, relays and settings.
- 5. The **'SystemOverview.xml'** is the file you will use to start the 'graphics' for your compressor.

WE'LL SHOW YOU WHERE THAT FILE IS STORED IN MCS-CONNECT IN THE NEXT PAGES OF THIS MANUAL.

6. Navigate to the **'Desktop'**, locate the 'Shortcut' that was placed on your desktop when you loaded MCS-Connect.

MCS-Connect 17.005 le Setup Load a Graph File Help		Scre	en 3.1
Serial	Local Netwo	rk Connections	Ethernet
Site Name		ork Connections—	
New Site		Conne	ect Remotely
	O Dialup	O IP (Internet)	O IP Lantronix

- 7. Click on 'MCS Connect' to run the program, screen below appears.
- 8. Follow the steps to setup communication with your controller. The complete instructions for setting up MCS-Connect can be found in the MCS-Connect manual located on: www.mcscontrols.com under 'Support/Manuals'.
- 9. Once communications has been setup for your controller, start MCS-Connect and proceed to scan for your controller.

19.3.1 Starting MCS-Connect

Start MCS-CONNECT and when your MCS controller appears in the site info grid select its tab and wait for all the information to be retrieved from the controller as shown.

	MCS-Connect 17.04.0	0 Beta								hon
	File Setup Offline Reset	Scan	View Button Bar T Graph	ime Help Fransmit Cfg	Receive Cfg	Factory	Diagnostic Save	Print	Graphics	A
Ì	Site Info 84 - ZAMI	IL CH #4 0 - M	laster Control	CivicOpera Ch1	1 - PAC480Q3-T3-2	0 - Soho-Da	IV CPM 81 - FWC	410A 1 - WDT	TEST 0 - Soho	44
	Address 192.168.10.101 (0)	HW Serial # 001205	Cfg Name Master Control	Company Name Napps	Unit Model # NAPPS CPM	Unit Serial # 123	Installed Date 02/19/2015	Cfg Vers. 17	Firmware Vers. CPM 17.14-I	Cfg D 03/13/

19.3.2 Setting up where MCS-Connect finds the Graphic Interface file

In screen 3-2 the screen shows the location of the link for communication with MCS-Connect for displaying the graphics for your controller.

- 1. After your controller is loaded, at the bottom of your computer click on the 'Service' tab to open the below screen.
- 2. Click on the Graphics tab and locate where you need to enter the name for your 'Graphics'.



3. The file's name can be copied to the above location.

Site Info 1 - MicroMag #2

Relav Outputs

o Ø

Selecting the Graphic tab 19.3.3

Screen below shows status of the controller you are viewing and is the first screen showing after connecting to your chiller.

Site Info 1 - Plant	landStart	2 - OFFICE	AHIL		3 5-TP	200M 7 . 8	ANT ANUI	3-00	NN VAVE	4 - 110 VAV
Site Tillo	apostare	2-Office	Ano o-	PLANT AND	5 5- IKI	(00M 7-P	LANT ANOI	3-000	WIN VAVS	4 - OP VAV:
Relay Outputs		° Ø	Analog (Dutputs		° Ø	Sensor	Inputs		•
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Relay Relay	Ma Ma	anual		Analog		Manual	-	Sensor	Value	Manual
M.1 COMP1		atus	A0#	Outputs	Value	Status	51#	Inputs	63	Status
M-2 CHAMINJ 1	OFF AUTO		M-1 C	OMP2 SPD%	64.5% AU	TO	M-2	WTR OUT	46.	SF AUTO
M-3 REV VLV 1	OFF AUTO		M-3 E	XV 1%	36.9% AU	TO	M. 3	SUCT PSI 1	32.	4P AUTO
M. 4 MTR INJ 1 (u	OFF AUTO		M-4 E	XV 2%	41.7% AU	TO	M-4 1	DISC PSI 1	157.	6P AUTO
M-7 CHW PUMP	ON AUTO		1-1 C	ND1 VFD%	100.0% AU	TO	M.5	OIL PSI 1	157.	4P AUTO
M.9 VESTFAN	ON AUTO		1.3 B	LD PUMP15	69.0% AU	TO	M. 7	S.ToRvVIv1	41.	OF AUTO
1-1 COMP 2	ON AUTO		1.4 B	LD PUMP2%	0.0% AU	TO	M-8	DISC TMP 1	152.	1F AUTO
1-2 CHAM INJ 2	OFF AUTO						M-9 I	MTR TMP 1	115.	8F AUTO
1-3 REV VLV 2	OFF AUTO						M-10	MTR FLT 1		DK AUTO
1-4 MIRINJ 2 (u	OFF AUTO						M-11 M.12	Cmp1VfdFlt		DK AUTO
1-6 CMP2 SV2 (I) ON AUTO						M-13	HIPSI SW1		DKAUTO
										10 41170
1-7 CND FAN1-1	ON AUTO						M-14	DISABLE 1		OTUAOIO
1-7 CND FAN1-1 1-8 CND FAN1-2	ON AUTO						M-14 M-15	RUN/STOP	R	UN AUTO
1-7 CND FAN1-1 1-8 CND FAN1-2 1-9 CND FAN2-1 140 CND FAN2-2	ON AUTO ON AUTO ON AUTO						M-14 M-15 M-16	RUN/STOP EMG/STOP	R	
1-7 CND FAN1-1 1-8 CND FAN1-1 1-9 CND FAN2-1 1-9 CND FAN2-2 1-9 System Status Capacity Control State UNIT IS LOADING	ON AUTO ON AUTO ON AUTO ON AUTO Time 00:02:30	Wanted/ Actual 2/2	Step Delay 90	Wanted % 64.5	ROC/ Target 0.0/ N/A	Acceleration/ MAX Accel, N/A / N/A	M-14 M-15 M-15 M-16 I I I I I I Control On WIR OUT = 4	DISABLE 1 RUN/STOP EMG/STOP SUCT PSI 2 DISC. PSI 2	Mode COOLING	ID AUTO IO AUTO 7P AUTO 0P AUTO 0P AUTO 0P AUTO 0P AUTO 0P AUTO 0P AUTO
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1.7 CND FAN1.1 1.8 CND FAN1.1 1.9 CND FAN1.2 1.9 CND FAN2.2 1.10 CND FAN2.2 Capacity Capacity Control State UNIT IS LOADING State IVMP IS PLINNTHE	ON AUTO ON AUTO ON AUTO ON AUTO ON AUTO Time 00:02:30 Time 06:20:17	Wanted/ Actual 2/2 PSI Diff	Step Delay 90 FLA %	Wanted % 64.5 Steps	ROC/ Target 0.0/ N/A Lead?	Acceleration/ MAX Accel. N/A / N/A Manual Speed %	M-14 M-15 M-15 M-15 M-16 M-15 M-16 M-16 M-16 M-16 M-16 M-16 M-16 M-16	6.5F	R 1 32. 158. Mode COOLING	IO AUTO IO AUTO IO AUTO IO AUTO OP AUTO OP AUTO Ref Type R134a
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1-7 CND FAN1-1 1-8 CND FAN1-1 1-8 CND FAN2-1 1-9 CND FAN2-1 1-10 CND FAN2-2 1 System Status Capacity Control State UNIT IS LOADING State 1)CMP IS RUNNING Evap EXV State 1) EXV IS OPENING 2) EXV IS OPENING 2) EXV IS OPENING Suction Suction Suction Suction Suction	ON AUTO ON ON AUTO ON ON ON ON ON ON ON ON ON ON ON ON ON ON ON ON ON ON ON ON ON ON O	Wanted/ Actual 2/2 PSI Diff 125.0P 126.5P Valve % 36.9% 41.7% Succion	Step Delay 90 FLA % 60% Control On Suct Suph 13.0 Disc Tomo	Wanted % 64.5 Steps 1 1 t ROC 0.1 0.1 Saturated Discherse	ROC/ Target 0.0/ N/A Lead? Yes t ADJ Delay 16 5 Disc	Acceleration/ MAX Accel N/A / N/A Manual Speed % N/A N/A EXV Target (Adjusted) 10.0F 10.0F	M-14 M-15 M-16 I I I I I I I I I I I I I I I I I I I	DISABLE 1 RUNSTOP EMGISTOP SUCT PSI 2 DISC PSI 2 6.5F	R H 32. 158. Mode COOLING	NAUTO NAUTO NOAUTO TP AUTO OP AUTO OP AUTO PAUTO Ref Type R134a Saturated
	ON AUTO ON ON AUTO ON ON AUTO ON ON AUTO ON ON ON ON ON ON OTO OTO OTO OTO OTO OTO OTO OTO OTO O	Wanted/ Actual 2/2 PSI Diff 125.0P 126.5P Valve % 36.9% 41.7% Suction Superheat 13.0	Step Delay 90 FLA % 60% Control On Suct Suph 13.0 13.0 Disc Temp 152.1	Wanted % 64.5 Steps 1 SuperHea t ROC 0.1 0.1 Saturated Discharge 114.8	ROC/ Target 0.0/ N/A Lead? Yes t ADJ Delay 16 5 Disc Superheat 37.3	Acceleration/ MAX Accel. N/A / N/A Manual Speed % N/A N/A EXV Target (Adjusted) 10.0F 10.0F Subcooling 7.7	M-14 IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Liquid Temp 104.8F	R H 32. 158. Mode COOLING	Ref Type Rata Rata Rata Rata Rata Rata Rata Rata

Figure 13.6

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Sensor Inputs

Now you can select the graphics button (Fig. 13.6) and wait for all the information to be displayed.

n d Analog Outputs

Chapter - 20. Samples of Graphics









Chapter - 21. Trouble Shooting problems MCS-Graphics

PROBLEM	POTENTIAL SOLUTION
Failed to Launch Graphics	Check to make sure File name and path is correct in Service/Graphics Link
Display of Graphics not correct	If you have upgraded to new graphic- download the latest MCS-CONNECT Version
Old Graphics still displays	It is important to remove the old graphic files from the directory where they are stored before copying the new files to that location.
Multiple Compressors	If you are connected to multiple compressors - make sure the correct 'Graphic file" is linked to the correct compressor.

21.1. Troubleshooting Information

PROBLEM	POTENTIAL SOLUTION
Can't communicate with controller	Check the Com Port setting in your PC and in the setup in MCS-CONNECT if you are trying to connect 'LOCALLY'
MCS-Connect cannot make changes	This indicates you are not at a proper authorization level. Follow steps below for proper authorization • From either the SITE INFO or STATUS screen in MCS-Connect, click the 'View Only' button at the top of the screen, or click on the 'Passwords' menu option on the lower right of your Keypad/LCD display. • Follow prompts and enter a valid 4-digit authorization number. • The authorization level is displayed at the top of the display and is reflected by the color of the Authorization button. Red = View Only Light Blue = User level Fuscisa = Service level Dark Blue = Supervisor level Green = Factory level
MCS-CONNECT cannot see other con- troller on my network	Remember, each MCS-MAGNUM must have its own unique network address number.
Connecting with MCS-Connect to a MCS- MAGNUM over Ethernet	Go to www.mcscontrols.com / Support / Literature / APP NOTES / APP079 for instructions.
Failed to Launch Graphics	Check to make sure File name and path is correct in Service/Graphics Link
Display of Graphics not correct	If you have upgraded to new graphic- download the latest MCS-CONNECT Version
Old Graphics still displays	It is important to remove the old graphic files from the directory where they are stored before copying the new files to that location.
Multiple Compressors	If you are connected to multiple compressors - make sure the correct 'Graphic file" is linked to the correct compressor.

MCS-CONNECT support can help you with any problems you are having connecting to a contoller, setting and changing sensors, etc.

Collect your data and email to: support@mcscontrols.com

Chapter - 22. Appendix - Transmit Config, Receive Config

Quick Steps for 'Transmiting a new 'Config' (loading to your controller)

- 1. Consult with factory for obtaining the latest MCS-Config file for your controller.
- 2. Download the file send to you from the factory to a location on your PC harddrive.
- 3. Click on MCS-CONNECT to start the program.
- 4. Click on the controller you wish to update.
- 5. Use the 'TRANSMIT CFG' button to begin (you must be authorized to make this change)
- 6. Locate the new 'CONFIG' file you just downloaded on your PC and begin transmitting to the controller.

Quick Steps for 'Receiving a 'Config' file from the controller:

- 1. Click on MCS-CONNECT to start the program.
- 2. Click on the controller you wish to "Receive the config file from.
- 3. Use the 'RECEIVE CFG' button to begin.
- 4. You are presented with a screen for naming the file and saving to a directory on your PC harddrive.

Chapter - 23. Appendix - Alarms - Print & Save

View Alarms, PRINT and SAVE file for viewing

- 1. Click on controller you wish to view
- 2. Click on 'ALARMS', under 'Additional Info, click on 'ALARM #, to view info
- 3. Save file for this 'ALARM' lockout to file on PC to the directory / 'MCS' / 'ALARMS'
- 4. File can be printed using a .txt editor 'NOTEPAD' or can be opened in 'EXCEL'
- 5. Click on 'EXCEL', click on 'ALL FILES' at bottom to view the .txt graph file you saved
- 6. Print file

Chapter - 24. Appendix - Graph - Quick steps to setup

Quick steps for setting up 'Graphing'

- 1. Locate controller to set up 'GRAPHING' file
- 2. Click on 'GRAPH' button at the top of the frame
- Click on 'GRAPH SETUP' to pick 'RELAY OUTPUTS', 'ANALOG OUTPUTS', 'SENSOR OR DIGITAL IN-PUTS' and setting the 'INTERVAL' (time) for the 'GRAPH' report.
- 4. Click on 'SAVE SELECT' (clicking on this button will enable the current settings to be saved and will be active when the controller is again accessed) or 'GRAPH SELECTED' (will plot the current points selected over the specified Y-Axis and will not be active when the controller is again accessed).
- 5. History will be pulled from the controller and can be viewed on your PC or:
- 6. Click on 'PRINT' which will save the current 'GRAPH' to a file on your PC
- 7. Located the file on your PC to print a hard copy
- 8. File can be printed using a .txt editor 'NOTEPAD' or can be opened in 'EXCEL'
- 9. Click on 'EXCEL', click on 'ALL FILES' at bottom to view the .txt graph file you saved

10. Print file

Loading new 'Firmware' to the controller: (AUTHORIZATION LEVEL - FACTORY OR HIGHER)

YOU MUST BE LOCALLY CONNECTED TO THE CONTROLLER directly at the job site using a MCS-USB-RS485 cable.

NOTE: Important: VERSION XX FIRMWARE MUST USE VERSION XX MCS-CONFIG FILES. (EX: HVAC 17.25 must be using a MCS-CONFIG version 17).

MIXED FIRMWARE AND CONFIG FILE WILL NOT WORK. MAKE SURE YOU HAVE THE LATEST FILES PRIOR TO LOADING NEW FIRMWARE TO YOUR CONTROLLER.

Be sure to use the latest MCS-Connect programs. (Free upgrade @mcscontrols.com)

MCS-CONFIG update must be sent from MCS-SUPPORT if you have an older version than the MAGSOFT VERSION.

- Consult with support@mcscontrols.com prior to upgrading your system.
- To download the MAGSOFT upgrade: Go to www.mcscontrols.com
- At top of main page click on 'SUPPORT', click on 'MAGNUM FIRMWARE'
- Locate the latest version of the MAGSOFT for your controller - server will require a 'USERS NAME' and password.
 (call MCS-SUPPORT to receive that informa-

(call MCS-SUPPORT to receive that information)

Important: VERSION 17 FI configuration files designed fo	RMWARE MUST USE VERSION 17 CONFIGURATION FILES. It will NOT work with r Magnum firmware versions 14 and lower. Also, you MUST always use the latest MCS-Connect and MCS-Config programs.
	Magsoft (Version HVAC 17.25T) 2.296 KB
Please Note: This file co applications. To load the firmw by clicking on the downloade	ntains the latest official version 17 firmware release for the Magnum for HVAC (are into a Magnum, first download (Save) the above file to your computer, run it d file to extract the hex file, and then use MCS-Connect to upload the hex file to the Magnum.
	Magsoft (Version CENT 17.25T) 1.845 KB
Please Note: This file conta applications. To load the firmy by clicking on the downloade	ins the latest official version 17 firmware release for the Magnum for centrifugal rare into a Magnum, first download (Save) the above file to your computer, run it d file to extract the hex file, and then use MCS-Connect to upload the hex file to the Magnum.
	Magsoft (Version REFR 17.25T) 1.884 KB
Please Note: This file con defrost applications. To lo computer, run it by clicking or	tains the latest official version 17 firmware release for the Magnum for hot gas ad the firmware into a Magnum, first download (Save) the above file to your the downloaded file to extract the hex file, and then use MCS-Connect to upload the hex file to the Magnum.
	Magsoft (Version RTU 17.25T) 2.238 KB
Please Note: This file co applications. To load the firmw by clicking on the downloade	ntains the latest official version 17 firmware release for the Magnum for RTU rare into a Magnum, first download (Save) the above file to your computer, run it d file to extract the hex file, and then use MCS-Connect to upload the hex file to the Magnum.

5. NOTE message about upgrading your 'FIRMWARE' before proceeding

- 6. Start your download of MAGSOFT to the directory on your PC. 'MCS/JOBSITES'
- 7. Connect the MCS-USB-485 cable to your PC and to the 485 port on the MAGNUM-N.
- 8. Open MCS-CONNECT, click on 'FIRMWARE' and upload the new MAGSOFT to your controller. Upload will take about 10-15 minutes.

Chapter - 25. Appendix - Loading New Firmware

How to Transmit Firmware Using MCS-Connect



NOTE: Important: VERSION XX FIRMWARE MUST USE VERSION XX MCS-CONFIG FILES. (EX: HVAC 17.25 must be using a MCS-CONFIG version 17).

MIXED FIRMWARE AND CONFIG FILE WILL NOT WORK. MAKE SURE YOU HAVE THE LATEST FILES PRIOR TO LOADING NEW FIRMWARE TO YOUR CONTROLLER.

Be sure to use the latest MCS-Connect programs. (Free upgrade @mcscontrols.com)

MCS-CONFIG update must be sent from MCS-SUPPORT if you have an older version than the MAGSOFT VERSION that you are downloading. (Example: MCS-CONFIG version 16 will not work with MCS-CONFIG version 17)

Consult with support@mcscontrols.com prior to upgrading your system.

- 1. To download the MAGSOFT upgrade: Go to www.mcscontrols.com
- At top of main page click on 'SUPPORT', click on 'MAGNUM FIRMWARE'
- Locate the latest version of the MAGSOFT for your controller - HVAC, CENT, REFR, or RTU - server will require a 'USERS NAME' and password. (call MCS-SUPPORT to receive that information)
- 4. NOTE message about upgrading your 'FIRM-WARE' before proceeding
- 5. Start your download of MAGSOFT to the directory on your PC. 'MCS/JOBSITES'

Magsoft (Version HVAC 17.25T) 2,298 кв
Please Note: This file contains the latest official version 17 firmware release for the Magnum for HVAC applications. To load the firmware into a Magnum, first download (Save) the above file to your computer, run it by clicking on the downloaded file to extract the k file, and then use MCS-Connect to upload the hex file to the Magnum.
Magsoft (Version CENT 17.25T) 1.045 KB
Please Note: This file contains the latest official version 17 firmware release for the Magnum for centrifugal applications. To load the firmware into a Magnum, first download (Save) the above file to your computer, run it by clicking on the downloaded file to extract the Kile, and then use MCS-Connect to upload the hex file to the Magnum.
Magsoft (Version REFR 17.25T) 1.884 KB
Please Note: This file contains the latest official version 17 firmware release for the Magnum for hot gas defrost applications. To load the firmware into a Magnum, first download (Save) the above file to your computer, run it by clicking on the downloaded file to extract the hex file, and then use MCS-Connect to upload the hex file to the Magnum.
Magsoft (Version RTU 17.25T) 2.238 KB
Please Note: This file contains the latest official version 17 firmware release for the Magnum for RTU applications. To load the firmware into a Magnum, first download (Save) the above file to your computer, run it by clicking on the downloaded file to extract the k file, and then use MCS-Connect to upload the hex file to the Magnum.

Standard Method

- 1. USING THE MCS-USB-485, connect the USB end to your PC port and connect the RS485 port to the MAGNUM-N port.
- 2. Open MCS-Connect
- Select Local Serial as method of connection (you must already be connected to the Magnum using an MCS-USB-485 cable to the Magnum). This will bring up the Magnum scanning screen.
- 4. Select the Magnum controller you would like to connect to and click the respective tab. Wait for the tables to load.
- 5. Click the **'VIEW'** button and enter the correct authorization code (must be Service level or higher). This will enable the button.
- 6. Click the '**LOAD FIRMWARE'** button and navigate to the software you wish to insert in the menu that pops up. (will be a .hex file)
- 7. Once you have selected the firmware, click on 'LOAD' and wait until firmware has finished transmitting.

Look In:	Magnum Hex	
0 0 0 1	MicroMag Flush Testing Music N+1 logic N+2 logic Magsoft_HVAC_V1723O3.hex Magsoft_REFR_V1723O.hex	Magsoft_RTU_V172303.hex
1		1
File <u>N</u> ame:	Magsoft_HVAC_V1723O3.hex	
Files of Type:	*.hex Files	

Backdoor Method

There may be certain situations where the standard method for transmitting software will not work (for example, software corruption through incomplete transfer, power failure, etc.). The magnum may be in constant reset and might not show up on the scanning screen of MCS-Connect. In such instances the following backdoor method must be used to transmit software.

- 1. Open MCS-Connect
- Select Local Serial as method of connection (make sure you are NOT connected to the Magnum yet, keep the serial cable unplugged for this step so that the **'LOAD FIRMWARE'** does not become disabled). This will bring up the Magnum scanning screen. Click the button and navigate to the MAG-SOFT version you wish to insert in the menu that pops up (will be a .hex file).
- 3. Reconnect the MCS-USB-485 cable to the MAGNUM.
- 4. Before actually transmitting software however, locate the RESET button on the MCS-Magnum board. You will need to start transmitting the software within seconds of pressing the RESET button.



5. Press the RESET button and then immediately begin transmitting the software.

Chapter - 26. Appendix- History Storage & Viewing

26.1. INCREASE THE HISTORY STORAGE CAPACITY FOR YOUR MAGNUM

The **MCS-COMPACT** is a daugherboard able to hold a type 1 or type 2 compact flash memory card. It can easily be installed in the field by plugging it into the expansion pins on the MCS-MAGNUM.

The MCS-COMPACT increases the MCS-MAGNUM's history storage up to a year+ of run data.

MCS-COMPACT provides plug and play capability allowing it to be moved from one MCS-MAGNUM to another MCS-MAGNUM, making it a great service troubleshooting tool.



Part # MCS-COMPACT

95

for connection from Compact Card Reader to

computer

26.2. Viewing Magnum History Offline

R	elay/Input
2	0n
đ	Off
G	Interval : 10s
	Graph Setup
	Print Graph
[C	ontrol
	Static

You can view the history/graph files offline. When you are online with MCS-Connect and you go into the graphing screen, MCS-Connect pulls back the current history/trend data from the MCS-Magnum and you can view the data online.

In the graphing screen over on the right hand side there is '**Save History**' button which will save all the data pulled back to a file on your PC hard drive.

This history file can be viewed at a later time, offline. When you are at the main screen for MCS-CONNECT, click on the 'OFFLINE' menu bar and click on the 'Load Offline Graph File'. Files should be located in the 'MCS\GRAPH' directory on your hard drive.

File Setup	Offline Help	
	Load an Offline GRAPH File	
	Load an Offline XML File	ocal Network Co
	Load an Offline MODBUS .cfg File	
	Edit Autostart File	

The MCS-Magnum can save onto a MCS-COMPACT, a 2G compact flash card, the same history file as in the graphing screen "Save History" option.

The only difference is MCS-Magnum names the history file and automatically saves the history file when the MCS-Magnum internal history data has filled up. You must remove the compact flash card from the MCS-Magnum and using the USB top Compact flash adapter, read the compact flash card on your laptop like you would read a USB memory stick.



Once you insert the USB Compact adapter (with Compact Flash card plugs into it) into your laptop you will see all the history files saved on it. The MCS-Magnum names the file with 'HISTORY-INFO' plus the date and number. The Number is sequentially numbered starting from 1 every midnight. Please see below an example of history files saved on compact file card. In this example there are two files, both saved on June 6, 2015, one file was the 48 file saved that day and the other being the 52 file saved that day.

Now to view a graphing file that has been saved on the compact flash card or one you manually saved in the graphing screen open MCS-Connect and click on the "Offline" text at the top of the screen. Then in the popup menu click on **'Load an Offline Graph File'**.

File Setup	Office Holp	
	Load an Offline XML FRe	ocal Network Connec
	Load an Offline MODBUS .cfg File	
	Loss and the second sec	
-		
	B	emote Network Conne
Site N	ame R	emote Network Conne

Then you will get a popup file selection window(see below photo). Move to the folder where the history file has been saved and select the history file you want to view.

E Load Offline	Graph		×
Look in:	_ MCS HISTOP	Y (E) 🚽 🧿 🍠 😅 📴 🗧	
Cuick access	Nam	Cystem volume information	
		History-Info 2015-06(JUN) -23 52 xt 6/23/2015 9:43 AM	
Desktop Libraries	-	History-Into 2015-06(JUN) -23 48 txt 6/23/2015 10:07 AM	
This PC			
Network			
	Object name.	History-Info 2019-06/JUNiy-23 48.bd	Open'
	Objects of type:	- A Res (*)	Cancel

Then after you select the file you will see a screen like below.

Click on the offline graph tab and you will see the screen below:

Disconnect	Scan	G	raph 1	Fransmit Cfg	Rec	eive Cfg
Che Info	OFFLINE G	RAPH				
Address	HW Ser	ial#	Cfg Name	Company	Na	Unit Mode

Now it will work just like the normal "Graph" button/screen in MCS-Connect, where you can select which points you want to graph.

Prior to MCS-CONNECT 18.27.10 when plotting a point(s) in a graph MCS-CONFIG was pre-programmed with user logic 'fixed values' so a technician could set a zone for the point plotted when reading a pulled back history file.

With the release of the above version, you are now able to add the fixed points <u>after</u> receiving the pulled back history file along with the points you are plotting.

Having user logic statements added to your config is no longer necessary.

Disconnect Scan	Graph Transmit Cfg Receive Cfg View Only Load Firmware Diagnostic Save Print
Info OFFLINE GRAPH	
Relay/Input On Off Interval : 10s Graph Setup Print Graph 240.0 240.0 240.0 210.0 180.0 180.0 180.0 180.0	R0s A0s Sis & Dit Fixed Val Fixed Val Added with version 18.27.10 Number of Points 2 Image: Construction of the cons

You can set 4 different 'fixed Vals' for setting zones for different graphed points.

Chapter - 27. Appendix - Saving Extended History Files

27.1. Saving Extended History Files for Viewing

With MCS-CONNECT the technician can enable '**saving history files**' to a location on their PC hard drive or to a USB stick including saving on the MCS-TOUCHSCREEN to a USB stick.

Using the setup in MCS-CONNECT, follow the instruction below.

1. Open MCS-CONNECT main screen, click on 'SETUP' than 'EXTENDED HISTORY' as shown below:

Communications	-Local Network Connections			
General Options			Ethernet	
Network Options	Remote Network Connections			
Extended History		Con	nect Remotely	
Alarm Alerts		Com	lect Remotely	
Schedule Diagnostic Save	O Dialup	O IP (Internet)	O IP Lantronix	

2. Next screen shows the Extended History screen, click on:

'ENABLE EXTENDED HISTORY SAVE'

ommunications General Tab	les Network Extended History	Alarm Auto-Pr	int	
Enable Extended Histor	ory Save O Disat	ble Extended H	istory Save	
	File Location Selection	on 3		SETTING
Select Save Location		ſ	MINUTES OF INA STATUS UP	CTIVITY F
Minutes of inactivity before	disabling status updates and beg	jin saving histo	ry: 1 🔻	
Minutes of inactivity before	disabling status updates and beg	in saving histo	ry: 1 •	ed by
Minutes of inactivity before This feature is no longer depende user inactivity for the specified nu pullback and resume updating the state.	disabling status updates and beg nt on the presence of a screensaver to t umber of minutes. Once user activity res a currently displayed screen. Any incomp	in saving histo rigger the start of umes MCS-Conne olete history files v	ry: 1 the save. It 2 ct will ceas 3 will be savet 4 =	ed by history lete

3. Set the number of minutes of inactivity for status updates to stop from the chiller, which enables the 'EXTENDED HISTORY SAVE' to begin saving.

(The unit will wait the time specified, then 'EXTENDED HISTORY pullback will begin.

4. Choose the location for MCS-CONNECT to save the file to. The file location when connected on a PC or laptop can be your 'C' drive and sub directory MCS where most of the MCS-CONNECT files are stored.

communications General	Tables Network	Extended History	Alarm Alerts	
Enable Extended	History Save	O Disa	ble Extended History S	ave
	F	ile Location Selection	on	
Select Save Location	C:\MCS\Exten	ded History		
Minutes of inactivity b	efore disabling stat	us updates and be	gin saving history:	1
Minutes of inactivity by This feature is no longer de user inactivity for the speci pullback and resume updat state.	efore disabling stat ependent on the presen ified number of minutes ting the currently displa	us updates and be ce of a screensaver to s. Once user activity re yed screen. Any incom	g in saving history: trigger the start of the save sumes MCS-Connect will ce plete history files will be sa	1 • It is now triggered by ase the current history ved in an incomplete
Minutes of inactivity b This feature is no longer de user inactivity for the speci pullback and resume updat state.	efore disabling stat ependent on the presen ified number of minutes ting the currently displa	us updates and be ce of a screensaver to . Once user activity res yed screen. Any incom	g in saving history: trigger the start of the save sumes MCS-Connect will ce plete history files will be sa	1 I I I I I I I I I I I I I I I I I I I



27.2. DISABLE THE EXTENDED HISTORY PULL BACK

- 1. Click on the 'Button Bar' and click 'DISCONNECT FROM THE CONTROLLER'
- 2. Open MCS-CONNECT main screen
- 3. Click on 'SETUP' than 'EXTENDED HISTORY' and
- 4. Click on 'DISABLE EXTENDED HISTORY' and save.

Chapter - 28. Appendix - Printing BMS Points Lists

Once you have scanned and connected to your controller, under the Menu Bar at the top of MCS-CONNECT, click to open the 'FILE' bar to open the drop down screen to view the options for printing 'BMS' point lists.

File	Setup	Offline	Res	et/Clear	Workspace	View	Button Bar	Time H
Exit			t		Scan			Graph
Prin	t BMS P	oints 🕨	MCS-N MCS-E	AGNUM	(BACnet IP & I EWAY(BACnet	Modbus t MSTP,) Johnson N2,I	Lontalk)
			MCS-N	AGNUM	& MCS-BMS-0	GATEWA	AY	and a second
			MCS-N	AGNUM	Unit & Compr	essor S	tates	

When you choose the points list you want to print, the next screen will open, choose where you will save the points list. MCS-CONNECT will print a pdf file in this location.

📕 🛛 🔁 📜 📼 🛛 STATUS P	RINTS				
File Home Share	Vie	2W			~ (2
← → ↑ ≥ > TI	his PC	> OS (C:) > MCS > STATUS P	PRINTS v (Search ST	ATUS PRIN 🔎
📷 OS (C:)	^	Name	Date modified	Туре	Size
\$GetCurrent		bms gateway points.pdf	10/25/2018 3:41 PM	Adobe Acr	23 KB
AMD	10.1	language compressor states.pdf	10/25/2018 3:43 PM	Adobe Acr	6 KB
dell	100	🛃 magnum states.pdf	10/25/2018 3:42 PM	Adobe Acr	24 KB
Drivers					
FEXUpdates					
FieldServer					
HP Plotter Driver	~				-
3 items					

Below is the different point lists that can be printed.

- MCS-MAGNUM (BACnet IP & Modbus)
- MCS-BMS-GATEWAY (BACnet MSTP, JOHNSON N2, LONTALK
- MCS-MAGNUM & MCS-BMS-GATEWAY
- MCS-MAGNUM Unit & Compressor States

Sample prints are shown on the next page.

MCS-MAGNUM (BACnet IP & Modbus) Points List

MCS	MAGNUM	BA	CNET ID	MODBUS	IP & RTU
PT #	NAME	ID	NAME	REGISTER	# ASSUMED DE
M-1	SUPPLY TMP	AI:1	SUPPLY TMP	30001	1
M-2	RETURN TMP	AI:2	RETURN TMP	30002	1
M-3	ReturnHumd	AI:3	ReturnHumd	30003	1
M-4	RETURN CO2	AI:4	RETURN CO2	30004	0
M-5	COIL TMP	AI:5	COIL TMP	30005	1
M-6	OA TMP	AI:6	OA TMP	30006	1
M-7	OA HUMD	AI:7	OA HUMD	30007	1
M-8	DuctStatic	AI:8	DuctStatic	30008	2
M-9	MFG CO2	AI:9	MFG CO2	30009	0
M10	TRANE SPLY	AI:10	TRANE SPLY	30010	1
M11	SPAREM-11	AI:11	SPAREM-11	30011	0
M12	DmprClosed	AI:12	DmprClosed	30012	0
M13	SplyFanFlt	AI:13	SplyFanFit	30013	0
M14	SPAREM-14	AI:14	SPAREM-14	30014	0
M15	SMOKE ALM	AI:15	SMOKE ALM	30015	0
M16	RUN/STOP	AI:16	RUN/STOP	30016	0
1-1	IonizerAlm	AI:17	IonizerAlm	30017	0
1-2	OA ENTHLPY	AI:18	OA ENTHLPY	30018	1
1-3	RUN ECNMZR	AI:19	RUN ECNMZR	30019	0
1-4	SPARE1-4	AI:20	SPARE1-4	30020	0
1-5	WtdOADmpr	AI:21	WtdOADmpr	30021	1
1-6	CoilContrl	AI:22	CoilContrl	30022	1
1-7	RtnDmpCtrl	AI:23	RtnDmpCtrl	30023	1
1-8	EntWtrTmp	AI:24	EntWtrTmp	30024	1
1-9	LevWtrTmp	AI:25	LevWtrTmp	30025	1
1-10	SPARE1-10	AI:26	SPARE1-10	30026	0
1-11	SPARE1-11	AI:27	SPARE1-11	30027	0
1-12	DmprMin%	AI:28	DmprMin%	30028	1
1-13	DmprCtrl%	AI:29	DmprCtrI%	30029	1
1-14	AllwEcnmzr	AI:30	AllwEcnmzr	30030	0
1-15	COOLING	AI:31	COOLING	30031	0
1-16	HEATING	AI:32	HEATING	30032	0
2-1	OCCUPIED	AI:33	OCCUPIED	30033	0
2-2	TMP RESET	AI:34	TMP RESET	30034	1

MCS-MAGNUM & MCS-BMS-GATEWAY Points List

BACNE	T MSTP	JOHNS	ON N2	LON	TALK
ID	NAME	ID	NAME	ID	NAME
AI-1		AI-1		AI-1	M 1 SUPPLY TMPs
AI-2	M 2 RETURN TMP	AI-2	M 2 RETURN TMP	AI-2	M 2 RETURN TMPs
AI-3	M 3 ReturnHumd	AI:3	M 3 ReturnHumd	AI-3	M 3 ReturnHumdsi
AI-4	M 4 RETURN CO2	AI:4	M 4 RETURN CO2	AI:4	M 4 RETURN CO2s
A1-6		A1-5		A1-5	M & COIL TMRsi
AI.5		A1.5	M & OA TMP	Alie	M 6 0A TMRsi
AI.0		AI:7		AI:7	M 7 OA HUMDsi
AI-8	M & DuctStatic	AI:8	M & DuctStatic	AI:8	M 8 DuctStaticsi
AI:0	M 9 MEG CO2	A1:0	M 9 MEG CO2	A1:0	M 9 MEG CO2ci
AI:10	M10 TRANE SPLV	AI:10	M10 TRANE SPLY	AI:10	M10 TRANE SRI Vel
AI-11	M11 SPAREM 11	AI:10	M11 SPAREM 11	AI:10	M11 SPAREM 11ci
AI-12	M12 DmprClosed	AL:12	M12 DmprClosed	ALIO	M12 DmprCloss
AL42	M42 CaluFaaFit	AI: 12	M42 CaluFanEla	AL: 12	M42 CaluFas Eltai
AE13	mis_spiyFanFit	AI:13	mis_spiyranrit	AI:13	mis_spiyranritsi
AI:14	M14_SPAREM_14	AI:14	M14_SPAREM_14	AI:14	M14_SPAREM_14si
AI:15	M15_SMOKE_ALM	AI:15	M15_SMOKE_ALM	AI:15	M15_SMOKE_ALMsi
AI:16	M16_RUN_STOP	AI:16	M16_RUN_STOP	AI:16	M16_RUN_STOPsi
AI:17	1_1_lonizerAlm	AI:17	1_1_lonizerAlm	AI:17	1_1_lonizerAlmsi
AI:18	1_2_OA_ENTHLPY	AI:18	1_2_OA_ENTHLPY	AI:18	1_2_OA_ENTHLPYsi
AI:19	1_3_RUN_ECNMZR	AI:19	1_3_RUN_ECNMZR	AI:19	1_3_RUN_ECNMZRs
AI:20	1_4_SPARE1_4	AI:20	1_4_SPARE1_4	AI:20	1_4_SPARE1_4si
AI:21	1_5_WtdOADmpr	AI:21	1_5_WtdOADmpr	AI:21	1_5_WtdOADmprsi
AI:22	1_6_CoilContrl	AI:22	1_6_CoilContrl	AI:22	1_6_CoilContrIsi
AI:23	1_7_RtnDmpCtrl	AI:23	1_7_RtnDmpCtrl	AI:23	1_7_RtnDmpCtrlsi
AI:24	1_8_EntWtrTmp	AI:24	1_8_EntWtrTmp	AI:24	1_8_EntWtrTmpsi
AI:25	1_9_LevWtrTmp	AI:25	1_9_LevWtrTmp	AI:25	1_9_LevWtrTmpsi
AI:26	1_10_SPARE1_10	AI:26	1_10_SPARE1_10	AI:26	1_10_SPARE1_10si
AI:27	1_11_SPARE1_11	AI:27	1_11_SPARE1_11	AI:27	1_11_SPARE1_11si
AI:28	1_12_DmprMin	AI:28	1_12_DmprMin	AI:28	1_12_DmprMinsi
AI:29	1_13_DmprCtrl	AI:29	1_13_DmprCtrl	AI:29	1_13_DmprCtrlsi
AI:30	1_14_AllwEcnmzr	AI:30	1_14_AllwEcnmzr	AI:30	1_14_AllwEcnmzrsi
AI:31	1_15_COOLING	AI:31	1_15_COOLING	AI:31	1_15_COOLINGsi
AI:32	1_16_HEATING	AI:32	1_16_HEATING	AI:32	1_16_HEATINGsi
AI:33	2_1_OCCUPIED	AI:33	2_1_OCCUPIED	AI:33	2_1_OCCUPIEDsi
AI:34	2_2_TMP_RESET	AI:34	2_2_TMP_RESET	AI:34	2_2_TMP_RESETsi
				_	1

MCS-BMS-GATEWAY (BACnet MSTP, JOHNSON N2, LONTALK Points List

MCS	MAGNUM	BA	CNET ID	MODBUS	IP & RTU
PT #	NAME	ID	NAME	REGISTER	# ASSUMED D
M-1	SUPPLY TMP	AI:1	SUPPLY TMP	30001	1
M-2	RETURN TMP	AI:2	RETURN TMP	30002	1
M-3	ReturnHumd	AI:3	ReturnHumd	30003	1
M-4	RETURN CO2	AI:4	RETURN CO2	30004	0
M-5	COIL TMP	AI:5	COIL TMP	30005	1
M-6	OA TMP	AI:6	OA TMP	30006	1
M-7	OA HUMD	AI:7	OA HUMD	30007	1
M-8	DuctStatic	AI:8	DuctStatic	30008	2
M-9	MFG CO2	AI:9	MFG CO2	30009	0
M10	TRANE SPLY	AI:10	TRANE SPLY	30010	1
M11	SPAREM-11	AI:11	SPAREM-11	30011	0
M12	DmprClosed	AI:12	DmprClosed	30012	0
M13	SplyFanFit	AI:13	SplyFanFit	30013	0
M14	SPAREM-14	AI:14	SPAREM-14	30014	0
M15	SMOKE ALM	AI:15	SMOKE ALM	30015	0
M16	RUN/STOP	AI:16	RUN/STOP	30016	0
1-1	IonizerAlm	AI:17	IonizerAlm	30017	0
1-2	OA ENTHLPY	AI:18	OA ENTHLPY	30018	1
1-3	RUN ECNMZR	AI:19	RUN ECNMZR	30019	0
1-4	SPARE1-4	AI:20	SPARE1-4	30020	0
1-5	WtdOADmpr	AI:21	WtdOADmpr	30021	1
1-6	CoilContrl	AI:22	CoilContrl	30022	1
1-7	RtnDmpCtrl	AI:23	RtnDmpCtrl	30023	1
1-8	EntWtrTmp	AI:24	EntWtrTmp	30024	1
1-9	LevWtrTmp	AI:25	LevWtrTmp	30025	1
1-10	SPARE1-10	AI:26	SPARE1-10	30026	0
1-11	SPARE1-11	AI:27	SPARE1-11	30027	0
1-12	DmprMin%	AI:28	DmprMin%	30028	1
1-13	DmprCtrl%	AI:29	DmprCtrl%	30029	1
1-14	AllwEcnmzr	AI:30	AllwEcnmzr	30030	0
1-15	COOLING	AI:31	COOLING	30031	0
1-16	HEATING	AI:32	HEATING	30032	0
2-1	OCCUPIED	AI:33	OCCUPIED	30033	0
2-2	TMP RESET	AI:34	TMP RESET	30034	1

MCS-MAGNUM Unit & Compressor States Points List

NAME: OFFICE AF	ME: OFFICE AHU COMPANY NAME: MicroCtrlSystem UNIT MODEL #: Cool/Heat/OA UNIT SERIAL #:					
		BMS Points Unit	State Chart			
STATE	BACnet	STATE TEXT				
0	STATE #	UNIT IN LOST I/O				
1						
	_					
	-					
	_					
	-					
	-					
	-					

Revision Page

Date	Author	Description of Changes
08-22-07	J. Walterick	Created manual.
09-06-07	J. Walterick	Alignment changes (Rev-1.1)
03-02-15	DEW	Convert to Indesign, edits
03-10-15	DEW	Edits
03-25-15	DEW	Edits
04-01-15	DEW	Edits - comments from Ray
04-07-15	DEW	Edits
04-17/20-15	DEW	Edits - comments from Ray
06-02-15	DEW	Edits
06-05-15	DEW	Edits
06-25-15	DEW	Edits
07-17-15-20	DEW	Edits
07-30-15	DEW	Added Diagnostic Save to section 9
09-29-15	DEW	Changed some network drawing, Graphic pages
12-09-15	DEW	Updated Screen shots added Diagnostic Save
2-11-16	DEW	Added graphic section at rear
3-04-16	DEW	Add new Alarm Alert setup Ver 17.12
3-7-16	DEW	Add lookup table, P/T Converter
6-13-16	DEW	Add New Live Graph Section
10-10/14-16	DEW	Edits from latest version
11-7-16	DEW	Updates and edits
06-20-17	DEW	Add BMS file print
06-22-17	DEW	Add info for editing Autostart file on touchscreen and MODBUS config
10-24-18	DEW	Add Diagnostic Save Pop up info
04-08-19	DEW	Add Fixed Values to Live Graph and Graph Pullback using Fixed Values
11-19-2021	DEW	Add Alarm Alerts setup for Gmail
11-29-2021	DEW	Add Hide/Show info
08-02-2022	DEW	Add 'UNITS' for F and C
02-21-2023	DEW	Update Alarm section - remove GMail reference



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