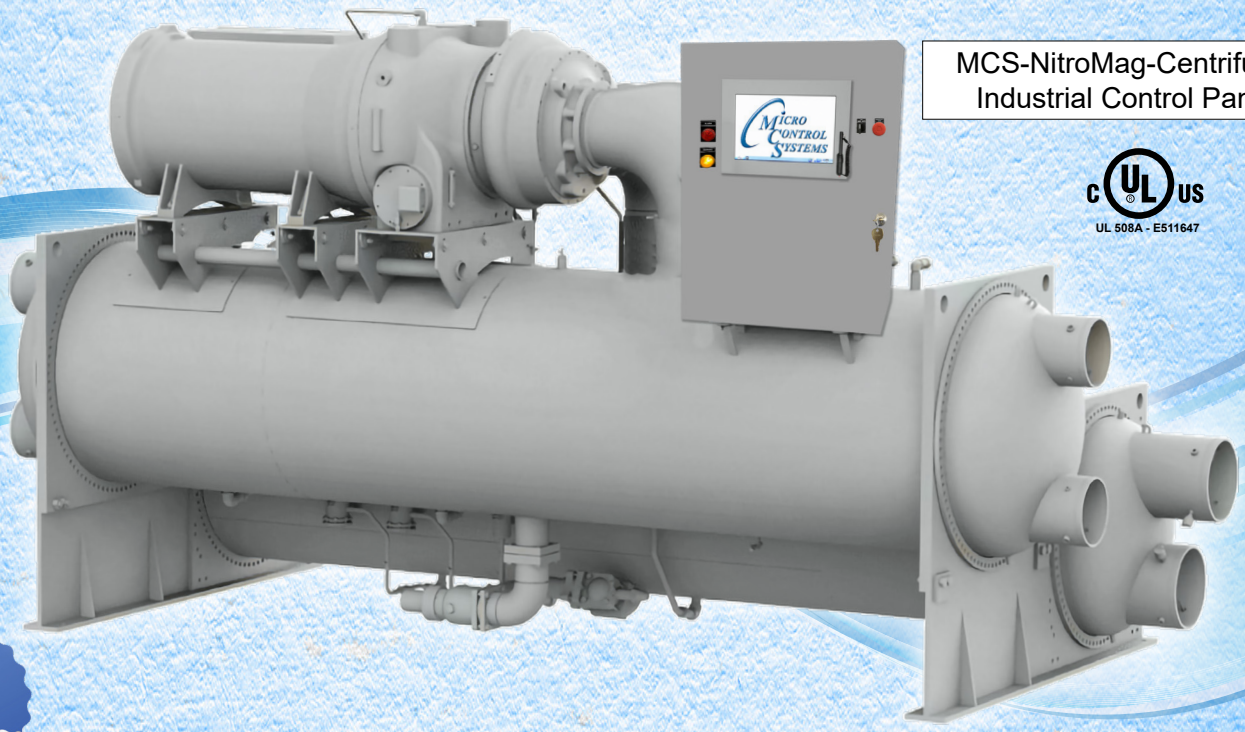
MICRO CONTROL SYSTEMS

MCS Total Solutions for all your HVAC/R Control Needs



MCS-NitroMag-Centrifugal Industrial Control Panel

c UL us
UL 508A - E511647

NEW

MCS-Nitromag Upgrade Brochure PEH-WSC Series Chillers

with Optional VFD Control

Click for Brochure Upgrades▶

This brochure describes a standard upgrade package for the McQuay / Daikin Chillers.

Each control upgrade installation is unique. It may be necessary to add additional options to the standard upgrade as described in this brochure.

Fill out the brief questionnaire in the back of this brochure and forward to your sales representative for an estimate.

Revision - 2025-08-20

Example MCS-NitroMag Upgrade Photos

PEH087 Chiller before upgrade
old PEH087 controls

Option - Upgraded MCS-CONTROLS
in Industrial Panel

Upgrade Specications

MCS NITROMAG-CENTRIFUGAL

Industrial Control Panel

The **MCS-NITROMAG-CENTRIFUGAL** is a control system containing a Capacitive Touchscreen, MCS-NITROMAG Controller, MCS-IO-BASE, MCS-IO-EXT, MCS-SI-BASE, MCS-SI-EXT and a MCS-RO-BASE. It includes a processor, memory, eMMC Flash, and supporting power circuitry.

Control panel includes the following; 20A, 16A and a 5A Single-Pole Circuit Breaker. A 5-port 10/100/1000 Mbps Ethernet Work-group Switch Industrial rated, Red Alarm Indicator, Yellow Warning Indicator, Emergency Stop Switch with guard and 3 Position Run/Stop Selector Switch.

The Capacitive touchscreen interface designed to simplify user access with the MCS Expansion Boards and utilizing MCS-Connect to provide both graphics and service mode access to technicians. Highly accurate and does not require calibration - easy to clean glass surface. Works outdoors, bright screen, water resistant, Exceptional Optics - 1280x800 resolution, sharp and vibrant images.

The MCS-NITROMAG controller comes with a built-in WiFi interface for Ethernet connectivity, and an onboard WiFi antenna connection mounted on the front of the touchscreen.

Specifications

Dimensions of control panel ...27”w x 39.75”h x 8.0”d
Rated Voltage (Standard).....120VAC or 230VAC
Phase / Frequency .....1 Phase / 60Hz
Full Load Current(approx) .....40A at 120VAC or 20A at 240VAC
Short Circuit Current Rating ..10kA

Temp. Range for Control Panel & Touch Screen

LCD Screen. .....15.4” (16:10 Diagonal)
16.2 Million Colors
1280x800 Resolution
Capacitive Stylus pen
Touchscreen Surface.....UV Degradation Protection
Operating Temperature.....-22°F to 176°F (-30°C to +80°C)
Operating Humidity..... .....90 %RH (Non Condensing)
Storage Temperature.....-22°F to 176°F (-30°C to +80°C)

Controller

Microprocessor .....Broadcom BCM2711 Quad core Cortex (ARMv8) 64-bit SoC @ 1.5Ghz
Flash Memory .....16 GB EMMC
RAM .....2 GB DDR3
MCS-I/O Comm Port. .....1 @ 38,400 baud
RS-485 Ports. .....2 @ go up to 115200 baud rate
Ethernet 10 Mbps/100Mbps/1Gbps
HDMI .....2 HDMI 2.0 ports-Standard and Micro
WiFi .....2.4 GHz, 5.0GHz 8.02 b/g/n/ac wireless
USB(2) .....USB type B 2.0 ports 480Mbps signalling
Protocols .....BACnet IP, BACnet MSTP, Modbus IP,

Power Supply - Specification

12vdc power supply.....85vac ~ 264vac
AC frequency range.....47 ~ 63Hz / 7.5A / 90W

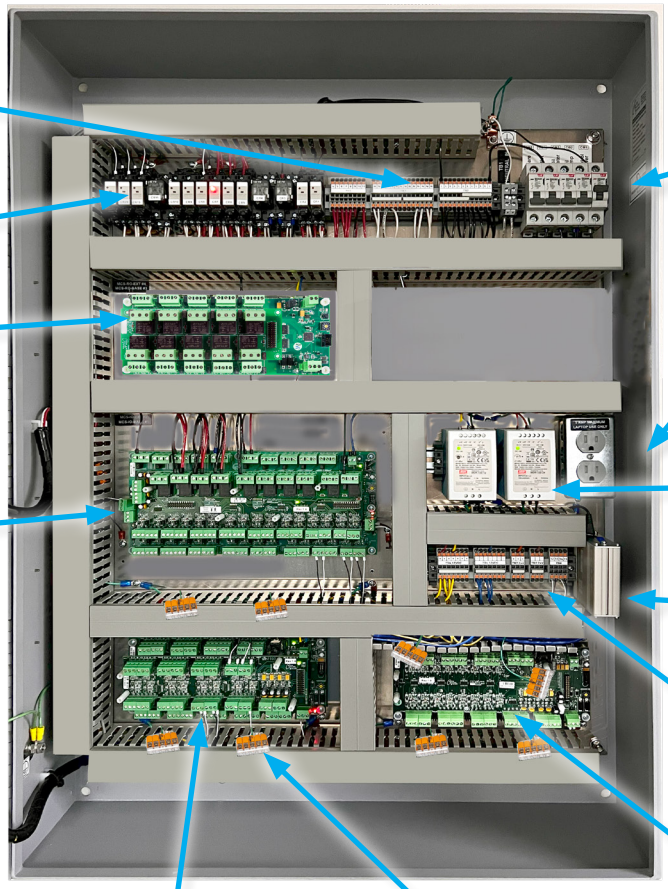
24vdc power supply.....85vac ~ 264vac
AC frequency range.....47 ~ 63Hz / 4A / 96W

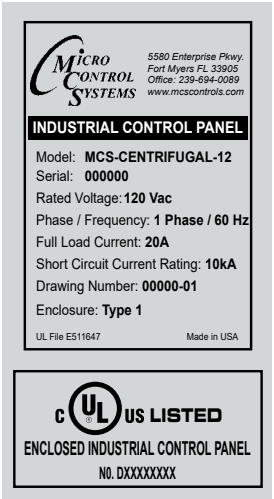
MCS-NitroMag-CENTRIFUGAL

INDUSTRIAL CONTROL PANEL

UL 508A - E511647

NEMA Rating Type 2- IP30 Rating





* Optional MCS Expansion and Extension boards shown

UL 508A Certified Industrial Control Panel

Benefits of selecting an Industrial Control Panel that carries the UL 508A certification include:

- UL 508A certification provides the inspection authority and your customer evidence that the control panel complies with nationally recognized safety standards. These standards ensure public safety and provide assurances that the electrical control panel is compliant with national and local electrical codes.
- For a control panel to carry the UL 508A Listing Mark, the panel must contain only UL recognized and listed components. The UL Mark on a component means that UL has evaluated and tested samples of this component and has concluded that they meet the UL requirements. This protects the quality and integrity of the enclosure and provides guarantee of safe performance.

Example Graphics MCS-Nitromag-15.4

Touchscreen

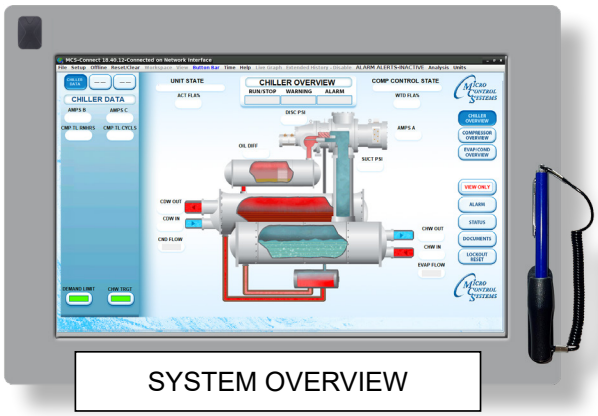
The **MCS-NitroMag-15.4** capacitive touchscreen interface designed to simplify user access with MCS Expansion boards utilizing MCS-Connect to provide both graphics and service mode access to technicians. Input method: Finger, glove, stylus.

Highly accurate and does not require calibration - easy to clean glass surface. Works outdoors, bright screen, water resistant, Exceptional Optics - 1280x800 resolution, sharp and vibrant images.

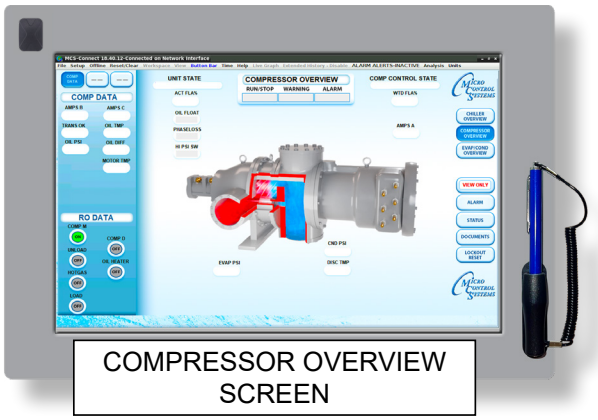
MCS-MCS-NitroMag-15.4 comes preloaded with the MCS-CONNECT program that allows you to view the ‘unit’s status’, ‘extended history’, ‘alerts’, ‘alarms’, setpoints, and more, all in a user-friendly graphic format.

Standard screens include:

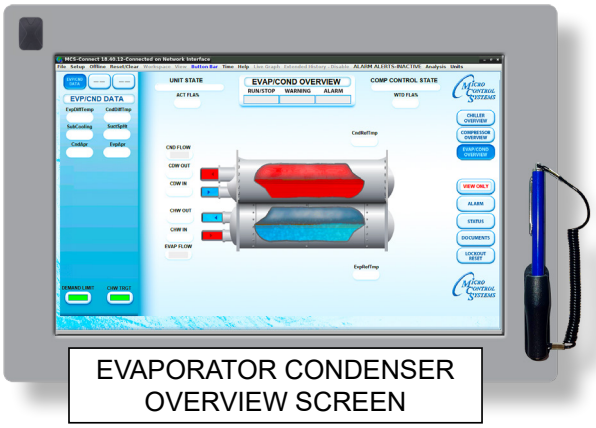
- ***SYSTEM OVERVIEW, COMPRESSOR OVERVIEW and EVAPORATOR/CONDENSER OVERVIEW***



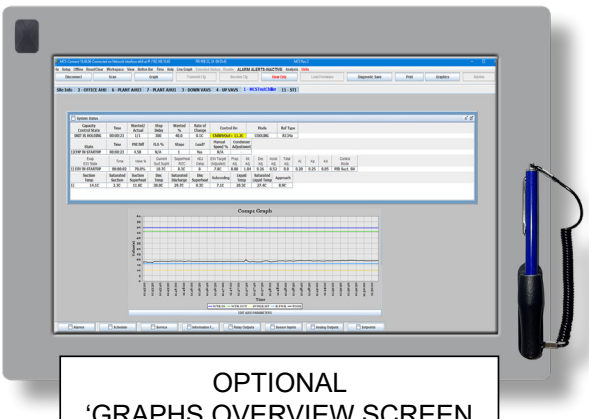
SYSTEM OVERVIEW



COMPRESSOR OVERVIEW SCREEN

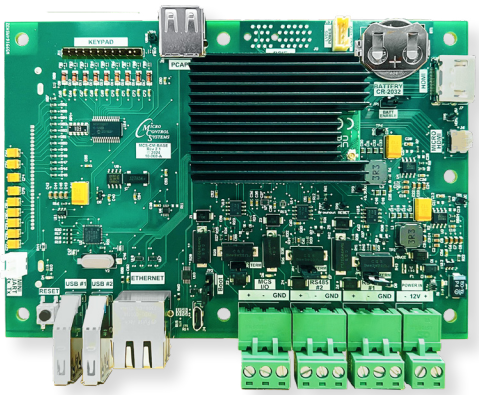


EVAPORATOR CONDENSER OVERVIEW SCREEN



OPTIONAL ‘GRAPHS OVERVIEW SCREEN IN REAL TIME’

Example Typical Upgrade with Optional Boards



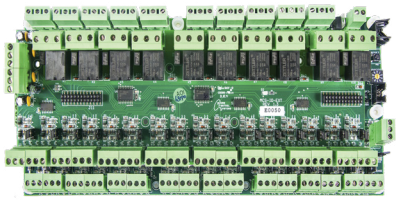
MCS-NitroMag-N

The **MCS-NitroMag-N** is a control system containing a processor, memory, eMMC Flash, and supporting power circuitry. The Broadcom quad-core processor delivers a blazing speed of 1.5GHz.

The MCS-NitroMag-N controller connects with MCS Expansion boards and Extension boards, allowing for a maximum of 144 SI inputs, 90 RO outputs, and 36 AO outputs.

The MCS-NitroMag-N comes with a built-in WiFi interface for Ethernet connectivity, and an onboard WiFi antenna connection.

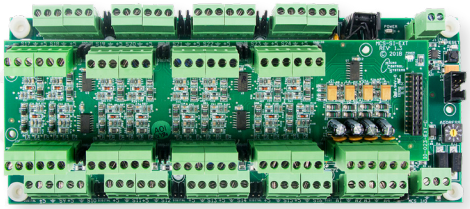
MCS-IO-Base & MCS-IO-EXT



MCS-IO-BASE has a stand-alone microprocessor which communicates with a MCS-NitroMag over the MCS-I/O port at 38,400 baud. The MCS-IO-BASE has 16 SI inputs, 10 RO outputs, and 4 AO outputs. All data is check summed with auto error correction. Each MCS-IO-BASE board can be powered by a 12VDC regulated power supply and has a automatic power fail reset system.

The **MCS-IO-EXT** provides a flexible and cost effective way to allow relay output, sensor input and analog output expansion for MCS-NitroMag. Each MCS-IO-EXT can be paired with a MCS-IO-BASE to double the number of inputs and outputs.

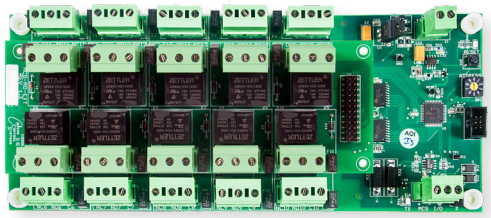
MCS-SI-Base & MCS-SI-EXT



The **MCS-SI-BASE** provides a flexible and cost effective way to allow sensor input and analog output expansion for the **MCS-NitroMag**. Each MCS-SI-BASE has a stand-alone microprocessor which communicates with the MCS-Nitromag over the MCS-I/O port at 38,400 baud. The MCS-SI-BASE has 16 SI inputs and 4 AO ouputs. All data is check summed with auto error correction. MCS-SI-BASE board can be powered by a 12VDC regulated power supply and has a automatic power fail reset system.

The **MCS-SI-EXT** provides a flexible and cost effective way to allow sensor input and analog output expansion for the **MCS MAGNUM**. Each MCS-SI-EXT can be paired with a MCS-SI-BASE to double the number of inputs and outputs.

MCS-RO-Base & MCS-RO-EXT



The **MCS-RO-BASE** provides a flexible and cost effective way to allow relay output expansion for the **MCS-Nitromag**. Each MCS-RO-BASE has a stand-alone microprocessor which communicates over the MCS-I/O port at 38,400 baud. All data is check summed with auto error correction. Because the communication is over a RS-485 long distance two-wire differential network transmission system, the MCS-RO-BASE may be located up to 5,000 feet away.

The MCS-RO-BASE board is powered by a 12VDC regulated power supply.

The **MCS-RO-EXT** provides a flexible and cost effective way to allow relay output expansion for the **MCS NitroMag**.

Each MCS-RO-EXT can be paired with a MCS-RO-BASE to double the number of outputs.

Example Typical Control Upgrade

MCS-PRESSURE TRANSDUCERS

The **MCS Pressure Transducers** are one of the most economical and durable options on the market for dealing with high-pressure industrial applications.

In addition to being CE and UL approved, MCS transducers are capable of surviving high vibration. They include a cavity built out of solid 17-4 PH stainless steel ¼" SAE Female Flare fitting & Schrader valve; 7/16-20 UNF pipe thread which creates a leak-proof, all metal sealed system that makes the transducers ideal for use with rugged HVAC environments.

MCS-T100

An extremely fast acting temperature sensor built for demanding environments. It is ideal for high moisture locations with continuous freeze and thaw cycles. The sensor is potted with a thermally conductive RTV Cure Silicon Adhesive to guarantee durability and response. Its high accuracy allows for interchangeability in the field. The large resistance range allows the use of over 1000' of cable with no noticeable effect. The MCS-T100 sensor has the ability to move from 32ºF to 212ºF in approximately 10 to 15 seconds.

MCS-Wells/Tubes

The MCS-WELL was designed to be used with the MCS-T100 temperature sensor, although it has other applications. It is used in the 23XL series chillers in the chilled water and condenser water lines. It comes pre-filled with heat conductive compound to aid in temperature to the sensor.

The **MCS-TUBE** can be epoxied to a discharge or suction line on the 23XL series chillers in order to obtain temperature readings without the use of a well. It was designed to be used with the MCS-T100 temperature sensor and comes pre-filled with heat conductive compound to aid in transferring temperature to the sensor.

MCS-USB-RS485

The **MCS-USB-RS485** is a USB to RS485 cable that provides a fast simple way to connect a **MCS-MAGNUM** to a Laptop or PC.

The MCS-USB-RS485 cable contains a small internal electronic circuit board, which converts USB to RS485 with LED indicators for transmit (TX=Red) and receive (RX=Green).

Example Typical Control Upgrade

MCS-EPOXY

- Pre-measured resins and hardeners in one tube
- Easy to use - bonds, seals, plugs, molds and rebuilds
- No special tools needed
- Can even harden under water

- Pressure tested to ..... 1300 psi
- Temperatures up to ..... 500 degree F
- Color..... Gray
- Density ..... 15.9 lb/gal (1.9 g/cc)
- Hardness (Shore D) 85
- Tensile Strength ..... 6000 psi
- Compressive Strength ..... 18.000 psi
- Modulus of Elasticity ..... 6 x 105 psi
- Shear Strength ..... 700 psi

MCS-CT 750

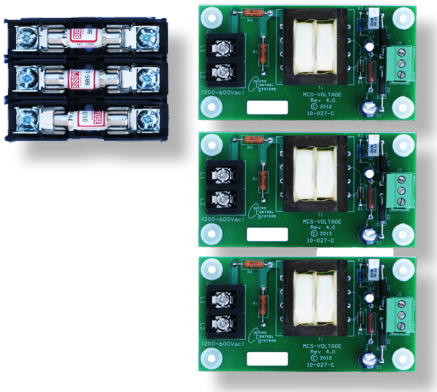
MCS-CT750 current sensor monitors current flowing to electrical equipment. The magnitude of the current is converted to a linear (0-5vdc) output signal which can be read as a standard analog input signal.

The MCS-CT series are the solid-core version, where the conductor runs through the sensor. No cutting, taping or rerouting is required. The current sensors are accurate, reliable, easy to install and require no service.

MCS-VOLTAGE-3PH

The **MCS-VOLTAGE-3PH** measures AC voltage between 200-600 AC. It is designed to monitor the voltage of each phase of the main input power to the unit.

The MCS-VOLTAGE-3PH sensor provides three separate DC voltage outputs that correspond to the AC voltage it is measuring.



MCS-PHASE-B

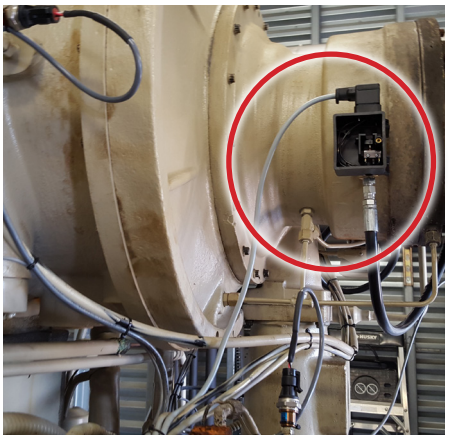
The **MCS-PHASE-B** is a programmable 3-phase line voltage monitor, high temperature LCD display, easy setup and clear diagnostic readout of system faults. The MCS-PHASE-B was specifically designed to protect motors and other 3-phase loads from premature failure and damage due to common voltage faults such as unbalance, over/under voltage, phase loss, reversal, incorrect sequencing and rapid short cycling.

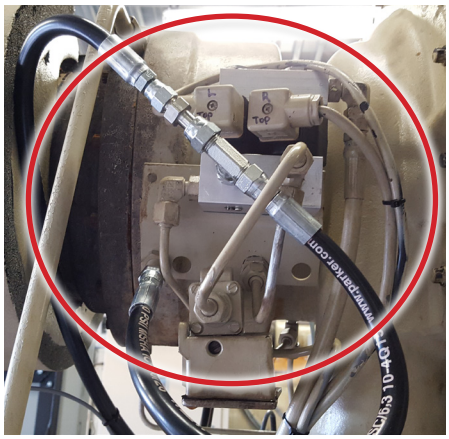
Optional Controls

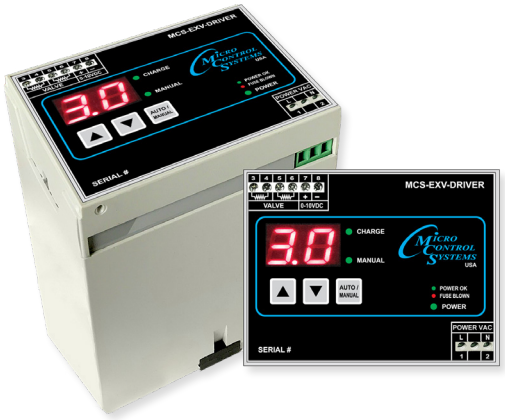
VFD Retrofit Accessory

KIT #3000434509 IS REQUIRED.

When upgrading a MCS Control Panel to a variable frequency drive, a vane open (VO) differential pressure switch must be installed for proper operation as earlier models of chillers do not have a vane open port installed in the IGV.







MCS-EXV-DRIVER

The **MCS-EXV-DRIVER** is used for the positioning and control of Sporlan, Alco, Carel, and Danfoss bipolar expansion valves using an analog input of 0-10 VDC (0 VDC = 0% valve opening, 10 VDC = 100% valve opening). The MCS-EXV-DRIVER also supports overdriving on full opened and full closed voltage signals. The display decimal notifies when overdriving by blinking.

Auto Mode – The unit defaults to this mode after every power up. In this mode, the MCS-EXV-DRIVER-XX positions the valve according to the analog input control voltage. **Manual Mode –** When in auto mode, if holding the 'Auto/Manual' key for 5 seconds and then entering the authorization number switches the unit into manual mode.

MCS-SERI

The **MCS-SERI** are Electronically Operated Step motor flow control valves, intended for the precise control of liquid refrigerant flow. Synchronized signals to the motor provide discrete angular movement, which translates into precise linear positioning of the valve piston. Valve pistons and ports are uniquely characterized, providing improved flow resolution and performance.

The MCS-SERI valves are easily interfaced with MCS microprocessor based controllers. Therefore, they are applicable on all the same types of systems found in the air conditioning and refrigeration industry as thermostatic expansion valves.

MCS-ACTUATOR

The **MCS-ACTUATOR** is used in conjunction with MCS controls as a replacement for certain model stepper motor actuators. This MCS Actuator operates as a 'pulse style open/close unit'.

Example Typical Points list with optional boards

Relay Outputs (MCS-IO-BASE)

#	Output Name	Type	Description
1-1	Comp M	Standard	Compressor Start Main
1-2	Comp D	Standard	Compressor Start Delta
13	VaneOpen	Standard	Vane Open: Relay output used to open the compressor guide vane
1-4	VaneClosed	Standard	Vane Closed: Relay output used to close the compressor guide vane
1-5	OilPump	Standard	Oil Pump: Turn ON or OFF
1-6	OilHeater	Standard	Oil Heater: Turn ON or OFF
1-7	Spare	X	Not Used - Reserved for Expansion
1-8	OilCooler	Standard	Oil Cooler: Turn ON or OFF
1-9	Spare	X	Not Used - Reserved for Expansion
1-10	Spare	X	Not Used - Reserved for Expansion

Relay Outputs (MCS-IO-EXT)

2-1	Spare	X	Not Used - Reserved for Expansion
2-2	Warning	Standard	Warning Light: Unit is in Safety Condition prior to Safety Shutdown.
2-3	Alarm	Standard	Alarm Light: Unit is in Safety Shutdown.
2-4	RunStatus	User Logic	Hardwired or BMS point to notify BMS that the unit is running
2-5	Spare	X	Not Used - Reserved for Expansion
2-6	Spare	X	Not Used - Reserved for Expansion
2-7	Spare	X	Not Used - Reserved for Expansion
2-8	ChwPump1	Standard	Chilled Water Pump #1: Turn ON or OFF
2-9	ChwPump2	Standard	Chilled Water Pump #2: Turn ON or OFF
2-10	CndPump	User Logic	Condenser Pump: Turn ON or OFF

Relay Outputs (MCS-RO-BASE)

3-1	Spare	X	Not Used - Reserved for Expansion
3-2	Spare	X	Not Used - Reserved for Expansion
3-3	MtrCooling	User Logic	Motor Cooling: Turn ON or OFF
3-4	Spare	X	Not Used - Reserved for Expansion
3-5	Spare	X	Not Used - Reserved for Expansion
3-6	Spare	X	Not Used - Reserved for Expansion
3-7	Spare	X	Not Used - Reserved for Expansion
3-8	Spare	X	Not Used - Reserved for Expansion
3-9	Spare	X	Not Used - Reserved for Expansion
3-10	Spare	X	Not Used - Reserved for Expansion

Example Typical Points list with optional boards

Relay Outputs - (User Logic virtual board)

#	Output Name	Type	Description
4-1	Spare	X	Not Used - Reserved for Expansion
4-2	Spare	X	Not Used - Reserved for Expansion
4-3	HwBMS R/S	User Logic	Hardwired BMS Run/Stop
4-4	NtBMS R/S	User Logic	Virtual Network Point for BMS Run/Stop
4-5	Spare	X	Not Used - Reserved for Expansion
4-6	Spare	X	Not Used - Reserved for Expansion
4-7	Spare	X	Not Used - Reserved for Expansion
4-8	Spare	X	Not Used - Reserved for Expansion
4-9	d/aHWRst	User Logic	Disallow Hardwired Reset
4-10	d/aNetRst	User Logic	Disallow Network Reset

Sensor Inputs (MCS-IO-BASE)

#	Output Name	Type	Description
1-1	ChilWtrIN	MCST100	Chill Water In Temperature
1-2	ChilWtrOut	MCST100	Chill Water Out Temperature
1-3	Suct Psi	MCS-200	Suction Pressure
1-4	Disc Psi	MCS-500	Discharge Pressure Transducer
1-5	Hi Oil Psi	MCS-500	Hi Oil Pressure
1-6	Lo Oil Psi	MCS-200	Lo Oil Pressure
1-7	Suct Tmp	MCST100	Suction Temperature
1-8	Disc Tmp	MCST100	Discharge Temperature
1-9	OilFeedTmp	MCST100	Oil Supply Temperature
1-10	Spare	X	Not Used - Reserved for Expansion
1-11	OilSumpTmp	MCST100	Oil Sump Temperature
1-12	Spare	X	Not Used - Reserved for Expansion
1-13	VaneClosed	Digital	Vane Closed: Relay Output used to close the compressor guide vane
1-14	PhaseLoss	Digital	Phase Loss: Phase Imbalance
1-15	Run/Stop	Digital	Run/Stop Hand Switch
1-16	Emg/Stop	Digital	Emergency Stop Switch

Example Typical Points list with optional boards

Sensor Inputs (MCS-IO-EXT)

#	Output Name	Type	Description
2-1	CndRefTmp	MCST100	Condenser Refrigerant Temperature
2-2	EvapRefTmp	MCST100	Evaporator Refrigerant Temperature
2-3	CmpAmps A	CT-750	Reads Amp Draw on Leg 1
2-4	CmpAmps B	CT-750	Reads Amp Draw on Leg 2
2-5	CmpAmps C	CT-750	Reads Amp Draw on Leg 3
2-6	Volts A	600VAC4	Volts phase A
2-7	Volts B	600VAC4	Volts phase B
2-8	Volts C	600VAC4	Volts phase C
2-9	Hi PSI SW	Digital	Mechanical Hi Pressure Safety
2-10	MtrTmp	Digital	Motor Temperature
2-11	Spare	X	Not Used - Reserved for Expansion
2-12	Spare	X	Not Used - Reserved for Expansion
2-13	Spare	X	Not Used - Reserved for Expansion
2-14	Spare	X	Not Used - Reserved for Expansion
2-15	Trans OK	Digital	Transition Starter
2-16	Spare	X	Not Used - Reserved for Expansion

Sensor Inputs (MCS-SI-BASE)

3-1	Spare	X	Not Used - Reserved for Expansion
3-2	Spare	X	Not Used - Reserved for Expansion
3-3	Spare	X	Not Used - Reserved for Expansion
3-4	Spare	X	Not Used - Reserved for Expansion
3-5	Spare	X	Not Used - Reserved for Expansion
3-6	Spare	X	Not Used - Reserved for Expansion
3-7	ChwFlow	Digital	Proof for Chilled Water Flow
3-8	CndFlow	Digital	Verifies Condenser Water Pump is running
3-9	OilDiffSW	Digital	Oil Pressure Differential
3-10	CndWtrIn	MCST100	Condenser Water Incoming Temperature
3-11	CndWtrOut	MCST100	Condenser Water Outgoing Temperature
3-12	Spare	X	Not Used - Reserved for Expansion
3-13	HwBmsDmd	DEMAND%	Hardwired Point for Demand %
3-14	HwBmsChwr	TRGTRST	Hardwired BMS Chilled Water Reset: Reset Target Temperature
3-15	SurgeGuard	Digital	Surge Protection Module
3-16	Spare	X	Not Used - Reserved for Expansion

Example Typical Points list with optional boards

Sensor Inputs (User Logic virtual board)

#	Output Name	Type	Description
4-1	Spare	X	Not Used - Reserved for Expansion
4-2	Spare	X	Not Used - Reserved for Expansion
4-3	Spare	X	Not Used - Reserved for Expansion
4-4	Spare	X	Not Used - Reserved for Expansion
4-5	Spare	X	Not Used - Reserved for Expansion
4-6	Spare	X	Not Used - Reserved for Expansion
4-7	Spare	X	Not Used - Reserved for Expansion
4-8	Spare	X	Not Used - Reserved for Expansion
4-9	Spare	X	Not Used - Reserved for Expansion
4-10	Spare	X	Not Used - Reserved for Expansion
4-11	Spare	X	Not Used - Reserved for Expansion
4-12	UnitIn/LO	User Logic	Tests for Unit in Lock Out
4-13	CtlRun/Stop	User Logic	Control Run/Stop
4-14	Spare	X	Not Used - Reserved for Expansion
4-15	Spare	X	Not Used - Reserved for Expansion
4-16	Spare	X	Not Used - Reserved for Expansion

Sensor Inputs (User Logic virtual board)

5-1	Spare	X	Not Used - Reserved for Expansion
5-2	Spare	X	Not Used - Reserved for Expansion
4-3	ChwGPM	User Logic	Chilled Water Gallons per Minute. Fixed value or true hardwired input.
5-4	Spare	X	Not Used - Reserved for Expansion
5-5	NetBmsRun	BMS_SI	Virtual Network Point for Run/Stop
5-6	NetBmsDmd	BMS_SI	Virtual Network Point for Demand %
5-7	NetBmsChwr	BMS_SI	Virtual Network Point for Chilled Water Reset: Reset Target Temp
5-8	Fla%	User Logic	Full Load Amp % Calculation
5-9	Lift	User Logic	Lift Calculation
5-10	ChwAppr	User Logic	Chilled Water Approach: Difference between refrigerant temperature/leaving water temperature
5-11	ChwDiffTmp	User Logic	Chilled Water Temperature Differential: Difference between entering/leaving temperature
5-12	CdwAppr	User Logic	Condenser Water Approach: Difference between refrigerant temperature/ leaving water temperature
5-13	CdwDiffTmp	User Logic	Condenser Water Temperature Differential: Difference between entering/ leaving temperature
5-14	Spare	X	Not Used - Reserved for Expansion
5-15	Subcooling	User Logic	Subcooling Calculation
5-16	SuctSprHt	User Logic	Suction Super Heat Calculation

Example Typical Points list with optional boards

Sensor Inputs (MCS-SI-EXT)

#	Output Name	Type	Description
6-1	Spare	X	Not Used - Reserved for Expansion
6-2	Spare	X	Not Used - Reserved for Expansion
6-3	Spare	X	Not Used - Reserved for Expansion
6-4	Unit Tons	TONS	Measures Unit Tons
6-5	Unit KW	KW	Measures Unit KW
6-6	Kw/Tons	User Logic	KW / Ton Calculation
6-7	PwrFactor	User Logic	Power Factor Calculation
6-8	Spare	X	Not Used - Reserved for Expansion
6-9	Spare	X	Not Used - Reserved for Expansion
6-10	Spare	X	Not Used - Reserved for Expansion
6-11	Spare	X	Not Used - Reserved for Expansion
6-12	Ctl Flow	User Logic	Control Flow - Tests both Condenser and Chilled Water Flow
6-13	Spare	X	Not Used - Reserved for Expansion
6-14	Spare	X	Not Used - Reserved for Expansion
6-15	Spare	X	Not Used - Reserved for Expansion
6-16	Spare	X	Not Used - Reserved for Expansion

Sensor Inputs (User Logic virtual board)

7-1	Spare	X	Not Used - Reserved for Expansion
7-2	Spare	X	Not Used - Reserved for Expansion
7-3	Spare	X	Not Used - Reserved for Expansion
7-4	Spare	X	Not Used - Reserved for Expansion
7-5	Spare	X	Not Used - Reserved for Expansion
7-6	HwBmsDMD	User Logic	Hardwired Point for Demand %
7-7	HwBmsRset	User Logic	Hardwired Point for Target Reset
7-8	NtBmsDMD	User Logic	Virtual Network Point for Demand %
7-9	NtBmsRset	User Logic	Virtual Network Point for Target Reset

Example Typical Points list with optional boards

Sensor Inputs (User Logic virtual board)			
#	**Output Name**	**Type**	**Description**
7-10	BMS R/S	User Logic	Virtual Network Point for Run/Stop
7-11	BMS DMD	User Logic	Virtual Network Point for Demand %
7-12	BMS Reset	User Logic	Virtual Network Point for Target Reset
7-13	d/aHwRst	User Logic	Disallow Hardwired Reset
7-14	d/aNetRst	User Logic	Disallow Network Reset
7-15	Spare	X	Not Used - Reserved for Expansion
7-16	Allow Unit	User Logic	Run/stop indicator for graphic display

Sample Questionnaire

Visit https://www.mcscontrols.com/brochures.html for a fillable form to email to sales@mcscontrols.com

General Information

Company:_____ Phone: _____

Name:_____ Title:_____ Email:_____

Mobile:_____ Site:_____

Unit Information

Installation Site Name _____

Model # _____ Unit Serial # _____ Site Unit # _____

What is the Voltage of the Unit? ☐ 208V, ☐ 230V, ☐ 460V, ☐ 4160V, Other Voltage _____

What is the Control voltage in the unit? ☐ 24V, ☐ 115V, ☐ 230V, What type of Refrigerant is being used? _____

Is MCS monitoring Main Voltage? ☐ Yes ☐ No. Will Phase loss need to be monitored? ☐ Yes ☐ No.

Network Information

1. Integrating to Building Management System (BMS) ☐ Yes ☐ No, If yes, complete the form provided on page 2.

Motor Information

2. What is the Starter Type?_____ Are we monitoring the Transition OK or Starter Fault?_____
   a. Does the Compressor Have a remote Starter? ☐ Yes ☐ No.
3. Is there a Variable Frequency Drive? ☐ Yes ☐ No
   a. What is the VFD Make and Model? VFD Make _____ VFD Model _____
   b. Will the VFD be hardwired to MCS controls, over MODBUS _____.
   c. Is MCS required to control VFD Cabinet Auxiliary Fan? ☐ Yes ☐ No.
4. What are the Motor "RUN LOAD AMPS'(FLA)? **COMP 1**: _____ **COMP 2**: _____.
5. Is Hot Gas Bypass present? ☐ Yes ☐ No, How does it operate?_____.

Purge Information

6. What is the Purge Type on the unit, how is it controlled ? _____.

Evap/Condenser/Pump Information

7. Is MCS controlling the chiller Water Pump(s)? ☐ Yes ☐ No, How will they be wired? _____
8. Is MCS controlling the Condenser water Pump(s)? ☐ Yes ☐ No, How will they be wires?_____
9. Is MCS controlling Condenser/Evaporator Isolation Valve? ☐ Yes ☐ No ☐ BMS.
10. Is MCS controlling tower fan(s)? ☐ Yes ☐ No, How many are there _____, how are they wired?_____.
11. Will the Chilled/Condenser Water Flow be measured by?_____.

Ambient Information

12. Will Ambient temperature need to be monitored? ☐ Yes ☐ No.

CVHA Information Only

13. Is there a Motor Cooler? ☐ Yes ☐ No, Will MCS be monitoring the Oil Feed? ☐ Yes ☐ No, Return Tem

COMMENTS (Is there any other Infomation we need to know?):

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2. Click on the emailed link. Fill out the digital fillable form on a computer and email to sales@mcscontrols.com
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Micro Control Systems

5580 Enterprise Pkwy., Fort Myers, FL 33905
Office: 239-694-0089 • Fax: 239-694-0031
www.mcscontrols.com