

GUIDE

Auto Changeover 2 CS0-AC2 4/19/2024

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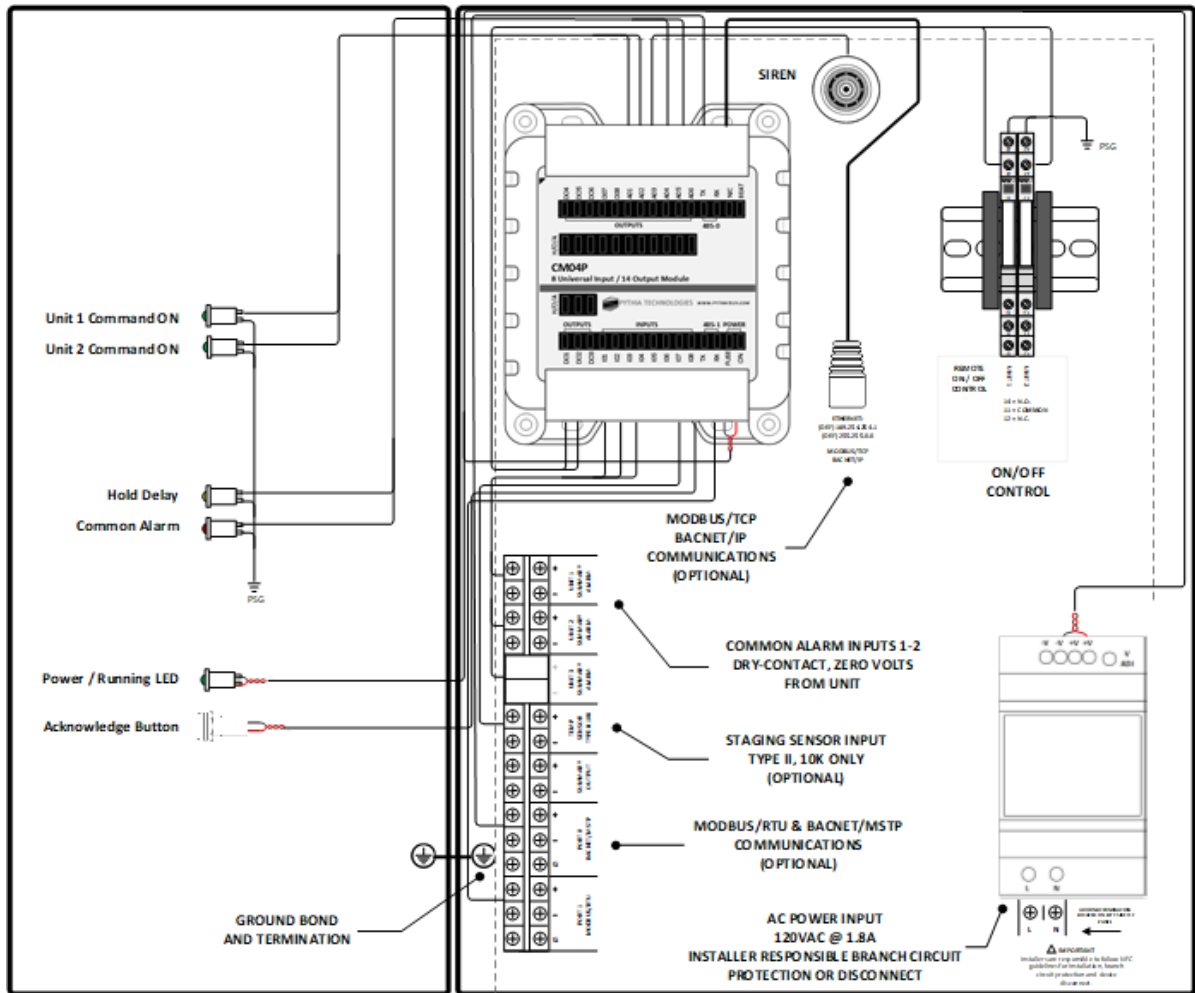
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1. Assembly



1.1 Power Supplies

1.1.1 120VAC

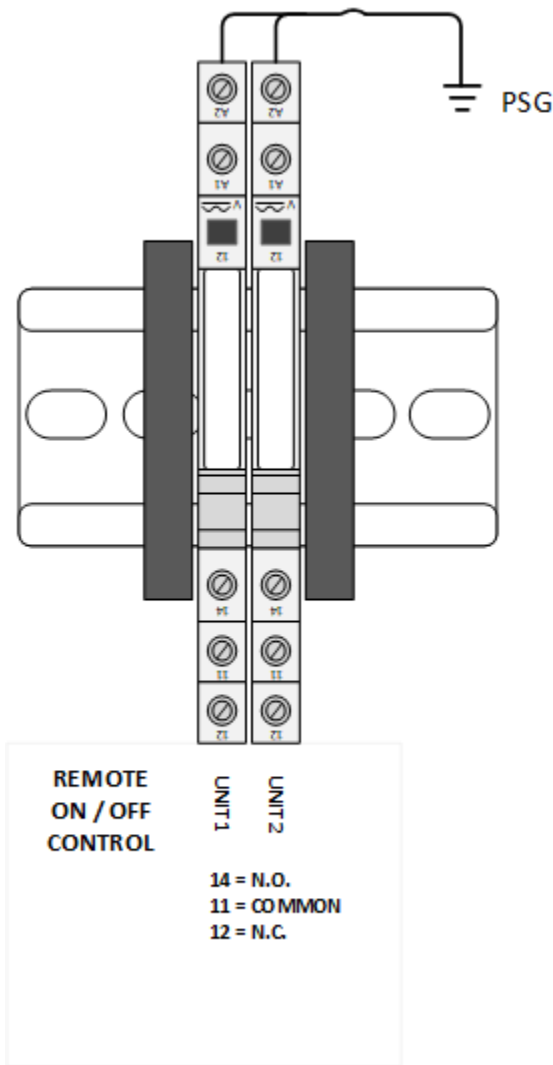
The 120VAC power supply is the Meanwell HDR-60-24. Refer to <https://www.meanwell.com/productPdf.aspx?i=753> for specifications.

1.1.2 24VAC

The 24VAC power supply is the Kele DCP-1.5-W. Refer to <https://www.kele.com/Catalog/18%20PowerSupplies/PDFs/DCP-1.5-W%20Catalog%20Page.pdf> for specifications.

2. Low Voltage Connections

2.1 Unit On/Off Output Relay



2.2 Low Voltage Inputs

+	+	+	+	+	+	+	+	+	+	+	+
+	+	+	+	+	+	+	+	+	+	+	+
Ω	I	+	I	+	I	+	I	+	I	+	+
PORT 1 MODBUS/RTU			SUMMARY OUTPUT		TEMP SENSOR TYPE II 10K		UNIT 2 SUMMARY ALARM		UNIT 1 SUMMARY ALARM		

3. Panel Configuration

3.1 Configuration Tool

Refer to the PTECH_Tool_CS0-AC2.pdf for downloading and using the configuration tool.

3.2 Unit Wiring

The output control relays provide Normally Open and Normally Closed connections. By default, units are configured for Normally Open connectivity. For power failure conditions, it is recommended at least one unit be wired to the Normally Closed contacts. The physical wiring must match the unit configuration for proper operation.

3.3 Unit Modes

The Unit Mode can be configured as Primary, Standby By, On or Off.

Primary and On modes are commanded to run. Only Primary unit's common alarm input is monitored. Standby and Off units are commanded off. The unit common alarm input is not monitored. Standby Units are commanded to run when a Primary unit fails if failover is enabled, or when temperature staging requires an additional unit. Off units are never commanded to run.

3.4 Common Alarm Input Delay

By default, common alarm inputs are ignored for 10 seconds. Users may select from a range of 0-600 seconds.

3.5 Primary Unit Latch Alarm

The unit can be configured to "latch" the Primary Alarm. In this case, the primary unit alarm will not clear until the alarm has cleared, and the user has pressed the acknowledgment button on the front of the panel.

3.6 Primary Unit Latch On

The unit can be configured to "latch" the Primary Unit On. In this case, the primary unit will continue to run during the duration of the alarm.

3.7 Failover

When a Primary unit has an alarm and Failover is enabled, the Standby unit is commanded to run. When a

Note: One unit must be configured as a Primary unit and one unit configured as a Standby unit.

3.8 Auto Changeover

Auto Changeover can be configured for Day of Week, Day of Month, or number of days. When enabled, auto changeover will switch modes between the current Primary unit and current Standby unit. The Standby unit will become Primary unit and the Primary unit will become Standby.

Press and hold the Acknowledgement button for approx. 15-seconds to initiate an immediate changeover.

Note For Number of Days: $\text{Changeover Day} = ((\text{Day of Year}) \bmod (\text{Number of Days}))$

3.9 Unit Time

The unit time can be configured using the AC2 command line tool. The tool synchronizes to the time of the computer running the tool.

3.10 Temperature Staging

Temperature staging requires the included 10K Type II temperature sensor.

There are two temperature stages. Each stage will command at least one unit to run. If one unit is configured as Primary and is already running, the Standby unit will be commanded to run when temperature exceeds the Stage 2 setpoint. Stage 1 setpoint will be ignored because one unit is already running.

For only temperature staging, both units can be configured as Standby units. When the temperature exceeds the Stage 1 setpoint, Unit 1 will be commanded to run. When the temperature exceeds the Stage 2 setpoints, Unit 2 will be commanded to run.

4. Modbus

The panel provides Modbus/RTU and Modbus/TCP.

4.1 Modbus Registers

STATUS REGISTERS	REGISTER (2 HI/LO)	READ / WRITE	DEFAULT
UNIT 1 ON/OFF	47117/118	R	0=OFF, ON > 0
UNIT 2 ON/OFF	47119/120	R	0=OFF, ON > 0
UNIT HOLD	47125/126	R	0=OFF, ON > 0
COMMON ALARM	47127/128	R	0=OFF, ON > 0
UNIT 1 ALARM	47485/486	R	0=OFF, 1=ON
UNIT 2 ALARM	47487/488	R	0=OFF, 1=ON
TEMPERATURE	47497/498	R	F, Scale .001
CONFIGURATION REGISTERS			
MODULE TIME SECONDS	40201	R/W	(0-59)
MODULE TIME MINUTES	40202	R/W	(0-59)
MODULE TIME HOURS	40203	R/W	(0-23)
MODULE TIME DAY	40204	R/W	(1-31)
MODULE TIME DAY OF WEEK	40205	R/W	(0-6)
MODULE TIME MONTH	40206	R/W	(1-12)
MODULE TIME YEAR	40207	R/W	(##)
ACKNOWLEDGE	48096	R/W	(1) SILENCES BUZZER AND CLEARS LATCH
UNIT CYCLE TIME	48192	R/W	(1-59) MINUTES
UNIT 1 MODE	48194	R/W	0=OFF, 1=ON, 2=STANDBY, 3=PRIMARY
UNIT 1 CONNECTION	48196	R/W	0=NORMALLY OPEN, 1=NORMALLY CLOSED
UNIT 2 MODE	48198	R/W	0=OFF, 1=ON, 2=STANDBY, 3=PRIMARY
UNIT 2 CONNECTION	48200	R/W	0=NORMALLY OPEN, 1=NORMALLY CLOSED
LATCH PRIMARY ALARM	48202	R/W	0=OFF, 1=ON
PRIMARY ALARM DELAY	48204	R/W	(0-600) SECONDS
LATCH PRIMARY ON	48206	R/W	0=OFF, 1=ON
BUZZER VOLUME	48208	R/W	(1-10)
FAILOVER	48210	R/W	0=DISABLED, 1=ENABLED
AUTO CHANGEOVER	48212	R/W	0=DISABLED, 1=DAY OF WEEK, 2=DAY OF MONTH, 3=NUMBER OF DAYS
AUTO CHANGEOVER DAY	48214	R/W	(0-6) DAY OF WEEK (1-31) DAY OF MONTH (1-62) NUMBER OF DAYS
AUTO CHANGEOVER HOUR	48216	R/W	(0-23) HOUR
AUTO CHANGEOVER MINUTE	48218	R/W	(0-59) MINUTE
TEMPERATURE STAGING	48220	R/W	0=DISABLED, 1=ENABLED
TEMPERATURE STAGE 1	48222	R/W	(45-95) F
TEMPERATURE STAGE 2	48224	R/W	(45-95) F
TEMPERATURE RANGE	48226	R/W	(1-10) F

5. Configuration Tool

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