



AstroDrive-Z3 Control and Monitor (CNM)

AstroDrive-Z3-CNM is a field configurable 7" Color Touchscreen console that intelligently controls & monitors AstroFan™ EC FFUs. The console is in an easy-to-use wall mounted package capable of controlling 12 Rooms/Zones and 120 FFUs. The ZEP3-CNM also has the ability to monitor 4 different types of sensors in each zone. The parameters that can be monitored are pressure, temperature, humidity, and particle counter. The AstroDrive-Z3 proprietary software provides facility management fully field configurable to customer's needs.



OPTION – Add BACnet Monitoring System (BMS) Info Exchange
AstroDrive-Z3-CNM-GW >>> ACGW008 BMS Gateway + AstroDrive-Z3-CNM

Main Functions

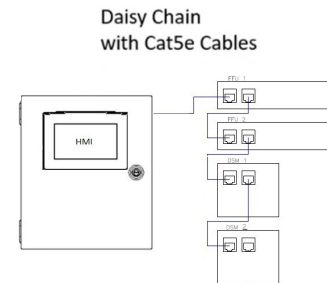
- Touchscreen HMI control
- Menu Driven configuration options
- Monitors FFUs and Identifies Error Modes
- Monitor and alarm 4 different sensors: Pressure, Temperature, Humidity, and Particle counters
- 3 levels of FFU Speed control for Run & standby modes (Global, Zone, and individual level)
- 4 Different operating Modes (see table below)
- Central Monitoring of fault conditions
 - ⌘ Pressure Switch Feedback — AC FFU
 - ⌘ RPM Feedback — EC FFU
 - ⌘ CFM Feedback — CFM FFU
- High/low limit control for RPM and CFM
- High/low limit monitoring control for alarming
- Multiuser capability: View only, User, and Master
- Error Logging
- Supports 3 protocols to BMS
 - ⌘ MODBUS TCP/IP
 - ⌘ BACnet MS/TP*
 - ⌘ BACnet IP*

*Requires AstroDrive-Z3-CNM-GW Console to provide BACnet protocols

Features

- Panel box mounted console
- 7" Color touchscreen
- Supports up to 12 Zones
- Supports up to 120 FFUs
- Supports up to 16 Digital inputs and 10 Relay outputs
- Supports up to 4 different sensors per zone
- Built in Audible and visual alarming
- Clock/Calendar feature to set standby periods
- Real Time Clock

System Diagram



Color Coded Mode and Status	
Run	Normal operating speed
Standby	Setback operating speed
Auto (Run/Standby)	Automatic operating speed
Stop	Stops the FFU from operating
Offline	Disables communication from the Console to the FFU
Error	Reports an error in the FFU



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Main Functions

FFU Types	EC FFU—RPM Feedback CFM FFU—CFM Feedback AC FFU—Pressure Switch Fault Feedback
User Interface	Color Touchscreen
# of FFUs to control	Up to 120 FFUs
Password Protection	Yes, 3 modes available Master, User and View
Communication Protocol	Modbus RTU, RS485 2 Wire for FFU Cntrl Modbus TCP/IP, Ethernet for BMS Integra•on

Display

Type	LCD 7 TFT Resolu•on 800x480
Colors	65,536 (16-bit)
Touch Panel	Yes

Environmental

Operating Temperature	0 to 50°C
Storage Temperature	-20 ~ + 60°C
Humidity	10 ~ 95% RH Non-condensing
Environment	IP66/IP65/NEMA4X (When panel Mounted)

HMI

Buzzer	Yes
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Features

Hierarchal Mode and Speed Control Levels	Global All Room speed and mode adjustment Individual room speed and mode adjustment Individual FFU speed and mode adjustment
Zone Control & Monitor	4 different sensors per zone, up to 12 Zones
Sensor Monitor	Pressure, Temperature , Humidity, and particle counters
I/O Specifications	16 Digital Inputs and 6 Relay outputs.
Alarm	Buzzer, Color-coded icon, and flashing screen
Date/Time	Real Time Clock
Event Log	Logs up to 2560 Events Ex. Communication Error or Changes in Setup to console

Mechanical

AstroDrive-Z3 Dimensions inch and mm	14.38" x 12.30" x 4.38" 365mm x 310mm x 110mm
Installation of AstroDrive-Z3 and AstroDrive-Z3-GW	Wall Mounting
Weight	7.2 kg (15.9 oz)

Power

Consump•on	7.7W for Zep3 & 10.7W for Zep3-GW
AstroDrive-Z3 or AstroDrive-Z3 + GW	100-240 VAC, .88A MAX, 50/60Hz

Ethernet

Ports	RJ-45 x 1, 10/100 Base – Tx
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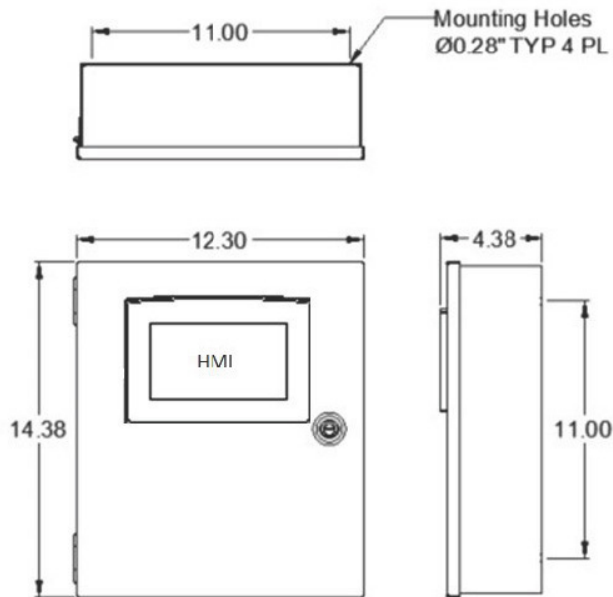
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AstroDrive-Z3 CNM Dimensions



AstroDrive-Z3-CNM Power Communication Module

- Every AstroDrive-Z3-CNM comes with a panel box to house the power and communication to the FFUs and Sensors to and from the console
- AstroDrive-Z3-CNM makes installation a true plug and play solution with the console
 - Provides power to the console
 - Provide power to the sensors
 - Provides communication to the console/FFU Daisy Chain
- High Voltage is wired into box and stepped down using Switch Mode Power Supply
- AC Power Requirements
 - 100-240 VAC, .88A MAX, 50/60Hz
- The Console provides 24VDC
- AstroDrive-Z3-CNM comes in two configurations
 - AstroDrive-Z3-CNM standalone system
 - AstoDrive-Z3-CNM-GW includes ACGW-008 FFU gateway for BACnet IP or MS/TP integration

ADD-ON AstroDrive Monitoring Options:

- 1) DSM2-(TRP, TR, P)
 - TRP: Temp, Humidity, and Pressure sensors
 - TR: Temperature, and Humidity sensors
 - P: Pressure sensor



- 2) Particles counters (PN: ACS2500)
 - .2 to 25um particles



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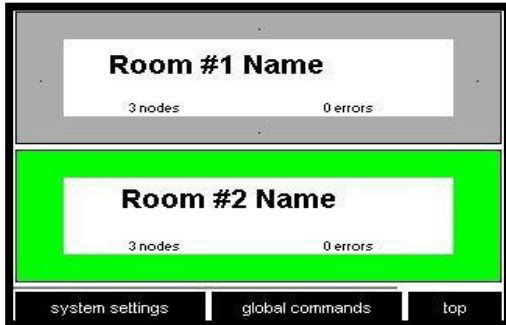


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EXAMPLE SCREENS

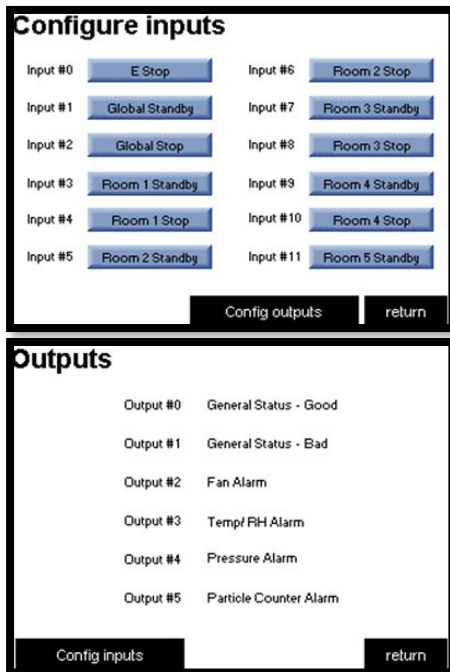
Fan/unit control

With FFU control added, the 12 zones/rooms have room identification noting the number of fans in the room and error notification for the room. Tapping on the room gets you to the individual Fan information.



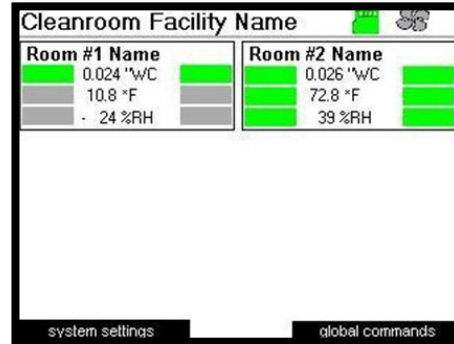
I/O Configuration

The "Assign I/O" button allows the operator to assign Inputs to groups and toggle them between Standby and Stop of either specific zone or globally. The "Config outputs" button would appear on the screen to view the functionality of each



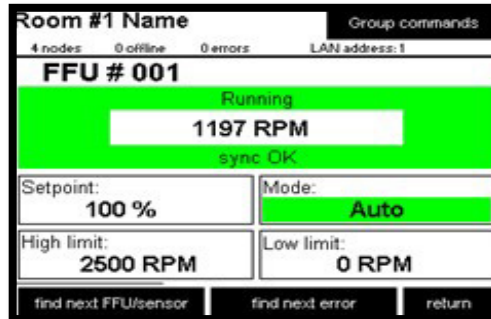
Main screen/Facility Control

The main screen shows the assigned groups (in this example 2 rooms) with measured P, T, RH . Each group has specified sensors, their values, and their modes. It also shows the company name at the top.

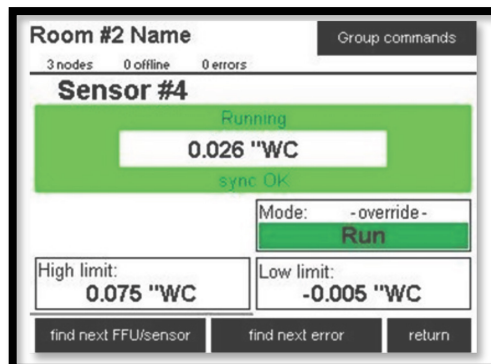


ECM FFU with RPM feedback SCREEN

FFU Screens provide individual FFU access: Fan set point speed control, high/low limit control, RPM/ CFM feedback, and changing the mode of the FFU.



Pressure Monitoring sensor SCREEN



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