

# DIRECT AIR COOLING (DAC): COMBINED TEMPERATURE CONTROLLER



PART # AF000400 & AF000400-HC

Revision: 1.4 | April 2024

## REGULATE DAC & HVAC IN SHELTERS FOR MAXIMUM EFFICIENCY

The combined controller regulates both direct air cooling units and HVAC cooling/heating units by means of a user-friendly remote monitoring system. By selectively limiting the use of the HVAC, the controller reduces costs, improves electrical efficiency and extends the life of the HVAC.



## COMBINED CONTROLLER FEATURES

- Cooling controller system provides total environmental control for equipment shelters
- Controls up to 3 DAC fans & 2 HVAC units (cool & heat) with lead/lag
- HC model controls up to 6 DAC fans & 4 HVAC units
- Reduces HVAC compressor cycling to extend product life and reduce maintenance costs
- Provides site alarms for high & low temp, DAC, HVAC or Controller failure
- Backlit LCD provides system status and operating parameters; display buttons scroll through menus, status and test modes
- Ethernet connectivity for additional monitoring & alarming:
  - SNMP protocol and traps,
  - Built-in mobile friendly web interface for system status, parameter updates, firmware upload and troubleshooting. Cable and WiFi access.
- 48VDC powered. DAC power managed by controller for simplified wiring
- Inhibits DAC and HVACs during smoke alarm
- Runs DAC and inhibits HVACs during H<sub>2</sub> alarm
- Disable, enable and limit the number of HVACs operating while the generator is running
- Compatible with AF000401 Wall DAC, AF000402 Door DAC and legacy AF000013 Door DAC (simple update kit is required)

## WEB INTERFACE EXAMPLE VIEWS:

**Status**

**System Configuration**

Current Mode  
**Direct Air**  
Switch To Test Mode...

Site ID 18928734989  
User Parameter File 189989  
Hardware Param File 1989  
Board/FW Version 214151  
Product Part Number 215621  
Serial Number 215621  
DC Voltage 53.00V  
Wifi Enabled Yes

**Temperatures**

Intake **19.01°C** Sensing **19.01°C**

**HVACs**

**System Parameters**

**Parameter Files Upload**

User Parameters  
CEMS-DT-01

\*To edit parameters in this file, use the Change Configuration section below.

Hardware Parameters  
CEMS-DT-01

**Change Configuration**

HVAC 1  
Config: Heating & Cooling

HVAC 1  
Config: Heating & Cooling

HVAC 1  
Config: Heating & Cooling

DAC Fans  
 Enabled

\*Applying these changes will also update the User Parameters file.

# DIRECT AIR COOLING (DAC): COMBINED CONTROLLER UNITS



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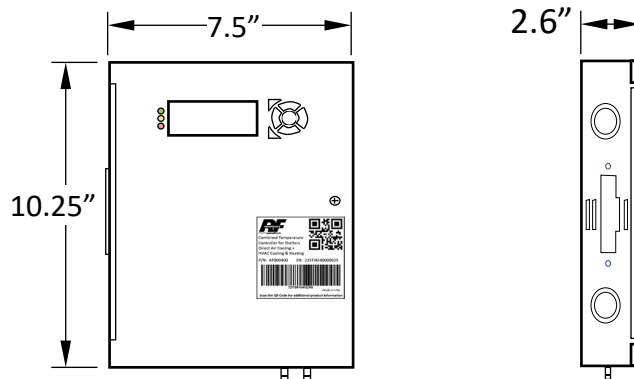
## SPECIFICATIONS

<b>Temperature Range</b>	-20F to 140F operating -40F to 158F storage	Configurable for Fahrenheit and Centigrade (°F / °C)
<b>Input Voltage</b>	36VDC to 60VDC	Transients up to 72VDC
<b>Power Consumption</b>	10W max – Controller only 250W max – for each DAC fan output	5A breaker for Controller only, 20A breaker for 2 fans, 30A for 3 fans (x2 for HC model)
<b>DAC fan Interface</b>	48 VDC power + Tach + Speed drive	Up to 3 fans (up to 6 fans for HC model)
<b>HVAC Interface</b>	24 VAC isolated, RGWYC std wiring <sup>1</sup>	Up to 2 HVACs (up to 4 HVACs for HC model)
<b>Alarm Interface</b>	Qty 10 dry contact Form C outputs	NC – Open on alarm std, NO configurable
<b>System Inputs</b>	Qty 3 Open/Closed inputs (must be isolated)	Smoke, hydrogen and generator inputs. Must be closed for normal operation.
<b>Sensors Inputs</b>	Qty 2 temperature sensors Qty 1 Blocked Filter sensor Optional: Up to 3 temp/humidity sensors	Site temperature control sensor included in controller, blocked filter and second temperature sensor part of DAC system.
<b>WiFi Access Point</b>	• IEEE 802.11 b/g/n (2.4 GHz) • Security protocol: WPA/WPA2 Mixed • Access point only	Protocols: HTTP – Web Interface (HTTPS pending). WiFi enabled / disabled via web interface/display button. Expires after 1 hour.
<b>Ethernet Port</b>	RJ45 Ethernet connector 10/100Mbps	Protocols: HTTP – Web Interface (HTTPS pending) Telnet for Debugging Hardware ready for SNMPv3 (Firmware ready for SNMP v1 and v2c)
<b>System Display</b>	2 lines x 16 characters + 7 buttons	Backlit display/buttons with 3 reporting LEDs
<b>Wiring Interface</b>	½" & ¾" conduit	Standard conduit fitting knockouts
<b>Flight Recorder</b>	Up to 10 Months temp & data logging	Real time event log, run time, cycles & alarms log

<sup>1</sup> Optional interfaces available for other control types (e.g. high voltage, mini-split etc.)

## DIMENSIONS

- Overall dimensions: 10.25" x 7.5" x 2.6"
- Weight: 4lbs
- Color: Black (other colors upon request)
- HC model uses an extension control box (same dimensions–no display or buttons)
- Standard factory terminated 66 Block included for alarm punch down connections



US Patents: 8,313,038; 8,770,493; 10,670,315; 10,788,233;  
11,079,161; 11,140,798; 11,324,145 and patents pending

## ABOUT RF INDUSTRIES

RF Industries (RFI) designs and manufactures a broad range of interconnect products across diversified, growing markets including wireless/wireline telecom, data communications and industrial. Our products include RF connectors, coaxial cables, data cables, wire harnesses, fiber optic cables, custom cabling, energy-efficient cooling systems and integrated small cell enclosures.

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