

# humiFog - UA

pressure atomizing  
zone control

CAREL



## Multi-Point Zone Control Panel

**ENG** User manual

➔ READ AND SAVE  
THESE INSTRUCTIONS ←



**We wish to save you time and money!**

**We can assure you that the thorough reading of this manual will guarantee correct installation and safe use of the product described**

## **WARNINGS**



**BEFORE INSTALLING OR HANDLING THE HUMIDIFIER PLEASE CAREFULLY READ AND FOLLOW THE INSTRUCTIONS AND SAFETY STANDARDS DESCRIBED IN THIS MANUAL AND ON THE LABELS ATTACHED TO THE *humiFog*.**

**CAUTION: ALWAYS DISCONNECT THE MAIN POWER BEFORE OPENING OR SERVICING THE HUMIDIFIER!**

This appliance has been designed exclusively to directly humidify in ducts and AHUs through the atomizing rack.

The quality of the water used affects the operation of this unit, so the *humiFog* must be supplied with treated water (Reverse Osmosis or Deionized). The installation, use and maintenance operations must be carried out according to the instructions contained in this manual and on the labels applied internally and externally.

IMPORTANT: BEFORE beginning installation:

- Check for shipping damage to cartons. Mark the shipping waybill accordingly.
- Open cartons and check for any hidden damage. Mark the shipping waybill accordingly.
- Check packing slip to ensure all items have been received. Notify CAREL of any shortages or damaged parts. **You must notify CAREL within 5 working days of any shortages.**

**The conditions of the environment and the power supply voltage must comply with the specified values listed on the data label in the humidifier.**

**All other uses and modifications made to the humidifier that are not authorized by the manufacturer are considered incorrect, and the manufacturer assumes no liability for the consequences of any such unauthorized use.**

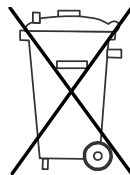
**Please note that the humidifier contains powered electrical devices and high pressure components.**

**All service and/or maintenance operations must be performed by qualified personnel who are aware of the necessary precautions and are capable of performing the operations correctly.**

**Disconnect the humidifier from the main power supply before accessing any internal parts.**

**The humidifier must be installed in accordance with all local and national standards.**

**WARNING: Your humidifier requires water to operate. Do NOT mount it above materials or machinery that could be damaged if a leak occurs. CAREL assumes no responsibility for consequential or inconsequential damage as a result of any leaks.**



**Disposal of the parts of the humidifier: The humidifier is made up of metallic and plastic parts. All parts must be disposed of according to the local standards on waste disposal.**

**Warranty on materials: 2 years (from the date of production, excluding the consumable parts).**

# TABLE OF CONTENTS

<b>1.</b>	<b>HOW THE humiFog WORKS .....</b>	<b>4</b>
<b>2.</b>	<b>COMPONENTS.....</b>	<b>5</b>
2.1	Main pumping station .....	5
2.2	Microprocessor control system.....	5
2.3	Atomizing nozzles.....	6
2.4	Distribution.....	6
2.5	Zone Control Panels .....	6
<b>3.</b>	<b>MODELS .....</b>	<b>7</b>
<b>4.</b>	<b>ZONE CONTROL CABINET POSITIONING AND MOUNTING.....</b>	<b>8</b>
4.1	Zone Control Positioning .....	8
4.2	Unit Dimensions and weights .....	8
4.3	Mounting .....	8
<b>5.</b>	<b>WIRING .....</b>	<b>9</b>
5.1	Power Wiring .....	9
5.2	Pumping Station to Multi Zones .....	9
5.3	Controls Wiring .....	10
5.4	Solenoid Wiring.....	10
5.5	Duplex Control Wiring .....	10
<b>6.</b>	<b>START-UP .....</b>	<b>11</b>
6.1	Startup Checklist .....	11
6.2	Re-addressing the Controllers and Displays for Multi-zone or Duplex Systems .....	11
6.3	Re-addressing PCO3 controller .....	12
6.4	Re-addressing PGD display .....	12
<b>7.</b>	<b>THE humiFog CONTROLLER.....</b>	<b>13</b>
7.1	System Status .....	14
7.2	Main Menu .....	14
7.3	Service Submenu.....	16
7.3.1	Service Settings Submenu .....	17
7.3.2	Manual Management Submenu.....	18
7.4	Manufacturer Submenu .....	18
<b>8.</b>	<b>WIRING DIAGRAMS .....</b>	<b>19</b>
8.1	See specific diagram(s) provided with unit. ....	19
<b>9.</b>	<b>REPLACEMENT PARTS .....</b>	<b>20</b>
9.1	See specific material list(s) provided with unit. ....	20
<b>10.</b>	<b>WARRANTY .....</b>	<b>22</b>

# 1. HOW THE humiFog WORKS

The humiFog humidification system is a high pressure atomizing system designed to produce a fine mist that readily evaporates to raise the relative humidity. The atomizing humidifier is an efficient humidification system that is especially suitable for larger installations, where high flow-rates of water are required without the necessity of excessive energy expenditure. When the humidity value in the environment is less than the desired value, as measured by a probe or external controller, the controller starts the volumetric piston pump, which sends the "treated" water to the nozzles.

The treated water, using a reverse osmosis or deionizer system, is pumped at a pressure of 1000psi (75bar) and sent via the connection pipes to the atomizing nozzles. The nozzles then reduce the jet of water into a multitude of very fine water droplets (10-20 microns). Because of the fine droplet size, the water can then easily change its state and vaporize. The energy required for this transformation is supplied by the ambient air; at a rate of 690 W per liter/hour. Consequently, there is a decrease in temperature in the environment being humidified, and this process may be useful in many applications (adiabatic transformation).

The humiFog unit must be supplied with treated water, for the following reasons:

- To reduce the introduction into the environment of dust due to the mineral salts found in the untreated water.
- To minimize the clogging of the nozzles.

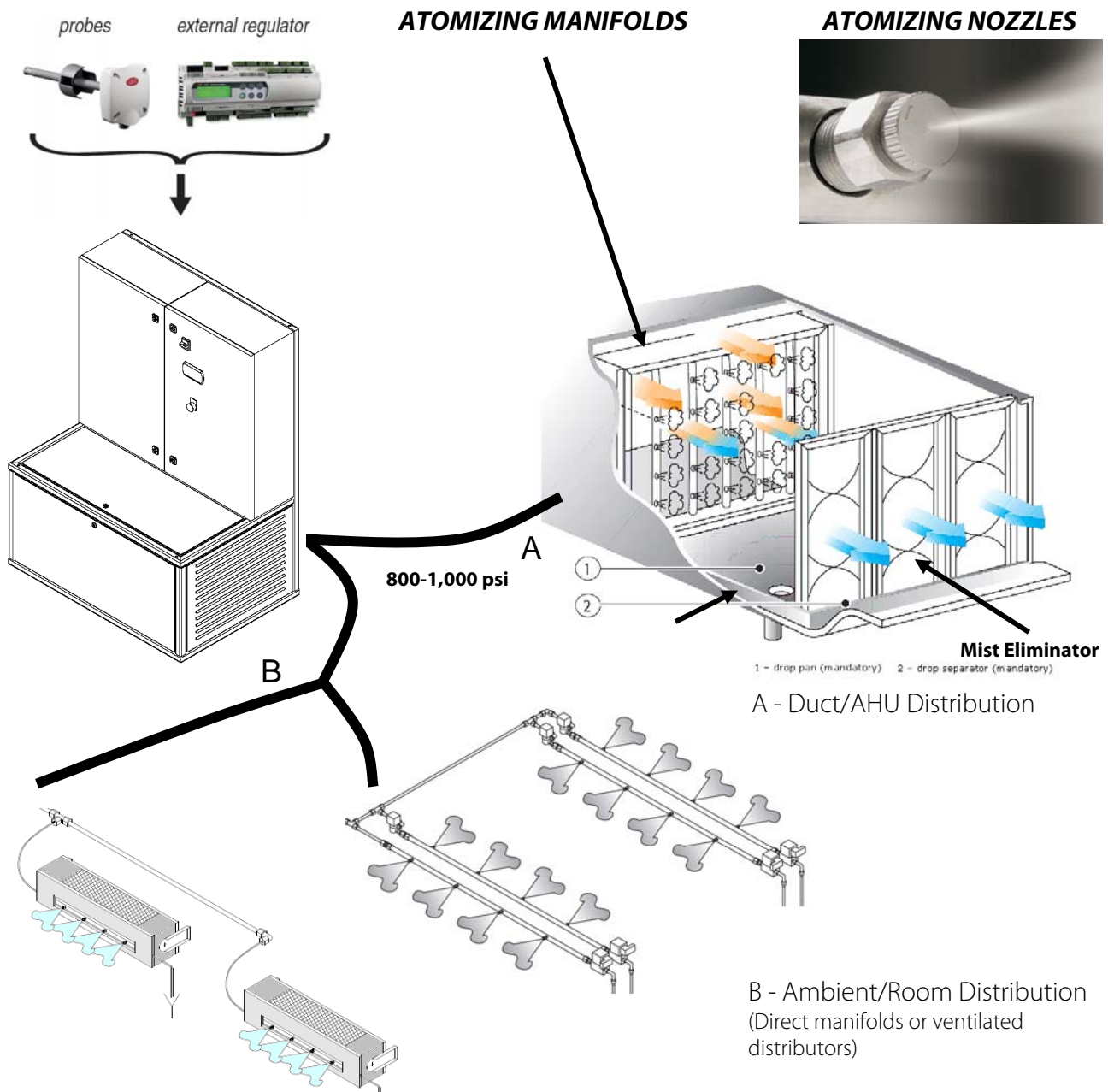


Fig. 1.a

## 2. COMPONENTS

A humiFog system is made up of the following components:

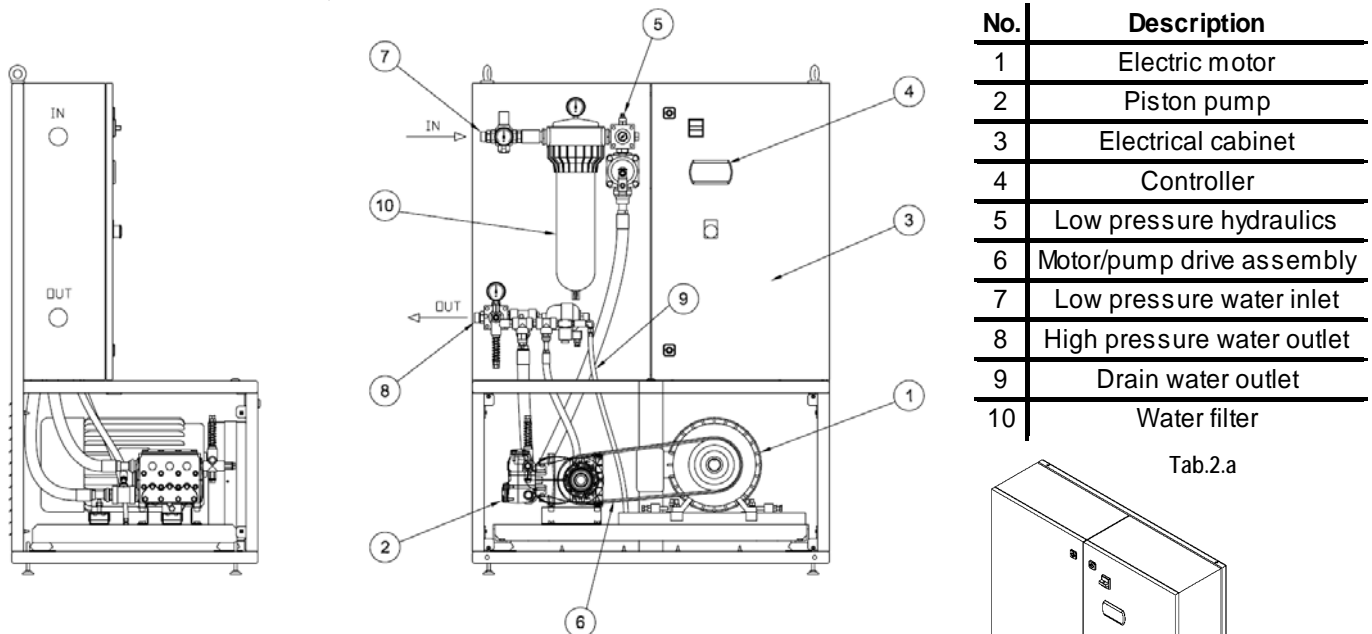
- Pumping station, containing the electrical panel and the volumetric piston pump.
- Microprocessor control system.
- Distribution system with the atomizing nozzles; for ducts/AHUs or rooms.
- Zone control panels for controlling the distribution staging in each zone or AHU.

### 2.1 MAIN PUMPING STATION

The main pumping station features an energy efficient combination of an advanced Inverter Duty Motor and a Variable Frequency Drive. This combination allows for the precise control of the volume of outlet water from the positive displacement pump. The positive displacement pump is a reliable component that is designed for long life and minimal maintenance. By adjusting the speed of the pump, the pressure and the flow rate of the nozzles are precisely modulated according to the requirements of the application. The station also incorporates a user friendly display, allowing the user to visually change set points, and other user-modified fields.

The main pumping station controls the water output using “Constant Pressure” principles. This type of control allows a single pumping station to supply humidification to multiple ducts/AHUs or rooms. In this setup, the humiFog controller manages the speed of the pump according to the “Constant Pressure” set point, increasing the speed if the pressure decreases (opening more zones/branches of the circuit) and decreasing the speed if the pressure increases (closing one or more branches of the circuit).

With this configuration, the humiFog controller can manage the humidity control and distribution directly (one zone/AHU); or the distribution control is managed by an additional external zone controller (multiple zones/AHUs).



Tab.2.a

NOTE: THE LEFT CABINET DOOR AND THE SIDE PANELS ARE NOT SHOWN, FOR CLARITY PURPOSES.

### 2.2 MICROPROCESSOR CONTROL SYSTEM

The humiFog control system is based on the latest, state of the art, CAREL pCO programmable controller. This controller operates a Variable Frequency Drive to modulate water pressure and water flow according to requirements. Control can be stand-alone using humidity and temperature sensors, or the system can be controlled by a DDC signal. Modbus, BACnet, Echelon and TCP/IP protocol interface is available through an RS485 serial communications port. A LAN (Local Area Network) connection allows up to 32 systems to be connected to share sensor information, or even operate redundantly

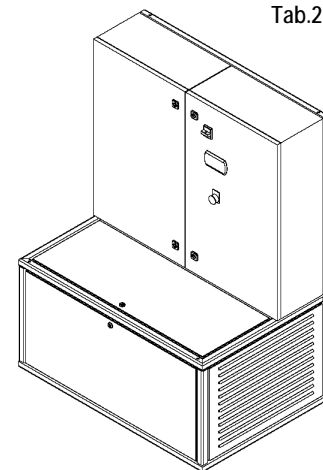


Fig. 2.b



## 2.3 ATOMIZING NOZZLES

The humiFog atomizing nozzles are constructed of stainless steel and are available in three capacities: 3.3, 6.2 & 8.8 lbs/hr (1.5, 2.8 & 4.0 kg/hr). Working on the centrifugal/whirljet principle, they have no targets to drip or require adjustment. An internal 60 micron filter is used to prevent jamming of the nozzle, and a special internal valve closes the orifice to avoid dripping and prevent any ambient contamination when the nozzle is off. The nozzles are mounted uniformly in the distribution manifolds.

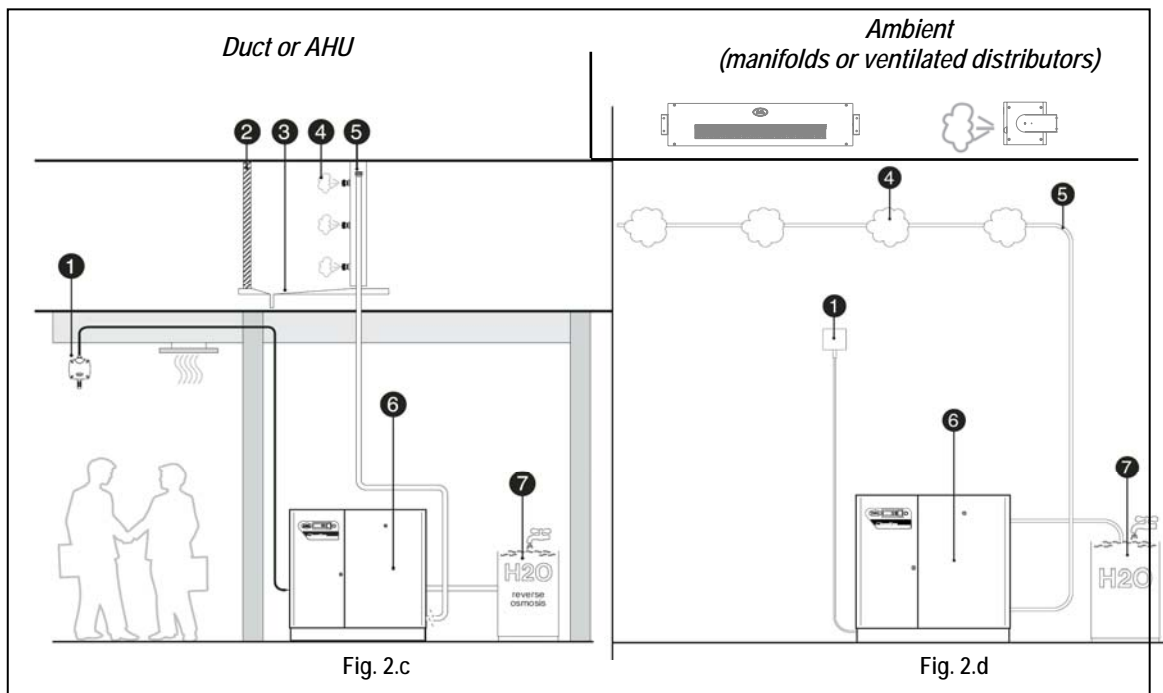


Atomizing nozzles

## 2.4 DISTRIBUTION

The following diagrams illustrate the typical applications in ducts (Fig. 2.c) or directly in the rooms (Fig. 2.d).

The ambient humidity is measured by a probe (1), or receives a command signal from an external controller, and is read by the controller contained in the humiFog pumping station (6). The controller then compares the humidity measured in the room against the humidity set point, starting, when necessary, the production of the pump. The demineralized water produced by the water treatment system (7) is brought to high pressure by the humiFog pump (6), sent to the manifolds for distribution into the duct or directly into the room (5), and then atomized by the nozzles (4). The percentage of water fog evaporated depends on the temperature and speed of the air, as well as on the relative humidity reached. In duct applications, any non-evaporated droplets are separated by a mist eliminator filter or cooling coil (2), collected in the bottom tank (3) and immediately discharged. The control system built into the pumping station controls the banks of nozzles supplied with solenoid "zone" valves.



## 2.5 ZONE CONTROL PANELS

The humiFog Zone Control Panels utilize the latest state-of-the-art CAREL pCO programmable controller. This controller operates the distribution system, by interfacing with the selected control system, and then controlling the water solenoid valves for appropriate modulation. Control can be stand-alone using humidity and temperature sensors, or the system can be controlled by a DDC signal. Modbus, BACnet, Echelon and TCP/IP protocol interface is available through an RS485 serial communications port. A LAN (Local Area Network) connection allows up to 32 systems to be connected to share sensor information, or even operate redundantly. The zone control cabinets are also used to control each zone, in a multi-point humiFog system. In this type of system, all of the zone control panels communicate to each other, and to the pumping station panel, by a pLAN network. The zone control panels are constructed of appropriate materials for their application (default Type 12), and contain pCO controllers, pGD displays, and industrial control components as required (see typical figure below).

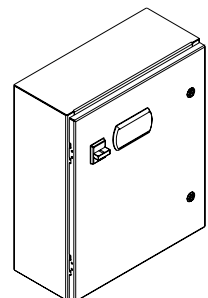


Fig. 2.e Typical Small Zone Control Cabinet

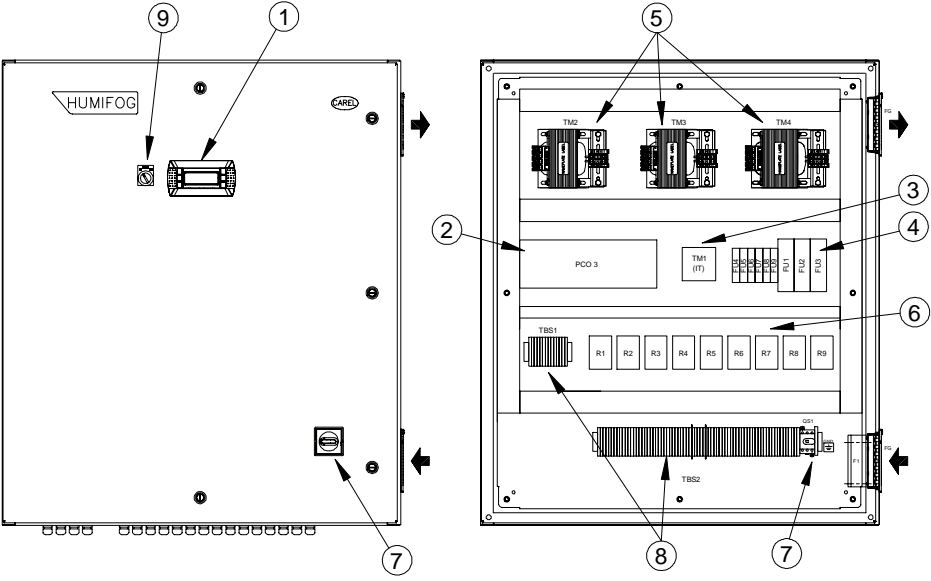
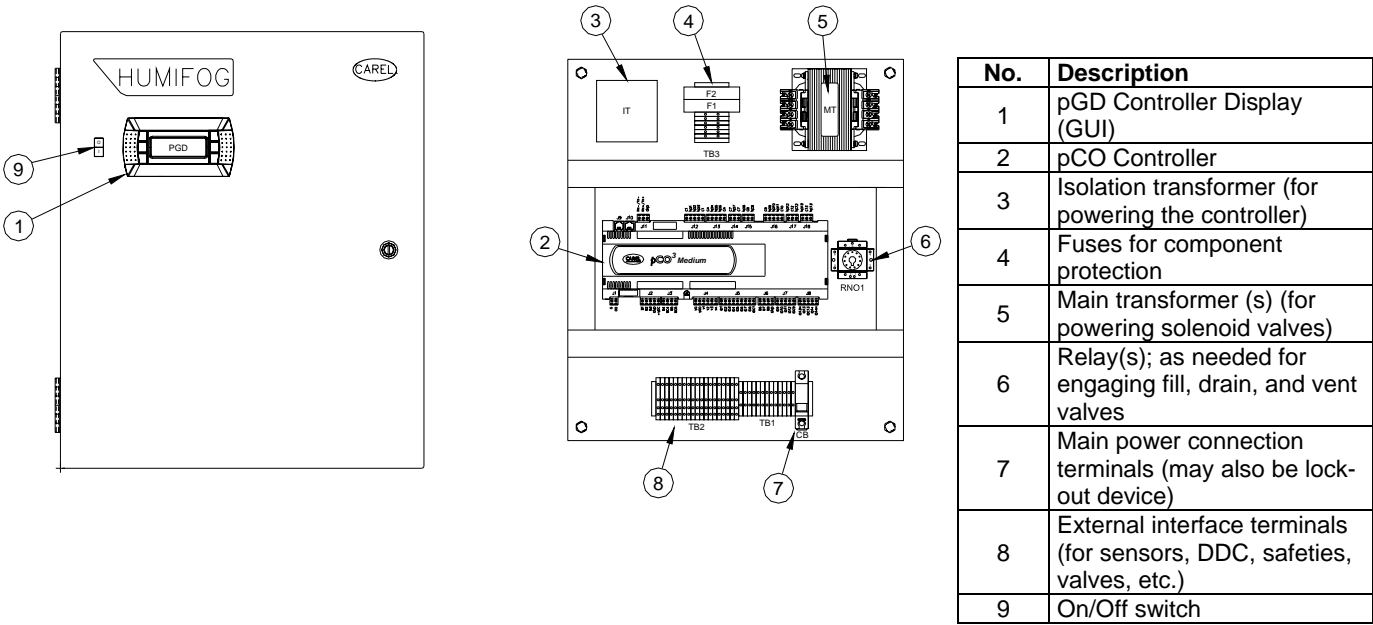


Fig. 2f Typical Large Zone Control Cabinet

**3. MODELS**

<b>Zone Control Panels</b>				
<b>UA</b>	<b>ZN</b>	<b>X</b>	<b>YYYY</b>	<b>0</b>
humiFog	<b>Zone Control Cabinet</b>	<b>Type of Cabinet</b> 0=Duct A=Ambient	<b>Available - Sequencing Number</b>	<b>Custom</b> U= USA

## 4. ZONE CONTROL CABINET POSITIONING AND MOUNTING

### 4.1 ZONE CONTROL POSITIONING

The humiFog Zone Control cabinet has been designed for wall mounting, and should be placed locally centered to the pumping station, and distribution zone points. For ducted systems, the zone control cabinet should be close to the duct/AHU. For ambient systems, the zone control cabinet should be mounted centrally to the zone areas.

**All connecting wiring is done by installer. Certain clearances must be maintained around the unit for safety and maintenance.**

The cabinet can be placed wherever the following conditions are met.

Cabinet protection index: IP20 / Nema Type 1 (unless specified otherwise)

Operating conditions: 20-80% RH non condensing, 34-104°F (1-40°C)

Storage conditions: 10-90% RH non condensing, 34-122°F (1-50°C)

**IMPORTANT:** The maximum distance between the zone control cabinet and the rack/distribution is 50 ft (15 meters).

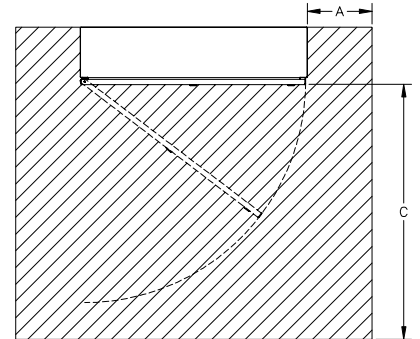


Fig. 4.a

### 4.2 UNIT DIMENSIONS AND WEIGHTS

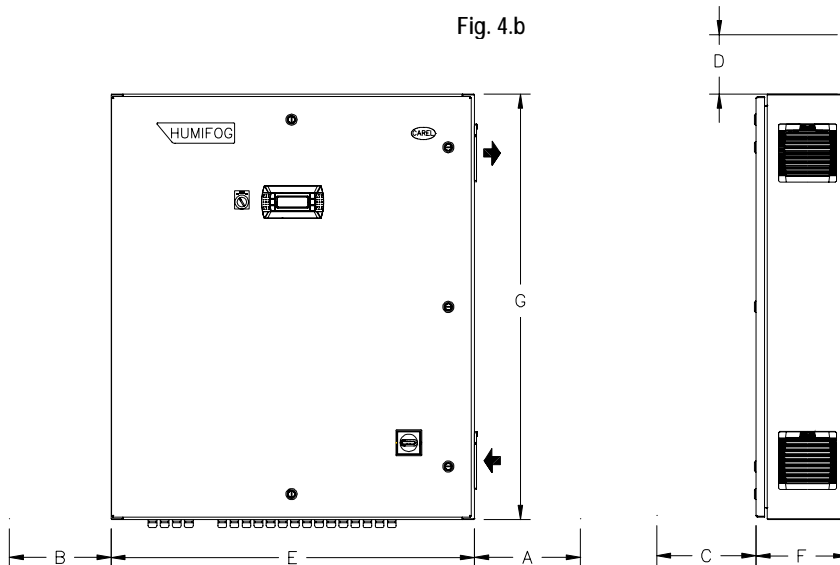


Fig. 4.b

Dimensions of Cabinets				
in / mm				
	*050 *080	*106	*104 *105	*103
A	4 / 102	4 / 102	10 / 254	10 / 254
B	4 / 102	4 / 102	10 / 254	10 / 254
C	24 / 610	24 / 610	36 / 914	48 / 1220
D	12 / 305	12 / 305	18 / 457	18 / 457
E	20 / 508	20 / 508	30 / 762	36 / 914
F	9 / 229	6 / 152	10 / 254	10 / 254
G	24 / 610	23 / 584	30 / 762	42 / 1067

Tab. 4.a

	*050 *080	*106	*104 *105	*103
Weight installed lbs / kg	65 / 30	20 / 44	125 / 57	230 / 104
Weight packaged lbs / kg	70 / 32	21 / 46	135 / 61	242 / 110

Tab. 4.b

### 4.3 MOUNTING

The humiFog zone control cabinets are designed to be wall mounted. There are appropriate holes in the back of the cabinet, for mounting to the wall. Use appropriate fasteners for supporting the weight of the cabinet and its components. Maintain clearances as noted above, for allowing proper ventilation around the cabinet, as well as clearances for maintenance and user operation.

**NOTE:** It is recommended that the unit be fixed in position so that the electrical connections do not become damaged. The local, state, and country regulations must be followed for all mechanical and electrical installations.

## 5. WIRING

### 5.1 POWER WIRING

Check that the power supply voltage to be connected matches the value indicated on the rating plate inside the electrical panel.

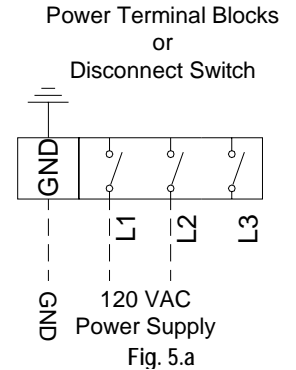
An external, fused disconnect should be provided according to local and/or national electrical codes.

NOTE: to avoid unwanted interference, the power cables should be kept separate from any control wiring.

**All wiring must be in accordance with local, state and country electric codes.**

NOTE: Tolerance allowed on main voltage = -15% to +10%

Power is connected to the main switch inside the control panel at the bottom right. Connect wires to the top of the switch/terminal labeled L1, and L2. There is also a ground bar/lug labeled GND.



### 5.2 PUMPING STATION TO MULTI ZONES

Pumping stations are wired to the multi-zone control panels by pLAN connections. Please see diagram below, as well as the CAREL pCO platform manual for specific instructions.

## pLAN CONNECTION

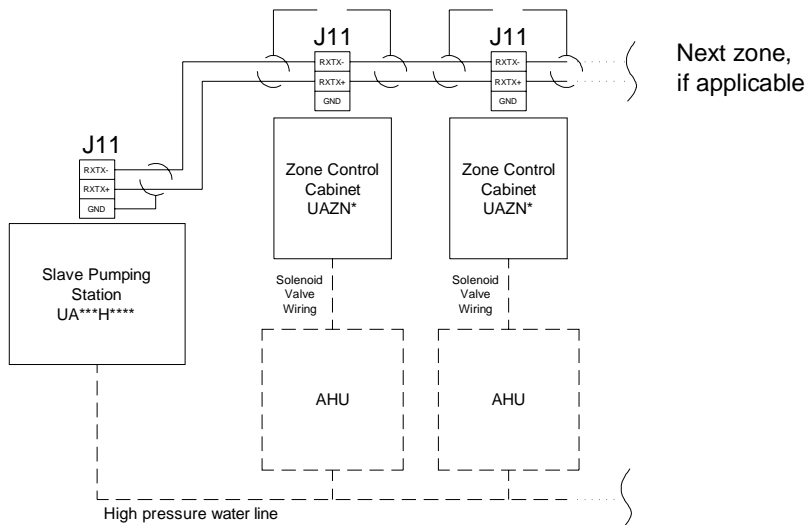


Fig. 5.b

#### WIRING FROM PUMPING STATION, TO ZONE CONTROL CABINET(S)

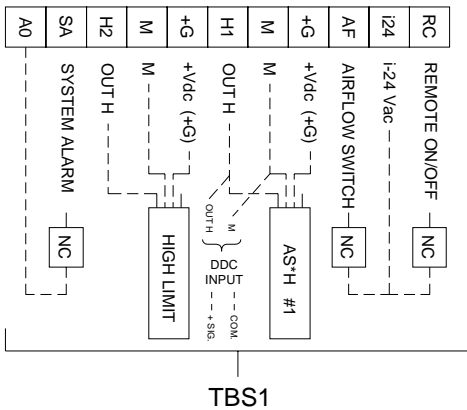
**NOTES:**

1. Use a twisted pair shielded cable to zone control cabinets.
2. Connect to terminal block J11 of PCO3 in each zone cabinet.
3. Connect the shield to the GND at pumping station end only.

### 5.3 CONTROLS WIRING

The control circuit is 24 VAC, powered from a transformer located in the control cabinet. The control terminal blocks, are used for interfacing with the external control wiring. The diagram below shows the appropriate terminals for this wiring.

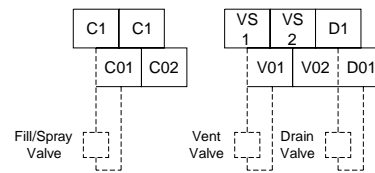
#### ZONE CONTROL PANEL SENSOR, ALARMS, CONTROL I/O



#### NOTES:

1. Digital Input "Remote On/Off" (ONOF on \*106) to be used for safety or remote control (if applicable). If not used, the Digital Input must be jumpered, or disabled in the software.
2. Digital Input "Air Flow" (FLUX on \*106) to be used for airflow safety (if applicable). If not used, the Digital Input must be jumpered, or disabled in the software.
3. Analog Input H1 (AMB on \*106) can be used for input control by sensor or a DDC. Selectable for type, and VDC or mA.
4. Analog Input H2 (LMT on \*106) can be used for a high limit control sensor (if applicable).
5. Digital Output "System Alarm" (SA-SA0 on \*106) gives status when there is an active alarm.

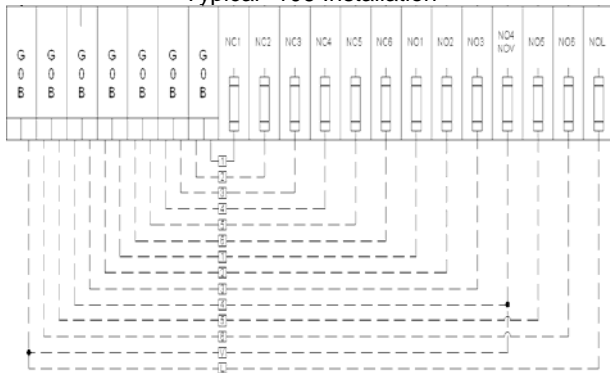
### ZONE CONTROL PANEL SOLENOID VALVE CONNECTIONS



### 5.4 SOLENOID WIRING

The solenoid valves are used for controlling the flow of water to the circuits, as well as for draining and venting the circuits. Note: Some systems do not have drain or vent valves. The solenoid valves are part of the 24VAC power circuit. They are powered from a separate main transformer, that is different then the power supply to the pCO control circuit.

#### Typical \*106 Installation



#### NOTES: (Diagram above for other models)

1. "NC" terminals are for Capacity/Fill/Spray valves. "NC" followed by the number 1-6 denote the staging; the stage with the highest capacity is NC1 and the stage with the lowest capacity is NC6.
2. Similarly, "NO" terminals are for the manifold drain valves and the header vent valves. "NO" followed by the number 1-6 denote the staging; the stage with the highest capacity is NO1 and the stage with the lowest capacity is NO6.
3. The "NOL" terminal is for the central drain valve. A 2-wire connection uses the NO\* termination for the "+" wire, and the G0B termination for the "-" wire.
4. A 2-wire connection for the wiring to the solenoid valves uses the NC\*, NO\*, and NOL terminations for the "+" wire, and the G0B termination for the "-" wire.
5. Check the schematic for more information on valve wiring.

### 5.5 DUPLEX CONTROL WIRING

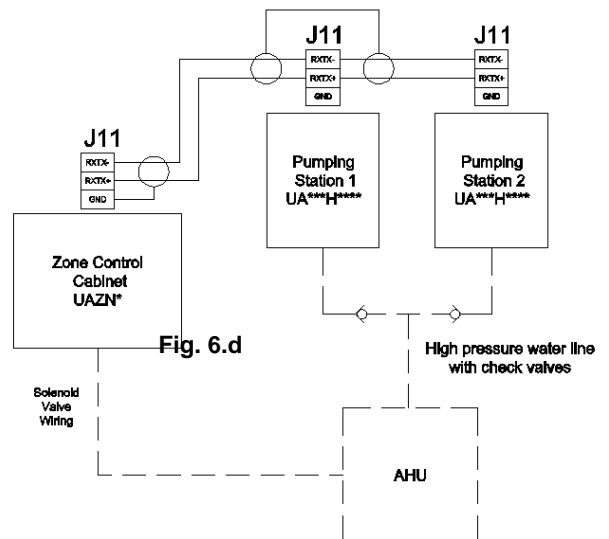
For a duplex system, both pumping stations are wired to one or more zone control panels by pLAN connections. Please see diagram below, as well as the CAREL pCO platform manual for specific instructions.

#### WIRING FROM ZONE CONTROL CABINET TO DUPLEX PUMPING STATIONS

#### NOTES:

1. Use a twisted pair shielded cable to pumping stations.
  2. Connect to terminal block J11 of PCO3 in each pumping station.
  3. Connect the shield to the GND at zone control end.
- Rx/Tx+ must match on all PCO controllers. Rx/Tx- must also match on all PCO controllers.

### pLAN CONNECTION



## 6. START-UP

### IMPORTANT INSTRUCTIONS/WARNINGS:

Before connecting the water to the pumping station, flush the supply pipe for around 10 minutes by piping water directly into the drain. Before starting the pumping station, verify that the humidifier is in full operational condition. The hydraulic and electrical equipment should not be locked out. There should not be any water leaks and the electrical components must be dry. If a hazard does seem to exist, the system should be locked out immediately and the problems corrected before continuing.

### 6.1 STARTUP CHECKLIST

Before starting the humidifier, the following should be checked:

- Water is connected, the line has been flushed, and external valves are open.
- Drain is connected and run to an open drain.
- Electricity is connected in accordance with instructions, local codes and data labels in the unit.
- The external power fuses/disconnect are installed and intact.
- All control wiring is done and tested.
- Airflow switch is wired to open on air flow loss.
- Hi-limit humidistat is wired to open on humidity rise above set point.
- Unit wires have been checked to make sure they and all connectors are tight from shipping.
- The high pressure water outlet piping is run correctly to the distribution system.
- The proper capacities for each stage of the manifold system are installed in the zone control cabinet.
- For a multi-zone system, the addresses of the zone controls cabinets are changed.
- For a duplex system, the addresses of the pumping stations are changed.

### 6.2 RE-ADDRESSING THE CONTROLLERS AND DISPLAYS FOR MULTI-ZONE OR DUPLEX SYSTEMS

The default addresses for a zone control cabinet are "1" for the PCO3 controller and "30" for the PGD display. The default addresses for the pumping station cabinet are "16" for the PCO3 controller and "32" for the PGD display. For multi-zone or duplex systems, the additional cabinets on the pLAN must have their addresses changed before they can operate correctly.

**When changing addresses, the pLAN connections between each of the PCO3 controllers must be removed.** The connections are restored once the readdressing is completed.

- For multi-zone system,
  - the PCO3 controllers in the additional cabinets can be assigned addresses sequentially upward.
  - the PGD displays in the additional cabinets can be assigned addresses sequentially downward.
- For a duplex system,
  - the PCO3 controller in the additional pumping station cabinet must be changed to "17."
  - the PGD display in the additional pumping station cabinet must be changed to "31."

pLAN ADDRESS TABLE						
	PCO3 Controller			PGD Display		
	Default	Multi-zone	Duplex	Default	Multi-zone	Duplex
Pumping Station	16	N/C	17	32	N/C	31
Zone Control	1	2, 3, ..., 15	N/A	30	29, 28, ..., 18	N/A

**Tab. 7.a**

### 6.3 RE-ADDRESSING PCO3 CONTROLLER

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To change the address of the PCO3 controller, the address of the PGD display must be set to "0" first. (The procedure for setting the address of the PGD back to the proper address is described in 6.2.2.)

1. Unplug J11 connector from PCO3 controller.
2. Press the up, down, and enter keys (3 keys on the right hand side of remote display) for approximately 3 seconds.
3. The screen should show "Display address setting."
4. Press the enter key and change value to "0."
5. Press enter.
6. Shut down power to the PCO3 controller, wait 3 sec, and then turn power back on to the PCO3 controller.
7. As unit is powering on, press and hold the up and alarm buttons (top left and top right buttons on PGD remote display) until "pLAN address" is displayed.
8. Change to desired address.
9. Press enter.
10. The PCO3 is now address to the value you last entered.

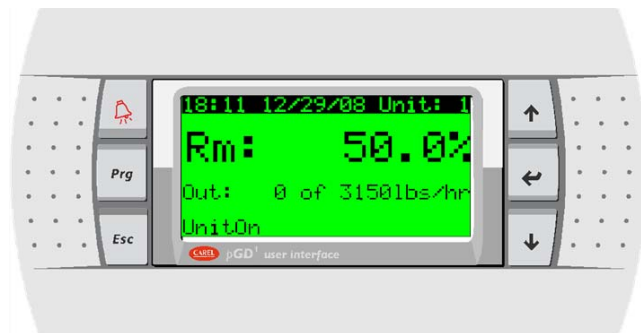
### 6.4 RE-ADDRESSING PGD DISPLAY

---

1. Unplug J11 connector from PCO3 controller.
2. Press the up, down, and enter keys (3 keys on the right hand side of remote display) for approximately 3 seconds.
3. The screen should show "Display address setting."
4. Press the enter key and change this value to 18-32. This address must be different from the address of the PCO3 controller.
5. Press enter.
6. Press the up, down, and enter keys (3 keys on the right hand side of remote display) for approximately 3 seconds.
7. You will be taken to the same screen as before, but this time you will see "I/O Board Address" displayed underneath "Display address setting."
8. Press the enter button 2 times so the text box is blinking beside "I/O Board address."
9. Change this to the same address that you assigned to the PCO3 controller.
10. Then, press enter.
11. The next screen displayed will show "Terminal config" press enter to continue.
12. The following screen will show P:(address of PCO3 controller) in upper left corner.
13. Trm1 None will be blinking. Change "none" to the addressed you entered in step 4 (address of PGD display.)
14. Press enter 1 time and change the next field to Pr.
15. Press enter 5 times and change ok? From no to yes.
16. Press enter.
17. The PGD remote display is now addressed to your PCO3 controller.

## 7. THE humiFog CONTROLLER

The humiFog controller features a comprehensive information display that shows the operation of the system at a glance:

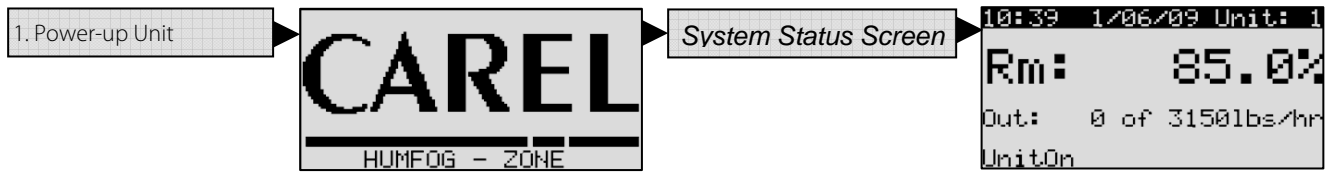


	Alarm	Turns off the buzzer and displays the first alarm screen in the alarm-loop. A red LED located under the Alarm button will be energized when there are alarms present. If the red LED is blinking, that means an alarm has occurred, but the condition has been corrected and the alarm can now be reset.
	Program	Shortcut to the Technician's Menu, where all application settings can be reached. If protected, a password will need to be entered.
	Escape	Escapes to previous screen-loop. When already in the Technician's Menu, pressing ESC takes you to the main status screen.  If ESC's green LED is blinking, part of the system is under "Manual Control."
	Up	Cycles upward through the screens, when cursor is in top left corner. When cursor is in a field, the value of the field is increased. The longer the button is held, the faster the value increases.
	Enter	Cycles through fields in a screen. When in a field, pressing ENTER confirms the current value into the field and goes to the next field.
	Down	Cycles downward through the screens, when cursor is in top left corner. When cursor is in a field, the value of the field is decreased.  The longer the button is held, the faster the value decreases.
+	Up + Down	Shortcut to quickly see the Software Application's Version Number and Date.  It is in this screen from which you can restore the Factory Settings, by pressing , then , then , and finally  one last time.
+	Escape + Program	Shortcut to quickly see the System Type and Number of Humidification Stages.  When in the Alarm History Screen, pressing ESC+PRG will erase the history.
+	Escape + Alarm	Keyboard shortcut to reset all Manually controlled points to Automatic control.  When in the System Run Hours screens, pressing these keys will reset the currently selected Stage's Run Hours.

NOTE: The standard humiFog display will have fields that can display values or fields that can accept values. If pressing the ENTER key places the cursor next to the display field, the UP and DOWN keys can be used to change that value.

## 7.1 SYSTEM STATUS

On initial power-up, the controller will go through a series of self-tests and then activate the program, bringing up the following screens. The visibility of some screens is dependent on the configuration of the system.



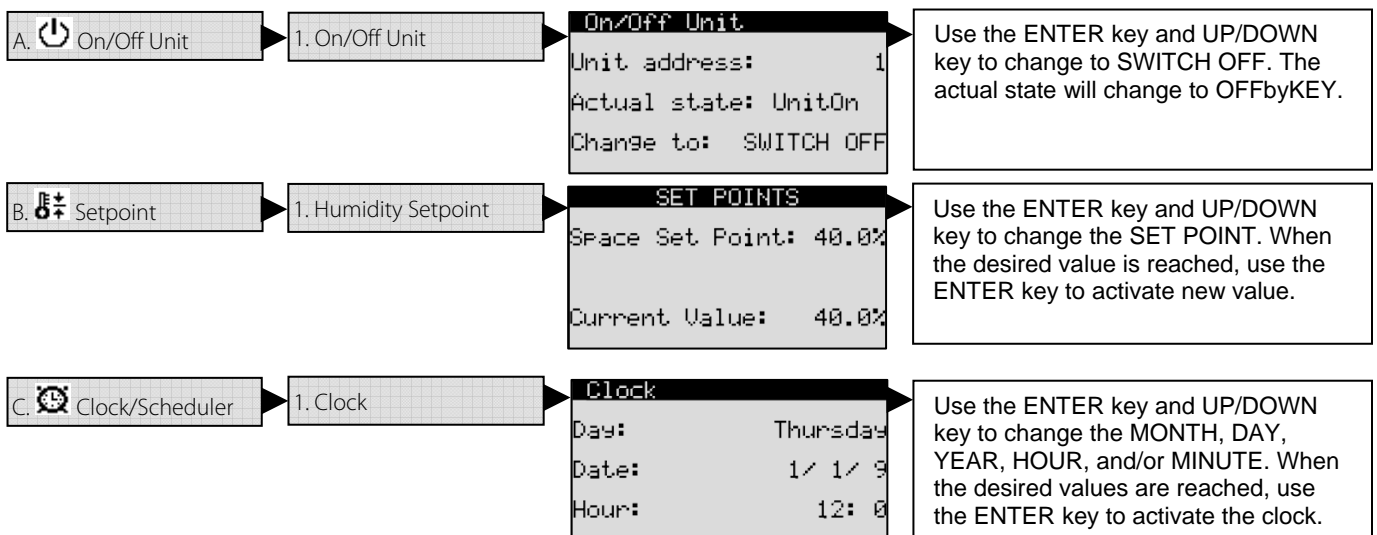
During power-up, the controller performs an alarm test. The alarm key will be red, and must be pushed twice to clear the alarms. To check the "Alarm History", go to the "Data Logger" in the "Main Menu". The 1st alarm is a "System Start Alarm", and the 2nd alarm is a "No Air Flow Alarm". Note: The "No Air Flow Alarm" occurs whether the AF digital input is open (low voltage) or closed (high voltage) at power-up.

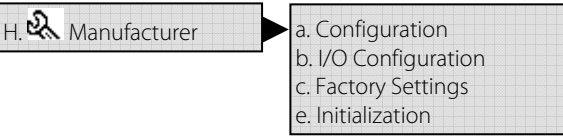
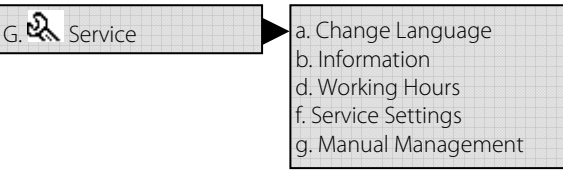
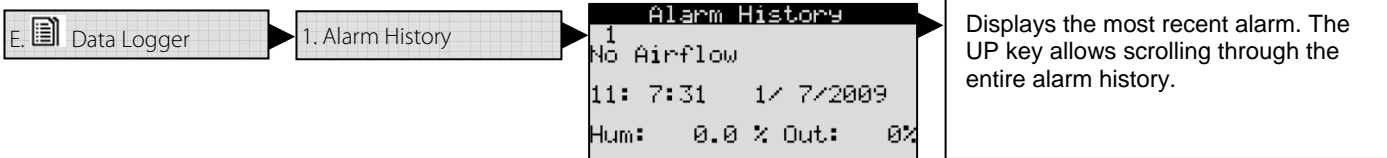
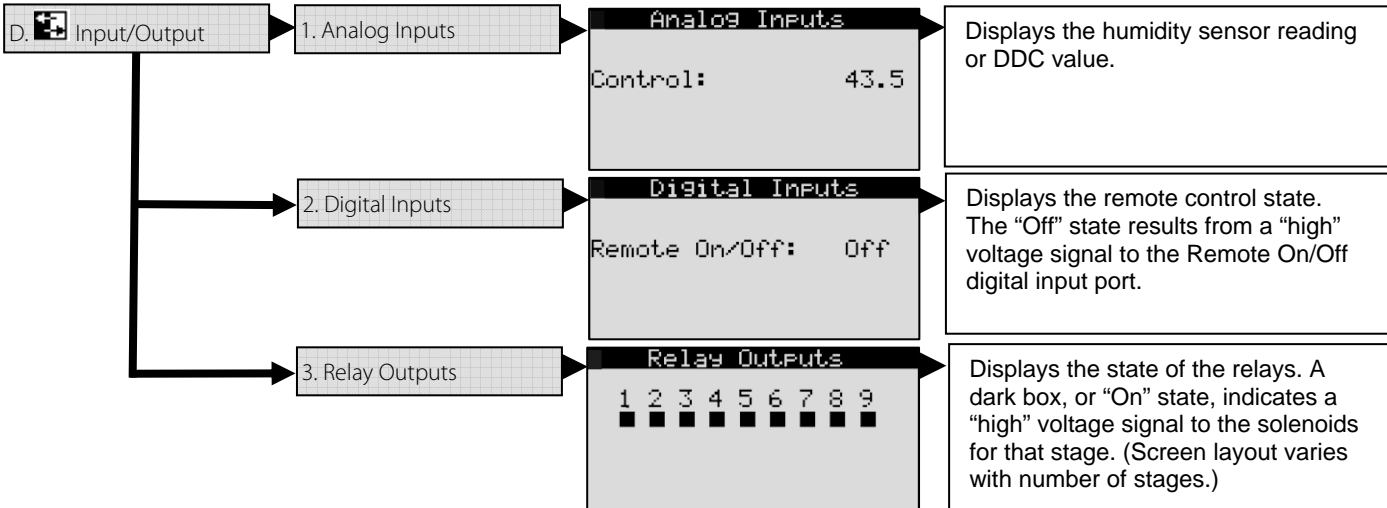
## 7.2 MAIN MENU

To access the "Main Menu", press PRG from the "System Status Screen" shown above.

List of Main Menu selections: (Use the UP/DOWN arrows to scroll through this list)

- A. On/Off unit
- B. Setpoint
- C. Clock/Scheduler
- D. Input/Output
- E. Data Logger
- F. Board Switch
- G. Service
- H. Manufacturer



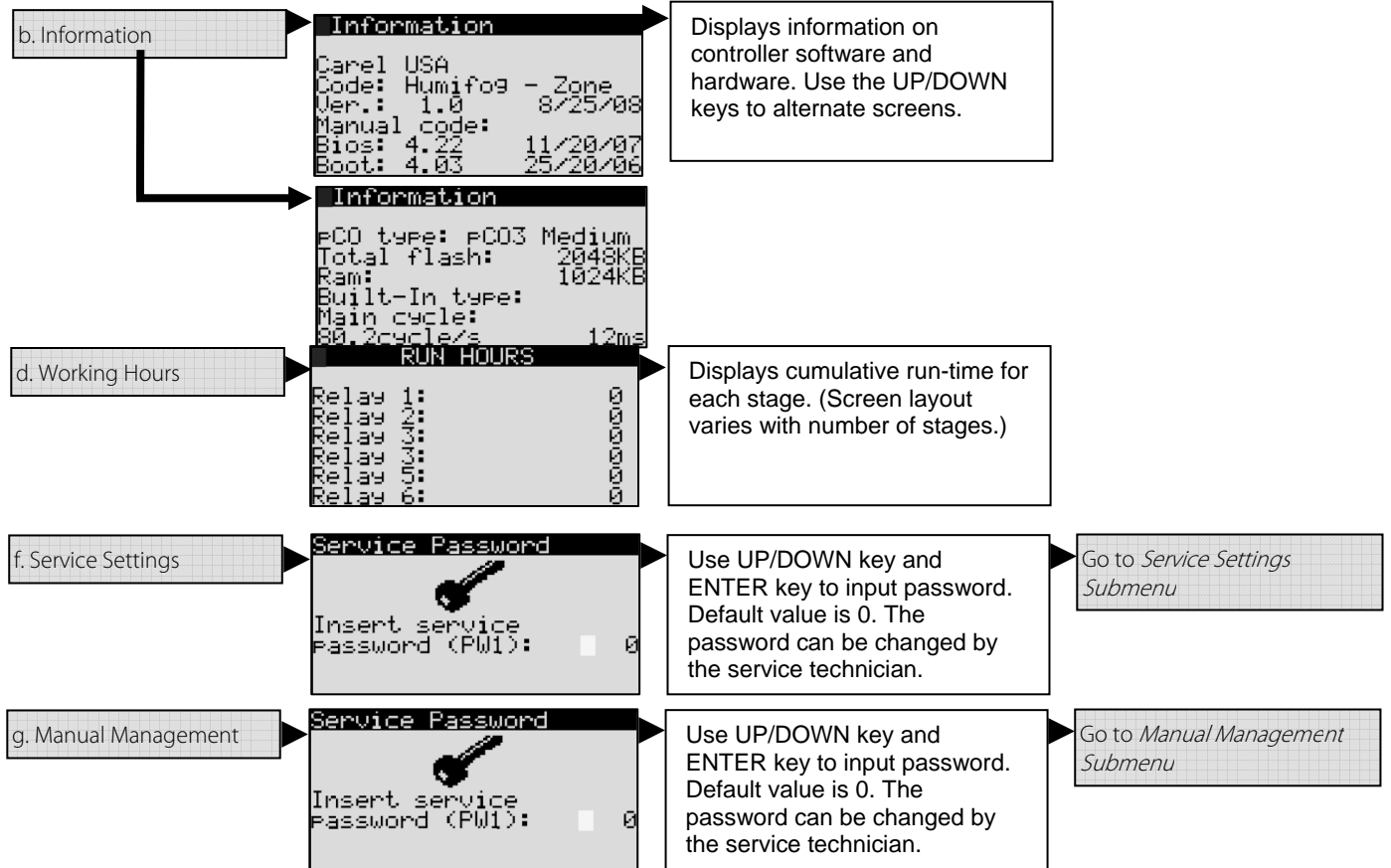


### 7.3 SERVICE SUBMENU

To access the "Service Submenu", scroll through the "Main Menu", and press ENTER when highlighted.

List of "Service Submenu" selections: (Use the UP/DOWN arrows to scroll through this list. Selections "c" and "e" are not available.)

- b. Information
- d. Working Hours
- f. Service Settings
- g. Manual Management



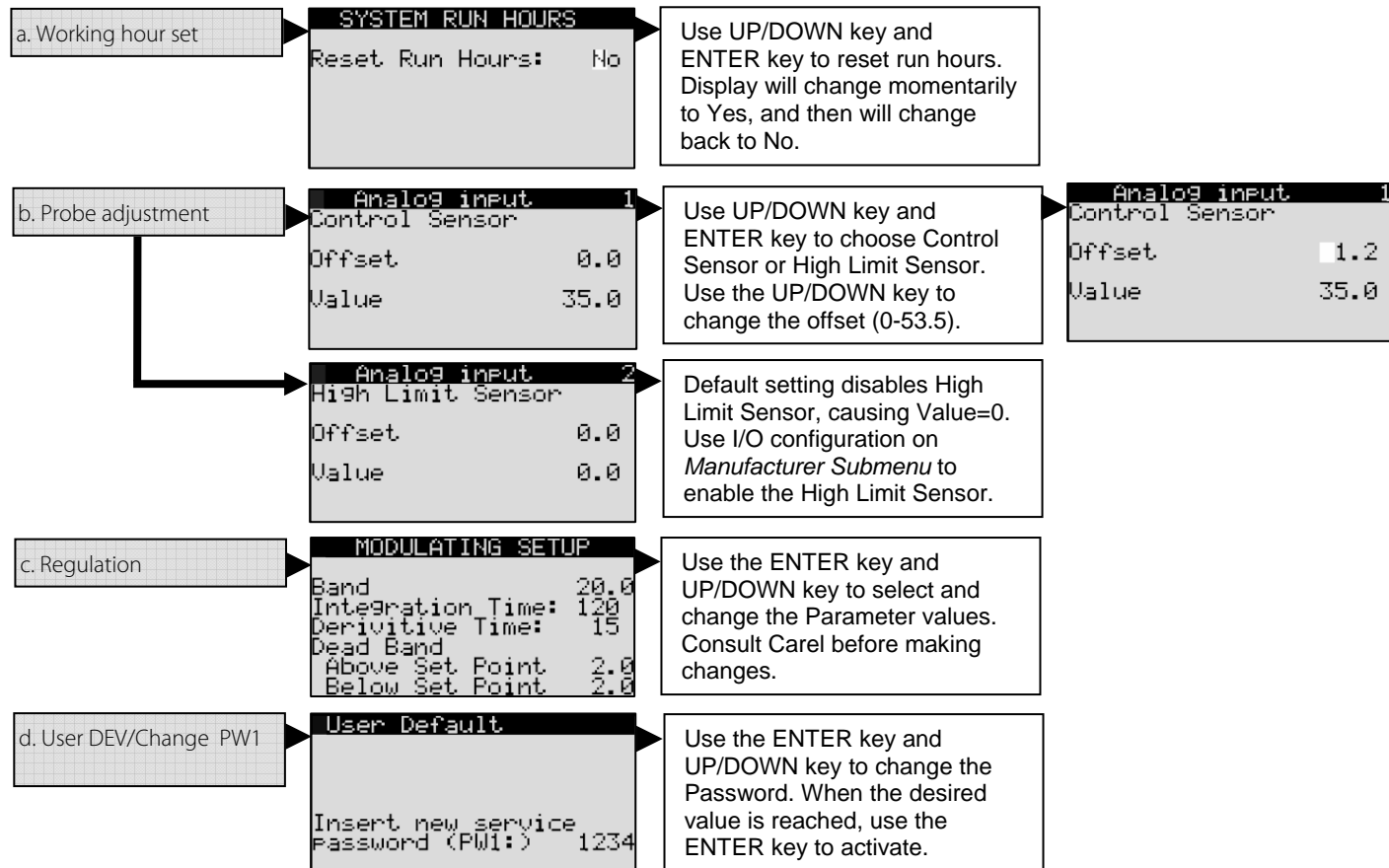
### 7.3.1 Service Settings Submenu

To access the "Service Settings Submenu,"

- Scroll through the "Service Submenu."
- Press ENTER when "Service Settings Submenu" is highlighted.
- Input the password.

List of Service Settings Submenu selections: (Use the UP/DOWN arrows to scroll through this list.)

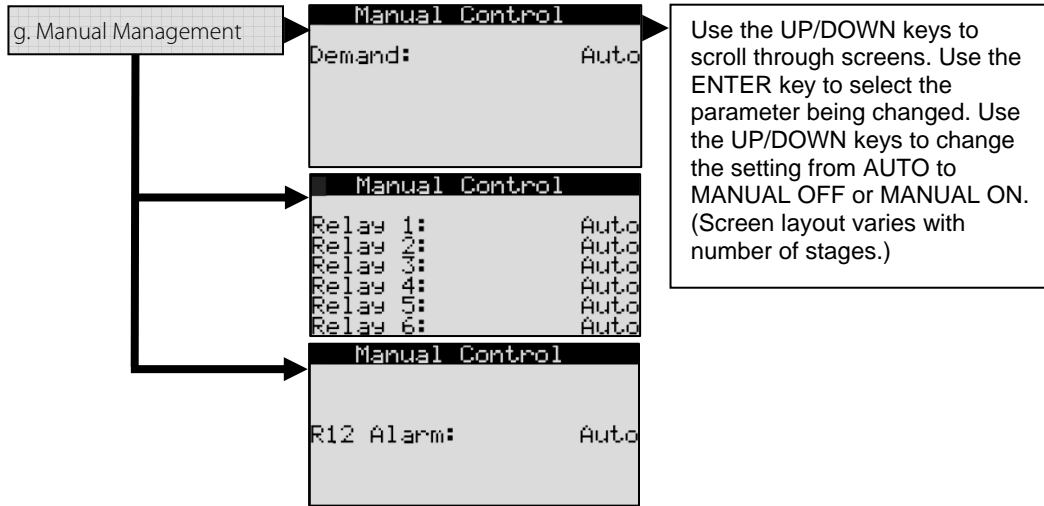
- Working hour set
- Probe adjustment
- Regulation
- User DEV/Change PW1



### 7.3.2 Manual Management Submenu

To access the "Manual Management Submenu,"

- Scroll through the "Service Submenu."
- Press ENTER when "Manual Management Submenu" is highlighted.
- Input the password.

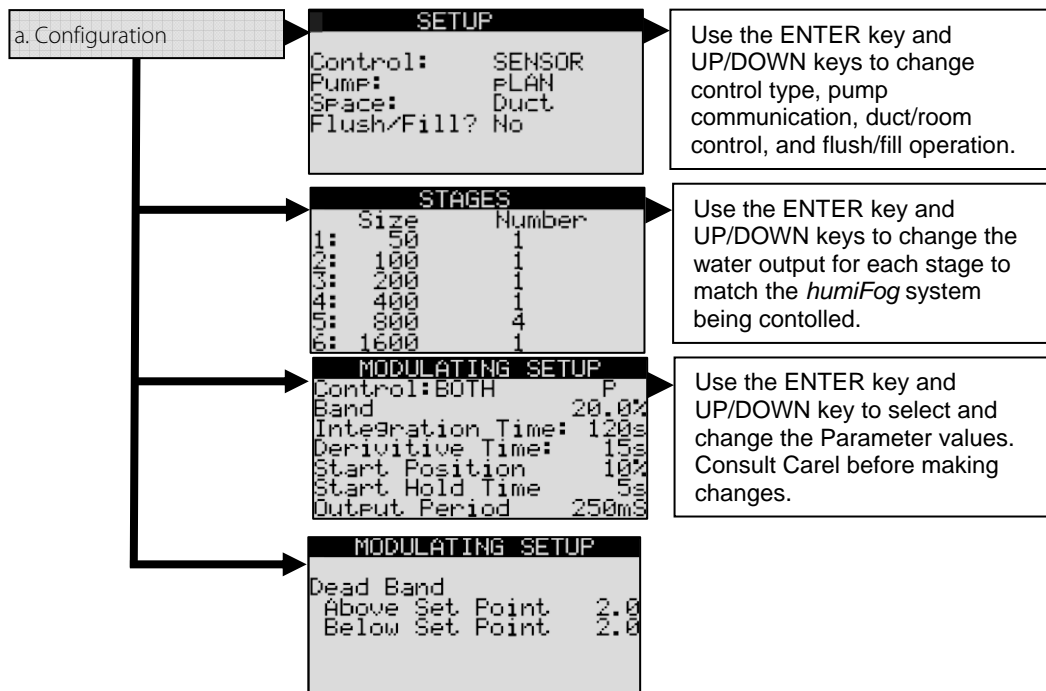


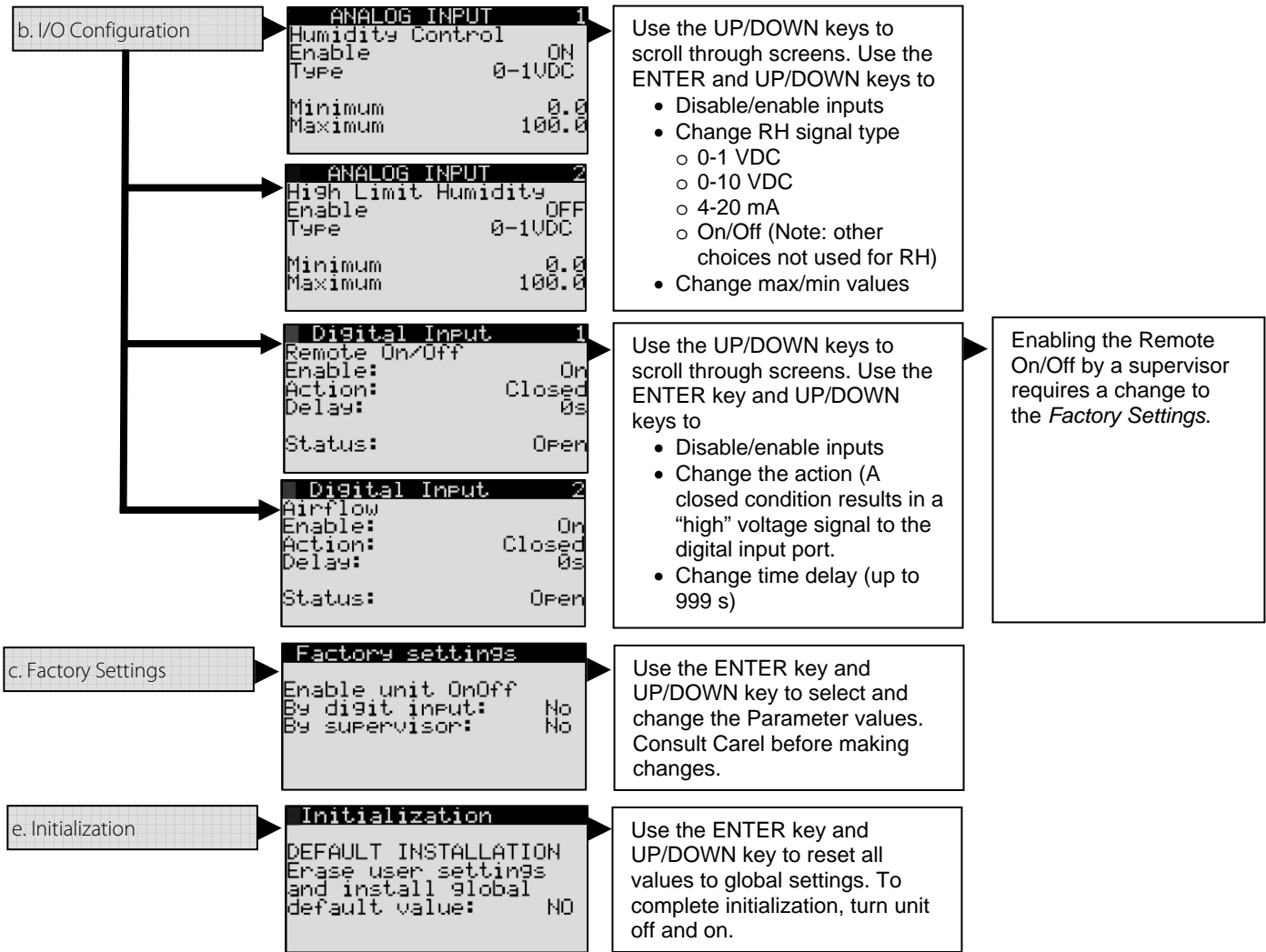
## 7.4 MANUFACTURER SUBMENU

To access the "Manufacturer Submenu," scroll through the "Main Menu" and press ENTER when highlighted. The settings in the "Manufacturer Submenu" are password-protected. Unauthorized users should contact their Carel representative before accessing the "Manufacturer Submenu."

List of Manufacturer Submenu selections: (Use the UP/DOWN arrows to scroll through this list. Selection "d" is not available.)

- Configuration
- I/O Configuration
- Factory Settings
- Initialization



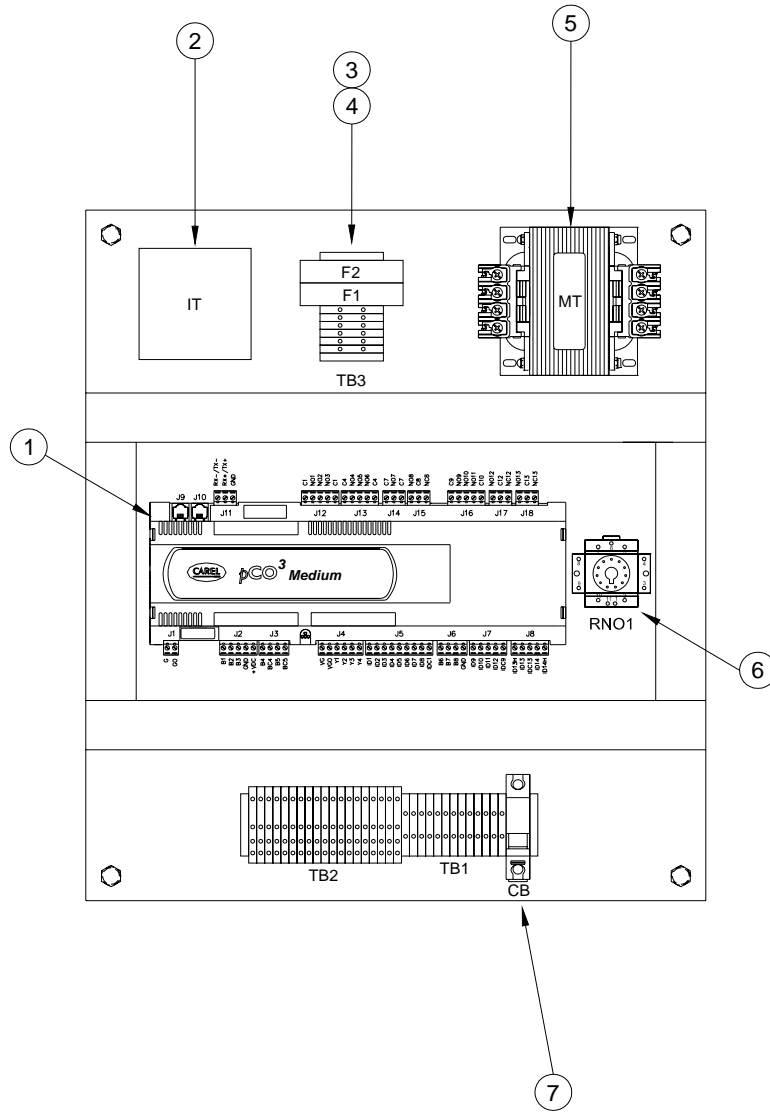


## 8. WIRING DIAGRAMS

### 8.1 SEE SPECIFIC DIAGRAM(S) PROVIDED WITH UNIT.

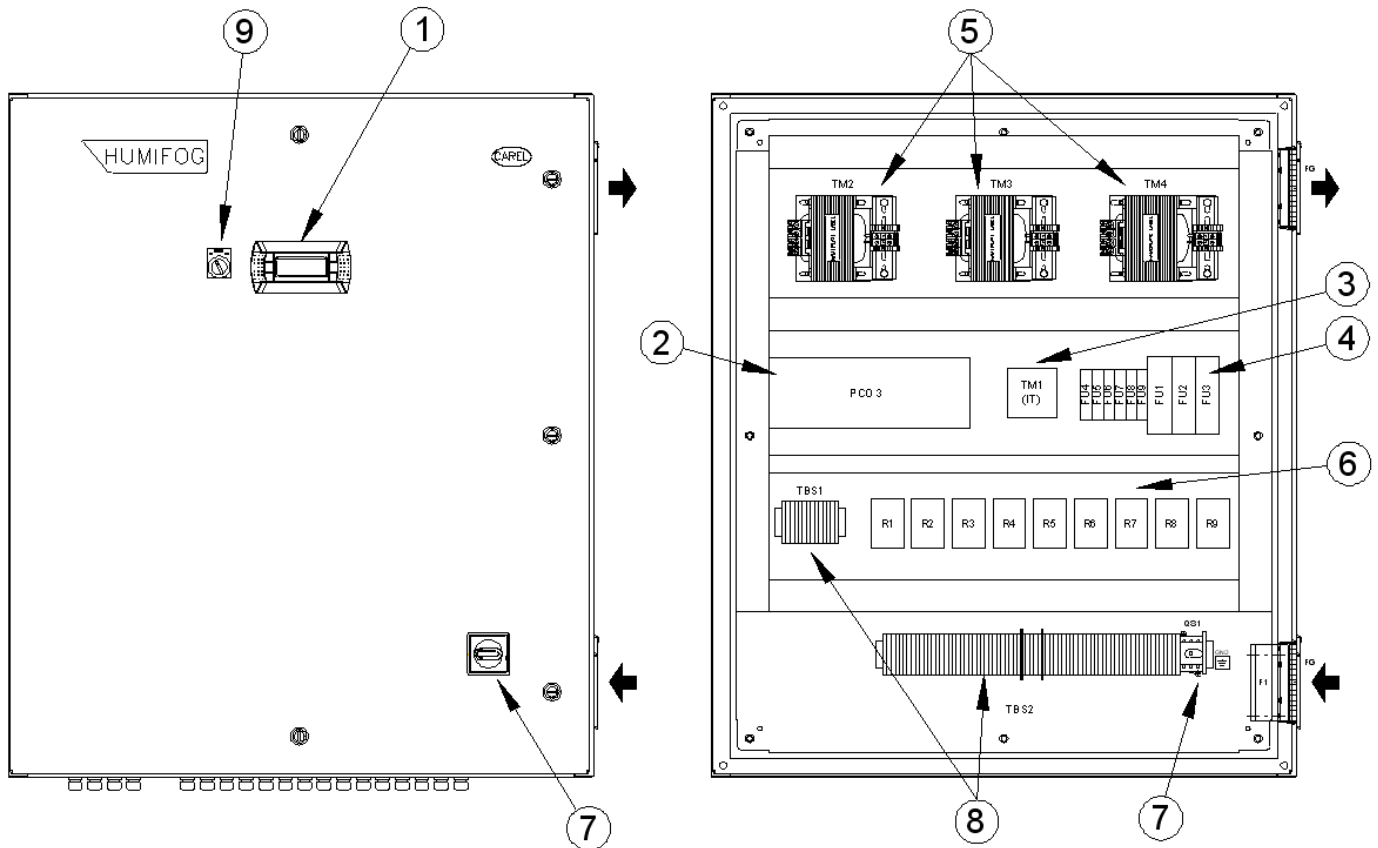
## 9. REPLACEMENT PARTS

### 9.1 SEE SPECIFIC MATERIAL LIST(S) PROVIDED WITH UNIT.



*Tab. 8.1  
Typical Small Zone Control Cabinet*

Item	Description	Part Number
1	CAREL PCO3 MEDIUM CONTROLLER	CONTACT CAREL
2	ISOLATION TRANSFORMER	CONTACT CAREL
3	FUSE F1 – 30A CLASS CC	CONTACT CAREL
4	FUSE F2 – 3A CLASS CC	CONTACT CAREL
5	MAIN CONTROL TRANSFORMER	CONTACT CAREL
6	DRAIN RELAY	CONTACT CAREL
7	CIRCUIT BREAKER	CONTACT CAREL
-	CAREL PGD DISPLAY	PGD1000FW0



Tab. 8.2  
Typical Large Zone Control Cabinet

Item	Description	Part Number
1	CAREL PGD DISPLAY	PGD1000FW0
2	CAREL PCO3 MEDIUM CONTROLLER	CONTACT CAREL
3	ISOLATION TRANSFORMER TM1	CONTACT CAREL
4	FUSE FU1, FU2: CLASS J 35A	CONTACT CAREL
	FUSE FU3: CLASS J 45A	CONTACT CAREL
	FUSE FU4: MIDGET 3A	CONTACT CAREL
	FUSE FU5: CLASS CC 1A	CONTACT CAREL
	FUSE FU6, FU7: CLASS CC 15A	CONTACT CAREL
	FUSE FU8: CLASS CC 20A	CONTACT CAREL
	FUSE FU9: MIDGET 1A	CONTACT CAREL
5	TRANSFORMER TM2, TM3: 750VA	CONTACT CAREL
	TRANSFORMER TM4: 1000VA	CONTACT CAREL
6	RELAY R1, R2, R3, R7: SPDT	CONTACT CAREL
	RELAY R4: DPDT	CONTACT CAREL
	RELAY R5: 3PDT	CONTACT CAREL
	RELAY R6, R8, R9: 4PDT	CONTACT CAREL
7	MAIN DISCONNECT SWITCH	CONTACT CAREL
8	TERMINAL BLOCKS TB1, TB2	CONTACT CAREL
9	CONTROLLER ON/OFF SWITCH	CONTACT CAREL
-	AXIAL FAN	CONTACT CAREL





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