



ACA

ACA – COMPRESSED AIR & WATER ATOMIZING HUMIDIFIER & AIR COOLER



Installation and Operation Manual

Please read and save this manual

Introduction

Foreword

Thank you for purchasing ACA steamOvap compressed air & water atomizing humidifier.

If you have questions or comments please contact us:

www.steamOvap.com

info@steamOvap.com

1-844-357-4477

Intended use

ACA Compressed air & water atomizing is intended exclusively to produce cold mist from water at atmospheric pressure for air humidification.

Operating conditions are specified in this Installation and Operation Manual (IOM).

Operation of this atomizing in the intended use scope requires that all directions and information contained in this IOM are observed.

Any other use or operation outside the above design scope without written authorization from steamOvap may lead to trouble and hazardous conditions and will void warranty.

No alteration or modification to the atomizing must be done without written authorization from steamOvap.

Replacement of any defective components must be done with original component and spare parts from steamOvap representative.

Installation and Operation Manual Limitation

This IOM is intended for trained and qualified personnel and must be applied along with the applicable local codes and regulations.

Any work related to installation or service for this atomizing must comply with local code and regulation regarding safety and prevention of accidents.

End of life disposition

Ensure that **ACA** Compressed air & water atomizing humidifier is empty from water, if not proceed empty all pipes, hoses and valves.

Disconnect **ACA** Compressed air & water atomizing humidifier from power supply, electrical control signal, water main supply, **ACA** Compressed air & water atomizing humidifier can then be removed from the wall or stand.

ACA Compressed air & water atomizing humidifier is an electrical equipment and as such **MUST** not be disposed of in domestic waste.

This humidifier should be returned to the closest steamOvap authorized representative for proper dismantling, recycling and disposition of components according to local regulations.

Table of content

Introduction.....	3
Table of content.....	4
Safety warnings.....	5
Before to proceed to Installation.....	6
ACA Overview.....	7
ACA-Distribution panel Dimensions & weight.....	9
Typical installation in-space overview.....	10
Installation – step 1 ACA Dist. panel positioning & mounting.....	11
Installation – step 2 Water supply installation.....	13
Installation – step 3 Compressed air installation.....	15
Installation – step 5 ACA control panel installation.....	16
Installation – step 6 Control installation.....	17
Verification before start-up.....	18
Configuration & Operation.....	19
Service.....	xxi
Warranty.....	xxii

Safety warnings

section

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General



Risk of electric shock.

Disconnect power supply before installation or service.

For safety and warranty reasons, Installation and service of this humidifier should be carried out by trained and qualified personnel.

Any work related to installation and service of this humidifier must comply with local code and regulation regarding safety and prevention of accidents.

Electrical Warning



Risk of electric shock.

Disconnect power supply before installation or service.

Power supply connection must be done by a trained and qualified electrician.

Water safety warning

Any work related to water supply, drain connection or service of such for this atomizing humidifier must comply with local code and regulation regarding safety and prevention of accidents.

Water supply connection must be done by a trained and qualified plumber.



Risk of disease: ACA atomizing humidifier should be connected to a clean,

wholesome mains water supply. Installer and user are responsible to ensure that the water supply system complies with local regulations in regards to Legionella

prevention and any other microbiological growth prevention,

Building owner and end user should carry-out a risk analysis and put in place a prevention plan to avoid any microbiological growth such as legionella.

Compressed air safety warning

Any work related to compressed air connection or service of such for this atomizing humidifier must comply with local code and regulation regarding safety and prevention of accidents.

Compressed air supply connection must be done by a trained and qualified plumber.

Others



Risk of flooding. In order to avoid any risk of flooding steamOvap recommends a Hi limit humidity switch installed in the air duct downstream of the distribution ramp.

Risk of freezing. Plan an anti-freeze system in case of installation in a location that would be exposed to outside conditions and susceptible of freezing.

Risk of malfunction. Do not block outlet(s).

Before to proceed to Installation

section**1**

Please read this Installation and Operation manual before to proceed to the Installation

Receiving & Unpacking

1. Upon receipt verify that packaging is complete and not damaged.
In case of damage, and/or missing boxes advise immediately the carrier by writing a note on the waybill.
2. Verify that model of the humidifier matches the purchase order and that all accessories are included.
3. Any missing item should be reported as soon as possible to steamOvap or its representative and within 5 business days after receipt.
steamOvap will not assume any responsibility for missing item after this delay.
4. Proceed carefully to unpacking, and check that the humidifier and its accessories are not damaged. in case of damage please proceed as for point 3

Included in standard delivery of ACA Compressed air & water atomizing humidifier

1. ACA Compressed air & water atomizing humidifier
2. Mounting brackets
3. ACA Controller
4. This IOM

Depending on model

5. In duct manifold
6. Compressed air hose
7. Water hose
8. RH% sensor

ACA Overview

ACA Compressed air & water atomizing humidifier

section 2



Figure 1 – ACA Overview

ACA product designation & name plate


steamOvap technologies inc.			
ACA Compressed air & water atomizing humidifier			
MODEL	ACA-S2		
S/N	YY-DDDXXX		
CAPACITY	26lb/h	VOLTAGE	24Vdc
		POWER	15W
		www.steamOvap.com	

Figure 2 – ACA Name plate

Product designation

Type	Model	Nozzle qty	Capacity	Comment
In space	ACA-S2	2	26lb/h	
In space	ACA-S4	4	53lb/h	
In space	ACA-S6	6	78lb/h	
In duct	ACA-DHPP	1 to 6	13 to 78b/h	
In duct	ACA-NOZZ6	1	13 b/h	Nozzle only
Control panel	ACA-OCUx	n/a	n/a	For 1 or 2 zones

Electrical rating

Type	Model	Nozzle Qty	Capacity	Rated power	Voltage & nb of phase	Rated current
In-space	ACA-S2	2	26lb/h	15W	24Vdc	0.6A
In-space	ACA-S4	4	53lb/h	15W	24Vdc	0.6A
In-space	ACA-S6	6	78lb/h	15W	24Vdc	0.6A
In duct	ACA-DHPP	1 to 6	13 to 78b/h	15 W	24Vdc	0.6A
-	ACA-OCUx	-	-	15W	120Vac/1p	0.13A

Compressed air requirement

Type	Model		Capacity	Air pressure	Air consumption
In-space	ACA-S2	2	26lb/h	87 to 100PSI	4 cfm @ 87PSI
In-space	ACA-S4	4	53lb/h	87 to 100PSI	8 cfm @ 87PSI
In-space	ACA-S6	6	78lb/h	87 to 100PSI	12 cfm @ 87PSI
In duct	ACA-DHPP	1 to 6	13 to 78lb/h	87 to 100PSI	2 to 12 cfm @ 87PSI

Water supply requirement

Pressure:

40 to 60PSI [2.8 to 4bar] hammer free

Temperature:

37 to 68°F [3 to 20°C]

Untreated water requirement

Water supply conductivity: 1 to 156µS/cm
 Water supply TDS: 0 to 100 ppm TDS max
 Water supply PH: 6.5 to 7.5
 Water supply chloride content: 0 to 50ppm

Pure water requirement

Water supply conductivity: 0.1 to 0.5µS/cm
 Water supply TDS: 0.02 to 0.2 ppm TDS min
 Water supply PH: 6.5 to 7.5

ACA-Distribution panel

Dimensions & weight

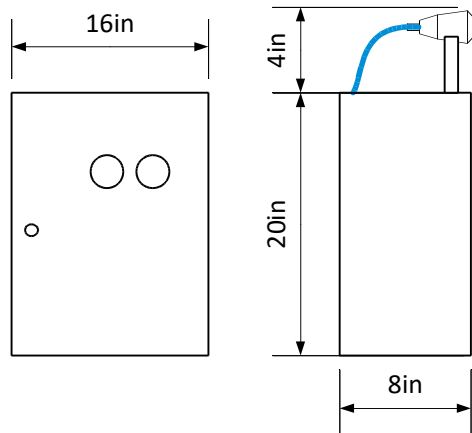


Figure 3 – ACA-Sx dimensions

Model	Capacity	Nb Nozzle	Dimensions			Weight
			W	H	D	
ACA-S2	26lb/h	2	16in	24in	8in	24lb [11kg]
ACA-S4	53lb/h	4	16in	24in	8in	26lb [13kg]
ACA-S6	78lb/h	6	16in	24in	8in	28lb [13kg]
ACA-DHPP	1 to 6	13 to 78lb/h	16in	20in	8in	22lb [10kg]

ACA maximum ambient conditions & IP rating

Temperature: 38°F to 113°F [+3 to +45°C]

Relative Humidity: 95%RH max (non condensing)

Ingress Protection for **ACA** standard enclosure: IP42

Typical installation in-space overview

section 3

General

1. Installation of this atomizing humidifier should be carried out by trained and qualified personnel.
2. Any work related to installation of this atomizing humidifier must comply with local code and regulation regarding safety and prevention of accidents.



WARNING. Risk of electric shock.

Power supply must be disconnected during installation.

Main power should be connected only after all installation steps have been completed and properly verified.

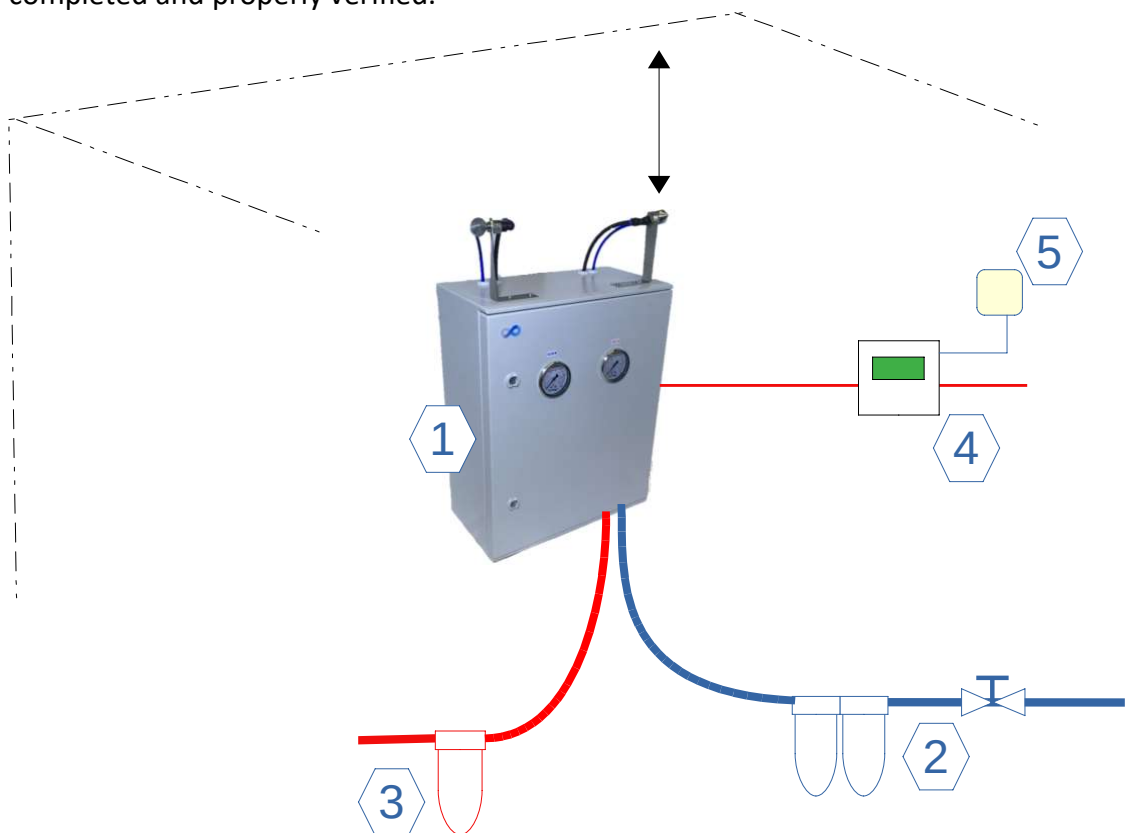


Figure 3 –ACA typical installation

installation steps :

- Positioning& mounting of ACA in space distribution panel
- Water supply installation
- Compressed air installation
- ACA control panel installation
- RH% control installation

Installation – step 1

ACA Dist. panel positioning & mounting

General guidelines for positioning

ACA in space distribution panel should be positioned so that:

- Unintentional wetting cannot occur on equipment, material or building surface or people. A ceiling height of 9ft [2.7m] minimum is recommended.
- Humidifier is easily accessible for service



CAUTION. Risk of flooding. Ensure that the space where **ACA** Compressed air & water atomizing humidifier will be installed is equipped with floor drain. In case of no floor drain is available; installation of a water leak detector is required in order to prevent any flooding in case of abnormal operation or service.

ACA Compressed air & water atomizing humidifier should be installed in a well-ventilated and dry environment.

If local is subject to below freezing point temperature, anti freezing disposition such as heat trace on any water carrying device and pipe is required.

Clearances

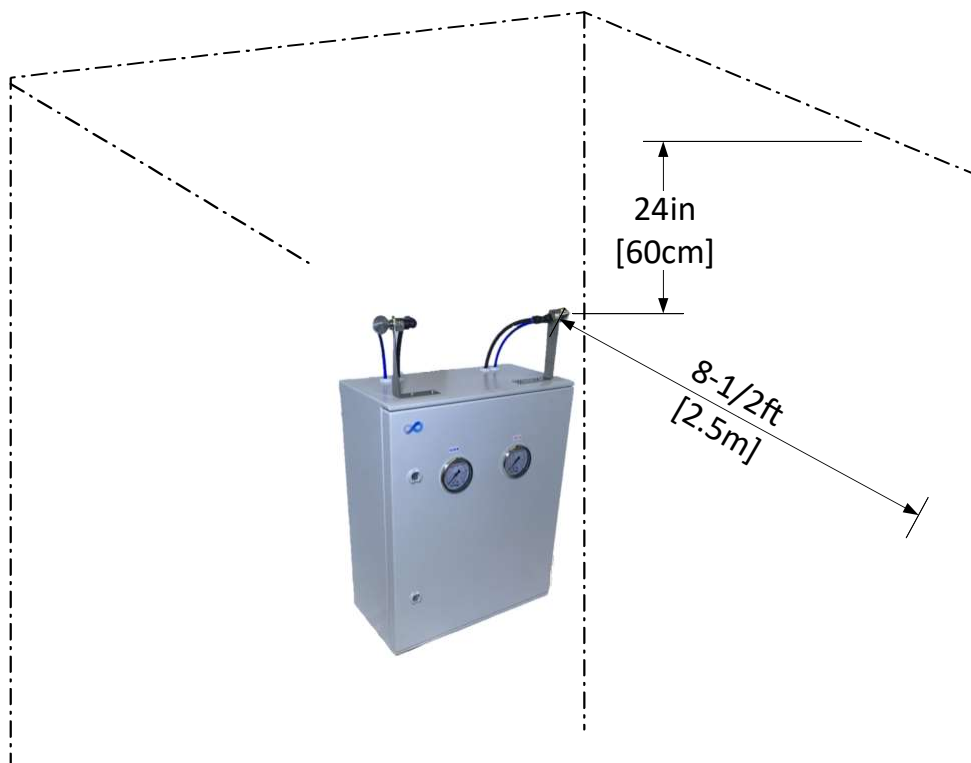


Figure 4 – minimum clearances

Clearance guidelines

There is no minimum clearance on both side of the ACA distribution panel, but it is a good practice to have a clearance of 4 to 8 in [100 to 200mm] for ease of installation and service. Allow a minimum clearance of 24in [60cm] with ceiling.

Front clearance of 8-1/2ft [2.5m] in front of nozzle is required to avoid any unintentional wetting on surfaces, equipment, wall, or people.

It is a good practice to install ACA in space distribution panel where ceiling height is 9ft [2.7m] minimum

Mounting holes positions

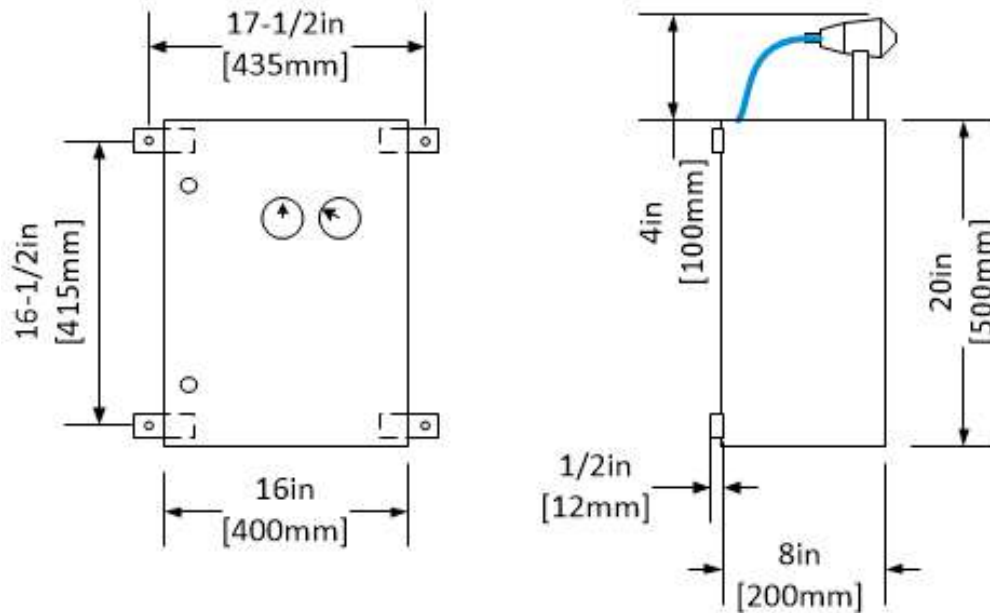


Figure 5 – ACA distribution panel mounting holes position

General guidelines for Mounting



CAUTION. Risk of malfunction. ACA distribution panel must be levelled in X & Z axis.

Installation on wall

1. Verify that wall structure and strength is appropriate to support the weight of the ACA distribution panel.
2. Mark the wall or support according to the holes location as per the above figure , and drill 4 holes to the wall or support as per the size of anchors and/or screws.
3. Use anchors of sufficient size (at least 1/4in [6mm]). Insert those anchors and the 2 top screws. Then hung the **ACA** distribution panel onto the 2 top screws. Ensure that the humidifier is properly levelled.
4. Insert the 2 bottom screws and tighten them up. Re verify the level in the 2 direction X and Z axis.
1. Tighten the 4 screws.

Installation – step 2

Water supply installation

Water supply specification & quality:

Water supply pressure: 40 to 60PSI [2.8 to 4bar] – hammer free

Water supply temperature: 37 to 68°F [3 to 20°C]

ACA Compressed air & water atomizing humidifier can accept a wide range of water quality. **Important:** the use of untreated water will lead to fine particles deposit with the atomized water, resulting in fine powder deposit in surrounding surfaces or air filter.

ACA should be connected to a clean, wholesome mains water supply. Installer and user are responsible to ensure that the water supply system complies with local regulations in regards to Legionella and any other microbiological growth prevention,

A 1µm sediment filter and a silver ions antibacterial cartridge or UV sterilizer must be installed on the water supply line.

Untreated water requirement	Pure water requirement
Water supply conductivity: 1 to 156µS/cm	Water supply conductivity: 0.1 to 0.5µS/cm
Water supply TDS: 0 to 100 ppm TDS	Water supply TDS: 0.02 to 0.2 ppm TDS
Water supply PH: 6.5 to 7.5	Water supply PH: 6.5 to 7.5
Water supply chloride content: 0 to 50ppm	

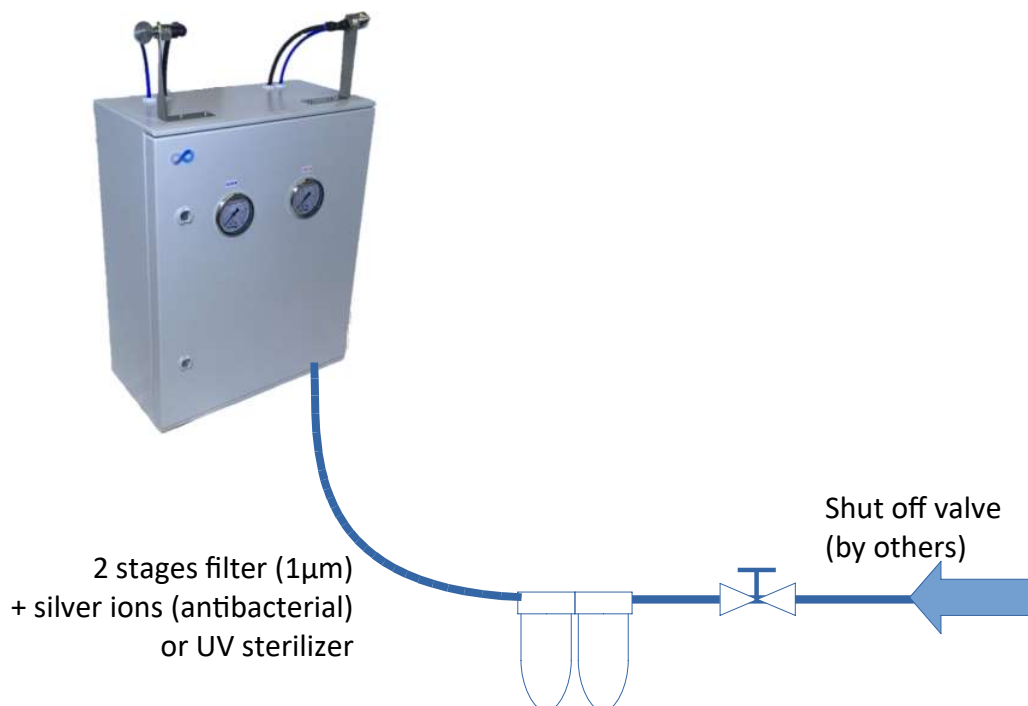


Figure 6 – water supply connection

Water supply connection:

1. Install a manual; shut off valve on the water main line.
2. If ACA distribution panel is supplied with tap water it is recommended to install a 5µm sediment filters on the line. This filter will protect internal water components from clogging.
3. ACA atomizing humidifier is supplied with 2 stages filters 1µm & antibacterial silver ions cartridge. Install this pre-filter on the water main line downstream of the manual shut-off valve.
4. Connect water supply to the 3/8in compression fitting connection. located at the bottom of ACA distribution panel and secure the water line.
5. Ensure that the water line is hammer free and leak free.

Important: In case ACA atomizing humidifier is Off for more than 24hours, user should be able to isolate the water main supply line and drain the ACA water supply line in order to avoid any stagnant water and associated risk of legionella growth.

Installation – step 3

Compressed air installation

Compressed air specification & quality:

Water supply pressure: 87 to 100PSI [6 to 7bar]

Air supply should be clean, dry and free from oil.

In case dirt or oil is contained in air supply, an air filter and oil separator should be installed.

Any oil collector should be connected to an oil drain.

To prevent bacterial growth, compressed air piping should be non-corrosive and any jointing material should be inorganic.

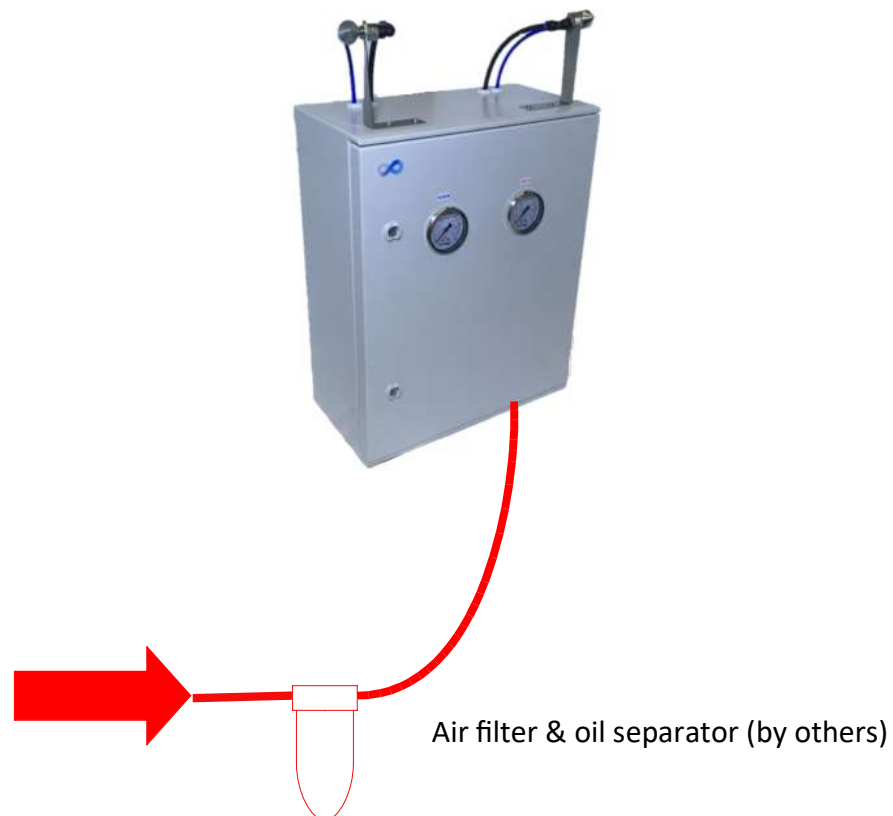


Figure 7 Compressed air installation

Compressed air connection:

6. Install a manual shut off valve on the compressed air line.
7. Install an air filter and oil separator on the line. This filter will protect ACA internal component and avoid spraying oil in the air.
8. Connect compressed air to the universal quick coupling M type 1/4 connection. located at the bottom of ACA distribution panel and secure the compressed air line.
9. Ensure that the compressed air line is leak free.

Installation – step 5

ACA control panel installation

Electrical Warning



Risk of electric shock.

Disconnect power supply before installation or service.

General guidelines for ACA control panel positioning

ACA control panel should be positioned so that:

- Unintentional wetting cannot occur the control panel
- Control panel is easily accessible for set-up and control of the ACA distribution panel and atomizing
- It is protected from sun and rain
- Maximum length of cable to ACA distribution panel and to RH% & Temp sensor is 30ft [9m].

Power supply specification:

ACA Control panel is supplied with power cord and standard 120Vac plug.

ACA Distribution panel is supplied from the ACA control panel at extra low voltage 24Vdc

refer to below diagram for electrical connection of ACA distribution panel.

ACA electrical rating

Type	Model	Rated power	Voltage & nb of phase	Rated current
-	ACA-OCU	15W	120Vac/1p	0.13A
In-space	ACA-S2, S4, S6, or DHPP	15W	24Vdc	0.6A

Installation – step 6

Control installation

General guidelines for control installation

RHS-P420 should be placed in a location where the air is properly mixed and representative of the air condition in the room

Connect ACA-Sx or DHPP and RHS-P420 according to below diagram

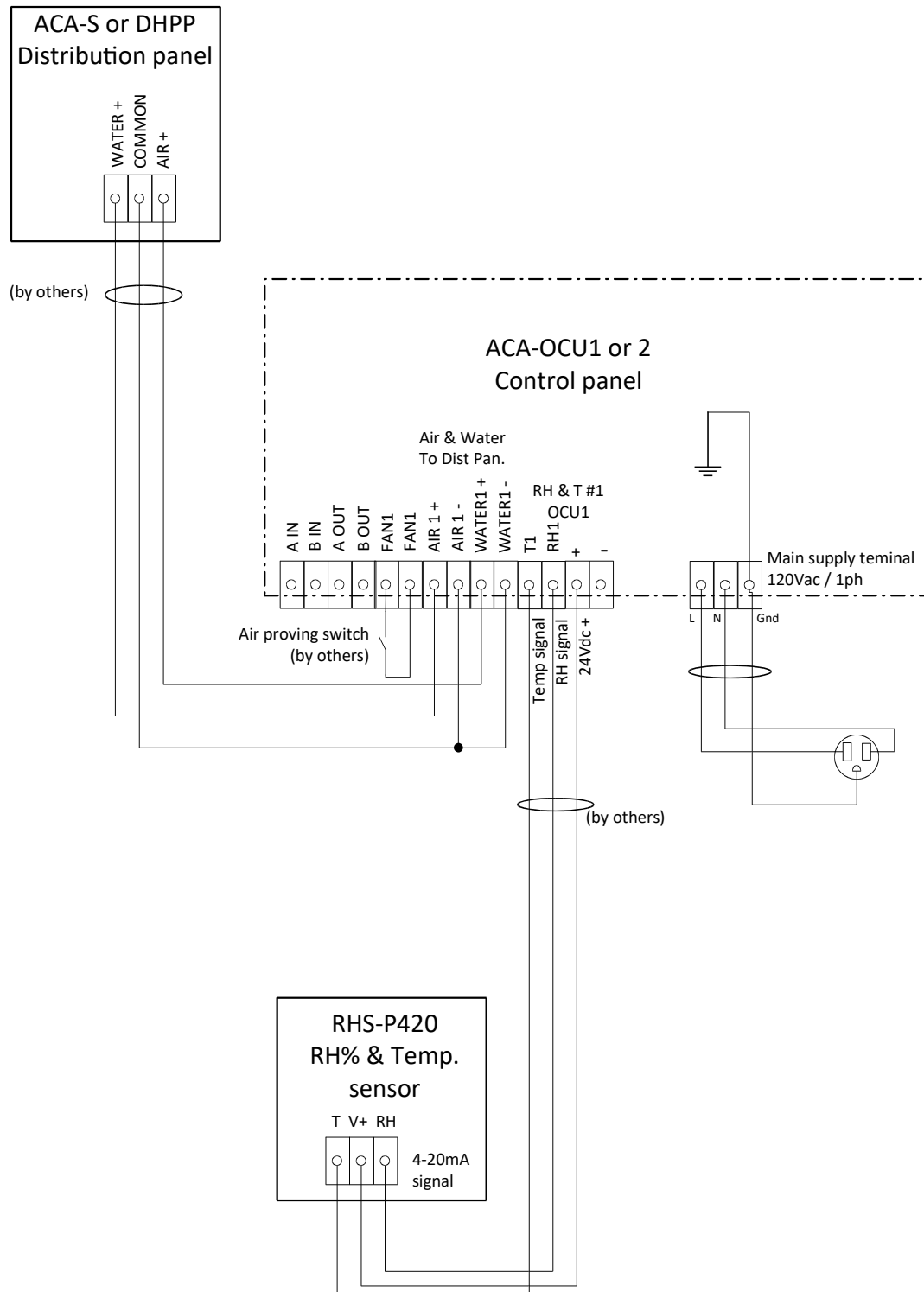


Figure 8 – Control connection

Verification before start-up

section 4

Warning

For safety and warranty reasons, Installation and service of this **ACA** atomizing humidifier should be carried out by trained and qualified personnel.

Any work related to installation and service of this atomizing humidifier must comply with local code and regulation regarding safety and prevention of accidents.



Risk of electric shock.

Disconnect power supply before verification.



Risk of flooding: Ensure that the space where ACA Compressed air & water atomizing humidifier will be installed is equipped with floor drain.

In case of no floor drain is available; installation of a water leak detector is required in order to prevent any flooding in case of abnormal operation or service.

Risk of damage due to wetting : Plan for proper clearance in front and below ACA distribution panel and nozzle in order to avoid any unintentional wetting on surfaces, equipment, wall, or people.

Risk of freezing. Plan an anti-freeze system (heat trace) in case of installation in a location that would be exposed to conditions susceptible of freezing.

Risk of malfunction. Do not block nozzle orifice(s).

Check list

- **Mounting**
 - Check mounting to verify that the **ACA** distribution panel is level and securely supported before filling with water.
 - Verify that **ACA** control panel and RH% and /or Temperature sensor are installed and connected.
- **Water supply**
 - Verify that all piping connections have been completed as recommended and that water pressure is available.
 - Ensure that 2 stages Pre-filter 1µm + anti-bacterial silver ions cartridge is installed.
 - Once water shut off valve is open, verify for any possible leak.
- **Compressed air**
 - Verify that compressed air piping have been completed that Air pressure is available.
 - Ensure that an air filter and oil separator have been installed on the line.
 - Once Air shut off valve is open, verify for any possible leak.
- **Power supply**
 - Verify that 120Vac electrical is available for the supply of **ACA** control panel
 - Check that **ACA** distribution panel and RH% and/or Temperature sensor have been wired to the **ACA** control panel.
- **Control circuit**
 - Verify that safety controls such as Hi limit humidistat and/or enable switch and/or floor leak detector have been connected.
 - Verify that RH% and Temperature sensor is connected to the control terminals.

Once all above verification has been completed and found satisfactory you can power up the **ACA** atomizing humidifier.

Configuration & Operation

section

5

Control panel overview

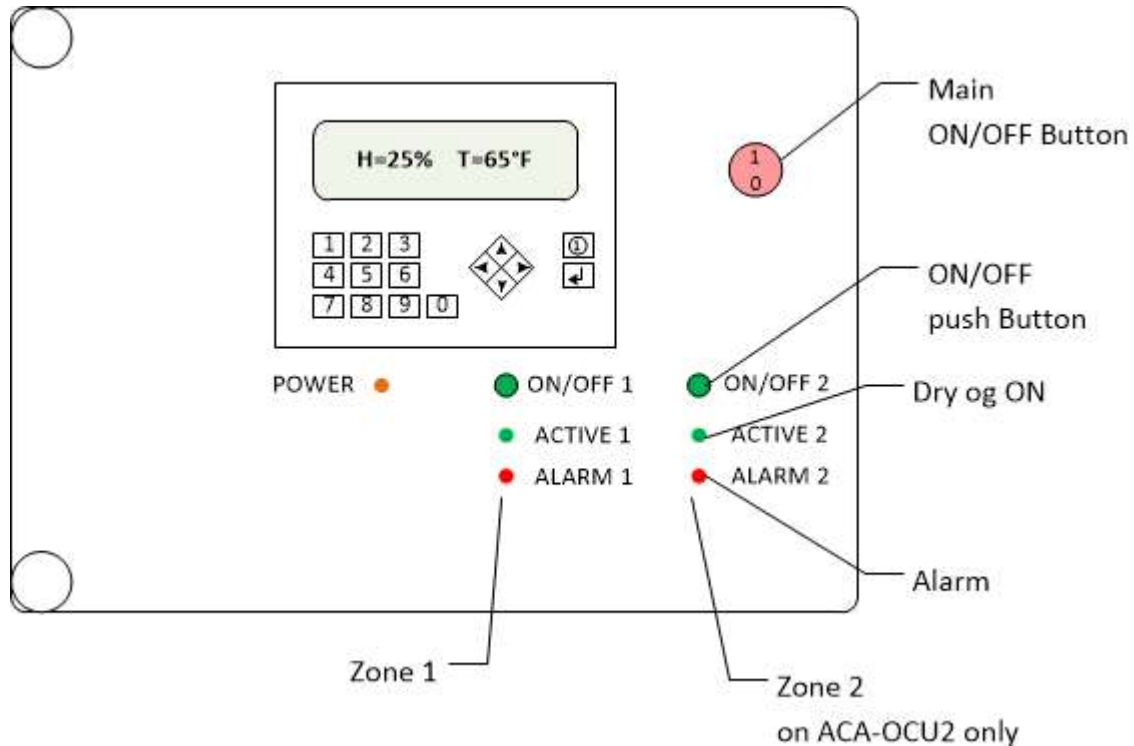


Figure 9 – Control panel

Control panel allows you to set-up and control the ACA Compressed air & water atomizing humidifier.

Control panel standard set-up

Steps	Screen	Description
01	H=25% T=65°F	When powered the display will indicate actual RH% and Temperature.
02	Set Point=50%	By pressing Right arrow → LCD display will indicate the RH% set point
03	P=30/40 Sec	Pressing right arrow → again will display the on/off pulse of the air and water valves
04	User Settings Password: 12345	Pressing right arrow → will display the password request to enter programming mode

Programming mode

Steps	Screen	Description
	Default password is 12345	Press enter ↵ once value is entered
A	<div>1. User Mode</div> <div>2. Tech Mode</div>	Press 1, for User mode
B	<div>Set Point:</div> <div>45%</div>	Enter desired Set point and press enter
C	<div>Room Status:</div> <div>"With Pulses"</div>	You can select by pressing the down arrow ↓ between: "No" or "with", then press enter ↵ Pulses are recommended for smaller space
D	<div>Room Pulse ON:</div> <div>25 Sec</div>	If With pulses is selected enter the Pulse ON period in seconds
E	<div>Room Pulse OFF:</div> <div>35 Sec</div>	Enter then the Pulse OFF period in seconds
F	<div>Delay ON:</div> <div>0 Sec</div> <div>Delay OFF:</div> <div>15 Sec</div>	Air valve closing should be delayed by 10 to 20 seconds after water valves this period can be adjusted depending on the water hose length, longer the hose length is longer the delay should be. This delay can be set-up in the technician mode. The Delay On should be set a 0sec, Delay Off will delay the closing of the Air valve to the desired valu.
	<p>Once all settings have been entered, you should put the control panel off by switching the main switch to Off for few seconds and put it back On</p> <p>Once back On, press for few second on the button "i" until the "SYSTEM" is displayed.</p> <p>Press enter ↵, then press left arrow ← until "RESET" is displayed, press again enter ↵.</p> <p>Controller will perform a reset. Once reset is complete, press on the right arrow 2 times to verify that the setting are recorded.</p>	

Make sure that the flip switch "A/M" located inside the control panel beside the control terminal is on the "A" position for Automatic

Operation mode

Once Control panel is ON, press on the ON/OFF green push button to put the ACA atomizing humidifier on Automatic mode.

Service

ACA Air & water atomizing humidifier does not require calibration or mechanical adjustment and is maintenance free.



Risk of disease: ACA atomizing humidifier should be connected to a clean, wholesome mains water supply. Installer and user are responsible to ensure that the water supply system complies with local regulations in regards to Legionella prevention and any other microbiological growth prevention, Building owner and end user should carry-out a risk analysis and put in place a prevention plan to avoid any microbiological growth such as legionella.

Some regular operation verification are recommended :

1. Regularly (daily) verify that the nozzle dry fog production is non wetting.
2. In case RO water pre-treatment is installed, replace PP pre filter, Carbon filter and RO membrane at least once a year.
3. Replace annually the 1µm water filter and Antibacterial silver ions cartridge. If a water supply water UV sterilizer is installed, replace the UV lamp according to manufacturer's recommendation.
4. Verify weekly the oil separator and air filter in the compressed air line, if oil separator requires to be drained more often. Better air filtration is required.
5. Depending on required RH% or Temperature control accuracy, annual calibrate the RH % and Temperature sensor (RHS-P420)
6. In case the ACA atomizing humidifier is Off for more than 24hours, isolate the water main supply line and drain the ACA water supply line in order to avoid any stagnant water and associated risk of legionella growth.

Warranty

steamOvap technologies inc. (hereinafter referred to as **steamOvap**), warrant for a period of 3 years after installation, that steamOvap manufactured and assembled products are free from defects in material and workmanship; provided that a start-up report with no default has been done and signed by the authorized **steamOvap** local representative. Otherwise the warranty period is reduced to 18 months.

ACA atomizing nozzle carries a life time warranty. Life time warranty does not cover atomizing flow capacity accuracy. Furthermore life time warranty will be voided in case water quality (max TDS contained in water) is not conforming to the specification indicated in this IOM.

steamOvap's obligations and liabilities under this warranty are limited to furnishing replacement parts to the customer, F.O.B. **steamovap's** factory, providing the defective part(s) is returned freight prepaid by the customer. Parts used for repairs are warranted for the balance of the term of the warranty on the original product or 90 days, whichever is longer.

No liability whatsoever shall be attached to **steamOvap** until said products have been paid for in full and then said liability shall be limited to the original purchase price for the product. Any further warranty must be in writing, signed by an officer of **steamOvap**.

steamOvap makes no warranty and assumes no liability unless the equipment is installed in strict accordance with installation manual in effect at the date of purchase and by qualified and trained personnel and in accordance to local codes and regulations.

steamOvap makes no warranty and assumes no liability whatsoever for consequential damage or damage resulting directly from misapplication, incorrect sizing or lack of proper maintenance of the equipment.

steamOvap retains the right to change the design, specification and performance criteria of its products without notice or obligation.

In case of litigation or dispute arising, all parties agree that the exclusive venue for any litigation shall be vested with a court of competent jurisdiction located in the Judicial District of Montreal, Quebec, Canada.



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