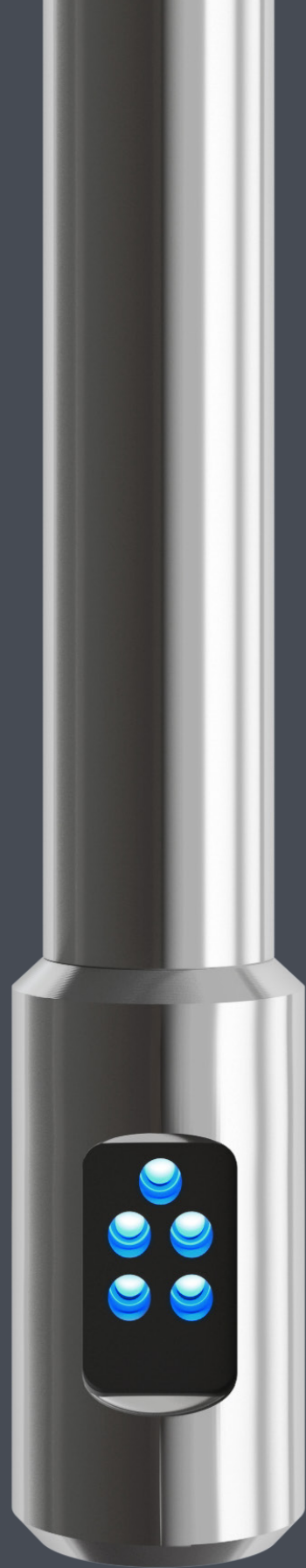


# Installation Manual

V4 SERIES DEMAND CONTROL  
KITCHEN VENTILATION SYSTEM

**ecoAzur<sup>®</sup>**

*intellinox*



## Safety Instructions and Notes

Warnings caution you about conditions which can result in serious injury or death and/or damage to the equipment. They also tell you how to avoid the danger. The warning symbols are used as follows:



### Electricity warning

Warns of hazards from electricity which can cause serious injury and/or damage to the equipment.



### General warning

Warns about conditions, other than those caused by electricity, which can result in physical injury and/or damage to the equipment.



**WARNING!** The ECOAZUR® system and related equipment should ONLY be installed by qualified personnel. Electrical wiring and connections should be done by a qualified electrician.



**WARNING!** The ECOAZUR® system and related equipment should be properly grounded to provide protection against electric shocks.



**WARNING!** More than one circuit disconnect switch may be required to de-energize the equipment before servicing. Dangerous voltage is present when input power is connected to the ECOAZUR® processor panel.



**WARNING!** Dangerous voltage is present when input power is connected to VFDs. After disconnecting the supply, wait at least 5 minutes (to let the intermediate circuit capacitors discharge) before removing the cover.



**WARNING!** Legal regulations and regulations issued by authorities must be observed during installation.



**WARNING!** The ECOAZUR® system will start up automatically after an input voltage interruption. Dampers and exhaust fans may automatically be energized.



**WARNING!** The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user. Never attempt to repair a malfunctioning ECOAZUR® part, including any other related equipment such as VFDs (Variable Frequency Drives), dampers, motors, fans, etc.; contact your local Authorized Service Center for repair or replacement.



**WARNING!** Do not stare at the ECOAZUR® optic sensor light.



**WARNING!** In case of occurrence of any problem please call your authorized service center.

Read and understand instructions provided with any other equipment related to the ECOAZUR® DCKV control system. For more information, concerning your ECOAZUR® DCKV control system, contact your authorized service center.

## General Instructions

The purpose of this Installation Manual is to provide instructions and illustrations for installing the ECOAZUR® DCKV (Demand Control Kitchen Ventilation) system and its components in the context of a commercial or institutional kitchen. Should additional information be required, the following documents may be referenced:

- Product Specifications (E4PS-EN) – Product design characteristics
- User's Manual (E4UM-EN) – Operation and maintenance manual
- Programming Manual (E4PM-EN) – Parameter setup & troubleshooting
- ECOAZUR® Electrical Diagrams – Project specific wiring instruction

The ECOAZUR® DCKV system usage is limited to the following application:

- Commercial cooking ventilation, including Type 1 and Type 2 hoods (grease hoods / condensate hoods), with or without modulating dampers.
- ECOAZUR® modulating dampers are not fire dampers and should solely be used as an airflow control device with an ECOAZUR® system.

### ECOAZUR® Component ID

<b>AS</b>	ANALOG INPUT MODULE
<b>CT</b>	USER INTERFACE
<b>CU</b>	PROCESSOR
<b>DS</b>	DIGITAL INPUT MODULE
<b>IB</b>	IRIS BLEU® OPTIC SENSOR
<b>MD</b>	MODULATING DAMPER
<b>NE</b>	HOOD NETWORK HUB
<b>PP</b>	PROCESSOR PANEL
<b>PT</b>	PRESSURE SENSOR
<b>TC</b>	OUTPUT MODULE
<b>TT</b>	TEMPERATURE SENSOR

Installation and commissioning of the ECOAZUR® system should be performed by a qualified personnel who is familiar with proper safety precautions, and who has read and understood the manufacturer's instructions.

The ECOAZUR® control system interfaces with third-party devices such as VFDs, fans and other equipment. Refer to manufacturer specific documentation and instructions for your safety and for proper operation and installation of these equipment.

Legal regulations and regulations issued by authorities must be observed, notably in the USA:

- NFPA 96 – Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
- NFPA 70 – National Electrical Code (NEC)

The installing contractor is responsible to ensure that all national and local codes and regulations are met, in terms of system installation, programming and operation. Improper installation poses serious risk of injury due to electric shock and other potential hazards.

The installation instructions may indicate typical component locations for reference only. Project specific instructions on the ECOAZUR Electrical Diagrams must be followed.

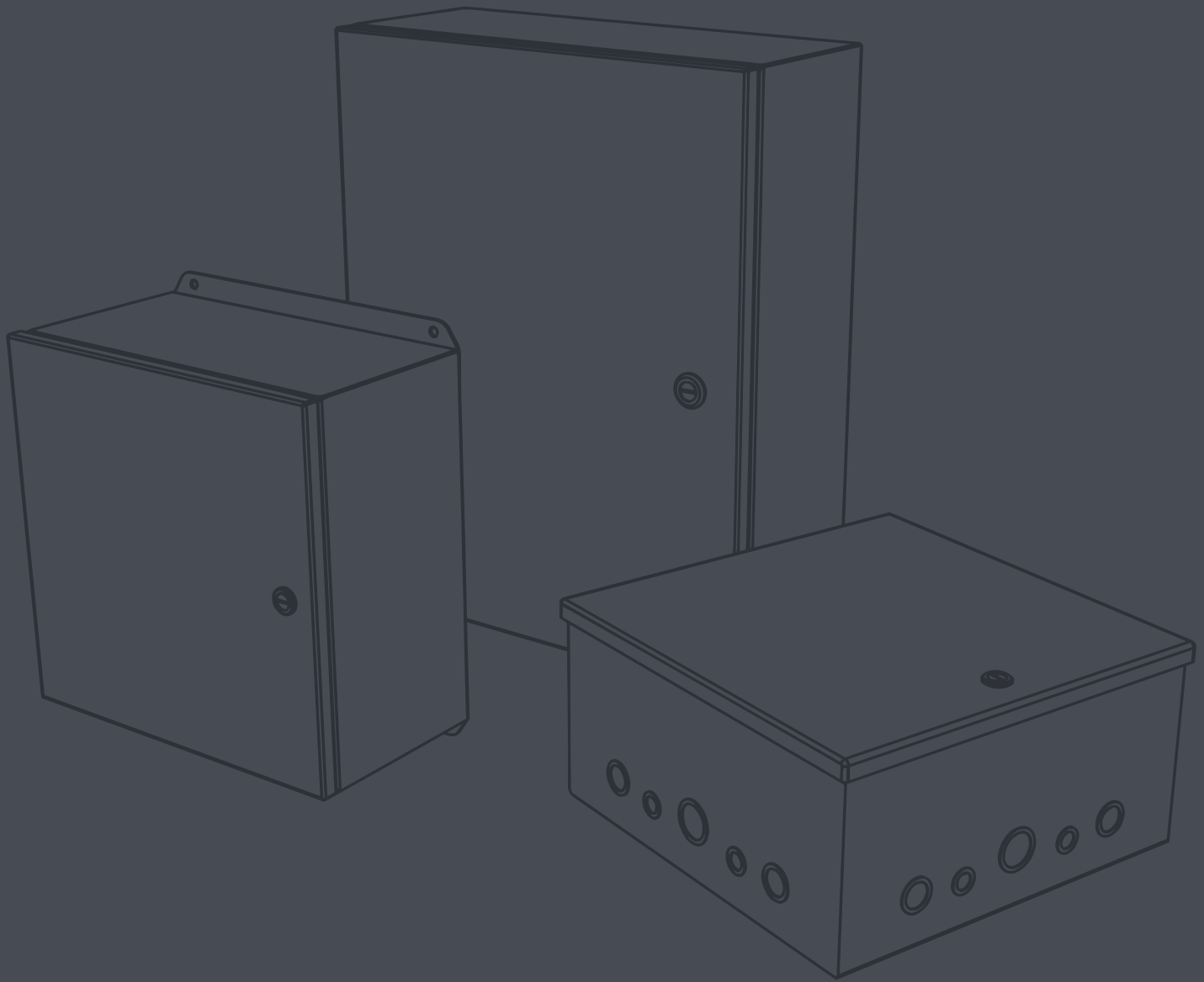
Only ECOAZUR® V4NF series network cables may be used to interconnect hood network components.

Minimum ECOAZUR® requirements concerning all other low voltage control cables are the following: 18 AWG, 75°C (167°F), shielded and plenum (FT6) rated.

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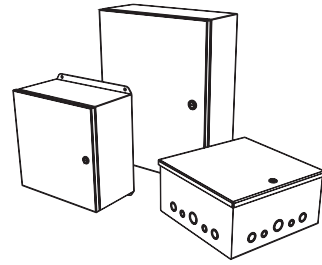
# PROCESSOR PANEL & EXPANSION PANEL

V4PP & V4EP

Installation Manual

**ecoAzur**<sup>®</sup>

# V4PP & V4EP PROCESSOR PANEL & EXPANSION PANEL



**REQUIRED TOOLS**

(According to conduits dimensions)

1/8"

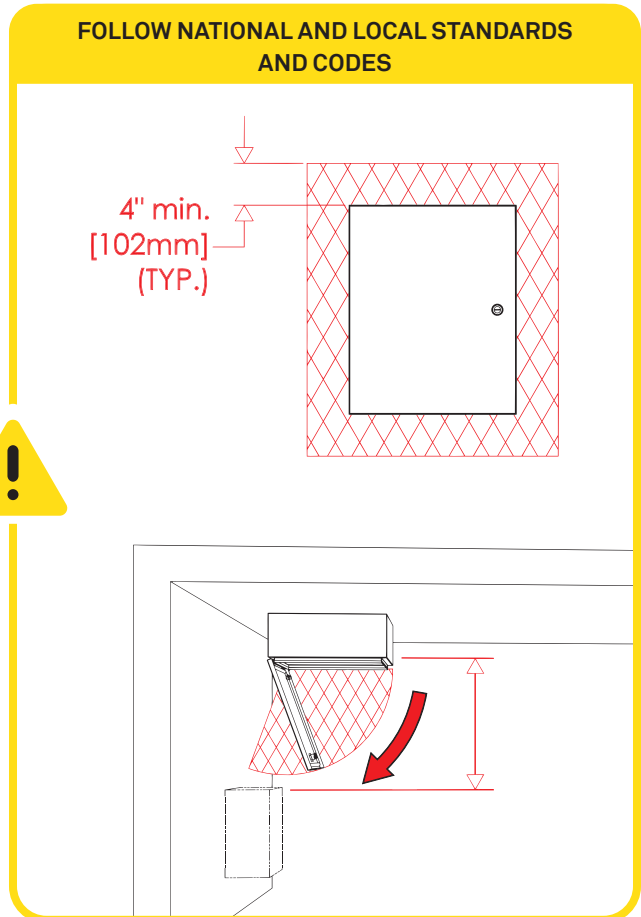
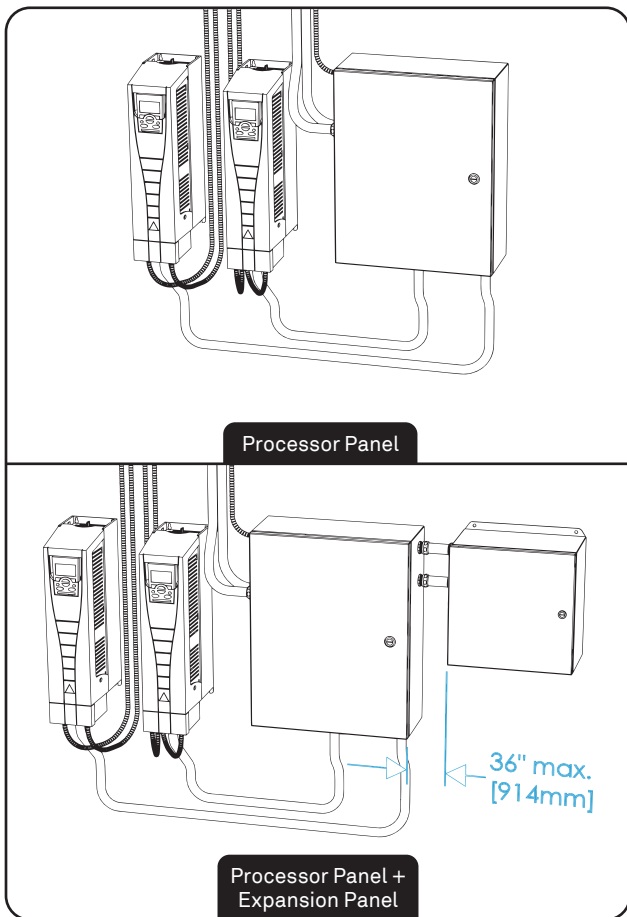
**HARDWARE**

(not included)

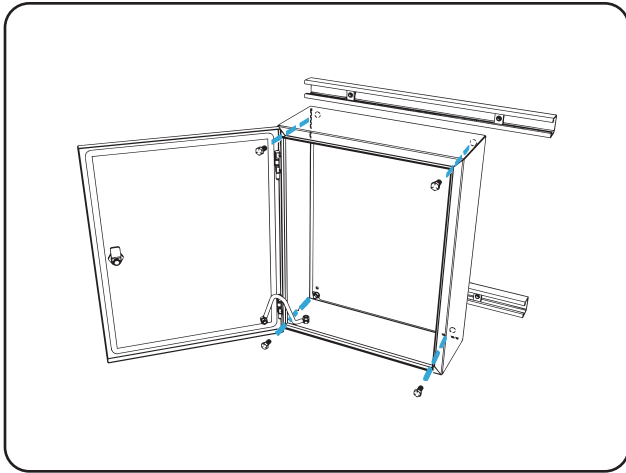
**CAUTION!**

## 1 Mark

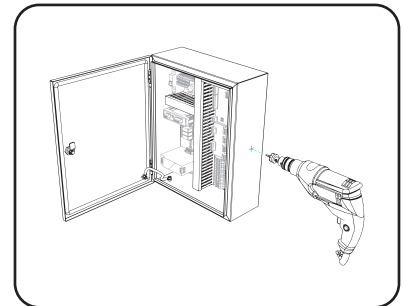
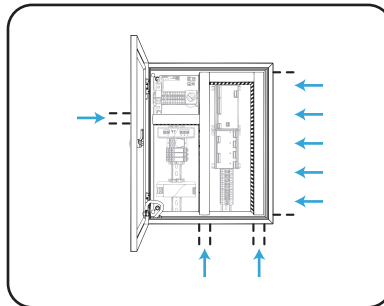
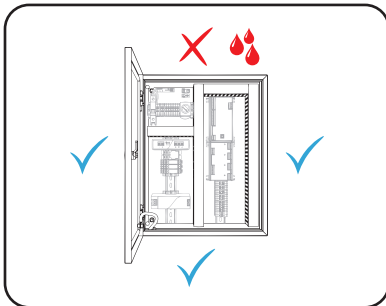
### Recommended Locations



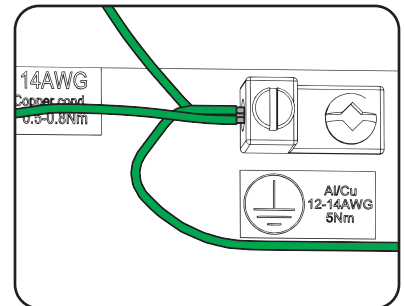
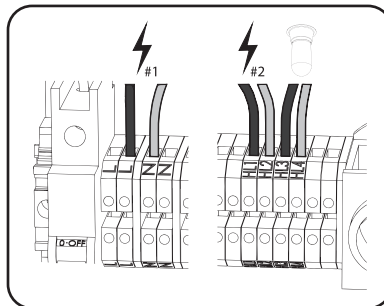
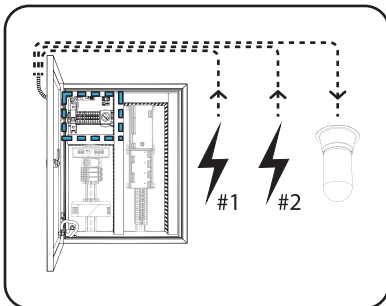
# Mark (cont'd)



## 2 Drill

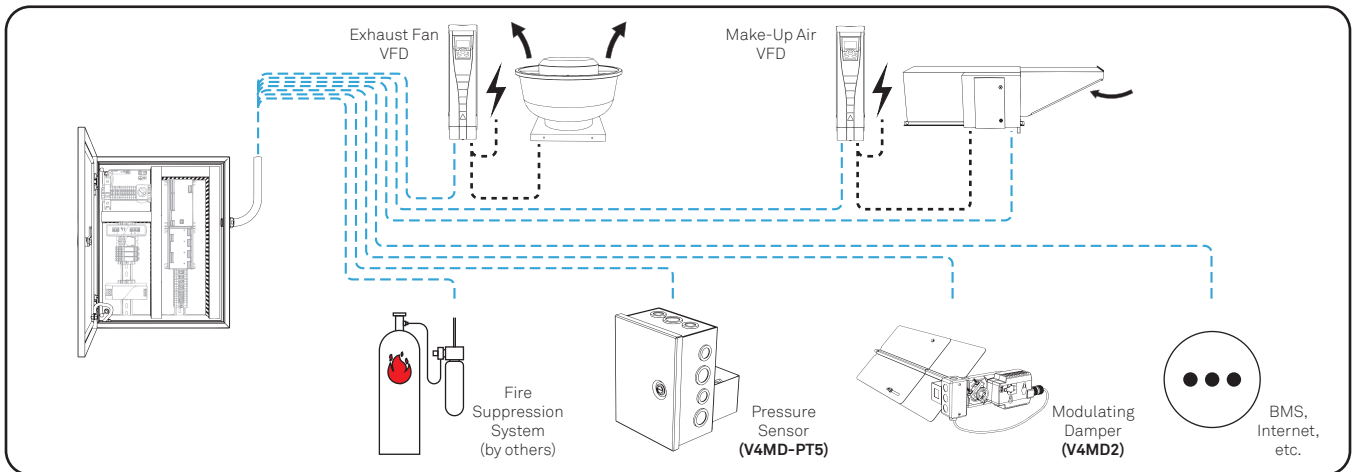
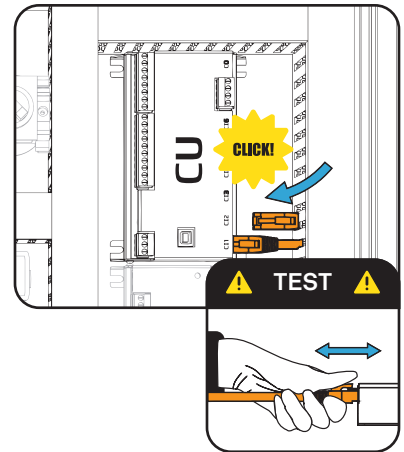
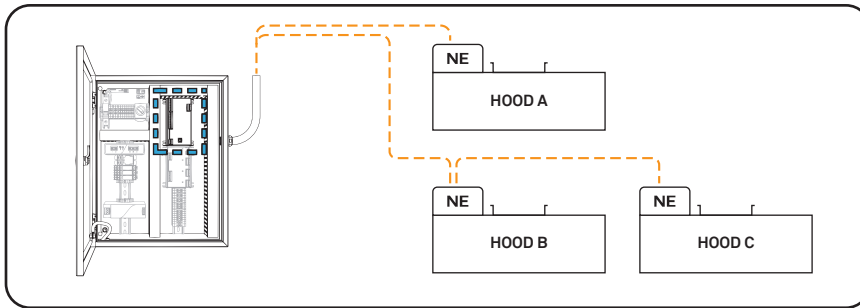


## 3 Connect 120/230V Circuits



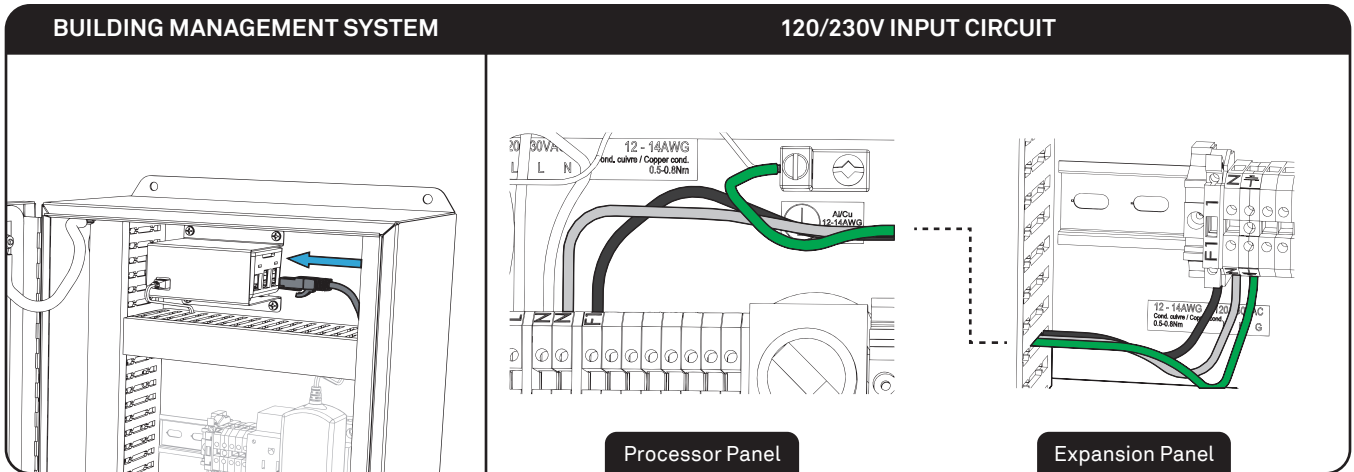
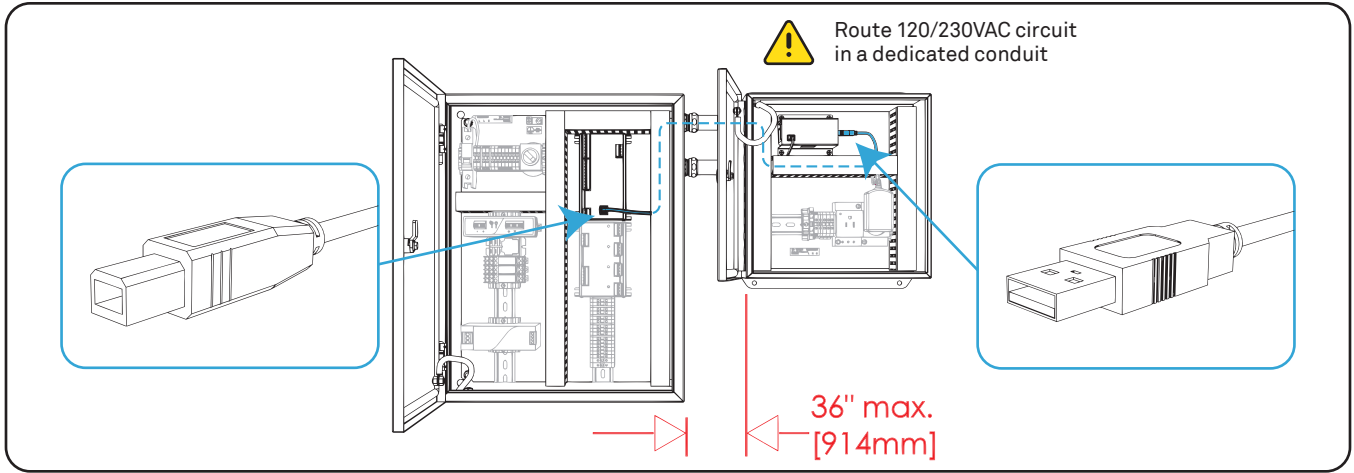
**⚠ CAUTION! ⚠**  
Refer to processor panel electrical schematics

# 4 Connect Low Voltage Circuits (24V MAX.)



**⚠ CAUTION! ⚠**  
Refer to processor panel electrical schematics

# 5 Connect Expansion Panel (if applicable)





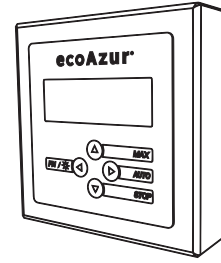
# USER INTERFACE

V4CT1E

Installation Manual

**ecoAzur**<sup>®</sup>

# V4CT1E USER INTERFACE



**REQUIRED TOOLS**

#2  $\oplus$

1/4"  $\ominus$

1" [25mm]  
For Cable Inside Wall  
Installation

**HARDWARE**

#8 [M4] Screws

x4

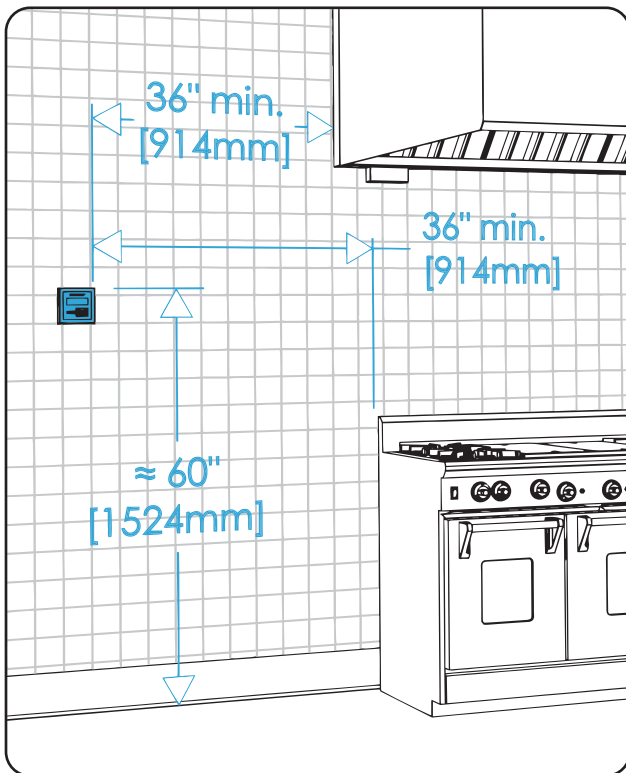
x4

(not included)

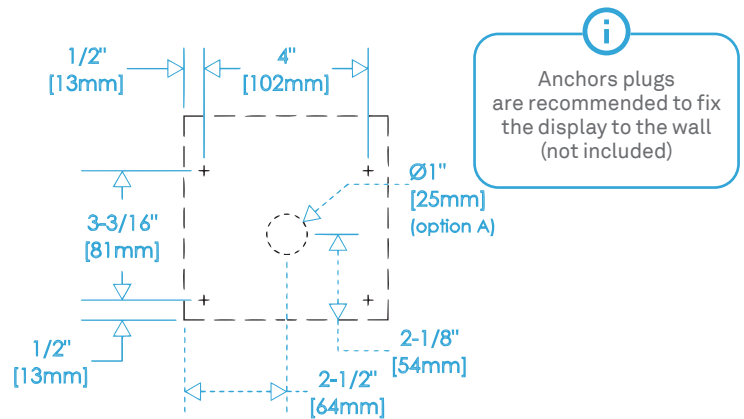
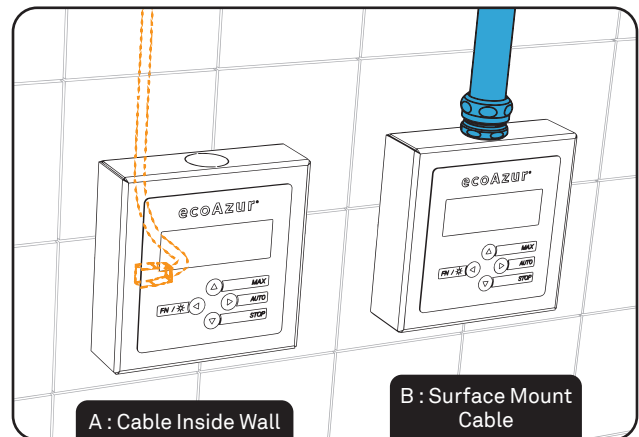
**CAUTION!**

## 1 Mark & Drill

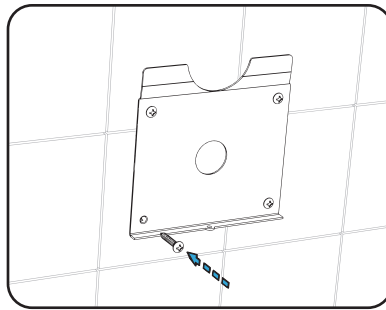
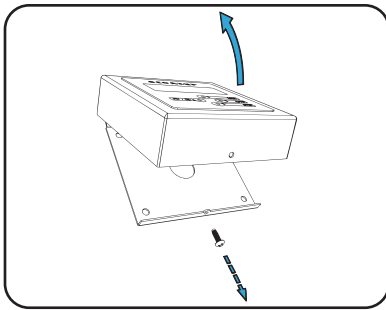
### Recommended Location



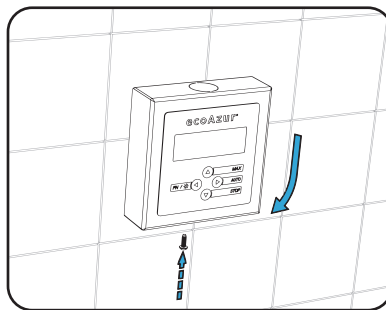
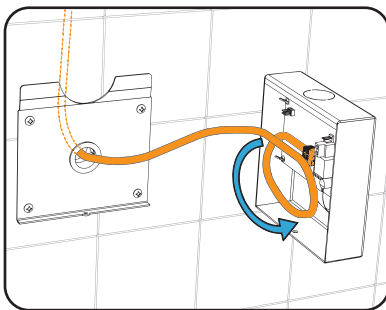
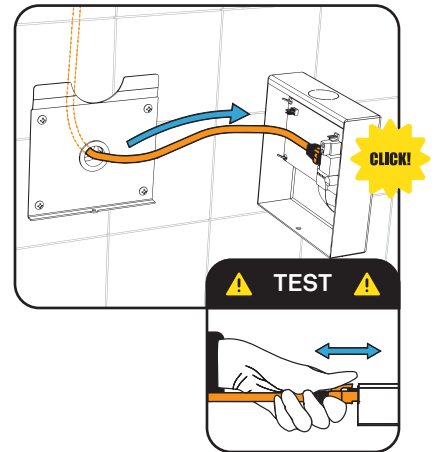
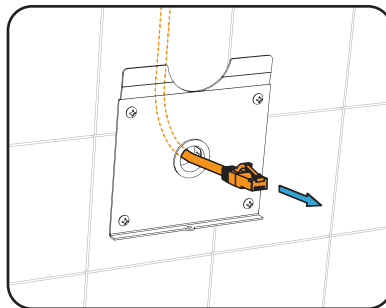
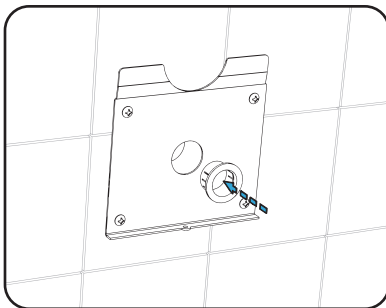
### Installation Options



# 2 Install

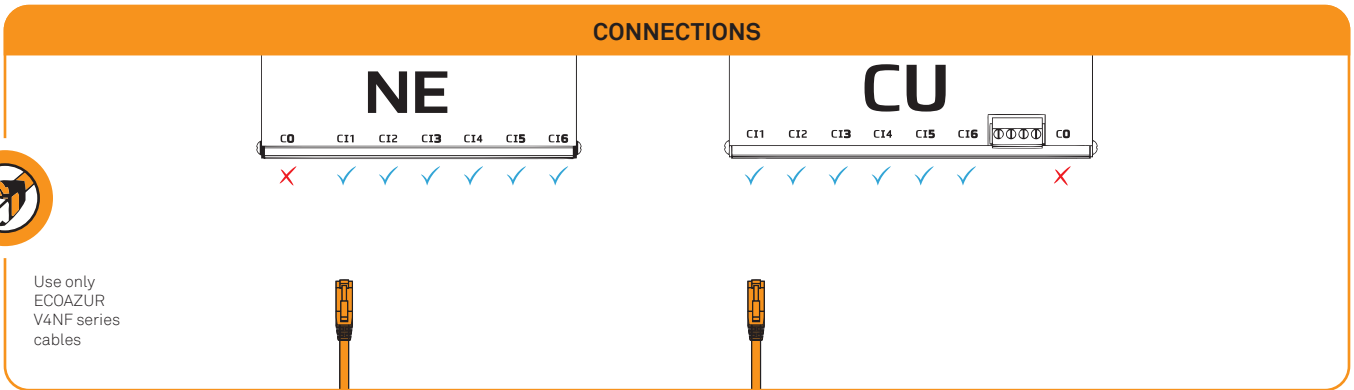
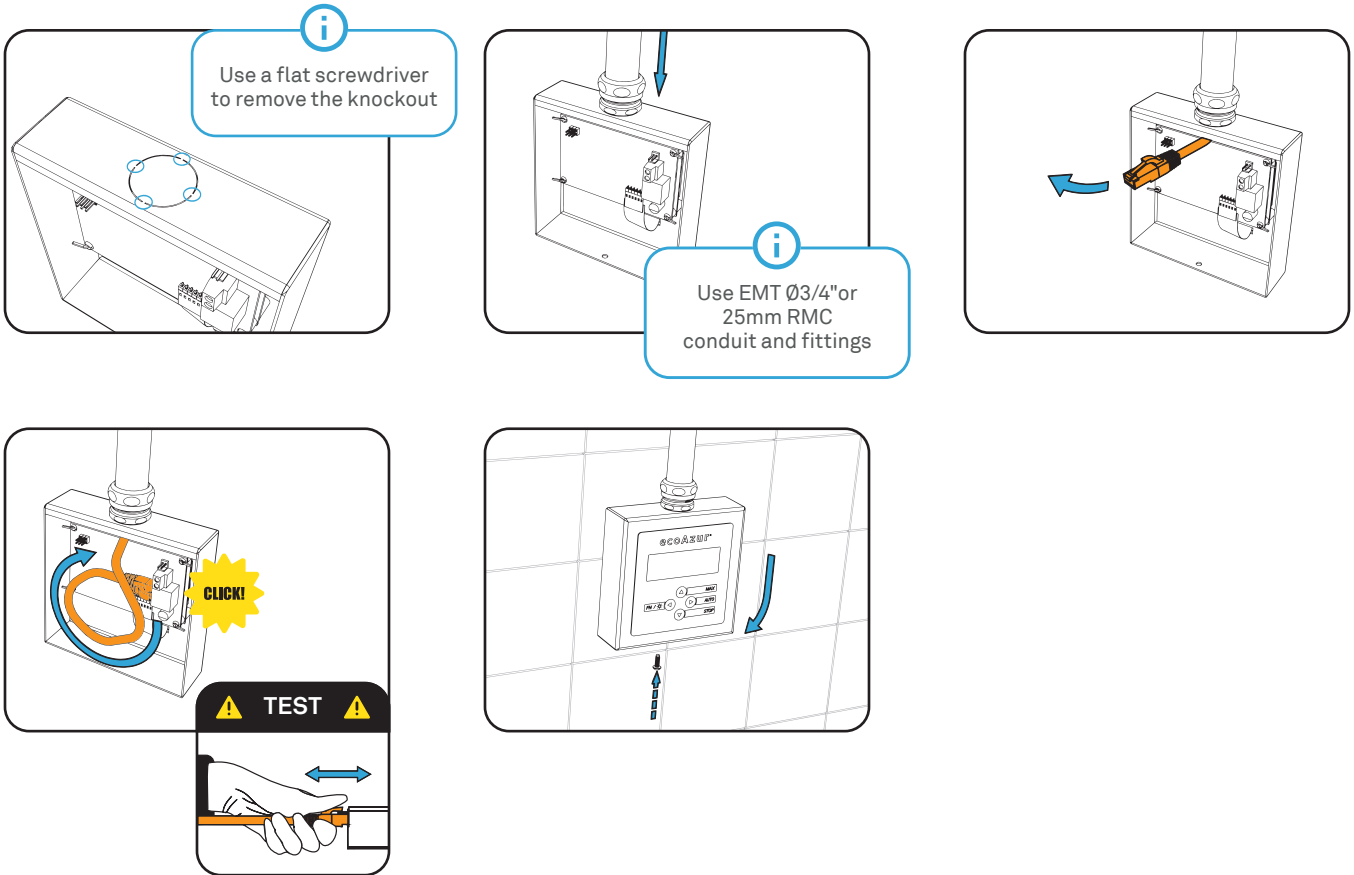


# 3 Connect (option A)





# 3 Connect (option B)





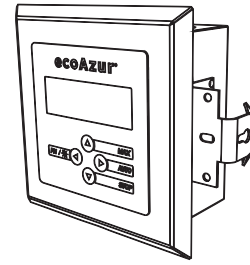
# RECESSED USER INTERFACE

V4CT4E

Installation Manual

**ecoAzur**<sup>®</sup>

# V4CT4E RECESSED USER INTERFACE



**REQUIRED TOOLS**

- #2  $\oplus$
- 1/4"  $\ominus$

**HARDWARE**

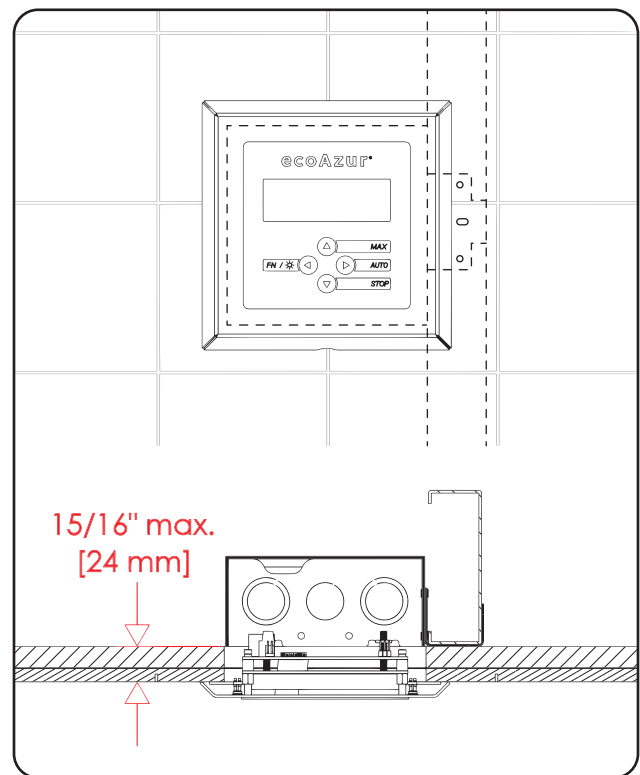
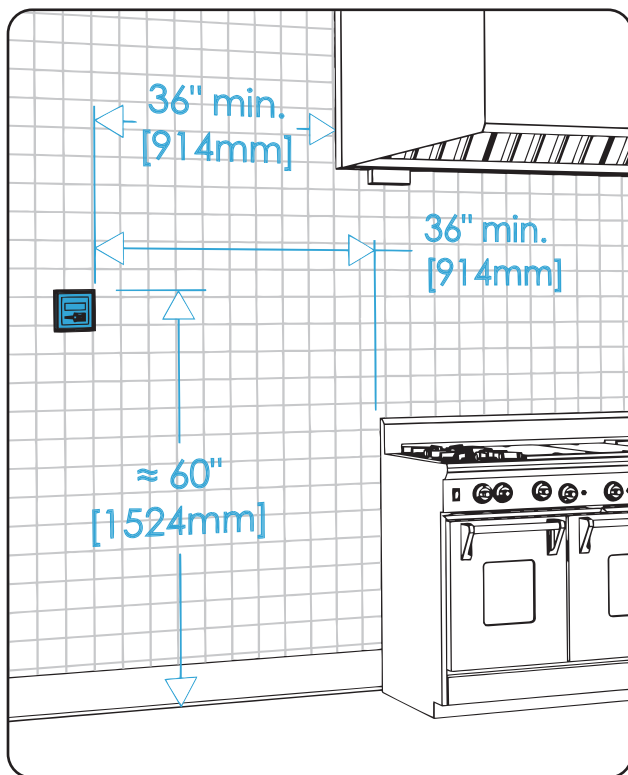
- 1-1/4" [32mm] x4
- 3/4" [19mm] x1
- #8 [M4] Screws x2

(not included)

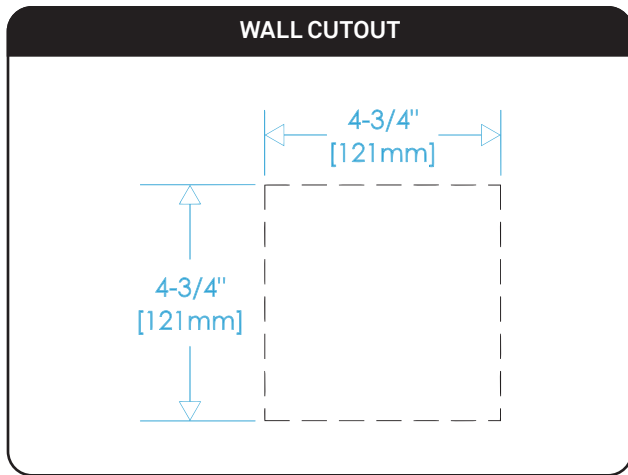
**CAUTION!**

## 1 Mark & Drill

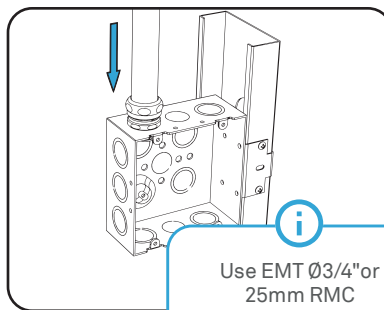
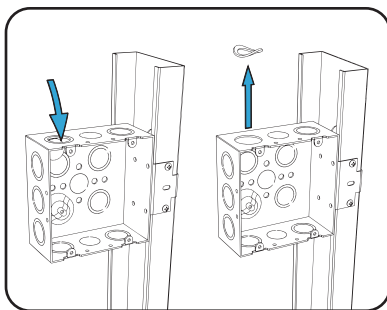
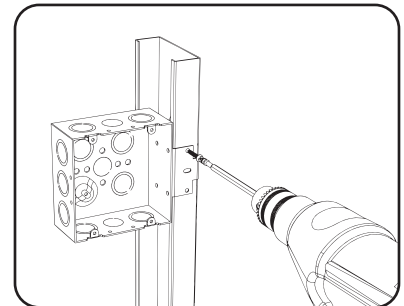
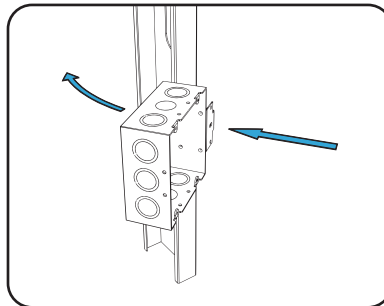
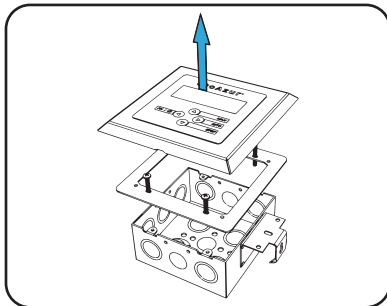
### Recommended Location



## Mark & Drill (cont'd)

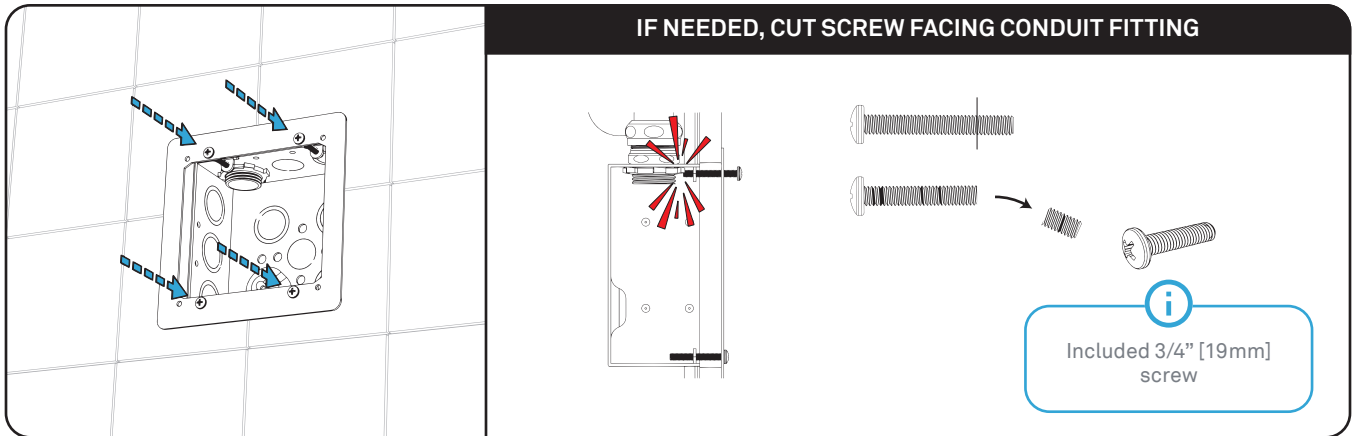


## 2 Install



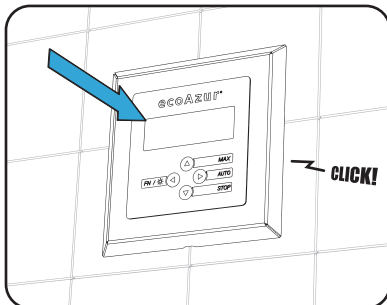
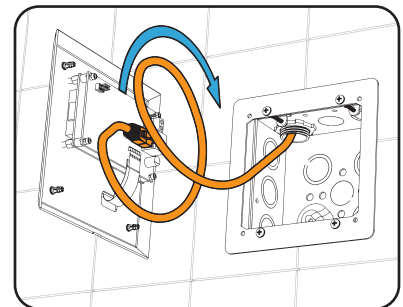
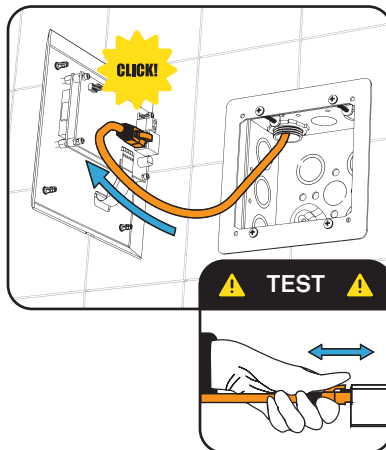
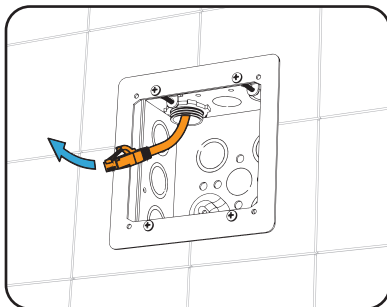
**i**  
Use EMT Ø3/4" or  
25mm RMC  
conduit and fittings

# Install (cont'd)

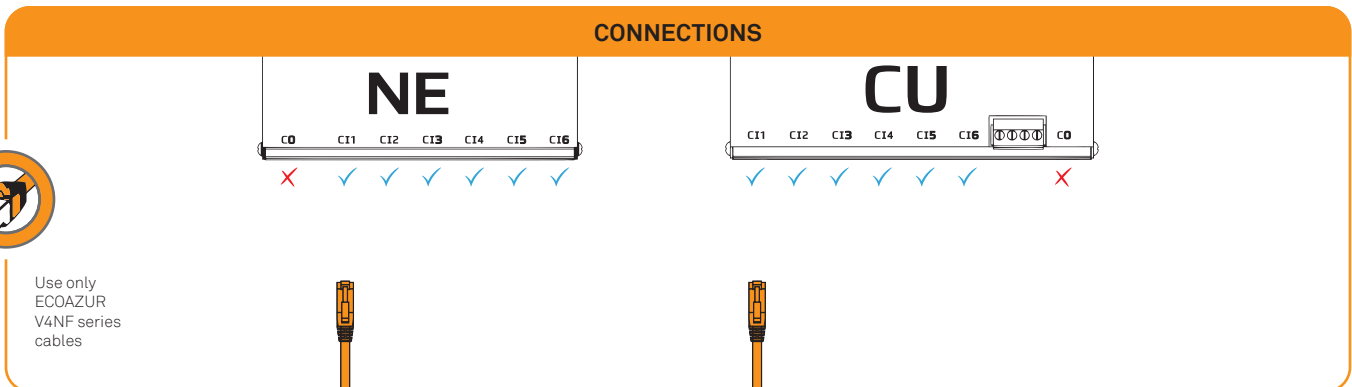
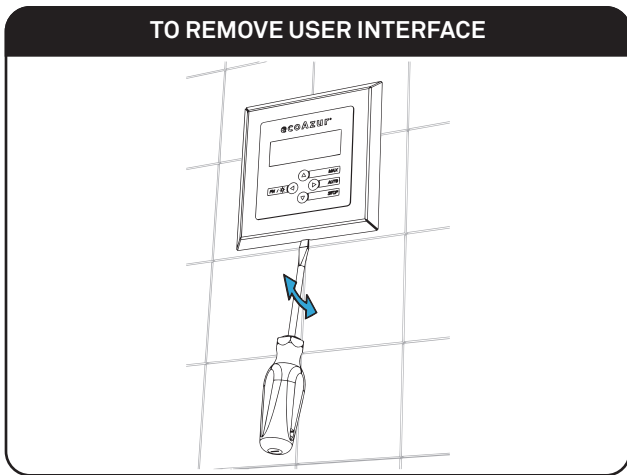


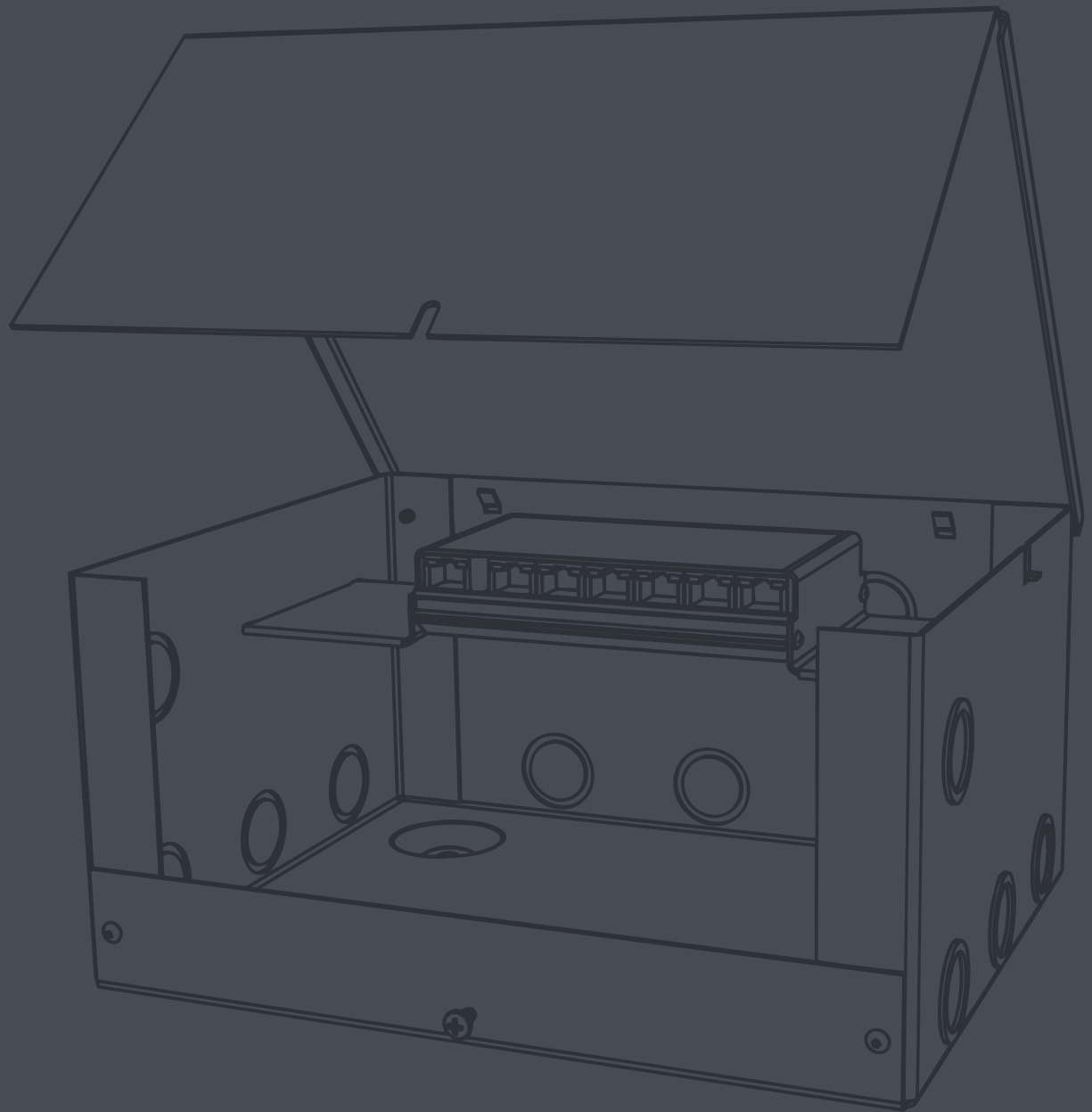
**⚠ CAUTION! ⚠**  
This step must be done after finished wall completion

## 3 Connect



# Connect (cont'd)





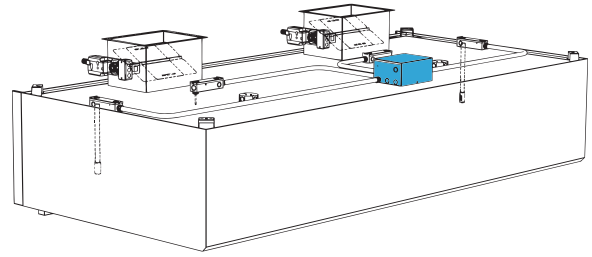
# HOOD NETWORK HUB

V4NE2

Installation Manual

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# V4NE2 HOOD NETWORK HUB



**REQUIRED TOOLS**

#2

11/32" [9mm]

**HARDWARE**

8-32 [M4]

x4

x4

x4

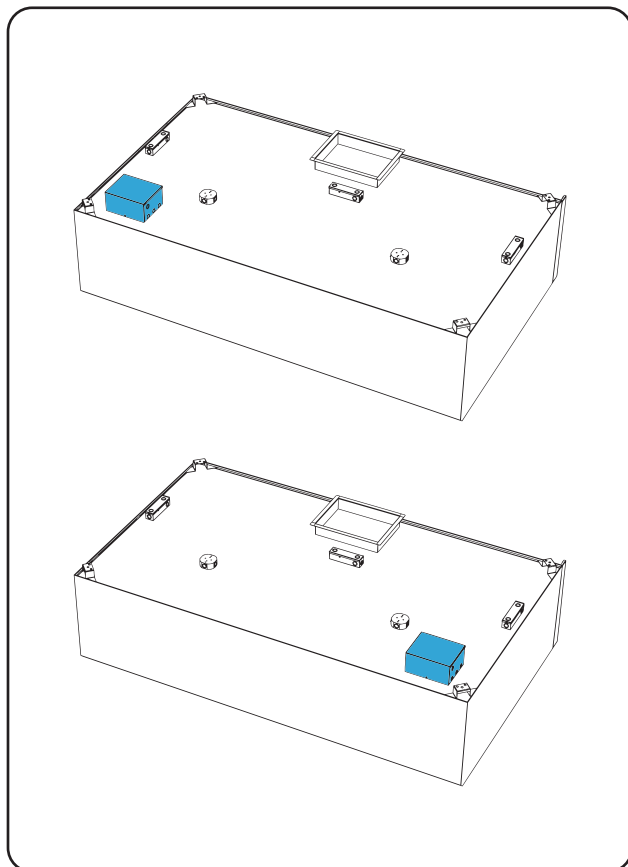
x4

(not included)

**CAUTION!**

## 1 Mark

### Recommended Locations

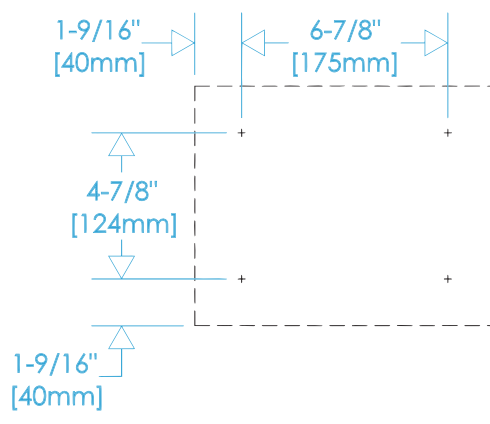


**REQUIRES 8" [203mm] CLEARANCE OVER HOOD**

8" [203mm]



# Mark (cont'd)




1-9/16" [40mm]

6-7/8" [175mm]

4-7/8" [124mm]

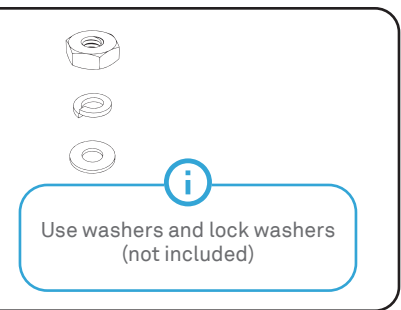
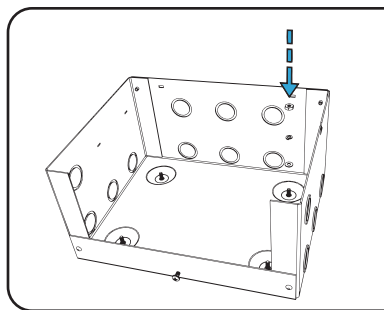
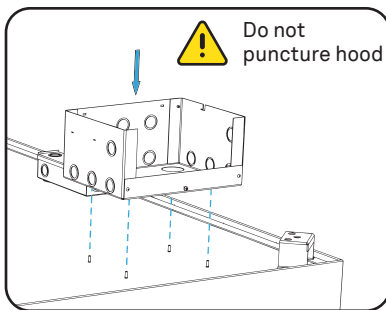
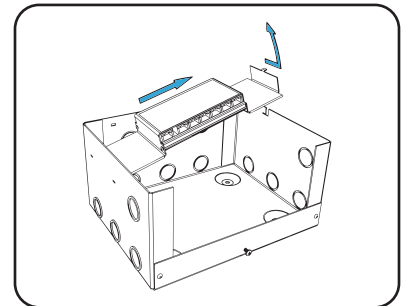
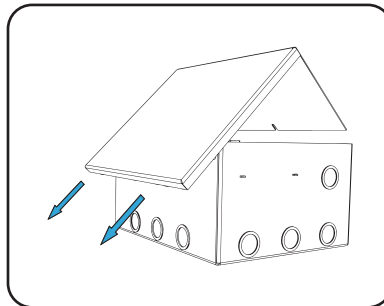
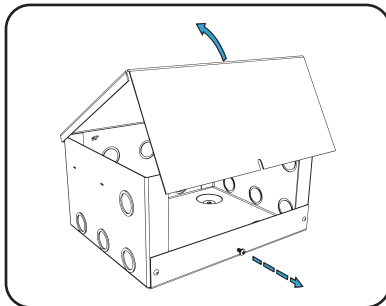
1-9/16" [40mm]



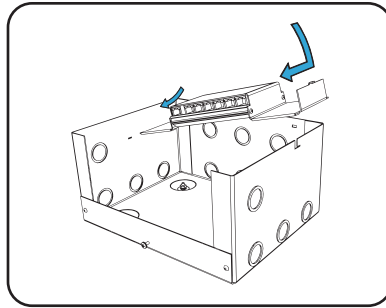
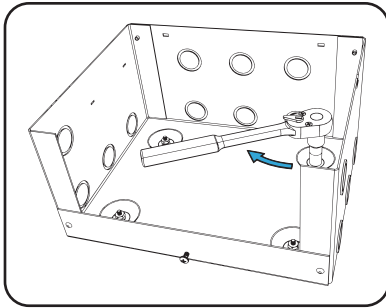
**i**

Welded studs 8-32 [M4] are recommended to secure the enclosure on top of the hood (not included)

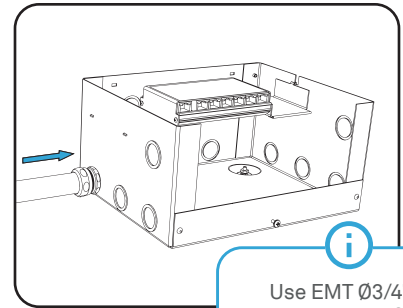
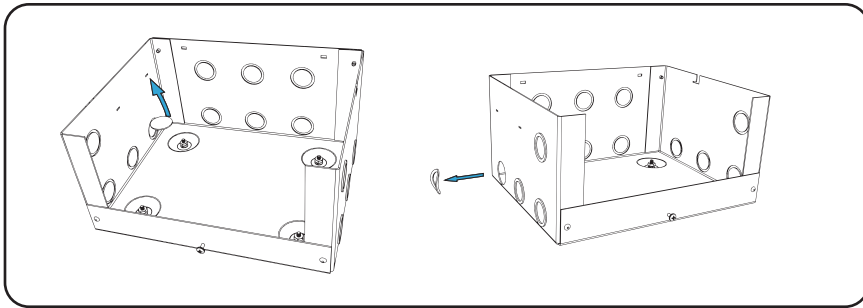
# 2 Install



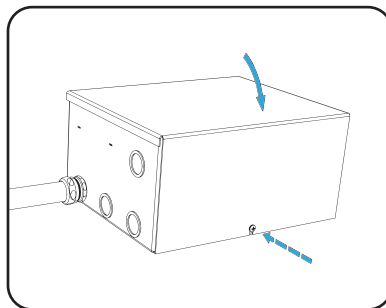
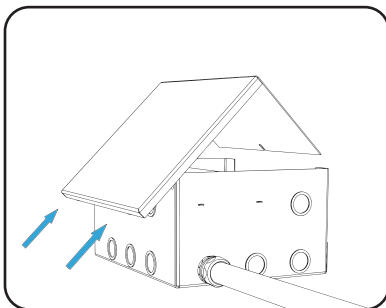
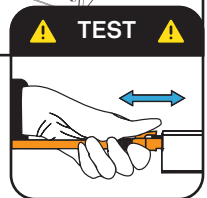
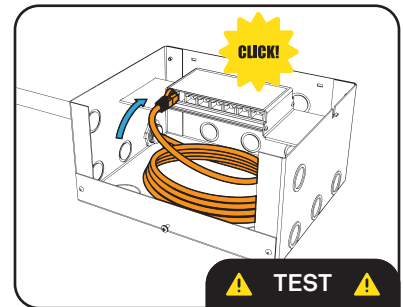
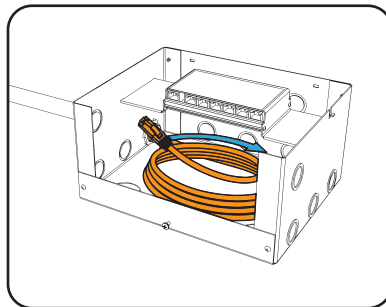
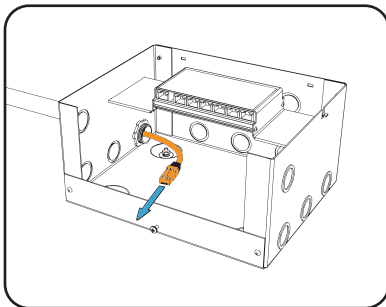
# Install (cont'd)



## 3 Connect



**i**  
Use EMT Ø3/4" or  
25mm RMC  
conduit and fittings

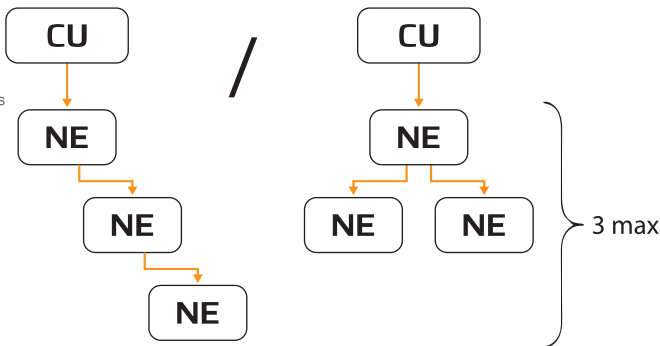


CONNECTION GUIDELINES

	NE							CU							
	CO	CI1	CI2	CI3	CI4	CI5	CI6	CI1	CI2	CI3	CI4	CI5	CI6	CO	
TT	✗	✓	✓	✓	✓	✓	✓	TT	✓	✓	✓	✓	✓	✓	✗
IB	✗	✓	✓	✓	✓	✗	✗	IB	✓	✓	✓	✗	✗	✗	✗
CT	✗	✓	✓	✓	✓	✓	✓	CT	✓	✓	✓	✓	✓	✓	✗
NE	✓ <sub>CI</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	NE	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✗
CU	✓ <sub>CI</sub>	✗	✗	✗	✗	✗	✗								



Use only ECOAZUR V4NF series cables

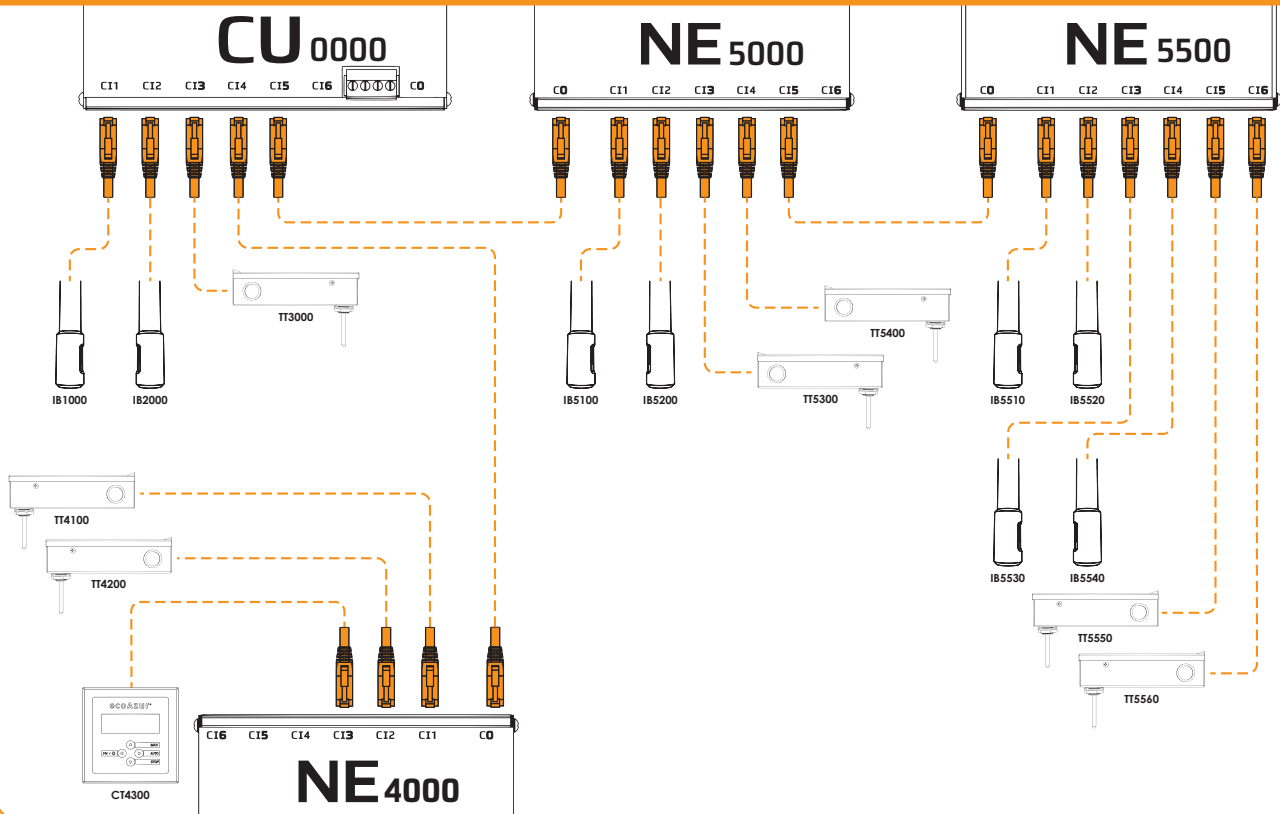


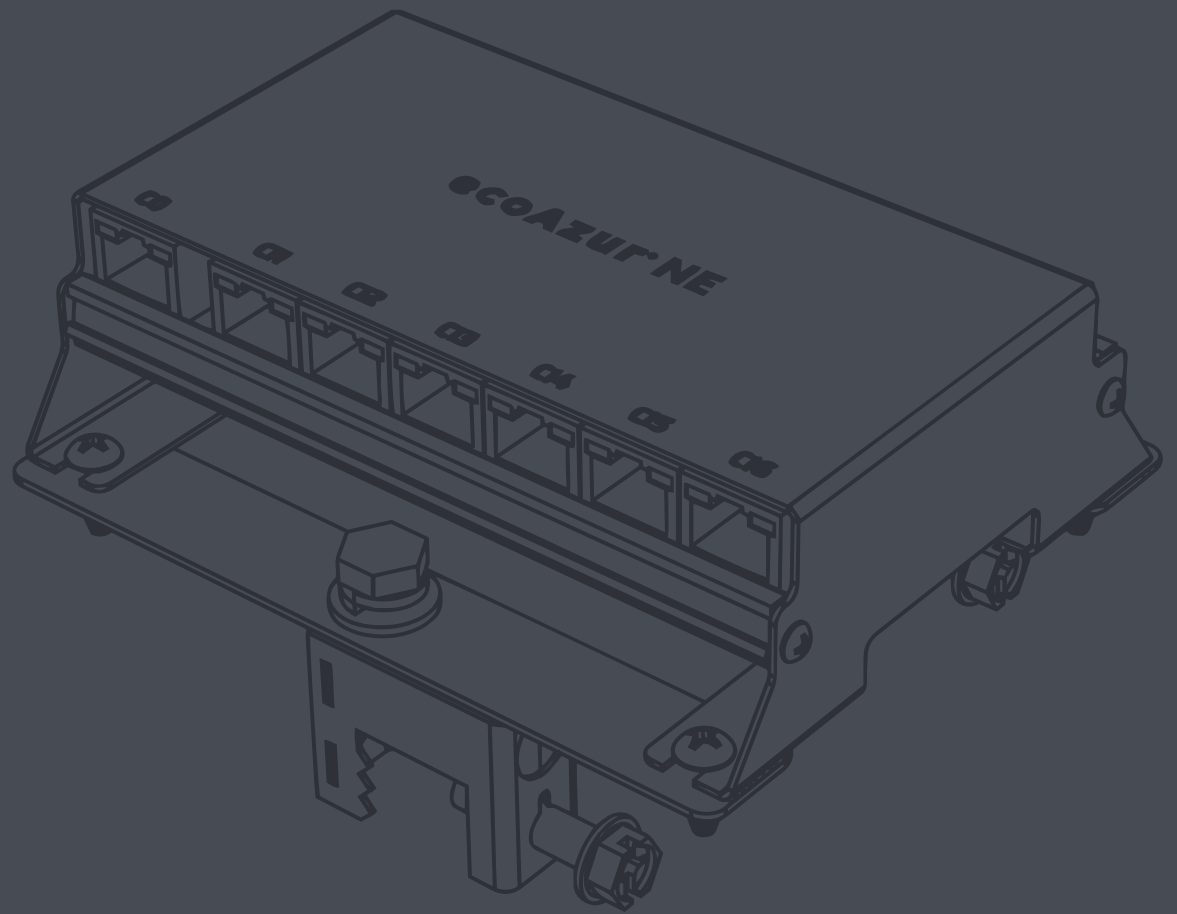
**CAUTION!**

**System Limits:**

- Max 3 NE by CU input (CI)
- Max 75 components (CU, TC, IB, TT, NE, CT, AS and DS)

EXAMPLE





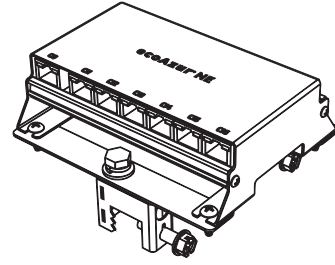
# HOOD NETWORK HUB WITHOUT ENCLOSURE

V4NE1

Installation Manual

**ecoAzur**<sup>®</sup>

# V4NE1 HOOD NETWORK HUB WITHOUT ENCLOSURE



**REQUIRED TOOL**

#2  
+

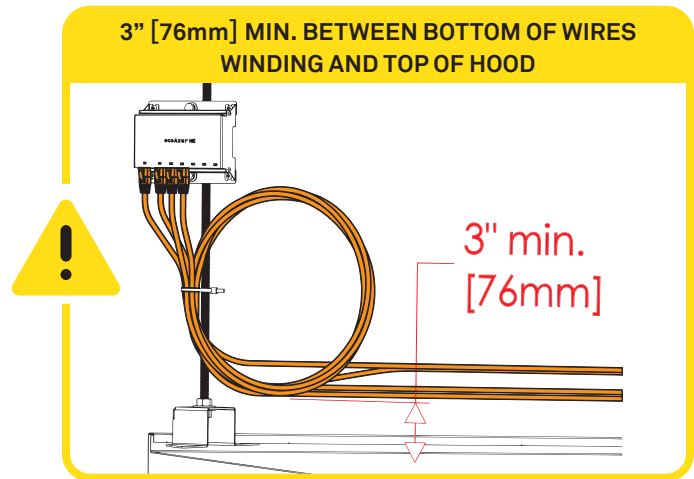
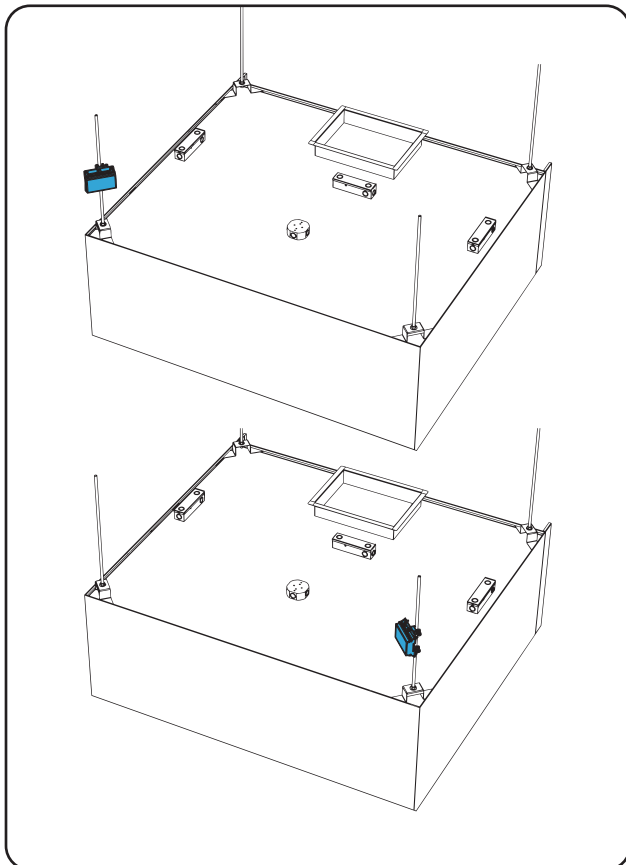
**COMPONENTS**

1x V4NE1

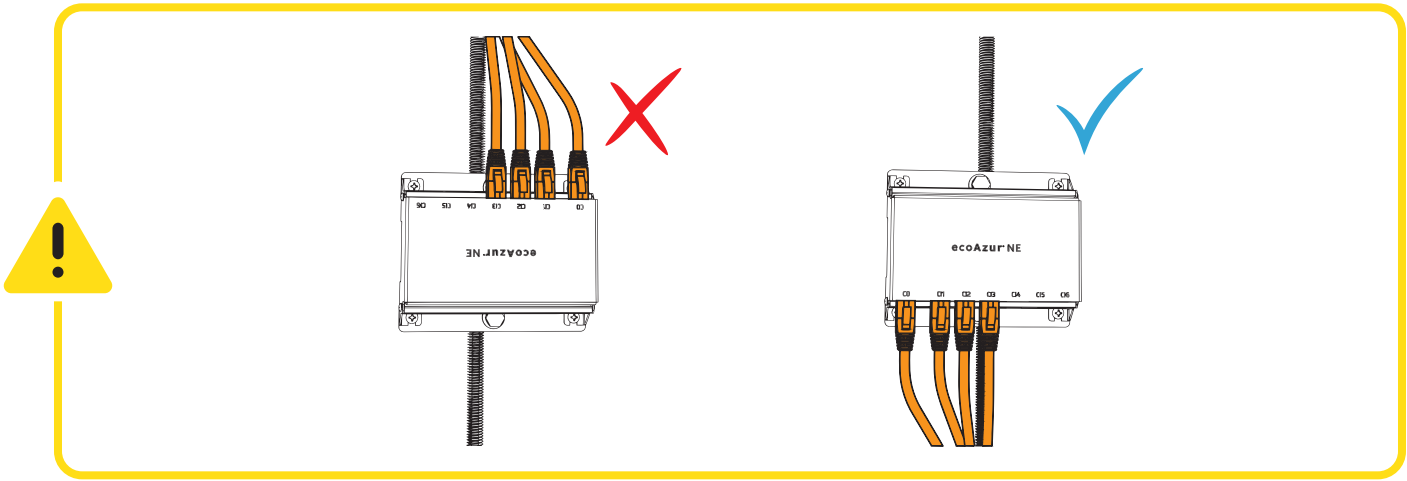
**CAUTION!**

## 1 Mark

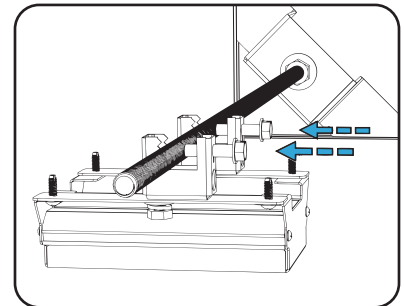
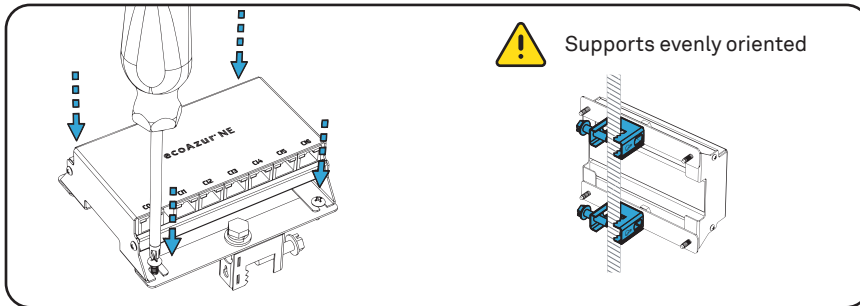
### Recommended Locations



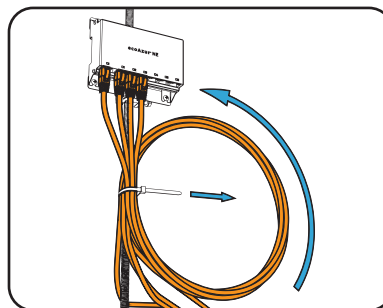
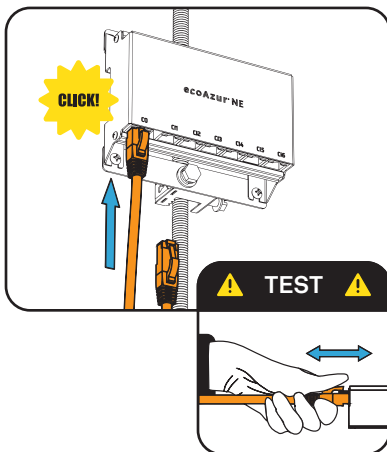
# Mark (cont'd)



## 2 Install



## 3 Connect

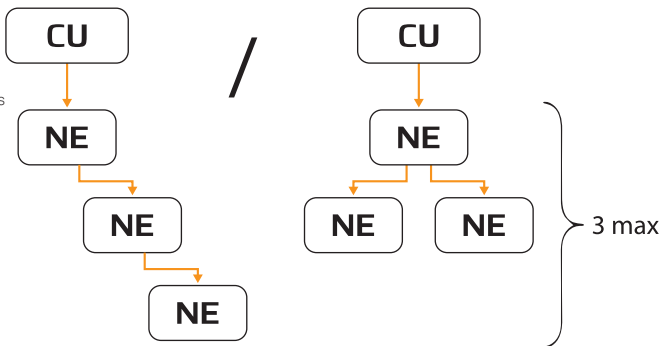


CONNECTION GUIDELINES

	NE							CU						
	CO	CI1	CI2	CI3	CI4	CI5	CI6	CI1	CI2	CI3	CI4	CI5	CI6	CO
TT	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
IB	✗	✓	✓	✓	✓	✗	✗	✓	✓	✗	✗	✗	✗	✗
CT	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
NE	✓ <sub>CI</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✓ <sub>CO</sub>	✗
CU	✓ <sub>CI</sub>	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗



Use only ECOAZUR V4NF series cables

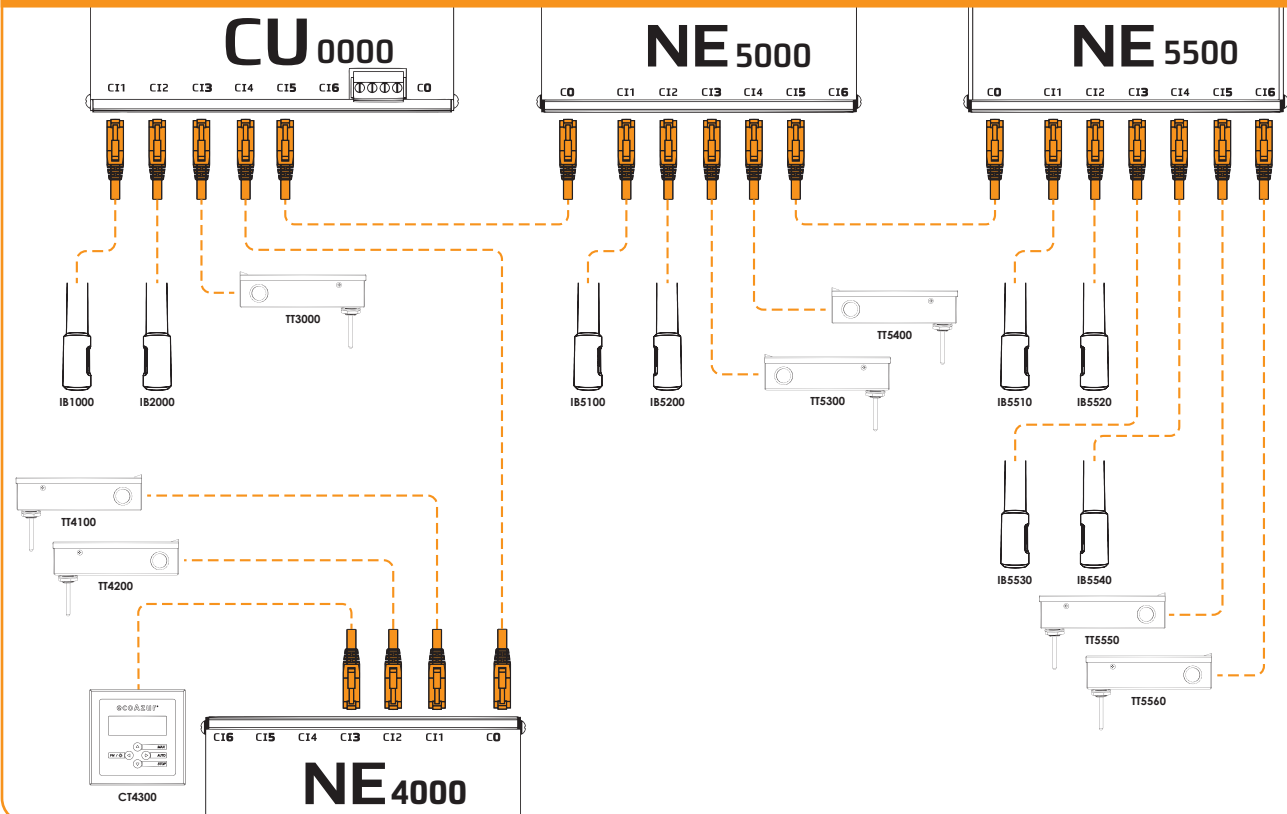


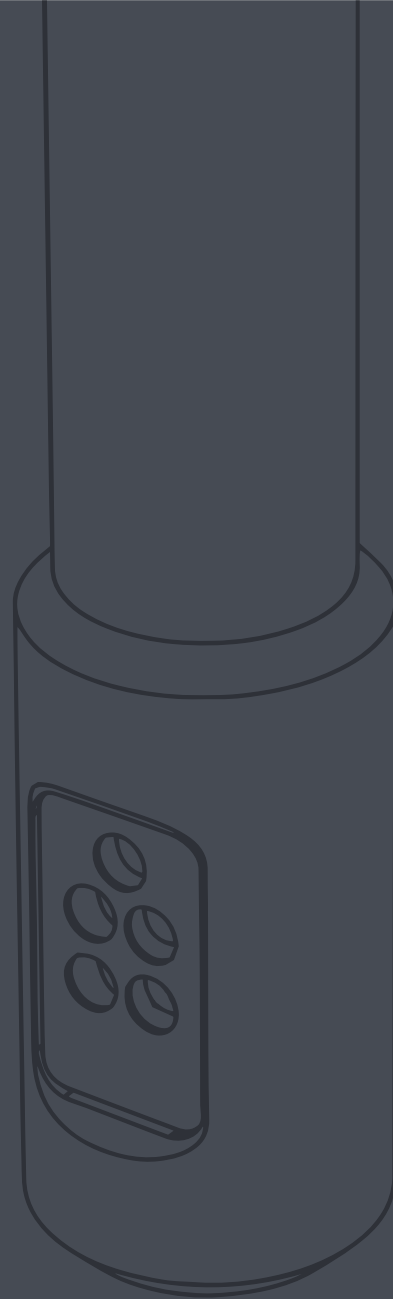
**CAUTION!**

**System Limits:**

- Max 3 NE by CU input (CI)
- Max 75 components (CU, TC, IB, TT, NE, CT, AS and DS)

EXAMPLE





# IRIS BLEU<sup>®</sup> OPTIC SENSOR

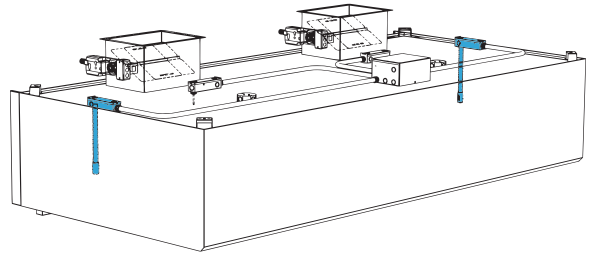
V4IB1

Installation Manual

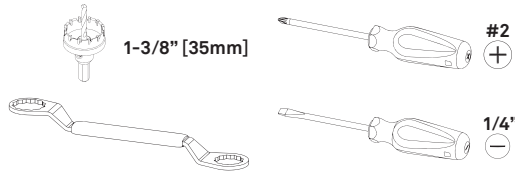
**ecoAzur<sup>®</sup>**



# V4IB1 IRIS BLEU® OPTIC SENSOR

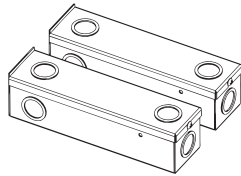


### REQUIRED TOOLS



### COMPONENTS

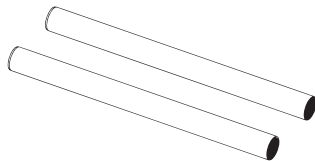
2x V4IB-EMT



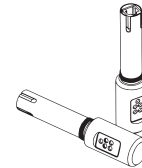
2x V4IB-CS



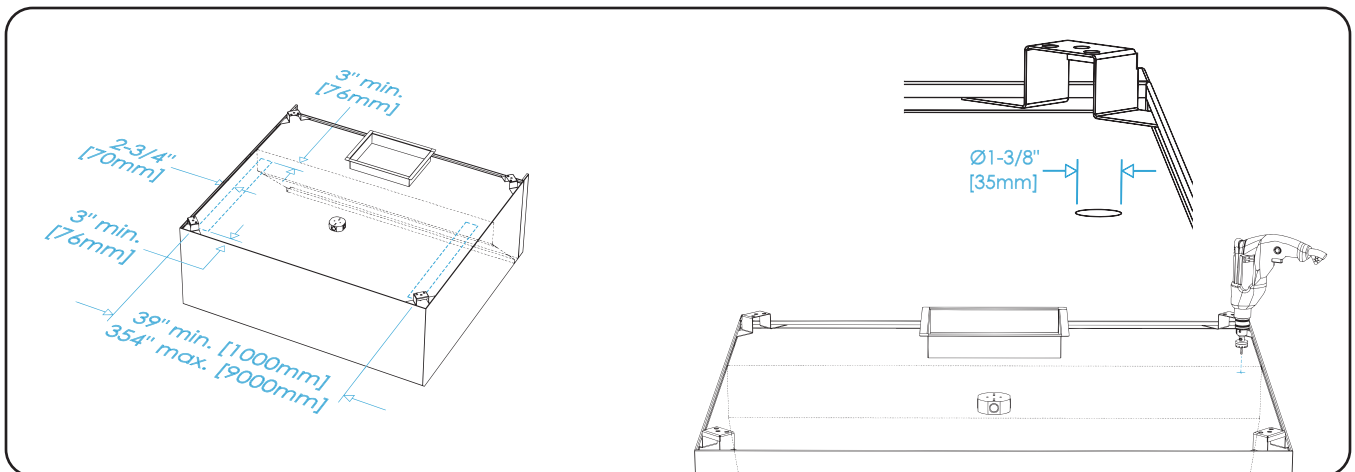
2x V4IB-TIB30  
/ V4IB-TIB15  
/ V4IB-TIB90



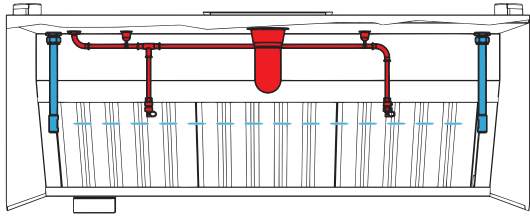
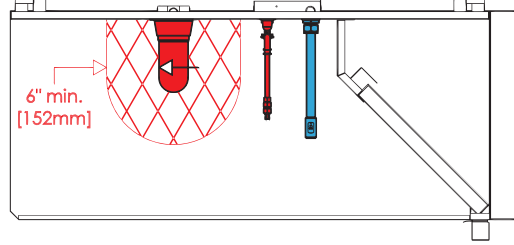
2x V4IB1



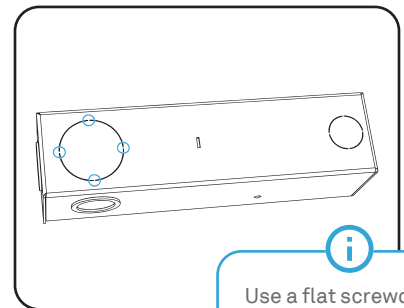
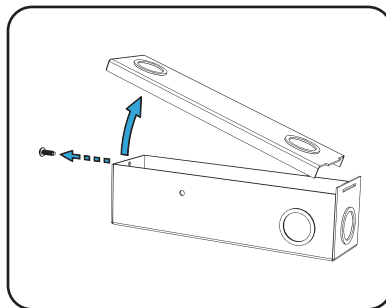
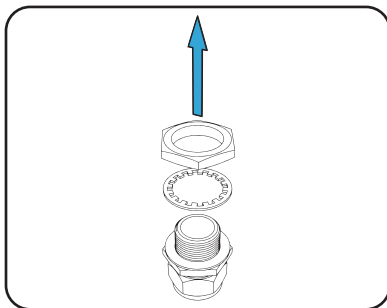
# 1 Mark & Drill



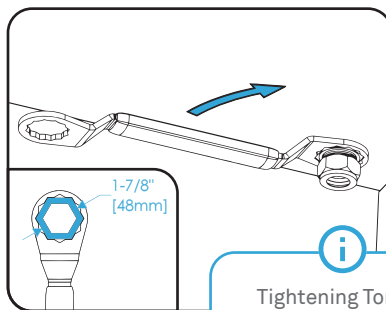
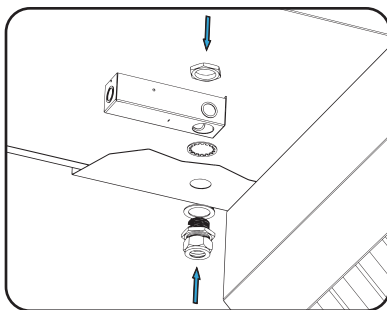
# Mark & Drill (cont'd)

<p><b>LIGHT BEAM FREE OF ANY OBSTACLE</b></p>  <p>A top-down diagram of a rectangular light fixture. A red light beam is shown originating from a central point and reflecting off two mirrors to illuminate a row of vertical bars. A yellow warning triangle with an exclamation mark is on the left. The text 'LIGHT BEAM FREE OF ANY OBSTACLE' is at the top.</p>	<p><b>6" [152mm] MIN. AWAY FROM LIGHT FIXTURE</b></p>  <p>A side-view diagram of a light fixture. A red hatched circular area around the fixture indicates a clearance zone. A red arrow points to this area with the text '6" min. [152mm]'. The text '6" [152mm] MIN. AWAY FROM LIGHT FIXTURE' is at the top.</p>
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## 2 Install Compression Seal V4IB-CS & Enclosure V4IB-EMT

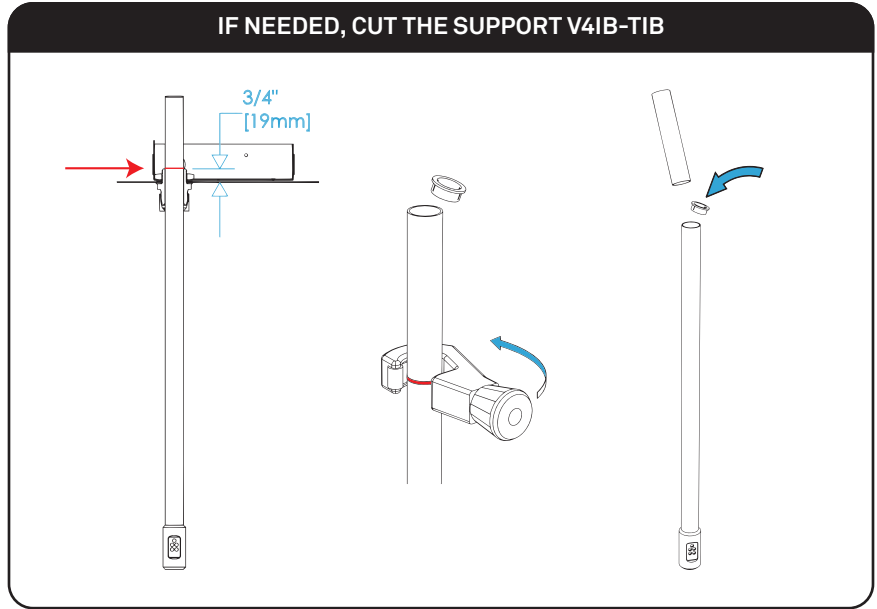
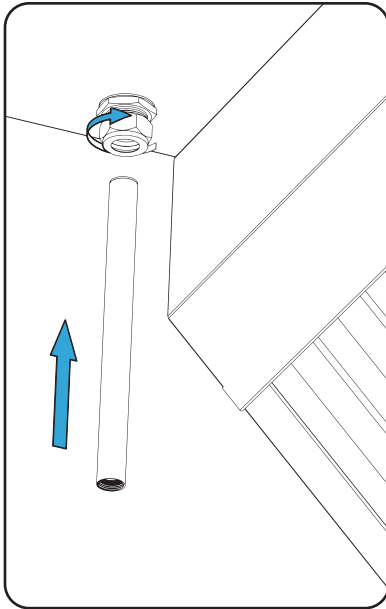


Use a flat screwdriver to remove the knockout

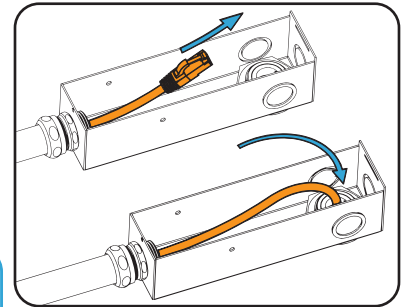
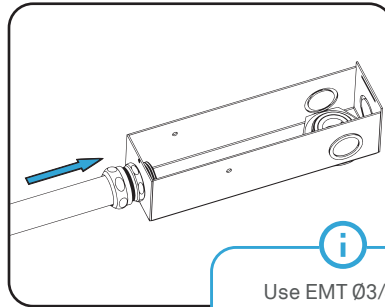
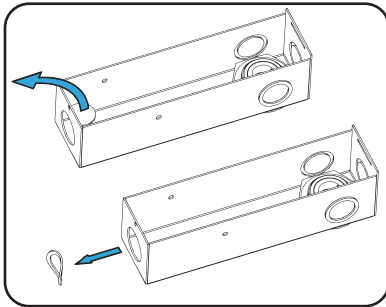


Tightening Torque  
60 lbf-pi [82 Nm]

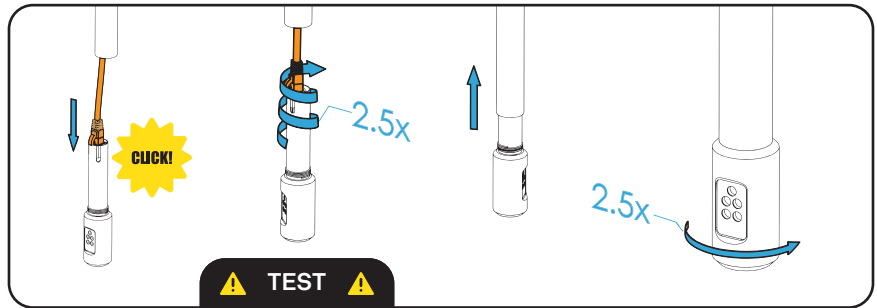
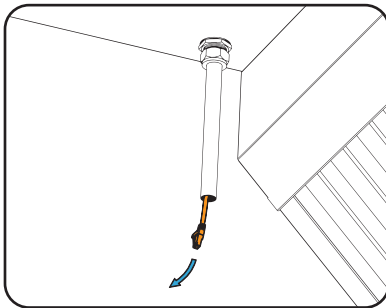
# 3 Install Support V4IB-TIB



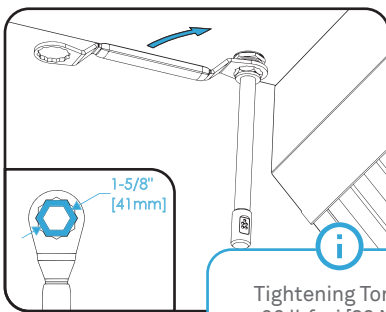
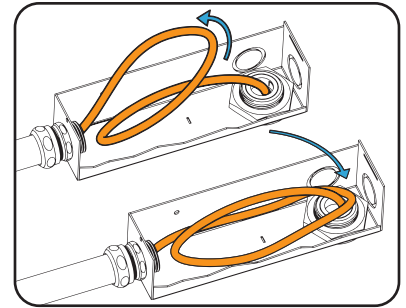
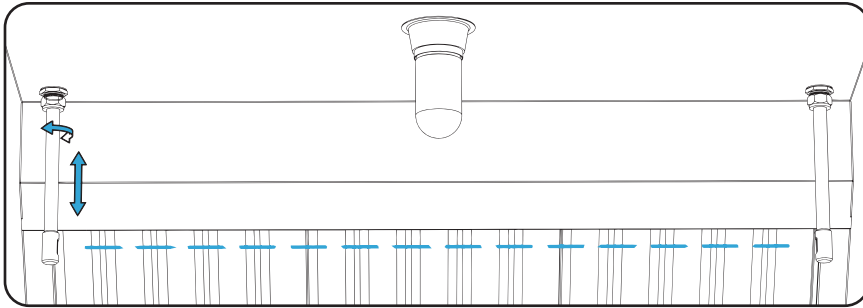
# 4 Install & Connect Sensor V4IB1



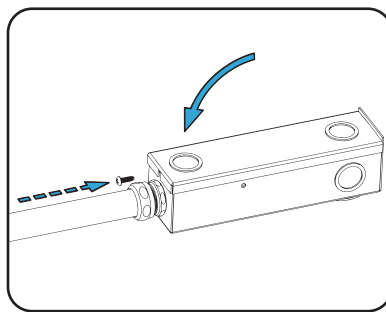
**i**  
Use EMT Ø3/4" or  
25mm RMC  
conduit and fittings



# Install & Connect Sensor V4IB1 (cont'd)



**i**  
Tightening Torque  
60 lbf-pi [82 Nm]



**CONNECTIONS**

**NE**

C0 C11 C12 C13 C14 C15 C16

✗ ✓ ✓ ✓ ✗ ✗

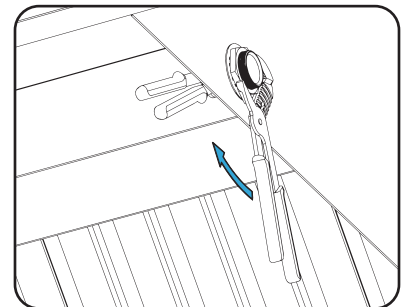
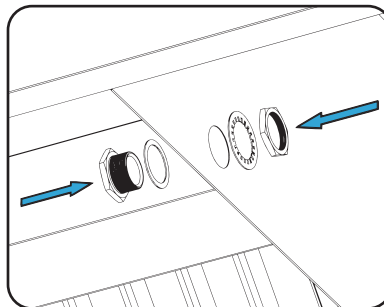
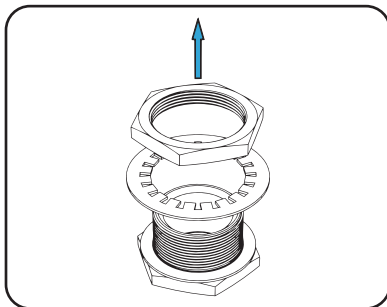
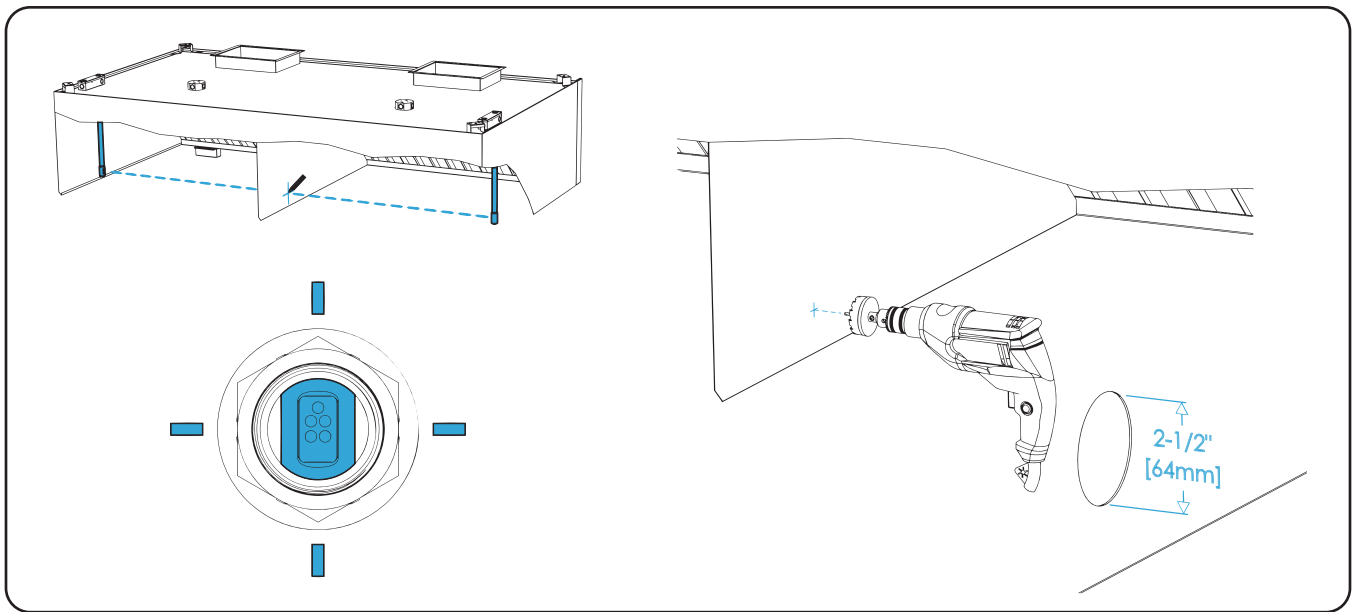
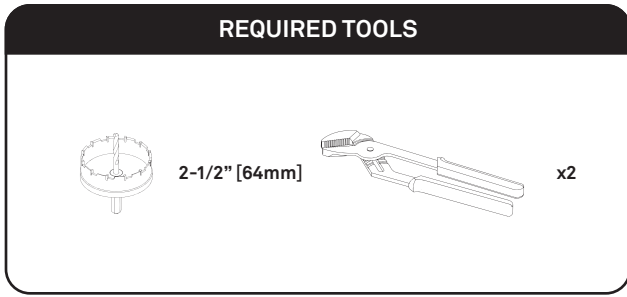
**CU**

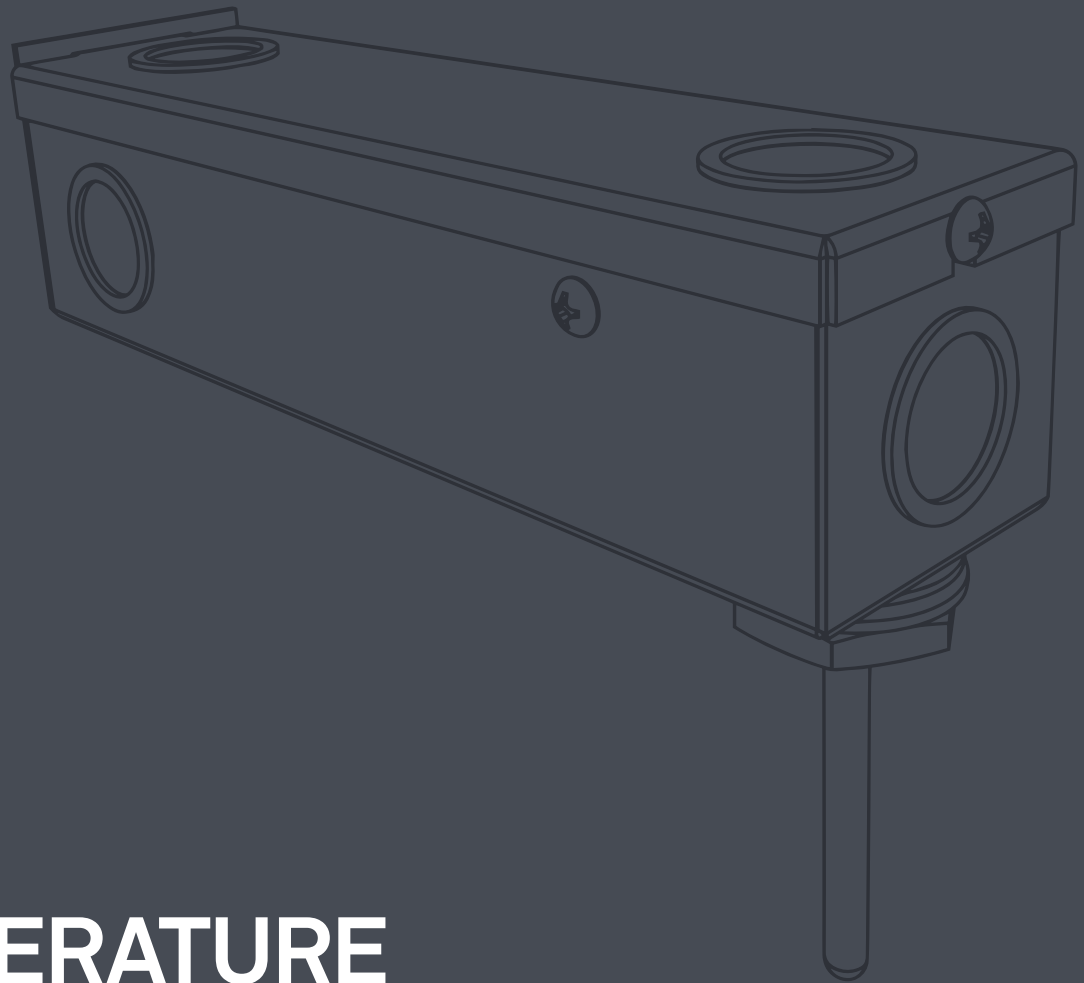
C11 C12 C13 C14 C15 C16 [ ] C0

✓ ✓ ✓ ✓ ✗ ✗ ✗

Use only ECOAZUR V4NF series cables

# 5 Install Pass Through Compression Seal V4IB-PC (if applicable)





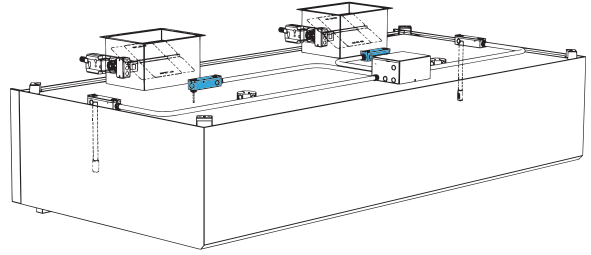
# TEMPERATURE SENSOR

V4TT2

Installation Manual

**ecoAzur**<sup>®</sup>

# V4TT2 TEMPERATURE SENSOR



**REQUIRED TOOLS**

1-1/8" [29mm]


#2

3/4" [19mm]

**CAUTION!**

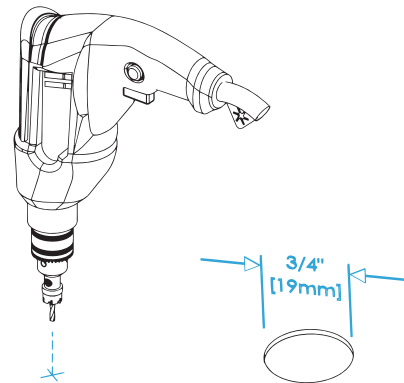
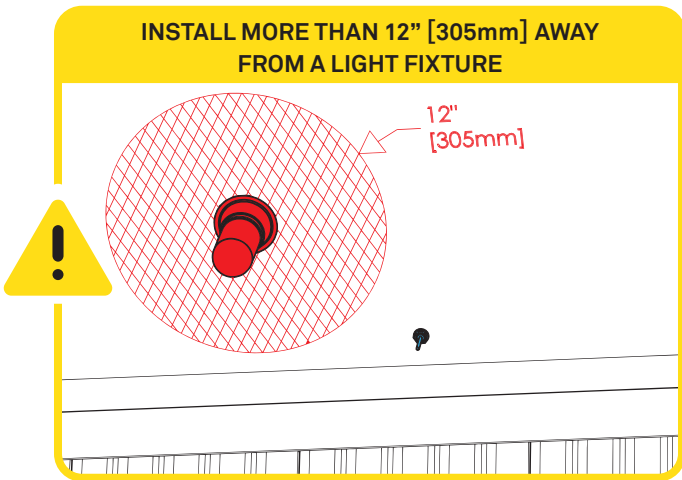
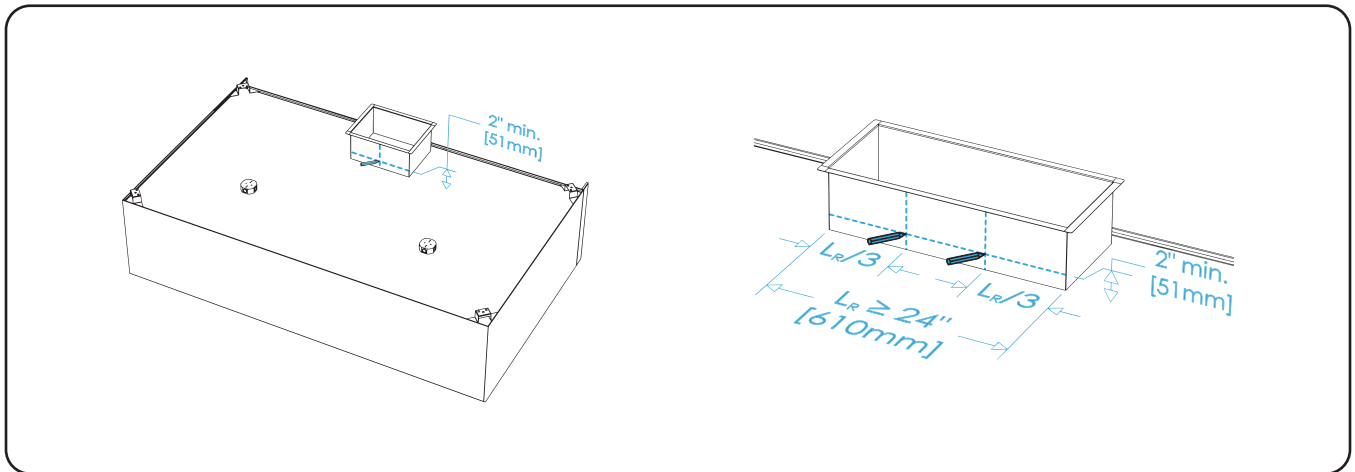
## 1 Mark & Drill

In front of filters

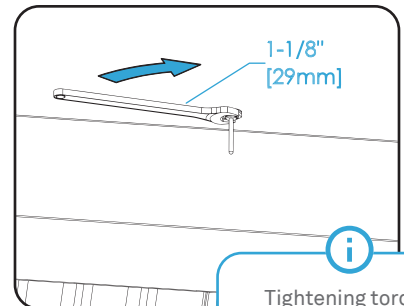
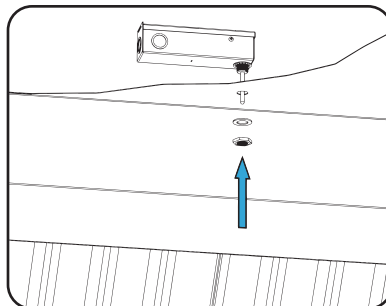
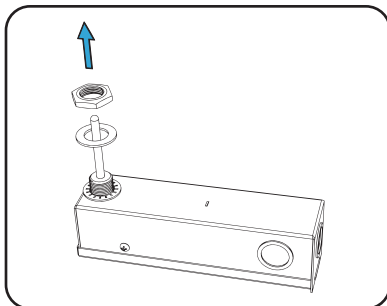
← L →	
96" [2438mm] < L ≤ 144" [3658mm]	2
144" [3658mm] < L ≤ 192" [4877mm]	3

# Mark & Drill (cont'd)

## In the hood riser



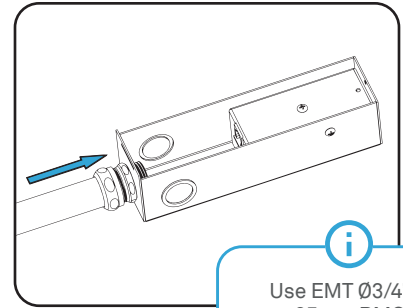
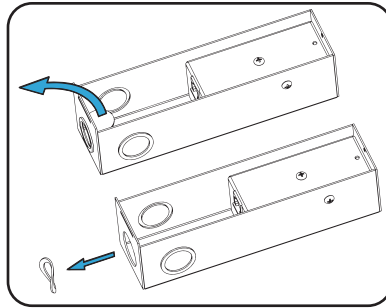
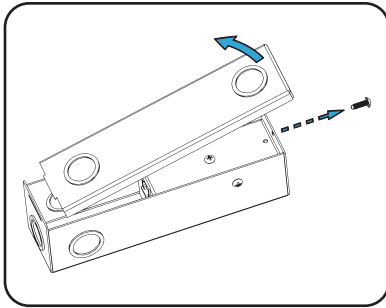
# 2 Install



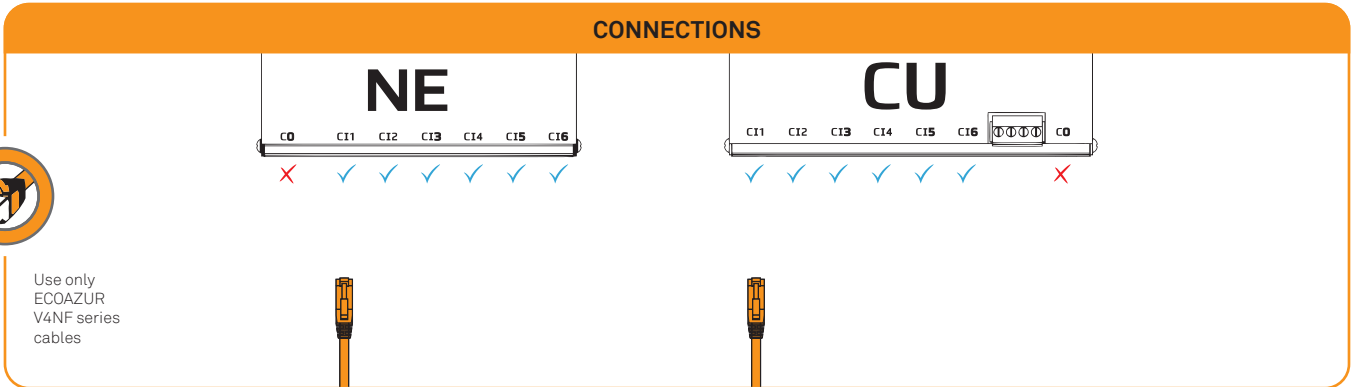
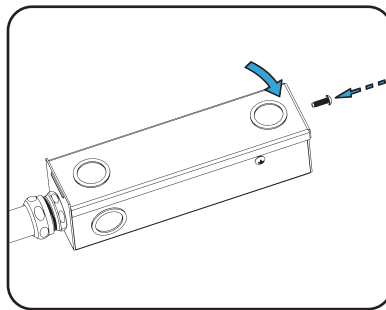
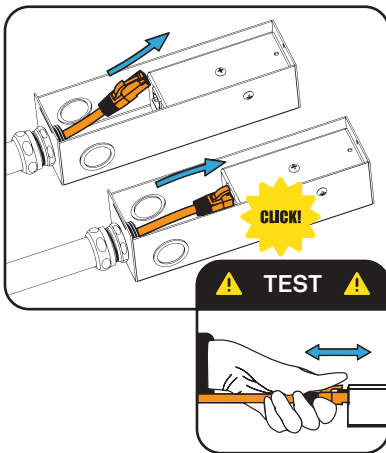
**i**  
Tightening torque  
30 lbf-pi [41 Nm]

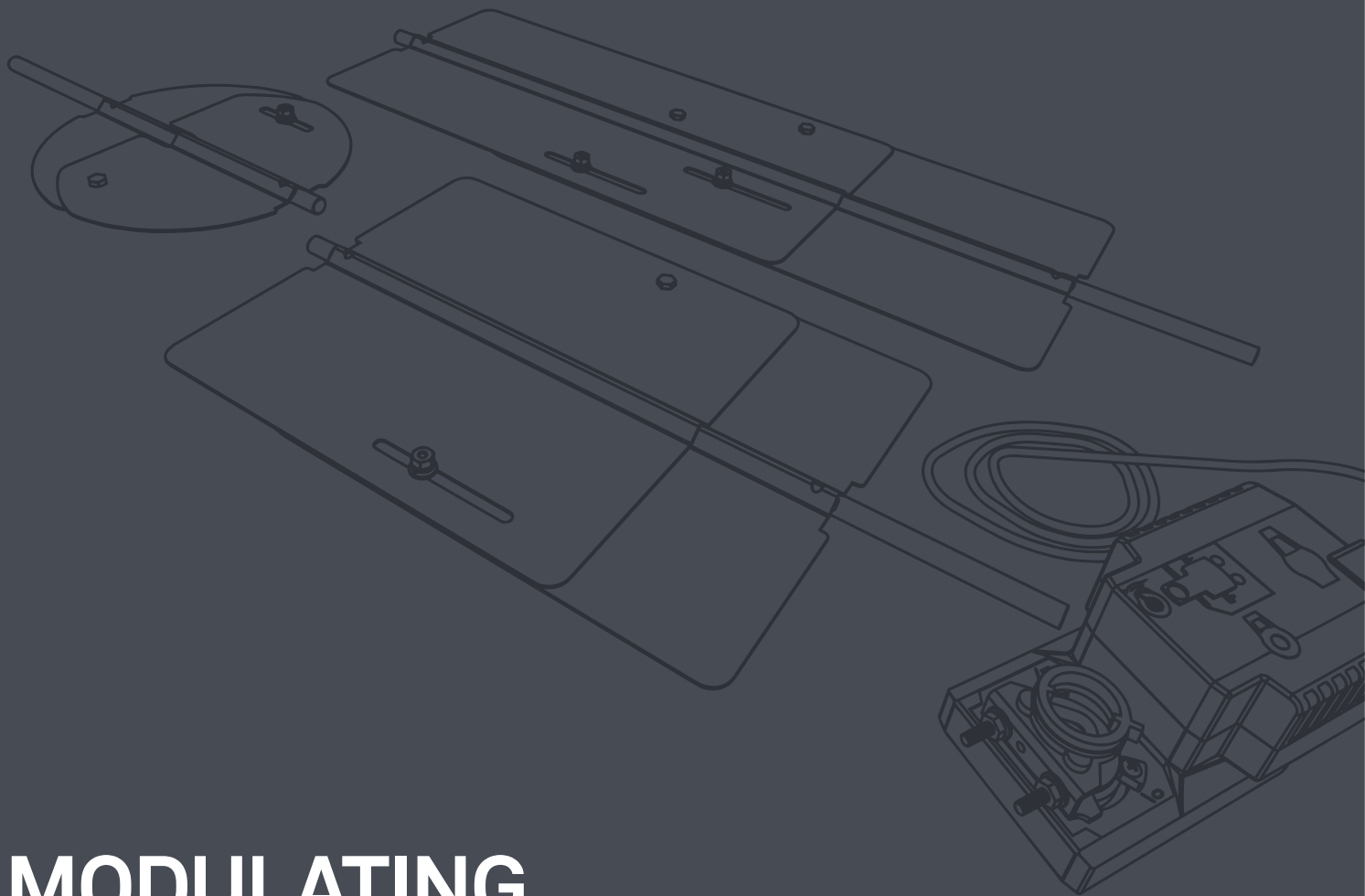


# 3 Connect



**i**  
Use EMT Ø3/4" or 25mm RMC conduit and fittings





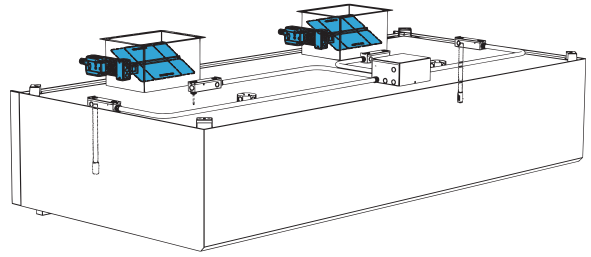
# MODULATING DAMPER

V4MD2 & V4MD-R/C

Installation Manual

**ecoAzur**<sup>®</sup>

# V4MD2 & V4MD-R/C MODULATING DAMPER



**TOOLS REQUIRED**

- 7/8" [22mm] Hex key
- #2 Screwdriver
- 1-1/4" [32mm] Wrench
- 11/16" [17mm] Wrench
- 7/16" [11mm] + 10mm Hex key

**HARDWARE**

- 18-16 ga [0.75-1.5mm<sup>2</sup>] Cable x4 (not included)

**CAUTION!**

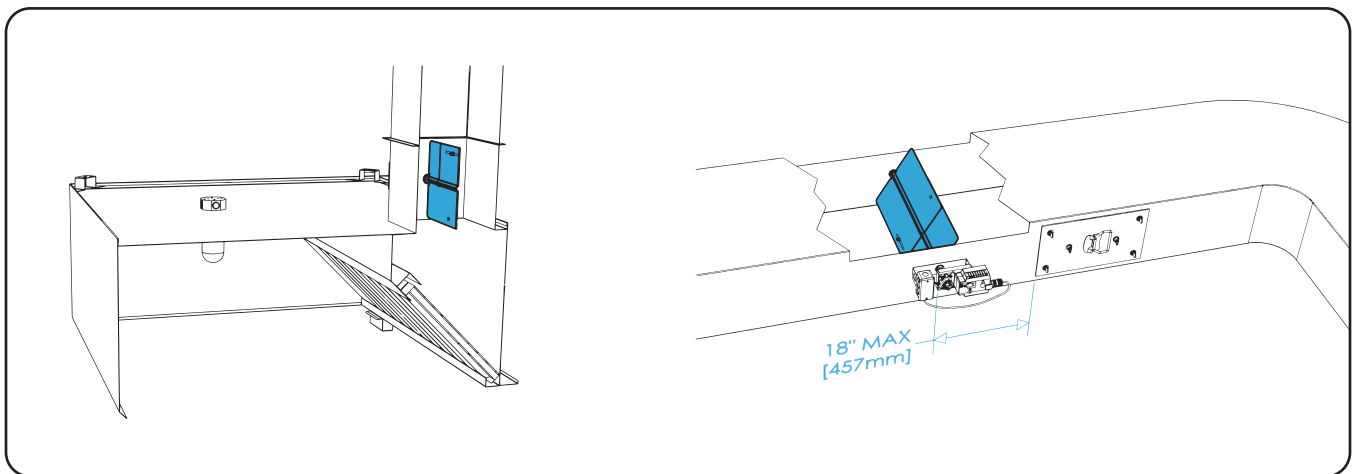
- Wear safety glasses
- Wear gloves
- Wear a hard hat

**COMPONENTS**

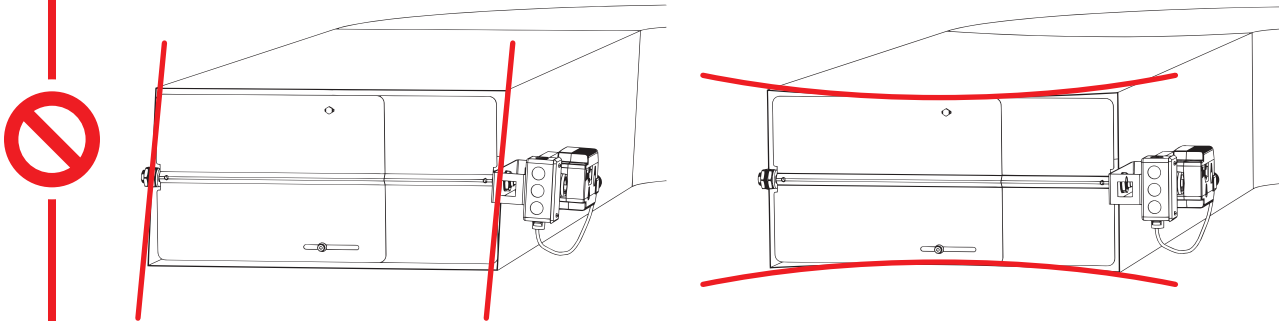
- 1x V4MD-R / V4MD-C (Damper cover)
- 1x V4MD2 (Modulating Damper unit)

## 1 Mark & Drill

### Recommended Locations



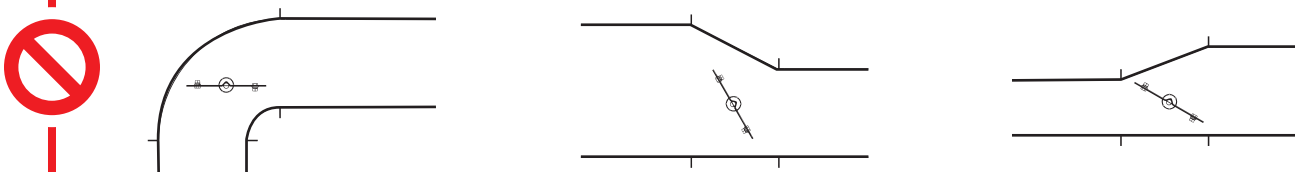
**DAMPER MUST BE INSTALLED IN A DUCT SECTION AS STRAIGHT AS POSSIBLE**



**ACTUATOR ORTHOGONAL TO DUCT**



**DO NOT INSTALL DAMPER IN A CONNECTION PIECE**



## Mark & Drill (cont'd)

**i** Drill two centered holes

7/8" [22mm]

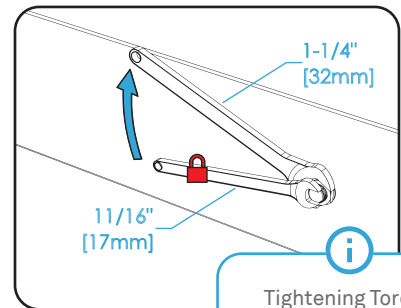
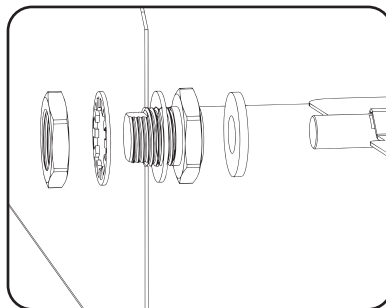
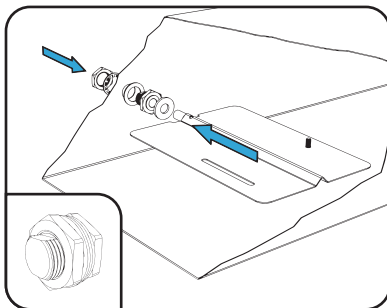
**!** Damper installed on vertical sides of a duct

INSULATED DUCT

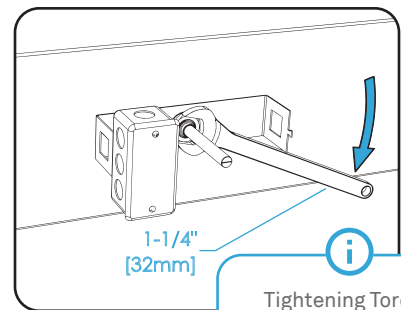
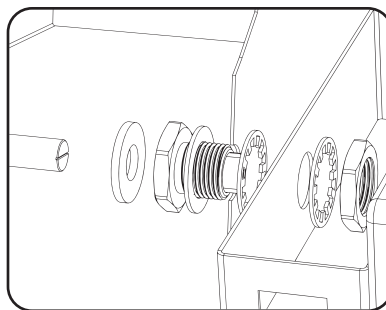
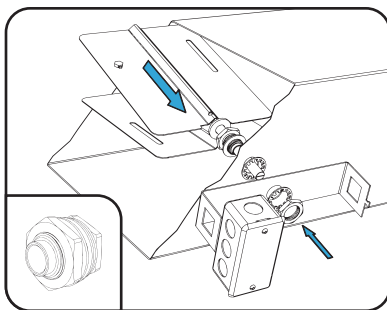
**!** Install actuator more than 18" [457mm] away from a combustible material and more than 3" [76mm] away from a semi-combustible material. Follow any additional local and national standards and codes

# 2

## Install Damper Blades V4MD-R/C

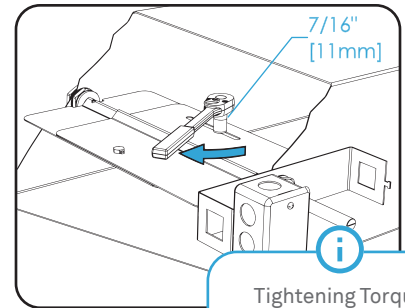
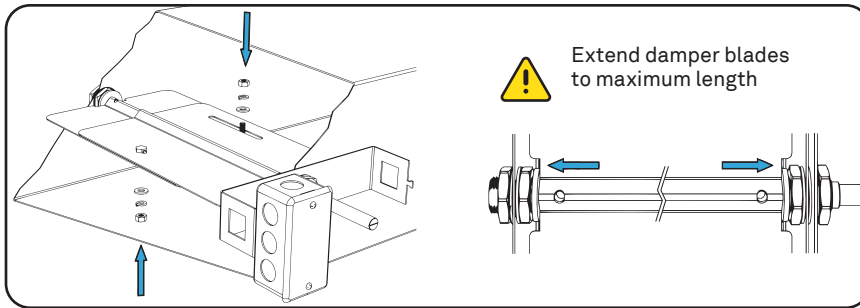


**i** Tightening Torque  
60 lbf-pi [82 Nm]



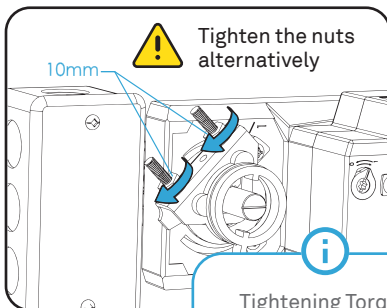
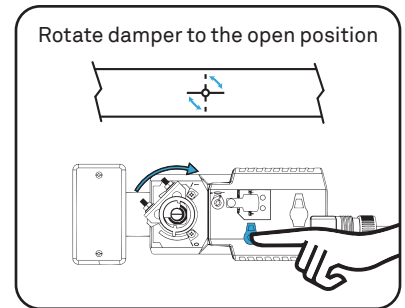
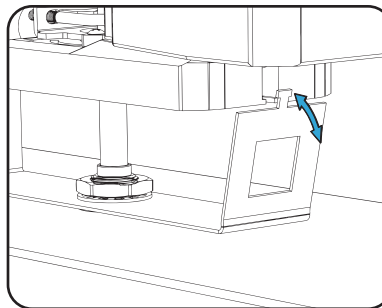
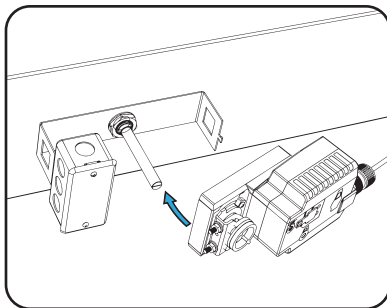
**i** Tightening Torque  
60 lbf-pi [82 Nm]

# Install Damper Blades V4MD-R/C (cont'd)

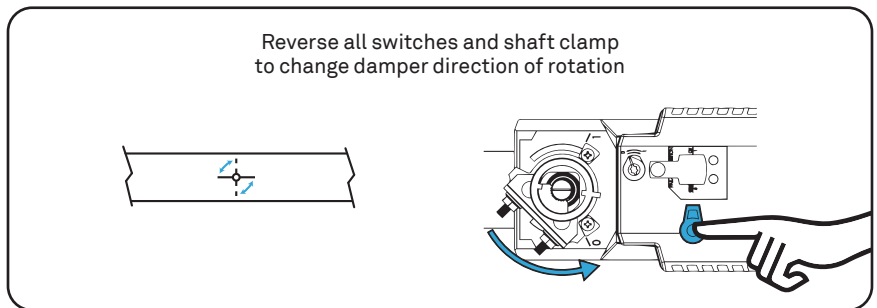


**i**  
Tightening Torque  
15 lbf-pi [20 Nm]

## 3 Install Actuator



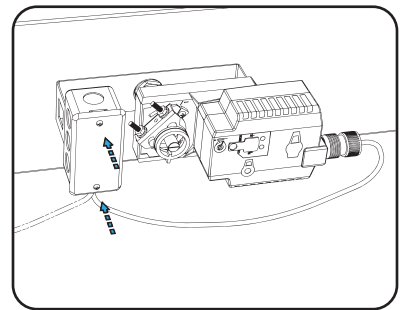
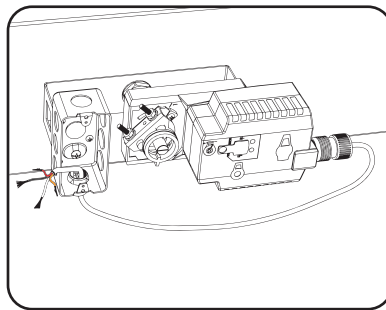
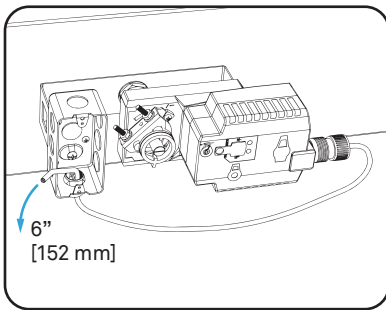
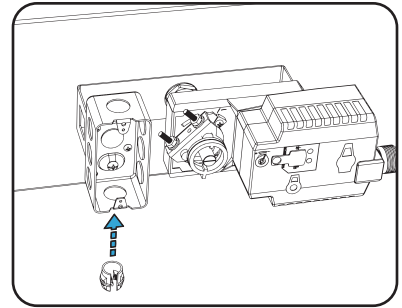
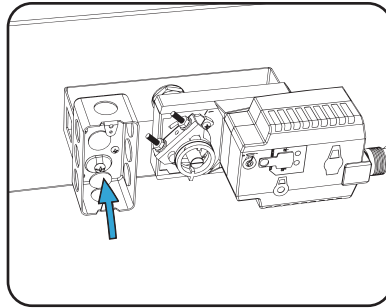
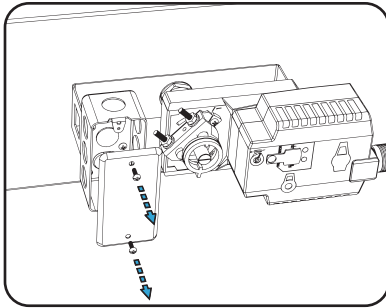
**i**  
Tightening Torque  
5 lbf-pi [7 Nm]







**ACTUATOR CONTROLS**

	<p><b>DIRECT/REVERSE ACTION</b></p> <p>10V = </p> <p>2V = </p>	<p><b>DEFAULT POSITION</b></p> <p>CCW / CW 0 / 1</p> <p> = </p>
	<p><b>i</b> 2V: Opened 10V: Closed</p>	<p><b>i</b> Fail-open position</p>

# 4 Connect Actuator



**i**

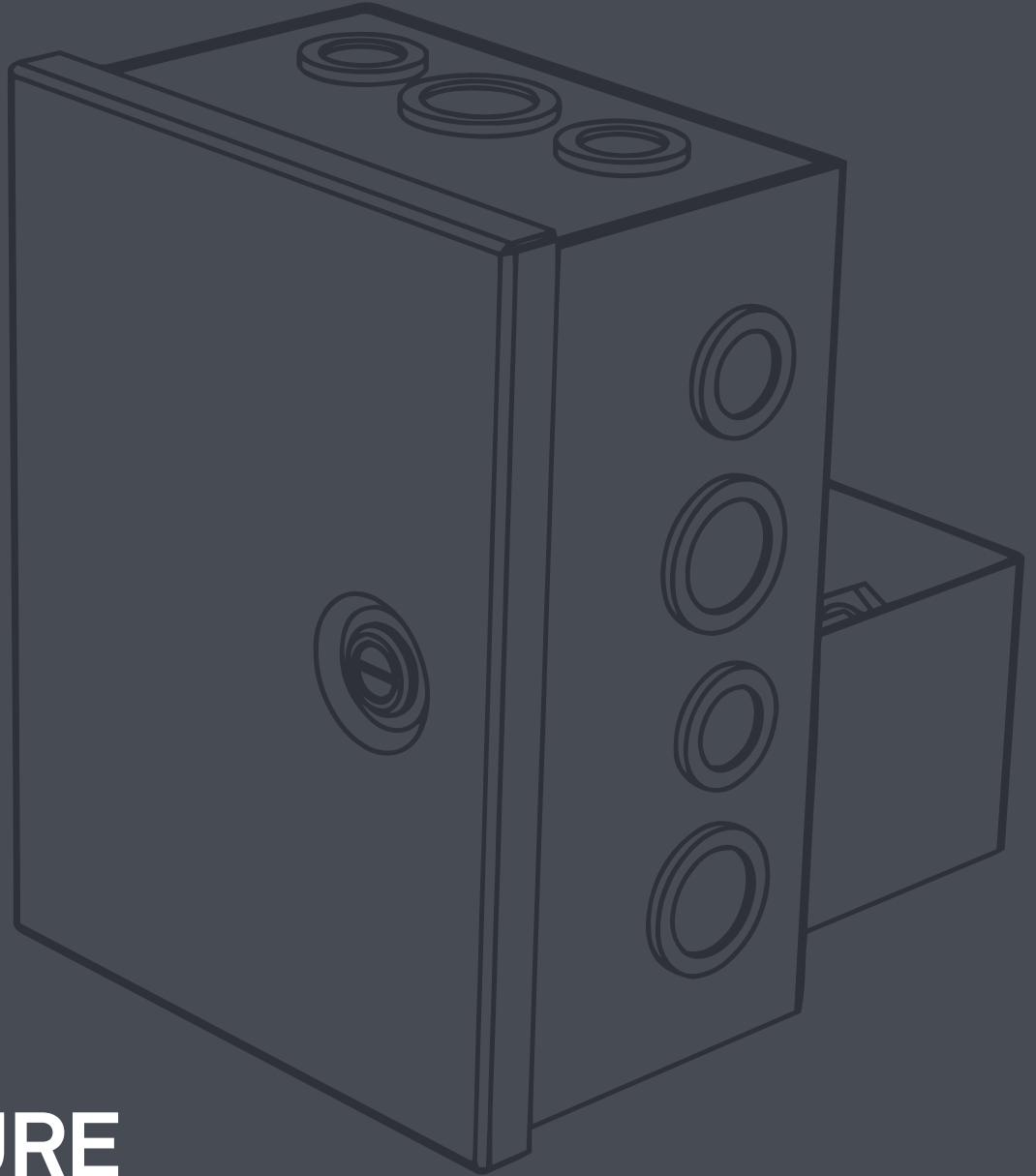
-  24 VDC/AC
-  COM
-  2-10 VDC input
-  2-10 VDC feedback

**⚠ CAUTION! ⚠**

**Refer to processor panel electrical schematics**

**Minimum Cable Requirements**

- Plenum/FT6 Gage
- Shielded
- 4 x 18 AWG [0.75 mm<sup>2</sup>]
- 75° C [167° F] max. temp.



# PRESSURE SENSOR

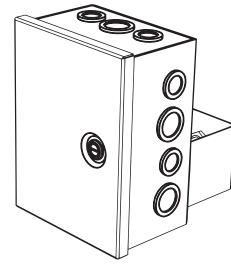
V4MD-PT5

Installation Manual

**ecoAzur**<sup>®</sup>



# V4MD-PT5 PRESSURE SENSOR



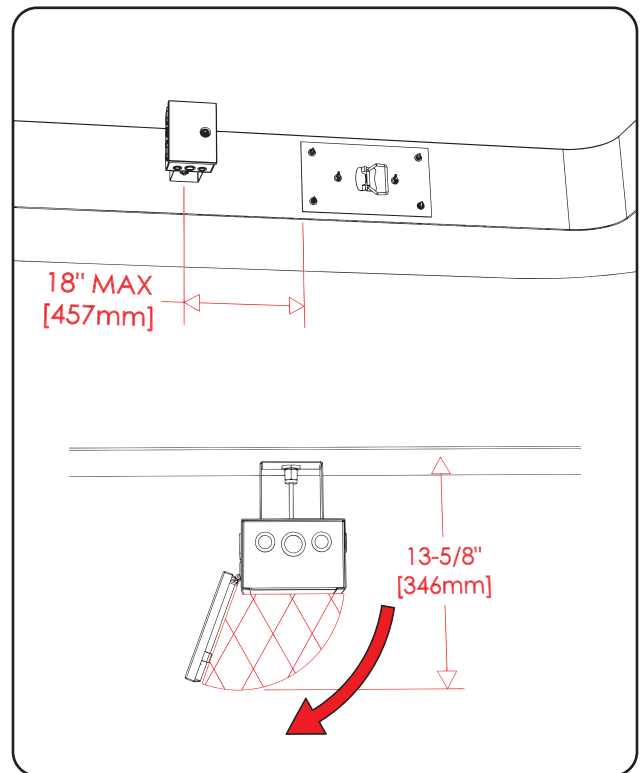
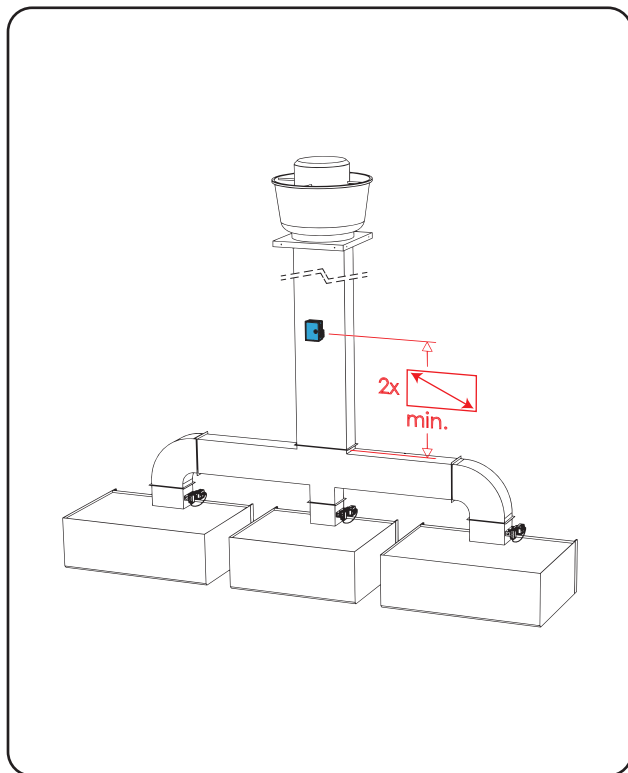
**REQUIRED TOOLS**

3/4" [19mm]  
1-1/8" [29mm]  
1/8"

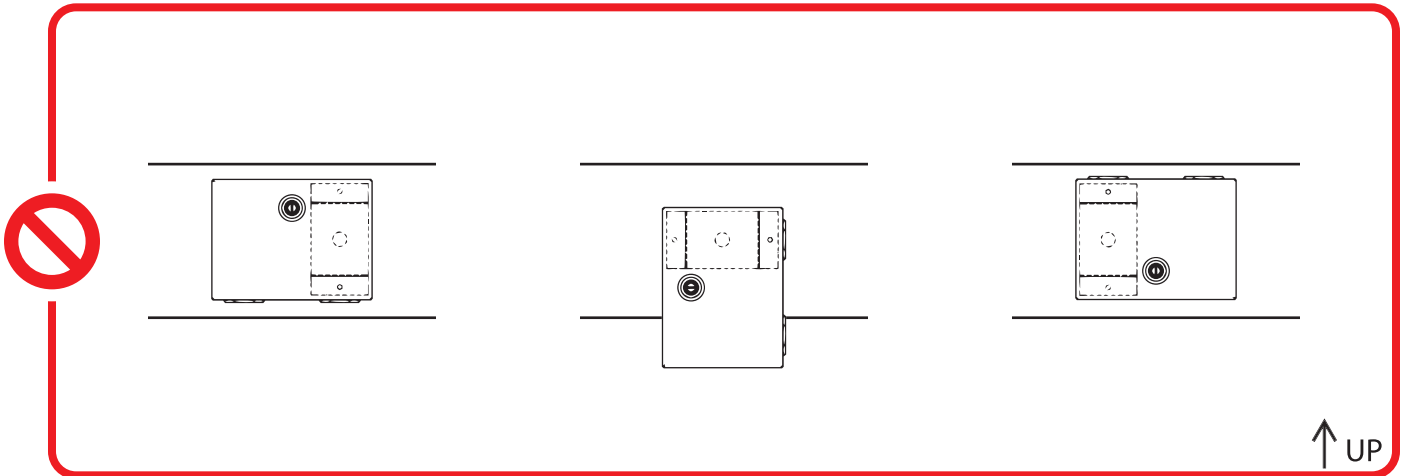
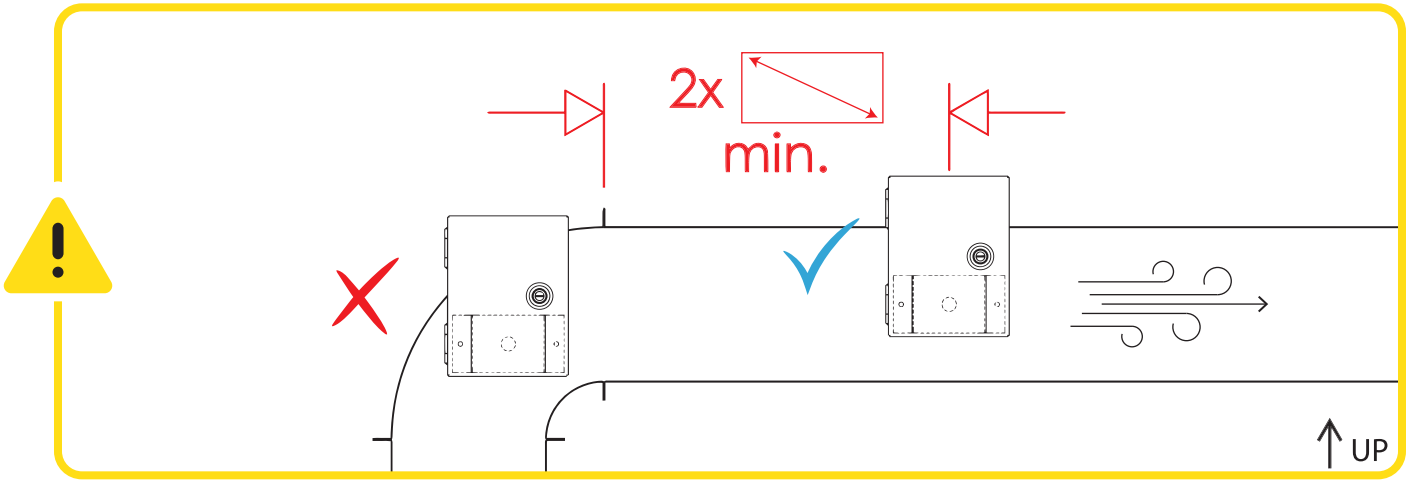
**CAUTION!**

## 1 Mark & Drill

### Recommended Location



# Mark & Drill (cont'd)



3/4" [19mm]

⚠ Sensor installed on vertical sides of a duct

**INSULATED DUCT**

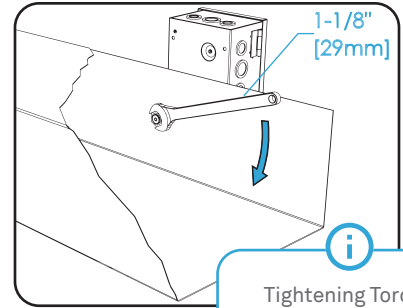
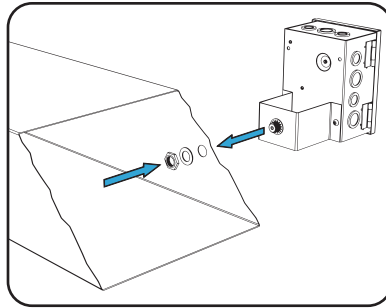
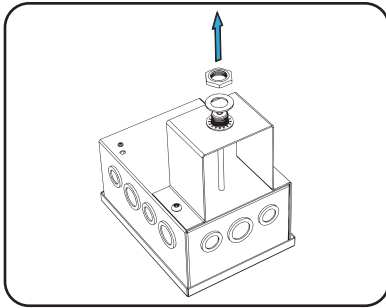
4-1/2" [114mm]

3-3/4" [95mm]

⚠

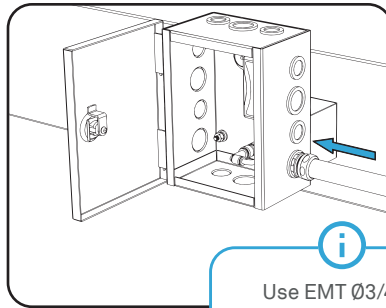
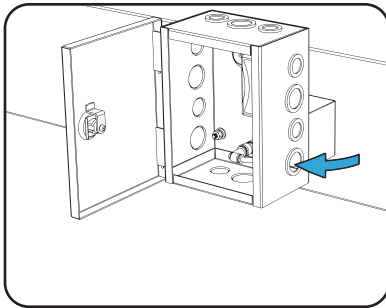
Install sensor more than 18" [457mm] away from a combustible material and more than 3" [76mm] away from a semi-combustible material. Follow any additional national or local standards and codes

# 2 Install

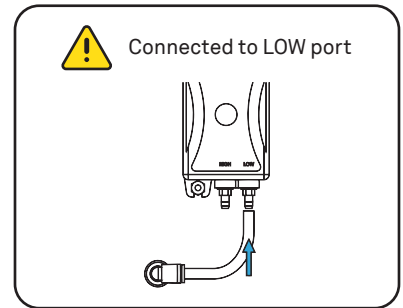
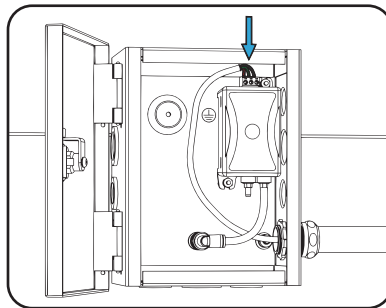
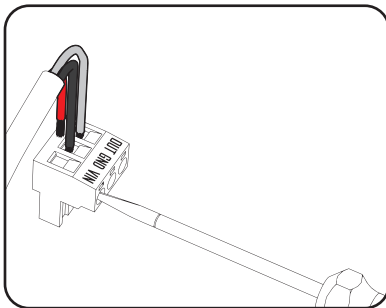
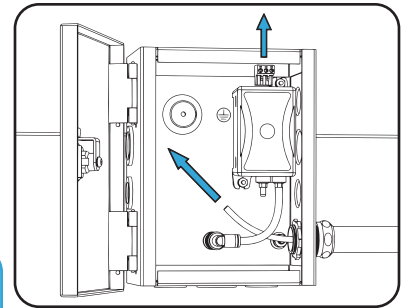


**i**  
Tightening Torque  
30 lbf-pi [41 Nm]

# 3 Connect



**i**  
Use EMT Ø3/4" or  
25mm RMC  
conduit and fittings



**⚠ CAUTION! ⚠**

<p><b>Refer to processor panel electrical schematics</b></p>	<p><b>Minimum Cable Requirements</b></p> <ul style="list-style-type: none"> <li>- Plenum/FT6 Gage</li> <li>- 3 x 18 AWG [0.75 mm<sup>2</sup>]</li> <li>- Shielded</li> <li>- 75° C [167° F] max. temp.</li> </ul>
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