



# Data Collection Unit

## Installation Instructions

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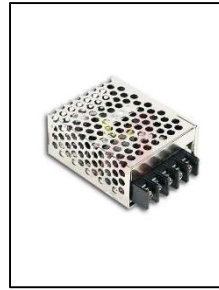


4<sup>th</sup> Generation

## PARTS AND HARDWARE



**1x**  
DCU



**1x**  
DCU power supply  
(model may vary)



**1x**  
Antenna



**7x**  
DCU port plug



**1x**  
Mounting bracket



**10x**  
Sensor cable gland



**4x**  
Self tapping sheet  
metal screws



**1x**  
DCU micro usb  
power cable

## PARTS AND HARDWARE



**1x**  
Pressure sensor  
and cable



**1x**  
Pressure sensor  
¼" nylon tube



**2x**  
Current sensor  
and cable



**2x**  
Temperature sensor  
and cable

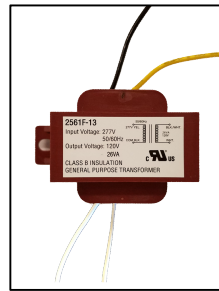


**20x**  
Cable ties

### ACCESSORIES PACKAGED SEPARATELY:



**1x**  
Modem



**1x**  
Step-down transformer

## PREPARING FOR INSTALL

Before you perform the installation it is important to know where the data collection units and modem will be installed. This ensures that you bring the correct DCUs and modems to the site. If a site plan has not been created for you:

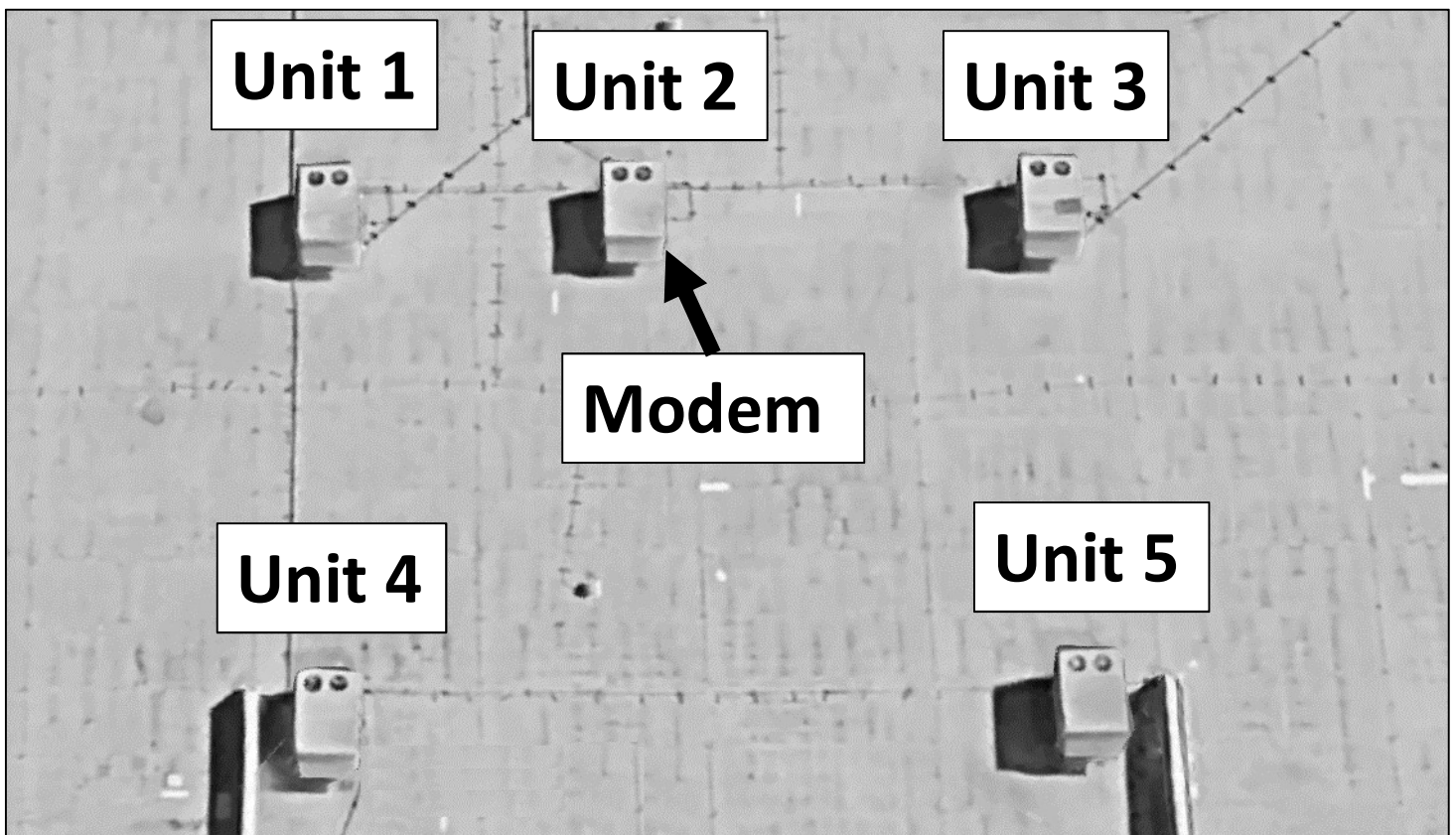
1. Count the number of roof top units
2. Give each unit a name or number
3. Plan DCU and HVAC unit pairings

### MODEM PLACEMENT

The modem enables DCUs to report sensor data to the cloud and must be centrally placed so that units can access it. The modem has 120 foot range and must be externally mounted. Install modem on unit which is in the middle of the other units.

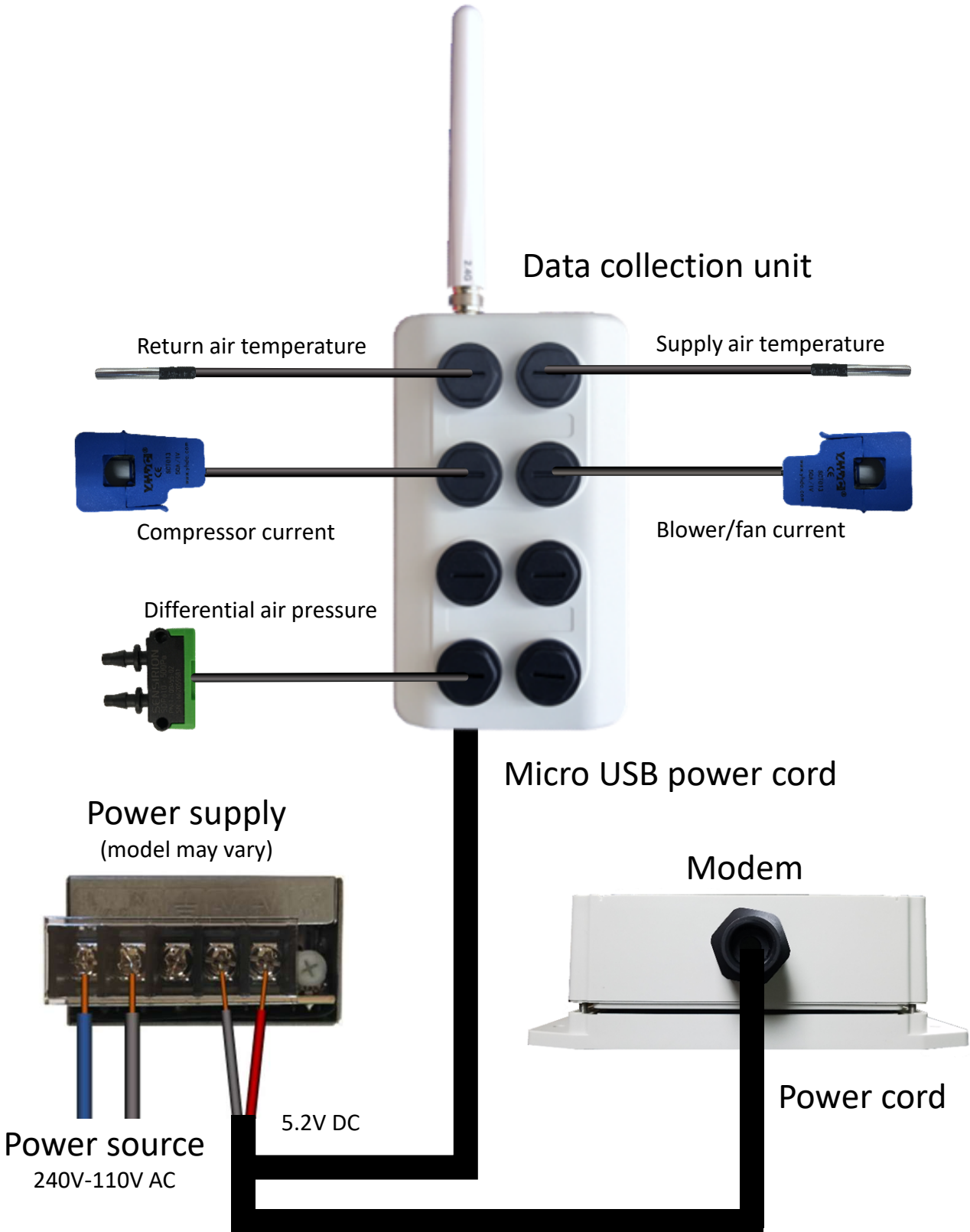
### DCU PLACEMENT

The DCU collects vital statistics and must be mounted on the exterior of unit. The antenna must be positioned at a high place on unit such that signal is not obstructed by sheet metal and other components.





# COMPONENT DIAGRAM



**NOTE: NOTE:** Power supply may differ per DCU unit. See instructions which correspond with the model supplied.

# POWER SUPPLY DIAGRAM

90v - 240v System



L1 Contactor

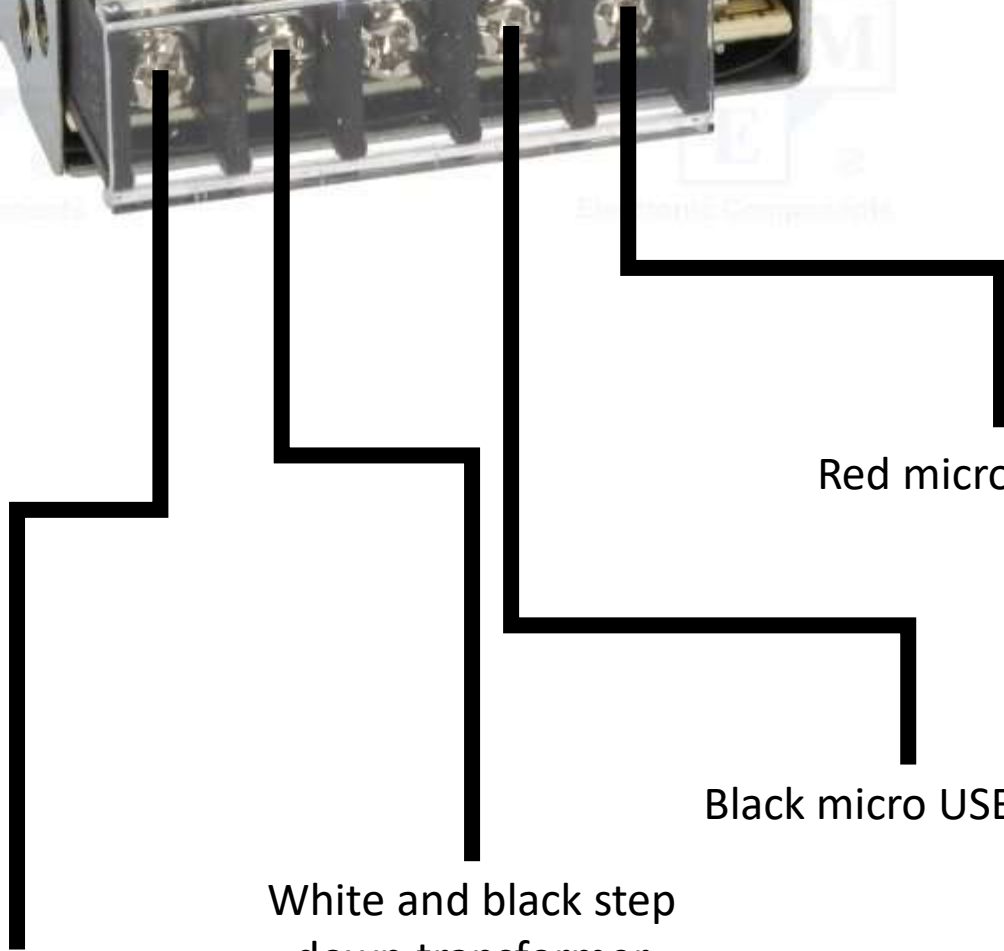
L2 Contactor

Red micro USB wire

Black micro USB wire

# POWER SUPPLY DIAGRAM

460v – 480v System



White step down transformer wire

White and black step down transformer

Black micro USB wire

Red micro USB wire

# POWER SUPPLY DIAGRAM

90v - 240v System

Red micro  
USB wire

Black micro  
USB wire



L2 Contactor

L1 Contactor

# POWER SUPPLY DIAGRAM

460v – 480v System

Red micro  
USB wire

Black micro  
USB wire

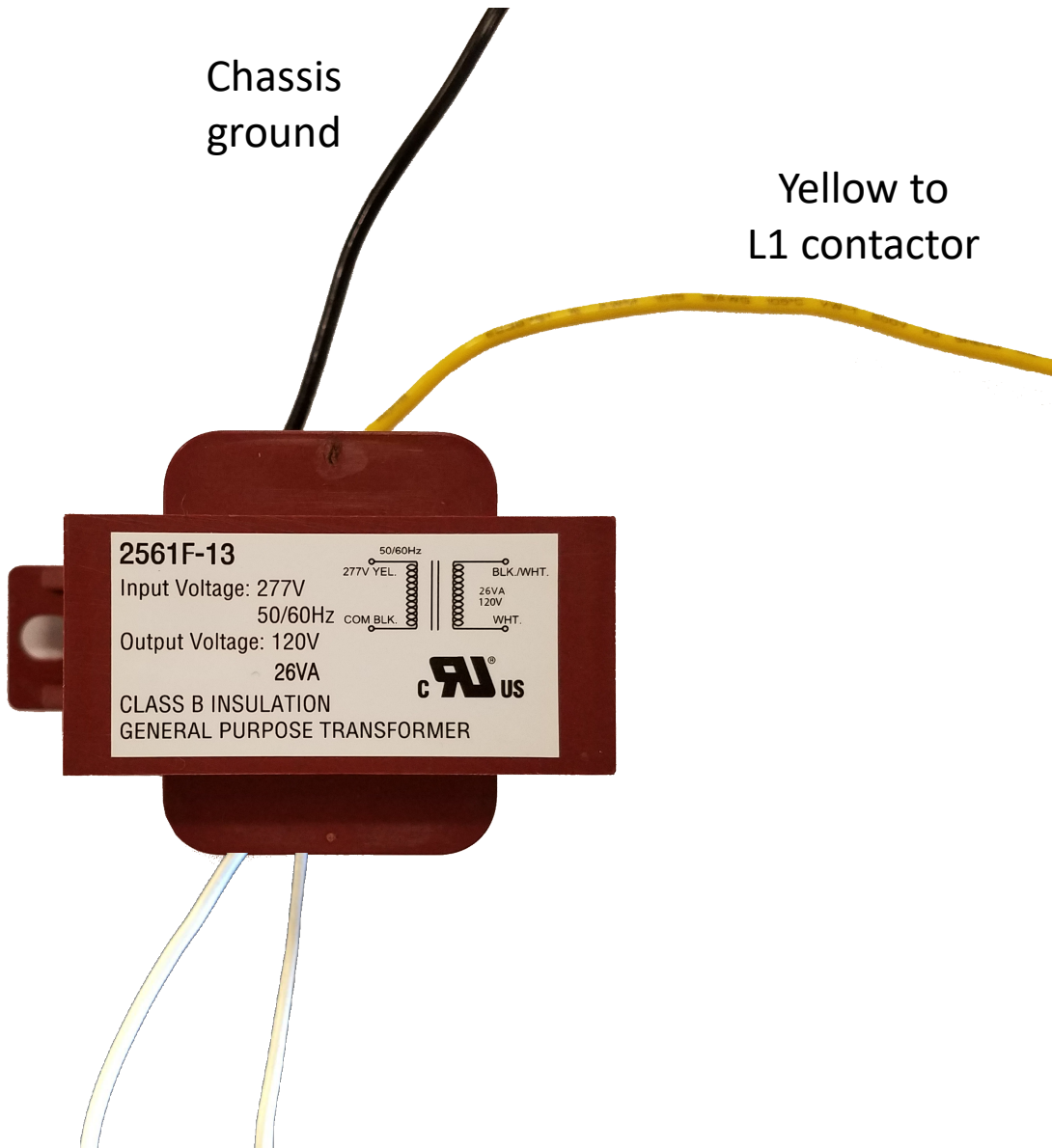


White and black step  
down transformer

White step down  
transformer wire



# STEP-DOWN TRANSFORMER DIAGRAM



## INSTALL INSTRUCTIONS

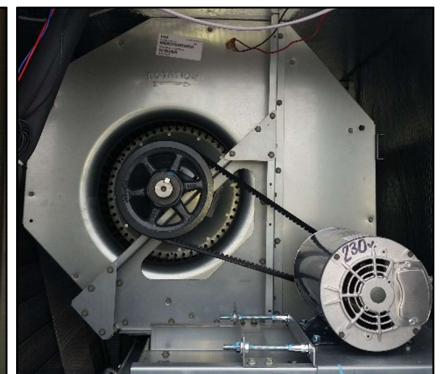
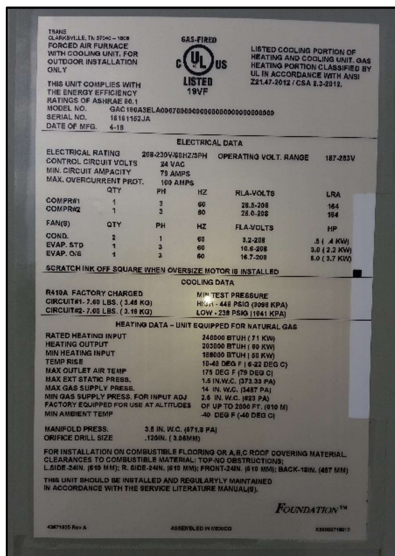
**WARNING:** DCU and Sensors installation should not HVAC void system warranty. If installation is not possible without voiding HVAC unit warranty, or without violating original manufacturer instructions please contact [install@optumsoft.com](mailto:install@optumsoft.com)

1. Turn off power to HVAC unit
2. Identify location for power supply on interior, also transformer if needed
3. Identify location for DCU on exterior
4. Identify location for modem
5. Drill 1" hole for power supply and sensor cables. Install sensor cable gland.
6. Install sensors and run cables to DCU location through gland in step 5.
  - a) See page 15 for locating where to place sensors.
  - b) Ensure use of cable ties to fasten temperature sensors to interior of duct
  - c) Ensure proper placement of CT sensors. See page 19-20.
7. Install DCU mounting bracket using self tapping screws
8. Install DCU by inserting onto mounting bracket
9. Install modem using self tapping screws
10. Install cable glands on sensor cables
11. Install sensor cables on DCU. Coil extra cable and zip tie. NOTE: Do NOT cut sensor cables.
12. Place power supply and connect to power source, or transformer as needed
13. Install modem and DCU power cords
14. Fasten power supply to unit
15. Plug unused DCU ports. Seal hole from step 5 if not air tight with silicone.
16. Turn on power to HVAC unit
17. Check for green LED on bottom of DCU
18. Perform post installation checklist and steps

# POST INSTALLATION STEPS

For each unit installed:

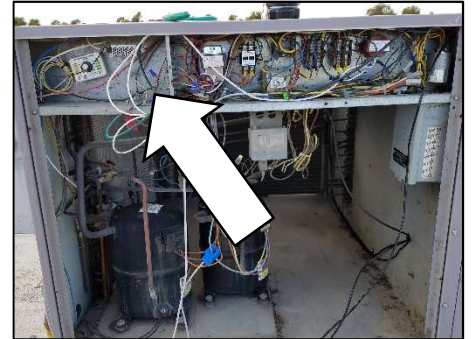
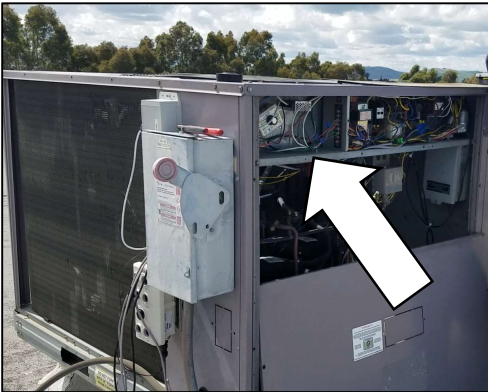
1. Take picture of HVAC unit, DCU, and modem if present.
2. Take pictures of compressor, evaporator, and fan labels and model numbers
3. For each unit, email pictures to [install@optumsoft.com](mailto:install@optumsoft.com) with the DCU serial number in the subject line.



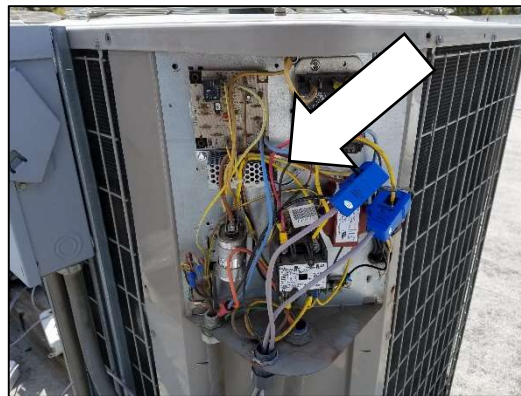
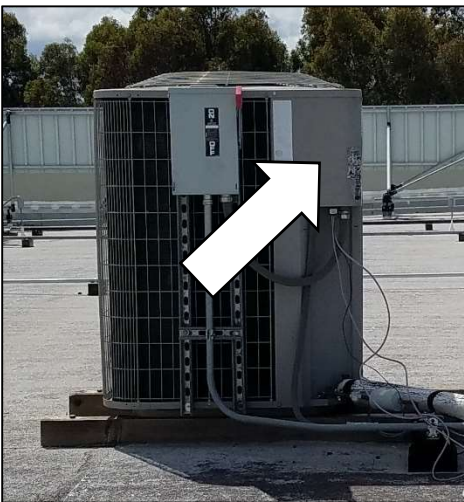


# POWER SUPPLY PLACEMENT

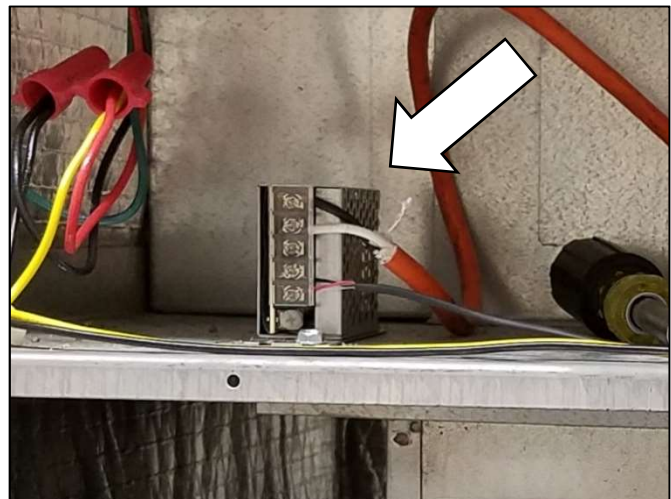
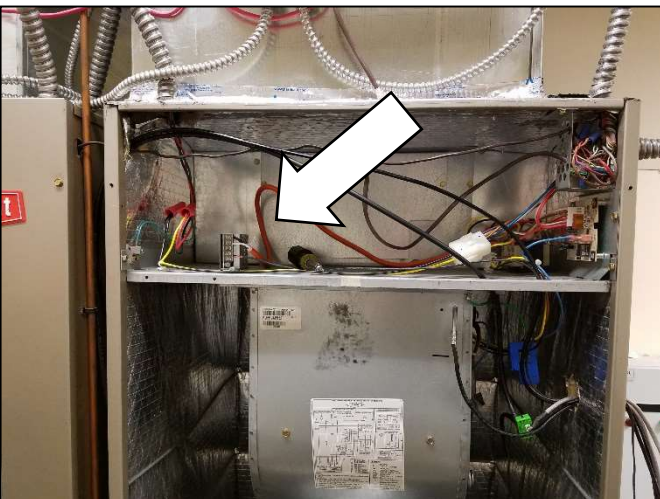
## Packaged unit



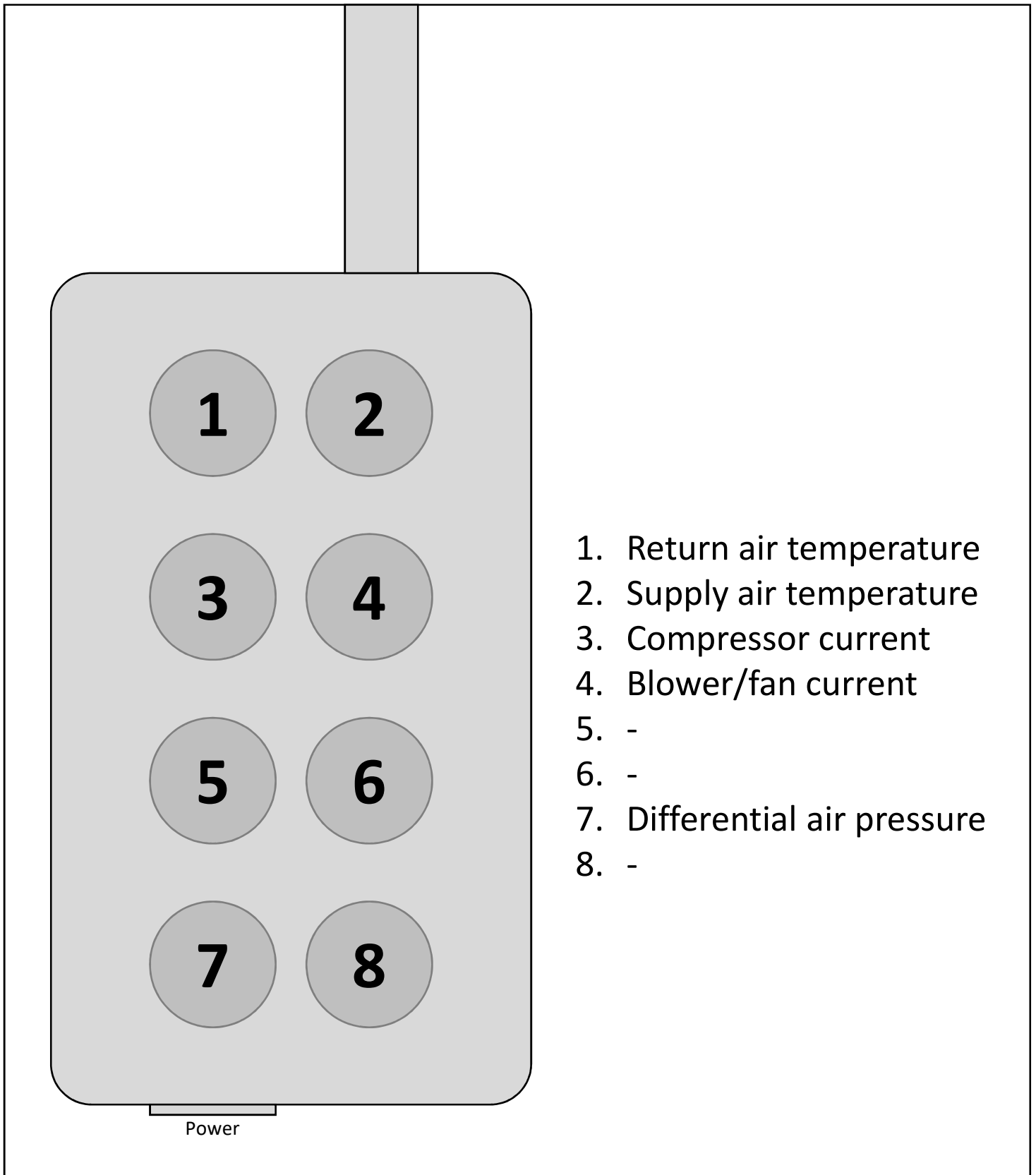
## Split system condenser unit



## Split system server room

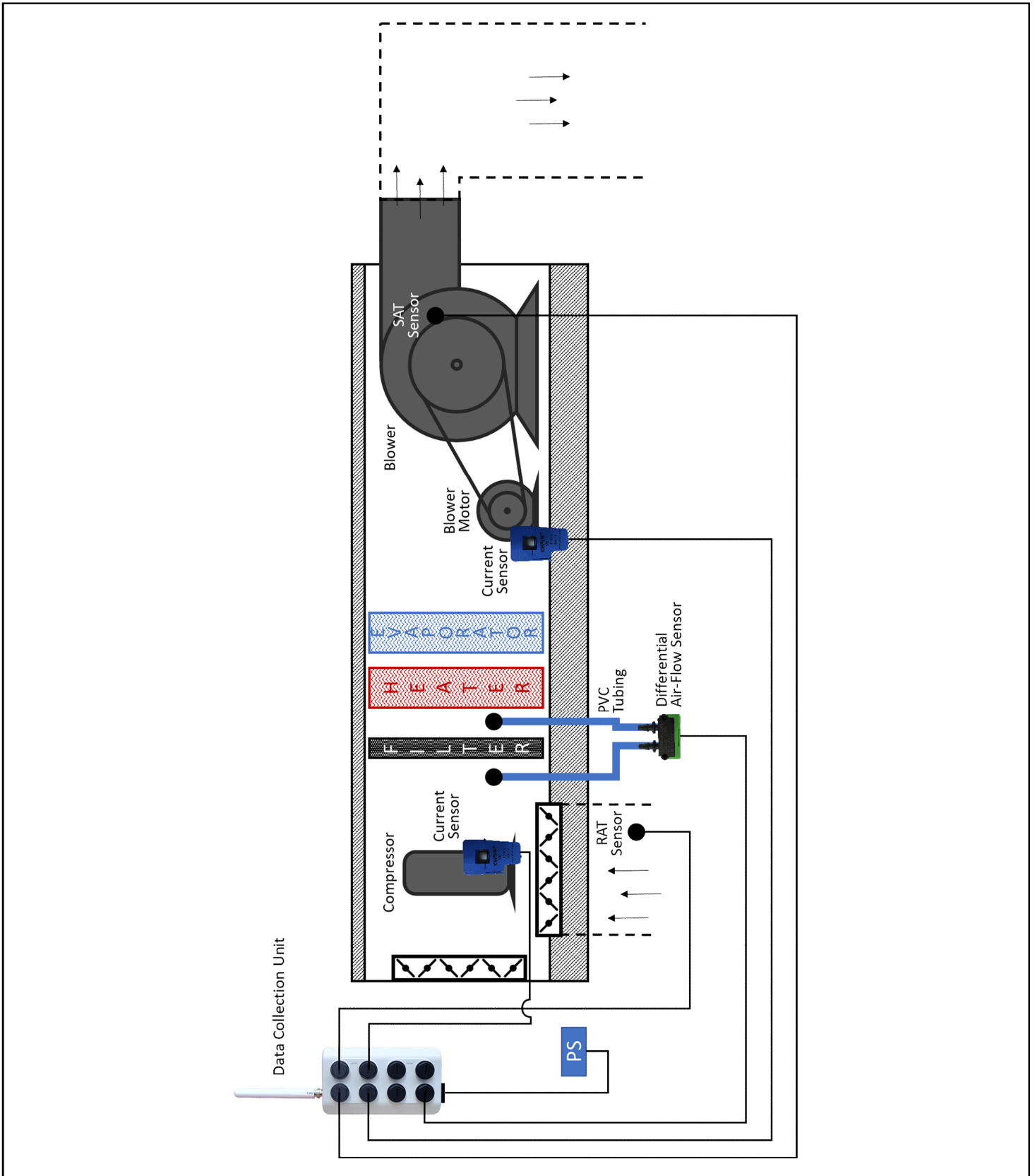


## DATA COLLECTION UNIT



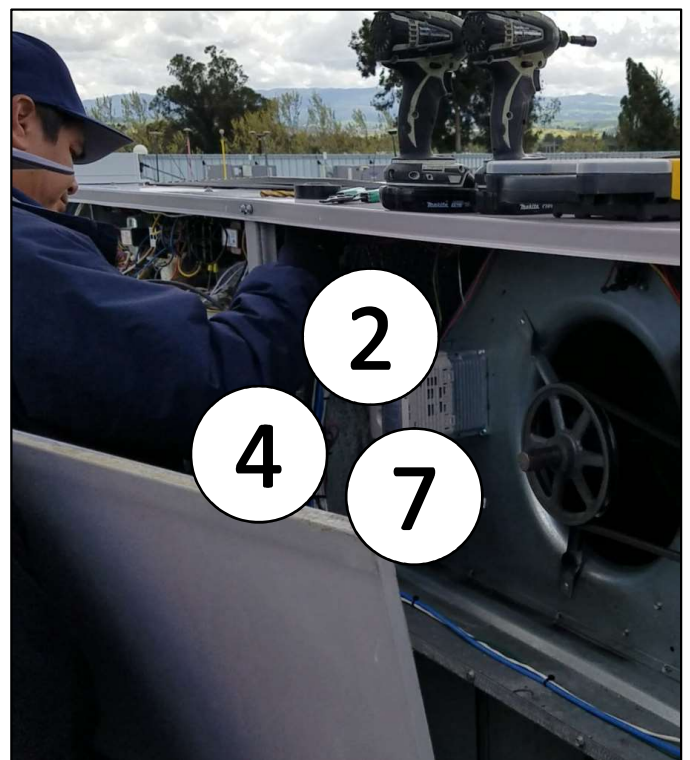
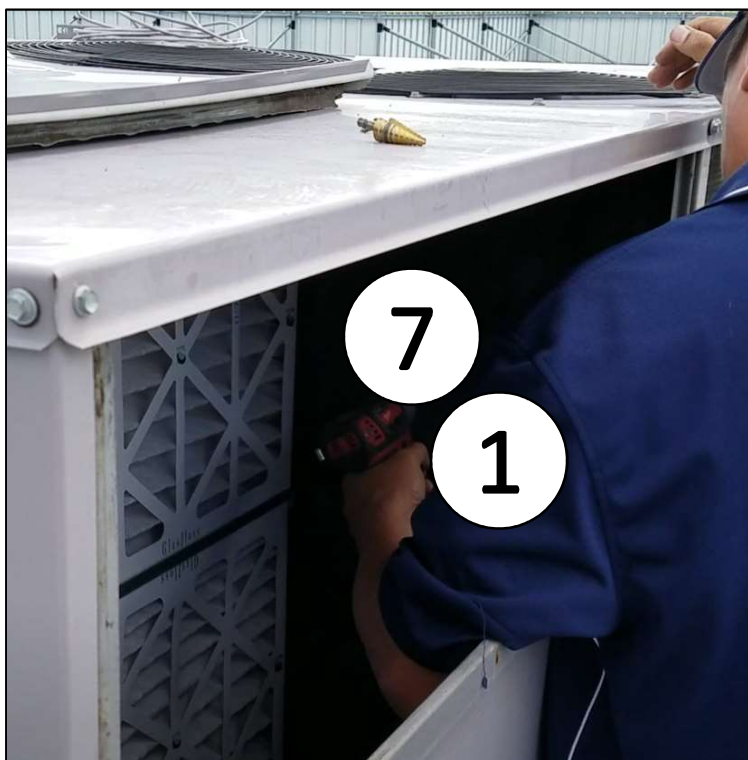
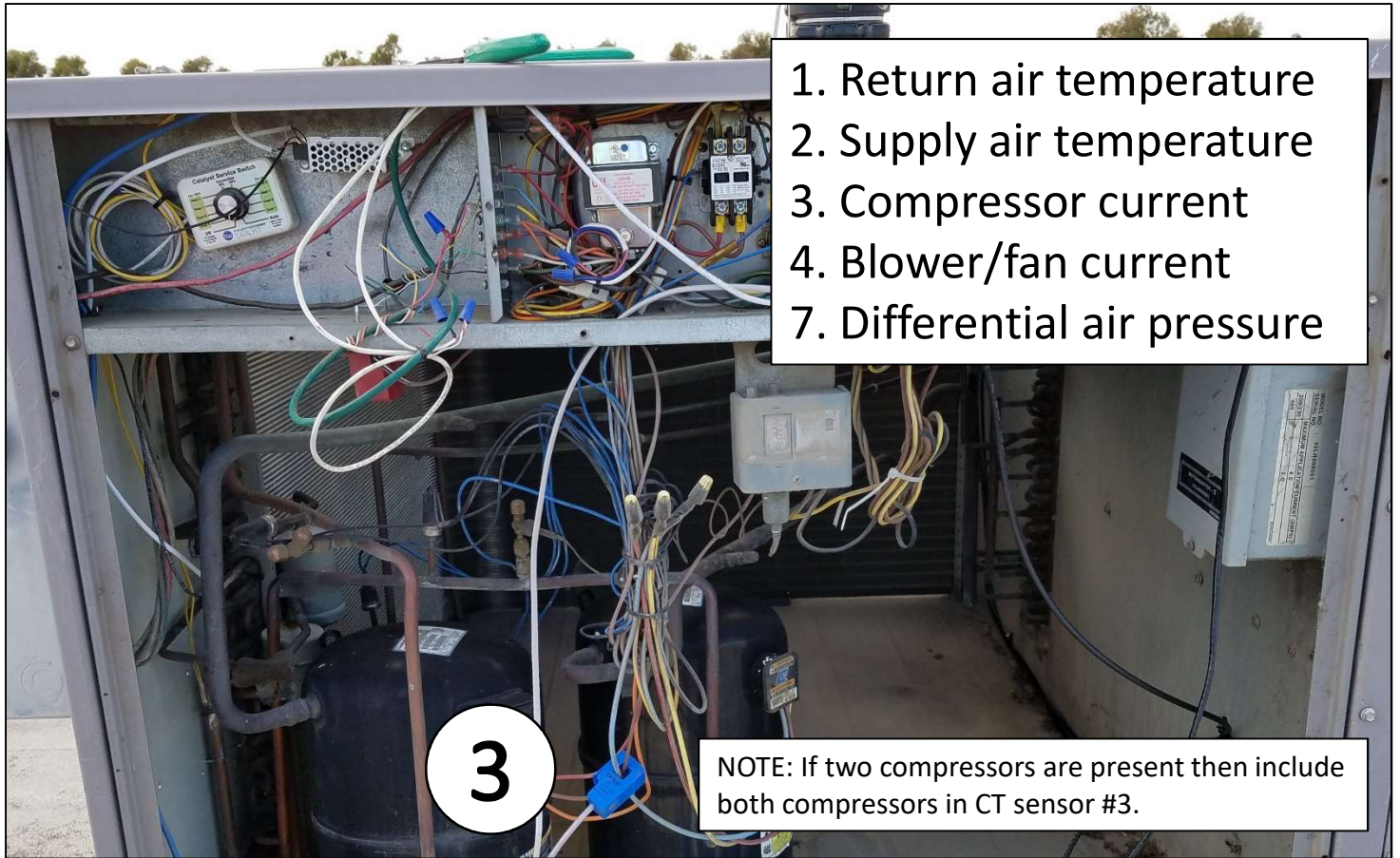


# SENSOR PLACEMENT



# SENSOR PLACEMENT

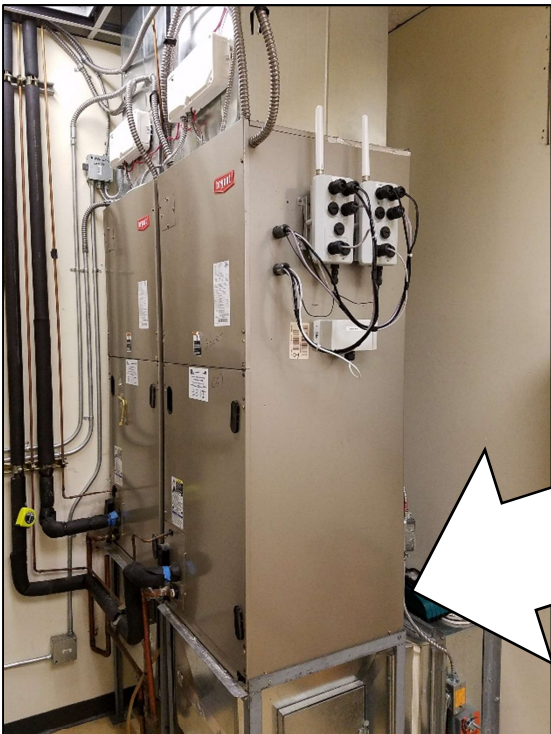
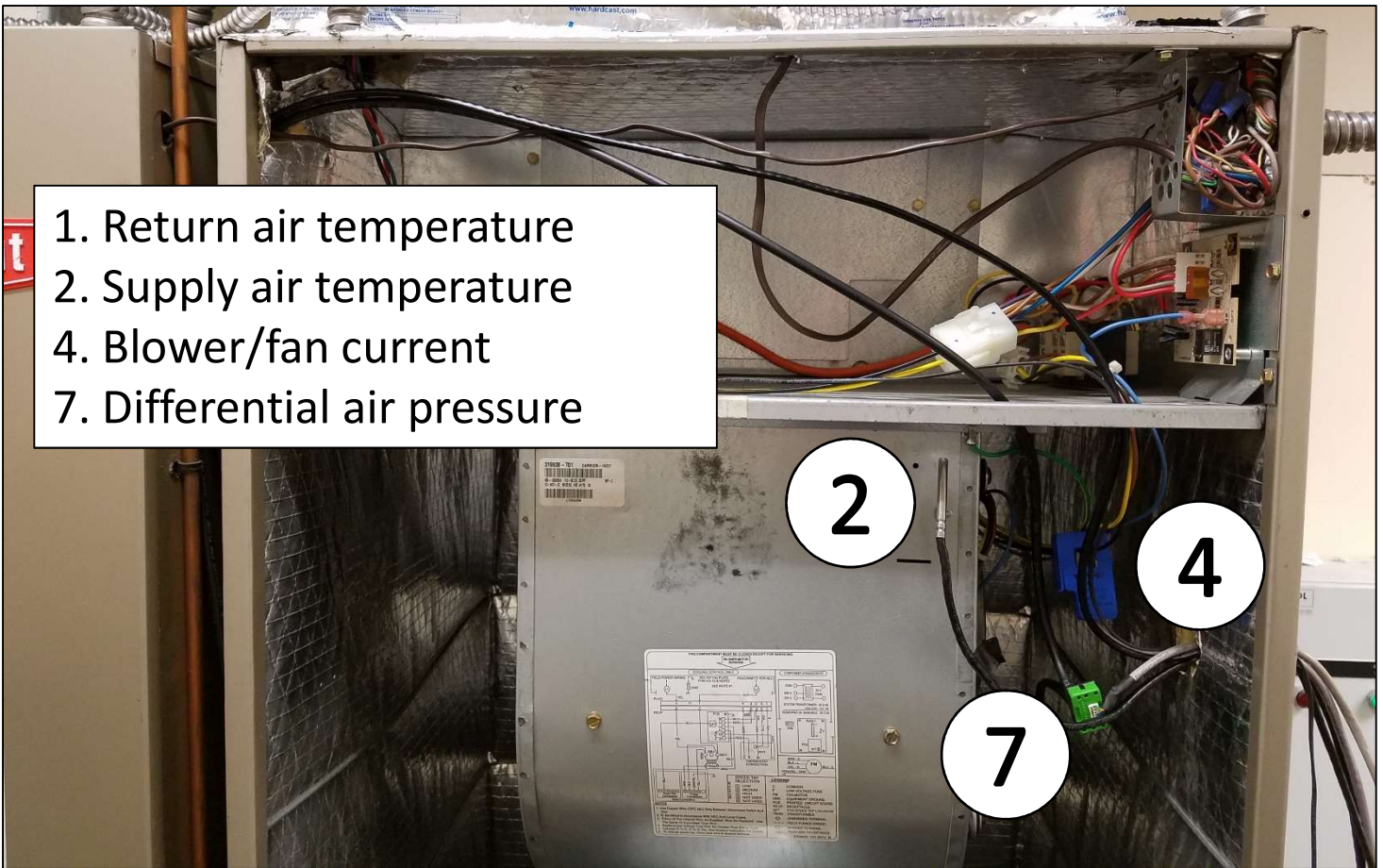
## Packaged unit





# SENSOR PLACEMENT

## Split system server room



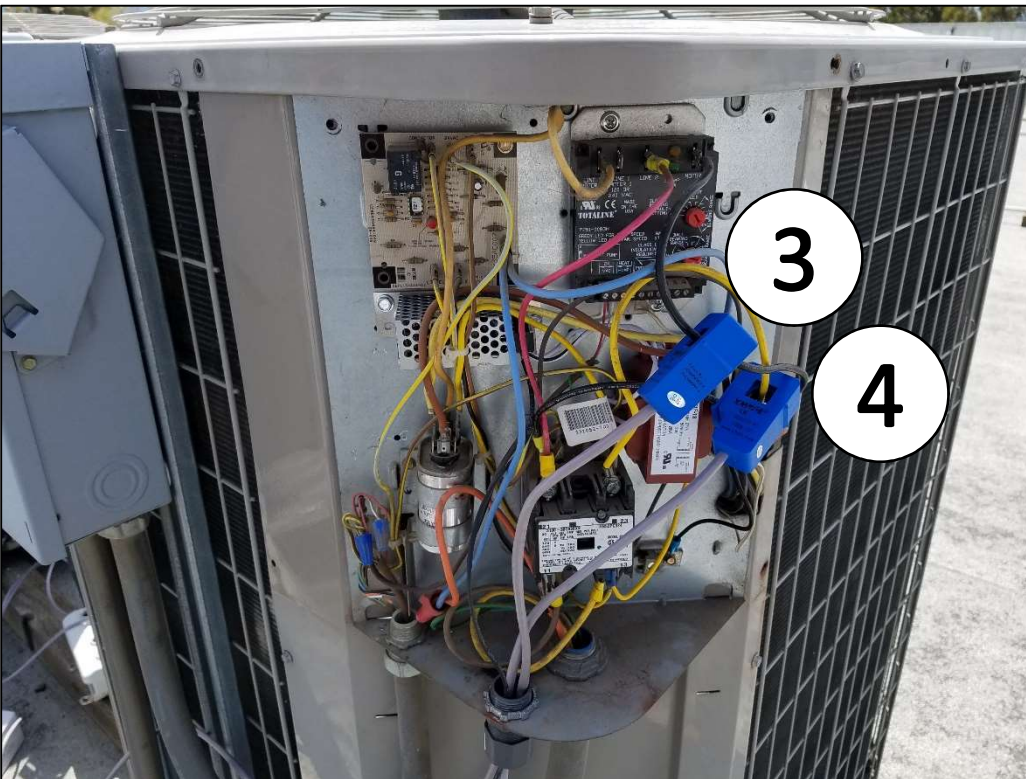


## SENSOR PLACEMENT

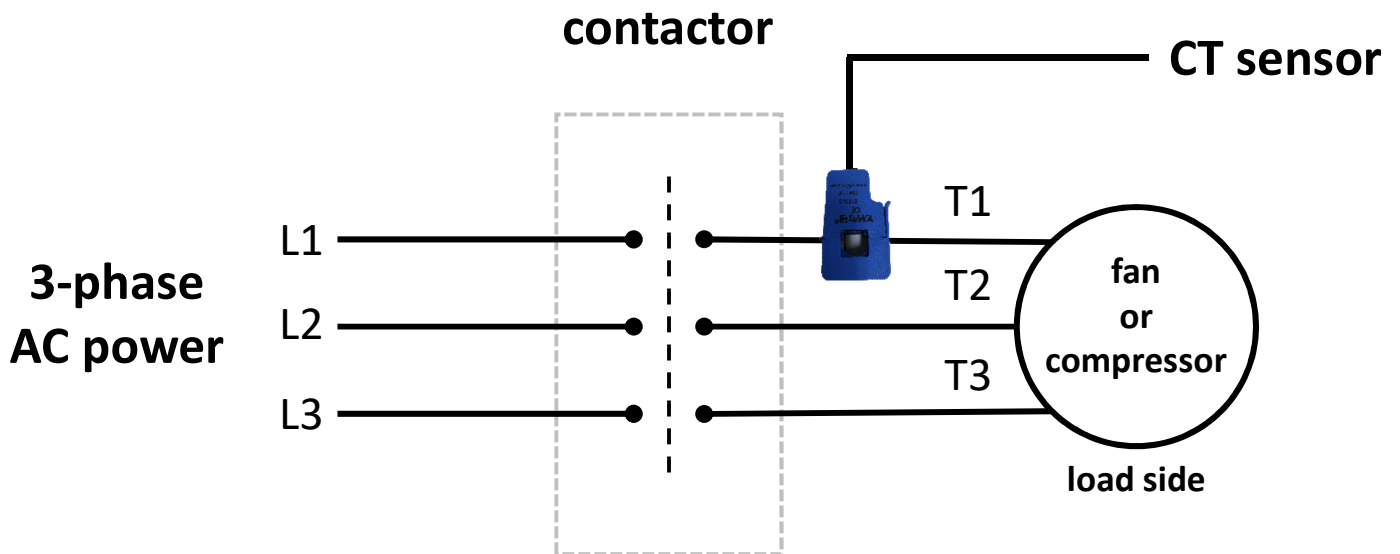
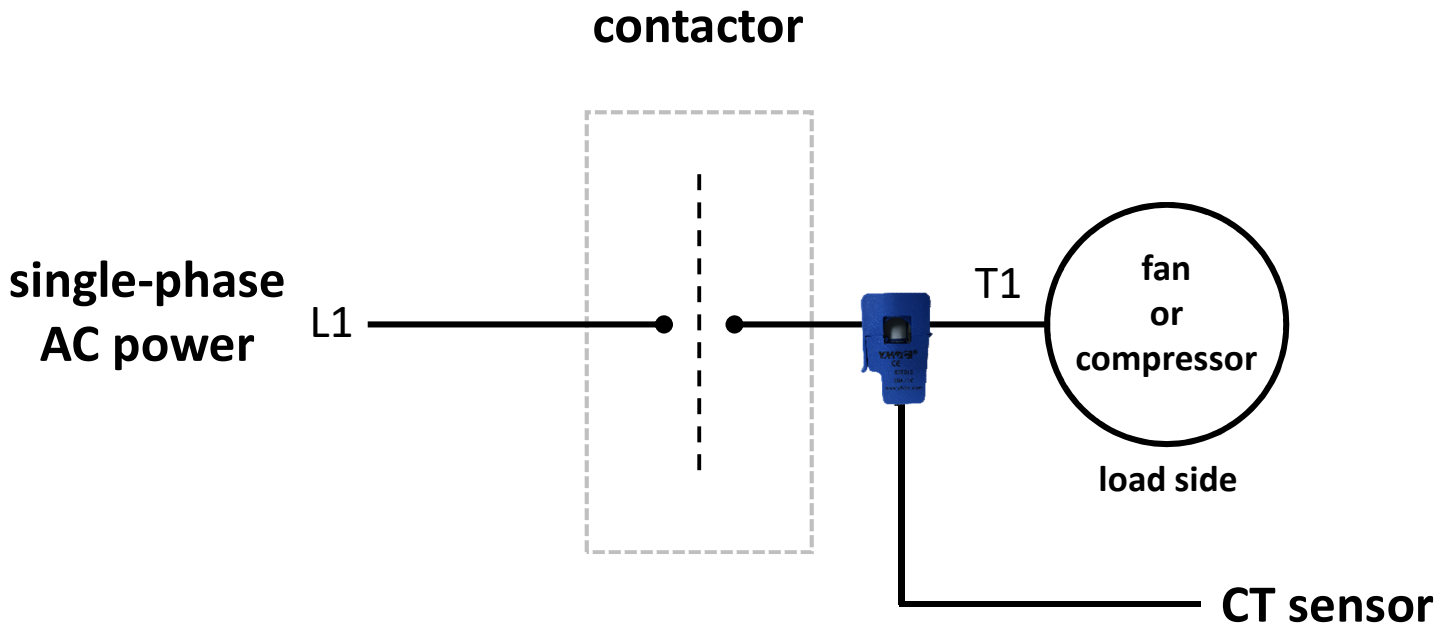
### Split system condenser unit



- 3. Compressor current
- 4. Fan current



# CT SENSOR PLACEMENT



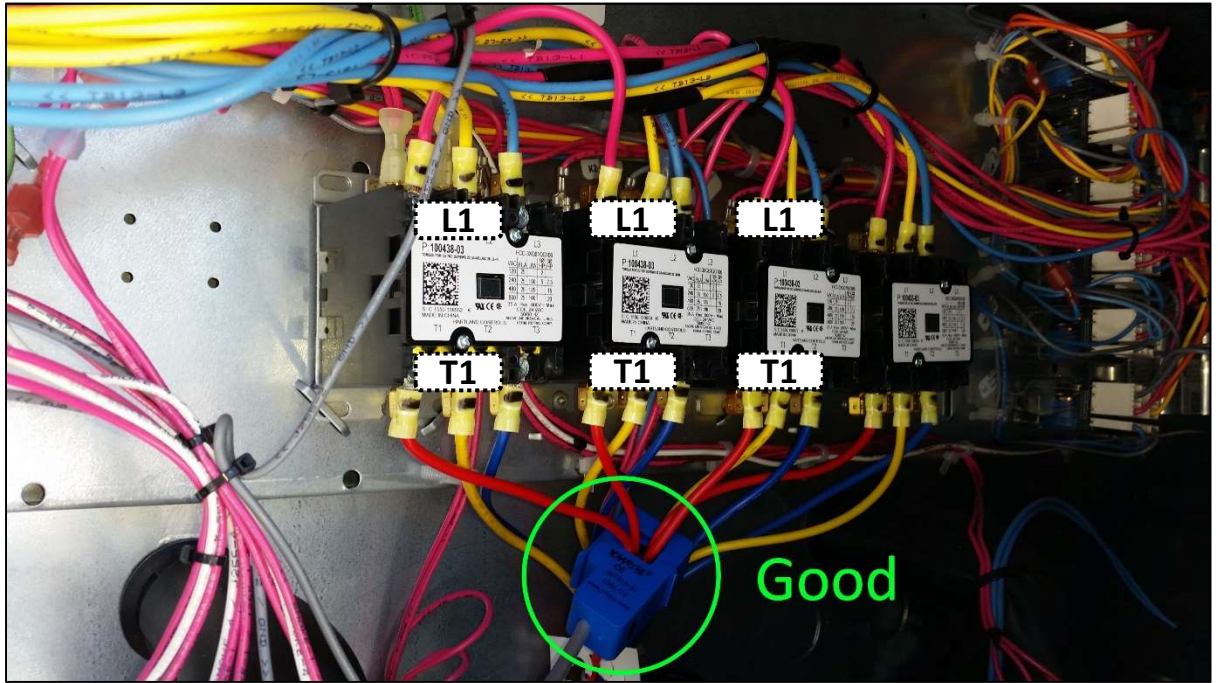
NOTE: Place clamp on load side. In case of multiple compressors then clamp on all compressor T1 lines. In case of multiple fans/blowers then clamp on all fan/blower T1 line.



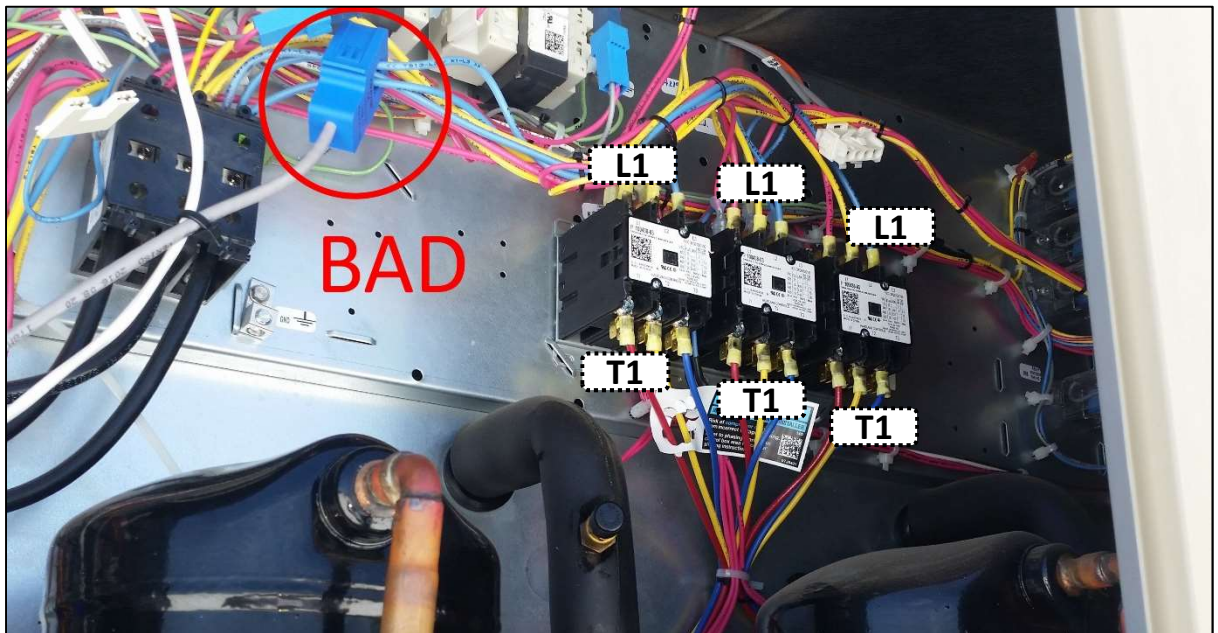
# CT SENSOR PLACEMENT

## CT Sensor Placement Example

GOOD



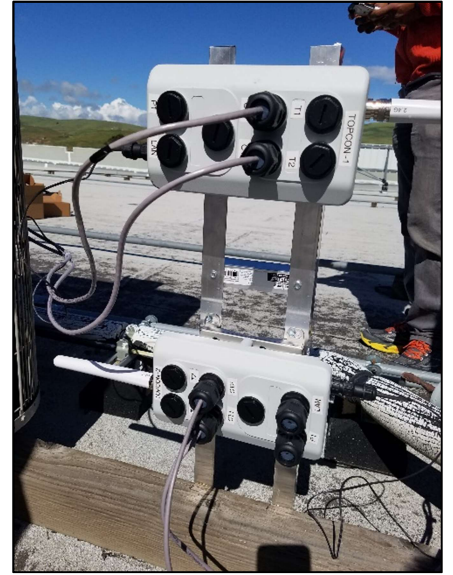
BAD



NOTE: Place clamp on load side. In case of multiple compressors then clamp on all compressor T1 lines. In case of multiple fans/blowers then clamp on all fan/blower T1 line.

## INSTALLATION TIPS

1. If it is not possible to mount DCU on HVAC unit it is acceptable to find another location such as a post.



2. Proper cable management is necessary to keep your HVAC unit safe. Use cable ties and loom clamps to secure wires.



3. Use a cable glands to guide wires into HVAC unit, maintain air tight seal, and to reduce chafing on wires.



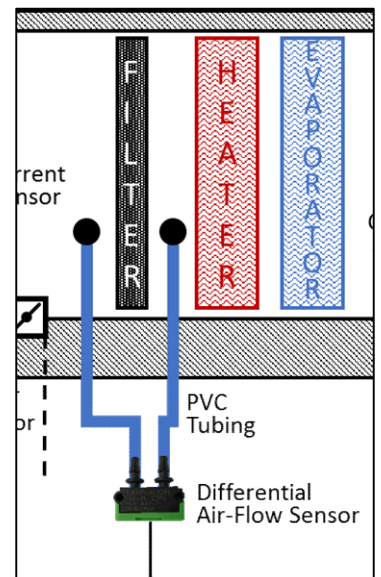


## INSTALLATION TIPS

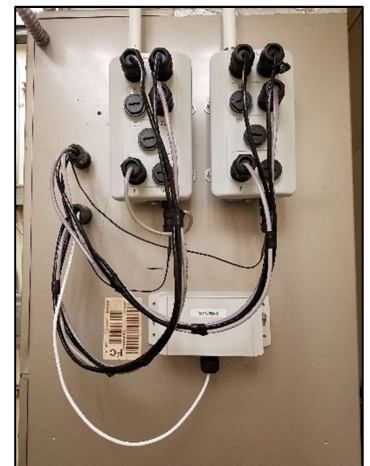
4. If two compressors are present then include both compressors wires in CT sensor.



5. For accurate air pressure readings, ensure that the tubing is installed on both sides of filter and does not include any other components such as the evaporator coil or heater.



5. Use a drip loop when installing wires to keep moisture on wires from entering the system.





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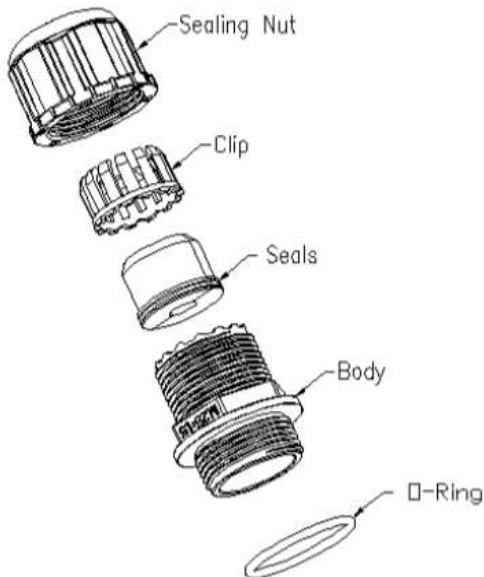
# M25 Cable Gland Assembly Instructions

## Installation Guide

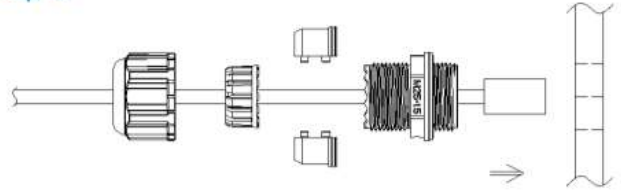
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### Contents :

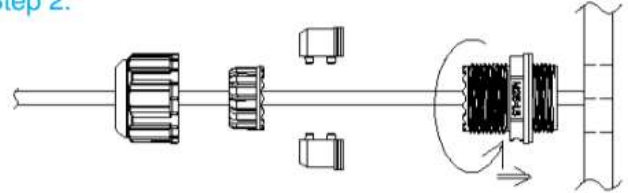


### Step 1.



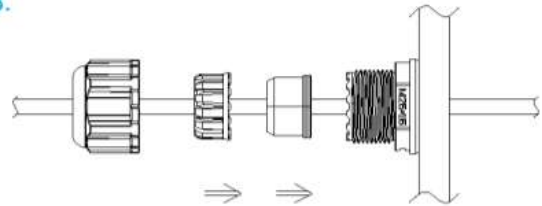
Insert The Cable Trough The Sealing Nut, Clip, Sealing and body. Connect plug onto panel side jack.

### Step 2.



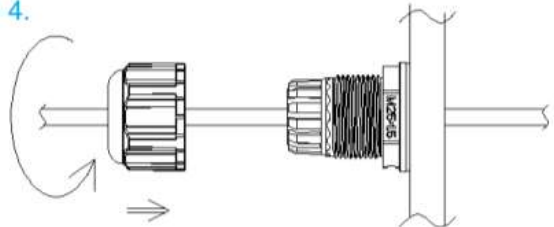
Screw Tightly The Body. The Torque Force: 10-12 kgf-cm.

### Step 3.



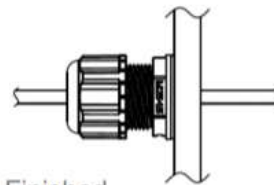
Insert Sealing And Clip.

### Step 4.



Screw Tightly Sealing Nut. The Torque Force: 15-17 kgf-cm.

### Step 5.



Assembly Finished