CO$_2$ Sensor

Installation and Commissioning Guide

ActronAir

Sensor Model Number	Family	Model Number	Connector Type
CCO2-S*	Tri-Capacity	PKY470/500/520/620/700/820/960T CAY470/500/520/620/700T EVY470/500/520/620/700T	8 Pin
	Hercules	PKV1400T/2000T	
CCO2-MOD	Variable Capacity Commercial	PKV720T/850T/960T CRV/EVA720T/850T/960T	4 Pin
	Genesis	PRV96AT CRV/EVA96AT	

* Compatible with CG10K Module

IMPORTANT NOTE:

Please read this manual carefully before installing or operating your air conditioning unit.

ActronAir

Table of Contents

01. Introduction

CONGRATULATIONS on your purchase of an ActronAir CO$_2$ sensor. This sensor has been designed and engineered to give you control of the amount of fresh air to be introduced into your compatible ActronAir airconditioning units with outside air dampers, for the purpose of Demand Control Ventilation (DCV). DCV allows for the modulation of the outdoor airflow in response to the occupancy of the conditioned space. When the actual occupancy is below the maximum occupancy assumed for system design, the occupancy-based outdoor air rate may be reduced accordingly. This reduction of outside airflow which requires conditioning, will result in an increase in efficiency of operation and associated lower running costs. CO$_2$ based DCV should not be applied in zones with indoor sources of CO$_2$ other than occupants.

The procedures outlined in this guide are provided to correctly and safely install the ActronAir CO$_2$ sensor to an appropriate ActronAir ducted air conditioning system. Failure to follow these procedures may result in personal injury, damage to the air conditioner, damage to the CO$_2$ sensor or incorrect operation of the air conditioning system. Such failure could render your warranty null and void.

02. Installation

02.01. Dimensions

CCO2-S	CCO2-MOD
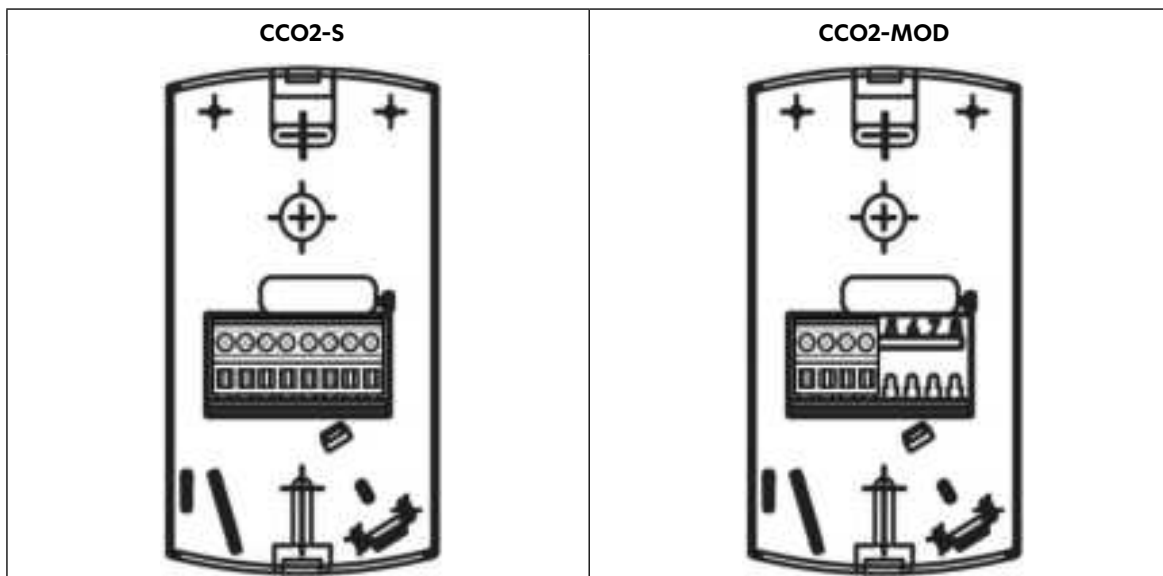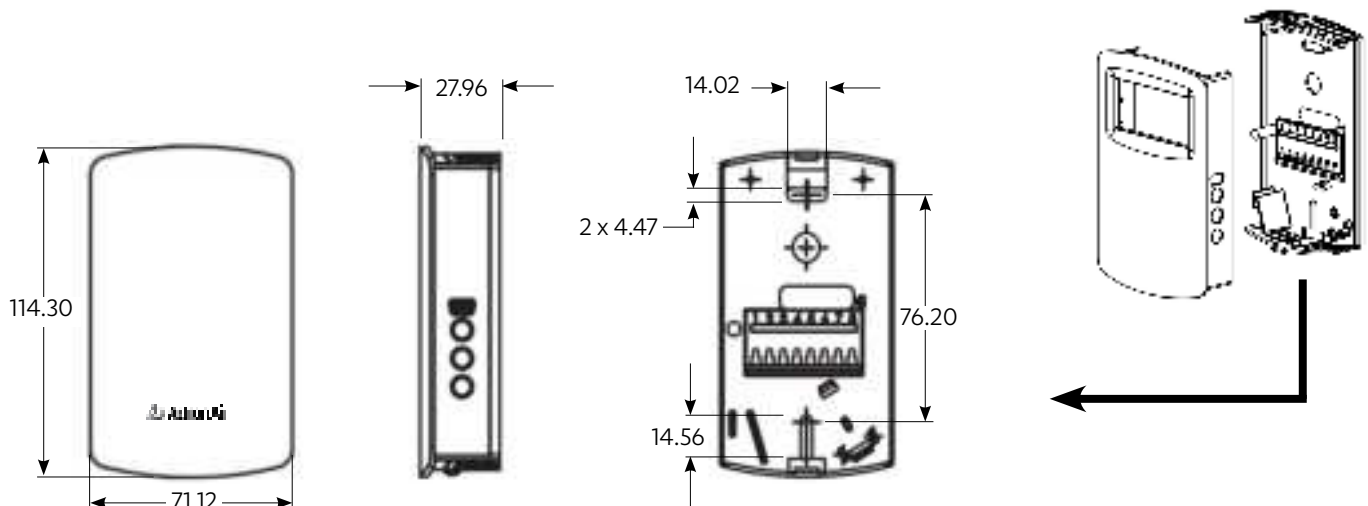
02.02. Cable Specifications and Mounting Location

The recommended cable to use is 0.50mm^2 shielded data cable.

The steps on how to mount CO$_2$ sensor are described below:

1. Remove screw located at the bottom of the tab.

2. Press the tabs located on top and bottom of the rear plate and lift the cover.

3. Select and mount the rear plate in an appropriate location - the CO$_2$ sensor is to be mounted 1.0 to 1.8 meters above the floor, away from lights, diffusers, doorways and external influences . This will ensure accurate CO$_2$ concentration levels measured based on occupancy level in conditioned space.

4. Pull the wires through the rear plate base hole and make necessary connections. Ensure cable entry gaps are sealed.

5. Secure the cover back to the rear plate.

02.03. DIP Switch Settings

To gain access to the DIP switch, remove the cover the CO$_2$ sensor and locate the switches.

CCO2-S (Tri-Capacity and Hercules)	CCO2-MOD VCC (PKV/CRV720-960) Genesis (PRV/CRV72AT-96AT)
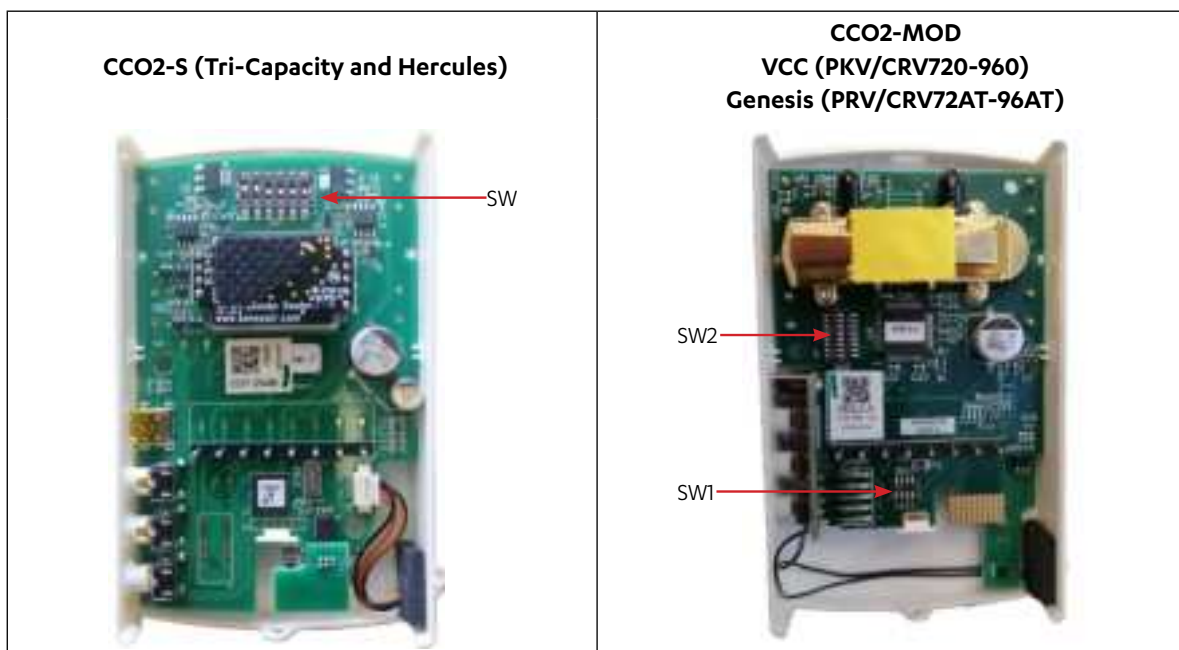
Please follow the DIP switch configuration in the figure below to ensure proper functionality of the CO$_2$ sensor.

02.03.01. Tri-Capacity and Hercules

Switch Settings

Each switch may be set to ON or OFF based on the required output, example as below:

All six switches are ON   All six switches are OFF

Switch Positions

There are six switches to configure the output of the CCO2 sensor. Switch position designations are as follows:

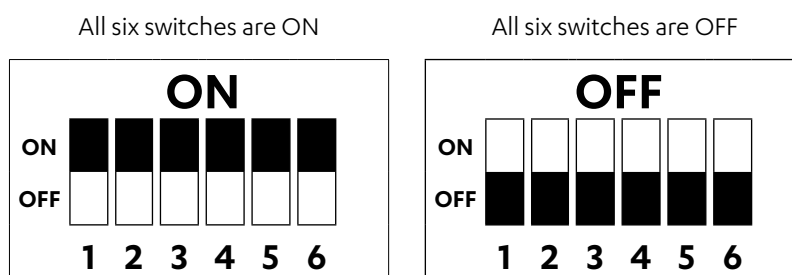**DIP Switch Position 1: CO$_2$ Output Selection**
ON: Output set to voltage
OFF: Output set to current
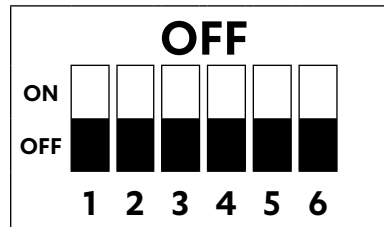
DIP Switch Position 2: Not used
Must always be set to OFF
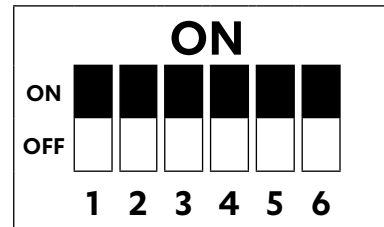
DIP Switch Positions 3 and 4: Current or Voltage Output Range Selection

Depending on the Switch setting of Position 1, Switch Position 3 and 4 may be set to configure the Output Range. The table below shows the Output Range indicated in the first column.

Output Range	DIP Switch Setting			Actron Product Application
	Position 1	Position 3	Position 4	
2-10V	ON	ON	OFF	---
0-10V	ON	OFF	OFF	*CG10K
0-5V	ON	OFF	ON	---
1-5V	ON	ON	ON	---
4-20mA	OFF	ON	OFF	**Hercules/Tri-Capacity
0-20mA	OFF	OFF	OFF	---
0-10mA	OFF	OFF	ON	---
2-10mA	OFF	ON	ON	---

* See 02.04.04 for illustration of DIP switch setting required when connected to CG10K

** See 02.04.03 for illustration of DIP switch setting required when connected to Tri-Capacity or Hercules unit

4-20mA output DIP Switch Setting

These settings will output readings within the range of 4-20mA based on CO$_2$ concentration levels.
Example application for this setting are Tri-Capacity (for PKY/CAY fitted with CM100 controller) and large Hercules (PKV) units.
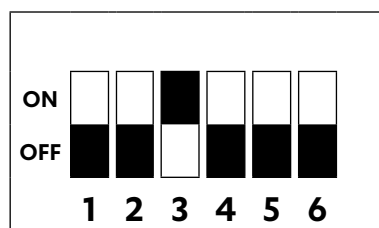
0-10VDC output DIP Switch Setting

These settings will output readings within the range of 0-10VDC based on CO_2 concentration levels.
Example application for this setting is when connected to CG10K or PKY/CAY (Tri-Capacity fitted with uPC Controller only).
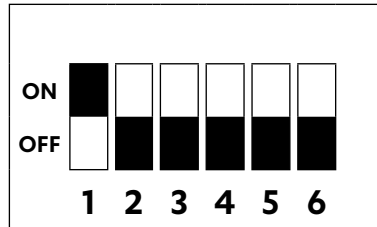
NOTE
Voltage divider terminal blocks are required for 0-10VDC operation with uPC Controller. Refer to Wiring Diagram 02.04.04. for installation instructions.

02.03.02. Variable Capacity Commercial and Genesis (PKV/CRV and PRV/CRV)

Switch Settings

There are two different DIP switches on the CCO2-MOD, SW2 (8 DIP switch) which is for configuring the RS-485 address value and SW1 (4 DIP switch) which configures other hardware and software options.

SW2 is used to configure the RS-485 address of the device. The factory setting address is 127 and which is also the address required to communicate with the ActronAir board. To set the MAC address to 127, all DIP switch positions must be set to ON, except for position 1.

All eight switches are ON
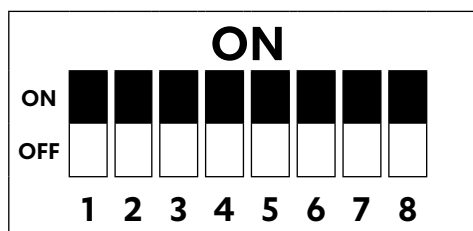
All eight switches are OFF
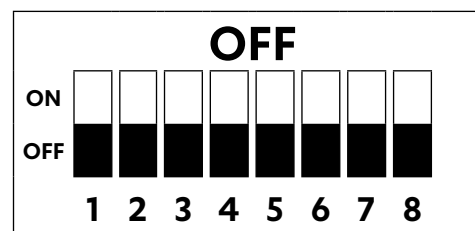
If the address needs to be changed, the assignment is determined by adding the values for each of the switches that are on. In this example 64+32+16+8+4+2+1 = 127

```
      ┌─────────────────────────────┐
      │      ┌─┐┌─┐┌─┐┌─┐┌─┐┌─┐┌─┐   │
   ON │      │█││█││█││█││█││█││█│   │
      │   ┌─┐ │ ││ ││ ││ ││ ││ ││ │  │
  OFF │   │█│                       │
      │   └─┘                       │
      │    1  2  3  4  5  6  7  8    │
      └─────────────────────────────┘
```
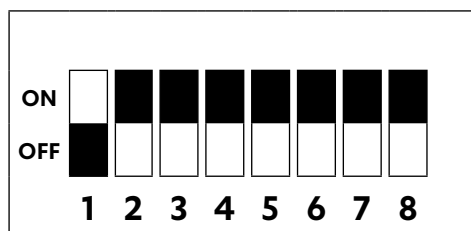
SW1 will come default with DIP switch positions 1 and 2 on and only 1 and 2 is required for communication to the ActronAir Board.

```
      ┌──────────────┐
      │  ┌─┐┌─┐       │
   ON │  │█││█│       │
      │  │ ││ │┌─┐┌─┐ │
  OFF │         │█││█│ │
      │         └─┘└─┘ │
      │   1  2  4  5   │
      └──────────────┘
```
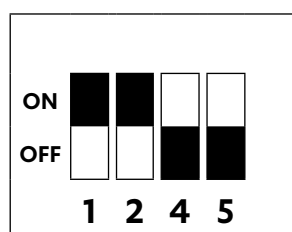
Auto Serial Configuration (AUT)

This value enables or disables the automatic baud rate detection. If the device fails to communicate on the MS/TP bus or the serial configuration is not 8 data bits, no parity and 1 stop bit, then this value should be set to "OFF", and the serial configured manually.

Setting Value	Description
ON / OFF	Auto baud enabled, assumes 8 data bits, no parity and 1 stop bit Auto baud disabled, serial baud rate, parity, and stop bits must be set manually

CO2 SENSOR TERMINAL	HERCULES TERMINAL BLOCK	Function
1	25	24VAC POWER FOR CO2 SENSOR
2	20	GND FOR CO2 & TEMP SENSOR
3	19	4-20mA CO2 SENSOR OUTPUT
4	NOT USED	NOT USED
5	NOT USED	
6	NOT USED	
7	20	TEMPERATURE SENSOR 10KΩ NTC (NOT REQUIRED IF USING ALTERNATIVE TEMPERATURE SENSOR)
8	18	

REFER TO UNIT WIRING DIAGRM FOR EXISTING CONNECTIONS

NOTE:
INTERNAL TEMP SENSOR FOR RETURN AIR

(NOT REQUIRED IF USING ALTERNATIVE TEMP SENSOR)

NOTE:
CO2 SENSORS SOLD SEPARATELY - NOT COMPATIBLE WITH 3RD PARTY CONTROLS

ALL WIRING & CONNECTIONS DONE BY INSTALLER

CABLE SPEC:
TWISTED PAIR SHIELDED
or
CAT5E DATA CABLE

RECOMMENDED 0.5mm2 - 0.65mm2
MAX 1mm2 (32/0.20) WIRE SIZE

Rev.	Description	PCR	By	Date
A	ORIGINAL			

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ActronAir®

Base Model No: PKV1400/1700/2000T
Variation Code:
Variation: CO2 & RETURN AIR TEMP SENSOR
Description: CO2 SENSOR CONNECTION

Drawn: RL   Date: 19-02-2018
Approved: MJH   Date: 02-03-2018
Drawing No: 0515-7814
Revision: A
Size: A4

MULTI INPUT SELECTION TABLE

MULTI INPUT MATRIX	DESCRIPTION	TYPE
A	SUPPLY AIR TEMP	SENSOR
B	ECONOMY MODE	DIGITAL INPUT
C	NIGHT MODE	DIGITAL INPUT
D	COMP STAGE CONTROL	0-10V ANALOGUE
E	IN-FAN SPEED CONTROL	0-10V ANALOGUE
F	CO2 SENSOR	4-20mA ANALOGUE

CO2 SENSOR TERMINAL	TRI-CAPACITY TERMINAL BLOCK	Function
1	1	24VAC POWER FOR CO2 SENSOR
2	14	GND FOR CO2 SENSOR
3	15	4-20mA CO2 SENSOR OUTPUT
4	NOT USED	NOT USED
5		
6		
7	16	TEMPERATURE SENSOR 10KΩ NTC (NOT REQUIRED IF USING ALTERNATIVE TEMPERATURE SENSOR)
8	17	

REFER TO UNIT WIRING DIAGRM FOR EXISTING CONNECTIONS

18	AFTER HOURS
17	RTN AIR SENSOR
16	RTN AIR SENSOR (GND)
15	MULTI INPUT 2
14	COMMON (GND)
13	MULTI INPUT 1
12	N/A
11	COMMON (GND)
10	REMOTE ON/OFF
9	
8	
7	
6	
5	
4	
3	
2	
1	

NOTE:
INTERNAL TEMP SENSOR FOR RETURN AIR

(NOT REQUIRED IF USING ALTERNATIVE TEMP SENSOR)

NOTE:
CO2 SENSORS SOLD SEPARATELY - NOT COMPATIBLE WITH 3RD PARTY CONTROLS

ALL WIRING & CONNECTIONS DONE BY INSTALLER

CABLE SPEC:
TWISTED PAIR SHIELDED
or
CAT5E DATA CABLE

RECOMMENDED 0.5mm2 - 0.65mm2
MAX 1mm2 (32/0.20) WIRE SIZE

ILLUSTRATION SHOWN IS CONNECTION TO MULTI INPUT 2

Base Model No:	CAY/PKY470-700T-6Q2 PKY820-960T-3Q2	Variation Code:	Variation:	CO2 SENSOR

					Description: CO2 SENSOR CONNECTION			
B	TERMINAL BLOCK REFERENCE TABLE CORRECTED	2965	RL	23-05-2018				
Rev.	Description	PCR	By	Date	Drawn: RL	Date: 22-02-2018	Drawing No: 0515-8814	Revision B / Size A4
A	ORIGINAL				Approved: MJH	Date: 23-05-2018		

MULTI INPUT SELECTION TABLE

MULTI INPUT MATRIX	DESCRIPTION	TYPE
A	SUPPLY AIR TEMP	SENSOR
B	ECONOMY MODE	DIGITAL INPUT
C	NIGHT MODE	DIGITAL INPUT
D	COMP STAGE CONTROL	0-10V ANALOGUE
E	IN-FAN SPEED CONTROL	0-10V ANALOGUE
F ***	CO2 SENSOR	0-10V ANALOGUE

*** NOTE: 0-10V MULTI-INPUT REQUIRES VOLTAGE DIVIDER TERMINAL BLOCKS (ACTRONAIR PART NO. 2045-080)

CO2 SENSOR TERMINAL	TRI-CAPACITY TERMINAL BLOCK	Function
1	1	24VAC POWER FOR CO2 SENSOR
2	14	GND FOR CO2 SENSOR
3	15	0-10V CO2 SENSOR OUTPUT
4	NOT USED	NOT USED
5	NOT USED	
6	NOT USED	
7	16	TEMPERATURE SENSOR 10KΩ NTC (NOT REQUIRED IF USING ALTERNATIVE TEMPERATURE SENSOR)
8	17	

NOTE:
INTERNAL TEMP SENSOR
FOR RETURN AIR

(NOT REQUIRED IF USING
ALTERNATIVE TEMP SENSOR)

NOTE:
CO2 SENSORS SOLD SEPERATELY
- NOT COMPATIBLE WITH 3RD
PARTY CONTROLS

ALL WIRING & CONNECTIONS DONE
BY INSTALLER

CABLE SPEC:
TWISTED PAIR SHIELDED
or
CAT5E DATA CABLE

RECOMMENDED 0.5mm2 - 0.65mm2
MAX 1mm2 (32/0.20) WIRE SIZE

18	AFTER HOURS	
17	RTN AIR SENSOR	
16	RTN AIR SENSOR (GND)	
15	MULTI INPUT 2 ***	
14	COMMON (GND)	
13	MULTI INPUT 1 ***	
12	N/A	
11	COMMON (GND)	
10	REMOTE ON/OFF	

REFER TO UNIT WIRING DIAGRM
FOR EXISTING CONNECTIONS

**NOTE: CO2 SENSOR MAY BE CONNECTED TO MULTI INPUT 1 OR MULTI INPUT 2.
ILLUSTRATION SHOWN DEPICTS CO2 SENSOR CONNECTED TO MULTI INPUT 2.**

**VOLTAGE DIVIDER TERMINAL BLOCKS (ACTRONAIR PART NO. 2045-080
MUST BE USED FOR 0-10V ANALOGUE INPUT**

	Base Model No:	CAY/PKY470-700T PKY820-960T	Variation Code:	Variation: CO2 SENSOR
	Description:	CO2 SENSOR CONNECTION (0-10V OUTPUT)		

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			Drawn:	OH	Date: 18-02-2022	Drawing No:		Revision	Size:
Rev.	Description	PCR	By	Date	Approved: RL	Date: 21-02-2022	0515-8814-X102	A	A4
A	ORIGINAL								

MULTI-INPUT 0-10V SIGNAL FOR uPC CONTROLLER

STEP 1: REMOVE EXISTING TERMINAL BLOCKS

064-PK-010

068-BR-010
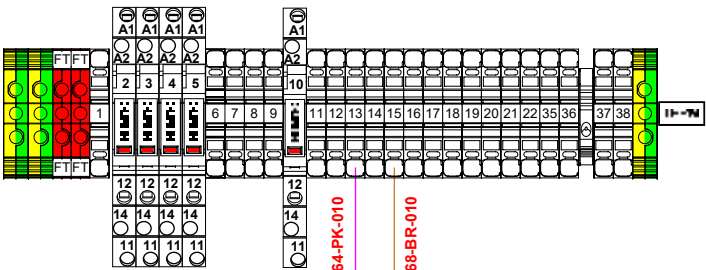
DISCONNECT WIRE
064-PK-010 & 039-BR-010
FROM TERMINAL BLOCK

STEP 2: INSTALL VOLTAGE DIVIDER TERMINAL BLOCKS

TOP ROW
"VIN" TERMINALS
0-10VDC INPUT
SINGAL

2ND ROW
GROUND
TERMINALS

GREY WIRE

GREY WIRE

064-PK-010

GREY WIRE

068-BR-010

CONNECT SUPPLIED
GREY WIRE INTO
GROUND TERMINAL
"12" & "14"
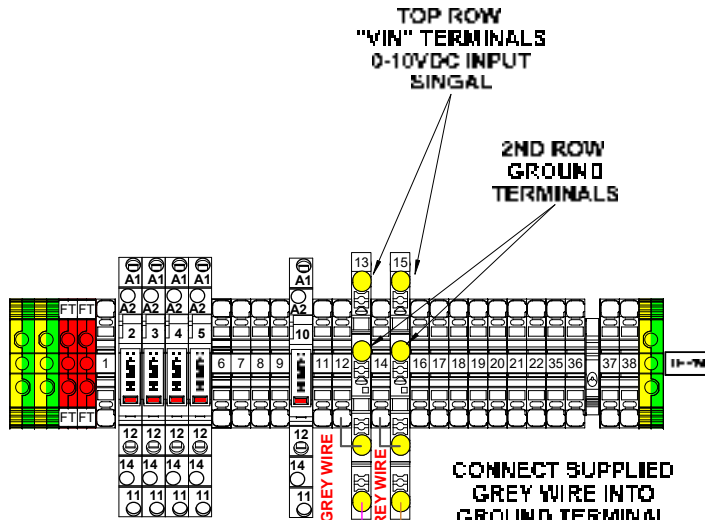
RECONNECT WIRE
064-PK-010 & 039-BR-010
INTO "VOUT" TERMINAL

OPTIONAL HUMIDITY SENSOR

OPTIONAL 2nd HUMIDITY SENSOR AND CABLE

OPTIONAL CO2 SENSOR AND CABLE

HUMIDITY SENSOR

HUMIDITY SENSOR
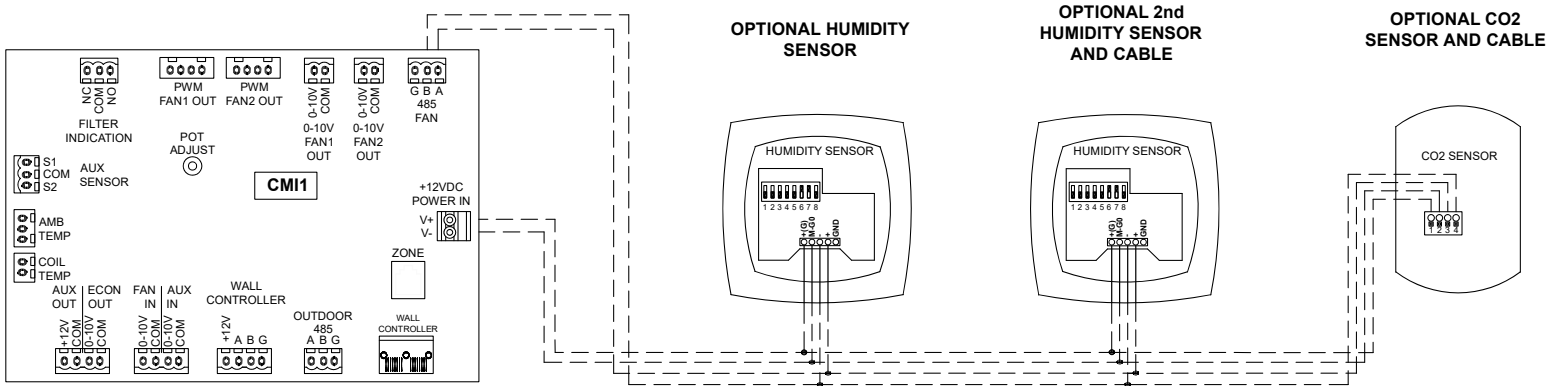
CO2 SENSOR

A COMBINBATION OF:
- 1 OR 2 HUMIDITIY SENSORS,
- 1 CO2 SENSOR
OR A COMBINATION OF
- 1 OR 2 HUMIDITIY SENSORS AND 1 CO2 SENSOR ARE POSSIBLE

Rev.	Description	PCR	By	Date		
B	ADD ADDITIONAL OPTIONAL CO2 SENSOR		JL	30/05/2024		

ActronAir*

Base Model No:
CRV/PKV/720/850/960T

Description:
HUMIDITY & CO2 SENSOR CONNECTION

Drawn:	JL	05/04/2024	Drawing No:	Sheet:	Revision:
Approved:	JL	30/05/2024	WD4000	1/1	B

03. Controller Setup

The optional CO$_2$ sensor function will be operational when the CO$_2$ sensor is enabled and configured.
For third party control, please contact third party supplier as controller configuration will be a different process.

03.01. CO$_2$ Sensor Setup

The CO$_2$ levels and corresponding damper positions is to be adjusted in accordance to the applications requirements. Steps provided in succeeding instructions are aimed to configure the setting as below. **Consult the relevant standards as required for your application.**
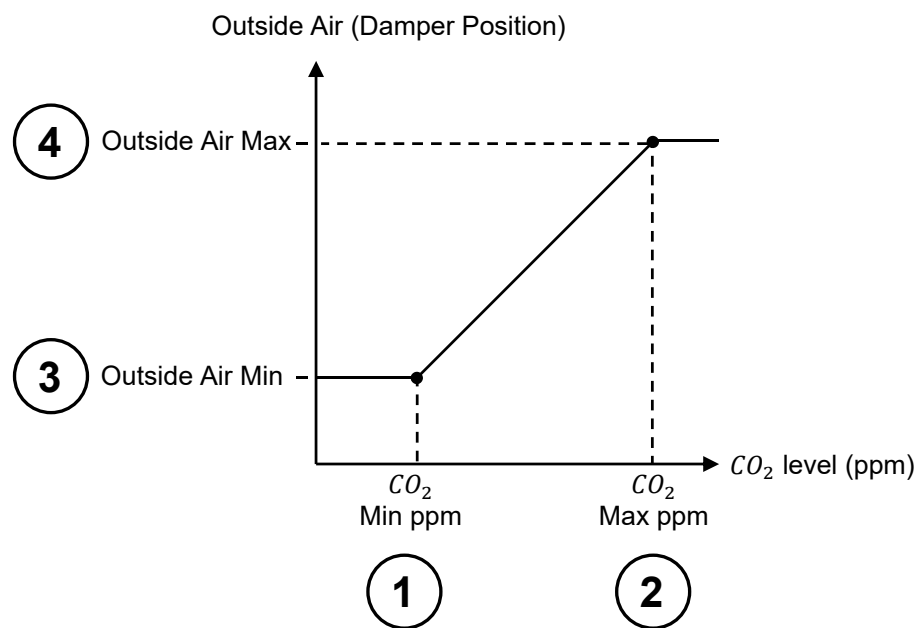
03.01.01. Tri-Capacity and Hercules

The unit control mode is to be set to **INTERNAL SENSOR**. This can be set through the Service Menu or via seven segment. The input type is **4-20mA** (for CM100 controller) or **0-5V** (for uPC controller) and the sensor is connected to the following ports as described below:

- Hercules - universal input **U12**
- Tri-Capacity - **Multi Input 1** or **2** (Note: Wiring Diagram and CO$_2$ Sensor Setup shown for Multi Input 2)

NOTES
The CO$_2$ sensor is compatible with the following software: • For Hercules with (CM100): 2021-136-1030 and onwards • For Tri Capacity with (CM100): 2021-136-2008 and onwards • For Tri Capacity with (uPC): 2021-136-3000 and onwards

The following steps will be necessary to install and commission the CO$_2$ sensor.

NOTES
Steps 1 - 2 are only applicable for Tri-Capacity (PKY/CAY) units only. Steps 3 and onwards, will be relevant to both Hercules and Tri-Capacity units.

1. Select Service page **Gfc8** to assign the CO$_2$ sensor to **Multi input 2**.

NOTE

For this Tri-Capacity example, CO$_2$ sensor will be assigned to **Multi Input 2**.

```
S. Configuration          Gfc8
Sensor present:

                  Multi Input 1:  NO



                  Multi Input 2:  NO
```

NOTE

Do not change your existing configuration for **Multi Input 1**.

2. Alter the option of **Multi Input 2** to **YES**. Ensure **CO$_2$ SENSOR** input is selected with a probe type of **4-20mA (for PKY/CAY fitted with CM100 controller)** or **0-5V (for PKY/CAY fitted with uPC controller)** as displayed in screenshot below.

For PKY/CAY fitted with CM100 controller

```
S. Configuration          Gfc8
Sensor present:
                  Multi Input 1:  NO

                  Multi Input 2: YES
*CO2 SENSOR*
Probe Type:              4-20mA
```

For PKY/CAY fitted with uPC controller

```
S. Configuration          Gfc8
Sensor present:
                  Multi Input 1:  NO

                  Multi Input 2: YES
*CO2 SENSOR*
Probe Type:                0-5V
```

3. Navigate to Economy Setting page **Gfd1** from Service Menu.

```
Min Outside Air           Gfd1
Enable CO2:                  NO


Damper Position            20.0%
```

4. Press Enter to select **Enable CO$_2$** and change setting to **Yes** to enable the CO$_2$ sensor.

NOTE

The number entities are represented in the damper position picture in step 5.


```
Min Outside Air           Gfd1
Enable CO2:                  Yes


CO2 Level            Damper Pos
600 ppm                     5 %
800 ppm                    10 %
```
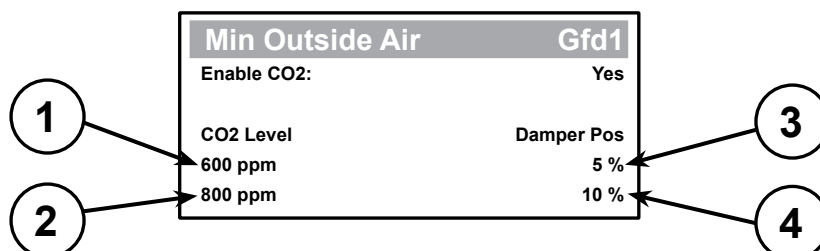
5. Adjust CO$_2$ levels and corresponding damper positions to suit your applications requirements. Consult the relevant standards as required for your application.

Outside Air (Damper Position)

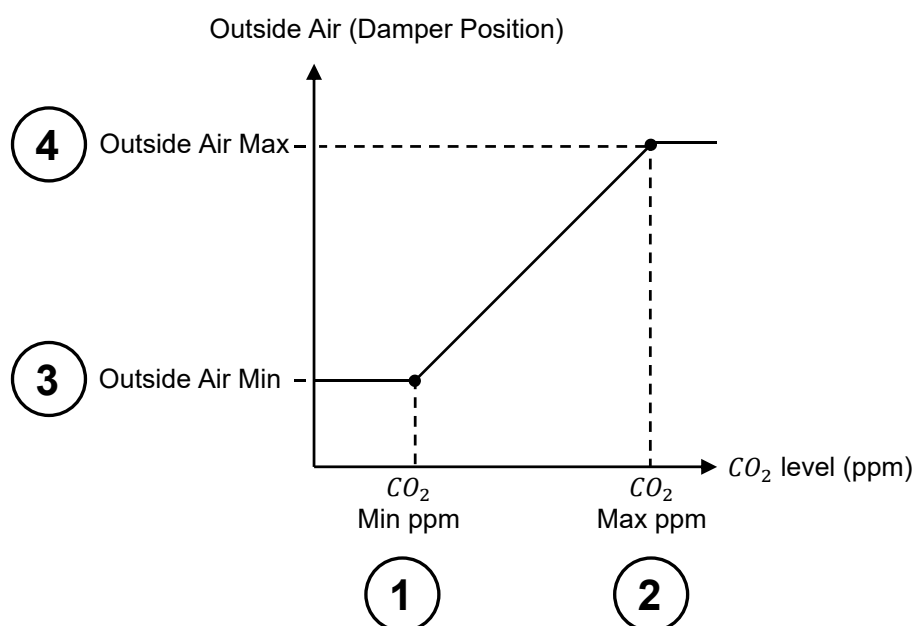### 03.01.02.   Variable Capacity Commercial and Genesis (PKV/CRV and PRV/CRV)

Connector to be used is RJ485.
The CO$_2$ sensor may be enabled by the following options:

Outdoor Board	**Bluetooth Commissioning Tool**	**Unit Installation Guide**

NOTE

For detailed instructions on enabling the CO$_2$ sensor using NEO, go to the Setting Economy Cycle Section in the Installation and Commissioning Guide of the Unit.

NOTE

The CO_2 sensor is compatible with the following software with CMI board:

Outdoor Board

By using the Outdoor board Seven Segment buttons, a linear scale can be created for the outside air damper.

To enable the CO_2 sensor go to the following menu.

diS (Display)		Display system's status and settings	
SEr (Service)		Service use only	
SEt (Settings)	**cnFg**	Family/Capacity/Circuit/Controller	
	CtrS	Control Source	
	iduS	IDU Fan and Airflow setting	
	run	Run (Indoor Fan and Compressor) Indicator	
	odFS	OD Fan Setting	
	qS	Quiet Mode	
	ECn	Group Control	
	ECoE	**oAdC =** Outside air damper enable	
		oAdo = Outside air damper On Off	
		ECEo = Economiser control enable	
		EHCE = Humidity control enable	
		EHCo = Humidity control mode	
		EHCS = Humidity sensor source	
		CCE = CO_2 control enable	

03.02. Minimum Outside Air Setup (Demand Controlled Ventilation)
03.02.01. Tri-Capacity and Hercules

Select service page **Gfc31** to check the CO_2 sensor operating range, enable/disable sensor fault alarm and the corresponding alarm levels, as shown below. In the event that the sensor is not operating or is out of range, the outside air will operate at the outside air minimum setting as shown on screen **Gfd1**.

NOTE

The screenshot displayed below from the Hercules CP10 displays **U12 Input** and is set to 4-20mA.
For Tri-Capacity CP10 display, this is omitted as the CO_2 sensor input is setup in **Gfc8**.

For Tri-Capacity

CO2 Control	Gfc31
Start:	**0ppm**
End:	**2000ppm**
Alarm Output:	**Enabled**
Sensor Fault:	**< 50ppm**
	> 1950ppm

For Hercules

CO2 Control	Gfc31
U12 Input:	**4-20mA**
Start:	**0ppm**
End:	**2000ppm**
Alarm Output:	**Enabled**
Sensor Fault:	**< 50ppm**
	> 1950ppm

03.02.02.   Variable Capacity Commercial and Genesis (PKV/CRV and PRV/CRV)

NOTE

The table shown below is from the Variable Commercial Capacity Installation and Commissioning Guide where the CO$_2$ setting is enabled.

To set the minimum, maximum damper positions and the CO$_2$ scale go to the following menus.

diS (Display)			Display system's status and settings	
SEr (Service)			**Service use only**	
SEt (Settings)	**ECoE**		**oAdC =** Outside air damper enable	
			oAdo = Outside air damper On Off	
			ECEo = Economiser control enable	
			EHCE = Humidity control enable	
			EHCo = Humidity control mode	
			EHCS = Humidity sensor source	
			CCE = CO$_2$ control enable	
	ECoS		**Etd =** Economiser temperature difference	
			EoLt = Economiser outside min temp	
			EoHt = Economiser outside max temp	
			EoLd = Economiser outside min damper	
			EoHd = Economiser outside max damper	
			EoHH = Economiser outside max humidity	
			EoHn = Economiser outside max moisture	
			EodP = Economiser outside max dew point	
			EoHE = Economiser outside max enthalpy	
			EEd = Economiser enthalpy delta	
			ELPL = Economiser CO$_2$ p1	
			EHPL = Economiser CO$_2$ p2	
			ELdP = Economiser CO$_2$ damper p1	
			EHdP = Economiser CO$_2$ damper p2	

03.03.   CO$_2$ Status
03.03.01.   Tri-Capacity and Hercules

To view the current status / levels of concentration of the CO$_2$ in the condition space, please flow the steps below:

> **NOTES**
>
> The screenshots portrayed below are taken from the Hercules CP10. The same steps maybe followed on the Tri-Capacity's CP05 to determine the CO$_2$ concentration levels, however, contents on E1 page may vary.

Go to Status Screen Page E1 and locate the last field named **CO$_2$ Sensor** on page E1, this will display the CO$_2$ concentration levels in the conditioned space.

For Tri-Capacity

Status AIN	E1
Suct/coil Temp 1:	25.9 °c
Discharge1 Temp:	70.1 °c
Out Coil1 Temp:	27.3 °c
CO2 Sensor	420ppm

For Hercules

Status AIN	E1
Return Temp.:	20.5 °c
Supply Temp.:	18.0 °c
Outside Temperature:	29.0 °c
CO2 Sensor:	450ppm

03.03.02.   Variable Capacity Commercial and Genesis (PKV/CRV and PRV/CRV)

The CO$_2$ maybe set up via the outdoor board, please refer to section 03.02.02 for the parameters required.

04. <u>Specifications</u>

Model	CCO2-S	CCO2-MOD
CO$_2$ Sensor	Single beam, dual wavelength NDIR	
Humidity Type	Capacitive Polymer	
Humidity Range / Limits	0 to 100% RH / 10 to 95% RH (non-condensing)	
Temperature State	Solid state band gap	
Temperature Range /Limits	0 to 50°C	
PPM Range	0 to 2000	
Accuracy	±40 ppm ±3% of reading	
Relative Humidity	±2% (10 to 90% RH)	
Temperature	±1°C @25°C	
Temperature Dependence	±8 ppm/°C at 1100 ppm	
Non-Linearity	16 ppm	
Pressure Dependence	0.13% of reading per mm Hg	
Response Time	2 min for 99% step change	
Power Requirements	16 to 35 VDC or 19 to 28 VAC	10 to 42 VDC or 10 to 30 VAC
Power Consumption	Average: 2 W Peak: 3.75 W	Average: 0.5 W Peak: 1.2 W
Communication Protocol	N/A	2-Wire RS-485, Modbus RTU
Output	4 to 20 mA (max. 500 Ω)	Modbus
Weight	125 g	
CM100 Software		
Hercules	2021-136-1030 onwards	N/A
Tri-Capacity	2021-136-2008 onwards	N/A
VCC/Genesis 70-100	N/A	CMI 4.18
Connecting Cable		
Maximum Cable Length	50 metres	100m
Recommended Cable	VCC - 0.50mm^2 - 0.65mm^2 twisted pair cable	

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