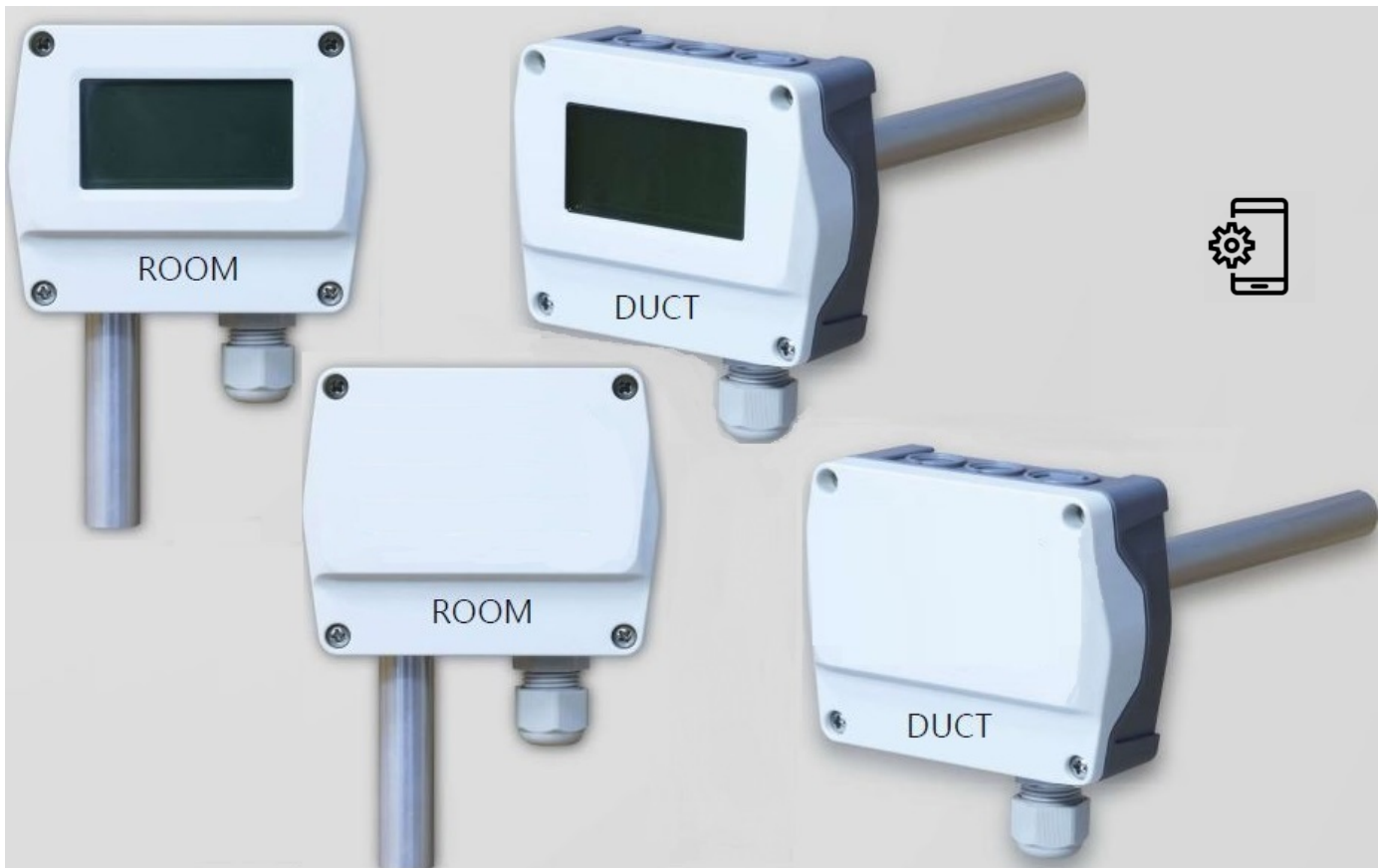# HEVAC Control Agencies

HE-FORN-621 SERIES
Carbon Dioxide (CO2) & Temp. Sensor

Modbus RTU, 0-10V or 4-20mA with LCD display and Relay output versions available

SUITABLE FOR DIRECT CO2 ZONE CONTROL ON/OFF & ANALOGUE OUTPUTS

Easy and Flexible Configuration via App

- Selectable analog output: 0–10 V or 4–20 mA, with scaling and clipping options
- Test mode for on-site installation and wiring verification
- Configurable relay parameters: set-point, delay, latch, and hysteresis
- Modbus settings: ID, register address, data type, RS485 baud rate, and communication delay

Field calibration

- Supports multi-point piecewise interpolation for enhanced accuracy
- Adjustable CO_2 background concentration compensation

Technical Data

CO2

Measuring range 1	400 ... 1000 ppm
Accuracy 1	±50ppm ±2.5% of reading
Measuring range 2	1000 ... 2000 ppm
Accuracy 2	±50ppm ±3% of reading
Measuring range 3	2000 ... 5000 ppm
Accuracy 3	±40ppm ±5% of reading
Measurement interval	5 seconds
Response time T63	typical 60 seconds
ABC algorithm, period	on/off, 7 days
Accuracy drift after five years with ABC enabled range	400 ... 2000 ppm
Accuracy	±50ppm ±0.5% of reading
Field calibration points	3

Temperature

Measurement range	-10 ... 60 ℃
Accuracy (including non-linearity, hysteresis, and repeatability)	typ. ±0.5℃ (15 ... 35℃)
	typ. ±0.9℃ (-10 ...60 ℃)
Accuracy drift[3]	< 0.03℃/year
Field calibration points	2

Analog output (two channels)

3-wire, 4-20 mA, 0-10V, 0-5 V, 1-5V

Accuracy at +25 °C	±0.1% full scale
Temperature dependence	±0.005%/°C full scale
External loads	current output RL < 400 ohm
	voltage output RL > 10k ohm

Relay output (two contacts) (option)

Contact	SPST NO, 60 VDC/VAC 700mA
Activate	High-point and Low-point with enable
Set point	-65536 ... 65535
Hysteresis	0 ... 9999
On/Off delay	0 ... 3600 second
Latch	on/off

Display (option)

LCD	128x64 dots
Backlight color	R,G,B

RS485 output with Modus (option)

ID	1 ... 247
Baud rate	200/2400/4800/9600
	19200/38400/57600/115200
RS485 data type	N81/N82/E81/E82/O81/O82
Delay	0 ... 100ms
Modbus command support	03 / 04
Register 32-bit Data format	Big-endian or Big-endian swapped
Register address	0x0000 ... 0xffff
Register data type	
16/32-bits signed/unsigned integer	
16/32-bits signed/unsigned integer x10	
16/32-bits signed/unsigned integer x100	
float 32-bit	
Temperature unit	℃ / °F

Power supply

	15-35 VDC, 24 VAC
Current consume	max. 300mA

Operating temperature

-10 ... 60 ℃

Mechanics

|	
Housing material	PC, Polycarbonate
Probe material	Aluminum
Flange material	Aluminum
Housing classification	IP65
Cable gland	PG9 with strain relief
Cable bushing	4.5 ... 8.2 mm
Terminal block	AWG 12...24
Connection	Cable gland with terminal block

Electromagnetic compatibility

Complies with EMC standard
EN61326-1, Industrial Environment

Wiring
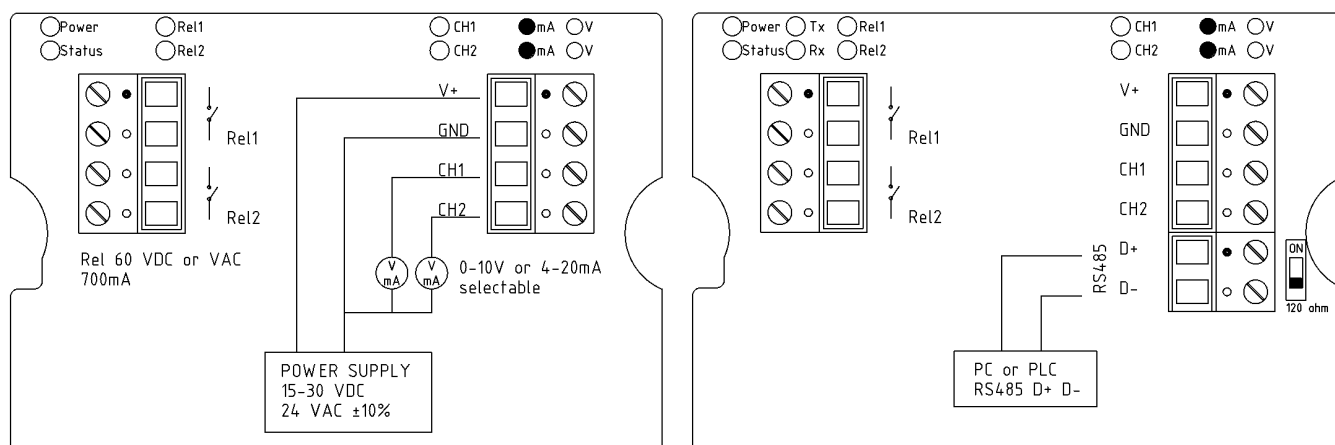
Dimension

Dimension in mm
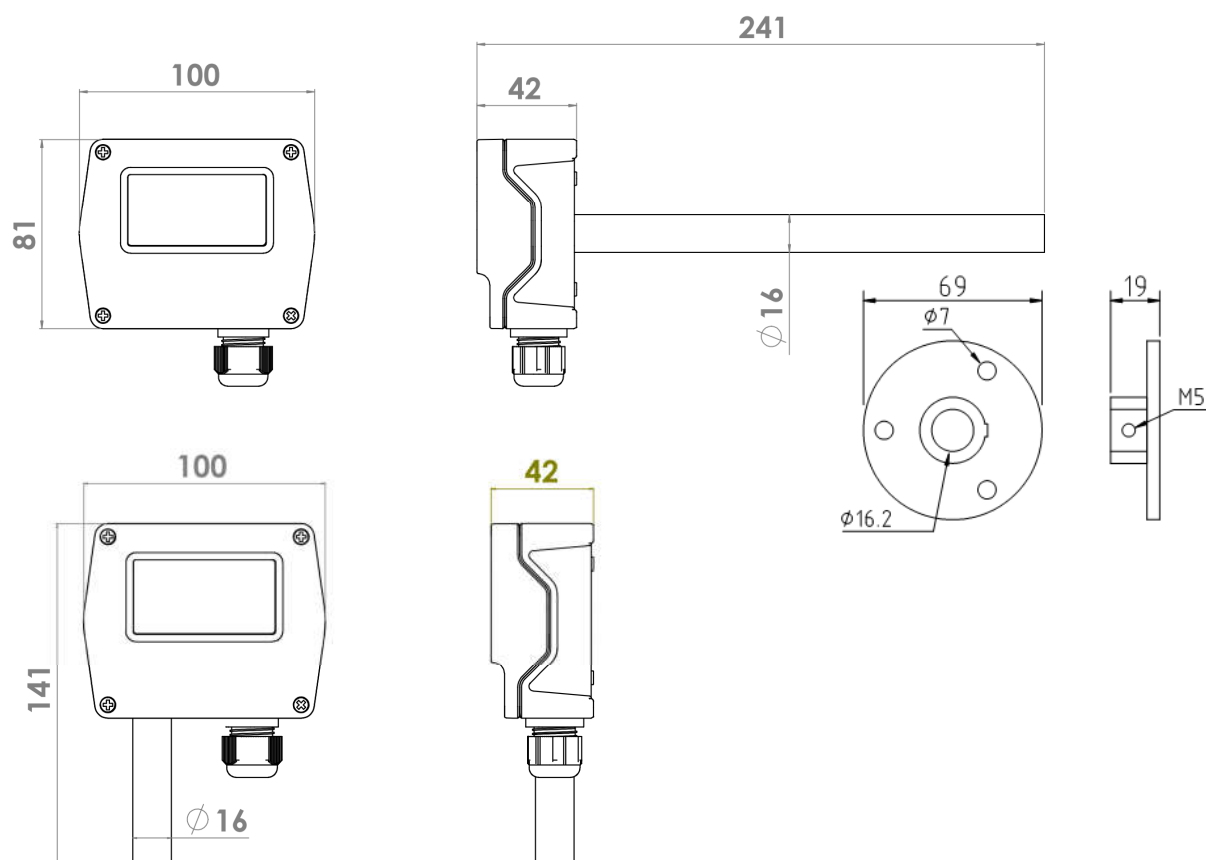
Ordering Guide

Model	Installation		Output		Filter	
HE-**FORN**-**621**	Wall mount	**1**	3-wire 4-20mA, 0-10V	**5**	Metal grid	**1**
	Duct version	**2**	3-wire 4-20mA, 0-10V, RS485	**6**		

Option	
M12-4P connector*	**B**
LCD Display with BL	**D**
Relay (two contacts)	**R**

The M12-4P connector only support 4-wires, and default wiring is V+, GND, CH1, and CH2. You may reassign pins for other functions as required.

Example

HE-**FORN**-**6212-51DR**

Carbon Dioxide & Temp	**621**
Installation: Duct version	**2**
	-
Output: 3-wire 4-20mA, 0-10V	**5**
Filter: Metal grid	**1**
LCD Display with BL: Yes	**D**
Relay (two contacts): Yes	**R**

Readily available & stocked versions in Australia

HE-FORN-6212-61DR   *FULL VERSION c/w Display, 0-10vDC & Relay outputs plus Modus for BMS connection.*

HE-FORN-6212-51   *NO DISPLAY, MODBUS or RELAY. Suitable for 0-10v CO2 & Temp. connections only*