



ES-HTCSIG

Signal Conditioning Circuit for Humidity, Temperature and CO2 Sensors

Installation Guide

1.0 Introduction

This unit is designed to accept 0-10V proportional signals from a carbon dioxide sensor, a temperature sensor or humidity sensor (or a multi-function sensor) and convert this into on/off command and speed control to the Nuaire Ecosmart fan via the ES-CI controller.

The unit has user adjustable threshold levels for each of the properties being monitored.

2.0 Installation

The installation must be carried out by competent personnel in accordance with all local and national statutory regulation; i.e. IEE, COHSE, HVCA etc.

The unit must be installed indoors, away from direct source of heat (e.g. radiator), any water spray or steam generating source. The mounting surface must be free from vibrations.

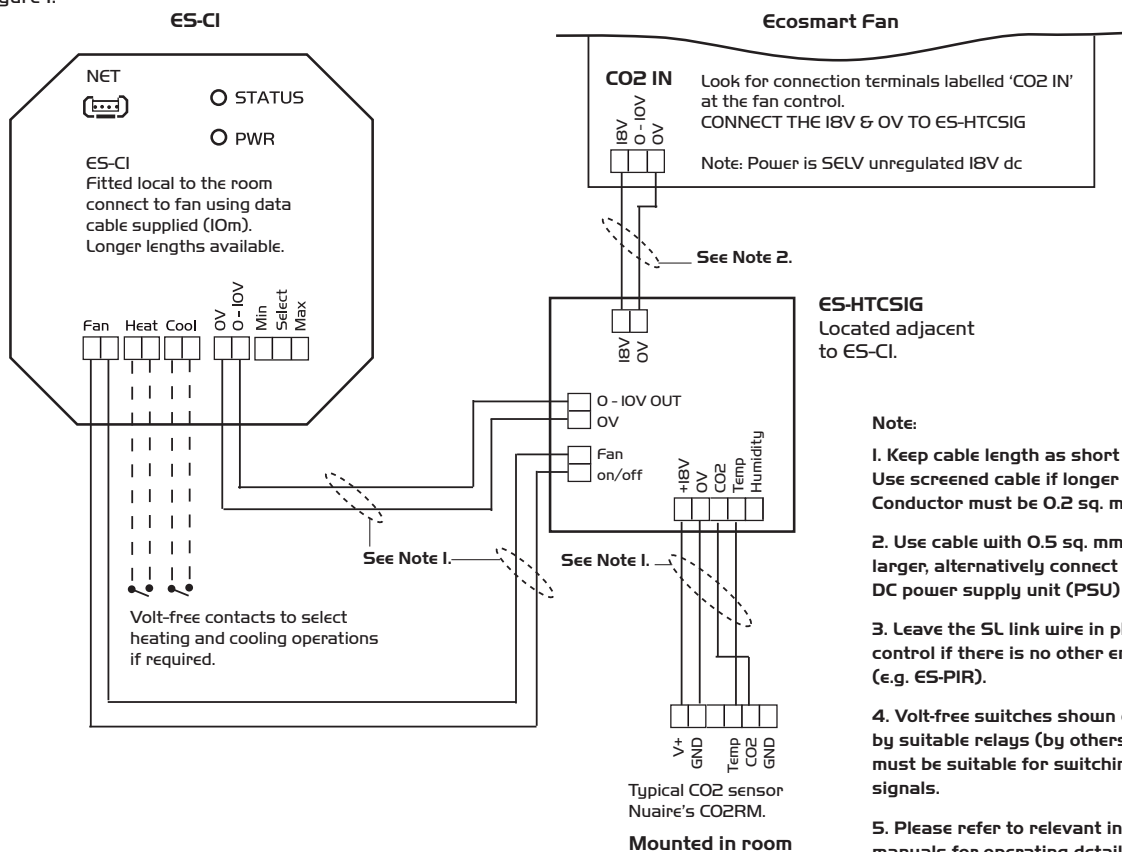
Install this unit in close proximity to the ES-CI and the sensors to minimise electromagnetic interference.

In all cases, keep the cable length of the signal cable as short as possible. If the signal cable is longer than 2m then screened cable should be used with the screening connected to earth at one end only.

Remove the front cover to gain access to the fixing holes. Use the box as a template to mark the hole locations on the wall. Drill and fix the unit using appropriate fasteners.

3.0 Wiring

Figure 1.



4.0 Adjusting the set points

Each input parameter (e.g. CO2) has two threshold values (C1 & C2);

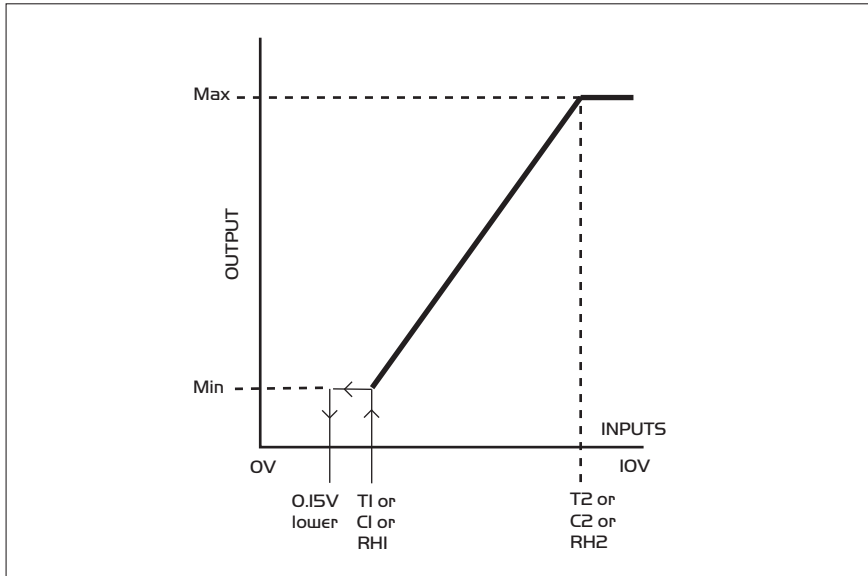
A lower value at which the fan will be switched on and run at minimum commissioned speed.

An upper value at which the fan will be running at maximum commissioned speed.

An input signal between these two values will be scaled proportionally (see fig. 2).

When the system is activated; the input signal must fall to 0.15V below the lower threshold before the system is switched off.

Figure 2.



A set of switches are available to modify the threshold values. These switches are labelled accordingly as shown in the tables below.

Temperature Threshold – Switches Ta, Tb & Tc

Switch settings			Threshold temperatures (see note 1)	
Tc	Tb	Ta	T1 (°C)	T2 (°C)
Off	Off	Off	25	28
Off	Off	On	24	28
Off	On	Off	23	28
Off	On	On	22	28
On	Off	Off	25	30
On	Off	On	24	30
On	On	Off	23	30
On	On	On	22	30

CO2 Threshold – Switches Ca, Cb & Cc

Switch settings			Threshold CO2 values (see note 2)	
Cc	Cb	Ca	C1 (ppm)	C2 (ppm)
Off	Off	Off	1000	1500
Off	Off	On	900	1500
Off	On	Off	800	1500
Off	On	On	700	1500
On	Off	Off	1000	1750
On	Off	On	900	1750
On	On	Off	800	1750
On	On	On	700	1750

Humidity Threshold – Switches Ha and Hb

Switch settings		RH Threshold (see note 3)	
Hb	Ha	RHI (%)	RH2 (%)
Off	Off	70	85
Off	On	65	85
On	Off	70	90
On	On	65	90

Notes:

1. calibrated for temperature sensor having 0-IOV output proportional to 0°C to 50°C.
2. calibrated for CO2 sensor having 0-IOV output proportional to 0-2000ppm.
3. calibrated for RH sensor having 0-IOV output proportional to 0-100% RH.

5.0 Maintenance

This unit does not require any routine maintenance. However, it is advisable to check the condition of the circuit board and wiring to ensure it has not been damaged by the installed conditions; e.g. unforeseen condensation etc.

6.0 Warranty

The 5 year warranty starts from the day of despatch and includes parts and labour for the first year.

The remaining 4 years covers replacement parts only.

The labour element is subject to full, free and safe access to the equipment as recommended by CDM regulations.

7.0 Service Enquiries

Nuaire can assist you in all aspects of service.

Our Technical Support department will be happy to provide any assistance.

Telephone 029 2085 8400
Fax 029 2085 8444

Technical or commercial considerations may, from time to time, make it necessary to alter the design, performance and dimensions of equipment and the right is reserved to make such changes without prior notice.