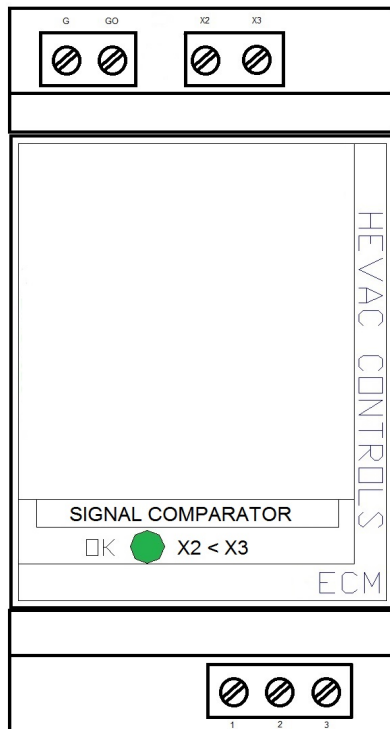


HEVAC

Control Agencies



ECM

intention

ENTHALPY COMPARATOR ECONOMY CYCLE INHIBIT INTERLOCK

- Australian Designed & Manufactured.
- 2 x 0-10vdc Enthalpy Sensor (Comparator) Inputs
- or Compare any 0-10vdc inputs (0.3v hysteresis)
- Indication Led for Input Suitability Status
- Potential Free 10A/240v rated Output relay with C/O contacts
- Small 2 module Standard Din module Enclosure.
- Stand alone capability.

Typical Application & notes :

Typically used in conjunction with air conditioning temperature controllers that also control economy cycle dampers for free cooling using either 2 position or modulating motorised fresh air & return air dampers. This module adds the ability to also inhibit economy cycle operation using 2 connected enthalpy sensors if the measured outside air enthalpy isn't at least 2.5 kJ/kg (~0.3vdc) lower than the return (or room) air enthalpy. For a basic perspective, typically an enthalpy delta (change) of 2.4 kJ/kg relates to a change of ~ 1 degrees Celsius or 7%RH or 1g/kg absolute humidity at an atmospheric pressure of 1 bar. Although Enthalpy measurement is a more accurate method of determining which air (F/A or R/A) is more suitable for cooling then comparing just temperature, it should be noted enthalpy control systems require a higher level of expertise for system servicing & testing.

The comparator function could alternatively compare any 0-10vdc type sensor signals ie O/A & R/A temperature inputs instead of comparing enthalpy but note the switching differential is fixed at 0.25 volts and is suitable for the application and sensors being compared.

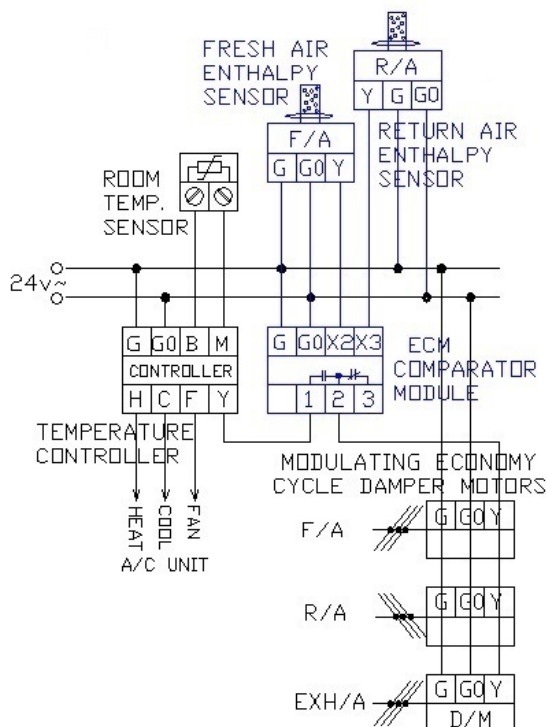
SWITCHING CHARACTERISTICS

X2<X3 COMPARATOR SWITCHING : TURN ON = - 0.29vDC delta , OFF - 0.1vDC {0.28v=2.4 kJ/kg enthalpy}

As a handy reference for system testing (@ 22c & 1 Bar) 1c delta =2.4kJ/kg & 1%RH = 0.35 kJ/kg (for 0-10vdc typical sensors)

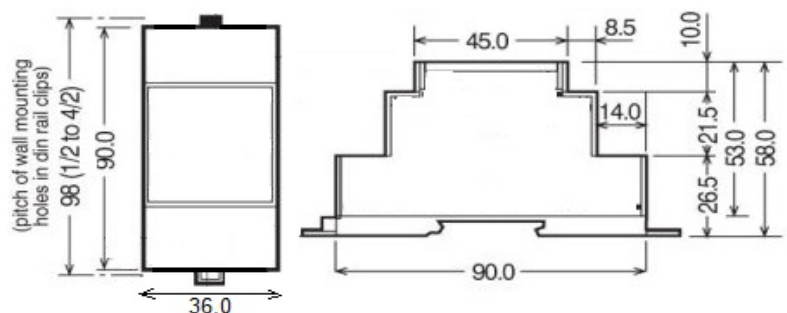
1 KJ/Kg Enthalpy =0.1176 vDC, 21c & 50%RH =~ 40Kj/Kg (4.7v), 25c & 60%RH = ~ 55kJ/kg (6.46v)

ELECTRICAL CONNECTIONS EXAMPLE



TEMPERATURE CONTROL SYSTEM WITH
MODULATING ECONOMY CYCLE O/P
USING ECM MODULE FOR F/A-R/A
ENTHALPY COMPARATOR INHIBIT
INTERLOCK

DIMENSIONS



26/06/19