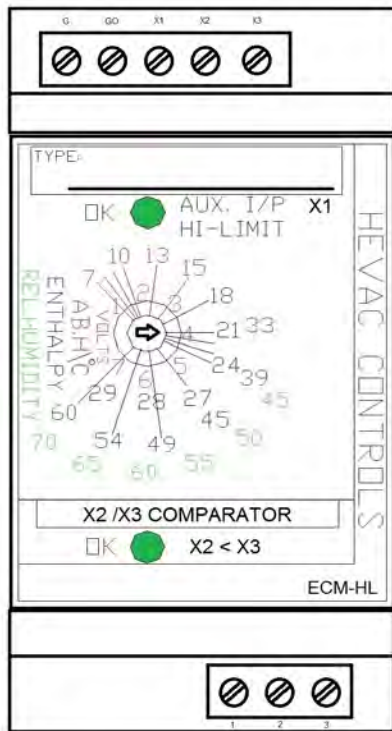


HEVAC

Control Agencies



ECM-HL

***ENTHALPY COMPARATOR
ON/OFF ECONOMY CYCLE
INTERLOCK WITH HI-LIMIT
AUXILIARY INHIBIT I/P***

- Australian Designed & Manufactured.
- 2 x Enthalpy Sensor Comparator inputs(or any 0-10vDC signals)
- Optional Use 1 x Adjustable High Limit Inhibit Input
- Indication Leds 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.

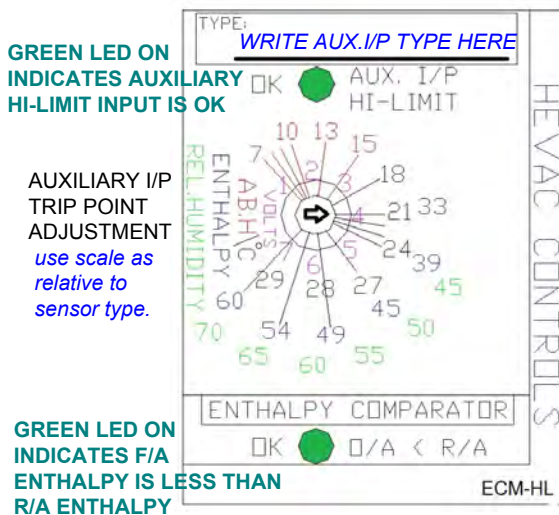
Typically used in conjunction with air conditioning temperature controllers that also need to control economy cycle dampers for free cooling, using either 2 position or modulating motorised fresh air & return air dampers. This module adds the ability to inhibit economy cycle operation using 2 connected enthalpy sensors & the optional use of an extra high limit input ..ie outside temperature high limit.

Typical Application & notes :

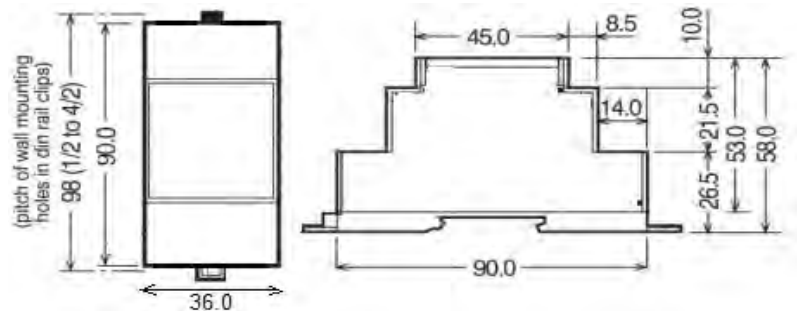
Enthalpy measurement is a more accurate method of determining which air (F/A or R/A) is more suitable for free cooling then comparing just temperature, although it should be noted, enthalpy control systems require a higher level of expertise for system servicing & testing. The comparator inhibit function (x2-x3) can alternatively compare any 0-10vdc type sensor signals ie O/A & R/A temperature or humidity etc instead of comparing enthalpy (but note the fixed switching differential is 0.25v). In addition to the comparator function, this module also has an optional use high limit input that can also inhibit economy cycle operation if the input (x1) exceeds an adjustable trip point. This input can be from any 0-10vdc type sensor , ie temperature, humidity, absolute humidity, air quality, dew point etc etc , as an example even if the O/A enthalpy is measured to be lower then the R/A enthalpy (x2<x3) but an additional O/A Absolute Humidity or air quality sensor is above the trip point setting than this can also inhibit economy cycle operation if desired. **Both green led's (high limit & comparator) need to be on (ok) for the output relay to energise.**

SWITCHING CHARACTERISTICS

- X1 HIGH LIMIT TURN ON RANGE : 1 - 7vDC
 HIGH LIMIT FIXED SWITCH DIFFERENTIAL : TURN ON, X1 @ -0.25 < S/P, OFF X1 = S/P (0.25v HYSTERESIS)
 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)



DIMENSIONS



ELECTRICAL CONNECTIONS EXAMPLES

