HEVAC Control Agencies

ECONOMY CYCLE CONTROL OPTIONS USING THE HEVAC ENDEAVOUR CONTROLLER

Ducted reverse cycle package air conditioning units complete with economy cycle dampers are a common form of building temperature & ventilation control. Most modern units can be supplied with a proprietary room control unit, but when more elaborate control is required particularly CO2 management and / or use of an A/C unit for base building load with reheat zones, then use of programmable control systems to meet specific site requirements is needed. The Hevac ENDEAVOUR controller is an ideal standalone choice for most control applications without the need & cost of a BMS type control system, however multiple Endeavor's can be connected to a central monitoring and override HMI wall panel or connected by Modbus to a BMS system.

The Hevac ENDEAVOUR controllers incorporate both digital & analogue inputs and outputs programmed to suit the specific site requirements. The Endeavour typically controls the room temperatures by controlling the output of single or multi-compressor reverse cycle air conditioning units that are also often fitted with modulating economy cycle dampers for use as both free cooling when outdoor conditions are favorable and for CO2 management.
On fall in measured room temperature below the zone temperature setpoint, stages of A/C compressors are energized in the heating mode typically set at 1c intervals from setpoint to warm the space as required.
On a rise in zone temperature above the room temperature setpoint, as a 1st stage effort for zone cooling (if the outside air temperature is measured to be cooler then the room temperature and the room temperature is measured to be above the setpoint) a 0-10vDC control signal from the controller modulates the economy cycle dampers to the fresh air mode in an effort to cool the space using more fresh air.
The economy cycle dampers are also often used to ventilate the space for CO2 management as the zone CO2 levels exceeds typically 600ppm and cause full fresh air mode if the level reaches ~800ppm. If economy cycle fresh mode doesn't satisfy cooling demand, then use of the A/C unit's compressors are sequenced on in 1c intervals from the setpoint. Economy cycle fresh air mode and DX cooling is allowed to operate at the same time as long as the outside air temperature continues to be more suitable for cooling then just using full return air, but the economy cycle use is subject to the controllers adjustable settings that limit economy cycle use if the outside air temperature is above or below adjustable limits, but is still available for CO2 control, but even that output has its own outside air temperature limits to throttle back fresh air use in extreme conditions & to protect the A/C units air on temperatures.
Normally all these inbuilt temperature & CO2 settings for economy cycle use cater for safe air on temperatures to A/C units but if further protection is preferred it is now also possible to use an additional air-on duct sensor fitted to the air intake of the unit to further restrict fresh air mode to maintain a minimum & maximum air on temperatures but still allowing CO2 control.
All preset controller settings are easily site adjustable by the air conditioning contractor using the controller's keypad, menu system & the LCD screen.
Hevac have a range of modern room sensors "HSMO series" for use with the Endeavour controller with various options of digital display, setpoint & run timer trigger buttons and humidity and CO2 measurement cells, see our web site at www.hevac.com.au for more details.