ECON-ZIP-BASE
ZIP Economizer™ Base Unit

Technical Data

Power Supply 24 VAC ± 20%, 50/60 Hz; Class 2 power source
4 VA Base Control (ECON-ZIP-BASE)
5.5 VA Base Control with Energy Module (ECON-ZIP-BASE + ECON-ZIP-EM)
5 VA Base Control with Communication Module (ECON-ZIP-BASE + ECON-ZIP-COM)
6.5 VA Base with Energy Module and Communication Module.

Power Consumption Rating* Rated Impulse Voltage 330V
Connectors 1/4" male spade connectors
Environmental RoHS, Conformally Coated
Software Class A
Control Pollution Degree 3
Temperature Input Signal NTC 10kΩ
Humidity 5 to 95% RH non-condensing
Humidity Input Signal 0-10 VDC, corresponds to 0 to 100%
Housing NEMA 1
Housing Material UL94-V0A
Ambient Temperature Range -40°F to +158°F (-40°C to +70°C)
Storage Temperature Range -40°F to +176°F (-40°C to +80°C)
Display 2x16 character LCD; LED backlight; transflective
Display Op. Range** -22°F to +176°F (-30°C to +80°C)
Agency Listing cULus acc. to UL873, CAN/CSA C22.2, No. 24-93
Energy Code Compliant ASHRAE 90.1, CA Title 24, NECB

Dimensions (Inches [mm])

Product Features

The ZIP Economizer™ is a modular designed, plug and play economizer control solution. The ZIP offers an extended temperature transflective LCD display, with on-board help, providing information every step of the way. Through its patented ZIP code set up, the system will automatically recognize your climate zone and will set the high limit change over temperature providing automatic compliance. Integrated onboard test sequence that ensures effortless compliance with California Title 24, and verification of proper operation. Auto-detection of inputted devices and non-proprietary sensors, allows for a quicker, and easier set up. Through its superior fault detection and diagnostics (FDD), it troubleshoots faults, initiates alarms, and reconfigures for best operation. Up to 10 alarms are stored as historic alarms, and with operating hours tracking it makes troubleshooting and maintenance easier.

Application

Direct expansion RTUs up to 30 tons, single dry bulb, single enthalpy, differential dry bulb, differential enthalpy change over strategies. Integrated cooling operations only when damper is 100% open (2 stages thermostat required). When optional energy module is used (ECON-ZIP-EM) demand control ventilation, pre occupancy purge, power exhaust, remote damper position override, fan speed switch. When optional communication module (ECON-ZIP-COM) is used remote alarm indication is available.

I/O Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Name</th>
<th>Description</th>
<th>Electrical Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input</td>
<td>R</td>
<td>Supply Hot</td>
<td>24 VAC, ± 20%, 50/60Hz</td>
</tr>
<tr>
<td>Input</td>
<td>G</td>
<td>Fan Signal (occupied)</td>
<td>On/Off, 24 VAC, ± 20%, 50/60Hz</td>
</tr>
<tr>
<td>Input</td>
<td>C</td>
<td>Supply Common</td>
<td>Common</td>
</tr>
<tr>
<td>Input</td>
<td>Y1</td>
<td>Cooling requirement Stage 1</td>
<td>On/Off, 24 VAC, ± 20%, 50/60Hz</td>
</tr>
<tr>
<td>Input</td>
<td>Y2</td>
<td>Cooling requirement Stage 2</td>
<td>On/Off, 24 VAC, ± 20%, 50/60Hz</td>
</tr>
<tr>
<td>Input</td>
<td>W1</td>
<td>Heating requirement Stage 1</td>
<td>On/Off, 24 VAC, ± 20%, 50/60Hz</td>
</tr>
<tr>
<td>Input</td>
<td>SAT</td>
<td>Supply Air Temperature Sensor</td>
<td>Type: 10K NTC (Type II thermostir)</td>
</tr>
<tr>
<td>Input</td>
<td>DAT</td>
<td>Outdoor Air Temperature</td>
<td>Type: 10K NTC (Type II thermostir)</td>
</tr>
<tr>
<td>Input</td>
<td>DAH</td>
<td>Outdoor Air Humidity</td>
<td>0-10 VDC Auto Detection: Sensor present if voltage 0.5V-10V</td>
</tr>
<tr>
<td>Input</td>
<td>RAT</td>
<td>Return Air Temperature</td>
<td>Type: 10K NTC (Type II thermostir)</td>
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<td>Return Air Humidity</td>
<td>0-10 VDC Auto Detection: Sensor present if voltage 0.5V-10V</td>
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<tr>
<td>Output</td>
<td>CC1</td>
<td>Compressor 1 RTU Stage 1 Mechanical Cooling Circuitry</td>
<td>100’000 cycles @ inrush current of 3A, normal current 1.5A Impedance for Auto detection @ 24 V: &lt;600 Ohm @ 60Hz &lt;800 Ohm @ 50Hz</td>
</tr>
<tr>
<td>Output</td>
<td>CC2</td>
<td>Compressor 2 RTU Stage 2 Mechanical Cooling Circuitry</td>
<td>100’000 cycles @ inrush current of 3A, normal current 1.5A Impedance for Auto detection @ 24 V: &lt;600 Ohm @ 60Hz &lt;800 Ohm @ 50Hz</td>
</tr>
</tbody>
</table>

Suitable Actuators

| ECON-ZIP-BASE | AFB24-SR, NFB24-SR, LF24-SR, TFB24-SK |

**The power consumption is for the control only and does not include connected loads such as actuator, compressors, fans, and sensors. For transformer sizing, the power consumption of these attached components must be included.

**At low temperature, the display has decreased response time, below -22°F (-30°C) it will not function.
When Temperature and Humidity sensors are used for enthalpy, respective temperature only sensors are not used and OAT and RAT and wiring shall terminate at ECON-ZIP-TH.

Return Air Temperature and Humidity sensors are only required when differential temperature or differential enthalpy high limit changeover strategy is used.

When the thermostat is not equipped with occupancy control, "Fan On" output "G" shall be wired to ECON-ZIP-BASE.

W1 must be wired to ECON-ZIP-BASE when unit is a Heat Pump, using 2 speed fan, and when it is desired to record operational hours in heating.

Existing refrigeration safety devices may exist, consult RTU wiring diagram.