

Required Tools

Drill.

Hole saw. Diameter :

- $\frac{3}{4}$ " (1,0 cm)
- $1\frac{3}{8}$ " (3,5 cm)
- $2\frac{1}{4}$ " (5,7 cm)

Wrench (optional : crescent wrench, monkey wrench)

- $1\frac{1}{8}$ " (2,9cm)
- $1\frac{5}{8}$ " (4,2 cm)
- $1\frac{7}{8}$ " (4,8 cm)
- $2\frac{3}{4}$ " (7,0 cm)

IB



1. Drill two $1\frac{3}{8}$ " (3,5 cm) holes, on each hood corner where the optical sensors are to be installed. Make sure that the sensors location is in the expected air flow, so that the steam and fumes are properly detected. (the exact position depends on specific hood profile and cooking apparatus).

2. Install one 1" (2,5cm) UL certified compression seal in each of the holes you just drilled. Make sure the lock washers are outside the hood and the UL certified fire seal washers are inside the hood. Tighten the nut using a $1\frac{7}{8}$ " (4,8 cm) wrench.



3. Insert TIB pipe inside the fittings, with inner threaded ends facing down (inside the hood). Secure the compression seals by hand so that adjustments can be made afterwards.



4. Screw the IB sensor heads to the lower ends of the TIB pipes, and make sure that both IB sensors heads face each other, and are at the same height. Once the adjustments are made, secure the compression seals with a $1\frac{5}{8}$ " (4,2 cm) wrench.

TT



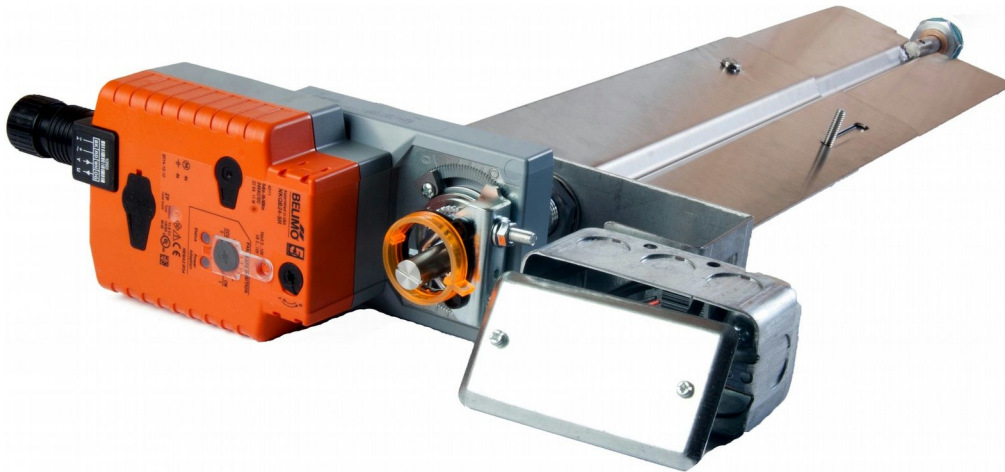
1. Drill a $\frac{3}{4}$ " (1 cm) hole, where the TT temperature sensor is to be installed (typically on the side of the duct or the hood ceiling). If inside the duct, make sure the hole is centered with the duct section. If a damper is included, make sure the TT is located upstream of the damper, and out of range of the damper blades.
2. Unscrew the nut of the TT temperature sensor, and insert the sensor in the hole. The lock washer must be outside the duct (or hood) and the UL certified fire seal washers inside the duct (or hood). From inside the duct (or hood), secure the nut on the TT temperature sensor using a $1\frac{1}{8}$ " (2,9 cm) wrench.

NE



1. The NE network hub must be at an adequate distance of all the sensors connected to it, according to the cables length of all sensors. It must not lie directly over the hood, but stand at least 3" above the hood.
2. Make sure its location is easily accessible for maintenance.

VM



1. Make sure the location of the VM damper meets the following requirements:
 - 1.1. Enough space for full rotation of the blade.
 - 1.2. Less than 18" away from an access door or the duct collar.
 - 1.3. Ideally in the most linear location (further away from elbows or collar)
2. Drill two $\frac{7}{8}$ " (2,2 cm) holes facing each other on the centers of two opposite sides of the duct, to receive the VM damper axle.
3. The through hole compression seal will be on the side of the actuator assembly. Make sure there is enough space on that side to easily access the actuator for maintenance. Install the through hole compression in its hole. Make sure the lock washers and the actuator mounting bracket are both outside the hood (the actuator mounting bracket must be inserted between both lock washers) and the UL certified fire seal washer is inside the hood. Tighten the nut using a $1\frac{1}{4}$ (3,2 cm) wrench.
4. The blind hole compression seal will be on the side opposite of the actuator assembly. Install the blind hole compression in its hole. Make sure the lock washer is outside the hood and the UL certified fire seal washer is inside the hood. Tighten the nut using a $1\frac{1}{4}$ (3,2 cm) wrench.
5. Insert a brass washer on the shaft of the free blade. Insert the free blade inside the blind hole compression seal. Make sure the shaft turns freely.
6. Insert a brass washer on the shaft of the driving blade. Insert the driving blade inside the through hole compression seal. Make sure the shaft turns freely.
7. Put a washer, a lock washer, and a stainless nut on both fixation studs of the driving blade.
8. Expand the two blades to the maximum, then secure them in place by using loctite on both fixation studs and tightening the nuts.
9. Make sure the damper can rotate freely.
10. Install the actuator on the actuator mounting bracket. Secure the shaft in fully open position.

Control Cables



1. Connect the components using only ecoAZUR® control cables, according to plan, or to network topology (for further information on that topic, please refer to “ecoAZUR® Programming Guide” section 3.5 - Topology and Addressing).
2. For connections above hood, use fasteners to tie loops next to terminals to keep some cable length for maintenance.
3. Cables must not lie on top of the hood, but stand at least 3” above the hood.
4. When connecting VM dampers actuators :
 - 4.1. Use wire connectors inside the junction box located on the actuator bracket.
 - 4.2. Make sure power comes from a dedicated 24VAC Power Supply

Pass Through Compression Seal

1. Drill a 2” $\frac{1}{4}$ (5,7 cm) hole in a straight line between the two IB sensor heads.
2. Install the 1” $\frac{11}{16}$ (4,3cm) UL certified pass through compression seal in the holes you just drilled. Tighten the nut using a 2” $\frac{3}{4}$ (7,0 cm) wrench.

PCU Panel

1. Find a suitable location for the panel.
2. Secure panel to the wall using appropriate wall anchors.
3. Power the panel with 120VAC current.
4. Connect the panel according to plan.

VFD

1. Find a suitable location for the VFD.
2. Secure VFD to the wall using appropriate wall anchors.
3. Power the VFD according to model and specifications, following the manufacturer's procedure.
4. Connect VFD to relevant TC Output according to plan.

Programmation

The following items assume you are familiar with the “ecoAZUR® Programming Guide”

1. Verify the amount of detected sensors.
2. Create appropriate Ventilation Appliances, with correct parameters.
3. Associate sensors to Ventilation Appliances according to plan and physical installation.
4. Review threshold values for TT, and test them if possible.
5. Associate TC Outputs to appropriate Ventilation Appliances, according to plan and physical installation.

Commissioning

While system on powered on,

1. Correct warnings or faults (if any)
2. For every IB pair :
 - 2.1. Verify that parameter “Raw Signal” is comprised between 2500 and 8900. If above, try misaligning the IB sensors until parameter value, if below, verify both sensor are correctly aligned
3. For every TT sensor :
 - 3.1. Verify that parameter “Temperature” reads correct actual temperature.
4. For every TC Output :
 - 4.1. For every Damper Output :
 - 4.1.1. Force Output to 2V (100%). Verify that damper is in fully open position.
 - 4.1.2. Force Output to 10V (0%). Verify that damper is in fully close position.
 - 4.1.3. Cut power to actuator. Verify that damper is in fully open position.
 - 4.1.4. Make sure the damper doesn't drag to the sides of the duct.
 - 4.1.5. Force demand on each sensor (by blocking the beam for IB pairs, or heating TT sensors) and make sure the damper that opens is the right one.
 - 4.2. For every VFD Output :
 - 4.2.1. Verify Output scaling (0V = 0% = 0Hz, 5V = 50% = 30Hz, 10 = 100% = 60Hz).
 - 4.2.2. Force demand on each sensor (by blocking the beam for IB pairs, or heating TT sensors) and make sure the VFD that ramps up is the right one.
5. AutoOff (If enabled)
 - 5.1. Test AutoOff with a 0 sec delay.
 - 5.2. Test AutoOff with correct delay.