

SC-VD-RK MODULATING VAV DIFFUSER RETROFIT KIT

The Specified Controls SC-VD-RK is a complete modulating VAV diffuser retrofit kit designed to fit Nailor®, Carnes®, Krueger, Titus and many other 24" x 24" plaque diffusers with standard neck sizes of 6", 8", 10", 12" and 14".

The SC-VD-RK is designed to provide single zone temperature control using a proprietary SC-Z20-T thermostat or in multi-zone applications utilizing the Z-20, 20 zone logic panel. For zones having more than a single diffuser, as many as 12 SC-VD-RK-SD auxiliary diffusers can be wired in parallel.



The SC-VD-RK comes complete with factory mounted actuator, duct sensor and actuator board mounted in a 4 x 4 enclosure. The actuator is direct mounted to a mechanical drive assembly that attaches to a round disk that modulates above the diffuser plaque.

INSTALLATION:

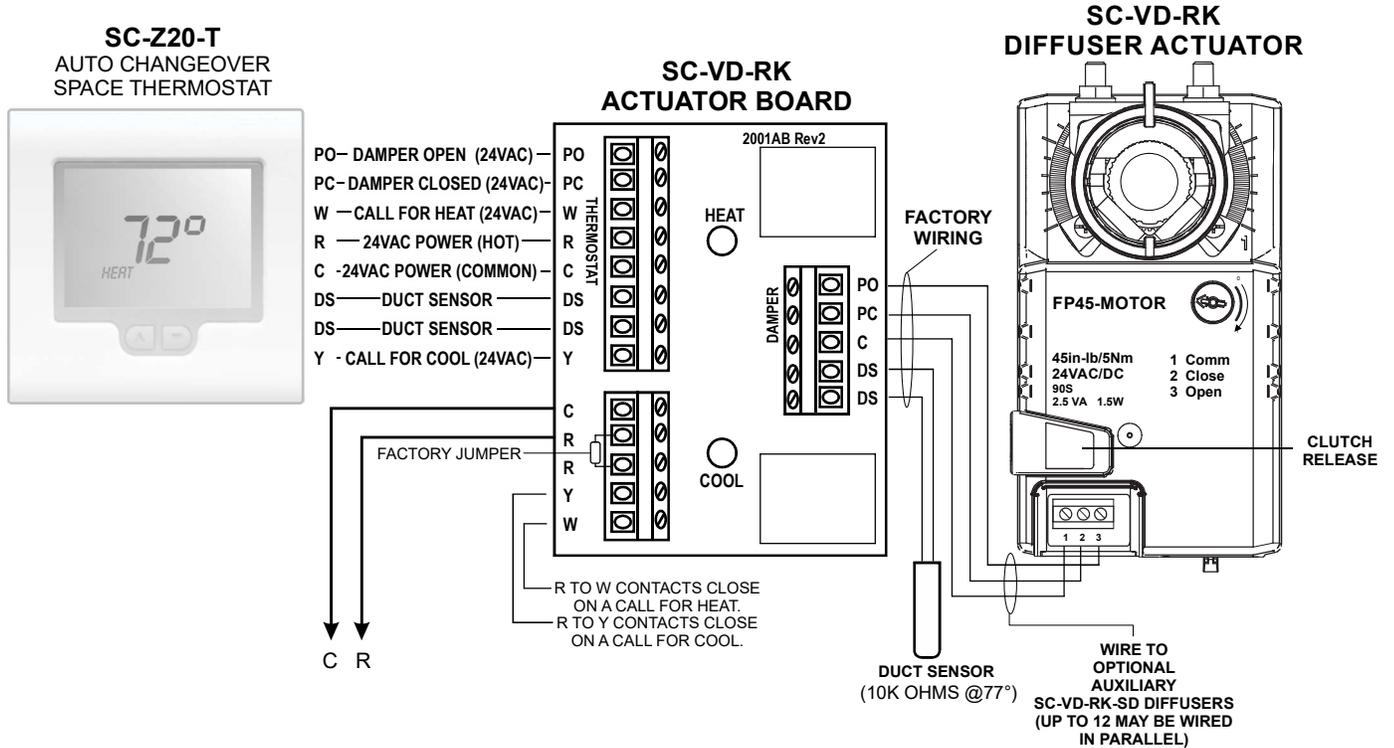
1. Remove the diffuser plaque and place the diffuser on a flat work surface.
2. Slide the actuator assembly over the diffuser neck and secure using the factory provided self-tapping screws.

3. After the actuator assembly is securely mounted, turn the diffuser over.
4. Align the disk with the 3 pre-drilled holes on disk with the holes in the actuator drive bracket.
5. Securely fasten the disk to the bracket using the supplied self-tapping screws.

Note: For easier mounting of the disk to the actuator drive bracket it can be raised above the diffuser opening by pressing in on the actuator clutch while turning the actuator collar. (See back side for further instructions and wiring)



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SEQUENCE OF OPERATION:

The automatic changeover duct sensor (factory mounted on the actuator shell) senses whether there is warm air or cool air in the duct. If the SC-Z20-T thermostat is calling for cooling and the duct sensor determines there is cool air in the duct, the diffuser will modulate open. If the SC-Z20-T thermostat is calling for heating and the duct sensor determines there is warm air in the duct, the diffuser will modulate open.

The green LED located on the actuator board indicates when the space temperature is 1.5° F above the thermostat setpoint and the thermostat is calling for cooling. The red LED located on the actuator board indicates when the space temperature is 1.5 below the thermostat setpoint and the thermostat is calling for heating.

APPLICATION AND INSTALLATION NOTES:

The minimum position setting of the diffuser is configured through the SC-Z20-T thermostat. The diffuser must be set at no less than 10% minimum open. Maximum static pressure is 0.25" w.c.

Use standard 18 gauge thermostat wire.

A 24VAC 40VA transformer will power a single SC-VD-RK and up to 20 SC-VD-RK-SD auxiliary actuators.

The actuator board is located in the 4 x 4 junction box attached to the actuator shell.

If the duct temperature is above 72° F, the zone diffuser will open on a call for heating.

If the duct temperature is below 72° F, the zone diffuser will open on a call for cooling.

If a single stand-alone diffuser or multiple stand-alone diffusers are used to zone more than 30% of the total CFM served by the HVAC system, a bypass damper may be required to maintain constant system static pressure.

The HVAC system should be controlled by its own space thermostat or discharge air controller. If a space thermostat is used to control the HVAC system, it must never be located in an area served by a stand-alone diffuser thermostat.

A suction line freeze stat (SC-FS) should be installed when zoning more than 30% of the total CFM served by the HVAC system to protect the equipment in the event the suction line temperature drops too low (Wire in series with the cooling control circuit).



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