

Storage and installation instructions for Volume Flow Controllers

General Information

The volume flow controllers are intended for use in ventilation and air conditioning systems and are designed for controlling the flow rate of air. Extreme levels of impurities in the air can severely affect the regulatory behaviour of the controllers. The storage and operation temperatures are stored in the relevant documentation. For volume flow controllers with electrical or pneumatic actuators, consult the specifications of the actuator manufacturer. If aggressive air is conveyed, a volume flow controller with polyurethane coating or in stainless steel (material number: 1.4571) can be used. If using the controllers for aggressive air, the material tolerance of the aggressive gas must be thoroughly checked before installation. For controllers with electric or pneumatic actuators, the manufacturer's restrictions apply. If in doubt about a specific case, consult the manufacturer.

Delivery

The volume flow controllers should be inspected for completeness and transport damage immediately on receipt of delivery. If the delivery is incomplete or the product has been damaged in transit, the delivery company must be informed immediately.

Storage

The volume flow controllers should be protected from high humidity, moisture and contamination such as sand, mortar, dust, etc.. With regard to any integrated electronic components, the controllers should be stored at an ambient temperature of between 0°C and 50°C.

Assembly

The transport packaging must be removed before assembly. Ensure that any padding material is also removed from inside the controller. During assembly, ensure that the pipe is free from dirt and loose objects such as cloths, newspapers, boring chips, packaging

materials, etc. since these can prevent the controller from functioning correctly. When installing the controller, select an installation location where the volume flow controller is easily accessible at all times. During assembly, ensure that the flow direction corresponds to the arrow on the nameplate. The controller can be installed in horizontal or vertical pipes in any location. The volume flow controller is almost insensitive to the flow stream, although some installation situations can have a negative impact on the flow mechanics, controller accuracy and acoustics and should therefore be avoided. These include, for example, extreme constriction of the flow, changes of direction around sharp bends, asymmetrical flow, free suction without inlet component, installation before or after disruptive obstacles, etc.. If space does not allow for a flow-calming straight section, the controller can be rotated around its longitudinal axis in order to minimize disruption to the flow (only in case of mechanical, self regulating controllers). This should be agreed in advance with the manufacturer.

In case of circular controllers and in a free suction arrangement, an inlet part with a radius of at least 15 mm must always be attached to the pipe. When connecting to the main duct, a straight flow section of at least $2.5 \cdot NW$ (VRS and VRS-M) or (VRRK) must be maintained and

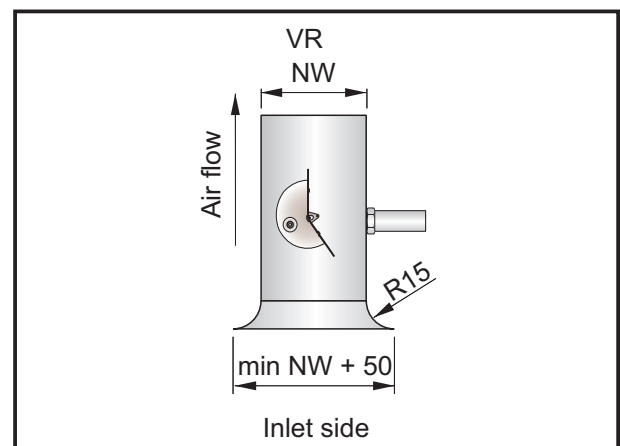


Fig. 1: Free suction installation

you must ensure that the branch point is rounded. If the controller is attached directly to the duct, a perforated sheet with 20% blockage should be installed.

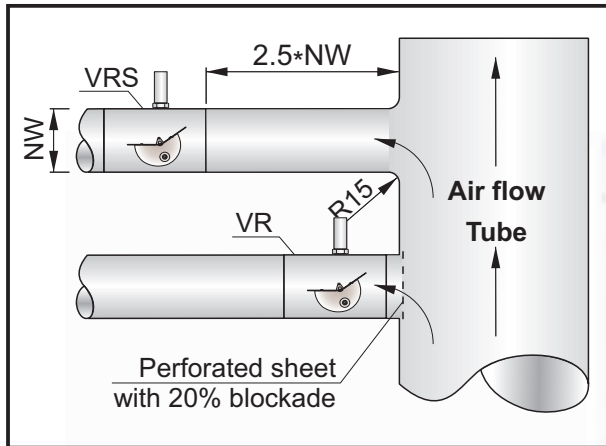


Fig. 2: Installation when connected to the duct round controller VRS

If a reduction or extension lies upstream when using electronic controllers with a measuring nozzle, a flow section of at least $5 \cdot NW$ or $5 \cdot$ the diagonal must be adhered to. Ensure that flexible pipes do not exceed the recommended lengths specified in the standard DIN 1946 part 2 (VDI ventilation regulations). The pipes and the volume flow controllers must be securely fixed and

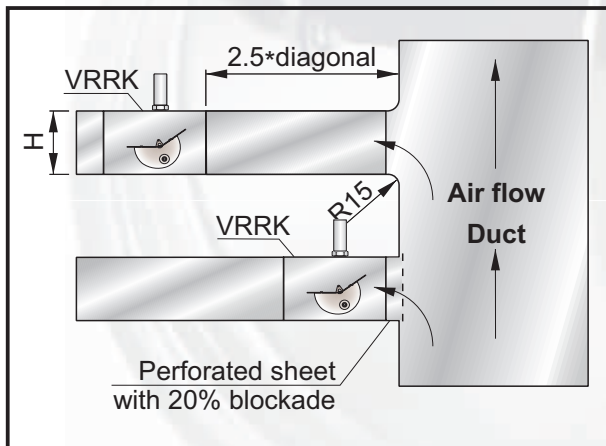


Fig. 3: Installation when connected to the duct rectangular controller VRRK and VRRM

suspended in a stable position. If a circular, self regulating volume flow controller is used in combination with a shut-off damper, ensure that the axis of the shut-off damper is aligned at right angles to the axis of the volume flow controller. Shut-off dampers with pneumatic actuators should be equipped with damping restrictions in the control pressure line in order to

prevent sudden opening and closing of the damper.

Use of a measuring nozzle

To monitor the volume flow, a measuring nozzle (Fig. 4) with a suitable pipe diameter can be installed at a minimum distance of 200 to 300 mm behind the volume flow controller. The required measuring nozzle is available under ref. number 246. The necessary system

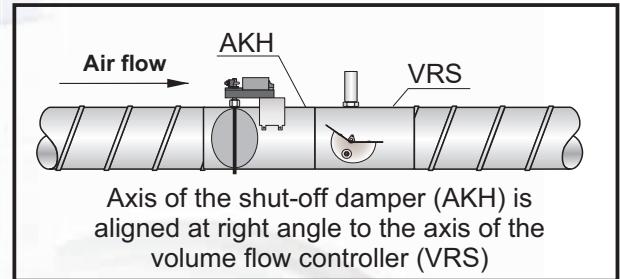


Fig. 4: Version with shut-off dampers

pressure must be maintained in order to guarantee faultless functioning of the measuring nozzle.

Maintenance

All components are maintenance-free, non-ageing and corrosion-proof under normal conditions. According to DIN EN 12097, access to the pipe system and the volume flow controllers must be available at all times to enable adjustment and maintenance. For volume flow

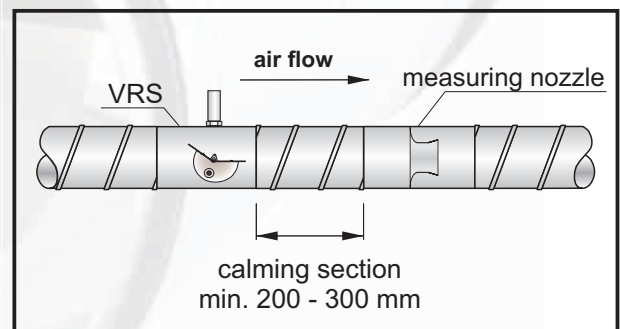


Fig. 5: Version with measuring nozzle

controllers with motor adjustment, the specifications of the motor manufacturer also apply.

Layout

For the layout of the pipe network, flow rates of between 3 m/s and 7 m/s are recommended. The manufacturer's relevant minimum response pressure of the controller should also be taken into account.