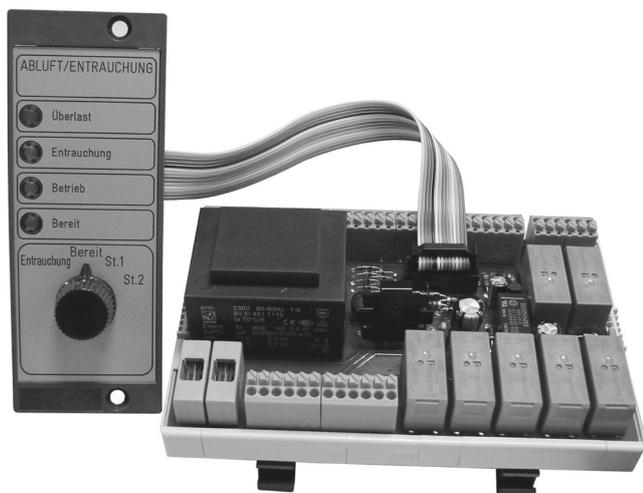


# Ventilation and Smoke Extraction Control Unit AES-ST3.1



## Application

The ventilation and smoke extraction control unit AES-ST3.1 is designed for the operation of one or two-stage fan motors for ventilation under normal operating conditions and for emergency smoke extraction.

## Function

The functionality of the controller corresponds to VDMA 24177 and carries general TÜV approval.

In ventilation mode all motor protection devices are enabled.

### Operation + Display module (internal)

**READY** Ventilation is switched off. The READY indicator is lit. An external smoke extraction alarm activates the smoke extraction mode as described in SMOKE EXTRACTION. In this switch position the fan motor can also be switched on in ventilation mode by a connected REMOTE SWITCH as described in ON or ST.1 / ST.2.

**SMOKE EXTRACTION** Ventilation flap drives to OPEN position. In smoke extraction mode the fan motor is switched to a high speed via the start-up circuit. The SMOKE EXTRACTION indicator is lit. The motor circuit breaker is disabled. The fan can only be switched off by resetting the triggering alarm or by the external FIRE BRIGADE switch.

**ON or ST.1 / ST.2** Ventilation flap drives to OPEN position. In ventilation mode the fan motor is switched on at the selected speed. The OPERATING indicator is lit. The motor circuit breaker is enabled. An external SMOKE EXTRACTION alarm activates the smoke extraction mode as described in SMOKE EXTRACTION.

**OVERLOAD** Indicates that the motor circuit breaker has tripped. In ventilation mode the fan motor is switched off. In smoke extraction mode the fan motor is not switched off. The alarm must be reset after repairing the fault on the motor protection device.

### FIRE BRIGADE SWITCH (external)

This switch has absolute priority. All other controls are subordinate. Smoke extraction mode is activated if the connecting cable is severed or disconnected.

**ON** Smoke extraction mode is activated as described in SMOKE EXTRACTION.

**OFF** The ventilation is switched off in ventilation or smoke extraction mode.

**READY** In this switch position the fan motor can be switched on in ventilation mode on the OPERATING & DISPLAY MODULE or by a REMOTE SWITCH as described in ON or ST.1 / St.2.

### Motor circuit breaker (internal)

Various motor protection devices can be connected in order to monitor the rated motor current for each fan stage. A visual alarm is given if the breaker trips. On tripping, the fan is only switched off if ventilation mode is active.

### Remote switching (external)

The remote switch can be connected as an additional switch for ventilation mode and is subordinate to the OPERATING & DISPLAY MODULE.

**0 or OFF** Ventilation is switched off.

**ON or ST.1 / ST.2** Ventilation flap drives to OPEN position. In ventilation mode the fan motor is switched on at the selected speed. The OPERATING indicator is lit. The motor circuit breaker is enabled. Smoke extraction mode is activated if an external smoke extraction request is received.

### Flap actuation (external)

If the ventilation is switched on in ventilation or smoke extraction mode, the associated ventilation flap is actuated. For maximum functional reliability the flap output is fed via a separate fuse.

### Operating / Ready / Smoke extraction / Overload (signal)

Non-floating signals for relaying to a higher-level post.

### Fan enable (external)

If the ventilation is switched on in ventilation or smoke extraction mode, the associated ventilation flap is actuated. The fan is only enabled for switching on when the flap signals OPEN via a limit switch (normally closed). This ensures that the fan does not work against a closed ventilation flap. If no flap enable contact is connected, the flap and the ventilation switch on simultaneously.

### ARM - automatic smoke alarm (external)

Connection for automatic smoke alarms. Smoke extraction mode is activated if an alarm is triggered, if there is no alarm module or if the connecting cable is interrupted. The ASAs are self-latching after being triggered. The ASA alarm is reset by interrupting the supply voltage for at least 3 seconds (switch off the main switch). The controller and the smoke alarms are matched to each other.

Before using third-party alarms, check that they are approved for connection and latching function!

### BMZ - central fire alarm (external)

Smoke extraction mode is activated if an alarm is triggered or if the connecting cable is interrupted. The CFA alarm is reset by a control on the CFA.

### DKM - pushbutton alarm (external)

Smoke extraction mode is activated if the alarm is actuated or if the connecting cable is interrupted. The PBA alarm is reset by a control on the triggering PBA. Several PBA contacts can be connected in series.

### DKT - pushbutton switch (external)

Smoke extraction mode is activated if the alarm is actuated or if the connecting cable is interrupted. The PBA alarm is reset by a control on the triggering PBA. Several PBA contacts can be connected in series.

### Smoke extraction (signal)

Floating signal contact for smoke extraction mode.

### Error (signal)

Floating signal contact for system error. Possible causes of error: no mains supply, main switch is switched off, primary or secondary control fuse has blown, low voltage supply is defective, motor protection device has tripped, fire brigade switch not READY.

### Ventilation activation (internal)

Switching outputs for activating fan stage 1 or 2 according to request by external alarm / controller.

### LT - lamp test (internal)

Control input for checking the function of the indicator lamps.

