

Smoke Detection System SDS-48

How to Eliminate Air Flow Faults

Statistically the most frequent fault during operation of the Smoke Detection System SDS is the airflow fault. There are different reasons which may cause an airflow fault:

- blocked smoke sampling pipe (including pre-filters if applied)
- damaged airflow indicator (pressure switch)
- fault in the wiring of the airflow indicator
- fault in the electronic modules

If the reason for an indicated airflow is unknown, please work off the following check list:

1 Fan Unit and 3-Way-Valves

Ensure that the fan is running and the 3-way-valves are in position “smoke sampling”.

2 Pipes and Hoses

Disconnect the flexible hose at the smoke detection panel resp. extension unit. If the airflow fault disappears now, the sampling pipe is blocked by dirt or water (condensate) and must be cleaned. Drain armatures and pre-filters (if applied) to be checked for proper function.

3 Airflow Indicator (Pressure Switch)

If the airflow fault is still present, please short circuit the wires of the cable connected to the airflow indicator. The short circuit simulates an airflow indicator, which has detected sufficient airflow.

If the fault indication on the display disappears now:

- Check the wiring of the airflow indicator.
- If the wiring is correct, the airflow indicator is defective and must be exchanged. (Remark: Most of the airflow faults are caused by damaged membranes from influence of compressed air, during pipe cleaning works).

4 Detector Connection Module

Measure, whether voltage is present at the output terminals of the detector connection module, where the airflow indicator is connected to. For this purpose, disconnect the cable to the airflow indicator at the detector connection module. The voltage meter should show some tenth of volt. An exact value cannot be indicated due to the fact, that the voltage exists only of short pulses. If no voltage appears (and the adjacent smoke detector is inserted), measure the voltage at input terminals 1/2 resp. 3/4 of the detector connection module. Here approx. 16 - 21V should be present. This voltage is superseded by voltage pulses and therefore the voltage display will not be very stable. If voltage at the input terminals is present, not however at the output terminals to the airflow indicators, the detector connection module is defective and must be exchanged. Please provide serial no. of the old detector connection module.

5 Galvanic Isolator and Control Module

Measure the voltage at the output terminals 1/2 (and 4/5 in case of 2-channel versions) of the galvanic isolators. The voltage should be at least 17V. The voltage is superseded by voltage pulses and therefore the voltage display will not be very stable.

If the voltage is below this value, measure the voltage at the terminals 40/41 of the power supply module. The voltage is superseded by voltage pulses and therefore the voltage display will not be very stable:

- If the voltage at the terminals 40/41 is below 20V, the control module should be exchanged. Please provide serial no. of the old control module.
- If the voltage at the terminals 40/41 is higher than 20V, disconnect the wires of the galvanic isolator at the terminals 1/2 resp. 4/5 and measure the voltage at the output terminals 1/2 (and 4/5 in case of 2-channel versions) again.
 - If the voltage is still below 17V, the galvanic isolator appears to be defective and should be exchanged. Please provide serial no. of the main panel.
 - If however the voltage is correct now, the reason for the fault might be a short circuit in the detector connection module resp. smoke detectors or airflow indicator. Please provide serial no. of the old control module.