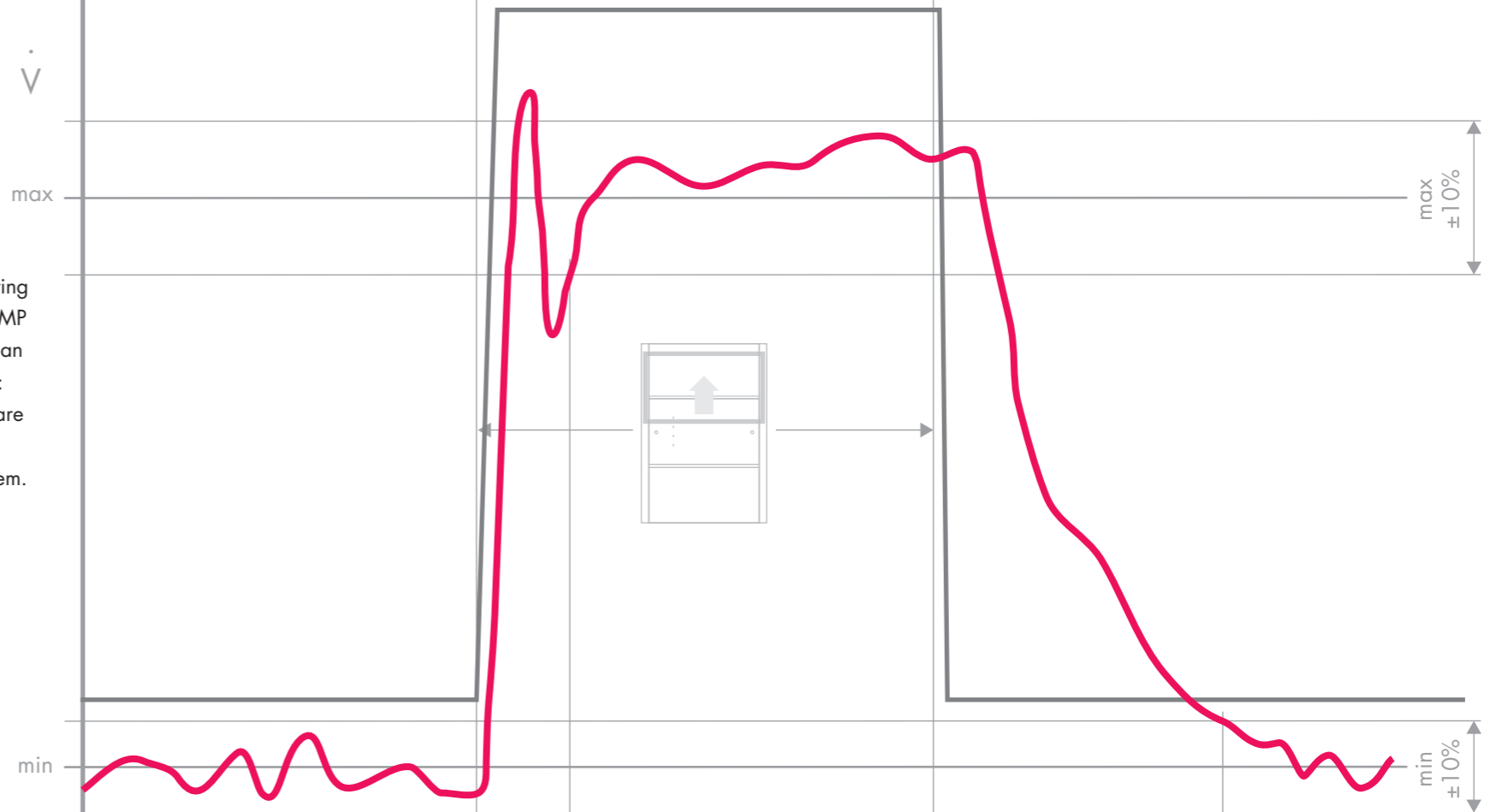


## Sauter's system competence for incorporating clean rooms into a building management system.

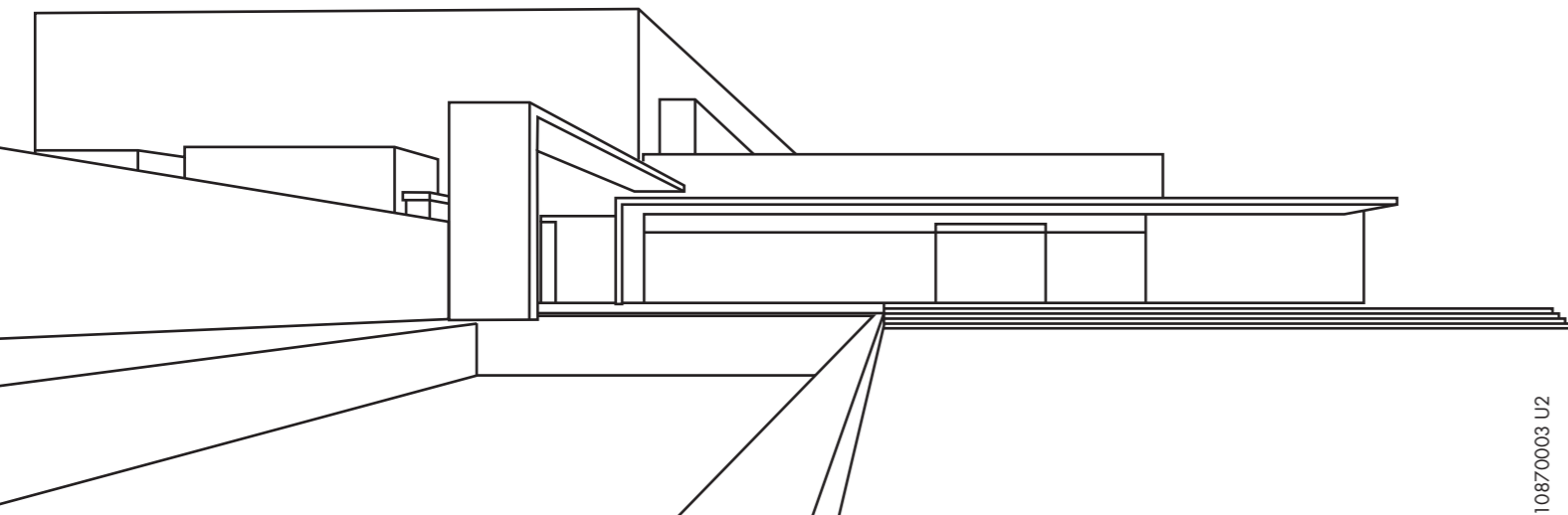
Clean rooms, laboratories and fume cupboards are never used in isolation, and their control system – whether electronic or pneumatic – is always part of a superior building management system. And when this sub-system is created by qualified specialists, there is a guarantee that it is integrated without interfaces into the overall system.

In the interests of safety, comfort and energy efficiency, it is important to include the system specialists in the project team right from the early phases of planning (this also applies to buildings with clean rooms or laboratories). Integral planning with Sauter's participation helps to create systems more quickly and less expensively, and to make them more economical to run. Further-

more, Sauter provides extensive services relating to system accreditation in accordance with GMP and FDA standards. To all this can be added an advantage that should not be underestimated: the components that really determine quality are manufactured by Sauter itself and are geared perfectly towards the requirements of the system.



**Innovative systems for controlling and monitoring clean rooms, laboratories and fume cupboards.**



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# ASV 115. A simple solution to meet complex requirements.

Control of the air volume in so-called critical environments calls for great competence when planning the system and choosing the right components. Because of Sauter's many years of experience, the company is widely acknowledged as being the renowned specialist for the control of critical applications – in research and production facilities in the pharmaceuticals industry, and in universities, research institutes and hospitals.

## Fast control, fast implementation

Control systems for room pressure, laboratories and fume cupboards need fast control loops in order to meet the operator's strict requirements and to satisfy legal obligations. With its ASV 115 compact VAV system, Sauter provides a solution for air-volume control that is based on a universal system with simple plug-and-play installation and the use of standardised, tested

applications. This simplifies and accelerates the processes, from the planning stage right through to the commissioning phase. Moreover, it guarantees reliable monitoring and problem-free maintenance during the system's serviceable life.

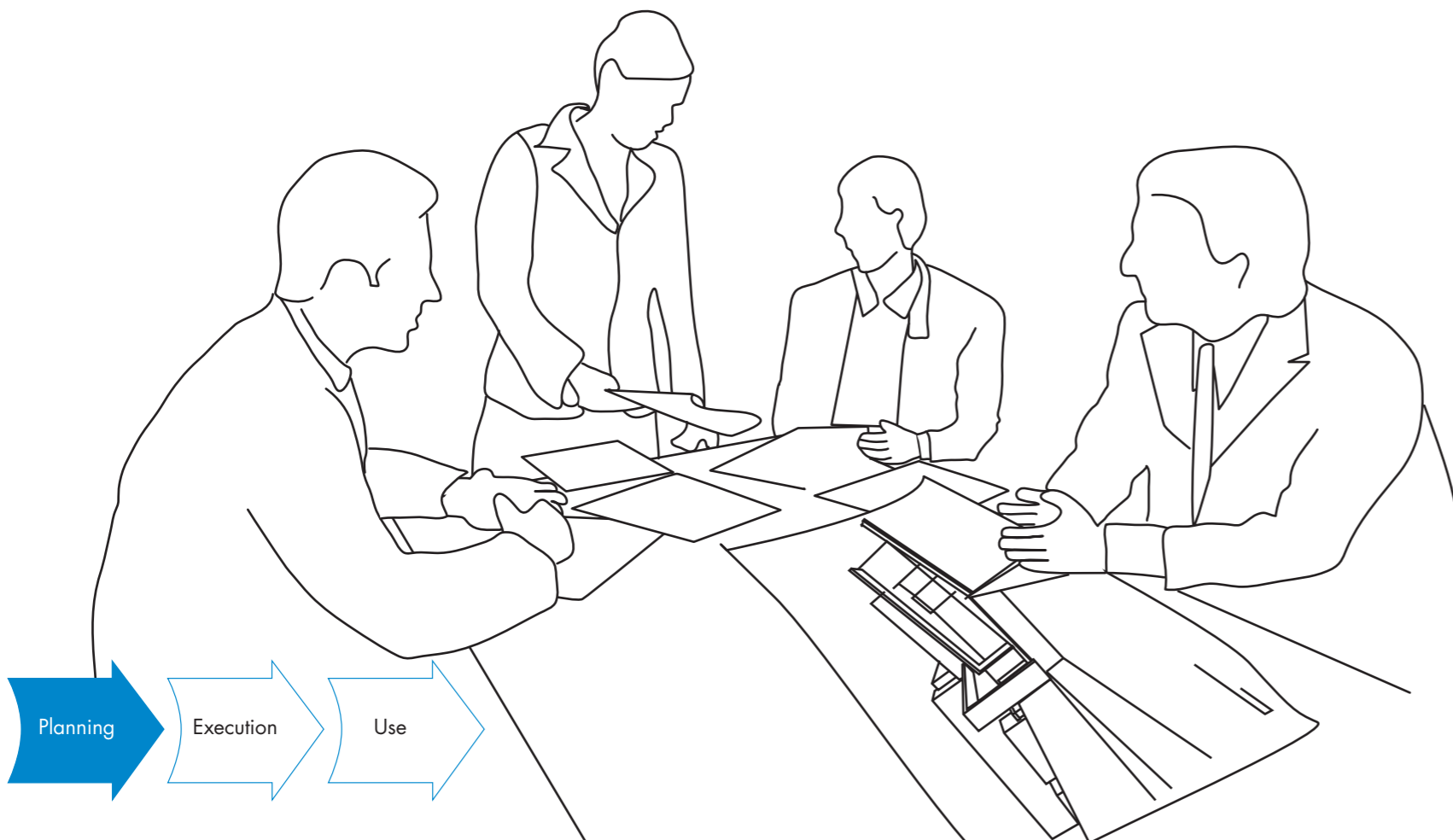
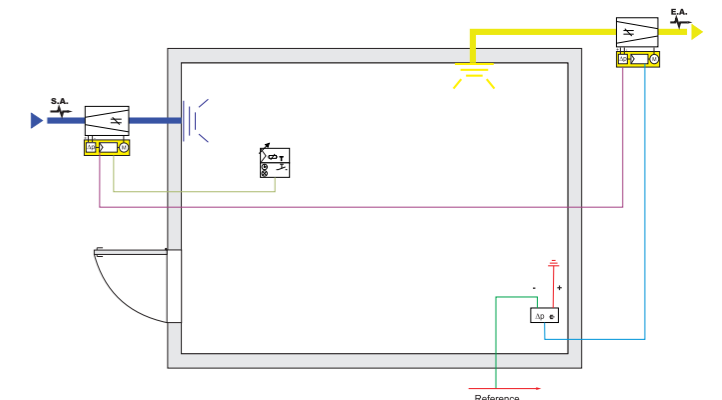
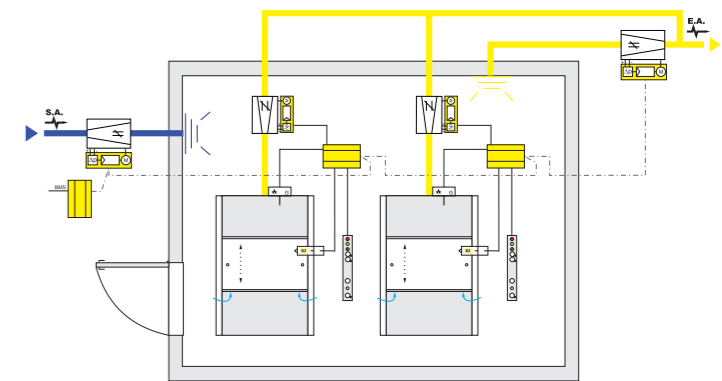
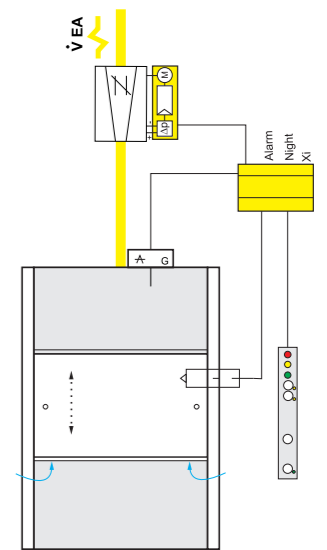
## One unit – many applications

The variable air volume control of fume cupboards is described in detail in EN14175 (Part 6). Its goal is to maintain safe operations in order to provide full protection for the personnel in the laboratory. In order to meet these complex demands, fume cupboards can be run in various different configurations. These configurations are included in the software of the ASV 115 and can be chosen to meet the requirements of a particular project.

The ventilation of laboratories by means of VAV control systems is obligatory, so as to ensure that air-borne contaminants can be reliably minimised, thereby protecting the laboratory personnel. The control solution requires the use of special strategies to regulate the throughflow of air in the laboratory.

The ASV 115 compact VAV system is designed for clean rooms with a positive-pressure control system (via the exhaust air) or negative-pressure control system (via the supply air). Using this solution, room pressures can be kept stable with a tolerance of  $\pm 5$  Pa. The room pressure control system is fed to the supply-air controller via a room-pressure controller in cascade. The room-pressure controller has a limitable influence of up to  $\pm 30\%$  on the VAV controller. In this configuration, no door contacts are needed to freeze the room pressure control system. After a door has been opened and then closed again, the correction time for the room pressure is 15 seconds.

The integration into the building management system is achieved by means of electro-pneumatic converters, which transmit the desired signals from and to the automation level.



# Perfect synthesis in a single piece of equipment. Quickly put into service thanks to 'plug and play' and application download.

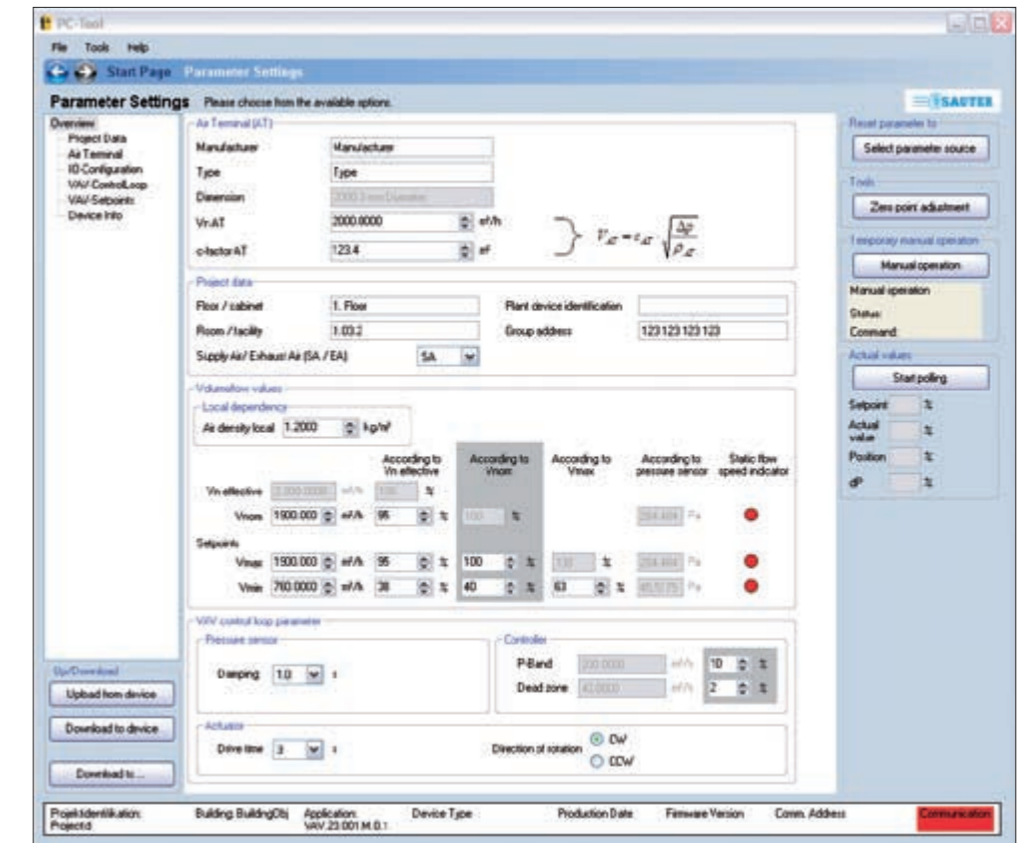
To be able to function properly, a VAV control system needs to have a sensing unit, a controller and a drive. For fume cupboards, this list can be extended by a monitoring system, comprising an interface unit and a control panel. Sauter products, which are perfectly matched to each other, reduce the number of components required, which substantially simplify the handling of the overall system.



### Three in one

While the components of a VAV control system with fast damper drives have traditionally always had to be installed as separate units, Sauter's ASV 115 system provides much-needed simplification in three important ways:-

- Sensor, controller and drive form a single unit: in the ASV 115 compact electronic VAV controller.
- Installation is by 'plug and play'.
- The application that was determined during the planning phase can be downloaded via PC onto the ASV 115.



### Planning the system and parameterising the equipment via PC

The planning and implementation of applications in laboratories and pharmaceuticals production facilities requires expert knowledge of the specific requirements of each operator. Sauter's extensive know-how of these wide-ranging and varied requirements is available in the form of standardised and tested applications in an extensive concept – from the planning stage through to implementation – with which the project-specific tasks can be carried out. The relevant documentation – from the full description of the system to the schematics – is already available for the planning process. Based on the chosen system configuration, this just leaves the components to be configured in line with the project's requirements.

# Latest component technology as a prerequisite for reliable and accurate control.

The ASV 115 unit, with its drive, controller and differential-pressure sensor, forms the heart of the system. The perfect interaction of these components in a single piece of equipment, acting together with the peripherals, guarantee the utmost control quality, reliability and conformity to standards.



### Fast drive: 0 to 90° in 3 seconds

The ASV 115 compact damper drive is distinguished by unusual features even in its basic functions:-

- A running time of only three seconds for 90° of rotation
- Variable running times of up to 30 seconds thanks to the brushless DC motor
- With 10 Nm of torque, it is also suitable for large air-volume boxes
- Long serviceable life even under heavy use thanks to electronic and mechanical torque limitation
- Regulation of fast control loops via high-speed bus system
- Freely configurable inputs and outputs for many different applications

### Integrated silicone sensor with high measuring accuracy

The differential-pressure sensor integrated in the drive is a static sensor with silicone diaphragm and capacitive measuring method:-

- Range of measurement: 150 or 300 Pa
- Thanks to static measuring method, it can also be used in contaminated exhaust air
- Excellent measuring accuracy even at the smallest differential pressures (as low as  $\Delta p = 1 \text{ Pa}$ ), e.g. during reduced mode at night with minimal air volumes
- Automatic compensation permits the drive to be fitted in any position
- No periodic zero-point calibration is necessary, which prevents uncontrolled system behaviour



### Highly accurate room-pressure controller

Used in conjunction with the ASV 115 VAV controller, the RLE 150 F100 room-pressure controller forms the ideal combination for controlling room pressures in tightly sealed rooms:-

- Range of measurement can be set between  $-20 \dots +20 \text{ Pa}$  and  $-50 \dots +50 \text{ Pa}$
- Static pressure sensor has excellent long-term stability
- Sensor is resistant to the usual disinfectants
- Integrated PI controller for setting the setpoint on the VAV controller
- Calibrated version available
- Heavy-duty version available



### Function indicator for fume cupboards for the safety of the personnel

The function indicator (which complies with EN14175) enables the user to check that the fume cupboard is operating properly. It was designed for simplicity, flexibility and the utmost convenience:-

- Optional accumulator for safety functions in the event of a power failure
- Can be fitted flush into fume cupboards
- Can be parameterised via plugs without direct access to the equipment
- Fast and faultless fitting thanks to plug-in method



### Air-flow transducer for fume cupboards

The transducer measures the air inlet speed in fume cupboards with horizontal and vertical front sashes:-

- Easy to fit in the roof of the fume cupboard
- Measurement of air speeds of up to 1 m/s
- Reliable detection of flow direction
- Integrated particle filters to protect against contamination of the sensor element



### Front sash sensor for fume cupboards

The sensor detects the vertical position of the front sash on fume cupboards:-

- Measuring range up to 1 meter with excellent reproducibility
- Easy to fit onto the counterweight of the front sash
- Measuring system is not subject to wear
- Can be calibrated for special measuring ranges

