Functional description

For use as a monitoring and alarm system for face velocities in various applications, such as fume hoods, safety cabinets and other extraction units.

A microprocessor controlled security system with integrated air flow sensor for monitoring the containment-safe operating status of fume hoods. An acoustic and optical alarm is activated as soon as the face velocity falls below the programmed threshold value.

The Airflow Monitor iM50 fulfills the standard **EN 14175**. That means security for the laboratory worker. iM50 is suitable for all fume hood constructions, making it easy to carry out new installations and re-fittings on existing fume hoods. Installation is very easy and is done directly on the side bar (Lisense) of the fume hood. The face velocity in the fume hood is identical to the face velocity measured in the bypass with the integrated air flow sensor of the Airflow Monitor iM50.

The face velocity is also displayed via an LED bar graph and thus it is possible to directly read off the actual values in m/s and ft/min.

The red LED, together with an acoustic alarm, signals the alarm operating status (insufficient face velocity). The green LED signals the safe operating status (face velocity is OK). The yellow LED signals the operating status „Sash > 50cm“ (only with an additional switch provided by the customer).

Operating and display panel

The operating and display panel of the Airflow Monitor iM50 has an integrated air flow sensor and is available as a built-in version.

Functions:

- LED bar graph for displaying actual values of the face velocity
- Acoustic and optical alarm (red LED) for insufficient face velocity
- Optical display (green LED) for sufficient face velocity (safe operation)
- Yellow flashing LED as an optical alarm for the operating status “Sash > 50cm”
- RESET button to acknowledge the acoustic alarm
- Button light ON/OFF (fume hood interior)
- Button ON/OFF for direct actuation of a fan
- Plug for programming via the service module SVM100 or laptop

Performance features

- microprocessor controlled monitoring system
- low cost airflow monitor as a compact, built-in version
- external power adapter 100...230V AC/24V DC
- all system data are saved mains voltage failure-safe in the EEPROM
- Integrated, password-protected user interface for programming the face velocity alarm values (daytime and night-time operation) and the alarm delay time
- Programming of all system values via service module SVM100 or laptop computer software PC2500
- monitoring of supply and exhaust air systems
- integrated airflow sensor 0.2...1 m/s for measuring the face velocity
- monitoring of fume hood operation in accordance with EN 14175 with acoustic and optical alarms
- LED bar graph for displaying actual values of the face velocity in m/s and ft/min
- optical and optionally acoustic alarm for the operating status “Sash > 50cm”
- programming of a second monitoring value (reduced face velocity during night-time operation)
- Button light ON/OFF (fume hood interior)
- Button ON/OFF for direct actuation of a fan
- Suitable for all fume hood constructions

Order code: Airflow monitor ● Technical data

Order code:	Airflow Monitor
	iM50
Type	

Ordering example: Airflow Monitor iM50

Airflow Monitor in fitted case, with 3 relays, ON/OFF, light and alarm RESET buttons, with day/night input and integrated air flow sensor.

Make: SCHNEIDER **Type: iM50**

Technical data

■ General	
Power adapter	110/230V AC/50/60Hz/+-15%
Max. charging rate	100 mA
Max. power input	10 VA
Reactivation time	600ms
Operating temperature	0 °C to +55 °C
Humidity	max. 80 % relative, non-condensing

■ Case	
Protection type	IP 20
Material	plastic
Colour	white, RAL 9002
Dimensions (LxWxH)	(134 x 80 x 40) mm
Weight	approx. 1.0 kg
Terminals	screw terminal 0.75 mm^2

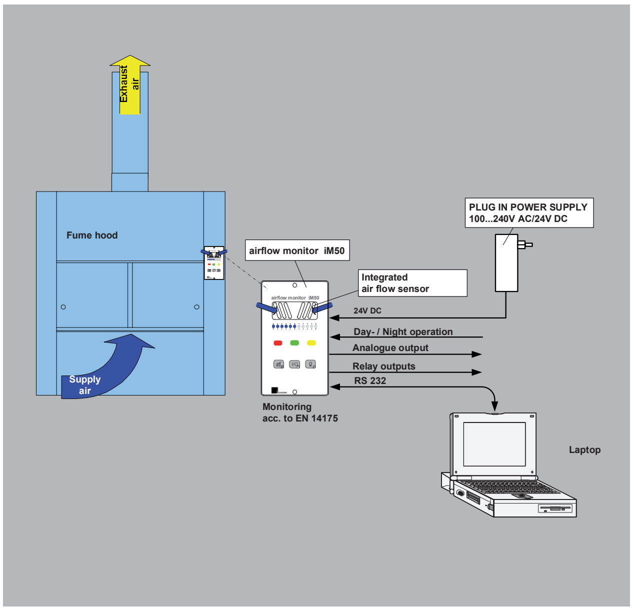
■ Relay outputs	
Number	1 relay (K3) for light
Contact type	front contact
Max. switching voltage	250V AC
Max. continous current	8A for fluorescent lamp (max. 58 W)
Number	2 relays (K1, K2)
Contact type	changeover/front contact
Max. switching voltage	250V AC
Max. continuous current	3A

■ Digital inputs	
Number	2 inputs, 24V DC/2mA
Actuation	potential-free contact, maximum cable length < 3m

■ Analogue output	
Exhaust air actual value	0(2)...10VDC, 10mA or 0(4)...20mA (Load resistor = 500 Ω)

■ Analogue input	
Setpoint	0(2)...5/10VDC, 1mA

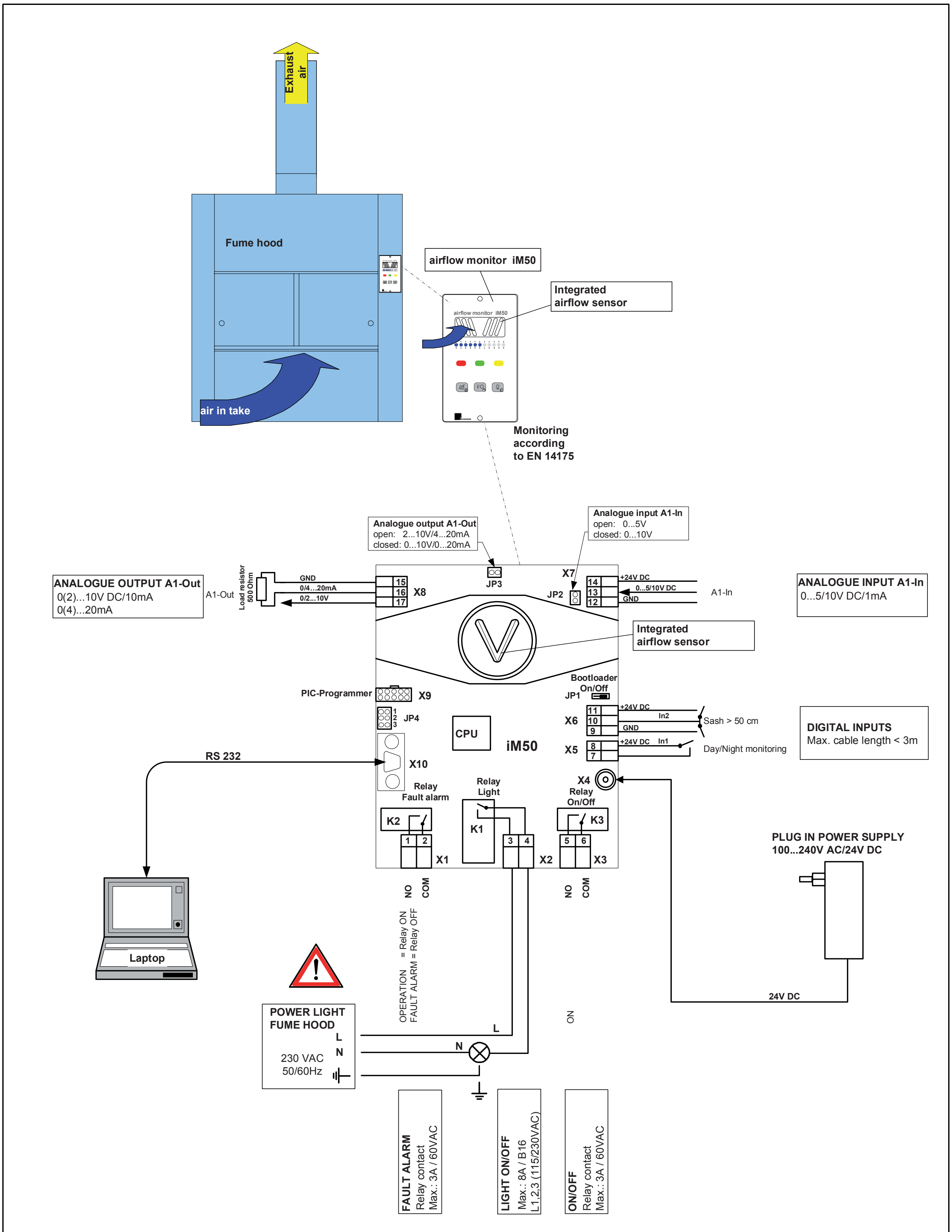
■ Integrated air flow sensor	
Measurement system	dynamic, hot wire anemometric principle
Measuring range	0.2...1 m/s
Response time	<100 ms



Schematic diagram: Airflow Monitor iM50

Terminal diagram

Terminal diagram: Fume hood controller Airflow Monitor iM50

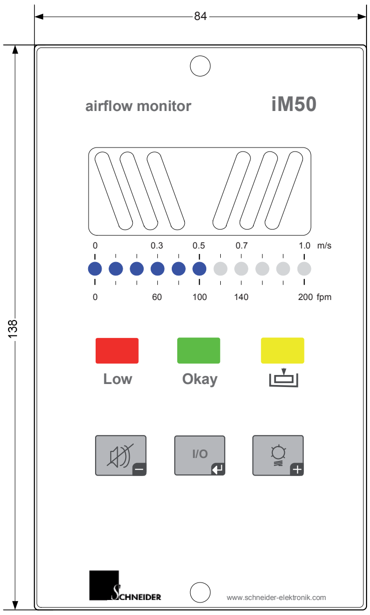


FUME HOOD MONITOR acc. to EN 14175
with integrated airflow sensor

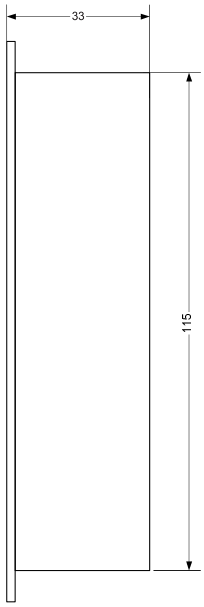
Terminal diagram, complete		**iM50**
SCHNEIDER ELEKTRONIK	Rev.: 1.0	Date: 15. Dec. 2008

Dimensions • Dimensional diagrams • Tender specification

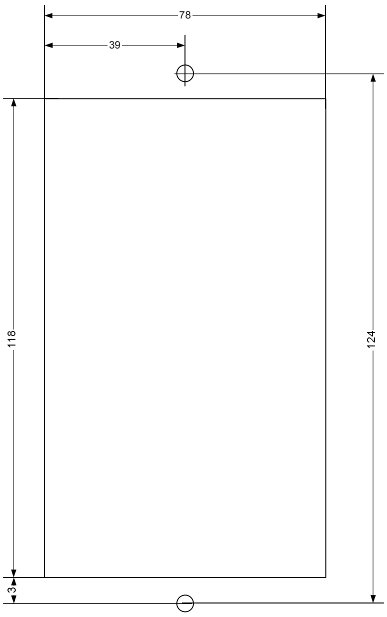
Case iM50: Top view



Case iM50: Side view



Case iM50: Extract



Tender specification iM50

Fume hood monitoring system with integrated microprocessor, an independent watchdog circuit and integrated air flow sensor. Monitoring of fume hood operation in accordance with EN 14175 with acoustic and optical alarm. Optical and optionally acoustic alarm for the operating status “Sash > 50cm open”. Programming of two independent monitoring values (face velocity for daytime operation and reduced face velocity for night-time operation). System data storage in mains voltage failure-safe EEPROM. LED bar graph for displaying the actual values of the face velocity in m/s and ft/min, button light ON/OFF (fume hood interior), button ON/OFF for direct actuation of a fan. Suitable for all fume hood constructions.

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