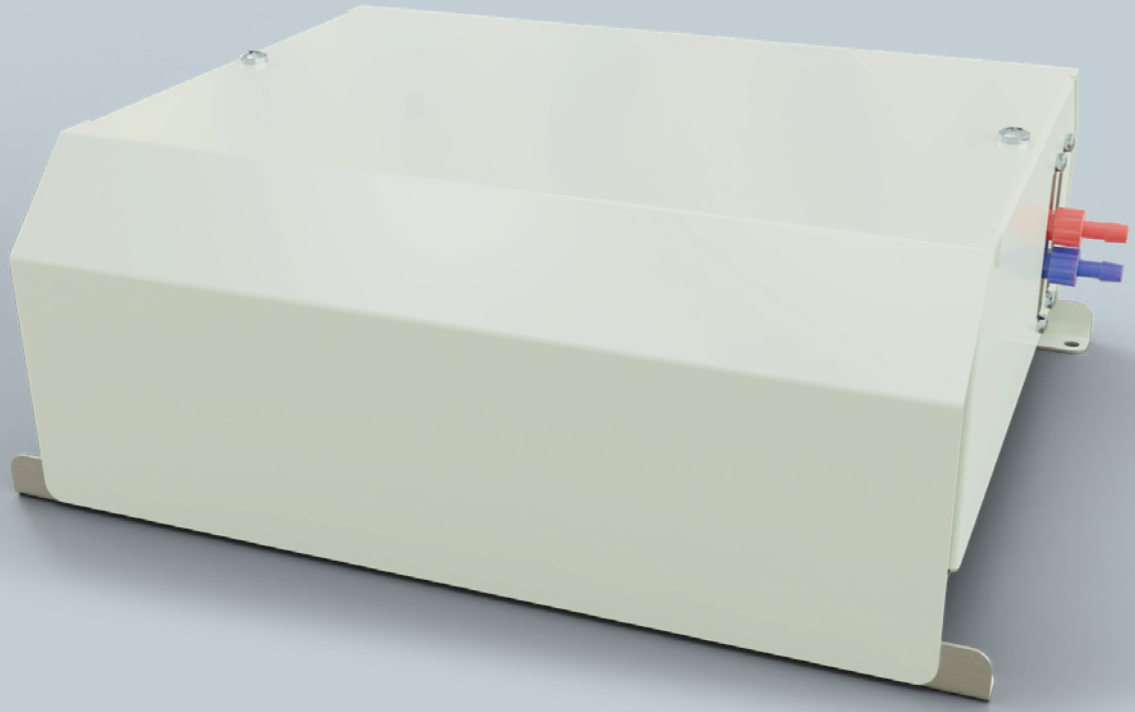
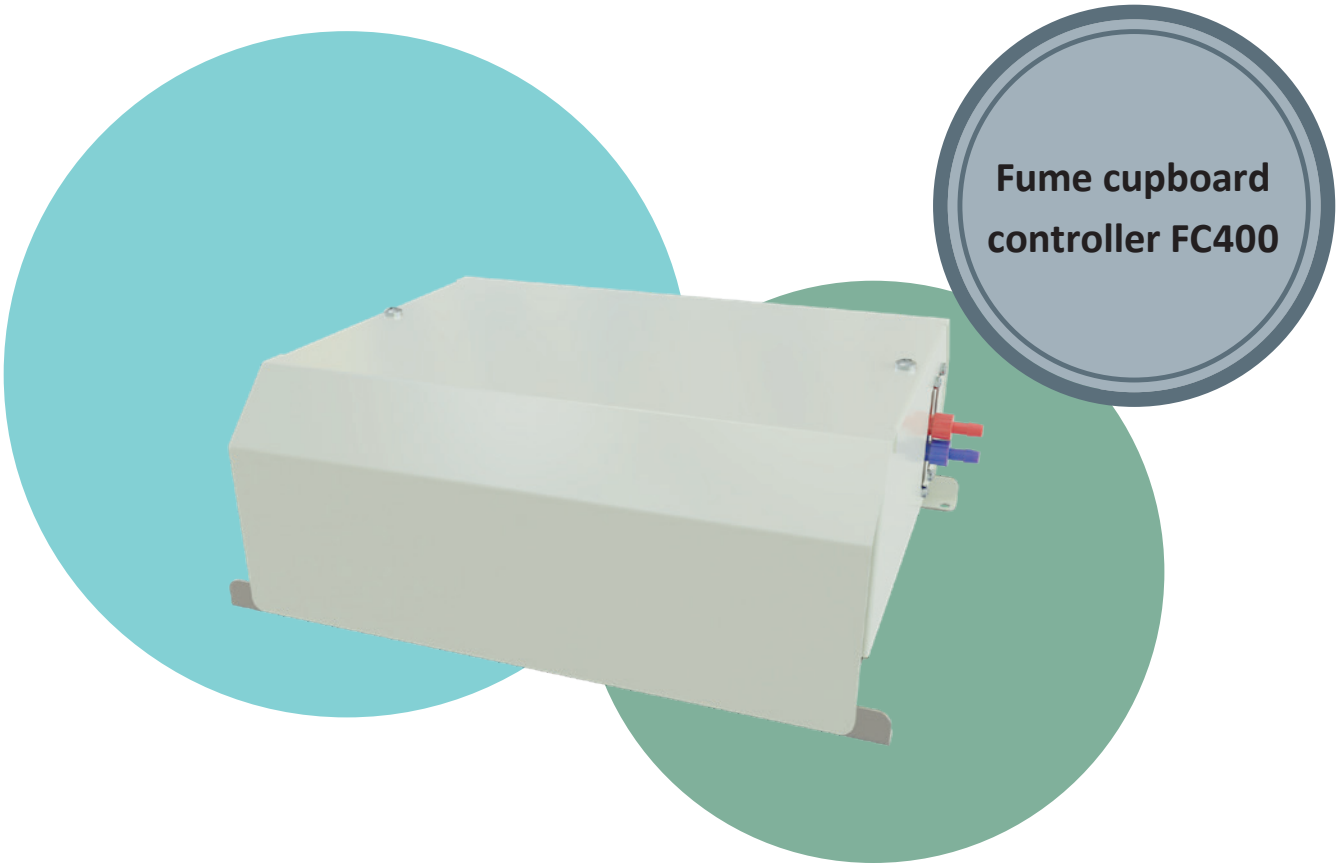


Technical data sheet
Fume cupboard controller FC400

SCHNEIDER
SCHAKO Group

WHERE TO FIND WHAT



GENERAL PERFORMANCE DATA

General	
Input	230 V AC, 50 / 60 Hz, ±10 %
Alternating current	Maximum 200 mA
Power output of the internal power supply	Maximum 15 VA, 24 V AC
Typical power consumption during operation	10 VA
Recovery time	5 to 10 s
Operating temperature	+15 °C to +40 °C
Humidity	Maximum 80 % relative, non-condensing
Housing	
Protection class	IP 10
Material	Sheet steel
Colour	RAL 9002
Housing dimensions (L x W x H)	290 x 208 x 100 mm
Weight	approx. 2,8 kg
Device terminals	0,2 to 1,5 mm^2

SPECIAL FEATURES

- Microprocessor-controlled variable control system
- Programming and retrieval of all system values via software PC2500
- Air flow sensor for measuring the face velocity
- Integrated function monitoring of safe laboratory fume hood operation according to DIN EN 14175-6
- Optional monitoring of a supportive flow
- Optional monitoring of a washer
- Variant 1: Integrated Modbus functionality, extendable with analogue functionality
- Variant 2: Integrated analogue functionality, extendable with Modbus functionality

The type plate is located on the left side of the housing opposite the pressure sensor connections.

PRODUCT DESCRIPTION

Variable microcontroller system for controlling and monitoring the exhaust air volume flow or the face velocity of fume cupboards as a function of the vertical and horizontal sash position. Depending on the configuration, the following operating modes for the fume cupboard control are available:

Standard model:

Fully variable control **FC400-V**

More available models:

Face velocity control **FC400-F**
Face velocity control **FC400-FP** with limitation to $\dot{V}_{min}$ und $\dot{V}_{max}$
Sash position sensor control **FC400-W**
Constant control (1-/2-/3-point) **FC400-K**
Constant control (1-/2-/3-point) **FC400-KW** with sash position sensor

The integrated function monitoring according to DIN EN 14175-6 provides maximum safety for the laboratory staff. An acoustic alarm and an optical alarm on the display of the FC400 are triggered if the value falls below the respective setpoint value for exhaust air. The standard model is suitable for all types of laboratory fume hoods and extractor systems.

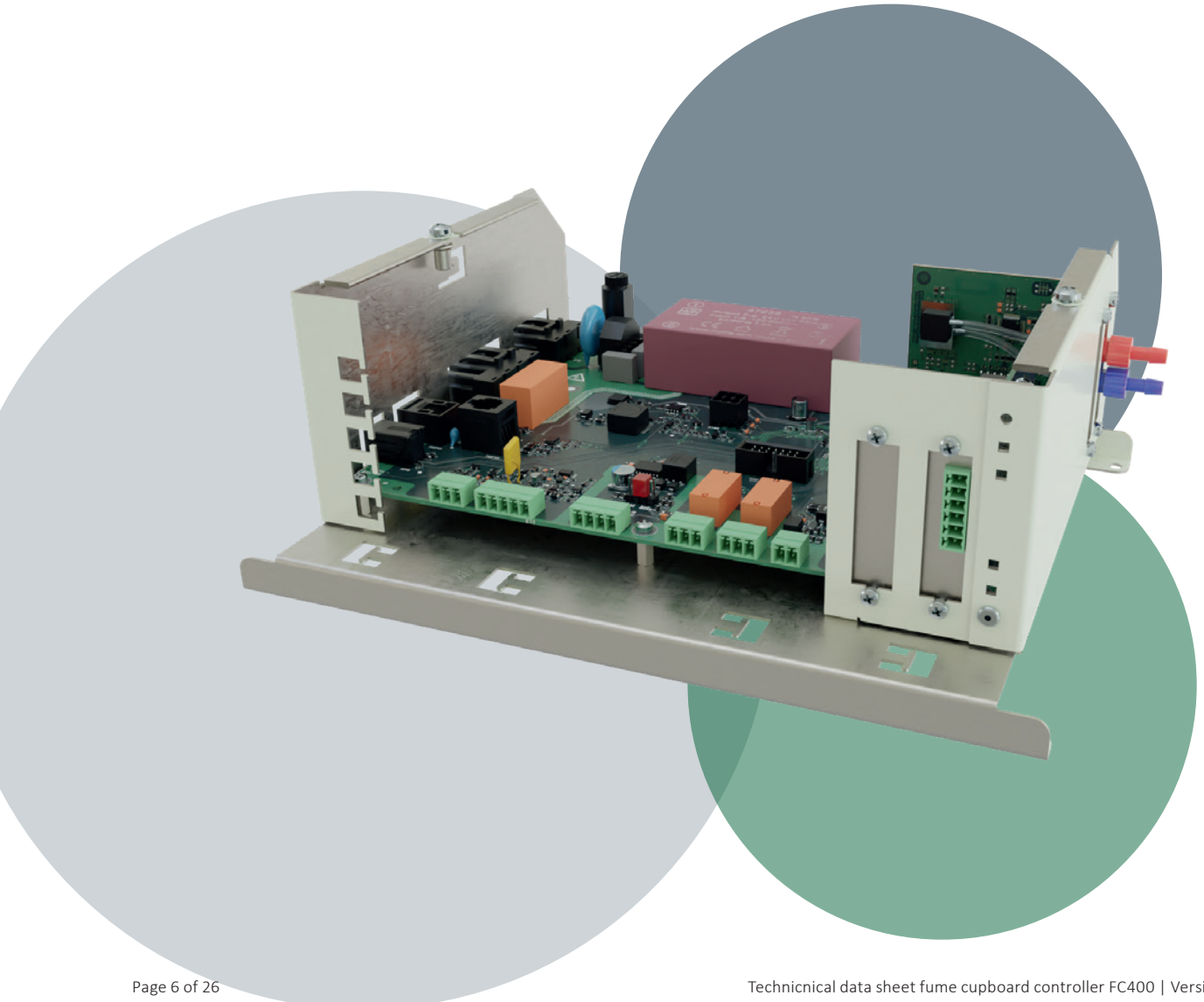
FUNCTIONAL DESCRIPTION

The laboratory fume hood control FC400 constantly compares the actual values determined by the sensors used and controls the pre-set nominal value quickly and precisely.
The precalculated return air demand by SCHNEIDER is determined immediately and directly available as setpoint value. This decisively improves the control time of the room air control system (e.g. VAV supply air volumetric flow controller by SCHNEIDER).

Advantages of the front-damper-dependent variable laboratory fume hood control

The toxic release safety of the laboratory fume hood in combination with minimum air consumption is guaranteed at each sash opening. The sturdiness of the laboratory fume hood operation in terms of air ventilation is achieved by suitable parameter setting of the constant face velocity and can be adapted to any laboratory fume hood designs.

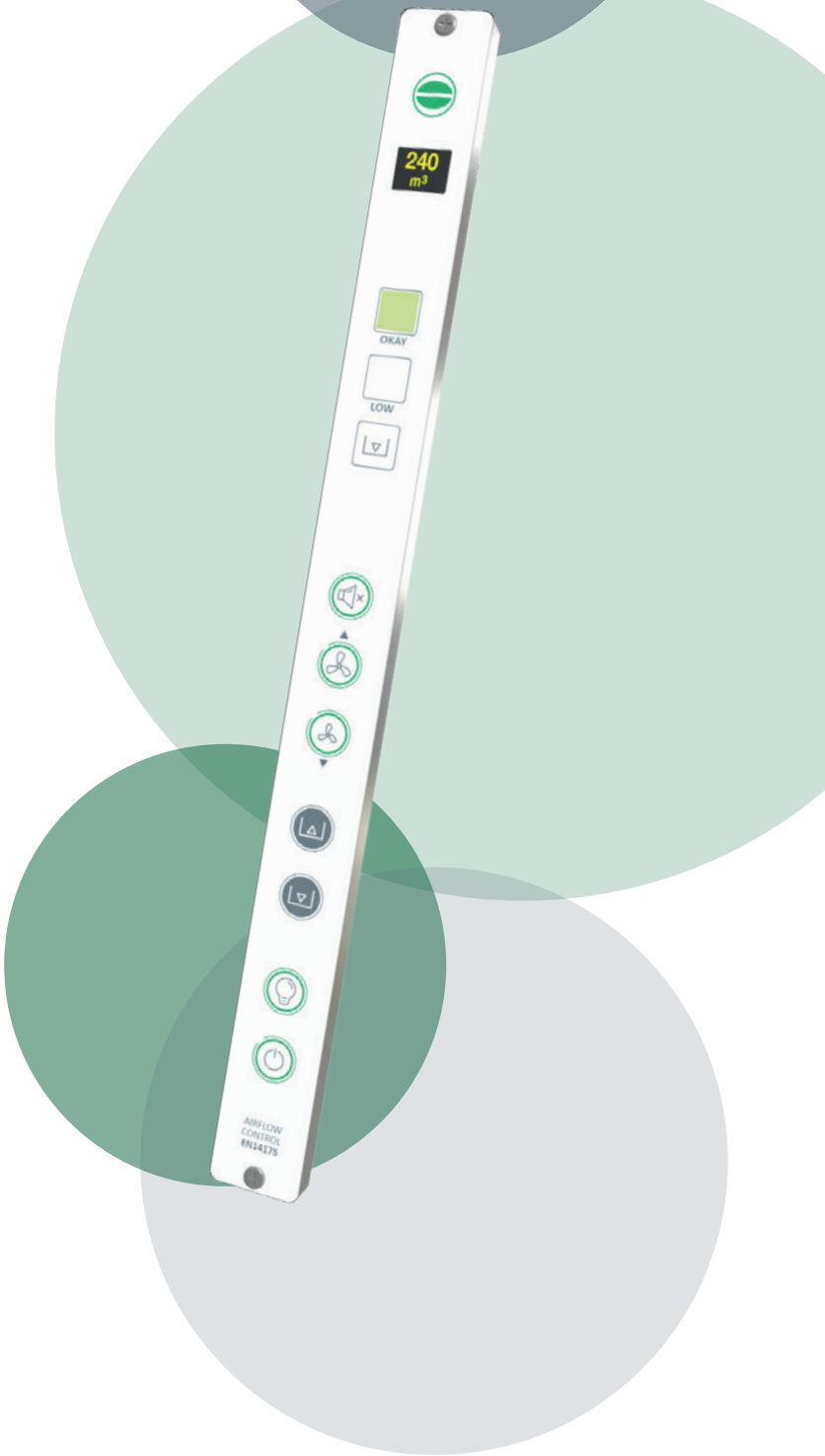
The air flow sensor AFS100 is used as standard sensor for FC400-F. By mounting an additional differential pressure sensor 4 to 300 Pa, a fully variable control with FC400-V is achieved via the connection of three independent sensors (sash position sensor, static differential pressure transmitter and air flow sensor). The control FC400 checks the three sensors for plausibility and the correlation between the actual values of the differential pressure and airflow sensor and the actual value of the sash position sensor. This constitutes a substantial improvement of the safety for the entire control system and for the user. Measuring errors and deviations are detected immediately and signalled by an alarm.



FUNCTION DISPLAY

Each fume cupboard controller comes with a functional display which is fitted to the lateral pilaster strip of the fume cupboard. This display visualizes whether the fume cupboard is operating correctly and allows the user to interact with the system.
We offer three versions of functional displays each suitable for installation in a different type of fume cupboard. They offer at least the operating and indicating elements required by DIN EN 14175 as well as additional elements depending on the display type. You can find an overview of the available functional displays in the document „Technical Data Sheet Functional Displays and Operating Panels Standard Versions".

Further information on customer-specific designs as well as an extensive selection of of function displays can be found in the Document „Technical Data Sheet Function Displays".



Minimum scope as per DIN EN 14175

- Acoustic and visual alarm when the exhaust airflow is too low
- Visual indication of sufficient exhaust air
- Visual warning of the operating state "Sash > 50 cm open".
- Push-button to acknowledge the acoustic alarm

Optional scope depending on the design

- Numerical display for the representation of the actual value
- Alphanumeric display for the representation of the actual value and the operational states of the fume cupboard
- Push-button to switch the fume cupboard controller on and off
- Visual indicator for the on/off state of the fume cupboard controller
- Push-button to switch the fume cupboard lighting on and off
- Push-button to toggle between daytime operation and reduced operation (nighttime operation)
- Visual indication of reduced operation (nighttime operation)
- Push-button to toggle between daytime operation and override mode
- Visual indication of emergency operation (override mode)
- Visual indication for excessive volume flow
- Visual indication for supply mains failure
- Push-button to close the sash*
- Push-button to open the sash*

* only in combination with the sash closing system SC from Schneider

MONITORING SUPPORTIVE FLOW

The optionally integrated supportive flow technology improves, with suitable design on the fume hood, the break-out behaviour at lower exhaust air volume flows and thus promotes the energy efficiency of the fume hood. An additional differential pressure sensor is used to monitor the supportive flow fan to ensure proper functionality. In the event of an alarm, this is clearly indicated on the optional display or with the red alarm LED. Optionally, the exhaust air volume flow can be automatically increased to the safe standard volume flow of the fume hood type.

DETECTION OF THERMAL LOADS

The system must detect thermal loads quickly and reliably as per DIN EN 14175-7, trigger the corresponding alarm and dissipate them via an increased exhaust air volume. For this purpose, SCHNEIDER offers a Ni1000/Pt1000 Temperature Sensor in a stainless steel thermowell coated with Safecoat 786 that measures the interior temperature of the fume cupboard in an unambiguous and reliable manner. As soon as the interior temperature in the fume cupboard increases and exceeds a freely parametrizable value the exhaust air volume flow is immediately increased and indicated on the optional display or via the green OK LED lamp.

An acoustic alarm can be implemented in addition. The connection of a temperature sensor provides for compliance with the requirements of DIN EN 14175-7 and also allows to meet customer-specific demands.

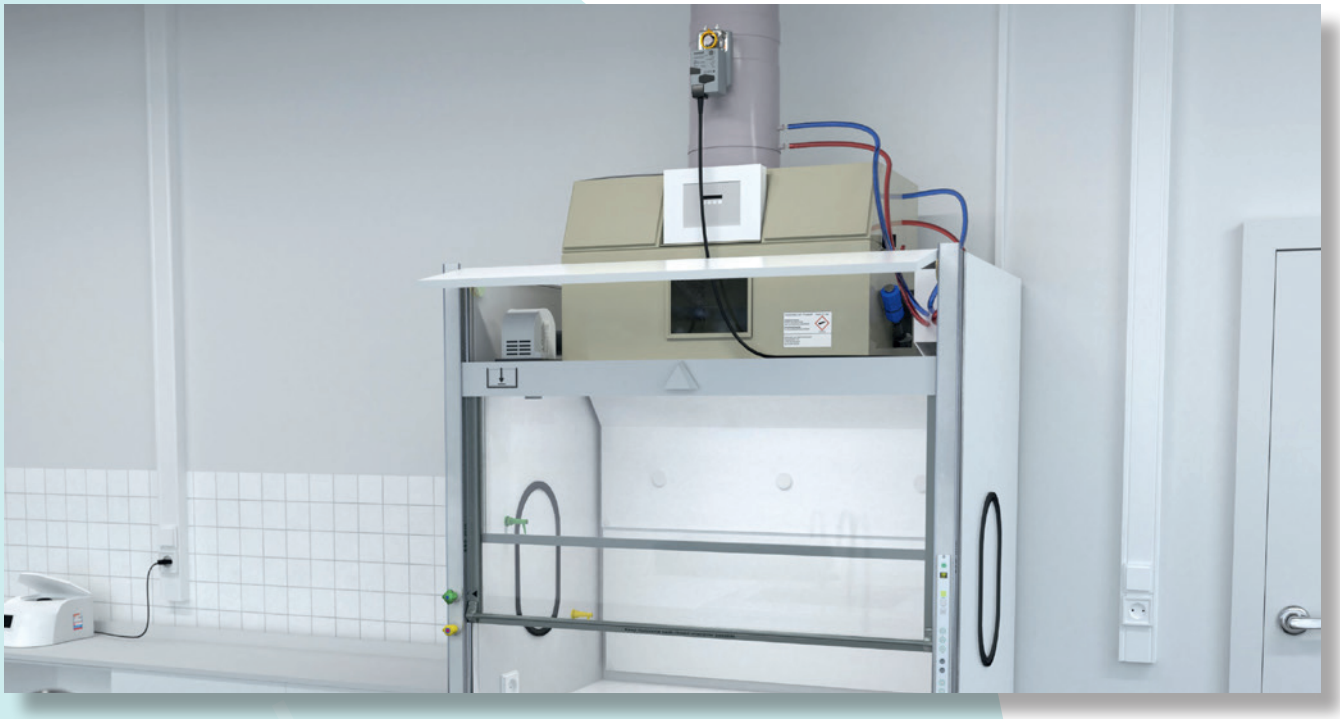
DIRECT ACTUATION OF FREQUENCY CONVERTER

The analogue output of the control FC400 serves as direct setpoint default for the frequency converter and controls the exhaust air fan in accordance with the constant face velocity to be controlled. This application is used when the exhaust fan extracts air directly from the connected fume hood.

To control a frequency inverter, an analogue output is required. This is directly possible with the FC400A variant, with the FC400M variant an additional expansion card of type AO2 or AIO1 is required.

FUME HOODS WITH SCRUBBER

For fume cupboards equipped with a scrubber, the pressure drop across the scrubber can be monitored with an optional differential pressure can be avoided.
Reasons for an increase in pressure loss can be, for example:
The scrubbed exhaust air contains residual moisture due to the process, which clogs downstream filter elements (particle filters or similar) very quickly, thus considerably pressure drop.
A heavily contaminated exhaust air (e.g. due to sticky substances) leads to a clogging of the separation systems and thus to an increase in the pressure drop across the exhaust air scrubber.
Depending on the degree of contamination, the increased pressure demand is detected and can be transmitted to existing support fans and sprinkler systems.
In a fume hood with scrubber, there are two thresholds for the pre-alarm and main alarm. The pre-alarm is signalled on the function display and is used to detect even minor contamination of the scrubber in good time. If the pressure loss exceeds the second threshold the main alarm is also signalled on the function display.
If there is too much contamination, the functionality of the exhaust air scrubber, and thus also the fume hood, is no longer guaranteed. The optional integrated monitoring minimizes the risk of an operating failure due to maintenance and cleaning work not being carried out in time. The monitoring function can also be used to plan and track maintenance cycles in line with demand cycles, thus minimizing the risk to people, the environment and materials.



CONTROL OPERATING MODE

FC400-V - fully variable control

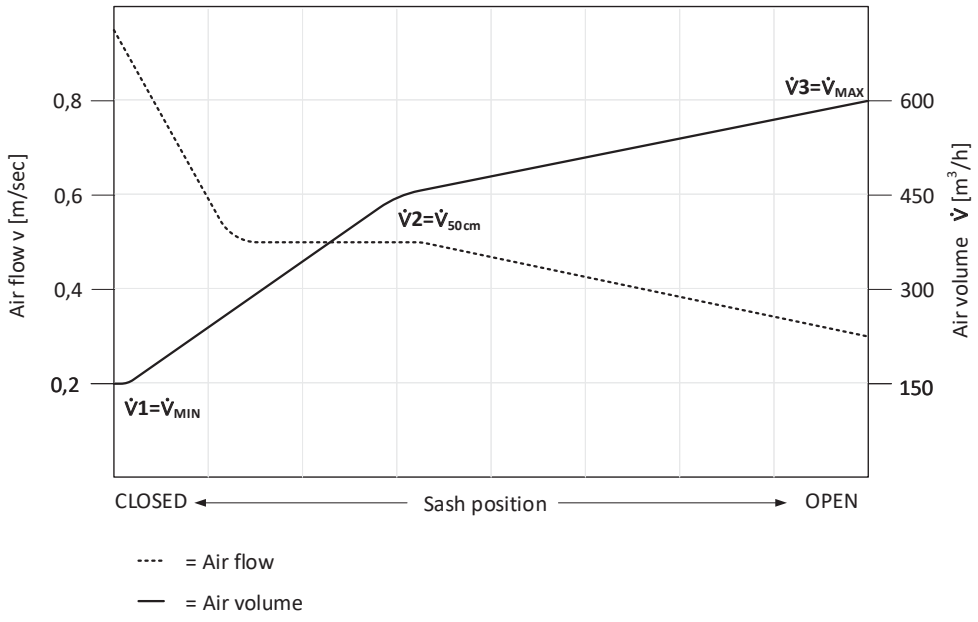
This operating mode is the energetically most useful and best version of laboratory fume hood control. The outstanding technical feature of this control version is a fast and at the same time stable control algorithm.
The operating mode FC400-V regulates the exhaust air volumetric flow continuously as a function of the sash position of the laboratory fume hood. The exhaust air volumetric flow of the laboratory fume hood is controlled either via a motorised damper (fume hoods are connected to a central exhaust air system) or by means of an independent exhaust air motor equipped with frequency converter. Pipe pressure variations are controlled quickly, precisely and in a stable manner. The exhaust air volumetric flows $\dot{V}_1$, $\dot{V}_2$ and $\dot{V}_3$ are freely parameterizable and determine the vertices of the control curve.

$\dot{V}_1 = \dot{V}_{min}$
With the sash closed (CLOSED), control takes place to a parameterised exhaust air volumetric flow $\dot{V}_1$ (minimum exhaust air volumetric flow). The toxic release safety of the laboratory fume hood in combination with minimum air consumption is guaranteed at any time.

$\dot{V}_2 = \dot{V}_{med}$
The second vertex of the exhaust air volumetric flow is $\dot{V}_2$, which indicates the exhaust air volumetric flow with partially opened sash (e.g. sash = 50 cm). The control of the exhaust air volumetric flow according to demand
takes place seamlessly as a function of the sash opening between $\dot{V}_1$ and $\dot{V}_2$ (closed ≤ sash ≤ 50 cm open).

$\dot{V}_3 = \dot{V}_{max}$
The third vertex of the exhaust air volumetric flow is $\dot{V}_3$, which indicates the exhaust air volumetric flow with fully opened sash (e.g. sash = 90 cm open). The control of the exhaust air volumetric flow according to demand takes place seamlessly as a function of the sash opening between $\dot{V}_2$ and $\dot{V}_3$ (50 cm ≥ sash ≤ 90 cm open).

The vertices $\dot{V}_1$, $\dot{V}_2$ and $\dot{V}_3$ are freely parameterizable and can be assigned to any sash opening, e.g. $\dot{V}_2$ for sash = 50 cm open.

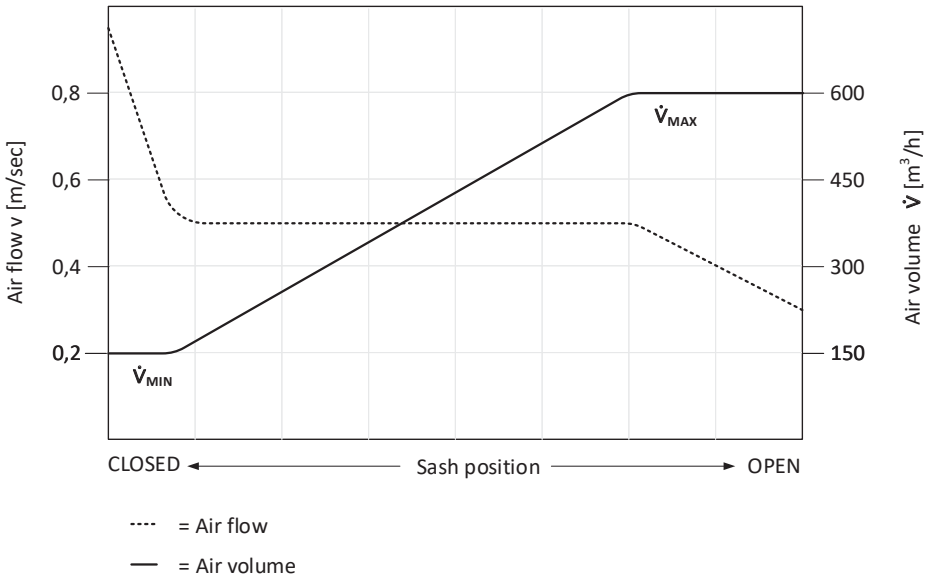


FC400-F – Constant air face velocity

The operating mode FC400-F (standard model) regulates at a constant air face velocity (e.g. v = 0.5 m/s), independent of the sash position. This is controlled either via a motorised damper (fume hoods are connected to central exhaust air system) or by means of an independent exhaust air motor equipped with frequency converter.
Pipe pressure variations are controlled quickly, precisely and in a stable manner. The air face velocity v (m/s) is freely parameterizable.
Using an air flow sensor AFS100 developed by SCHNEIDER a change in position of both the horizontal sash (horizontal) and the sash (vertical) is registered on the laboratory fume hood.

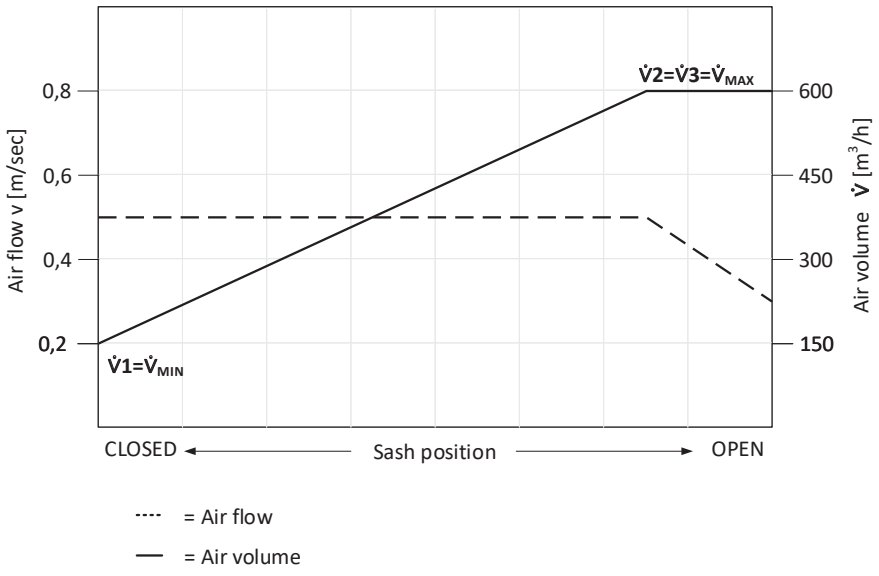
FC400-FP - volumetric flow limits $\dot{V}_{MIN}$ and $\dot{V}_{MAX}$

If the sash is closed and the face velocity is 0.5 m/s, the corresponding volumetric flow is very low. If a higher volumetric flow is necessary for the minimum air volume in the room, a limitation to the minimum volumetric flow can be set. Likewise, the maximum volumetric flow can be limited when the sash is open. Thus, the laboratory fume hood is in a safe range and definitely containment-proof. Limiting the exhaust air volumetric flow to $\dot{V}_{max}$ guarantees a high energy-saving effect in combination with maximum safety for the operating personnel. The load on the ventilation system is only as high as absolutely necessary for the operating state of the laboratory fume hood.



FC400-W - sash position sensor dependent control

For laboratory fume hoods without transverse damper, only one sash position sensor is required for a precise vertical measurement of the sash position.
The sash position sensor (cable potentiometer) detects the vertical sash position with an absolute accuracy higher than 2 mm (0.2 %). The reproducible and continuously linear detection of the sash position allows very quick, accurate and stable control.
If turbulent and undefined air flows affecting the measuring precision and stability of the air flow sensor should take place in the laboratory room, the sash position sensor SPS100 is always a better choice than the flow sensor AFS100. The sash position measured via the sash position sensor is the setpoint value input for the FC400-W controller which calculates the required exhaust air volumetric flow and regulates it as needed. The volumetric flow always follows the sash position sensor linearly.



FC400-K / FC400-KW - constant control

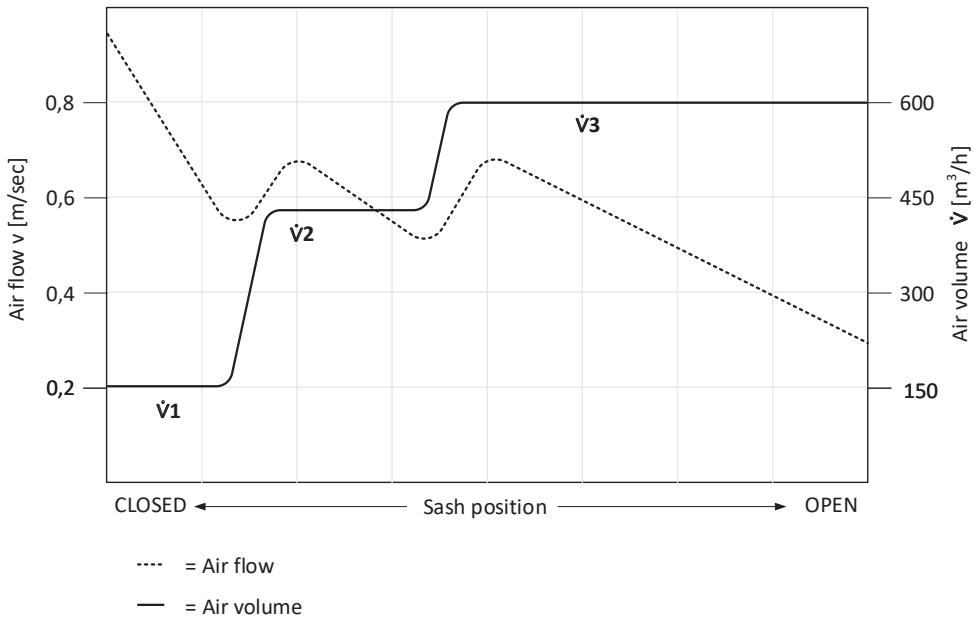
The operating mode FC400-K regulates the exhaust air volumetric flow of the laboratory fume hood. The exhaust air of the laboratory fume hood is controlled either via a motorised damper (fume hoods are connected to central exhaust air system) or by means of an independent exhaust air motor equipped with frequency converter.
Pipe pressure variations are controlled quickly, precisely and in a stable manner. The exhaust air volumetric flow $\dot{V}_1$ is freely parameterizable.

For the operating mode FC400-K, limit switches for detecting the sash positions must be provided on site at the laboratory fume hood. Alternatively, three fixed control points can be defined with the sash position sensor SPS100; for this, the version FC400-KW must be selected.

1-point constant control
In 1-point constant control, the exhaust air volumetric flow is constantly controlled at $\dot{V}_1$, independent of the sash position.

2-point constant control
A 2-step constant control controls the exhaust air volumetric flow as a function of the sash position either at $\dot{V}_1$ (sash = CLOSED) or $\dot{V}_2$ (sash = OPEN). The sash position CLOSED is detected via a limit switch (FC400-K) or the sash position sensor SPS100 (FC400-KW).

3-point constant control
A 3-point constant control controls the exhaust air volumetric flow as a function of the sash position at $\dot{V}_1$ (sash = CLOSED), $\dot{V}_2$ (sash < 50 cm open) or $\dot{V}_3$ (sash ≥ 50 cm OPEN). The sash positions (CLOSED and ≥ 50 cm) are each detected by a limit switch (FC400-K) or a sash position sensor SPS100 (FC400-KW).



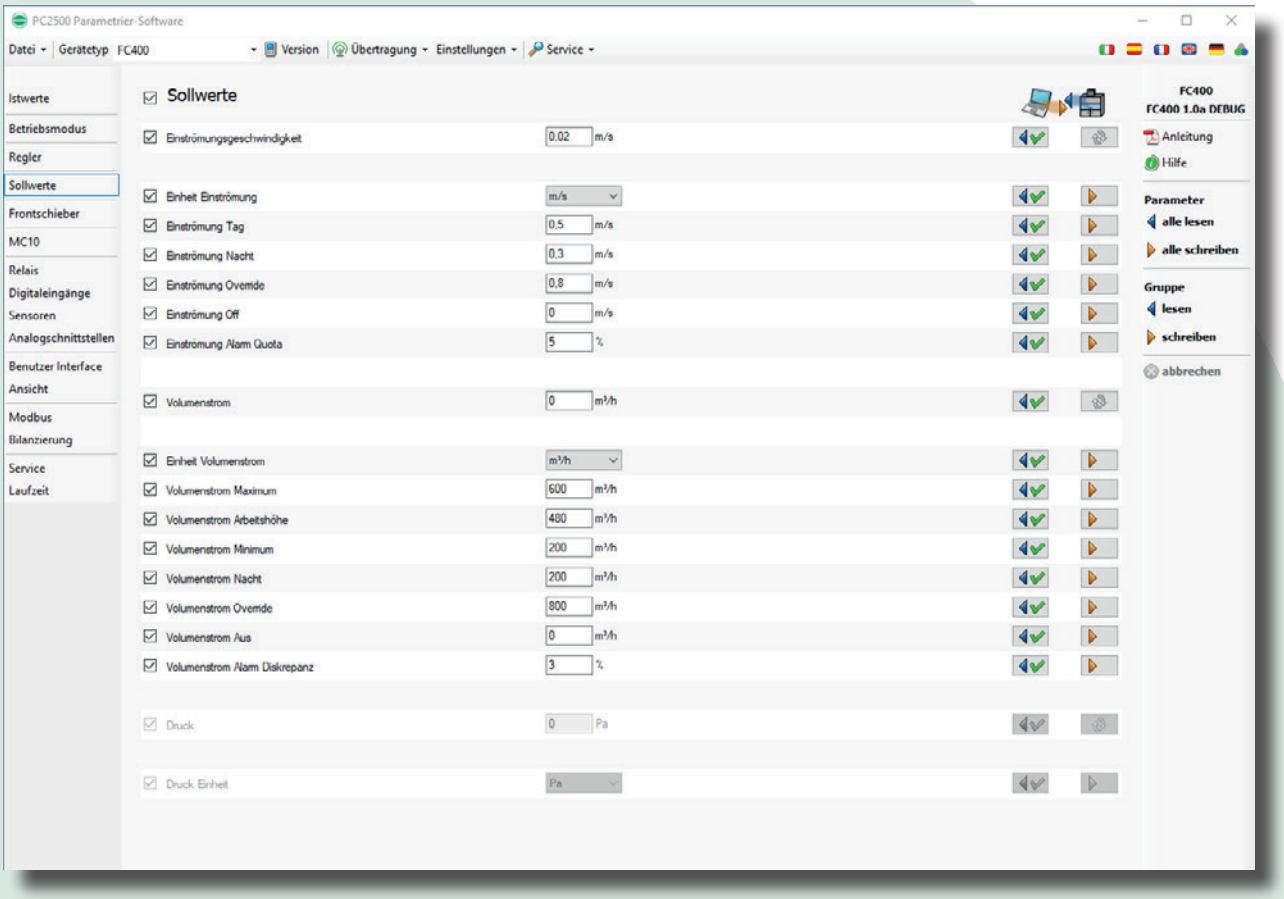
CONNECTION OF THE FC400 TO THE BUILDING CONTROL SYSTEM VIA MODBUS RTU

The building control system (BCS) balances the air demand of the entire building and can additionally check all room controllers for plausibility. DAY/NIGHT switchover, visualisation of fault messages and actual values and remote maintenance and remote fault diagnostics can be easily integrated. A detection of room-related air consumption and individual billing can also be implemented.

For more information, refer to the document „Installation and Operating Manual Fume Cupboard Controller FC400".

PARAMETERIZATION AND PROJECT SET-UP

All device-specific control parameters can be called up, edited and monitored on site directly at the fume cupboard using a laptop and the PC2500 Software.



APPLICATION AREAS

Standard laboratory

Animal laboratory

Training laboratory

Pharmacy

Clean room

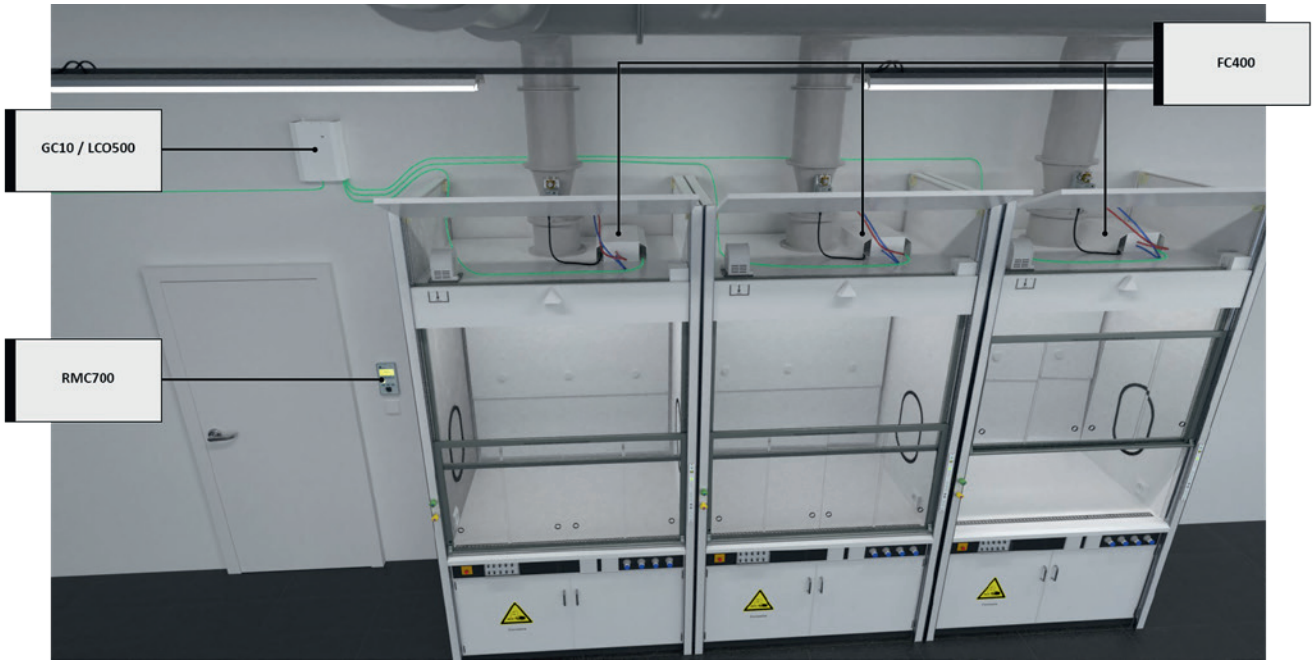
GMP area

Nuclid laboratory

Application examples

Room diagram 1 – FC400A Fume Cupboard Controller with analogue output and GC10 or LCSO500 Room Group Controller

Room diagram 1 shows the standard interconnection of a standard laboratory via analogue signals and room balancing via a GC10 or LCO500 Room Group Controller from SCHNEIDER.



Room balancing with GC10 or LCO500 Room Group Controller from SCHNEIDER

The actual values of the exhaust air controllers are fed centrally to a room group controller as analogue signals. This room group controller from SCHNEIDER balances the required room supply air and room exhaust air independently, as a function of the fume cupboard exhaust air, and adjusts the system autonomously to the calculated values. If the total exhaust air of all fume cupboards is insufficient to maintain a defined room air exchange rate (e. g. RAE = 4-fold or 8-fold), the room exhaust air volume controller increases the air volume until the required room air exchange rate is achieved.
The room supply air volume controller follows the total room exhaust air, reduced by a fixed value or by a percentage. This means that the negative pressure in the laboratory required by DIN 1946-7 is always guaranteed at all operating conditions.

Room diagram 2 – FC400M Fume Cupboard Control with interconnection via Modbus RTU

Room diagram 2 shows the standard interconnection of a standard laboratory via Modbus RTU. The internal communication between the devices takes place via Modbus. Up to 63 participants can be connected to one bus segment. If more than 63 participants are required, a repeater must be used.
In practice, 30 participants per bus segment should be regarded as the upper limit. This way, the response time of the connected participants (e. g. room supply air volume flow controllers) is adequately secured even with high data traffic.

Room balancing via Modbus with VAV Volume Flow Controllers from SCHNEIDER

The VAV Volume Flow Controllers with Modbus interface from SCHNEIDER balance the required room supply air and room exhaust air independently, as a function of the fume cupboard exhaust air, and adjust the system autonomously to the calculated value. If there are several VAV Volume Flow Controllers in a bus segment, it is necessary to define one of them as the master, which subsequently provides for the room balancing. If the total exhaust air of all fume cupboards is insufficient to maintain a defined room air exchange rate (e. g. RAE = 4-fold or 8-fold), the room exhaust air volume controller increases the air volume until the required room air exchange rate is achieved.
The room supply air volume controller follows the total room exhaust air, reduced by a fixed value or by a percentage. This means that the negative pressure in the laboratory required by DIN 1946-7 is always guaranteed at all operating conditions.

ORDER CODE FC400

01	02	03	04	05	06	07
Type	Control operating mode	Additional functionality 1	Additional functionality 2	Additional functionality 3	Emergency power supply	Power supply

01 - Type

Laboratory fume hood control for controlling and monitoring the exhaust air volumetric flow or the face velocity of lab fume hoods as a function of the front and transverse sash with integrated function monitoring according to DIN EN 14175-6.

FC400M: Basic unit with integrated Modus RTU functionality, without analogue functionality

FC400A: Basic unit with integrated analogue functionality, without Modbus RTU functionality

02 - Control operating mode

F: Face velocity

FP: Face velocity with volumetric flow control to $\dot{V}_{min}$ and $\dot{V}_{max}$

FW: Face velocity with sash position sensor and calculation of the opening area of the laboratory fume cupboard (suitable only for laboratory fume hoods without lateral dampers)

W: Sash position sensor (suitable only for laboratory fume cupboards without lateral dampers)

V: Fully variable

VS: Fully variable, lateral dampers detection via switch

K: Constant (1/2/3 point), for on-site limit switches

KW: Constant (1/2/3 point) with sash position sensor

03 - Additional functionality 1

0: Without additional functionality 1

S: With supportive flow monitoring

W: With washer monitoring

04 - Additional functionality 2

0: Without additional functionality 2

AO2: Expansion board MC10-AO-2-A, two analogue outputs 0 V - 10 V, galvanically isolated

AIO1: Expansion board MC10-AIO-1-A, two analogue outputs 0 V - 10 V, one analogue input 0 V - 10 V, galvanically isolated

DOA: Expansion board MC10-DO-1-A, two relay outputs, changeover contacts, max. 24 V, 3 A

DOB: Expansion board MC10-DO-1-B, three relay outputs operating contacts, max. 24 V, 3 A

T*: Expansion board MC10-PTC-1-A, temperature input, temperature sensor included

M*: Expansion board MC10-MOD-1-A, Modbus-RTU

05 - Additional functionality 3

0: Without additional functionality 3

AO2: Expansion board MC10-AO-2-A, two analogue outputs 0 V - 10 V, galvanically isolated

AIO1: Expansion board MC10-AIO-1-A, two analogue outputs 0 V - 10 V, one analogue input 0 V - 10 V, galvanically isolated

DOA: Expansion board MC10-DO-1-A, two relay outputs, changeover contacts, max. 24 V, 3 A

DOB: Expansion board MC10-DO-1-B, three relay outputs operating contacts, max. 24 V, 3 A

T*: Expansion board MC10-PTC-1-A, temperature input, temperature sensor included

M*: Expansion board MC10-MOD-1-A, Modbus-RTU

06 - Emergency power supply

0: Without emergency power supply (standard)
N: With intelligent emergency power supply

07 - Power supply

EXT: External power supply with 24 V DC
INT: Internal wide range power supply 90 V AC - 240 V AC

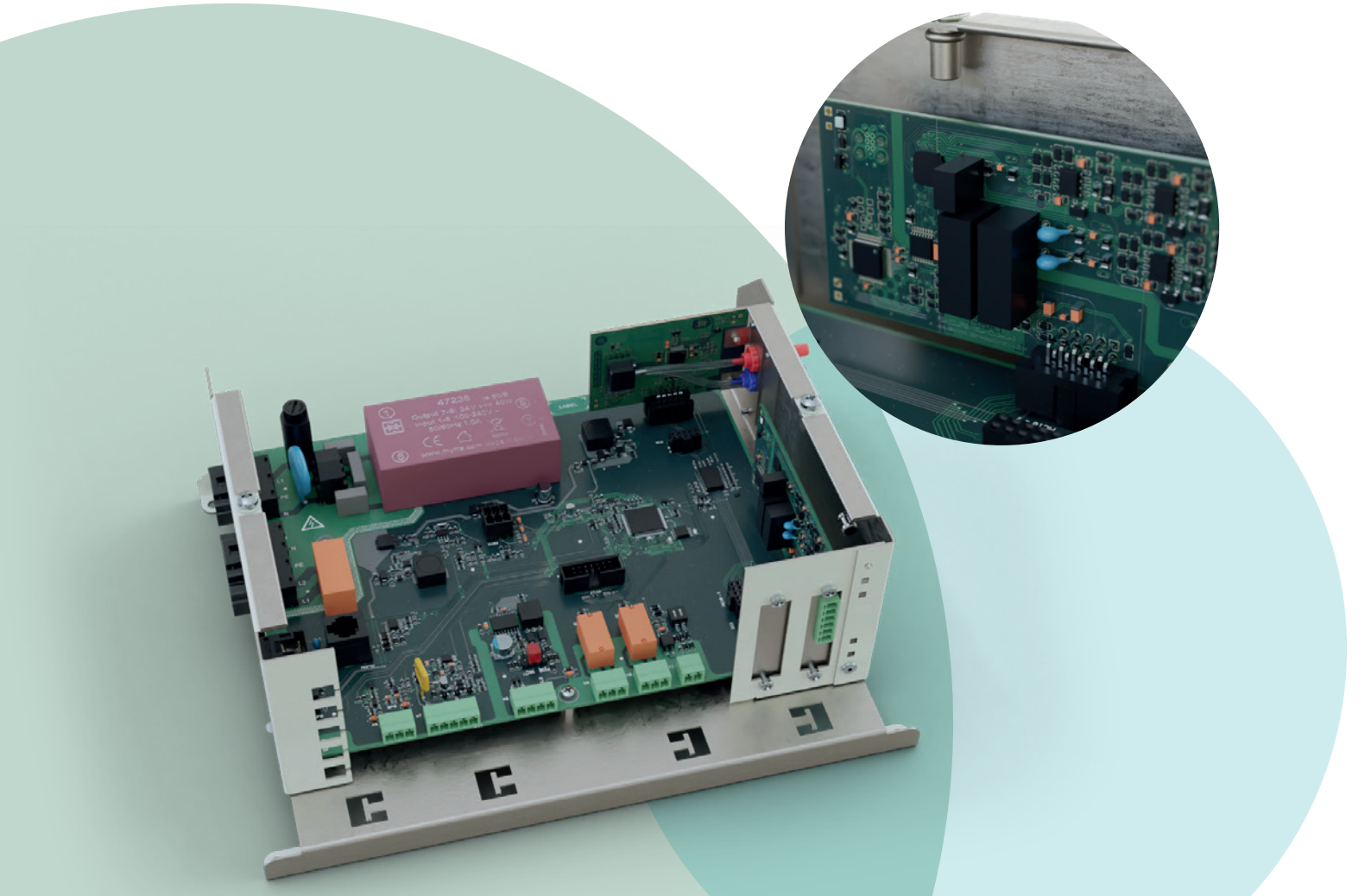
* Only selectable once per device

Example

Laboratory fume hood control for controlling and monitoring the exhaust air volumetric flow or the face velocity of lab fume hoods as a function of the front and transverse sash with integrated function monitoring according to DIN EN 14175-6. Fully variable control via differential pressure transmitter, air flow and sash position sensor, additional supportive flow monitoring, integrated Modbus RTU functionality, expansion board with two analogue outputs, with intelligent emergency power supply, with external power supply 24 V DC.

Make: SCHNEIDER
Type: FC400M-V-S-AO2-0-N-EXT

01	02	03	04	05	06	07
FC400M	-V	-S	-U	-0	-N	-EXT



Products to be ordered separately

Dampers with or without measuring device, or measuring devices for use with frequency inverters, to be ordered separately (depending on the control operating mode)

Order code	Sensors included in the scope of delivery	Control damper with and without measuring device (to be ordered separately)	Zusätzlich zu bestellende Produkte (to be ordered separately)
FC400-F-...	AFS100 (airflow sensor)	DK-DN-PPS-0-0-MM	-
FC400-FP-...	AFS100 (airflow sensor) P+ / P- (differential pressure sensor)	VD-DN-PPS-0-0-MM	VM-DN-PPS-0-0-MM
FC400-FW-...	SPS100 (sash position sensor) P+ / P- (differential pressure sensor)	VD-DN-PPS-0-0-MM	VM-DN-PPS-0-0-MM
FC400-W-...	SPS100 (sash position sensor) P+ / P- (differential pressure sensor)	VD-DN-PPS-0-0-MM	VM-DN-PPS-0-0-MM
FC400-V-...	AFS100 (airflow sensor) SPS100 (sash position sensor) P+ / P- (differential pressure sensor)	VD-DN-PPS-0-0-MM	VM-DN-PPS-0-0-MM
FC400-K-...	P+ / P- (differential pressure sensor) Limit switch to be provided on site	VD-DN-PPS-0-0-MM	VM-DN-PPS-0-0-MM
FC400-KW-...	SPS100 (sash position sensor) P+ / P- (differential pressure sensor)	VD-DN-PPS-0-0-MM	VM-DN-PPS-0-0-MM

The function display has always to be ordered separately.

Function display

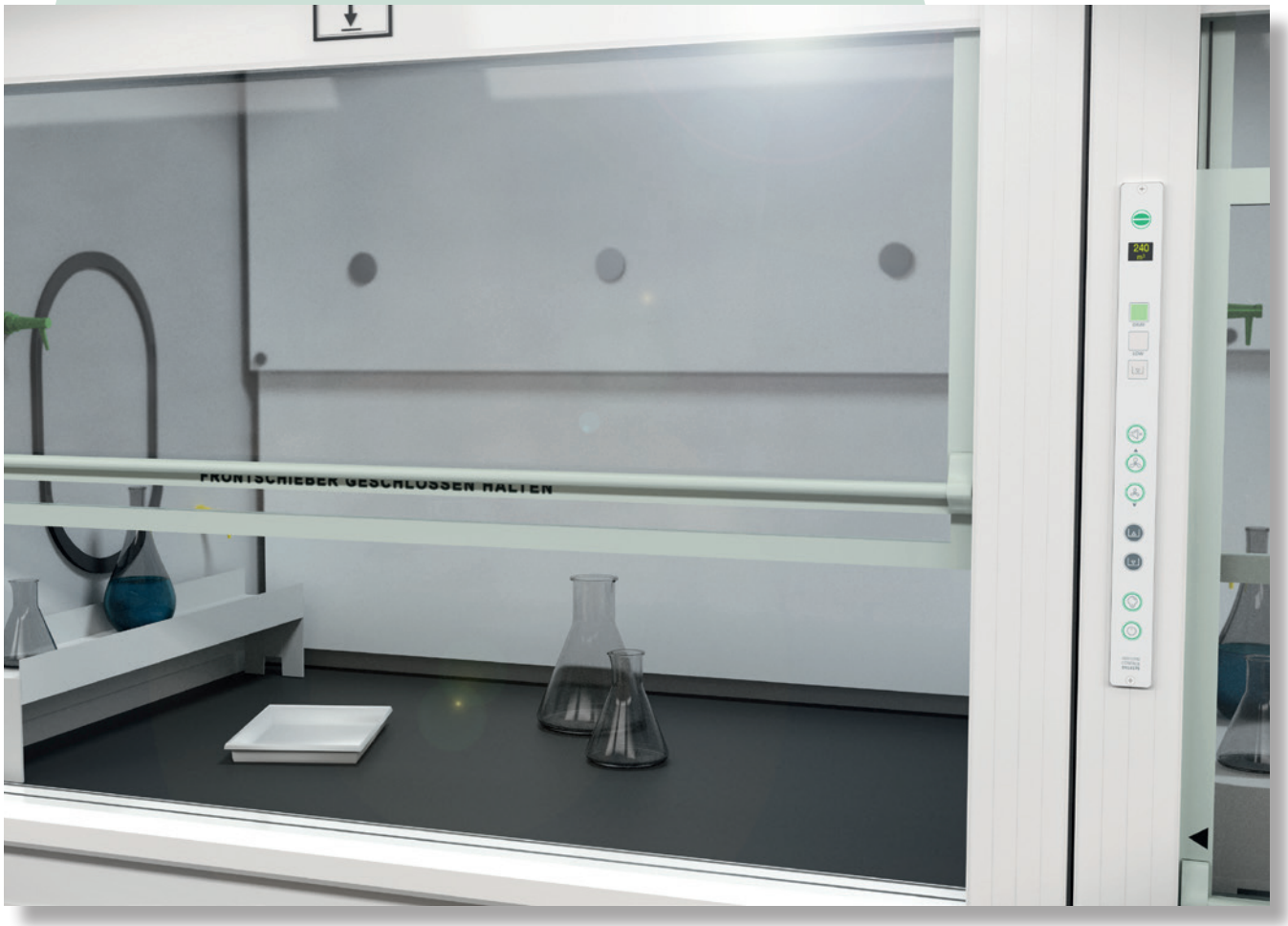
01	02	03
Type	FA number	Cable length

01 – Type:
FA: Function display

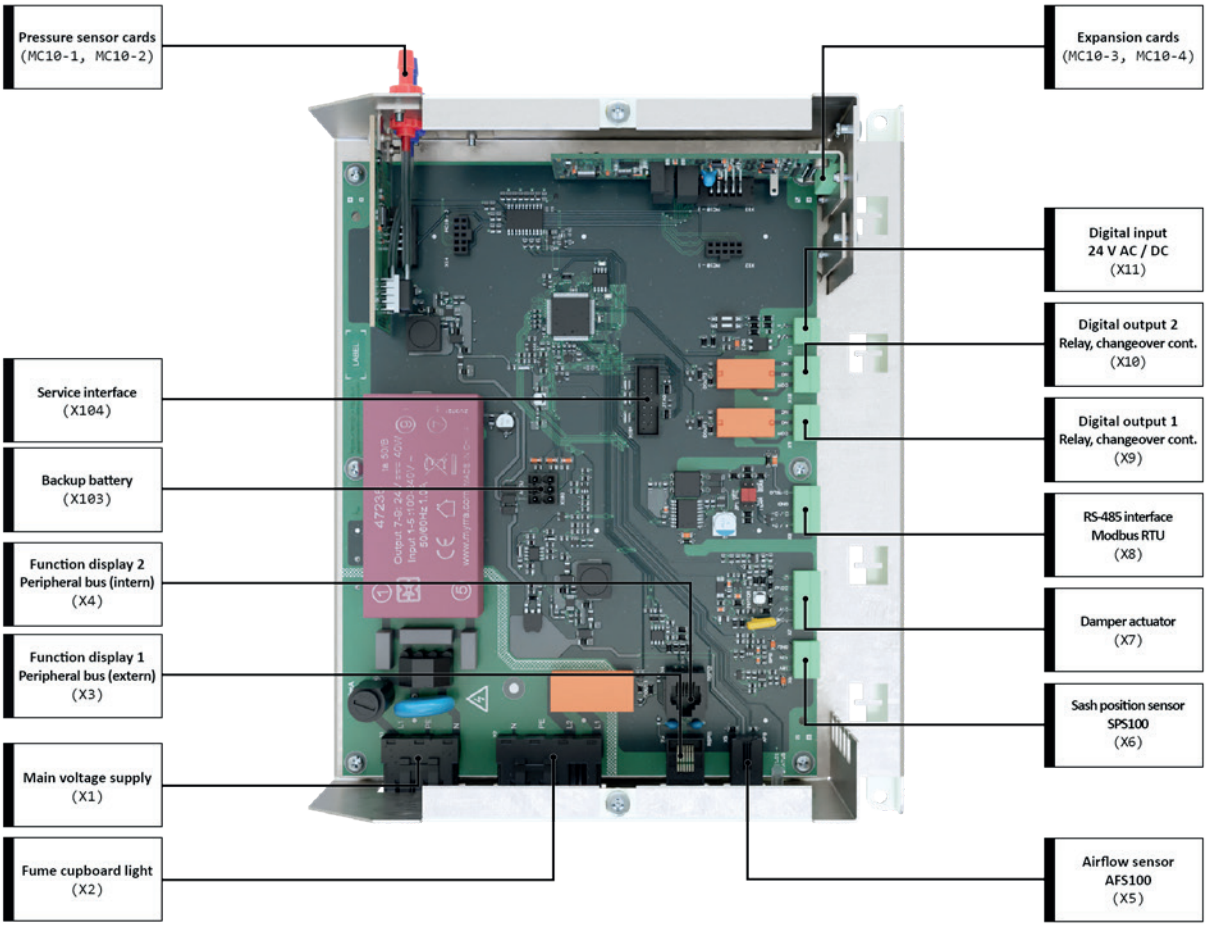
02 – FA number:
XXXX: Different SCHNEIDER standard versions and customized versions

03 - Cable length
3: 3 m
5: 5 m

Further information can be found in the Document „Technical Data Sheet Function Displays“.



TERMINAL ASSIGNMENT



Pressure sensor cards (MC10-1, MC10-2)
The pressure sensor cards from SCHNEIDER can be plugged in at will

Service interface (X104)
Interface for firmware updates

Backup battery (X103)
Power supply in case of mains failure

Function display 2 (X4) Peripheral bus (intern)
Connection for primary function display of the 2nd generation

Function display 1 (X3) Peripheral bus (extern)
Connection for secondary function display of the 2nd generation

Main voltage supply (X1)
Wide range network input

Fume cupboard light (X2)
Connection for cupboard light

Expansion cards (MC10-3, MC10-4)
The expansion cards from SCHNEIDER can be plugged in at will

Digital input 24 V AC / DC (X11)
Connection for digital input

Digital output 2 (X10) Relay, changeover cont.
Connection 2 for relay output

Digital output 1 (X9) Relay, changeover cont.
Connection 2 for relay output

RS-485 interface Modbus RTU (X8)
Galvanically isolated RS-485 interface

Damper actuator (X7)
Connection for damper actuator for control via damper

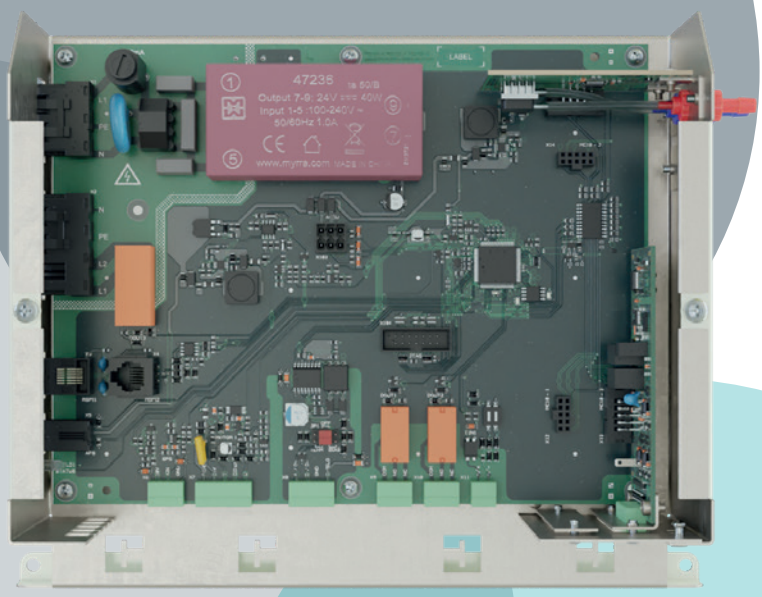
Sash position sensor SPS100 (X6)
Connection for sash position detection sensor

Airflow sensor AFS100 (X5)
Connection for airflow sensor

DIFFERENTIAL PRESSURE SENSORS

Up to two position-independent differential pressure sensors are available with the measuring ranges 4 Pa to 300 Pa, 10 Pa to 1000 Pa or - 150 Pa to +150 Pa.

Air connection	Function	Description
	Volume flow	Measures the exhaust air volume flow of the fume cupboard
Optional		
2	Supportive flow monitoring or Scrubber monitoring	Measures the exhaust air volume flow of the supportive flow Measures the pressure drop across the scrubber

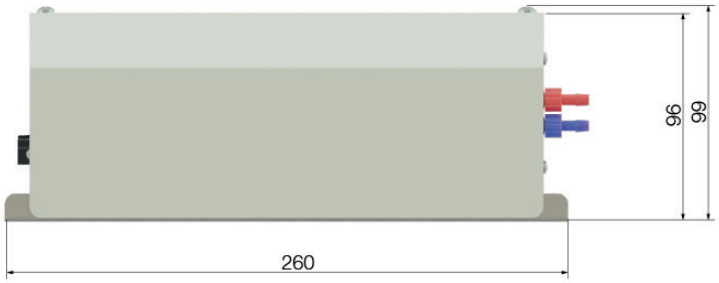


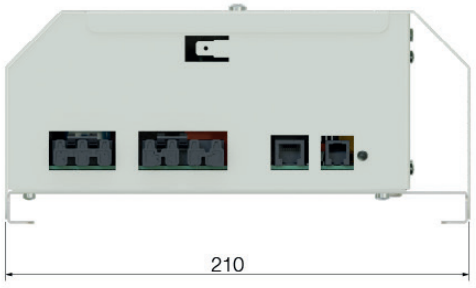
TECHNICAL DATA

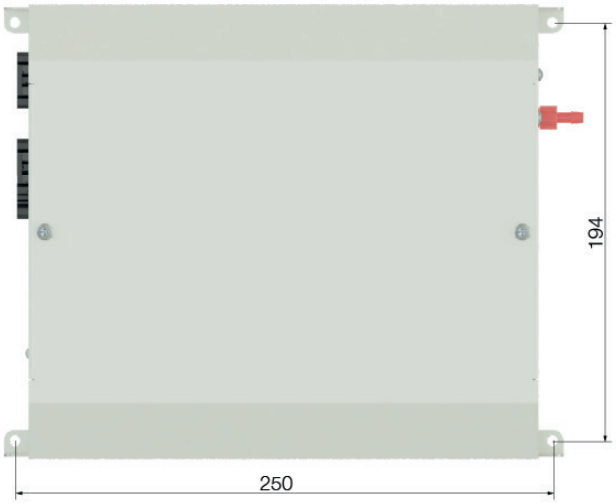
General	
Input	230 V AC, 50 / 60 Hz, ±10 %
Alternating current	Maximum 200 mA
Power output of the internal power supply	Maximum 15 VA, 24 V AC
Typical power consumption during operation	10 VA
Recovery time	5 to 10 s
Operating temperature	+15 °C to +40 °C
Humidity	Maximum 80 % relative, non-condensing
Housing	
Protection class	IP 10
Material	Sheet steel
Colour	RAL 9002
Length	290 mm
Width	208 mm
Height	100 mm
Weight	approx. 2,8 kg
Device terminals	0,2 to 1,5 mm^2
Relay fume cupboard light (X2)	
Quantity	1 relay (K1)
Contact type	normally open
Rated voltage	250 V AC
Rated current	5 A
Relay universal (X9, X10)	
Quantity	2 relays (K2, K3)
Contact type	Changeover contact
Rated voltage	30 V AC / 30 V DC
Rated current	3 A
Digital inputs	
Quantity	1, galvanically isolated, optocoupler
Signal voltage signal = 1	10 V to 28 V DC
Signal voltage signal = 0	0 V to 4 V DC
Analogue outputs (X8) Only variant FC400A!	
Quantity	2, galvanically isolated
Voltage range	0 (2) V to 10 V DC
Maximum current load per output	10 mA

Sash position sensor SPS100 (X6)	
Measuring principle	orientation-independent, cable potentiometer
Measuring range	0 mm to 1000 mm (SPS100) Optional: 0 mm to 2000 mm (SPS200)
Response time	< 10 ms
Pressure sensors	
Quantity	1 to 2
Pressure range	4 Pa bis 300 Pa Optional: -150 Pa bis +150 Pa Optional: 10 Pa bis 1000 Pa
Response time	< 10 ms
Sensor-Berstdruck	500 mbar (50.000 Pa)
Airflow sensor AFS100 (X5)	
Measuring principle	dynamic, hot-wire anemo-metric principle
Measuring range	0 m/s to 1 m/s
Response time	< 100 ms
Damper actuator (X7)	
Control signal, Y	2 V to 10 V DC
Feedback signal, U	2 V to 10 V DC
Nominal voltage	24 V AC, +10 %, -20 %, 0,8 A
Function display 1 (X3)	
Quantity	1
Input	24 V DC
Alternating current	01, A
Function display 2 (X4)	
Quantity	1
Input	24 V DC
Alternating current	01, A
Communication interface (X8) Only variant FC400M!	
Interface	RS-485 (ANSI TIA/EIA-485)
Number of lines	2 (half-duplex) + GND + Shield
Speed	Up to 115 kBit/s
Galvanic isolation	Up to 15 kV
Driver	1/8 Load
Possibility of use	Modbus RTU
Expansion slots	
Expansion slots MC10-1 and MC10-2	Suitable for pressure sensor cards
Expansion slots MC10-3 and MC10-4	Suitable for universal elect-ronic expansion cards

HOUSING DIMENSIONS







ACCESSORIES

Damper
DK-250-PPS-0-0-MM

Stellklappe mit
Messeinrichtung
VD-250-PPS-0-0-MM

AFS100

SPS100/200

Related documentation

- Technical data sheet sash position sensor SPS100 / SPS200
- Technical data sheet airflow sensor AFS100
- Technical data sheet controller unit, measuring devices an control dampers
- Technical data sheet function displays
- Installation and operating manual fume cupboard controller FC400

The information and data contained in this documentation have been compiled to the best of our knowledge and in accordance with the current state of the art (subject to technical changes). The currently valid version applies. The proven properties of SCHNEIDER products are based on the use of the products recommended in this documentation. Diverging situations and individual cases are not taken into account, so that we cannot assume any warranty and liability.

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Do you have any questions? We look forward to your message:
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