

FCC – Fume cupboard controller

Introduction

FCC guarantees a safe work environment by maintaining the correct air speed in the fume cupboard's hatch opening regardless of the opening height of the hatch (beneath marked safety height).

Function

FCC quickly and accurately regulates, via damper actuator, the air speed in the fume cupboard's hatch opening to 0.5 m/s.

The accompanying measurement probe for air speed is installed inside the fume cupboard and the hose is attached to the FCC, which has an internal air speed sensor.

The electrical interlocking contactor EFK can be connected to FCC. The contactor can interrupt power supply to electrical outlets after an adjustable time from detected low air speed rates. This feature will avoid increased risk of explosions during handling of flammable substances.

In addition to normal operating mode, you can select either emergency or save mode via the connected monitor. In emergency mode, the air speed is increased and acoustic and optical alarms are activated. In save mode, the air speed is decreased and an optical alarm is activated before the FCC returns to normal operation after an adjustable time.

User interface

Fume cupboard monitor FLOCHECK V is used as display device to FCC. The display unit has a keypad, clear text messaging and LEDs for status. The following equipment can also communicate with FCC:

- Mini-DUC CMA (only systems without LINDINTELL).
- A server with web interface LINDINSPECT (only systems with LINDINTELL).

Communication

- Modbus TCP or RTU (systems based on LINDINTELL and Gateway NCE).
- Modbus RTU (systems based on Mini-DUC CMA).



FCC – Fume cupboard controller.

LINDINTELL/LINDINSPECT

LINDINTELL is a system software installed on a central server. LINDINTELL takes over all optimisation and control functions from Mini-DUC CMA.

LINDINSPECT is a Web interface developed for use with LINDINTELL

Alarms

Alarms are indicated by panel FLOCHECK V both acoustically via a buzzer and optically via LED.

- Normal operation is indicated with an illuminated green LED.
- A too high rate of air speed gives an acoustic alarm via buzzer and an optical alarm via blinking red LED.
- An air speed that is too low gives only optical alarm, i.e. blinking red LED.

The time before alarm is adjustable. The acoustic alarm can be acknowledged. The buzzer can be deactivated.

On connection to 24 VAC + Comm., alarms are also transmitted and managed via the parent system.

Calibration

Calibration is carried out in situ with the help of instruments for air speed measurement. All settings can be reset to factory settings.

FCC – Fume cupboard controller

Technical specifications

General

Dimensions

162 x 122 x 52 mm (LxBxH, excluding cable glands).

Material

Epoxy coated steel plate encapsulation.

Weight

0.7 kg

Colour

RAL 9003.

IP classification

IP53 encapsulation.

Electrical system

Power supply

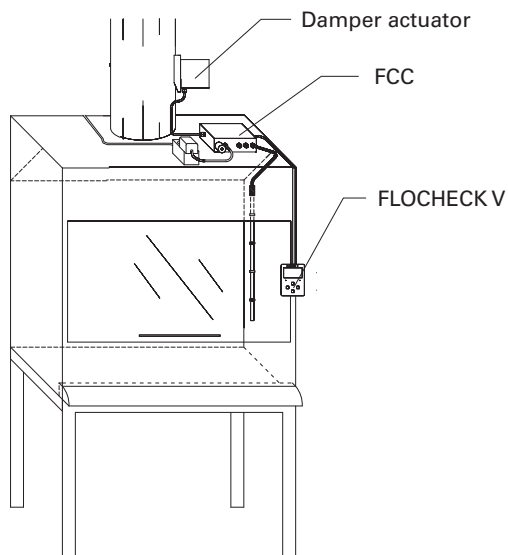
24 VAC.

Output

1.5 VA.

CE marking

Fulfils EMC and low voltage directives.



FCC is installed on a fume cupboard with connections to a actuator on the extract air damper and the fume cupboard monitor FLOCHECK V.

Accessories

Electrical interlocking contactor EFK is available as an accessory to FCC. On alarm regarding incorrect air speed in the fume cupboard's hatch opening, FCC can interrupt the supply to the connected extension blocks for heaters or other equipment via EFK. The interruption is reset manually on monitor FLOCHECK V. Outlet power reset may also be available from an external push button.

Regulation

Interval

0.2-0.9 m/s

Speed

Change regulated within 3 s (95% within 2 s)

Accuracy

+/-4%.

Connections

- 1 x 24 VAC + Comm. (power supply and digital communication loop).
- 1 x 1-6 VDC analogue input (internal sensor).
- 1 x 0-10 VDC analogue input (cutoff signal).
- 1 x digital input (resetting fume cupboard).
- 1 x 0-10 VDC analogue output (for damper motor).
- 1 x relay (24 VAC or switch function).
- 1 x digital output (Any alarm, see note 1).
- 1 x digital output (Fume cupboard hatch ctrl1, see note 1).
- 1 x digital output (Fume cupboard hatch ctrl2, see note 1).
- 1 x modular jack 8P8C - RJ45 for connection of fume cupboard monitor FLOCHECK V.

Note 1: Non standard feature that has to be ordered with FCC.