Control panel

EASYLAB BE-SEG-02 and BE-SEG-03

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The art of handling air

About this manual

This operating and installation manual enables operating or service personnel to correctly install the TROX product described below and to use it safely and efficiently.

This operating and installation manual is intended for use by fitting and installation companies, in-house technicians, technical staff, properly trained persons, and qualified electricians or air conditioning technicians.

It is essential that these individuals read and fully understand this manual before starting any work. The basic prerequisite for safe working is to comply with the safety notes and all instructions in this manual.

The local regulations for health and safety at work and general safety regulations also apply.

This manual must be given to the facilities manager when handing over the system. The facilities manager must include the manual with the system documentation. The manual must be kept in a place that is accessible at all times.

Illustrations in this manual are mainly for information and may differ from the actual design.

Commissioning

Commissioning requires that the control panel has been mounted to the side frame of a fume cupboard and connected (⮡ *Chapter 4 'Mounting and connecting the control panel' on page 15*).

Only skilled qualified electricians are allowed to install the described components.

The control panel must be configured with the EasyConnect configuration software before it can be used.

Usage

The control panel can only be used together with the FMS-1 or FMS-2 monitoring system or with the EASYLAB controller TCU3 and the EasyConnect configuration software.

Limitation of liability

The information in this manual has been compiled with reference to the applicable standards and guidelines, the state of the art, and our expertise and experience of many years.

The actual scope of delivery may differ from the information in this manual for bespoke constructions, additional order options or as a result of recent technical changes.

The obligations agreed in the order, the general terms and conditions, the manufacturer's terms of delivery, and the legal regulations in effect at the time the contract is signed shall apply.

Defects liability

For details regarding defects liability please refer to Section VI, Warranty Claims, of the Delivery and Payment Terms of TROX GmbH.

The Delivery and Payment Terms of TROX GmbH are available at *www.troxtechnik.com*.

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- Publishing content
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Other applicable documentation

In addition to these instructions, the following documents apply:

- Operating and installation manual for the EASYLAB controller TCU3
- Installation manual for the FMS-1 and FMS-2 monitoring systems
- Project-specific wiring documents
- Design manual for the LABCONTROL air management system

TROX Technical Service

To ensure that your request is processed as quickly as possible, please keep the following information ready:

- Delivery date of the TROX components and systems
- TROX order number
- Product name
- Brief description of the fault

Online	*www.troxtechnik.com*
Phone	+49 2845 202-400

1 Control panel overview

The system

The control panel consists of two parts, a front part with the display and operating elements and the electronic components, and the casing. The control panel can be flush mounted (without the casing) or surface mounted (with the casing) to the fume cupboard side frame.

The EASYLAB configuration cable is used to connect the control panel to the TCU3 fume cupboard controller or to the FMS monitoring system.

You can adapt the range of functions of the control panel to project-specific requirements using the EasyConnect configuration software. The range of functions may vary for different fume cupboards.

Fig. 1: BE-SEG-02 (left) and BE-SEG-03 (right)

Functional description

The Type BE-SEG-02 and BE-SEG-03 control panels are used to display and control the most critical aerodynamic and safety-related functions of a fume cupboard. Users can obtain information regarding the condition of the fume cupboard and can set various operating modes.

Display elements

OLED display (BE-SEG-02 only)

The OLED display shows system messages or, if enabled, the actual face velocity in m/s or the volume flow rate in m³/h.

PF	System message, e.g. 'PF' (power failure)
0.50 m/s	Face velocity; you can select the unit of measure (e.g. m/s) using the EasyConnect configuration software
600 m³/h	Volume flow rate; you can select the unit of measure (e.g. m³/h) using the EasyConnect configuration software

The display shows system messages related to fume cupboard control as well as error codes. For an overview of the displayed messages and codes refer to the following chapters:

- ♦ *Chapter 6.3 'Operating states' on page 23*
- ♦ *Chapter 7 'Fault remedy' on page 24*

For TCU3 controllers with a face velocity transducer (equipment function FH-VS), the face velocity may be shown on the display. You can activate this function using the EasyConnect configuration software.

Status display

	Green	Normal operation; fume cupboard is functionally reliable
HIGH	Yellow	Volume flow rate too high; fume cupboard is functionally reliable, increased energy consumption
LOW	Red	Volume flow rate too low; fume cupboard is not functionally reliable, work at the fume cupboard is not safe

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Warning display for sash opening

	Permanent LED	The maximum operational sash opening has been exceeded. An acoustic alarm may also sound (depending on the controller configuration). The permanent light is reset by closing the sash.
	Blinking LED	The volume flow rate for the fume cupboard has been reduced due to diversity control, or the motion detector has signalled that the sash should be closed. Close the sash.

ECO display (only BE-SEG-02)

The ECO display informs you whether your fume cupboard is working efficiently. You can activate the ECO display using the EasyConnect configuration software.

ECO	Green	Very energy-efficient
ECO	Yellow	Energy-efficient
ECO	Red	Not efficient

Alarm sounder

The alarm sounder warns you if the volume flow rate or the face velocity is too low while diversity control for the room is active. For details see ⬦ *Chapter 6.3 'Operating states' on page 23*.

Controls

You can select a function by pressing the corresponding button:

- Select an operating mode
- Activate the automatic sash device
- Switch the fume cupboard lighting on or off

BE-SEG-02			
		Alarm acknowledgement	Pressing this button switches the acoustic alarm off.
		Activate increased operation	Pressing this button activates the increased volume flow rate set for the controller (e.g. for emergency operating mode). The symbol colour changes to white.
		Activate reduced operation	Pressing this button activates the reduced volume flow rate set for the controller (e.g. for night setback). The symbol colour changes to white.
		Shut-off	Pressing this button activates the SHUT-OFF mode. The symbol colour changes to white.
		Open the sash	These buttons are used to open and close the automatic sash device. The buttons can be used only if an automatic sash device has been configured.
		Close the sash	
		Fume cupboard lighting	Pressing this button switches the fume cupboard lighting on or off. The button can be used only if this function has been configured.
		Manual control	Pressing this button activates or deactivates manual control. As long as manual control is active, you can override default operating modes. See ↳ 'Temporary override' on page 22.

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BE-SEG-03

	🔇	Alarm acknowledgement	Pressing this button switches the acoustic alarm off.
	🌀	Change monitoring value	This button is used to switch between two monitoring values.
	🌀	Monitoring on/off	Pressing this button activates or deactivates the monitoring function.
	💡	Fume cupboard lighting	Pressing this button switches the fume cupboard lighting on or off. The button can be used only if this function has been configured.

Service socket

The service socket is used to connect the control panel to a personal computer. This is required for configuring the control panel with the EasyConnect configuration software. You can use the EASYLAB configuration cable or the BlueCON Bluetooth adapter.

Fig. 2: Service socket

Technical data

Data	Value	Unit
Length	306.4	mm
Width	23	mm
Height – surface mounted	12.5	mm
Height – inset	2.8	mm
Height – flush inset	0	mm
Supply voltage	24	V DC
Connecting cable	Type SF-UTP	
Temperature range for operation	0 to +50	°C
Temperature range for storage	-10 to +70	°C
Relative humidity	< 90	%
IEC protection class (safety-low voltage)	III	
IP protection / surface mounting	IP41	
IP protection / flush mounting	IP42	
Weight	0.130	kg

2 Safety

Symbols are used in this manual to alert readers to areas of potential hazard. Signal words express the degree of the hazard.

⚠ **DANGER!**

Imminently hazardous situation which is due to live components and which, if not avoided, will result in death or serious injury due to electric voltage.

⚠ **CAUTION!**

Potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

❗ **NOTICE!**

Potentially hazardous situation which, if not avoided, may result in property damage.

Dangers and risks

⚠ **DANGER!**

Danger of death due to electric current!

Danger of death if live components are touched.

– The supply voltage must be switched off and prevented from being switched on again before anyone starts mounting and wiring the control panel.
– Only skilled qualified electricians are allowed to work on live components.

⚠ **CAUTION!**

Danger of injury from sharp edges!

Danger of injury or risk of damage to electrical cables due to sharp edges or burrs of the side frame cut-out.

– Fold or deburr the edges of the side frame cut-outs.

❗ **NOTICE!**

Temperature differences – Risk of damage to property!

Condensation may damage the electronic components beyond repair.

– If the control panel has been kept in an unheated area, wait at least two hours before switching on the supply voltage for commissioning.

❗ **NOTICE!**

Electrostatic charge – Risk of damage to property!

Electrostatic charge can damage the electronics.

– First touch an equipotentially bonded metal surface, e.g. a water pipe, for electrical earthing before you remove the control panel from its protective wrapping.

❗ **NOTICE!**

Risk of damage to property!

Over tightening the fixing screws may damage the casing.

– Tighten the screws only hand-tight.

! NOTICE!

Risk of damage to property due to foreign matter and liquids!

Foreign matter and liquids that may have got into the unit may damage the electronic parts.

– If liquid gets inside the control panel, let the control panel completely dry before commissioning.
– Remove foreign matter, if any.
– If the device emits a smell or smoke, have it checked by the manufacturer.

! NOTICE!

Risk of damage to property due to scouring or caustic cleaning agents!

Scouring or caustic cleaning agents may damage the surfaces of the control panel.

Use only mild cleaning agents to clean the front plastic.

Qualified staff

Only skilled qualified electricians are allowed to work on live components.

The monitoring system is typically commissioned together with the fume cupboard, either by the laboratory furniture manufacturer or by the system owner.

Malfunctions, if any, must only be eliminated by trained in-house technicians employed by the system owner, or by the TROX Technical Service.

Correct use

The EASYLAB control panel BE-SEG-02 is intended for use together with the EASYLAB fume cupboard controller TCU3 (equipment function FH-xxx). The control panel can also be used with FMS-1 or FMS-2 volume flow rate monitoring system FMS-1 or FMS-2, either in addition to or instead of the TCU3. The control panel BE-SEG-03 can be used together with the volume flow rate

measuring system FMS-1 or FMS-2. The control panel serves as a status display for fume cupboard control and fume cupboard monitoring and allows you to set and monitor various fume cupboard operating modes.

- Use the control panel only for the applications described in this manual.
- The control panel must be flush mounted or surface mounted to the side frame of a fume cupboard.
- Use the unit only with the connection values given in the technical data.

Incorrect use

Do not use the control panel for areas of application that are not described in this manual.

The control panel must not be used in the following areas:

- Outdoors
- In wet areas
- In areas with potentially explosive atmospheres

Residual risk: supply voltage failure

A failure of the supply voltage is indicated on the control panel only if the EASYLAB controller TCU3 is equipped with the EM-TRF-USV expansion module and the battery pack has been connected and fully charged. Otherwise the control panel just stops working, the display is dark.

3   Delivery

Supply package

Check delivered items immediately after arrival for transport damage and completeness.

Properly dispose of packaging material.

Control panel BE-SEG-02 – supply package
Control panel BE-SEG-02 with casing and adapter frame
Connecting cable, approx. 5 m, patch cable, blue

Control panel BE-SEG-03 – supply package
Control panel BE-SEG-03 with casing and adapter frame
Connecting cable, approx. 5 m, patch cable, blue

Carrying the control panel

- If possible, take the control panel in its transport packaging up to the installation location.
- Do not remove the protective wrapping until just before installation.

Storing the control panel

If you need to store the control panel temporarily, make sure that the following conditions apply:

- Leave the unit in its packaging and do not expose it to the effects of weather.
- Store the unit in a dry place and away from direct sunlight.
- Temperature -10 °C to +70 °C, humidity maximum 90% (non-condensing)

4   Mounting and connecting the control panel

> ⚠ **DANGER!**
>
> **Danger of death due to electric current!**
>
> Danger of death if live components are touched.
>
> – The supply voltage must be switched off and prevented from being switched on again before anyone starts mounting and wiring the control panel.
> – Only skilled qualified electricians are allowed to work on live components.

> ⚠ **CAUTION!**
>
> **Danger of injury from sharp edges!**
>
> Danger of injury or risk of damage to electrical cables due to sharp edges or burrs of the side frame cut-out.
>
> – Fold or deburr the edges of the side frame cut-outs.

Mounting the control panel

The control panel is suitable for surface mounting or flush mounting. Types of installation include:

- Flush mouting to the side frame of the fume cupboard
- Surface mounting onto the side frame of the fume cupboard
- Surface mounting onto other suitable surfaces

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Surface mounting

The control panel is surface mounted with its casing.
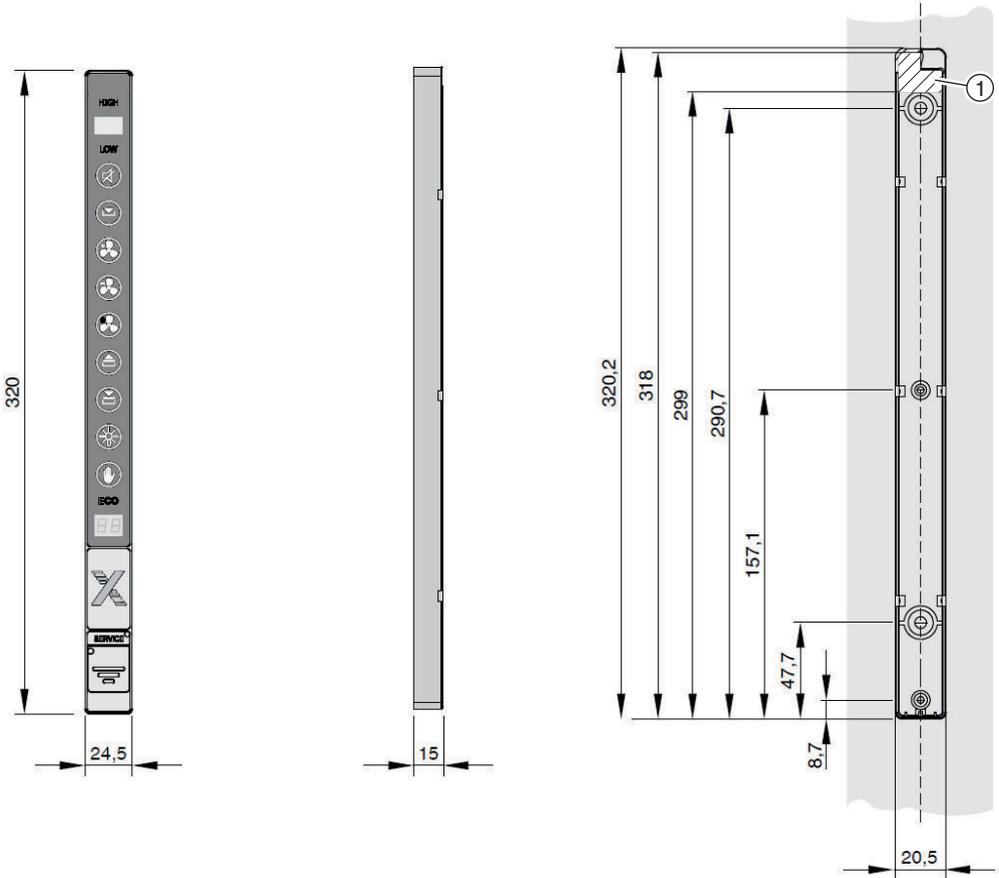
1. ▶ Remove the casing.

Fig. 3: Dimensional drawing, surface mounting

2. ▶ Create a cut-out and, if necessary, drill holes into the side frame according to the dimensional drawing (Fig. 3). The marked part of the casing (Fig. 3/1) has a small cut-out for the cable.

> ℹ️ *Fixing screws*
>
> *Choose screws which are appropriate for the side frame material.*
>
> *The screws should be as short as possible, otherwise the cables in the side frame might become damaged.*
>
> – *3 fixing screws Ø 3 mm, screw head not higher than 4.4 mm*
> – *2 fixing screws Ø 5 mm, screw head not higher than 6.5 mm*

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3. ▶ Fix the casing with suitable screws to the fume cupboard side frame.

4. ▶ Take the end of the connecting cable through the casing (Fig. 3/1) into the side frame cut-out.

5. ▶ Press the control panel together with the connecting cable into the casing until it locks.

6. ▶

> ℹ️ *Control panel remote from controller*
>
> *If there is some distance between the control panel and the TCU3 controller or the FMS monitoring system, you may use a network patch cable type S-FTP with a maximum length of 40 m instead of the supplied 5 m cable.*

Lay the cable for connecting the control panel to the TCU3 controller or to the FMS monitoring system.

Replacing the previously used control panel BE-SEG-01

1. ▶ Remove control panel BE-SEG-01.

2. ▶ Press the adapter frame into the existing cut-out until it locks into place.

3. ▶ Take the end of the connecting cable for the new control panel through the casing and into the side frame cut-out.

4. ▶ Press the control panel BE-SEG-02 or BE-SEG-03 together with the connecting cable into the casing until it locks.

5. ▶

> ℹ️ *Control panel remote from controller*
>
> *If there is some distance between the control panel and the TCU3 controller or the FMS monitoring system, you may use a network patch cable type S-FTP with a maximum length of 40 m instead of the supplied 5 m cable.*

Lay the cable for connecting the control panel to the TCU3 controller or to the FMS monitoring system.

Flush mounting

The control panel is flush mounted without its casing.
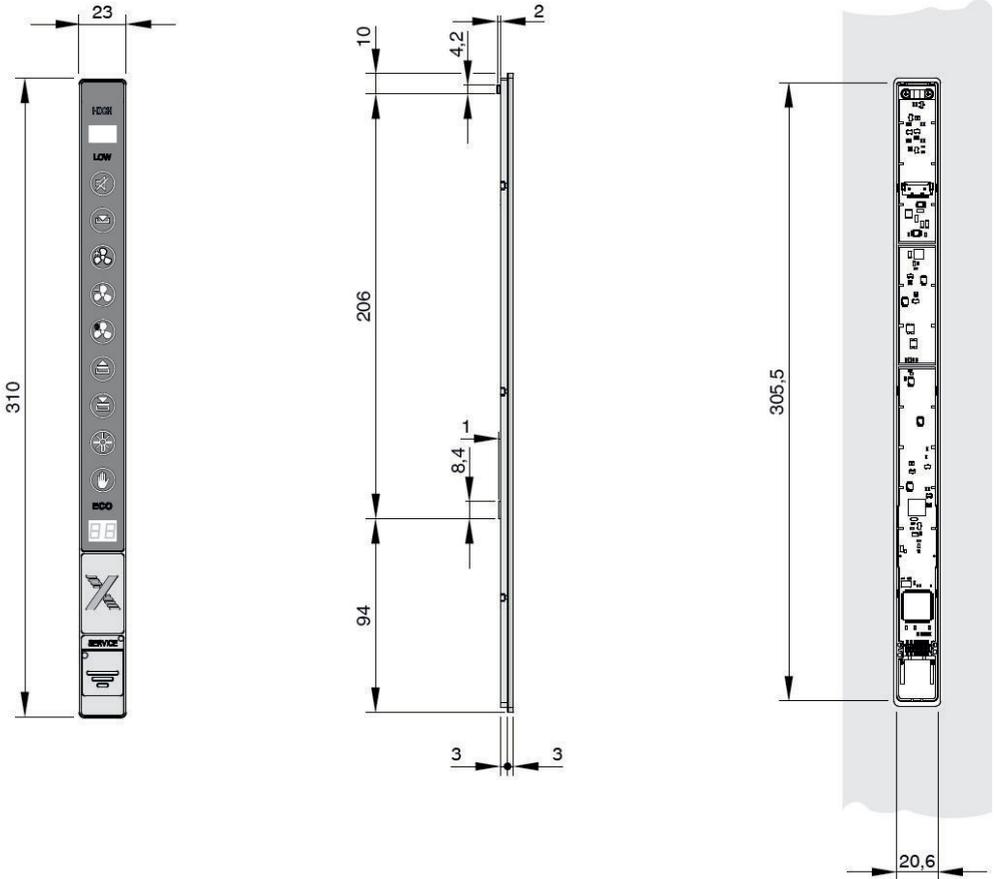
1. ▶ Remove the casing.

Fig. 4: Dimensional drawing, flush mounting

2. ▶ Create a cut-out and, if necessary, drill holes into the side frame according to the dimensional drawing (Fig. 4).

3. ▶ Press the control panel together with the connecting cable into the side frame cut-out until it locks into place.

> ℹ️ **Alternative: Glueing**
>
> *The control panel can also be glued to the fume cupboard side frame; to do so, remove the protective film from the adhesive area at the side of the control panel*
>
> – *Create side frame cut-out as shown in Fig. 4.*
> – *Make sure that the surfaces to be glued together are free from dust and grease.*

4. ▶

> ℹ️ **Control panel remote from controller**
>
> *If there is some distance between the control panel and the TCU3 controller or the FMS monitoring system, you may use a network patch cable type S-FTP with a maximum length of 40 m instead of the supplied 5 m cable.*

Lay the cable for connecting the control panel to the TCU3 controller or to the FMS monitoring system.

Connecting the control panel to the EASYLAB controller TCU3

Fig. 5: TCU3 connection

▶ Connect the control panel to either terminal 1 (Fig. 5/①) or terminal 2 (Fig. 5/②) of the TCU3 controller.

The remaining connection is intended for a second control panel.

Connecting the control panel to the FMS monitoring system

Fig. 6: FMS connection

▶ Connect the control panel to either terminal 1 (X2, Fig. 6/①) or terminal 2 (X3, Fig. 6/②) of the monitoring system FMS.

5 Commissioning the control panel

Commissioning requires that the control panel is connected to a computer on which the EasyConnect configuration software is installed.

To connect the control panel to the computer, you need the BE-SEG-02/03 configuration adapter and one of the following components:

- EASYLAB configuration cable
  (TROX material number: B588NF4)
- Bluetooth adapter BlueCON
  (TROX material number: B588NF5) and computer with Bluetooth interface

Making the connection using the EASYLAB configuration cable:

Fig. 7: Connection with the EASYLAB configuration cable

1. ▶ Connect the computer and the monitoring system with the BE-SEG-02/03 configuration adapter and with the EASYLAB configuration cable (Fig. 7/①).

2. ▶ Start the EasyConnect configuration software.

Making the connection using the BlueCON Bluetooth adapter:

Fig. 8: Connection with the BlueCON Bluetooth adapter

1. ▶ Plug the BlueCON module (Fig. 8/①) into the control panel.

2. ▶ Activate Bluetooth on the computer.

3. ▶ Start the EasyConnect configuration software.

Configuration

The EasyConnect configuration software provides a commissioning wizard that guides you in making project-specific adjustments:

- Optical alarm, red, either blinking or permanent
- Duration of the acoustic alarm
- Type of acoustic alarm when the maximum operational sash opening is exceeded
- Enabling the function button for increased operation
- Enabling the function button for reduced operation
- Enabling the function button for shut-off
- Enabling the function button for fume cupboard lighting
- Enabling the function button for manual control
- Enabling the face velocity display

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6   Using the control panel

Basic functions

Standard mode

In standard mode all function button fields for all available functions are indicated as blue symbols (i.e. not active).

You can set the standard mode using the EasyConnect configuration software.

Selecting special operating modes

Activate increased operation

▶ Press the *[Activate increased operation]* 🌀 push button.

⇨ Increased operation is now active. The symbol colour changes to white 🌀.

ⓘ *Limit the activation period*

You can set a time limit for [Activate increased operation] 🌀*.*

This enables an automatic deactivation of the increased operation after the set delay.

Activate reduced operation

▶ Press the *[Activate reduced operation]* 🌀 push button.

⇨ Reduced operation is now active. The symbol colour changes to white 🌀.

Shut-off

▶ Press the *[Activate shut-off]* 🌀 push button.

⇨ Shut-off is now active. The symbol colour changes to white 🌀.

Deactivate special operating modes.

▶ Press the push button for the respective active function again.

⇨ The special operating mode is now no longer active. The symbol colour changes to blue.

ⓘ *Selecting a different operating mode*

To select a new operating mode without first deactivating the previous function just press the corresponding function button.

Volume flow rate warning

You can set a volume flow rate setpoint for a warning using the EasyConnect configuration software.

If the volume flow rate exceeds the setpoint, the status is displayed in yellow.

▶ Inform a technician.

If the volume flow rate falls below the setpoint, the status is displayed in red. The fume cupboard is no longer functionally reliable.

1. ▶ Stop working at the fume cupboard.

2. ▶ Inform a technician.

Additional functions

Open the sash

▶ Press the *[Open sash]* 🔼 push button.

⇨ The sash opens.

Close the sash

▶ Press the *[Close sash]* 🔼 push button.

⇨ The sash closes.

Switch on the fume cupboard lighting

▶ Press the *[Fume cupboard lighting]* 🔆 push button.

⇨ The fume cupboard lighting is now on.

Switch the fume cupboard lighting off

▶ Press the *[Fume cupboard lighting]* ⊛ push button.

⇨ The fume cupboard lighting is now off.

Temporary override

Operating mode default settings from the central BMS or from the room control panel can be overridden on the control panel for the fume cupboard controller.

A centrally set operating mode can be temporarily overridden at any time using the operating mode button on the control panel. The operating mode selected on the control panel remains active until the central BMS defaults another operating mode. If the central BMS sets a different default operating mode, that operating mode overrides the locally activated operating mode.

Permanent override – manual control

You can use the control panel to permanently override signals from the central BMS.

1. ▶ Press the *[Manual control push button]* ⓘ.

⇨ This overrides external signals for the time being.

2. ▶ Choose any other operating mode by pressing the respective button on the control panel.

Stopping manual control

▶ Press the *[Manual control push button]* ⓘ again.

⇨ The fume cupboard controller resumes the previously set operating mode.

ⓘ *No override option*

The central BMS can suppress overrides from the control panel temporarily or permanently.

In this case, manual control cannot be used, and the control panel shows only the externally set operating mode.

If you attempt to change the operating mode on the control panel, the active operating mode will blink briefly.

ⓘ *Temporary limit for manual control*

Manual control for the fume cupboard can be set for a limited period of time.

Manual control will then automatically be deactivated after the set delay, and the previous operating mode will be resumed.

Operating states

No.	Fault description	Cause	Remedy
¹	Sash opening > max.	The maximum operational sash opening has been exceeded.	Close the sash.
²	Close the fume cupboard	Motion detector – indicates that the sash has to be closed. The sash is open and the motion detector has not detected a person in front of the fume cupboard during the set delay.	Close the sash.
²	Reduced face velocity	Motion detector – lower the face velocity to 0.3 m/s. The motion detector has not detected a person in front of the fume cupboard during the set delay. The face velocity has been reduced.	
³	Diversity limitation	The diversity control in combination with the room management function is active. The volume flow rate of the fume cupboard is reduced based on the total room extract air.	Close the sash.

¹ Warning indicator light is illuminated; ² acoustic signal; ³ Warning indicator light is blinking

No.	Fault description	Cause	Remedy
00	Fume scrubber active	The increased volume flow rate for the extract air scrubber has been achieved. The extract air scrubber is in operation.	
EF	Fire Open Fire Shut-off	The sensor system has activated smoke extract. Depending on the controller configuration the damper blade will remain open or will be shut (shut-off).	
PF	UPS, battery operation	The connected power supply has failed. Control is maintained by the battery pack.	Provide power supply.
S1	Test function	Testing has been triggered by the configuration software and is active, e.g. actuator test.	
SC	Automatic sash device	Error message related to the automatic sash device.	
SE	Service	Service (maintenance) for the fume cupboard control is due.	Initiate maintenance and have the maintenance interval reset.
oo	Fume scrubber request	A user has requested the extract air scrubber. The controller raises the volume flow. When the set volume flow rate has been reached, extract air scrubbing starts.	

7   Fault remedy

Alarm messages

No.	Fault description	Cause	Remedy
A1	Volume flow rate too high	The volume flow rate exceeds the set-point value.	Check the actuator and the controller.
A2	Volume flow rate too low	The volume flow rate has fallen below the setpoint value.	Check the pressure. Check the volume flow rate transducer.
A3	Face velocity too low	The face velocity has fallen below the threshold value. Check if the sash opening is too wide open.	Reduce sash opening. Check the volume flow rate. Check the pressure.

Configuration faults

No.	Fault description	Cause	Remedy
C1	Software version	Not all controllers have the same software version installed.	Have the correct software version installed by the Service department.
C2	No. of controllers > 24	More than 24 controllers have been connected to the communication line.	Reduce the number of controllers.
C3	Termination of the communication cable	The communication cable has not been terminated properly. An active terminal resistor is required at each end of the communication cable.	Activate the terminal resistors using a switch on the EASYLAB TCU3 main PCB.
C4	RMF configuration	The room management function has not been activated on any of the controllers.	Activate the RMF on a controller.
C5	dP controller ≠ 1	Configuration of differential pressure control is incomplete. There is either no differential pressure controller on the communication cable, or the room management function is not active.	Include a differential pressure controller. Activate differential pressure control in the room management function.
C6	System conflict	Not all controllers are of the same system type.	Connect either supply air controllers or extract air controllers but not both.

Faults related to the EASYLAB controller TCU3

No.	Fault description	Cause	Remedy
H1	24 V under-voltage	The supply voltage is too low. The sensors and actuators are no longer supplied with sufficient power.	Check the power supply to the system.

No.	Fault descrip-tion	Cause	Remedy
H2	AI characteristic	Analog input signal is outside of the characteristic.	Check the voltage signal or sensor. Check the characteristic parameters stored in the controller.
H3	Supportive flow fault	The feedback signal from the supportive flow fan is missing. The fan has been switched off, or the cable is no longer connected. The controller automatically raises the volume flow rate to the value that has been set for this case.	Check the feedback signal and the supportive flow fan.

Control panel faults

No.	Fault descrip-tion	Cause	Remedy
E1	Connection lost	Communication between the control panel and the fume cupboard controller has been interrupted. This text always appears in English.	Check the cable connection, the control panel, and the controller.
E2	CP-CRC failure	Communication between the control panel and the fume cupboard controller is faulty. This text always appears in English.	Check the cable connection, the control panel, and the controller.
E3	CP not possible	The control panel cannot be used with the controller to which it is connected. The control panel must be connected to a configured fume cupboard controller or to a controller with active room management function.	Check the wiring, assignment, and configuration.
E4	CP memory	A hardware error occurred while the internal memory was being accessed.	If the error occurs again, replace the control panel.

8   Removing and disposing of the control panel

> ⚠️ **DANGER!**
>
> **Danger of death due to electric current!**
>
> Danger of death if live components are touched. Live electrical components may execute uncontrolled movements and cause serious injury.
>
> – Switch off the power supply and remove the unit from the power supply before starting to de-install the unit.
> – Only skilled qualified electricians are allowed to de-install live components.

Removing

Once the period of use of the device has expired, the device must be removed and disposed of in an environmentally friendly manner.

1. ▶ Remove the mains cable.

2. ▶ Remove any other cables.

Disposal

If no removal or disposal agreement has been made, recycle any disassembled components:

▶ Have electronic waste and electronic components disposed of by approved specialist disposal companies.

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