

UCS C-SV 4A Smoke Extraction and Weather Control Unit User Manual

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GENERAL SAFETY RULES

This manual is an integral part of C-SV 4A/8A and C-SV IB 4A/8A control units and it must be carefully read before using it since it gives important indications with regards to its safe installation, use and maintenance. Keep it with care.



Before using C-SV 4A/8A and C-SV IB 4A/8A control units, read carefully the following general safety rules.

- · After taking off the packaging make sure that the control unitsintact. In case of doubt do not use it and contact an authorized service centre.
- Check that the control unit is not damaged in any of its parts. The safety concept of the control unit is valid only in perfect conditions.

RISK OF ELECTRICAL SHOCKS

- Any damaged socket, connection terminal or cable must be replaced immediately by qualified technicians or by authorized service centre.
- In case ofrepair orreplacement of the connection cables and/or of the damaged devices orthat don't work properly, please contact the authorized service centre.
- Incorrect or improper installation may cause the system to malfunction and/or result in damage to people and/or property.
- Always disconnect the power supply before opening the control unit.

Any installation and/or maintenance tasks are only to be carried out by skilled, specialist personnel. Existing electrical systems must comply with the rules in force in the country where the control unit is installed. Before doing any maintenance, make sure that the power supply and the batteries have been disconnected. Install an allpole disconnecting device in the power supply system (IEC EN 60335-1). Conform to the "ELECTRICAL CONNECTIONS" wiring diagrams shown in this manual.



The operations which can be dangerous if they are not carried out correctly are indicated with this symbol.



Danger to persons due to electricity.



The operations whose execution requires qualified or specialized staff to avoid any danger are indicated with this symbol.



Important information for a correct installation and use of the product.

Informative letter

The installer and the maintenan cemanmust know the content of this manual. Although the main features of the equipment described in this manual are not subject to change, the manufacturer reserves the right to modify the components, details and accessories it deems necessary to improve the product or to meet manufacturing or commercial requirements at any time and without being obliged to update this manual immediately.



WARNING

ALL RIGHTS ARE RESERVED ACCORDING TO THE INTERNATIONAL COPYRIGHT CONVENTIONS,

The reproduction of any part of this manual, in any form, is forbidden without the prior written authorization of the manufacturer. The content of this guide can be modified without prior notice. Great care has been taken in collecting and checking the documentation contained in this manual to make it as complete and comprehensible as possible. Nothing contained in this manual can be considered as a warranty, either expressed or implied – including, not in a restrictive way, the suitability warranty for any special purpose. Nothing contained in this manual can be interpreted as a modification or confirmation of the terms of any purchase contract.

The UCS products have not been conceived to work in areas at risk of explosions. In case of damage or malfunction, the control units must not be used until the Customer Care Technical Service has repaired it.



WARNING

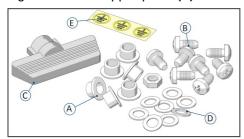
The original configuration of the control unit must not be changed at all, except as prescribed in this manual. On receiving the control unit, make sure the supply corresponds to what has been ordered. In case of non-compliance immediately inform the manufacturer. Also make sure the control unit has not been damaged during ttran sport.

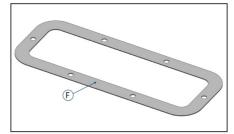
PACKING CONTENTS

The control units are delivered in a box inside which there are the use manual and the following components:

- 6 plugs (A)
- 6 fixing screws (B)

- 1 cabinet opening key (C)
- 6 transparent gaskets (D)
- 3 "earthing" adhesives (E)
- 1 gasket for the upper plate (F)





UNPACKING

- 1. Remove the control unit from the box.
- 2. Remove all the components from the packaging.



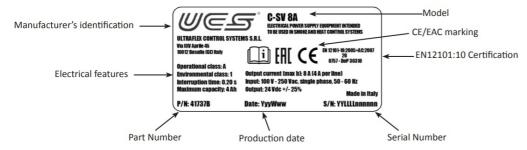
WARNING

Check the control unit. Before installing the control unit, check to ensure that all of the items listed are present and that there are no visible signs of damage.

DATA PLATE

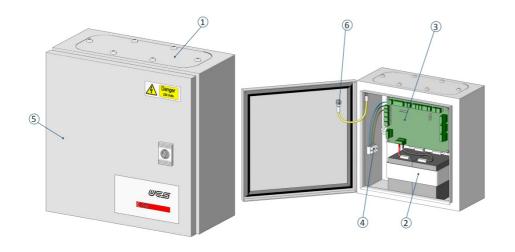
The manufacturer's identification and European Directive conformity plate is located on the control unit. Several safety warnings are applied to the control unit; such warning smust be strictly followed by everyone dealing with this product. The company is not to be held responsible for damage to property or accidents to people which might occur if the above-mentioned warnings are not observed. In such a case, the operator is the only person responsible.

The identification plate **CE/EAC** is located on the left lower part of the control unit.

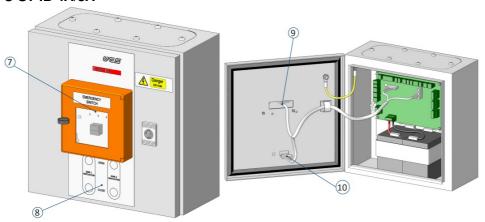


PRODUCT DESCRIPTION

C-SV 4A/8A



C-SV IB 4A/8A



COMPONENTS

- 1. Cable inlet plate
- 2. Buffer batteries
- 3. Electronic board
- 4. Power supply connection terminal
- 5. Cabinet closing system
- 6. Earthing connection
- 7. Integrated emergency push button
- 8. Manual opening push button panel for natural ventilation
- 9. Connection of emergency push button
- 10. Manual opening connection of natural ventilation

C-SV 4A / 8A and C-SV IB 4A / 8A control units command the smoke and the heat extraction in case of fire and also they allow daily ventilation by opening a single or several windows. Depending on the desired use, the control unit can be supplied in 4 and 8 Amp versions and it allows the connection of a wide range of sensors, rod actuators, rack actuators and chain actuators and different accessories to complete the installation. The control units are equipped with buffer batteries and they command 24 Vdc actuators. Smoke extraction opening occurs after the enabling of smoke detectors, emergency push buttons, fire control units or "BMS – building management system" systems. The emergency push buttons are equipped with LEDsfor displaying faults and malfunctions of powersupply and emergency status. The control unit also allows natural ventilation by controlling automatically the windows depending on environmental conditions detected by the sensors ensuring comfort and energy saving. The manual control of windows and doors occurs by means of specific push buttons on two separate areas.



The installation of the emergency push button is compulsory because, in addition to allowing manual emergency control, it also provides display of fault / emergency warnings, and can be used for easy, remote **RESETTING.**

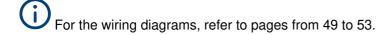


The emergency commands enjoy priority over those for ventilation / climate control (the manual commands are blocked).

The control unit comes with 2 batteries that are kept charged when the mains power supply is available and, when this is not available, they guarantee a 72 hour autonomy period in stand-by mode, making it possible to still execute a complete emergency opening command, as prescribed by EN 12101-10.

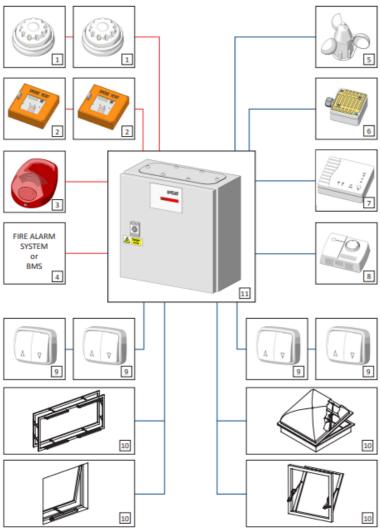
Accessories and equipment connected to the control unit must be chosen among those listed in the following table and diagram:

N.	Description	Item code	Maximum number	Wiring
1	Smoke optical sensor	36418Q	10 pcs	2 poles, sect. 0,5-1,5 sq.m m,Lmax 500m
2	Emergency push button panel	42140N	10 pc	7 poles, sect. 0,5-1,5 sq.m m,Lmax 500m
3	Acoustic signalling device	40892C	1 pcs	2 poles, sect. 0,5-1,5 sq.m m,Lmax 500m
4	Connection of BMS system or t hird-party fire protection syste m	_	_	2 poles, sect. 0,5-1,5 sq.m m,Lmax 500m
5	Wind sensor WS	37185V	1 pc	2 poles, sect. 0,5-1,5 sq.m m,Lmax 500m
6	Rain sensor RS	40450K	1 pc	4 poles, sect. 0,5-1,5 sq.m m,Lmax 500m
7	CO2 sensor	41773L	1 pc	2 poles, sect. 0,5-1,5 sq.m m,Lmax 500m
8	Thermostat TH	40675K	1 pc	3 poles, sect. 0,5-1,5 sq.m m,Lmax 500m
9	Natural ventilation push button s (2 separate areas)	41019H(or equivalent)	_	3 poles, sect. 0,5-1,5 sq.m m,Lmax 500m
10	Actuators 24 Vdc (2 separate motor lines)	See UCS product catalogue	Depending on actua tor absorption and c ontrol unit size	See par. 7.2 "Electricalcon nections"
11	C-SV smoke extraction control unit	See UCS product catalogue	_	_



WARNING

If the control unit is used with third-party motors and / or accessories, the verification of their compatibility with the control unit itself and the sizing of the system are the responsibility of the installer.



TECHNICAL FEATURES

- Class D control panel (control panel with detectors) according to prEN 12101 9:2008.
- Designed for use in class 1 environments, according to the classification contained in EN 12101-10 (clean, indoor environments, temperature –5°C to +40°C).
- Mains power supply (for secondary power supply): 100-250 Vac, 50 60Hz. Nominal power consumption:
 108W (C-SV 4A) 202W (C-SV 8A). Standby power consumption: less than 2W (C-SV 4A) less than 9W (C-SV 8A).
- Secondary power supply from lead batteries: 12V, 4,5 Ah, in series or lead batteries: 12V, 4 Ah, in series. Maximum interruption time when switching between the two power supply sources: 0,2 s.
- Maximum current required of the batteries, when the primary power supply is unavailable: 4,05 A or 8,05 A
 depending on the version.
- Motor outputs: 24 Vdc +/- 25%. 2 lines max 2A or 4A each for C-SV 4A and C-SV 8A respectively.
- Visual signals: n° 3 LEDs: GREEN, YELLOW, RED, on board, for diagnostics.

OUTPUTSL:

- N° 2 X 24 Vdc polarity inversion motor outputs, each with a maximum load of 2A or 4A for C-SV 4A and C-SV 8A respectively. 2 natural ventilation zones, 1 smoke extraction zone.
- N° 1 x 24 Vdc auxiliary output. This output is disconnected automatically if a blackout or an emergency occurs. In standby mode, you must subtract the power consumption of this output from the available power on the two motor outputs.
- N° 1 output with clean (NC/NO) switching contact, to display emergencies(EM. SIG.).
- N° 1 output with clean (NC/NO) switching contact, to display emergency closing (EM. CL. SIG.);
- N° 1 output with clean (NC/NO) switching contact, to display anomalies/faults (AUX. SIG.).

INPUTS:

- Input for smoke sensors (up to 10 sensors).
- Input for emergency push buttons (up to 10 push buttons).
- Input for emergency signal from any external alarm system.
- · Input for emergency closing command.
- AUX1 input driven by an external voltage (24 Vdc +/- 25%) for the activation of EMERGENCY INTERLOCK command (by default, the input is disabled).
- 2 inputs for manual control of the 2 natural ventilation zones.
- Thermostat input, 1 weather management zone.
- Inputs for wind, rain and CO2 sensors, 1 weather management zone.
- Input for disabling weather functions (thermostat, wind, rain, CO2).

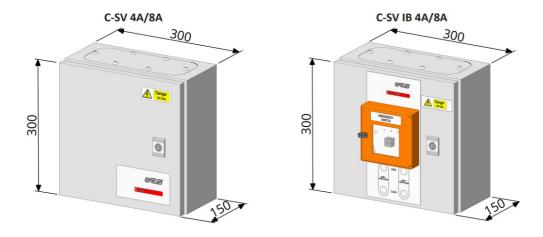
ITEMS INCLUDED:

- 2 lead batteries: 12 V, 4,5 Ah (*) or 2 lead batteries: 12 V, 4 Ah (*) (LxHxD: mm. 90 x 100 x 70 Code 40911V);
- Extractable input / output connectors for easy wiring.



(*) If the batteries are not supplied by UCS, follow the connection diagram on page 49. Charging time: for 100% discharged batteries, maximum 10 hours.

Dimensions



INSTALLATION

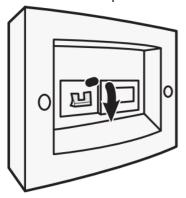


The control unit installation must be carried out only by competent and qualified staff.

Make sure that a differential switch (circuit breaker) has been installed upstream the line and that it functions properly.

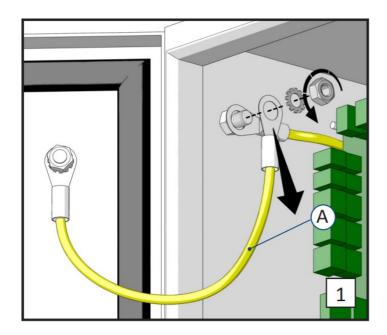
Before carrying out any intervention on the electrical system, disconnect the power supply by means of main switch.

The control panel is to be located in a safe place, protected from the effects of fire and smoke.

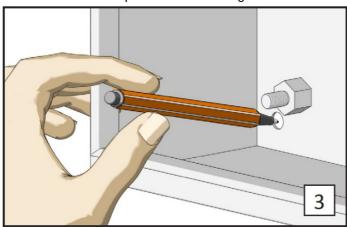


Control panel positioning

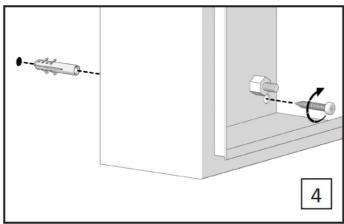
Remove earth cable "A" placed on the control unit door.



Mark on the wall the position of the fixing holes.



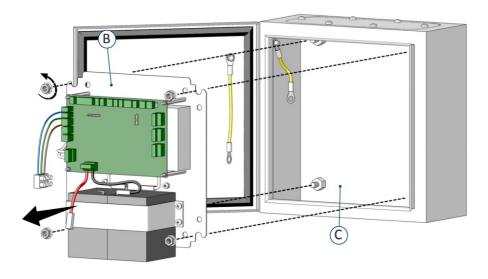
Drill the wall and fix the box.



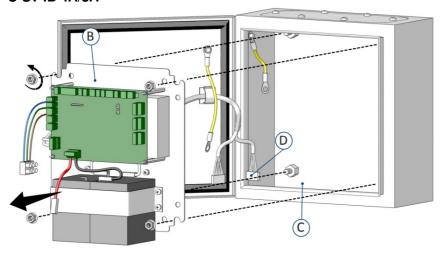


Choose adequately the fixing system according to the wall type to which the control unit is fixed.

C-SV 4A/8A



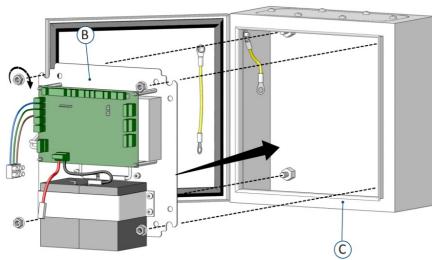
C-SV IB 4A/8A



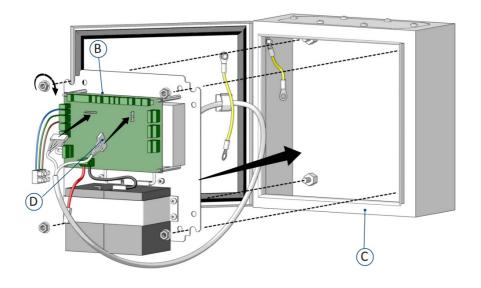
Remove plate " ${f B}$ " from box " ${f C}$ " to gain access to the fixing holes.

For C-SV IB 4A/8A version, disconnect connectors "D" of the push button panel and emergency push button panel.

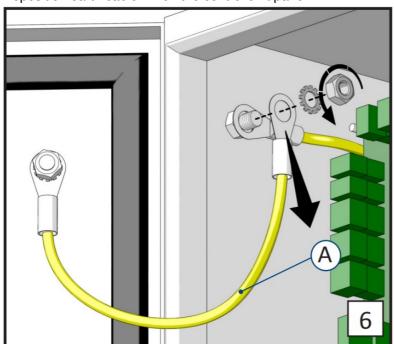
C-SV 4A/8A



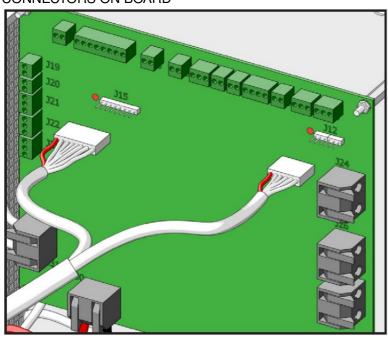
C-SV IB 4A/8A



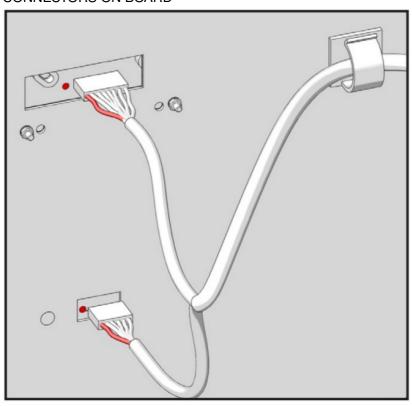
Reposition earth cable "A" on the control unit panel.



CONNECTORS ON BOARD



CONNECTORS ON BOARD



Electrical connections

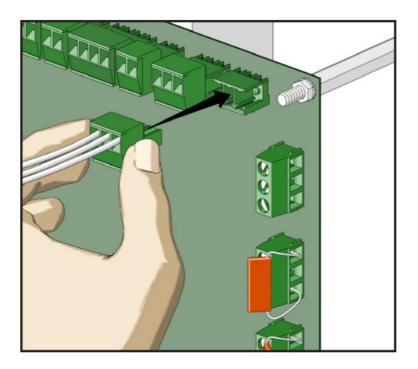
The control unit is supplied with the **(RED)** positive cable to the battery disconnected and isolated by means of tape, to avoid the battery discharging completely and being damaged before installation

Connect this cable to the corresponding free pole on the battery, ONLY ONCE ALL OTHER WIRING OPERATIONS HAVE BEEN COMPLETED

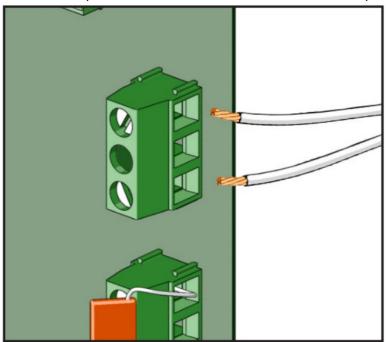
If the batteries are not supplied by UCS, follow the connection diagram on page 49.]

The control unit is fitted with quick coupling terminals, which allow quick, optimum connection of the plant's wires. The terminals are suitable for wires with a 0,5 to 1,5 sq.mm section (20 to 16 AWG).

See the "ELECTRICAL CONNECTIONS" wiring diagrams in this manual.



The motor outputs terminals can take wires with a 1,5 to 4 sq.mm section (16 to 11 AWG).





Sizing of the cables must be adequate for the plant's electrical characteristics (maximum current absorption, maximum admissible voltage drops, etc.).

The cable minimum cross section of each motor line can be calculated according to the following formula:

A = cross section of the line in mm²

L = line length in m (from control unit to last line actuator)

I = total current absorbed (A) by the motors installed on the line

ΔU = maximum permitted voltage drop in the

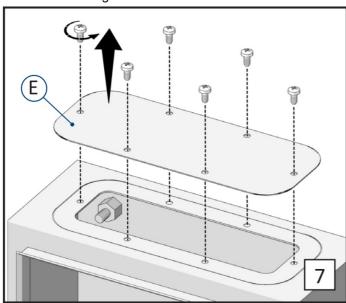
line = 2V

The control unit comes with some resistors / capacitors fitted on the connectors, to allow you to switch it on without any device connected, and without an alarm being activated on the control unit itself. When connecting the accessories (smoke sensors, push button panel, actuators), these resistors / capacitors must be moved as shown in the "ELECTRICAL CONNECTIONS" diagram:

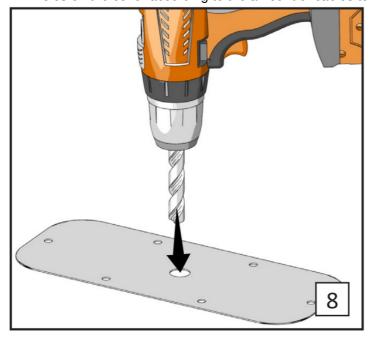
- the 10 k O hm resistors on the SMOKE and EMERGENCY BUTTON terminals must be moved as shown in diagram 8 on page 52.
- the 10 kOhm resistors on the EXT AL and EM CL terminals must be moved as shown in diagrams 6 and 7 on page 51;
- the 4,7 uF capacitors on the MOTOR 1 and MOTOR 2 outputs must be moved to the end of the lines, as shown in the diagram 3 on page 50, in order to havecontrol over any interruptions / short-circuits on the cables.

All the electrical connections, including the main power supply, must reach the control unit through the dedicated cover. For that purpose, proceed as follows:

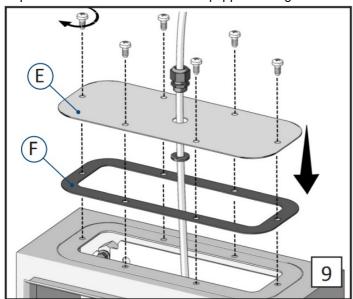
Remove the fixing holes from cover "E



Drill holes on the cover according to the amount of cables to be connected.



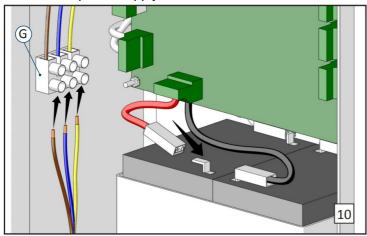
Reposition cover "E" on the box equipped with gasket "F"





Each cable must be inserted into the control unit through a dedicated cable gland (not included).

Connect the power supply cable to terminal "G". Connect the red cable to the battery.



WARRANTY

The Ultra flex Control Systems S .r. l. Company guarantees that its products are made in a workmanlike manner and are free of factory and material defects. This guarantee is valid for a period of two years, from the date of manufacture of the product, and is limited to replacement or repair free of charge of the item that, within such period, is returned, delivery paid, and found by us to be defective in terms of its materials and/or manufacture. The guarantee excludes any and all other direct or indirect damages. The guarantee and any responsibility on our part (excepting that of replacing or repairing defective items, according to the terms and conditions above) expressly excludes malfunctioning of our products if their lack of or defective functioning is attributable to incorrect installation or negligent or improper use.

For more details please refer to the General Warranty Conditions on our site.



Documents / Resources



<u>UCS C-SV 4A Smoke Extraction and Weather Control Unit</u> [pdf] User Manual C-SV 4A, C-SV 4A Smoke Extraction and Weather Control Unit, Smoke Extraction and Weather Control Unit, Weather Control Unit, Control Unit

Manuals+,