

Weldability[®]

Operating instructions

Control S7-1200

for unit “Protecto EcoCube”

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1 Safety indications

Our engineers ensure that our filter systems reflect the state of the art through continuous development. Nevertheless, misuse or misconduct can endanger your safety.

Please observe the following for a successful use of the filter system:



- Please read these instructions before operating the system, and observe the safety precautions to avoid injury!
- Improper use of the equipment can cause serious injury or death!
- Store this manual in a safe place!
- Do not place the device in rooms with easily ignited or explosive medium or potentially explosive areas!
- Do not place the device in rooms with aggressive media!
- Protect the casing and the power cords from heat, moisture, oil and sharp edges!
- Ensure the casing cannot fall down!
- Pay attention to the admissible supply voltages!
- Only use original spare parts!
- When cleaning and servicing the device or the replacement of parts, the control unit must be disconnected from the power supply!
- **Do not use the control device if one or more parts of the device are not defective, missing, or damaged. In each of these cases, please call our service department on Tel: +44 (0) 845 862 2620.**

2 Overview of the HMI-Display







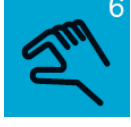









Fig.1: HMI-Display

The current status of the filter unit is visualized by the HMI-display of the control:

- Enabled: Your system is ready!
- System operation: Your system generates clean air!
- System message: Information warning
- System message: Information malfunction

3 Description of the function keys

Taste	Symbol	Beschreibung
F0		<u>Filter unit On / Off</u> Switch the unit on/off.
F1		<u>Previous menu item</u> Change to the previous menu item.
F2		<u>Reduce parameter</u> Reduction of the selected parameter.
F3		<u>Top menu</u> Change to the top menu of the control unit.
F4		<u>Increase parameter</u> Increase of the selected parameter.
F5		<u>Next menu item</u> Change to the next menu item.
F6		<u>Cleaning by hand</u> A single cleaning of all filter cartridges is triggered. This can be implemented in all cleaning modes (F7, F8, F9).
F7		<u>Cleaning mode "Automatic"</u> The cleaning of the filter cartridges starts automatically in relation to the cartridge resistance (Delta-p).
F8		<u>Cleaning mode "by hand"</u> The cleaning of the filter cartridges can only be triggered by hand.
F9		<u>Cleaning mode "Manual"</u> The cleaning of the filter cartridges always happens in a defined time interval. This interval starts as soon as an adjusted parameter for cartridge resistance as been reached.
Acknowledge		<u>Acknowledge</u> Acknowledgement of a pending system message.

Delete		<p><u>Password Delete</u> Pressing the button activates the entry field for the password protected section.</p>
Enter	 	<p><u>Enter Password</u> First of all the DEL button once has to be pressed, for activating the password intake. Then enter the password by using the function keys F1-F10. The entry must be confirmed with ENTER.</p>

4 Description of the menu items

Corresponding to the fitting of the device, the settings of the steering are preset. False settings can contradict the fitting of the device or disturb its function. Therefore, several settings are protected against accidental changes. They can only be displayed and changed after having entered a "user password". You can change only a few settings by yourself, especially functions in the main menu.

Menu	Menu name	Description
Main menu: no password needed		
1	<u>Top menu</u> Cartridge resistance (Delta-p) & Cleaning mode	<u>Delta-p</u> Display of the cartridge resistance value [mbar]. <u>Cleaning mode</u> „Automatic“: The cleaning of the filter cartridges starts automatically in relation to the cartridge resistance (Delta-p). „by hand“: The cleaning of the filter cartridges can only be triggered by hand. „Manual“: The cleaning of the filter cartridges starts automatically in relation to the cartridge resistance (Delta-p), with a succeeding cleaning break.
2	System message	Detailed display of the system messages. !: Message occurred
3	Language	Selection of the menu language [DE / EN].
4	Operating hours	Display of the operating hours [h].
5	Software & Parameter	<u>Software</u> Display of the used software version. <u>Password</u> Enter password to get to the secured part of the control.

Parameter menu: user-Password (24364) with priority "low"		
P1	Cleaning start	Setting range: 2 – 30 mbars Pressure value that triggers of a cleaning.
P2	Cleaning stop	Setting range: 1 – 30 mbars Pressure value that ends a cleaning.
P3	Cleaning alarm	Setting range: 5 – 40 mbars Pressure value that starts a cleaning alarm.
P4	Cleaning valve break	Setting range: 5 – 180 sec Rest time between the dedusting of the individual cartridges.
P5	Cleaning offline	Setting range: 0 – 20x The value corresponds to the number of cleaning cycles with the fan switched off.
P6	Cleaning break	Setting range: 5 – 240 min. Resttime at the cleaning mode "Pressure + time", between the individual cleaning cycles.

5 Software functions

5.1 Filter unit ON

HMI-Display: Key F0

If the filter unit is in operational status pressing the button starts the operation of the unit.

5.2 Filter unit OFF

HMI-Display: Key F0

If the filter unit is in operation pressing the button stops the operation of the unit.

5.3 External Start / Stop of the fan

clamp X4:2 & X4:3 (24VDC)

The interface allows for external activation/deactivation of the filter unit.

The external single throw must be implemented as a normally open contact (NO).

5.4 External message System in operation

clamp X1:1 & X1:2 (Potential-free)

The potential-free contact (NO) is activated as soon as the operation of the unit starts.

6 Cleaning of the filter cartridges

Regarding the cleaning mode you can select between a manual and a pressure-dependent cleaning. In this regard, please note that a cleaning cycle is stopped when:

- the cleaning mode is changed during a cleaning!
- the unit is switched on/off during a cleaning!

6.1 Cleaning by hand

HMI-Display: Key F6

The manual cleaning is started by pressing the button. All filter cartridges are cleaned once.

6.2 Cleaning mode „Automatic“

HMI-Display: Key F7

The online cleaning is started during the operation of the unit as soon as the pressure for the start of the cleaning is reached. Now cleaning cycles are carried out till the measured pressure corresponds to a cleaned condition. A manual cleaning of the filter cartridges remains possible.

6.3 Cleaning mode „by hand“

HMI-Display: Key F8

The cleaning is inactive and is only started in case of cleaning by hand.

6.4 Cleaning mode „Manual“

HMI-Display: Key F9

The online cleaning is started during the operation of the unit as soon as the pressure for the start of the cleaning is reached. Now a cleaning of all filter cartridges is regularly carried out in a certain interval (cleaning break). A manual cleaning of the filter cartridges remains possible.

6.5 Cleaning Offline

The offline cleaning is active as soon as the fan is switched off. However, the unit must remain connected to the main power supply. The cleaning is carried out if the pressure of the beginning of the cleaning is reached at least once in operational mode. The cleaning is stopped when the fan is switched on again.

7 System messages: Warning / Malfunction

The system messages of the control have to be viewed in two different ways:

- **Message: Warning**

The operation of the unit is still possible!

- **Message: Malfunction**

The operation of the unit is hereby stopped!

No.	Message	Possible causes
1	Motor fault	<p>The message is generated as soon as the frequency inverter causes an error message. Possible causes:</p> <ul style="list-style-type: none"> - insufficient voltage supply / phase failure - initiation of PTC / exceeding the maximum admissible temperature - exceeding the maximum admissible current consumption
2	Particle sensor (Option)	<p>The message is generated as soon as the particle sensor captures an inadmissible high concentration of particles. The control must be disconnected from the power supply so that the particle sensor is reset. Possible causes:</p> <ul style="list-style-type: none"> - damage of the filter cartridges / filter break - detection of a fire
3	Filteralarm	<p>A warning message is generated if the filter resistance exceeds the value of the preset "cleaning alarm". After that it is necessary to clean or replace the filter cartridges.</p>

8 EC Declaration of conformity

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Designation of the device: "control unit S7-1200"

We declare under our sole responsibility that the following guidelines have been applied for the above mentioned product:

Electromagnetic Compatibility: 2014/30/EC

Low Voltage Directive: 2014/35/EU

This declaration will become void if the device is exposed to modifications that are not approved by the manufacturer in written form.

Authorised representative for technical documentation: Weldability sif



(Adrian Hawkins, managing director)