1. ENTER DATAS IN SET MODE

1. Press key C to have access to the function menu F01÷F13.
2. Press key C again to select the wished function.
3. Press key A to modify data.
4. Press key A and C to change the data item.
5. Press key B to go back to the function menu F01÷F13.
6. Press key B to quit set up and go back to the operating mode.

FUNCTIONS MENU

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>F01</td>
<td>External inputs enable 0 = Include, 1 = Exclude</td>
</tr>
<tr>
<td>F02</td>
<td>Pulse time 0.05 ÷ 5.00 sec</td>
</tr>
<tr>
<td>F03</td>
<td>Interval time between ev. 1 ÷ 999 sec (see B3x)</td>
</tr>
<tr>
<td>F04</td>
<td>Set number of outputs 0 ÷ 48</td>
</tr>
<tr>
<td>F05</td>
<td>Cycles after ventil. stop 0 ÷ 99</td>
</tr>
<tr>
<td>F06</td>
<td>Manual activation C=selection / A=output activation</td>
</tr>
<tr>
<td>F07</td>
<td>dP Control 0 = excluded, 1 = included</td>
</tr>
<tr>
<td>F08</td>
<td>Output voltage 24V, 115V, 230V (See HV)</td>
</tr>
<tr>
<td>F09</td>
<td>Zero dP adjustment 0.00 (see C8)</td>
</tr>
<tr>
<td>F10</td>
<td>dP threshold STOP cycle 0.01÷20.00 inW.C.</td>
</tr>
<tr>
<td>F11</td>
<td>dP threshold START cycle 0.01÷20.00 inW.C.</td>
</tr>
<tr>
<td>F12</td>
<td>dP thres. max. dP alarm 0.01÷20.00 inW.C.</td>
</tr>
<tr>
<td>F13</td>
<td>Fan mode selection 0 = by contact, 1 = by dP reading</td>
</tr>
</tbody>
</table>

Key A = Access to the sel. function
Key B = Exit from Set Up
Key C = Select function

NOTE 1: The device will automatically switch from Set Mode to Run Mode if no key is pressed for 5 minutes.

2. OPERATION

When the power is supplied the cleaning cycle starts if all the necessary conditions for running are present.

DISPLAY DESCRIPTION

OFF Cycle stops for cleaning consent missing (D6 open)
-0- Cycle stops for ventilator OFF (D1a Open, dP reading < 0.20 kPa. See D1ab1)
1,00/P Cycle stops for low dP (Display blink)
A01 Number of activated electrovalve
... Cycles after ventilator stop active (Blinking points)
1,23 Differential pressure reading (inW.C.)
E dP reading over 20.00 inW.C.

Key B = Alarm reset
Key C = Enter in Set Up
3. ALARMS DESCRIPTION

**DISPLAY** | **DESCRIPTION**
--- | ---
1.50/H | Maximum dP alarm (display blinking). Filter congested. Check the solenoid valves activation and cleaning frequency.
E1/05 | Overload output 05 (Example, Display blinking). Check the ev. connection; state of the coil of the ev. indicated on display and possible presence of water inside the electric connector of the ev.

4. INSTALLATION RULES

- Protect the device against the direct exposure to the sun.
- Avoid arranging the device in the proximity of or in direct contact with any source of heat and electromagnetic field. Connect the device on supply lines different from those used for motor drives or other devices that may cause some noise on the net.
- Fix the device on the wall at minimum 60 cm from the floor.
- For all input control signals to the Timer (D1a, D5, D6,...) use anti-flame wires with a minimum section of 0.5 mm².
- Before acting on the device for any operation, check for safe conditions. For electrical operations never forget to disconnect the power supply, wait for 30 seconds for the internal capacitors discharge before opening. At the end of the operations close the device to restore the protection degree before powering again.
- For the electrical connection of the supply voltage and filter cleaning electrovalves use anti-flame wires with a minimum section of 0.75 mm². For output relay contacts use anti-flame wires with a minimum section of 1.5 mm².
- For the output signal 4÷20 mA use anti-flame shielded wire with minimum section of 0.5 mm².

**ATTENTION:** with output voltage 230VAC use connectors with RC filter or insert it on every supply line of any ev. If filters are not used, an operating malfunction could happen.

5. TECHNICAL FEATURES

| Feature | Specification |
--- | --- |
Supply Voltage | 115 VAC ± 10 % - 50/60 Hz |
Output voltage: | 115 VAC ± 10 % - 50/60 Hz |
Fuse | 250 V / 1 A F (5x20) |
Power requirement: | 10 VA + Solenoid valve power when activated |
Operating temperature | -10 °C ÷ + 50 °C |
No. Outputs | 28 |
dP Control | With internal trasducer |
Dimensions: / Protection degree | 180x254x111 mm. / IP66 |
Terminals | 2,5 mm² 250 VAC / 12 A |

A wrong supply voltage connection might cause irreparable damages to the device.

The fuse wire protect only from any short circuit and not necessarily from wrong supply voltage.
6. STANDARD FEATURES

B1b - SELECT NUMBER OF OUTPUTS
The selection of the number of outputs to be control led is connected by keyboard in SET MODE. If you set 0 or AUTO in this function the sequencer will automatically select the connected boards by skipping the non-connected ones. Minimum load 5W + 12W depending on the output voltage. If the load is below 5W, autoselection does not work, set the number of outputs in set up.

B2x - ACTIVATION TIME FROM 0.05 TO 5.00 SEC.
B3x - INTERVAL TIME FROM 1 TO 999 SEC.
If the pulse time is lower than 1 sec. it is possible to set any interval time value in the range indicated.
If the activation time is higher than 1 sec. the minimum settable interval time is: Minimum interval time = 5 times pulse time (B2x)

B8a - SHORT-CIRCUIT PROTECTION OF EVERY SINGLE OUTPUT
In case of short circuit, the output is automatically skipped, the relay K1, normally active, is deactivated and the terminal board contact opens.

B10 - MANUAL ACTIVATION OF EVERY SINGLE OUTPUT FROM KEYBOARD
By keyboard, it is possible to activate manually and individually every single output for an operation test.
Press key C to select the desired output to be activated. Press key A to activate the output.
The output is held active for all the time that key A is pressed. It allows to measure the output voltage by using a tester.
In case of anomalous operating, do this test with electrovalves disconnected.

C0 - INPUT ACTIVATION FROM EXTERNAL CONTACTS
In Set up you can activate or deactivate the control of all the inputs of the device.
If inputs are deactivated, they are considered as always closed and no jumper is required on the terminal board.
Use a jumper for unused inputs if you activate them.

C1d - DIFFERENTIAL PRESSURE DIGITAL CONTROL
If dP control is active (Set F07 = 1), the cleaning cycle starts and stops according to the dP reading.
With dP reading under the STOP threshold the cleaning cycle stops and the display shows dP reading and letter P alternatively. The cleaning cycle stops is at the end of the cycle.
With dP reading over the START threshold the cleaning cycle is able to start.

C13_ - ADDITIONAL CYCLES AFTER FAN STOP WITH FAN MODE SELECTION.
In set up code it is possible to adjust the zero reading of differential pressure. In this function the display shows the dP reading and, with plant stops or air pipes not connected if the dP reading is not 0.00 in/W.C. it is possible to adjust it by key A and C.

C7d1 - MAXIMUM DP ALARM. CONTACT OPEN WITH ALARM. AUTOMATIC RESET.
If the dP readout is above the threshold in Set up, the maximum dP alarm is activated. The display shows the alarm condition code E7 (see the alarm description) or the dP readout and letter H alternatively, according to the model.
The corresponding alarm relay will signal its condition. The alarm is automatically reset when the dP readout is below the alarm threshold again.
The activation of this alarm is delayed by 20 seconds by default.

G1 - MAXIMUM LOAD POWER 25W PER OUTPUT
Use the jumpers on the board to select the supply voltage and the output voltage on the electrovalves. (See the board layout).
HP: Supply voltage selection between 115VAC and 230VAC.
JP2: Output voltage selection between 24, 115, 230 V (Only with 115VAC or 230VAC power supply).
WP: Output voltage selection between AC and DC only with JP2 set to 24V.
WARNING: set F08 to the same output voltage that has been selected by means of the jumpers to adjust the shortcircuit threshold. Otherwise, this might cause any malfunction or damage to the sequencer.

C7d - ADDITIONAL CYCLES AFTER FAN STOP WITH FAN MODE SELECTION.
In set up it is possible to select the mode intended to manage the fan and the post-cleaning cycles:

SET = 0 (not available with option C11a)
If you connect a voltage-free auxiliary contact of the circuit intended to drive the fan with the sequencer, it is possible to add a pre-set number of cleaning cycles after the fan stop. Their number can be set from the keyboard from 0 to 99.
Post-cleaning cycles can be also activated when dP = 0.
If the D1a contact is open, the display will show '0-' and signal that the cycle is not working because the fan is off.
The decimal points on the display will flash on and off during the cycles after the fan stop:
NOTE D1a: Connect D1a by means of a jump if it is not used with active inputs (see F01).

SET = 1
If the dP control is activated, you can add a pre-set number of cleaning cycles after the fan stop. Their number can be set from the keyboard from 0 to 99. The timer compare the dP readout with a 01.0 in/W.C. a fixed threshold.
When dP readout goes down under 01.0 in/W.C. the additional cleaning cycles start if the dP readout should reach the cycle STOP threshold value during the normal operation.
The decimal points on the display will flash on and off during the additional cycles.

D6 - ON/OFF CLEANING CYCLE FROM EXTERNAL CONTACT.
If contact D6 is open, the cleaning cycle is not enabled and the display shows 'OFF'.
With sequencer with digital dP control the display shows 'OFF' and the dP reading alternatively.
By closing D6, the cleaning cycle can start from the first electrovalve
NOTE D6: Link D6 clamp if it is not used with inputs from external contact active. (see F01).

D1abIn - ADDITIONAL CYCLES AFTER FAN STOP WITH FAN MODE SELECTION.
In Set up can be possible to add a pre-set number of cleaning cycles after the fan stop. Their number can be set from the keyboard from 0 to 99. The timer compare the dP readout with a 01.0 in/W.C. a fixed threshold.
When dP readout goes down under 01.0 in/W.C. the additional cleaning cycles start if the dP readout should reach the cycle STOP threshold value during the normal operation.
The decimal points on the display will flash on and off during the additional cycles.

JP1: Supply voltage selection between 115VAC and 230VAC.
JP2: Output voltage selection between 24, 115, 230 V (Only with 115VAC or 230VAC power supply).
JP3: Output voltage selection between AC and DC only with JP2 set to 24V.
WARNING: set F08 to the same output voltage that has been selected by means of the jumpers to adjust the shortcircuit threshold. Otherwise, this might cause any malfunction or damage to the sequencer.

Page 3
7. WIRING DIAGRAM

POWER SWITCH (option)

Fuse See technical features

Kx 6A/250VAC

Clamps 12A 250V 2.5mm²

SUPPLY VOLTAGE
1 Phase 2 Neutral 3 Earth
See technical features

CUMULATIVE ALARM RELAY

OUTPUT SIGNAL 4-20 mA dp READING / 0-4PS (See C13_x)
supply from sequential 12 VDC Max 450 ohm
Connect to other devices with passive input and preferably
insulated

ON/OFF CLEANING CYCLE FROM
EXTERNAL CONTACT
(contact closed = cycle enabled)

NOTE: Link clamps if not used with inputs from
external contact enabled (K01=0)

OUTPUT VOLTAGE FOR ELECTRO-VALVES
See technical features

R = 100-200 G
C = 100±100V

ATTENTION: with output voltage 230VAC use connectors with RC
filter inside or insert RC filter on every supply line of any
electrovalves.
If filters are not used, an operating malfunction could happen.
Material: PS thermoplastic/RAL 7035
Temperature: -10°C-70°C
Protection degree (EN60529): IP66
Impact resistance (EN50014): >7 Nm
## 10. PROBLEMS SOLUTION

<table>
<thead>
<tr>
<th>DEFECT</th>
<th>POSSIBLE CAUSE</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display OFF</td>
<td>Fuse burnt.</td>
<td>Check the protection fuse on supply line.</td>
</tr>
<tr>
<td></td>
<td>Supply voltage.</td>
<td>Check if supply voltage is present and if it agrees with supply voltage</td>
</tr>
<tr>
<td></td>
<td>Jumper for input voltage selection</td>
<td>needed by the device (clamps 1 and 2). Check jumper JP1.</td>
</tr>
<tr>
<td>No output activation</td>
<td>Output voltage.</td>
<td>Check that sequencer output voltage and electrovalve coils have the</td>
</tr>
<tr>
<td></td>
<td>Connection to the electrovalves.</td>
<td>same voltage.</td>
</tr>
<tr>
<td></td>
<td>Jumper for output voltage selection</td>
<td>Check the connection between sequencer and electrovalves and do manual</td>
</tr>
<tr>
<td></td>
<td></td>
<td>test of the outputs (See B10). Check jumper JP2 and JP3.</td>
</tr>
<tr>
<td>Wrong differential pressure</td>
<td>Pneumatic connection not free.</td>
<td>Disconnect the 2 pipe to the Timer and verify that dP reading is 0.00</td>
</tr>
<tr>
<td>reading.</td>
<td>Pipe damaged</td>
<td>inW.C.. If it is OK check the pipe for air connection from the device to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the filter.</td>
</tr>
<tr>
<td>The cleaning cycle do not run</td>
<td>The memory of the microprocessor could be modified by external</td>
<td>Remove the supply voltage from the Timer. At the same time press key B</td>
</tr>
<tr>
<td>in according to the set value.</td>
<td>factor.</td>
<td>and switch on the supply voltage. By means of this operation the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>default data are loaded in set up. Adjust the zero dP reading and the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>other parameters according to the filter’s needs.</td>
</tr>
</tbody>
</table>


### 11. WARRANTY

The warranty lasts 2 years. The company will replace any defective electronic component, exclusively at our laboratory, unless otherwise agreed, upon the Company’s prior consent.

**WARRANTY EXCLUSION**

The warranty is not valid in case of:

1) Tampering or unauthorized repairs.
2) Wrong use of the device, not in compliance with technical data.
3) Wrong electrical wiring.
4) Inobservance of the installation rules.
5) Use of the device, not in compliance with CE rules.
6) Atmospheric events (Lightning, electrostatic discharge), Overvoltage.