

BB SEQUENCER FOR DEDUSTING PLANTS

PLEASE READ THE WHOLE USER MANUAL CAREFULLY BEFORE INSTALLING THE EQUIPMENT

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

F01 External inputs enable
F02 Pulse time
F03 Interval time between ev.
F04 Set number of outputs
F05 Cycles after ventil. stop
F06 Manual activation
F07 dP Control
F08 Output voltage
F09 Zero dP adjustment
F10 dP threshold STOP cycle
F11 dP threshold START cycle
F12 dP thres. max. dP alarm
F13 Fan mode selection

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

FUNCTION VALUE

0 = Include, 1 = Exclude
0.05 ÷ 5.00 sec
1 ÷ 999 sec (see B3x)
0 ÷ 48
0 ÷ 99
C=selection / A=output activation
0 = excluded, 1 = included
24V, 115V, 230V (See HV)
0.00 (see C8)
0.01 ÷ 20.00 inW.C.
0.01 ÷ 20.00 inW.C.
0.01 ÷ 20.00 inW.C.
0 = by contact, 1 = by dP reading

Key A = Data decrement in Set
Key B = Return to fuction menù
Key C = Data increment in Set



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

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 ÷ + 50 °C
No. Outputs	28
dP Control	With internal trasducer
Dimensions: / Protection degree	180x254x111 mm. / IP66
Terminals	2,5 mm ² 250 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 loads by skipping the non connected ones. Minimum load 5W ÷ 12 W depending on the output voltage. If the load is below 5 W, 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.

The display alternatively shows code E1 and the number of the faulty output.

Press key B to reset the alarm.

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 holded 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 stop is at the end of the cycle.

With dP reading over the START threshold the cleaning cycle is able to start.

C3 - DIFFERENTIAL PRESSURE READOUT FROM INTERNAL TRANSDUCER (MAX 20.00 inW.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.

C8 - DP ZERO READOUT REGULATION

In this 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 inW.C. it is possible to adjust it by key A and C.

C13_20 - DP FULL RANGE 20.00 inW.C.

Maximum differential pressure value measurable by the device 20.00 inW.C. = 100.0 mbar = 1012 mmH2O.

With dP reading over 20.00 inW.c. the display shows 'E' instead of the numeric value of dP.

D1ab1in - 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 inW.C. a fixed threshold.

When dP readout goes down under 01.0 inW.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 clamps if it is not used with inputs from external contact active. (see F01).

DPa - 6X4 RILSAN AIR CONNECTIONS

G1 - MAXIMUM LOAD POWER 25W PER OUTPUT

HV - INPUT / OUTPUT VOLTAGE SELECTION.

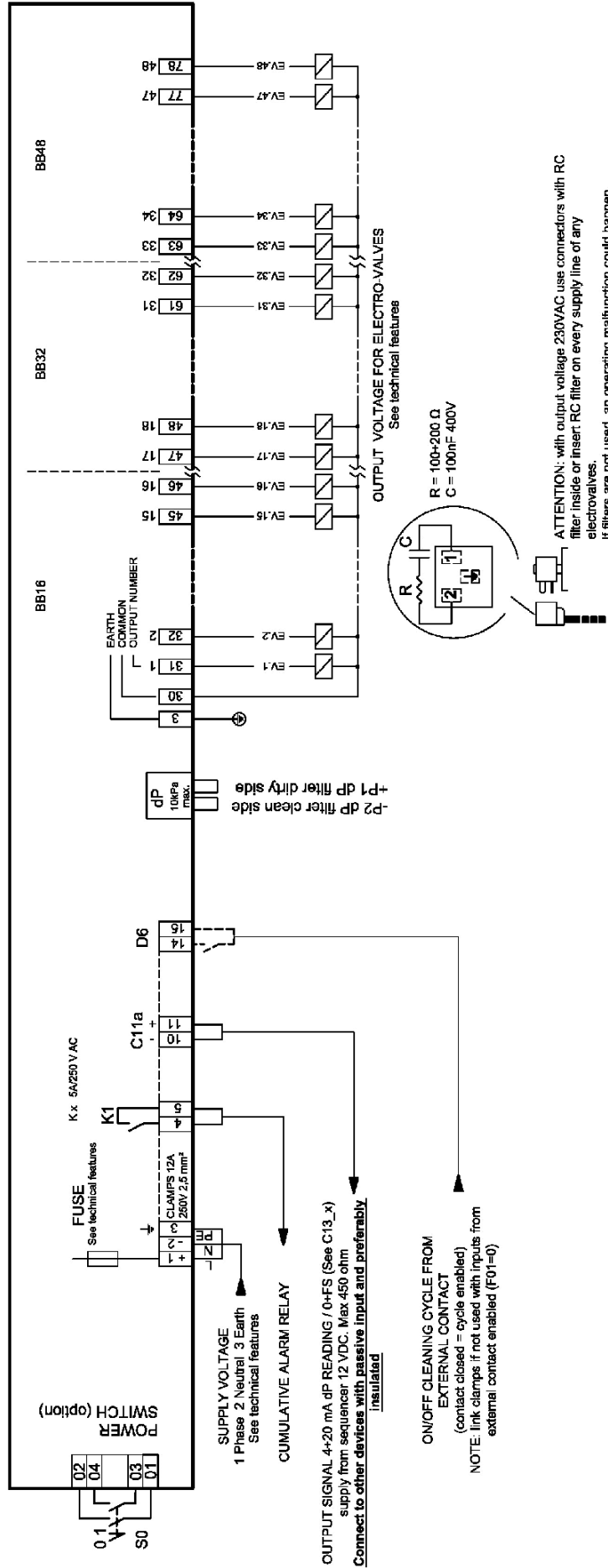
Use the jumpers on the board to select the supply voltage and the output voltage on the electrovalves. (See the board layout).

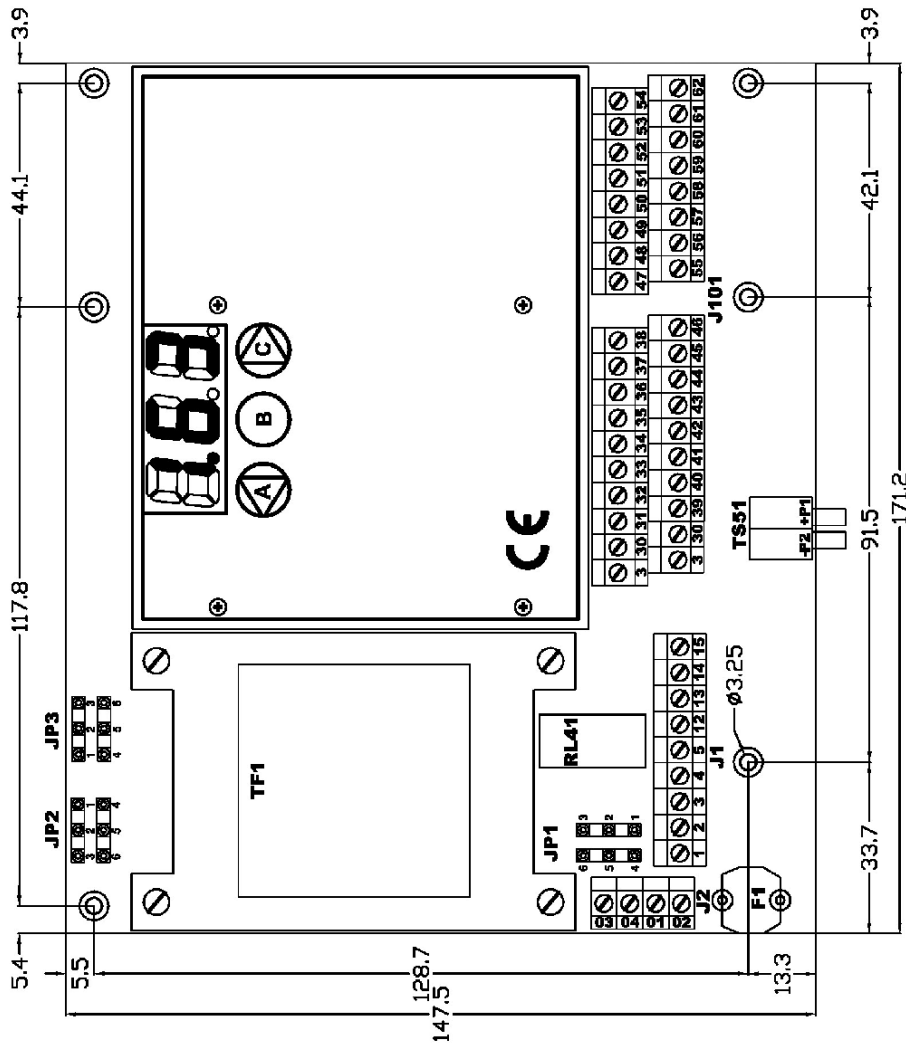
JP1: Supply voltage selection between 115VAC and 230VAC.

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.

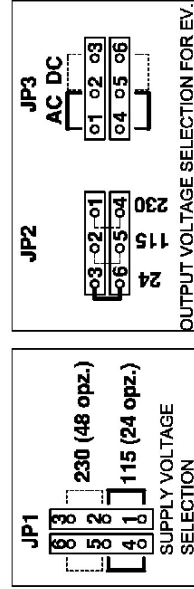




LEGEND

- F1** Protection fuse 5x20
- J1** Supply voltage and I/O connection clamps
- J2** Power switch connection clamps (opt.)
- J101** Ev. connection clamps.
- JP1** Supply voltage selection Jumper
- JP2** Output voltage selection Jumper
- JP3** AC/DC output voltage selection Jumper
- RL41** Output relay K1
- TS51** Differential pressure transducer
- +P1** Higher pressure dP pipe connection
- P2** Lower pressure dP pipe connection
- TF1** Input transformer

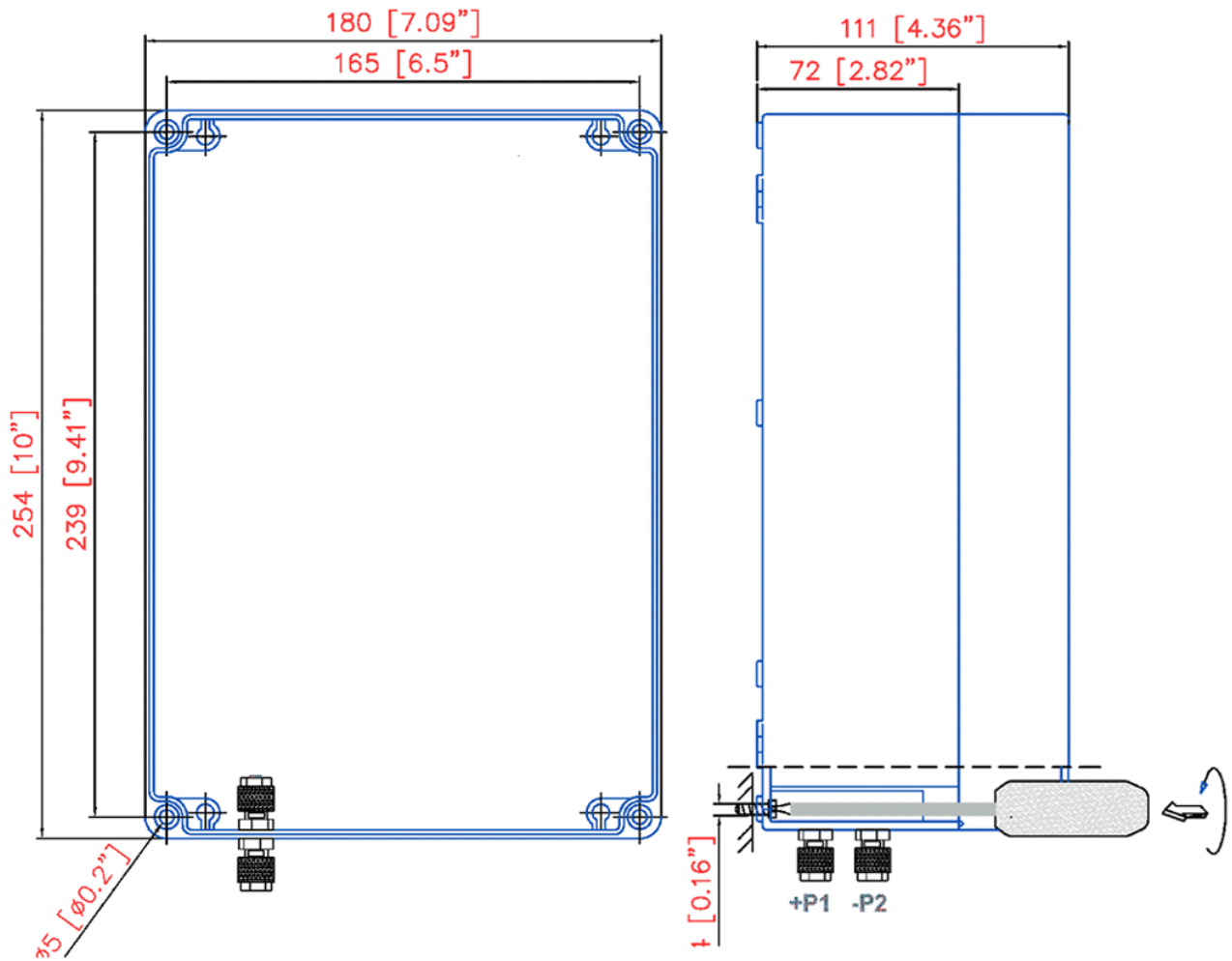
SELECTION VOLTAGES DETAILS



SELECTION VOLTAGE JUMPER
Positions as voltages indicated in:
5. TECHNICAL FEATURES

NOTE: DC OUTPUT VOLTAGE IS AVAILABLE ONLY FOR 24V

DIMENSIONS IN mm.



Material: PS thermoplastic/RAL 7035
 Temperature: -10°C=70°C

Protection degree (EN60529): IP66
 Impact resistance (EN50014): >7 Nm

10. PROBLEMS SOLUTION

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



Questo prodotto è conforme alle seguenti direttive:
Direttiva 2004/108/EC 'compatibilità elettromagnetica' rispondenti alle norme Europee armonizzate EN61000-6-2:2005 classe B della norma EN61000-6-4:2001.
Direttiva Bassa Tensione (DBT) 2006/95/CE rispondente alle norme Europee armonizzate EN60947-1:2004.
This product is in compliance with the following directives:
Directive 2004/108/CE 'electromagnetic compatibility' related to the European Standard EN61000-6-2:2005 class B of the rule EN61000-6-4:2001. Low Voltage
Directive 2006/95/CE related to the European Standard EN60947-1:2004.

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.