

RCP Enclosure with Integrated E4T Sequencer



Use and Maintenance Instructions

Description	2
Functioning	2
Features	2
Dimensions	3
Installation	3
Warnings	3
Acoustic Emissions	4
Maintenance	4
Electric Connections	4
Control Board Connection Layout	5
Adjustment of Cycles and Times	6
Disassembly of the Pilot Enclosures	8

Description

Enclosure for the remote pneumatic activation of pulse valves for dust collector plants, via electro-pilots with direct solenoid activation.

The pilots protected inside the enclosure are isolated from the environment, away from dust, humidity, weather, accidental blows.

Up to 8 pilot units (minimum 1) can be housed in each enclosure.

Functioning

The pulse valves are activated by an electro-magnet that is normally mounted in the top part of the same on the lid.

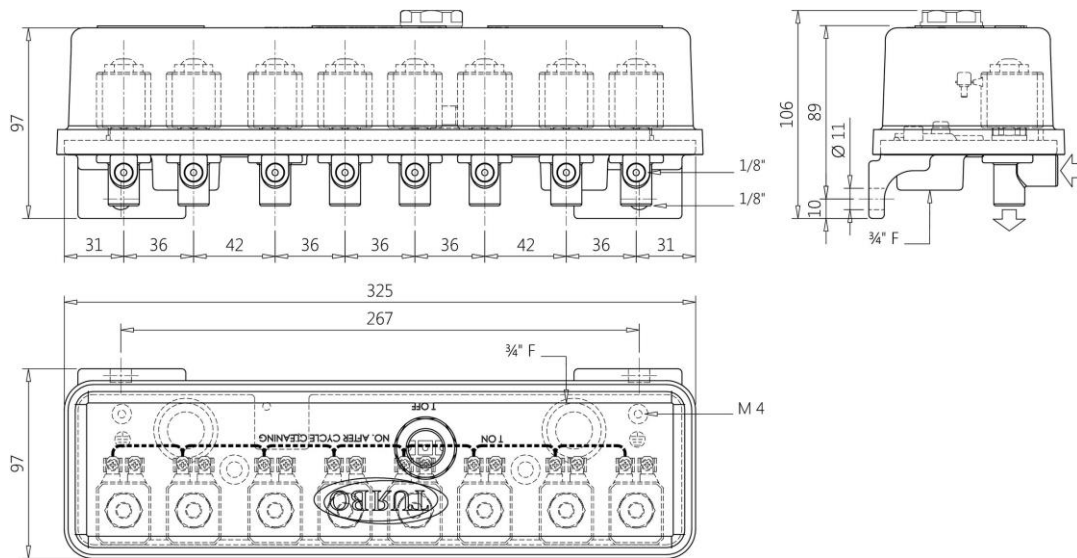
The pilot enclosure allows remote control valve activation; the series of RCP pilots is managed by the E4T sequencer. The electric signals coming from the E4T sequencer command the coils activating the pneumatic pilot.

Each pilot is connected with polyamide, galvanised steel or stainless steel pipe to the upper chamber of the tank valve and, activates the pneumatic valve at every impulse.

Features

Enclosure Support Base	Die-cast Aluminium
Enclosure Lid	Die-cast Aluminium
Pilot Core	Stainless Steel
Screws	Stainless Steel
Protection rating from water and dust (EN60529).	IP66 (EN60529)
Operating Pressure	0.5 Bar to 7.5 Bar Maximum
Operating Temperature	- 20 °C + 80 °C
Environmental Humidity	0 ÷ 95% Relative Non Condensing
Power Supply Voltage	24 Vdc 100 Vac 50-60 Hz 240 Vac 50-60 Hz
Electric Consumption	25 Watts At Maximum Load
Coil Insulation	Class H
Maximum Piloting Distance	≤ 3 Metres
Total Weight with 8 Pilots	3.2 Kg
Environmental Humidity	0 ÷ 95% Relative Non Condensing

Dimensions



Installation

De-pressure the piping before installation. Make sure there is no electric voltage present.

The appliance can be mounted in any position.

The direction of flow and the connections of the piping are indicated on the base of the appliance.

Piping connections must be compliant with that indicated on the plate data; they must not be under-dimensioned.

Warnings

Reducing the dimensions with the use of adapters, can cause malfunctioning.

In order to protect the appliance, it is recommended to install a separate air filter, which removes the solid bodies exceeding 15 micron and over 90% of the water. It must be installed as near as possible to the appliance and upstream from any other air handling unit.

When tightening the fittings, if tapes, sealants, adhesives are used, do not allow residues of the substance to circulate in the system.

Use tools that are suitably dimensioned and correctly positioned on the connection fittings and joints.

The piping connections must not be tightened excessively.

During fixing operations, do not twist the valve or solenoid.

The solenoid can overheat also in normal conditions of use. Do not touch it and pay attention to accidental contact.

Remove the voltage before starting to operate.

All electric terminals must be tightened to norm before commissioning.

Depending on their voltage, the electric components must be earthed and be in compliance with local regulations.

The appliance must have the following electric connections: DIN-46244 compliant cable glands. If accurately mounted, they are a protection for the cables with rating equal to IP66.

Acoustic Emissions

In full operating conditions, the solenoid valves emit sounds that depend on the type of application, the fluid and the appliance used.

Maintenance

Periodic cleaning of the parts increases their operational duration and efficiency. The frequency of the intervention depends on the fluid used and the operating conditions.

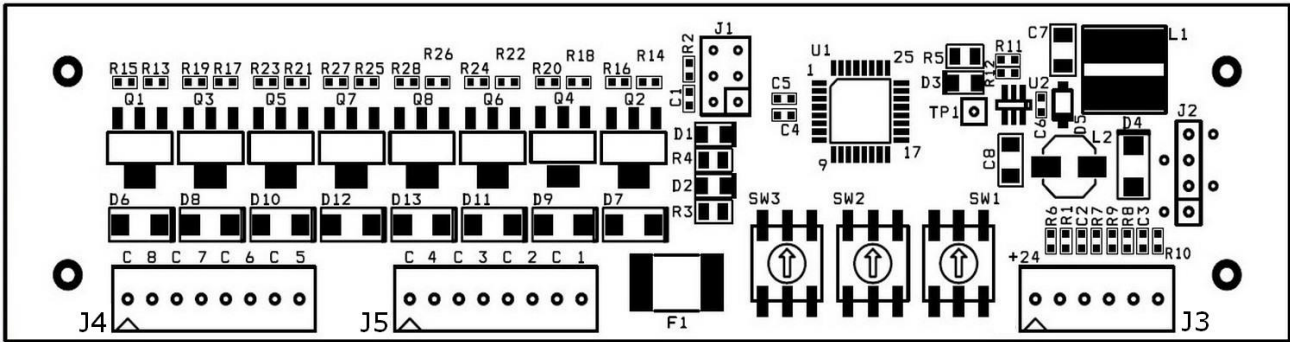
The tools must be examined during use to prevent excessive wear.

If a problem should occur during installation or maintenance, or if in doubt, contact Turbo Srl or its Authorised Representative.

Electric Connections

The electric connections must only be performed by qualified staff and must be compliant with the regulations in force in the country of installation.

Control Board Connection Layout



Connector J3

Position	Value
1	+ 24 Vdc
2	Gnd Earth
3	Fan 1 Contact Input
4	Fan 2 Contact Input
5	Enabling 1 Consent Contact Input
6	Enabling 2 Consent Contact Input

Connectors J4 and J5

Position	Value
1	Solenoid valve 1 Power Supply
C	Common Solenoid valve 1
8	Solenoid valve 8 Power Supply
C	Common Solenoid valve 8

Adjustment of Cycles and Times

To set the cycles of the sequencer, the three rotary switches SW1 - SW2 - SW3 must be adjusted; the switch-over rotation is not continuous but with determined steps through 16 positions.

Switch SW1 Triggering Time			
Position	Value	Position	Value
0	100 m. sec.	8	1500 m. sec.
1	150 m. sec.	9	2000 m. sec.
2	200 m. sec.	A	2500 m. sec.
3	250 m. sec.	B	3000 m. sec.
4	300 m. sec.	C	3500 m. sec.
5	400 m. sec.	D	4000 m. sec.
6	500 m. sec.	E	4500 m. sec.
7	1000 m. sec.	F	5000 m. sec.

Switch SW2 Pause Time Between Triggering			
Position	Value	Position	Value
0	1 sec.	8	20 sec.
1	2 sec.	9	25 sec.
2	4 sec.	A	30 sec.
3	6 sec.	B	35 sec.
4	8 sec.	C	40 sec.
5	10 sec.	D	50 sec.
6	14 sec.	E	60 sec.
7	16 sec.	F	70 sec.

Switch SW3 Number of Post-Cleaning Cycles			
Position	Value	Position	Value
0	1 cycle	8	9 cycles
1	2 cycles	9	10 cycles
2	3 cycles	A	11 cycles
3	4 cycles	B	12 cycles
4	5 cycles	C	13 cycles
5	6 cycles	D	14 cycles
6	7 cycles	E	15 cycles
7	8 cycles	F	16 cycles

The E4T sequencer board functions at 24 Vdc. The accessory power supply board with transformer is mounted in the RCP enclosures at 115 and 230 Vac.

Enabling consent contact input terminals 5 . 6 of J3.

Used to activate the control unit from remote; it can be switched on and off from a distance.

The control unit is supplied with a jumper on the two terminals 5, 6, without which it will not switch-on.

Fan contact input terminals 3 . 4 of J3.

Informs the control unit that the plant has been started and is operating.

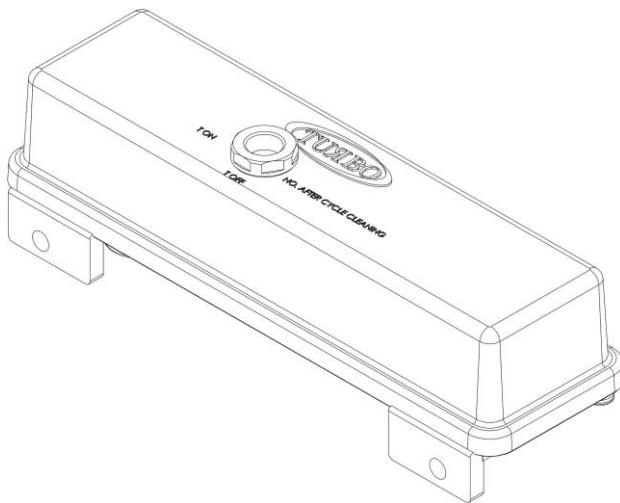
The control unit is supplied with a jumper on the two terminals 3, 4 to simulate the plant operating status, as if the fan were switched on.

The trigger time is the duration of valve opening; during its activation the green LED switches on.

The pause time between the solenoid valves in washing mode is the interval between one triggering and the next; the yellow LED switches on.

The number of Post-Cleaning cycles and the number of triggerings set to be performed after plant and fan switch off; the red LED switches on.

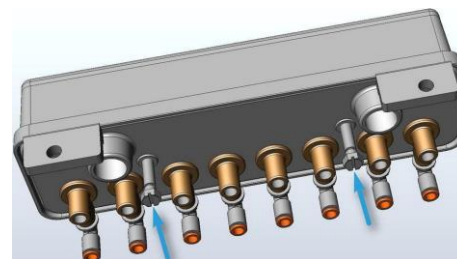
To access the switches, use a 30 mm wrench to loosen the hexagonal cap with transparent glass, which is found in the upper part of the lid.



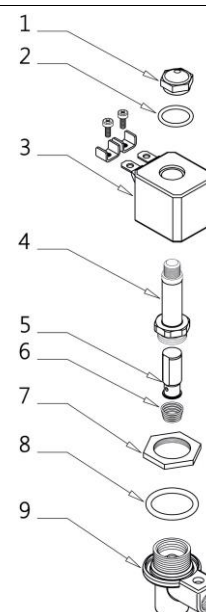
Disassembly of the Pilot Enclosures

Sequence

Remove the M8 slotted hex head 13 mm screws.
They are used to block the lid of the enclosure to the support base.
Disconnect the electric connections.



Pos.	Description
1	Hexagonal nut
2	Seal
3	Coil
4	Pilot pipe
5	Mobile core
6	Spring
7	Hexagonal nut
8	Seal
9	Pilot body



Remove nut and washer pos. 1 and pos. 2.
Extract the coil pos. 3 from the pilot valve unit pos. 4 and pos. 5.
Remove the nut pos. 7.
Extract the pilot valve unit pos. 4 and pos. 5 from the base of the enclosure.
Remove the mobile core pos. 5 from the valve body.
All parts are now accessible for cleaning operations or replacement.

Commissioning

Perform an electrical check before pressurising the system.
In the case of valves with pilot, apply voltage to the coil several times and wait for a metallic click, which indicates activation of the solenoid.

Re-mounting the Pilots Enclosure

Perform the sequence in reverse order with respect to the disassembly operations performed.

Note

Lubricate the O-rings with top quality silicone grease.

Re-position the solenoid valve and the O-ring.

Tighten the nut pos. 7 with coupling torque of 12 Nm.

Re-position the coil, nut and washer.

Re-position the lid and tighten the screws.

After maintenance, activate the valves a few times to check they function correctly.

It is compliant with the following Directives: Electromagnetic Compatibility Directive 2014/30/EU, meeting EU harmonised standards EN61000-6-2:2005 class B of Standard EN61000-6-4:2001.

Low Voltage Directive 2014/35/EU meeting EU harmonised standards EN 60947-1:2004.