

### E Series

#### Description

The control instruments "E" series economizer are among the most modern and complete available today on the market.

They have been built to command membrane solenoids on dust removal filters. A large back lighted liquid crystal display clearly shows the filter and the cleaning system status. It has a fast-flow setting menu with intuitive operation that allows the operator to choose one of five different languages offered, and to select from four different pressure-reading scales (mbar, kpa "H2O and mmH2O). The clogging level can be seen on a numerical and/or graphic scale. The pre-coating deactivation function, the recognition of the valves connected and the post-washing function are all completely automatic.

What makes this "E" Series totally innovative is the software installed in the powerful microprocessor, which directs the full-automatic operation. This mode makes the instrument completely autonomous and independent in the management of the filter washing, modulating the pause and shooting time depending on the clogging level. The "cleaning", then, is increased or reduced automatically depending on the real needs; this optimizes the economy of the entire system.

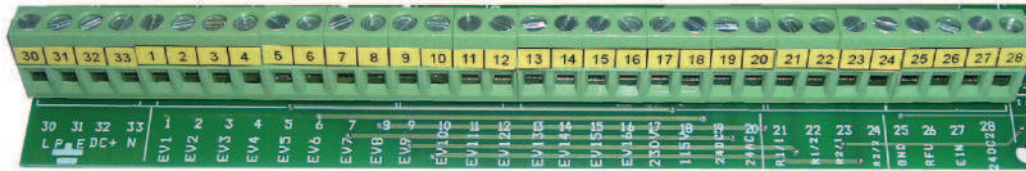


#### DEVICE PERFORMANCES

- LCD Display with backlight and friendly menus in six languages
- Three modes of operation: manual, auto and full-auto mode to smart filter management
- Operating time in seconds and minutes with selectable range for any applications
- Four units selectable for differential pressure measures
- No selection jumpers required for the output voltages of the valves that is done automatically according to the positioning of the common of pulse valves in the terminal
- Multi-selectable power supply through just one jumper located in the terminals compartment
- Post-cleaning function with selectable number of cycles up to 255 cycles
- Hours counter and pulses counter
- Up to two programmable alarm relays
- Minimum differential pressure
- Maximum differential pressure
- Maximum current pulse valves dissipation
- Pulse Valves not working alarm
- Power down
- External input to start/stop cleaning from remote
- External input to start/stop cleaning from air tank sensor
- Automatic pre-coating functions
- 4-20mA output to remote dP pressure
- Zero crossing switching pulse valve
- Pulse valves manual activation
- Selection of pulse-jet cleaning systems or rotating nozzle with self-selection of optimal parameters
- Protection from current overload for device and pulse valves



CONNECTION LAYOUT



VALVES

Terminal	signal	Terminal	signal
1	EV1 Solenoid valve 1	9	EV9 Solenoid valve 9
2	EV2 Solenoid valve 2	10	EV10 Solenoid valve 10
3	EV3 Solenoid valve 3	11	EV11 Solenoid valve 11
4	EV4 Solenoid valve 4	12	EV12 Solenoid valve 12
5	EV5 Solenoid valve 5	13	EV13 Solenoid valve 13
6	EV6 Solenoid valve 6	14	EV14 Solenoid valve 14
7	EV7 Solenoid valve 7	15	EV15 Solenoid valve 15
8	EV8 Solenoid valve 8	16	EV16 Solenoid valve 16

The common of solenoid valves must be connected to the type of pilot according to the following table:

Terminal	LEGEND	Voltages
17	230V	230VAC 50Hz
18	115V	115VAC 50Hz
19	24DC	24VDC
20	24AC	24VAC 50Hz

NOTE: THE TERMINAL 31 IS THE GROUND OF DEVICE AND PULSE VALVES

ELECTRICAL CHARACTERISTICS

Power

- 230VAC ±10% 50 Hz
- 115VAC ±10% 50 Hz
- 24VAC ±10% 50 Hz
- 24VDC ±10%

Output

- 24VAC (MAX 20VA @ Ton Max 5s)
- 24VDC (MAX 20W@ Ton Max 5s)
- 230VAC (MAX 20VA@ Ton=10s)
- 115VAC (MAX 20VA@ Ton=10s)

Fuses

- 1 x 2 Ampere

Working temperature

- 15°C÷50°C

Storage temperature

- 20°C÷60°C

Timing

Pause time

- 5 s ÷ 50 min

Working time (air pulse)

- 50 ms ÷ 10 s (step 10 ms)

Differential pressure Meter

- Range: 0 ÷ 10 KPa
- Maximum differential pressure: 50 kPa – 0.5 bar

POWER

Power Supply 230-115-24/50hz

Terminal 30 L phase

Terminal 33 N Neutral

Terminal 31 PE Ground

Power Supply 24 VDC

Terminal 32 DC +

Terminal 25 GND Negative

Terminal 31 PE ground

(internally connect to 25)

CE DIRECTIVES



This product is compliant with the following directives:

Machine Directive 2006/42/EC '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

# ECONOMISER FOR DEDUSTING PLANTS

## WITH DIGITAL ΔP CONTROL BY INTERNAL TRANSDUCER

BA

BA4 / BA8 / BA12 / BA16 Series - Multiple output voltage  
Up to 144 outputs available upon request with different enclosures



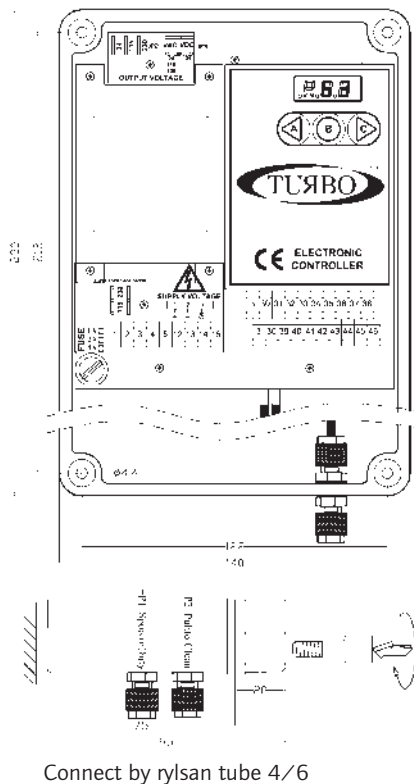
### DESCRIPTION

Economiser for dedusting plant cleaning cycle with digital ΔP control.

Microprocessor-operated device with electrical zero connected to ground which ensures high immunity to external interference and low field emissions.

Max 1 output relay. Max 2 volt free digital inputs.

- BA4** to control 4 solenoid valves
- BA8** to control 8 solenoid valves
- BA12** to control 12 solenoid valves
- BA16** to control 16 solenoid valves



Connect by rylsan tube 4/6

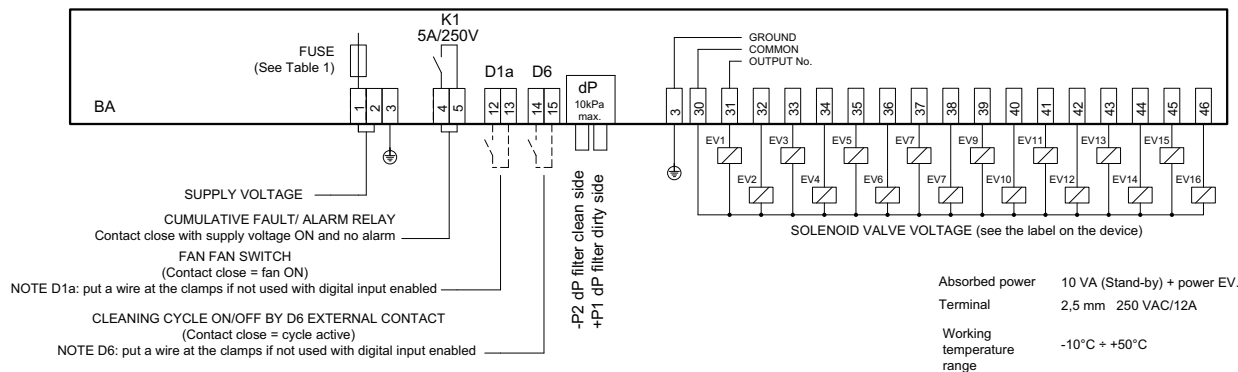
### TECHNICAL CHARACTERISTICS

<b>Standard supply voltage</b>	230 VAC / 115 VAC
<b>Supply voltage available upon request</b>	24 VAC / 24 VDC
<b>Output voltage</b>	230/115 / 24VAC - 24VDC
<b>Working temperature range</b>	-10°C ÷ +50°C
<b>Absorbed power</b>	10 VA (Stand by)
<b>Protection level</b>	IP65
<b>Max no. of outputs</b>	16
<b>Dimensions</b>	140x230x95 (BA4 - BA16)
<b>Material</b>	ABS / RAL 7035

### STANDARD FEATURES

- Manual selection of output number / solenoid valve
- Adjustable activation time per each output from 0.05 to 5 sec.
- Adjustable interval time between two activations from 1 to 999 sec.
- Short circuit output protection
- Manual activation of each single output
- Digital differential pressure control
- Differential pressure reading by internal transducer (max 10kPa)
- Maximum dP alarm with alarmed contact open and automatic reset
- Zero dP reading adjustment
- 10kPa dP reading full range
- Additional post-cleaning cycle after fan stop
- Cleaning cycle ON/OFF by volt free external contact
- Max 25W load power per each output
- Input and output selection by JP1, JP2 and JP3 jumpers on the board

WIRING DIAGRAM



PARAMETER SETTING IN SET MODE

In Run Mode press key C to enter the function menu

F01	Digital input use	0 = included 1 = excluded
F02	Pulse time	0,05 ÷ 5,00 sec
F03	Time interval between events	1 ÷ 999 sec (see B3x)
F04	Number of outputs	0 ÷ 16
F05	Cycles after fan stop	0 ÷ 99
F06	Manual activation	C = Selection A = Output activation
F07	ΔP control	0 = excluded 1 = included
F08	Output voltage	24V, 115V, 230V (see HV)
F09	Zero ΔP adjustment	0,00 (see C8)
F10	ΔP threshold for cycle STOP	0,01 ÷ 9,99 kPa
F11	ΔP threshold for cycle START	0,01 ÷ 9,99 kPa
F12	Max ΔP alarm threshold	0,01 ÷ 9,99 kPa
F13	Fan mode selection	0 = by contact 1 = by ΔP reading

Key A = Access to the selected function	Key A = Parameter decrement in
Key B = Exit from Set Up	Key B = Return to function menu
Key C = Function selection	Key C = Parameter increase in Set

OPERATION

When power is supplied, the cleaning cycle starts if all the conditions required for operation are present

OFF	Cycle stopped due to cleaning consent missing (D6 open)
- 0 -	Cycle stopped due to fan OFF
'P'	Cycle stopped due to low dP (Blinking display)
A01	No. of activated EV
...	Cycles active after fan stop (Blinking points)
—	Bar indicating pause time flow between events
E	ΔP reading over 9.99kPa

Key B	Alarm Reset
Key C	Access to Set Up

NOTE

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

ALARM DESCRIPTION

3,00/H = Maximum ΔP alarm  
(Blinking display)

example: E1/05 = 05 output overload  
(Blinking display)

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