

Electro-pneumatic converter



Assembly manual and operating instructions

ENG



Renova certification

Introduction	page 4
warnings	page 4
assistance	page 4
general information	page 5
safety	page 5
protective equipment for personal	page 7
technical data	page 8
transport and storage	page 9
installation	page 9
function and tests	page 12
maintenance / disposal	page 13
Index of revision number	page 14

introduction

The following manual is intended for installers and users of the product and provides descriptions and explanations on EP10000000R (installation and maintenance).

Inside you will find:

- General instructions on danger and general dangers
- Technical specification and data
- Storage instructions
- Installation instructions, pneumatic and electrical connections
- Maintenance

Since the product and Renova itself are constantly evolving in order to improve the quality and performance of its products, Renova reserves the right to update the manuals to new versions, without the obligation to update products already marketed and / or any previous manuals

warnings

CAREFULLY READ THE INSTRUCTIONS AND WARNINGS IN THIS MANUAL AND KEEP THEM FOR FURTHER REFERENCE FOR THE ENTIRE LIFE OF THE PRODUCT. IN THIS MANUAL ARE IMPORTANT INSTRUCTIONS RELATING TO OPERATIONS AND SAFETY FOR THE INSTALLATION, USE AND MAINTENANCE OF THE PRODUCT.

WE STRONGLY RECOMMEND ASSEMBLY OF THE DEVICE BY QUALIFIED TECHNICAL PERSONNEL IN ORDER TO AVOID ANY RISK OF DAMAGE TO PEOPLE, THINGS OR THE PRODUCT ITSELF.

IN THE EVENT OF ANY BREAKAGE OF THE PRODUCT, THE OPERATOR SHOULD BE AWARE OF THIS MANUAL AND THE INFORMATION INSIDE IT, KNOWING AND KNOWING TO AVOID ANY RISKS AND / OR DANGERS, BEFORE ANY INTERVENTION BY OUR TECHNICIAN.

assistance

Renova is present all over the world with its agents and distributors.

**To contact the Renova support service write to:
support@renova-srl.it**

general information

These instructions will enable you to safely install, set up and operate EP converter EP10000000R. These instructions are an integral part of the product and must be accessible to personnel. Personnel must carefully read through and understand these instructions before starting work of any kind on the valves. Following all of the safety and handling instructions contained in this manual is a fundamental requirement for safe working

explanation of symbols



DANGER

This symbol and the word “DANGER” indicates an immediately dangerous situation that may result in death or serious injury if not avoided



WARNING!

This symbol and the word “WARNING!” indicates a potentially dangerous situation that may result in death or serious injury if not avoided



CAUTION!

This combination of symbol and signal word indicates a possibly hazardous situation that may result in damage to property or environmental damage if it is not avoided

liability and warranty

Modifications to the EP10000000R may only be carried out by the manufacturer’s personnel. If the valve requires repairs or servicing beyond the scope of the activities described in these instructions, this work may only be carried out by the manufacturer of the valve or by persons who have been expressly authorised and trained by the manufacturer. Failure to observe the above will void the warranty. The manufacturer accepts no liability for damages incurred.

safety

This section provides an overview of all major safety aspects for the protection of people and for safe, fault-free operation.

Further task-related safety notices appear in the sections on transportation, installation, checks before initial operation, and maintenance

Intended use

The EP converter EP10000000R is a precision electronic pressure regulator which provides an output pressure that is proportional to a given control signal.

It is intended for pneumatic applications where fine control of air pressure, or regular automated pressure changes are required



WARNING!
Dangerous if misused!

- Incorrect use of a proportional control valves can create dangerous situation
- Do not use in areas where an explosive atmosphere may be present

general dangers

The following section lists residual risks which may be present even if the safety valves are used correctly



WARNING!
Danger of injury caused by compressed air!

Compressed air can cause injuries if not handled correctly

- Ensure system are depressurised before work begins
- Have all work carried out by pneumatics specialists



WARNING! Personal requirement
Danger of injury caused by lack of training!

People who lack proper training cannot assess the risk when handling the proportional pressure control valves and they place others at risk of serious injury or death

- Have all work on the pneumatic system carried out by pneumatics specialists
- Have all electrical installation work carried out by qualified electricians

specialized operators

Pneumatics specialists are trained for the specialist area they work in, and they know the relevant standards and regulations. Because of their special training and experience, pneumatics specialists can carry out work on pneumatic, electropneumatic and mechatronic systems and identify and avoid risks by themselves.

Because of their specialist training, knowledge and experience, and their knowledge of the relevant standards and regulations, qualified electricians are able to carry out work on electrical installations and identify and avoid possible risks by themselves.

Qualified electricians are specially trained for the area they work in, and they know the relevant standards and regulations.

protective equipment for personal

- For all work, always wear:



Protective clothing

Protective clothes are heat-resistant and close-fitting clothes with low tear strength, close-fitting sleeves and without any parts sticking out.



Safety shoes

Safety shoes protect the feet from crushing, falling parts and slipping on slippery surfaces.

- For special activities, wear:



Protective gloves

Protective gloves protect the hands and forearms against contact heat and sharp objects



Safety goggles

Safety goggles protect the eyes from flying objects and splashing liquids.



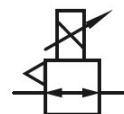
Ear protection

Ear protection protects the ears from damage caused by exposure to noise.

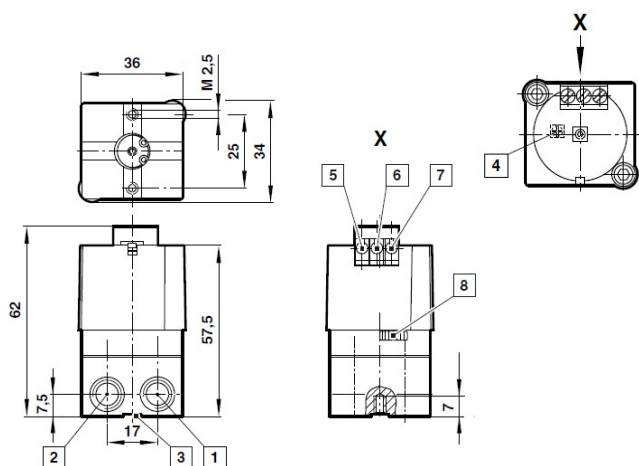
technical data

Specification	Value
Output pressure	0 ... 6 bar
Operating pressure	At least 1,5 bar above maximum required output pressure
Flow	Up to 200 N l/min
Ambient temperature	0 ... +60 °C Contact our technical service for use below +2°C
Response time	< 500 ms from 0 to 100% or < 150 ms from 100 to 0% of output pressure into a 10cc load
Linearity	< 1,5% of span
Weight	0,20 kg
Electrical power input	24 V d.c. ±10%
Loop resistance	2 wire version; 250 Ω max
Requirements for operating media and consumables	Compressed air, oil free and dry air

Schematic



Specification	Value
Air consumption (typical)	≤ 6 bar/90 psi ≤ 3 N l/min
Temperature effect	14 mbar max/°C change in temperature
Degree of protection	IP20
Hysteresis and deadband	< 1% of span
Vibration immunity	< 3% output shift for ± 2 g 15 ... 150 Hz
Electrical input signal	2-pin versions or 1 ... 10 V
Failure mode	Signal falls to bleed pressure when electrical supply fails
Materials	Housing: zinc casting and nylon Diaphragms: nitrile Spacer: nylon
Compressed air quality (Filter grade)	5 µm



- 1 Inlet port (G1/8 or 1/8 NPT)
- 2 Outlet port (G1/8 or 1/8 NPT)
- 3 Exhaust, do not obstruct
- 4 Span adjust pot (under lid)
- 5 Power (3 wire units only)
- 6 Signal (2 & 3 wire units)
- 7 Common (2 & 3 wire units)
- 8 Adjust zero

*for more information consult the technical data sheet

transport and storage

transport

Individual packed items are packed according to the expected transportation conditions. Packaging is intended to protect the individual components against transportation damage, corrosion and other damage until they are installed. Only remove the packaging just before installation.



Check package on delivery to make sure it is complete and has not been damaged in transit.

packaging and storage

Be careful during the transportation to not drop and/or not throw packaged units. The EP converter is packed for immediate installation upon delivery. If they are going to be stored for extended periods, please:

- Leave the packed units in the box they were shipped in.
- Do not store them outdoors.
- Store them in a dry, dust-free place.
- Don't expose them to aggressive media, such as salty air.
- Protect them from direct sunlight.
- Storage temperature: 15 to 35 °C.
- Relative humidity: 90% max.

installation

Before installation please note that for new system, ensure all connections and lines are clean, free from burrs, fluids and debris. Do not remove blanking covers from the proportional valves until just before installation.

mounting

The valve must be securely mounted to prevent accidental damage from occurring during operation. It is recommended that the valve is mounted either with the mounting holes provided, or by use of rigid piping.



WARNING!

Care should be taken to prevent blocking of the exhaust port. Failure to do so may result in unwanted effects within the surrounding system

For the installation shut off air pressure. Install in air line::

- Vertically (bowl down)
- With air flow in direction of arrow on body
- Upstream of regulators, lubricators and cycling valves
- **As close as possible to the air supply when used as a main line filter**
- **As close as possible to the device being protected when used as a final filter**
- Make sure bowl and bowl guard if so equipped are turned fully clockwise into a body before pressurizing

pneumatic connection



DANGER!

Danger of injury caused by impropoer connection!

Faulty pneumatic connections can impair the safe operation of the proportional pressure control valves and may cause injuries during operation.

- Do not install any additional components between the load and the valve
- Connect pipe-work using 6mm or ¼" OD, 4mm ID, plastic pipe, cut cleanly at right angles, with push-fit pipe connections, or with suitable rigid piping



WARNING!

Danger of injury caused by compressed air!

Compressed air can cause injuries if not handled correctly.
Make sure the machine is depressurised before work begins.

A pneumatic specialist and the following protective equipment will be required to complete this step:



saefty goggles



protective gloves



CAUTION!

Avoid damaging the thread when removing the blanking covers

1. Carefully remove the blanking covers from the proportional pressure control valve
2. Connect air supply equipment for drying and filtering before connecting the valve. For requirements for operating media and consumables, see section of **techincal data** (page 8)

Fit and seal pipes and hose connections to the valve and from the valve to the load, following national standards and red regulations as applicable.

electrical connection



DANGER!

Danger of injury caused by impropoer connection!

Danger of death through contact with live components. When switched on, electrical components can perform uncontrolled movements and result in serious injury:

- Isolate the electrical supply before starting work and male sure it cannot be switched back on.

A qualified electrician and the following protective equipment will be required to complete this step:

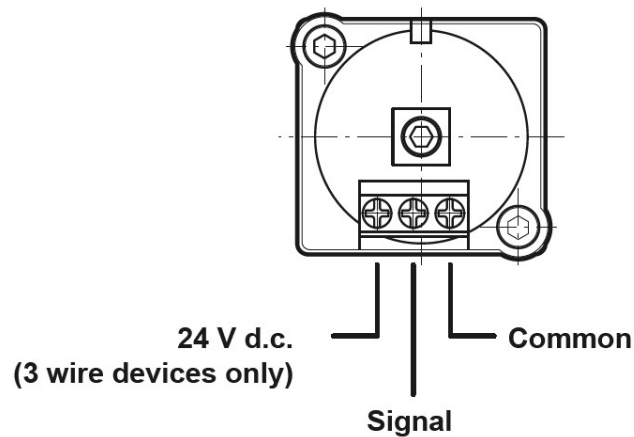


saefty goggles



protective gloves

Connect the valve as indicated in the diagram, using screened cable.



function and tests

Before the initial operation it is recommended to carry out some tests to verify the functionality and correctness of assembly and installation.

A pneumatic specialist and the following protective equipment will be required to complete this step:



safety goggles



protective gloves



Ear protection

1. Ensure the air supply is 1,5 bar (22psig) above maximum required output pressure. Cycle the unit from 0-100% for 10 cycles.
2. Set control signal to 5% of full-scale and monitor the output pressure at the unit output port using an accurate manometer. Check the output is within $\pm 1\%$ of desired pressure setting.
3. Increase control signal to 100% of full scale and check the output is again within $\pm 1\%$ of the desired pressure setting.
4. If the pressure is not the desired amount re-set the calibration by adjusting the zero and the span using an appropriate potentiometer trim tool. Repeat the zero and span adjustment until the desired set points are achieved.

maintenance / disposal

Servicing:

- Keep accumulated liquids below baffle on general purpose units and below element on oil removal units.
- Replace filter element when dirty or when service indicator (if so equipped) shows approximately one-half red / green

Maintenance:



WARNING!

Risk of injury from using incorrect replacement valves!

Using incorrect or faulty replacement valves may endanger personnel and cause damage, malfunctions, or total failure.

- Only use the manufacturer's original replacement valves
- Contact the manufacturer for information about replacement valves, see the manufacturer's address on the rear of this booklet

Disposal:



CAUTION!

Improper disposal may result in risks to the environment.

- At the end of their life have proportional pressure control valves disposed of by a licensed waste disposal contractor
- If in doubt, ask the local municipal authority or special waste disposal contractors for more information

Index of manual revision

Rev. n.	Rev. Date	Description of the changes made

note



Renova srl – viale Rimembranze 93 – 20099 Sesto San Giovanni (MI) Italy
tel.: +39.02.2700.7394 – fax: +39.02.2570.8635
www.renova-srl.com – email: support@renova-srl.it