

Pneumatic function block Inflas Eco



Original assembly instructions with operating instructions and technical appendix

Language version: English

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A) General

A1 Explanation of symbols

In these operating instructions, notes are marked with the following symbols:

 xxxxx	Danger/ Caution/ Warning ... indicates a dangerous situation that could lead to death or severe injury and/or damage to the piping system.
	Note ... indicates an instruction that should be obeyed without fail.
	Information ... indicates useful tips and recommendations.

Ignoring these notes, cautions and warnings could result in danger and the manufacturer's warranty may become void.

A2 Intended use

The Inflas Eco pneumatic function block is designed

- after connection of the solenoid valve to a system-side controller,
- with a gaseous control medium (as a rule compressed air) with control pressure in accordance with the type plate,
- at environmental conditions between -20°C and +80°C (EBRO standard)
- for type CBN 700 and CBN 700 K
- to ventilate and vent the inflatable seal of Inflas valves fitted with 90° part-turn actuators, with the electric signals of the above-mentioned controller in the positions <OPEN> and <CLOSED>.
- the compressed air must be filtered with a mesh size of 40µm (ISO 8573-1, class 5) to protect the solenoid valve. It must be dried and, for switching cycles >4x/min, lightly oiled.
- An (optionally) installed "position detector" module on the actuator signals the position of the actuator (open/closed) to the system-side controller and (only for CBN 700 K) releases the inflating process.

The function block must not be operated until the following documents have been observed

- :
- the <Manufacturer's declaration on EC Directives> included in the delivery
 - These EBRO assembly instructions/OI (supplied with the delivery) for the Inflas Eco
 - The assembly instructions (supplied with the delivery) for the valve, pneumatic actuator, position detector and valve.

The safety instructions in Sections B1 and C1 must be observed when installing and operating the function block.

Note 1:

The associated operating instructions for the valve, the actuator on which the function block is installed, the position detector and the control valves must be complied with.

Failure to comply with this <Intended use> represents gross negligence and releases the manufacturer, EBRO-Armaturen, from any product liability.

A3 Labelling of the function block

Each function block is labelled with the following data on its housing or type plate:

For	Labelling	Remarks
Type	CBN 700 (K)	
Pneumatic plan		

The type plate should not be covered so that the installed switch box remains identifiable.

A4 Transport and storage for retrofitting or replacement

!	<p>Function blocks with additional electrical modules: To avoid corrosion damage to electrical components during storage, the actuators should be stored at constant room temperature.</p>
!	<p>If a function block is already installed on an actuator: The transport and storage requirements in the actuator manual apply. In all cases, the unit is to be stored at constant temperature in an enclosed area.</p>

For the correct transport of an individually supplied function block, the following applies:

- Always observe the symbols on the packaging when transporting the packages:
- Until the function block is put to use (fitted to the actuator), keep it in the factory packaging.
- Protect the function block from dirt and moisture.

B) Assembly and commissioning

!	<p><i>These instructions contain safety instructions for foreseeable risks during the assembly/connection of the function block to a control system.</i> It is the user's responsibility to supplement these instructions for other risks specifically linked to the location. Compliance with all requirements for this system is assumed.</p>
!	<p><i>These instructions contain no safety instructions for foreseeable risks during the assembly/connection of the switch box.</i> These are contained in the separate OI for the relevant switch box.</p>

B1 Safety notices for assembly and connection

	<p>The assembly and pneumatic connection of a function block to the operator's system(s) may only be carried out by trained specialists.</p> <p>For the purposes of this manual, trained specialists are persons who, on the basis of their training, specialist knowledge and professional experience, are familiar with pneumatic components and can correctly assess and execute the work assigned to them and can identify and avoid potential risks.</p>
	<p>A knowledge of the typical properties of rotary valves (butterflies, ball valves) is also required for the assembly; assembly and connection should, where appropriate, be carried out in collaboration with expert colleagues.</p> <p>Function blocks are not "step ladders": external loads must be kept away from the valve, actuator, attachments and feed lines.</p> <p>The commissioning of the function block that is installed on an actuator is only permitted if the valve is surrounded on both sides by a section of pipe or equipment.</p> <p>Each activation before this means a risk of crushing and is the exclusive responsibility of the user.</p>

B2 Prerequisites for assembly/disassembly

- Ensure that only those function blocks are fitted that comply with the conditions of use. See the corresponding labelling on the type plate (*Section A4*).
- The specifications on the type plates are to be observed. Further technical information about the function blocks can be found in the sources given in Section A6 and on the product.
- Any upgrades to the components may only be carried out after consultation with the manufacturer.

B3 Installation procedure

- Inspect the function block for transport damage. Damaged function blocks must not be installed.
- Connection to the user-side controller must be made in accordance with the planner's/ user's specifications.
The pneumatic plan is fixed to the function block.
- Identifiable system malfunctions must be resolved before commissioning. See also Section C3 <Troubleshooting>.

B4 Initial commissioning

- The equipment should only be operated in an undamaged and clean state.
- All pneumatic connections to the user-side compressed air system should be checked by a qualified person before being put into operation.

C) Operating instructions

In accordance with the provisions of Directive 2006/42/EC, the planner of the system must draw up a comprehensive risk analysis.

The manufacturer EBRO Armaturen provides the following documents for this purpose:

- these assembly and operating instructions.

	<p><i>These instructions include safety notices for foreseeable risks arising when using the switch box in industrial applications.</i></p> <p>It is the planner's/operator's responsibility to supplement these instructions for other risks specifically linked to the system.</p>
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C1 **Safety instructions for operation and maintenance**

  Danger	<ul style="list-style-type: none"> • The function of a function block must comply with the <Intended use>, which is described in Section A2. • The conditions of use must comply with the specifications shown on the switch box type plate. • All necessary maintenance work to be carried out on the function block is to be completed by qualified personnel only. For the purposes of these instructions, qualified personnel are persons who, on the basis of their training, specialist knowledge and professional experience, can correctly assess and execute the work assigned to them and can identify and avoid potential risks. • The operator of a pneumatic plant is required to maintain the equipment properly, operate the equipment properly, to monitor it and carry out maintenance and repairs. • The specified safety regulations are to be observed during any maintenance or repair work.
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C2 **Automatic operation**

If the function block is connected to the user's control system as described in Section B, then no further action is required. Section C1 <Safety instructions> is to be observed.

Maintenance: At suitable intervals, check whether the screw connections to the valve are OK.

C3 **Troubleshooting**

Type of problem	Countermeasure
Malfunction of pneumatic components and/or (feed) lines	If malfunctions in the pneumatic connections in/at the function block or its components are diagnosed, these are to be corrected – in compliance with the information in Section D <Planning documents> – by qualified personnel.

D) Technical appendix/planning documents

D1 Technical specifications of the function block

Function block for double-acting rotary actuators with 1/4" NAMUR interface on the process valve with inflatable seal.

The control block receives its control signals from a normal commercial 5/2-way Namur valve – Assembly on flange plate between the actuator and the Namur valve.

The closing signal for the actuator is passed on directly by the block.

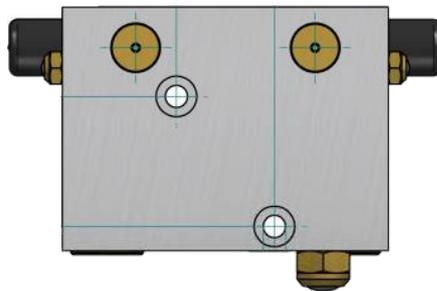
- (Only for CBN 700) The seal on the flap is inflated after a time delay.
- (Only for CBN 700 K) As soon as an additional pneumatic signal is placed on connection X, the seal on the flap is inflated after a time delay.

When the opening signal is placed on the block, the seal is first ventilated and the actuator then moves to the open position.

The delay times can be set separately from each other but are dependent on the pressure. At 6 bar they are approx. 0 - 2 seconds.

Setting:

Delay
Open valve



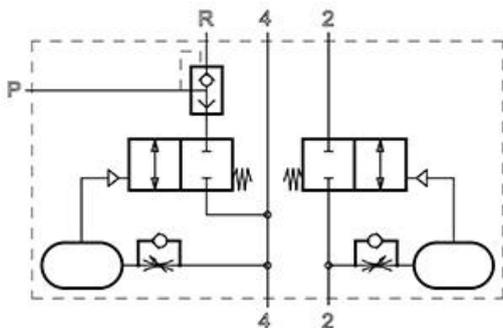
Delay
Inflate sleeve



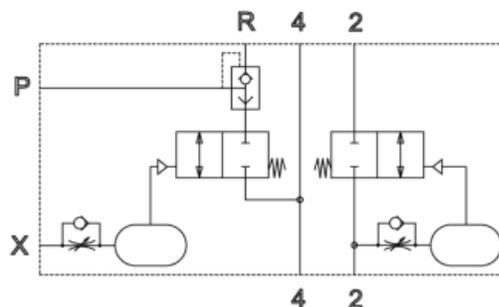
D2 Pneumatic plans

The valid pneumatic plan is fixed to the function block.

CBN 700

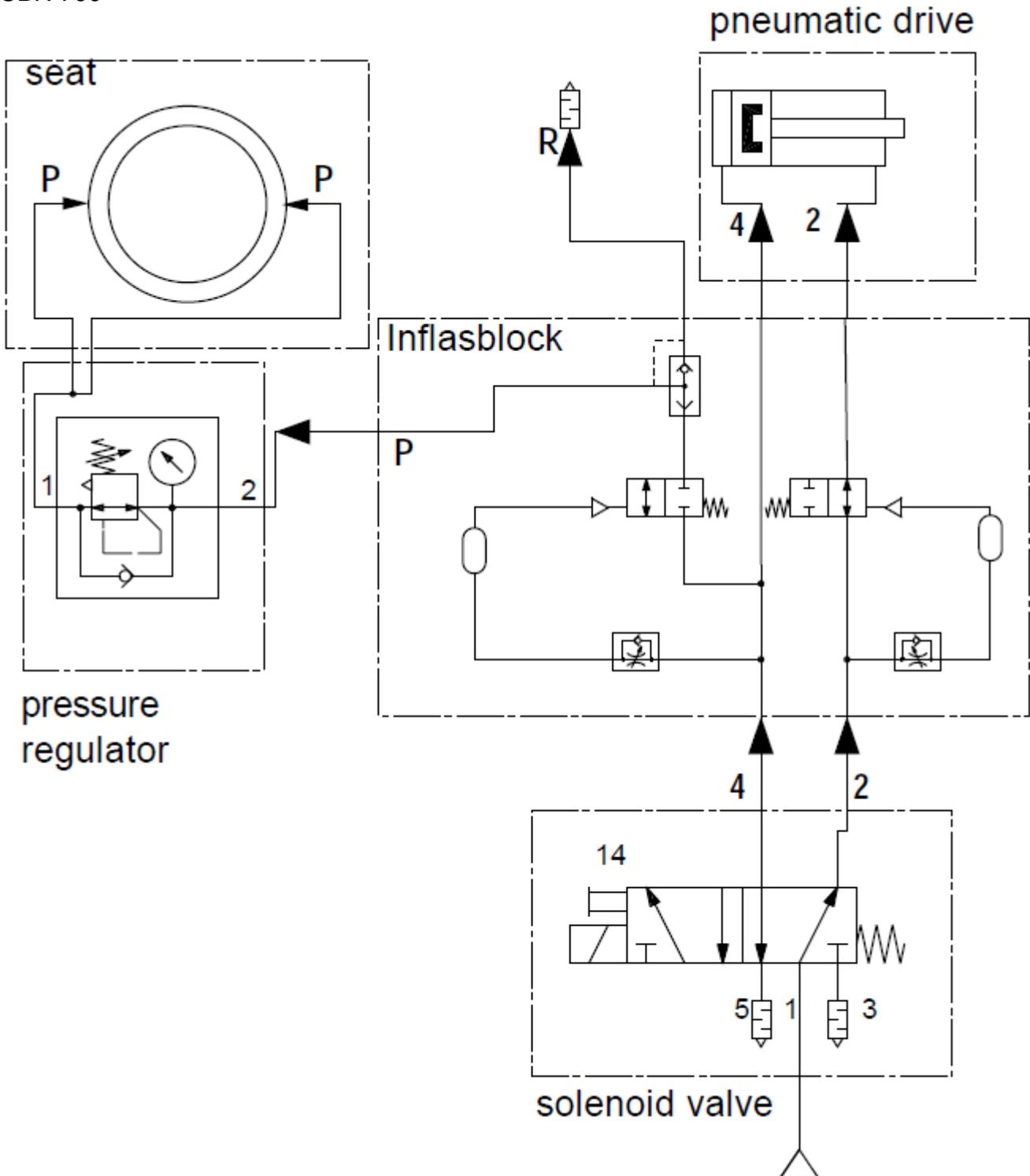


CBN 700 K



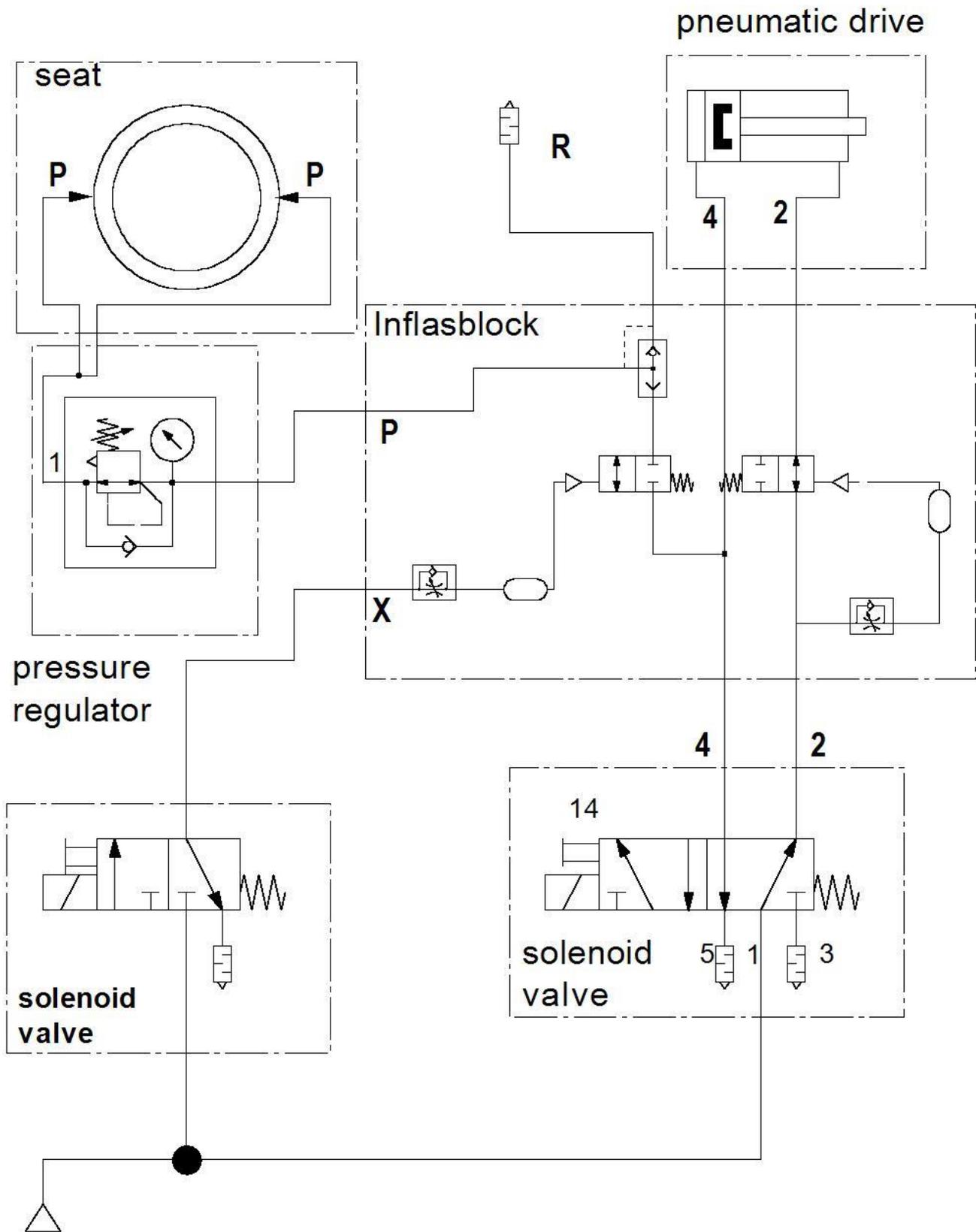
Proposal for the pneumatic switching with the valve

CBN 700



Proposal for the pneumatic switching with the valve

CBN 700 K



D3 Data sheets for typical position detectors

The relevant data sheet for the position detector is available as a separate document in the appendix.

D4 Dimensional drawings

