



**PNEUMAX**



## **2200 Optyma-S EVO**

Instruction, use and maintenance manual  
**PNEUMATIC AND MECHANICAL**





# ENGLISH

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## **1. ABOUT THIS DOCUMENT**

- All available documents on the product can be found at [www.pneumaxspa.com](http://www.pneumaxspa.com)
- This document refers to the devices of the "2200 Optyma-S EVO" series listed in the "[General Overview](#)" chapter.
- This document has been drafted and checked to the best of the ability of PNEUMAX S.p.A. (hereinafter also referred to as "Manufacturer").
- PNEUMAX S.p.A. is not responsible for its use and reserves the right to make changes to the product and the information provided below without prior notice.
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## **2. SAFETY WARNINGS**

- The Manufacturer shall not be held liable for any consequences that may arise from failure to comply with the instructions in this manual.
- So as not to jeopardise the proper operation of the device and cause hazards to persons and property, thus invalidating the warranty and conformity of the device with the essential requirements of the relevant directives, any form of tampering or intervention not authorised by PNEUMAX S.p.A. through this manual or any other official document is strictly prohibited.
- The product is not intended for use in environments with a potentially explosive atmosphere.
- Do not use the product in places where static electricity poses a problem.
- Protect the product from moisture, UV radiation, corrosion, vibration and shock.
- Pay attention to external factors such as the proximity of live cables, magnetic fields, magnetically exposed conductive metal parts very close to the device that can affect and disturb the system.
- Do not exceed the current capabilities of each individual interface or accessory module.
- Applying supply voltages beyond the technical specifications may cause irreparable and irreversible damage to the system.
- Only use power supplies that guarantee a safe electrical disconnection of the operating voltage according to IEC/EN 60204-1.
- Comply with the requirements for PELV circuits according to IEC / EN 60204-1
- The device must be installed and put into service by qualified personnel in accordance with the operating instructions
- Before working on the product, switch off the electrical and pneumatic power supplies, taking care to empty the pneumatic circuit, and ensure that it is not switched back on by third parties during operations.
- Strictly meet the conditions of use set out in the dedicated section.

Below the symbols used to identify the type of potential danger you may encounter:



Generic danger



Danger objects falling  
(moving objects)



Crushing danger



Required use of  
security devices



Dangerous for the environ-  
ment

### 3. CONDITION OF USE

Product compatibility is the responsibility of the person who designs the equipment or chooses its specifications.

All products covered by this manual are intended for use in an industrial environment.

The product warranty is only valid if it is used under the conditions specified in this manual.

### 4. NORMATIVE REFERENCES

- EMC : 2014/30/UE
- RoHS : 2011/65/UE



## 5. GENERAL OVERVIEW

The 2200 Optyma-S EVO series is a range of solenoid valve batteries for air flow control, which, when integrated with the PX3 system, allows management via input, output, multi-pole and protocol modules.



### 5.1 Product identification

- General identification of solenoid valve battery



PRODUCT IDENTIFICATION LABEL

ORDERING CODE

CERTIFICATIONS  
if the configuration  
allows it

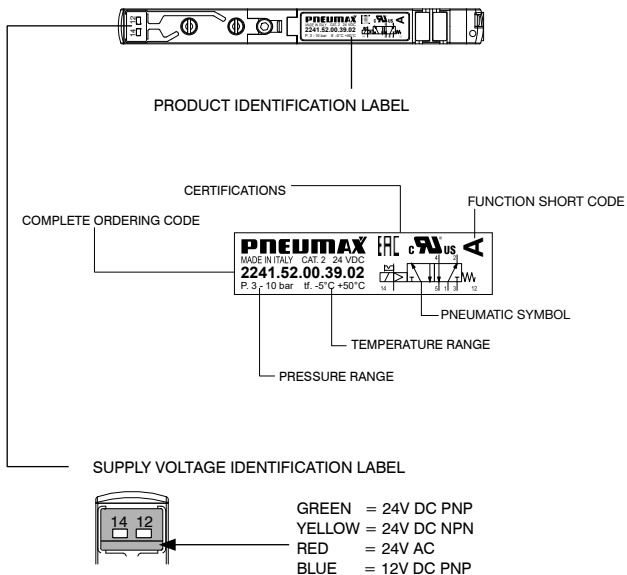


PRODUCTION BATCH

SUPPLY VOLTAGE

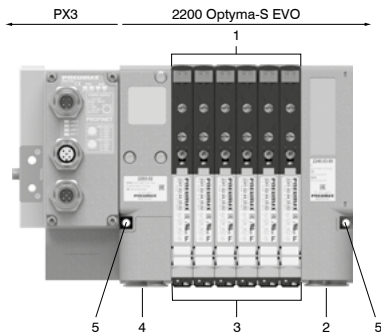


- Solenoid valve identification

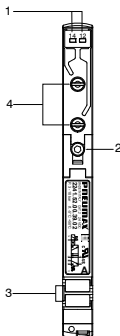




## 5.2 Product Overview



1. 2200 Series Optyma-S EVO Valves
2. Right End
3. Modular Bases
4. Left End
5. Mounting Holes



1. Solenoid valve status LED (LED on: solenoid pilot energized)
2. Fixing screw to sub base
3. Removable, user-customizable labels
4. Valve manual over-ride



## 5.3 Installation



### WARNING:

Assembly, commissioning, maintenance and disassembly must be carried out by qualified personnel that specialized in electrical/mechanical control. Use the appropriate safety procedures when handling the devices.



### WARNING:

Follow the indicated tightening torques

### 5.3.1 Assembly of components to sub-bases

- Solenoid valves or closing plate



TIGHTENING TORQUES 0,8Nm

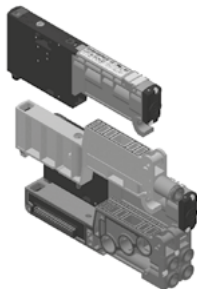
- Individual supply or discharge modules



Solenoid valves

Intermediate supply or individual discharge module

Modular sub-base

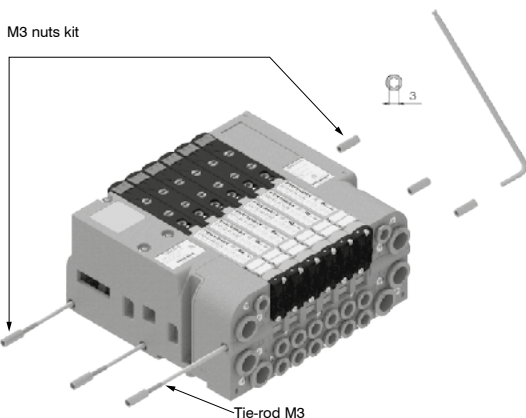
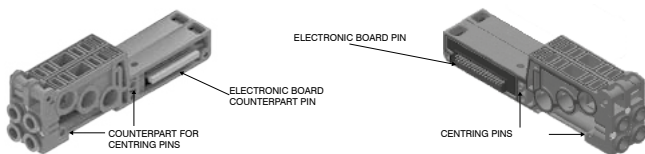




## SOLENOID VALVES MANIFOLD 2200 Optyma-S EVO

- Complete solenoid valve battery assembly

Once the battery configuration has been defined, bring the bases close to each other. Take care to align the centering pins and pins with their counterparts on the adjacent base. Do the same with the selected right and left terminals.



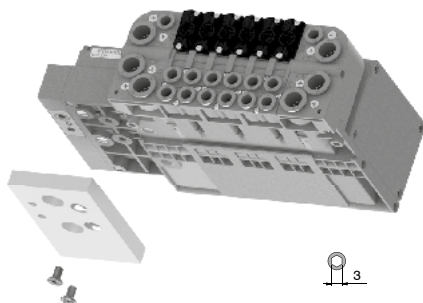
TIGHTENING TORQUE MIN 2Nm

TIGHTENING TORQUE MAX 2,5Nm

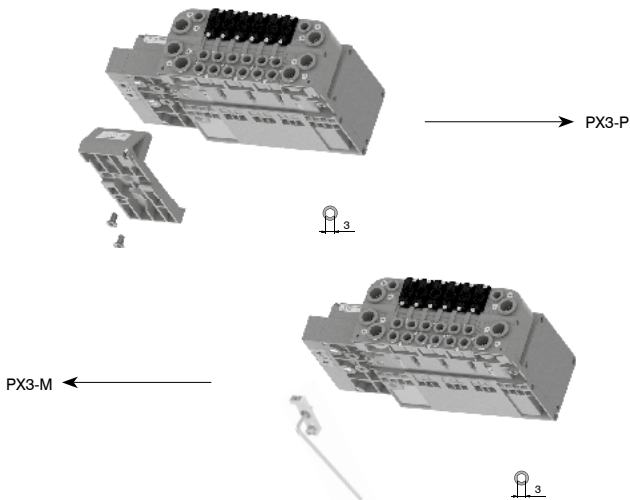
When choosing the size of the tie rods, bear in mind that each base is considered to be "2 places" and that the terminals are already included in the dimensions of the "Tie-Rod Kit".

### 5.3.2 Assembly of fixing elements

- Offset compensation plate assembly

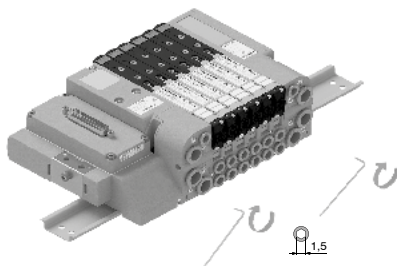


- DIN rail adapter assembly





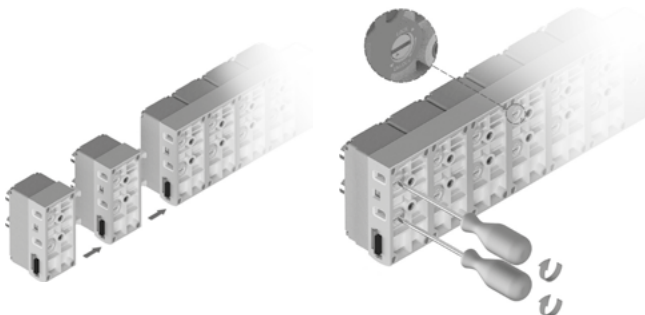
- DIN rail fixing



### 5.3.3 Assembly of PX3 series modules

Enter the required modules

Attach the inserted modules to the battery

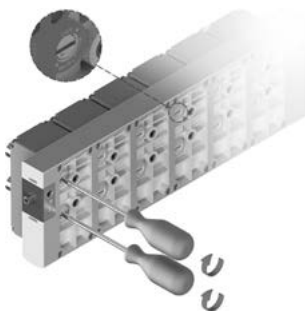


To lock: rotate in the direction of the LOCK print on the case.  
To unlock: rotate in the direction of the UNLOCK print on the case.  
The same procedure shall be used to add or remove any module.

Complete every configuration with the 3100.KT.00 left end-plate kit.



To lock: rotate in the direction of the LOCK print on the case.  
To unlock: rotate in the direction of the UNLOCK print on the case.  
The same procedure shall be used to add or remove any module.



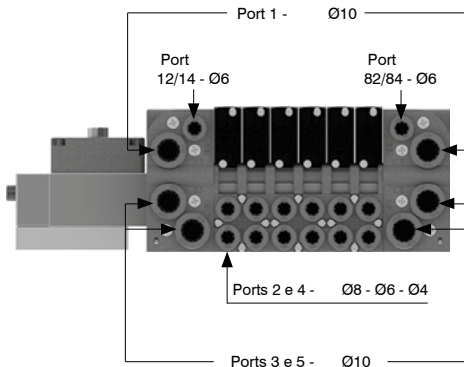
All modules and accessories available for the "PX3" modular electronic system can be found in the "EVO Catalogue"





## 5.4 Commissioning

- Pneumatic connections**



Connect the air pipes using pneumatic fittings to the designated pneumatic connection ports.

- If necessary, install silencers in the exhaust connection ports and where they are not already installed.
- Ensure that the exhaust ports are not directed towards work areas where people are present.
- Supply power to the unit at the rated voltage.
- Supply pneumatic power to the unit at the rated pressure.
- Check that each component of the unit is working correctly.



**WARNING:**

Check the correspondence of pneumatic and electrical signals during installation, before each use and periodically.

Check that the components are working correctly during installation, before each use and periodically in the event of infrequent use.

Each standard solenoid valve is equipped with a manual control with unstable or bistable functions. The manual control can be operated using suitable equipment (e.g. a screwdriver), which allows the valve to be switched in the absence of electricity and to perform operations such as maintenance or checks. When the signal is removed, the pressure in the downstream circuit disappears.



**WARNING:**

Install the device in compliance with safety requirements for hydraulic and pneumatic transmission systems and their components.

Pay attention to external factors that may compromise the device's proper functioning.

Take safety measures to prevent hazards due to the proximity of live cables, magnetic fields, and magnetically conductive metal masses very close to the device that may affect and interfere with the diagnostic system.

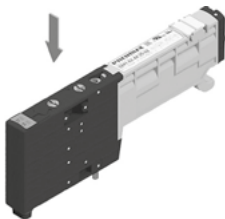
Ensure that the exhaust ports are not directed towards work areas where people are present.



**Manual override actuation**

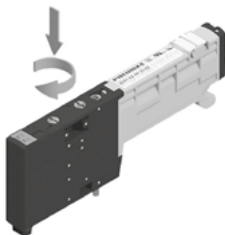
**Unstable function:**

Push to actuate (when released it moves back to the original position)



**Bistable function:**

Press and then rotate to obtain the bistable function



**WARNING:**

The manual override must be used only in case of authorised operation and only when all suitable safety measures were taken. It is forbidden to alter, tamper with or attempt to block the manual override in the pressurized circuit position.

Do not touch the device while it is operating.

**Note:** it is recommended to return the manual override to its original position when not in use.





- **Electric connections**

The device must be electrically powered via the multi polar module or the serial module.



**WARNING:**

The electrical connection must be done with components without voltage present.



Incorrect pneumatic connections may damage the device or compromise its correct operation.



To guarantee the correct operation of the device, the connections of each coil and each sensor must be electrically independent (parallel connection).



Only use power supplies which can guarantee a safe electrical isolation of the working voltage in accordance with IEC/EN 60204-1.

Additionally, observe the requirements anticipated by the PELV circuits in accordance with IEC/EN 60204-1.

For detailed information on connector connections and all aspects relating to electronics, please refer to the relevant installation, use and maintenance manual.







## 6. ANNEXES

### 6.1 Accessories

All accessories available for the 2200 Optyma-S EVO series are contained in the 'EVO Catalogue'.





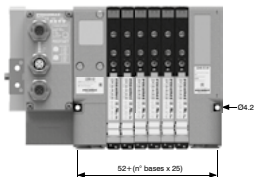
## 7. TECHNICAL DATA

Construction Characteristics	
Functional components	Technopolymer
Valve body	Technopolymer
Spool seals	Oil-resistant nitrile rubber (NBR)
Piston seals	Oil-resistant nitrile rubber (NBR)
Springs	Stainless steel
Operators	Technopolymer
Pistons	Technopolymer
Spools	Stainless steel

Operational Characteristics	
Power supply	24V DC $\pm$ 10% PNP
	24V DC $\pm$ 10% NPN
	24V AC
	12V DC + 10% - 0% PNP
Electropilot absorption in DC	1.3W nominal with energy-saving system
Average current consumption 24V	36mA
Average current consumption 12V	72mA
Electropilot absorption in AC	0,6W nominal
Electropilot pipe supply pressure (12-14)	from 2,5 to 7 bar max.
Working pressures valve pipes [1]	from empty to 10 bar max.
Storage temperature	from -5°C a +50°C
Operating temperature	from -5°C a +50°C
Degree of protection	IP65
Fluid	Filtered air. Lubrication is not necessary, but if applied, it must be continuous.

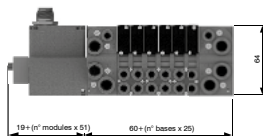
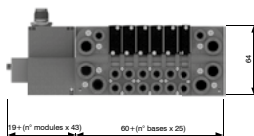
## 7.1 Dimensions

Maximum dimensions based on the number of valve seats



OPTYMA-S EVO WITH PX3-P

OPTYMA-S EVO WITH PX3-M





## 8. MAINTENANCE AND CLEANING

Do not connect or disconnect the device when powered!

Do not open and/or disassemble live parts.

Before carrying out any operation, it is essential to disconnect the pneumatic and electrical power supply to the device and wait for the residual pressure to be completely discharged.

Periodically remove any dust deposits using a damp cloth.

Use soapy water to clean the device.

Do not use aggressive or alcohol-based products.

For maintenance operations on internal components, contact PNEUMAX S.P.A..

## 9. HANDLING AND STORAGE CONDITIONS



### Handling:

Only transport the product in its original packaging.

Lift the solenoid valve battery avoiding gripping the sides.

It is recommended to consider the overall length of the battery and use only the central lifting points to ensure stability and even load distribution.



Failure to comply with the solenoid valve battery handling instructions may cause the unit to fall, which could damage the device.

A fall can cause breakage of internal components, compromising the functionality of the battery.

In addition, incorrect lifting and handling can pose a danger to the safety of the operator, exposing them to the risk of accidents or injuries during handling.



### Storage:

Store in the original packaging to avoid damage from impact.

Store indoors.

Respect the temperature conditions indicated in the '[Technical Data](#)'.

Keep the product in stock for the shortest possible time.



## 10. DISMANTLING AND DISPOSAL

### **Dismantling the product:**

Switch off the power source and compressed air.

Disconnect the power cable.

Disconnect the network cables.

Wait a few minutes before performing any operation on the device once the voltage has been removed.

Wait until the residual pressure is completely discharged.

Make sure that the exhaust is always free, if a silencer is used periodically check that it is not clogged.

### **Disposal of the product :**



This product must not be disposed of as municipal waste.

Check local regulations and guidelines to dispose of this product properly, in order to reduce the impact on human health and the environment.



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