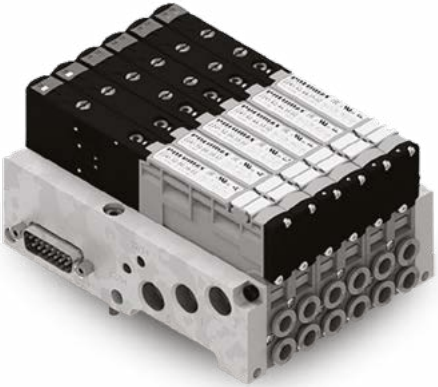
PNEUMAX



2200 Optyma-Sc

Instruction, use and maintenance manual

ENGLISH

INDEX

1. ABOUT THIS DOCUMENT

- All documents available on the product can be found at 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 drawn up and checked to the best of the ability of PNEUMAX S.p.A. (hereinafter also referred to as the "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.
- No part of this document may be copied, modified, reproduced, translated into any language or transmitted with any data communication system, without the consent of PNEUMAX S.p.A.

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.

SOLENOID VALVES MANIFOLD
2200 Optyma-Sc

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


Generic danger


Crushing danger


Dangerous for the environment


Danger objects falling (moving objects)


Required use of security devices

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

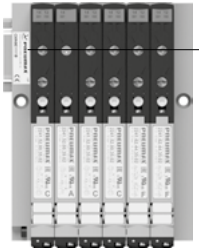
Overall dimensions and technical information are provided solely for informative purposes and may be modified without notice

5. GENERAL OVERVIEW

The “Optyma-Sc” manifold is a compact solution useful where a limited number of solenoid valves are required without the need to manage input and output signals.

5.1 Product identification

- General identification of solenoid valve battery

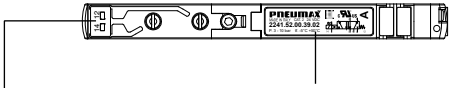


PRODUCT IDENTIFICATION LABEL

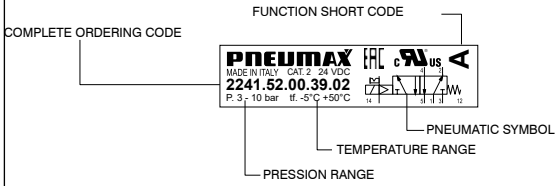
PRODUCTION BATCH

ORDERING CODE

- Solenoid valve identification



PRODUCT IDENTIFICATION LABEL

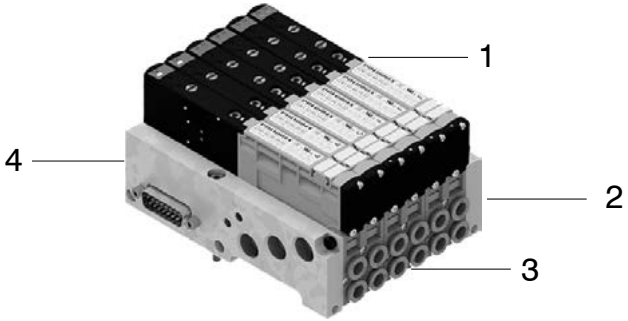


SUPPLY VOLTAGE IDENTIFICATION LABEL

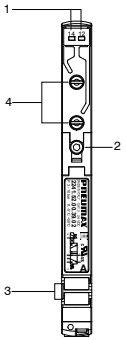
GREEN = 24V DC PNP
YELLOW = 24V DC NPN
RED = 24V AC
BLUE = 12V DC PNP

Overall dimensions and technical information are provided solely for informative purposes and may be modified without notice

5.2 Product Overview



1. 2200 Series Optyma-S Valves
2. Right Terminal
3. Modular Bases
4. Left Terminal



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

ENGLISH

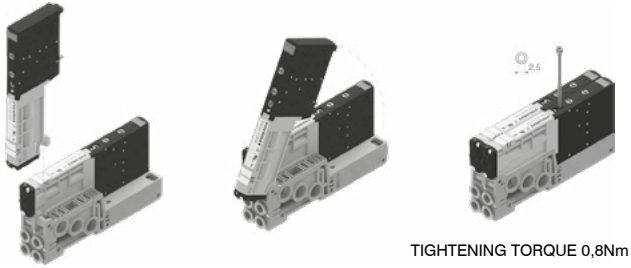
5.3 Installation

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

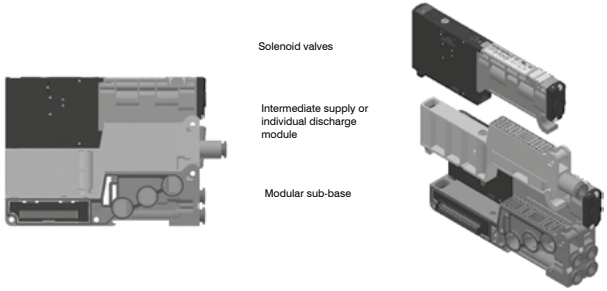
5.3.1 Assembly of components to sub-bases

- Solenoid valves or closing plate

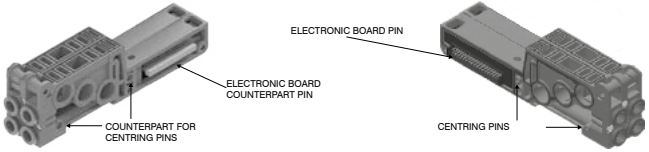


TIGHTENING TORQUE 0,8Nm

- Individual supply or discharge modules

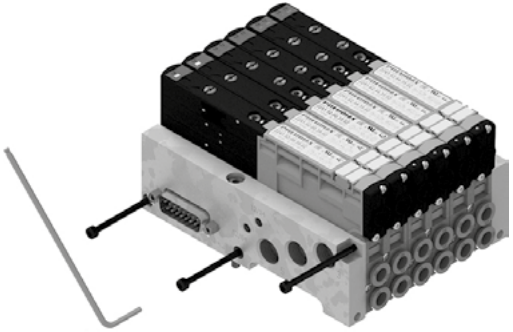


Once the battery configuration has been defined, bring the bases close to each other. Take care to align the centering pins and pins with their counterparts on the adjacent base. Do the same with the selected right and left terminals.



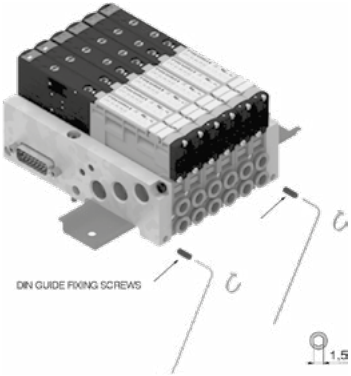
- Complete solenoid valve battery assembly

Solenoid valve battery assembly with 'TCEI M3 screw kit'.



5.3.2 Assembly of fixing elements

- DIN rail fixing

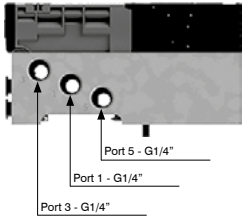


Overall dimensions and technical information are provided solely for informative purposes and may be modified without notice

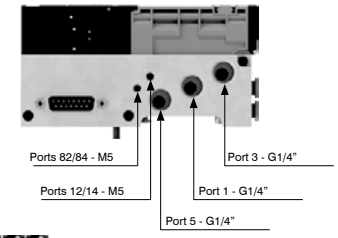
5.4 Commissioning

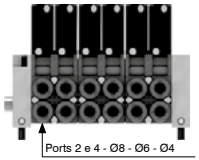
- **Pneumatic connections**

Right teminal with pneumatic connections



Left teminal with 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.

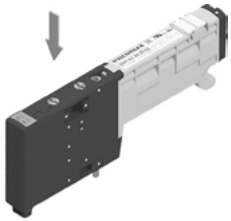
WARNING:
Check the correspondence of pneumatic and electrical signals during installation, before each use and periodically.
Check that the components are working correctly during installation, before each use and periodically in the event of infrequent use.
Each standard solenoid valve is equipped with 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.

SOLENOID VALVES MANIFOLD
2200 Optyma-Sc

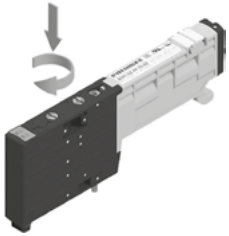
WARNING:
Install the device in compliance with safety requirements for hydraulic and pneumatic transmission systems and their components.
Pay attention to external factors that may compromise the device's proper functioning.
Take safety measures to prevent hazards due to the proximity of live cables, 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



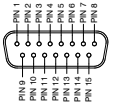
WARNING:
The manual override must be used only in case of authorised operation and only when all suitable safety measures were taken. It is forbidden to alter, tamper with or attempt to block the manual override in the pressurized circuit position.
Do not touch the device while it is operating.

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

- **Electric connections**

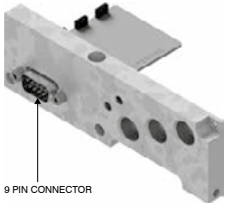
The device must be electrically powered via the multipolar module on the 'Left Terminal'.

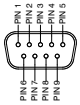
Left terminal with 15-pin connector for configuration with 6 valve positions



PIN 1	PILOT 14 SV POS. 1
PIN 2	PILOT 12 SV POS. 1
PIN 3	PILOT 14 SV POS. 2
PIN 4	PILOT 12 SV POS. 2
PIN 5	PILOT 14 SV POS. 3
PIN 6	PILOT 12 SV POS. 3
PIN 7	PILOT 14 SV POS. 4
PIN 8	PILOT 12 SV POS. 4
PIN 9	PILOT 14 SV POS. 5
PIN 10	PILOT 12 SV POS. 5
PIN 11	PILOT 14 SV POS. 6
PIN 12	PILOT 12 SV POS. 6
PIN 13	COMMON *
PIN 14	COMMON *
PIN 15	COMMON *

Left terminal with 9-pin connector for configuration with 4 valve positions





PIN 1	PILOT 14 SV POS. 1
PIN 2	PILOT 12 SV POS. 1
PIN 3	PILOT 14 SV POS. 2
PIN 4	PILOT 12 SV POS. 2
PIN 5	PILOT 14 SV POS. 3
PIN 6	PILOT 12 SV POS. 3
PIN 7	PILOT 14 SV POS. 4
PIN 8	PILOT 12 SV POS. 4
PIN 9	COMMON *

* = NPN version= 24V
PNP version= 0V

When setting up the configuration, please note that the maximum number of available electrical signals is:
- 8 for 9-pin multipole connectors
- 12 for 15-pin multipole connectors

If a monostable valve is used on a bistable base (occupying 2 electrical signals), one electrical signal is lost.

WARNING:
The electrical connection must be done with components without voltage present.
Incorrect pneumatic or electrical 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.

6. ANNEXES

6.1 Accessories

All accessories available for the 2200 Optyma-Sc series are contained in the catalogue:

Overall dimensions and technical information are provided solely for informative purposes and may be modified without notice

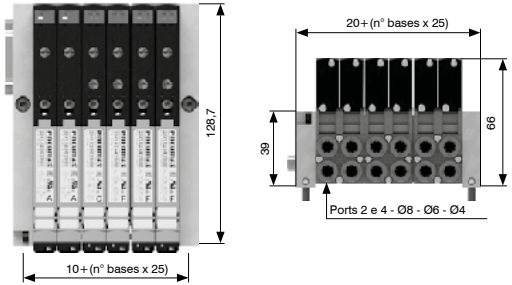
7. TECHNICAL DATA

Construction Characteristics	
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 ± 10% PNP
	24V DC ± 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 to10 bar max.
Storage temperature	from -5°C to +50°C
Operating temperature	from -5°C to +50°C
Degree of protection	IP40
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



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.
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.

PNEUMAX S.p.A.
Via Cascina Barbellina, 10
24050 Lurano (BG) - Italy
P. +39 035 41 92 777
info@pneumaxspa.com

D.MN.33-EN REV.00-11/2025