

Please Note!!!

The information and technical details mentioned in this documentation reflect the status at the time of printing.Depending on the state of design and development, there may be differences between the illustrations in the instructions for use and the product´s actual appearance. This does not affect the accuracy of the information, instructions, and the operating procedures described.

The product may only be used by people who are familiar with the medical device's basic functions.
The instructions for use are intended for medical and specialized technical personnel.
Serious incidents related to the product must be reported to the manufacturer and the competent authority of the Member State where the user is established.

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1 Introduction

Dear customer,

Thank you for choosing a Heyer Aerotech GmbH product!



Please read the Instructions for use before using the product!

These instructions for use apply to our product:

Control and valve box *(in all variants)*

The information listed below will help you quickly familiarize yourself with our product, features and operation.

Our product has been produced in accordance with all currently applicable standards and directives

IMPORTANT NOTE!

- **There are no warranty claims for damage or malfunction caused by improper transport, storage or use!**

NOTE!

- **Fire hazard! O^2 has a fire-promoting effect!**
- **Do not bring oxygen fittings into contact with oil, grease or flammable liquids.**
- **Do not smoke! No open fire!**
- **Always open and close valves very slowly!**

2. Intended purpose

The valve and control unit is used for monitoring, shutting off and emergency supply of individual supply areas and end connections of the medical gas supply system.

3. Variants

The valve and control station is available in different versions / designs:

Article description	Article no.	Dimensions in mm	Mounting option	Number of media
Control and valve box. with integr. medium monitor 1-fold	7008101	Installation dimension: 430 x 305 x 100 Door with frame: 465 x 338 x 10	Flush-mounted	1
Control and valve box. with integr.medium monitor 2-fold	7008103	Installation dimension: 430 x 305 x 100 Door with frame: 465 x 338 x 10	Flush-mounted	2
Control and valve box. with integr. medium monitor 3-fold	7008107	Installation dimension: 430 x 305 x 100 Door with frame: 465 x 338 x 10	Flush-mounted	3
Control and valve box. with integr. medium monitor 4-fold	7008119	Installation dimension: 430 x 400 x 100 Door with frame: 465 x 432 x 10	Flush-mounted	4
Control and valve box. with integr. medium monitor 5-fold	7008120	Installation dimension: 430 x 495 x 100 Door with frame: 465 x 527 x 10	Flush-mounted	5
Control and valve box. with integrated medium monitor 6-fold	7008123	Installation dimension: 430 x 592 x 100 Door with frame: 464 x 625 x10	Flush-mounted	6
Control and valve box.for surface installation with integr medium monitor 1-fold	7018101	Outer dimensionse: 645 x 360 x 112	Surface-mounted	1
Control and valve box.for surface installation with integr medium monitor 2-fold	7018103	Outer dimensionse: 645 x 360 x 112	Surface-mounted	2
Control and valve box.for surface installation with integr medium monitor 3-fold	7018107	Outer dimensionse: 645 x 360 x 112	Surface-mounted	3
Control and valve box.for surface installation with integr medium monitor 4-fold	7018119	Outer dimensionse: 645 x 455 x 112	Surface-mounted	4
Control and valve box.for surface installation with integr medium monitor 5-fold	7018120	Outer dimensionse: 645 x 550 x 112	Surface-mounted	5
Control and valve box.for surface installation with integr medium monitor 6-fold	7018123	Outer dimensionse 645 x 720 x 112	Surface-mounted	6

4. Functional description

The valve and control unit is an integral part of a medical gas supply system in accordance with DIN EN ISO 7396-1.
The valve and control unit allows individual supply areas of the medical gas supply system to be shut off by valves in the event of an emergency or during maintenance and installation work for expansion.
The ability to lock the shut-off valves provides additional protection against unauthorised access.
In addition, the valve and control station are physically separated to prevent unwanted gas flow, e.g. during maintenance. Areas isolated from the supply can be supplied from a NIST supply in an emergency.

During normal operation, the valve and control station is used to monitor the operating pressures of the associated areas. The built-in contact manometers indicate the network pressure and open a contact if the pressure is too high or too low. This is wire-breakage proof and intrinsically safe (self-monitoring).

A display also allows continuous monitoring of system status. The pressure of the relevant medium or area is constantly monitored. If the power supply is interrupted, the monitor functions are cancelled. However, the basic functions of the valve and control station are still available.

In an emergency, the valve and control station can be opened using the emergency opening.
To do this, gently press the emergency opening in the valve and control station door (see "emergency access" label) with the heel of your hand.

4.1 Construction of valve and control station

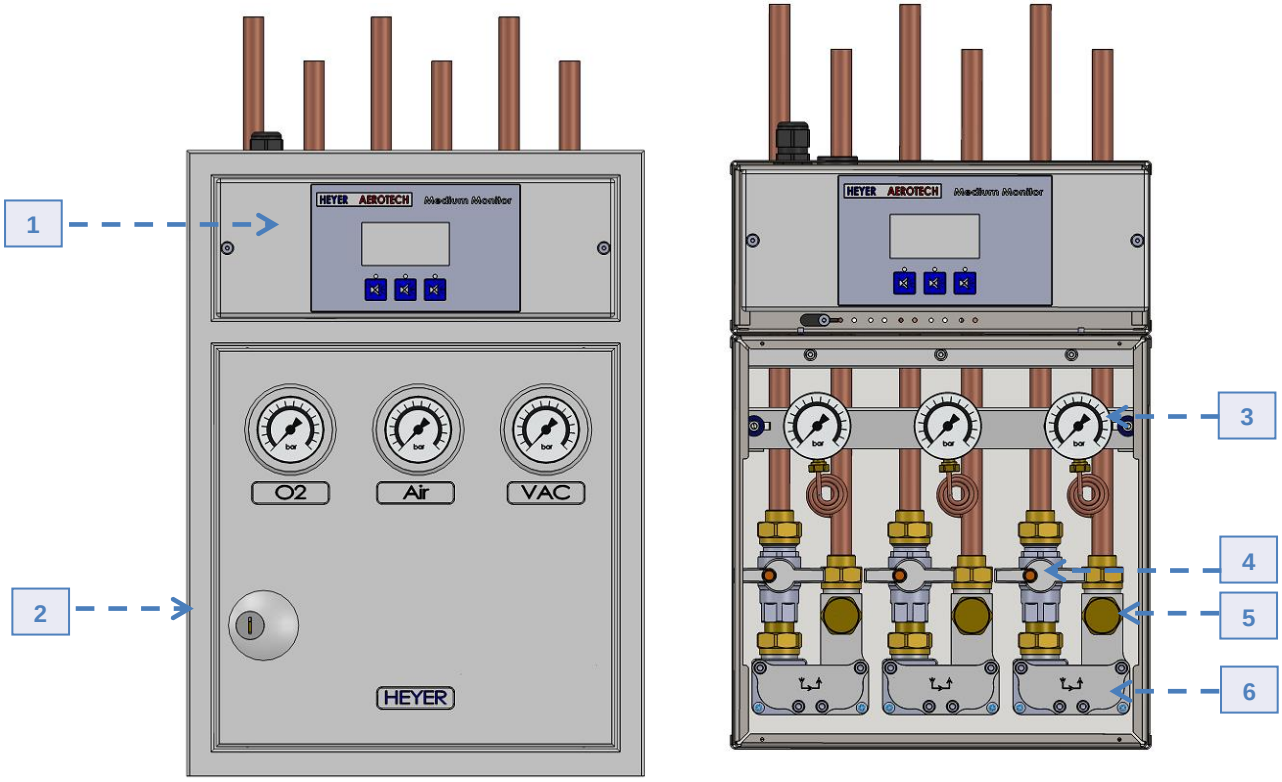


Figure 1: Construction of the valve and control station

Pos.	Description
1	Medium Monitor (Emergency signalling unit)
2	Emergency Acces
3	Contact pressure gauge
4	Shut-off valve (lockable) (in closed positon)
5	Emergency feed (NIST housing)
6	Physical separation

4.2 Emergency opening function

In the event of an emergency, the design of the door allows quick access to the valve and control station.



Figure 2: Emergency opening

Gently press the emergency opening in the door (see “emergency access” label) with the heel of your hand.
Carry out the following steps in order to reinsert it:

- Unlocking the lock
- Replacement of the emergency release in the door
- Lock the door with the provided lock.

4.3 Function emergency power supply

The following steps must be taken to set up the emergency supply via the emergency and maintenance inlet point:

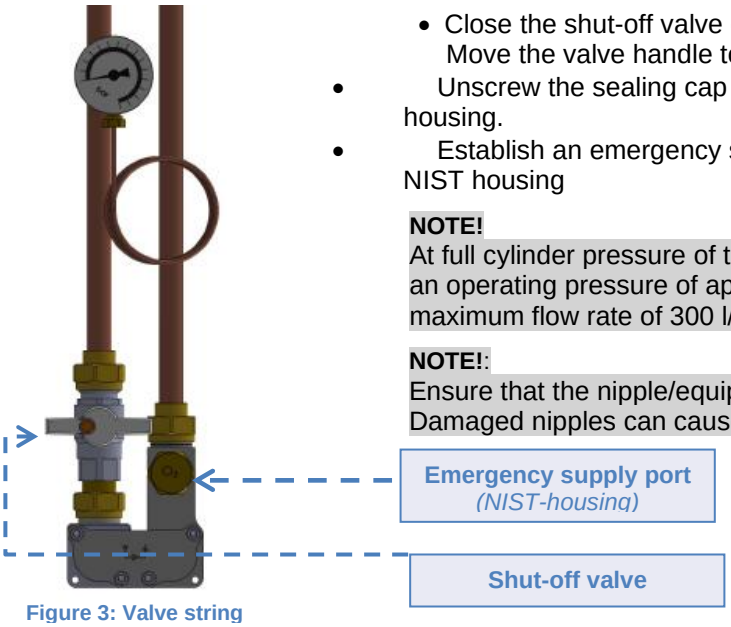


Figure 3: Valve string

- Close the shut-off valve of the affected medium. To do this Move the valve handle to a horizontal position.
- Unscrew the sealing cap from the corresponding NIST housing.
- Establish an emergency supply of the corresponding gas type at the NIST housing

NOTE!
At full cylinder pressure of the emergency supply (approx. 200 bar) and an operating pressure of approx. 5 bar, the NIST connection has a maximum flow rate of 300 l/min.

NOTE!:
Ensure that the nipple/equipment to be connected is undamaged. Damaged nipples can cause malfunction.

4.4 Shut-off valve function

The shut-off valve is open or closed depending on the position of the valve handle
Valve handle in vertical position = shut off valve closed (see Figure 3)
Valve handle in horizontal position = shut off valve open

4.5 Function Physical separation

Physical separation is a physical separation of supply that prevents unwanted gas flow.

In order to create the physical separation, the following steps must be carried out:

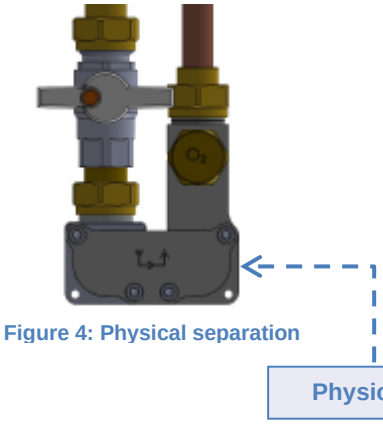


Figure 4: Physical separation

- Open the conrol and valve box door (with appropriate key)
- Close shut off valve (valve handle in horizontal position)
- Bleed the pipework downstream of the section shut-off valve
- Loosen cylinder screws (4 x M5 x 25)
- Rotate physical separation by 180° (horizontally)
- Then re-tighten with cylinder screws (4xM5x25).
- Carry out the steps in reverse order to restore the gas flow (normal operation)

4.6 Medium Monitor function

The medium monitor is used to display and monitor the pressures of the respective media.
The status of each medium (OK / HIGH / LOW / ERROR) is displayed.
(ERROR indicates a faulty connection, e.g. cable break).

The monitor also has a visual alarm for high or low pressure.
(= red LED / flashing status line "HIGH" (pressure too high) / "LOW" (pressure too low)). There is also an audible high/low pressure alarm for each medium.

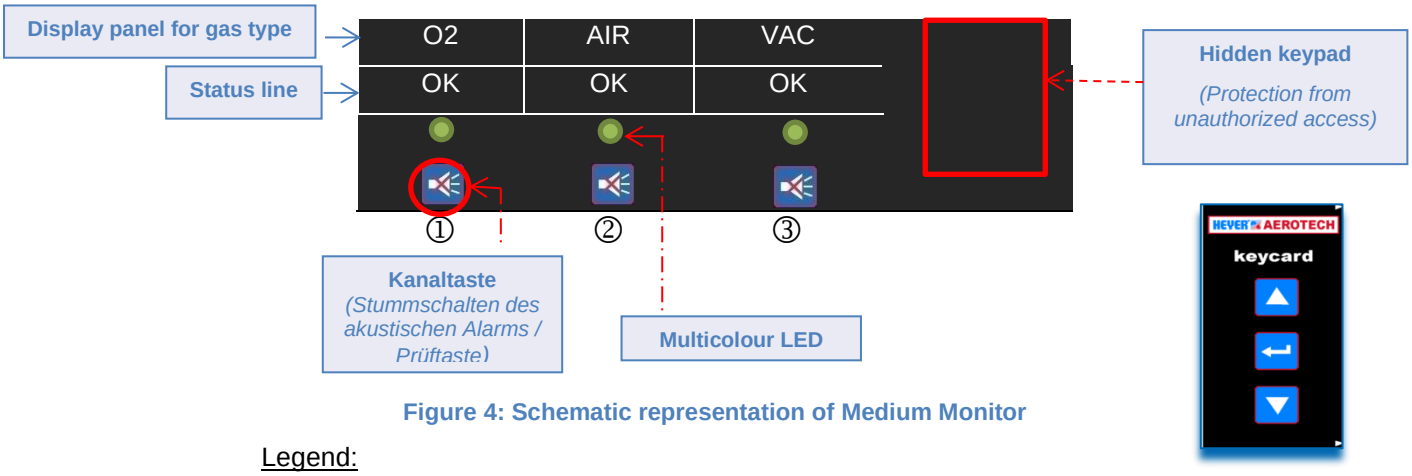


Figure 4: Schematic representation of Medium Monitor

Legend:

① Operating status medium 1 (HIGH / LOW = LED Red / OK = LED Green)

② Operating status medium 2 (HIGH / LOW = LED Red / OK = LED Green)

③ Operating status medium 3 (LOW = LED Red / OK = LED Green)

An operational signal can be muted permanently by pressing the corresponding channel key.
An emergency signal can only be silenced temporarily. The alarm pause is cancelled after 12 minutes. In the event of an alarm, the status line flashes and the LED is steady. After muting, the status line is steady and the LED starts flashing.

If the channel key and the ENTER key are pressed consecutively on a channel with "OK" status, a test alarm is triggered (approx. 1.5 s). During this time, the audible alarm will sound and the LED will flash red. HIGH / LOW / ERROR" is displayed on the status line. At the same time, this "error status" is transmitted to the BMS.

By placing a keycard on the right edge of the display, a hidden keypad becomes visible, which is used to access the service menu. The two hidden arrow keys and the ENTER key are used to navigate through the menu.

5. Troubleshooting

Error	Cause	Remedy
No display in Medium Monitor	Problem with power supply	Check the power supply to the valve and control station. Contact Heyer Aerotech GmbH service if power is present.
Red LED lights up, Warning signal sounds	Presence of an emergency alarm (possibly an operating signal)	Determine the cause of the alarm (pressure of a medium too high or too low) Check the relevant supply system, including the supply source Take the necessary measures for the emergency procedure that has occurred. Contact the Heyer Aerotech GmbH service department
Red LED flashes, Warning signal suppressed	Presence of an acknowledged emergency alarm, the cause of which has not yet been eliminated.	Ensure that the necessary measures of the respective emergency procedure have been initiated
Unusually high gas consumption	Leakage in the system	Contact the service of Heyer Aerotech GmbH
No fault detected but alarm triggered	Defective contactor / Faulty connection or cable break	Contact the service of Heyer Aerotech GmbH

6. Technical Data

Technical Data	
Operating voltage	230 V AC / 50 Hz
Operating voltage Medium monitor (emergency signalling device)	24 V DC/AC
Shut-off valve	Ø 15 / Ø 20
Nominal pressure	- 1 to 10 bar
Test pressure	15 bar
Pressure display	via contact pressure gauge
Measuring range contact pressure gauge	Pressurised gases: 0 to 16 bar Vacuum: -1 to 0 bar
Accuracy class contact pressure gauge	2,5
Status display of the pressure conditions	acc. to DIN EN ISO 7396-1
Operating temperature	Temperature: -10 bis 40 °C Rel. humidity : 5-95 %
Storage temperature	Temperature: -10 bis 40°C Rel. humidity : 5-95%
Materials	Copper, brass, aluminium, stainless steel, silicone 70, NBR
GMDN code	36271
Classification	IIa

7. Cleaning

We recommend only wipe disinfection of the surface of the valve and control station.
As cleaning agents, we recommend surface disinfectant cleaners or rapid disinfectants for medical devices from the neoform MED range from Dr Weigert or other suitable agents from the current list of the VAH (Association for Applied Hygiene).

NOTE!
Liquids must not penetrate the product. Otherwise, the function of the medical gas piping system may be affected!

8. Inspection

At least once a year, the entire gas supply system must be subjected to a visual inspection, function test and leak test by authorised personnel. During the visual inspection, the entire system must be checked for integrity and pressure conditions.
In addition, the facility must designate an authorised person to be responsible for the daily operation of the medical gas supply system to observe whether the system is being operated safely and effectively. (See DIN EN ISO 7396-1)

9. Maintenance

Maintenance and periodic inspections must only be carried out by persons who are suitably qualified and familiar with the product. Persons carrying out these operations must have suitable test equipment and original spare parts.

The operational readiness of the valve and control unit must be checked daily by visual inspection.

We recommend annual maintenance of the entire medical gas supply system, including the valve and control unit.
A maintenance contract with Heyer Aerotech or a Heyer Aerotech authorised service centre is recommended.

Component	Interval	Measure
Seals	every 8 years	Replace the seals in the valve train
Checking the over- and underpressures	annually	Carry out function test
Checking the signalling system	annually	Carry out function test
Checking the forwarding of messages	annually	Carry out function test
Checking the gas detection	annually	Visual inspection
Shut-off valves	If necessary	Replace the complete component

To replace individual components, the upstream and downstream areas of the supply system must be separated (depressurised). If necessary, it must be ensured that the supply of essential areas is guaranteed by the emergency supply.

9.1 Spare parts

Item number	Description
00007298	Sealing set for valve set control and valve box 1/2"
00007298-01	Sealing set for valve set control and valve box 3/4"
0281910	contact pressure gauge oxygen 0 to 16 bar
0281911	contact pressure gauge neutral gases 0 to 16 bar
0281913	contact pressure gauge vacuum 0 bis -1 bar
4100178	Shut-off valve 1/2" for control and valve box
4100179	Shut-off valve 3/4" for control and valve box
0223112	Emergency opening device incl. lock
0223280	Sight glass pressure gauge for control and valve box

10. Accessories

Artikelnummer	Bezeichnung
4100058	hollow wall fastening for control and valve box
2220210-1	Supply channel for 1-4 gases RAL 9010 (only flush-mounted)
2220260-1	Supply channell for 5-6 gases RAL 9010 (only flush-mounted)

11. Manufacturer

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