Operating Manual

MIQ/CHV PLUS
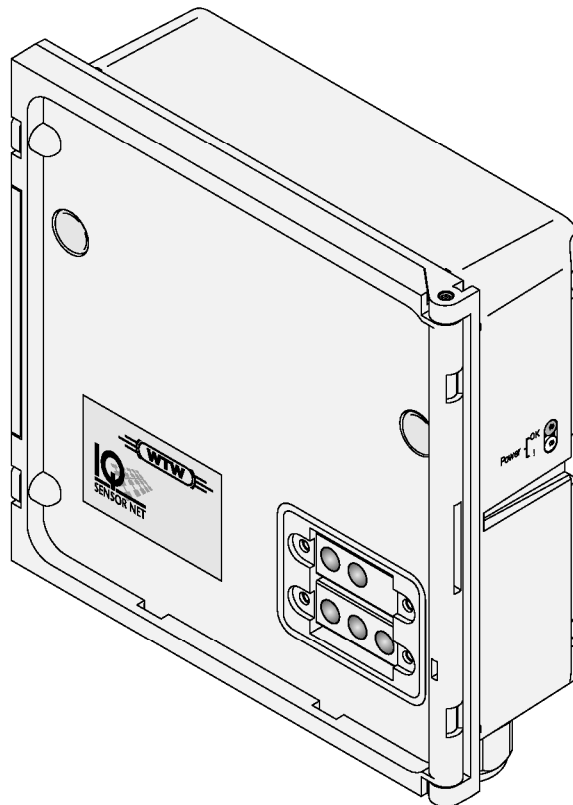
**Valve module for compressed air-operated
sensor cleaning heads**

ba75539e01   07/2005

Accuracy when going to press

The use of advanced technology and the high quality standard of our instruments are the result of continuous development. Consequently, this may result in some differences between this operating manual and your instrument. Also, we cannot guarantee that there are absolutely no errors in this manual. Therefore, we are sure you will understand that we cannot accept any legal claims resulting from the data, figures or descriptions.

0 - 2

1   Overview

General characteristics   The MIQ/CHV PLUS valve module provides a switchable compressed air valve for the operation of sensor cleaning heads.

The MIQ/CHV PLUS valve module registers on the IQ SENSOR NET system as an output (V). It appears in the list of outputs and can be linked with a sensor. Thus, the valve is controlled directly by the IQ SENSOR NET.

Alternatively, you can also control the valve via an external switch. The switch can consist of one of the following:

● the relay of an MIQ/CR3 or MIQ/R6

● the relay of a measuring transmitter with the R option

● any other switch (relay or sensing device)

The valve module is connected with the external switch via a control line for this.

Warning
The valve circuit must not supply any unauthorized voltages or currents. It has to be made sure that the circuit at any time meets all requirements of a *Limited circuit* or *Limited Power* as well as of *SELV Safety Extra Low Voltage*. For more details, see chapter 7 TECHNICAL DATA.

The following application example shows a cleaning system made up of a CH cleaning head and an MIQ/CHV PLUS valve module:

Application example
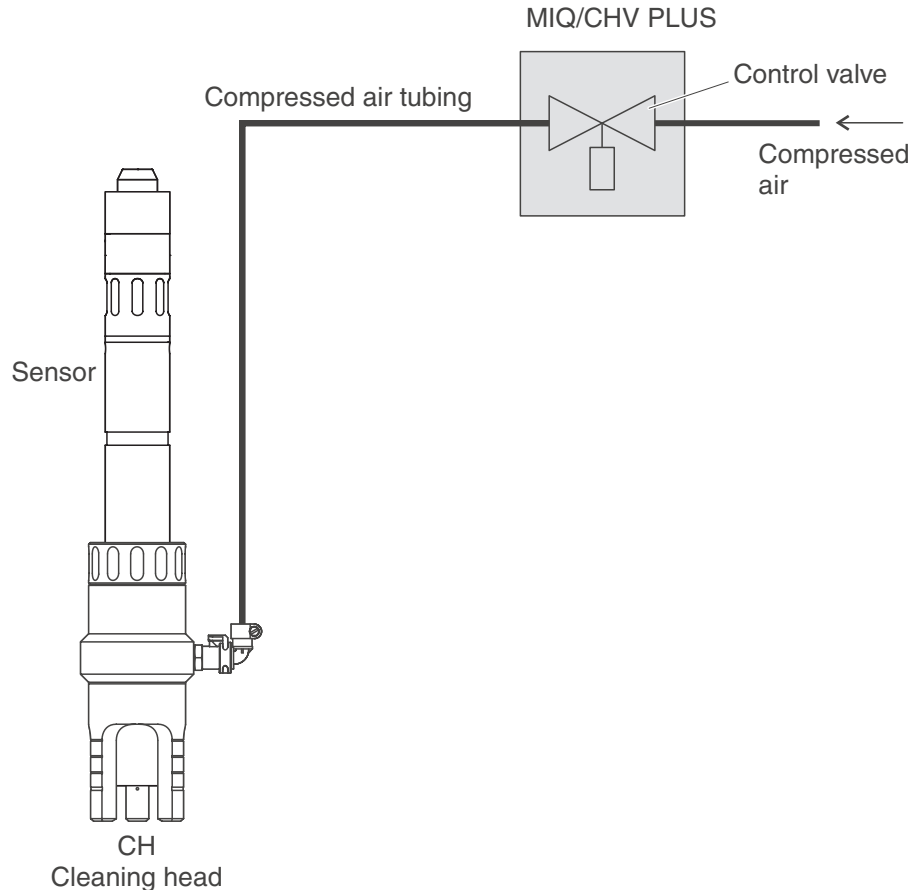
Fig. 1-1   Application example of the MIQ/CHV PLUS valve module
Power supply and control line via the IQ SENSOR NET

Power supply   When used in the IQ SENSOR NET, the valve module is supplied with voltage by the IQ SENSOR NET.

IQ SENSOR NET compatibility   The MIQ/CHV PLUS can be fully integrated in the IQ SENSOR NET using the MIQ standard module housing.

The housing has the same characteristics as all MIQ modules regarding stability, leakproofness and weather resistance. It also provides the same wide variety of installation options (stacked mounting, canopy mounting, top hat rail mounting, etc.).

Terminal strip   The MIQ/CHV PLUS has the following electrical connections on the terminal strip inside the housing:

● 1 x valve circuit connection

● 2 x SENSORNET connection

Note
If the valve is controlled via an external switch, only one SENSORNET connection can be used due to the limited number of cable glands. SENSORNET connection 1 or 2 can be selected.

2 Safety instructions

This operating manual contains special instructions that must be followed during the installation of the MIQ/CHV PLUS valve module. Thus, it is essential for the operator to read this component operating manual before carrying out any work with the system. Always keep the operating manual in the vicinity of the valve module.

General safety instructions

The following safety labels in the individual chapters of this operating manual indicate different levels of danger:

Warning
indicates instructions that must be followed precisely in order to prevent serious dangers to personnel.

Caution
indicates instructions that must be followed precisely in order to avoid slight injuries to personnel or damage to the instrument or the environment.

Other labels

Note
indicates notes that draw your attention to special features.

Note
indicates cross-references to other documents, e.g. operating manuals.

2.1   Authorized use

The authorized use of the MIQ/CHV PLUS consists of providing a control valve for compressed air-operated sensor cleaning heads. Please observe the technical specifications according to chapter 7 TECHNICAL DATA. Only operation according to the instructions in this operating manual is authorized.

Any other use is considered to be **unauthorized**. Unauthorized use invalidates any claims with regard to the guarantee.

2.2   General safety instructions

The MIQ/CHV PLUS is constructed and inspected according to the relevant guidelines and norms for electronic instruments (see chapter 7 TECHNICAL DATA).
It left the factory in a safe and secure technical condition.

Function and operational safety

The failure-free function and operational safety of the MIQ/CHV PLUS is only guaranteed if the generally applicable safety measures and the special safety instructions in this operating manual are followed during its use.

The failure-free function and operational safety of the MIQ/CHV PLUS is only guaranteed under the environmental conditions that are specified in chapter 7 TECHNICAL DATA.

Safe operation

If safe operation is no longer possible, the MIQ/CHV PLUS must be taken out of operation and secured against inadvertent operation. Safe operation is no longer possible if the MIQ/CHV PLUS:

● has been damaged in transport

● has been stored under adverse conditions for a lengthy period of time

● is visibly damaged

● no longer operates as described in this manual.

If you are in any doubt, contact the supplier of your MIQ/CHV PLUS.

3 Installation

3.1 Scope of delivery

The following parts are included in the scope of delivery of the MIQ/
CHV PLUS:

- MIQ/CHV PLUS. All openings and open electrical contacts are closed with suitable covers or blank covers.

- 2 x cable glands with seals

- 2 x ISO blind nuts M4

- 2 x cheese-head screws M4x16 with plastic washer

- 1 x contact base

- 2 x plastic tapping screws for fixing the contact base

- 1 x hose clip

- Operating manual.

3.2 Mounting for use in the IQ SENSOR NET

The IQ SENSOR NET provides a number of options for integrating the MIQ/CHV PLUS mechanically and electrically in the system (stacked mounting, distributed mounting, etc.). The individual types of installation are described in detail in the INSTALLATION chapter of the system operating manual.

3.3 Connecting the valve control line

Note
The valve control line must be connected if the valve is <u>not</u> controlled via the IQ SENSOR NET system.

Warning
The valve circuit must not supply any unauthorized voltages or currents. It has to be made sure that the circuit at any time meets all requirements of a *Limited circuit* or *Limited Power* as well as of *SELV Safety Extra Low Voltage*. For more details, see chapter 7 TECHNICAL DATA.

General installation instructions

Observe the following instructions when attaching connecting wires to the terminal strip:

- Shorten all the wires used to the length required for the installation.
- Basically, fit all stranded wire ends with wire end sleeves before connecting them to the terminal strip.
- Any wires that are not used and project into the housing must be cut off as closely as possible to the cable gland.

Materials required

- Wire end sleeves, suitable for the connecting wires, with suitable crimping tool
- 1 x cable gland with sealing ring (MIQ/CHV PLUS scope of delivery)

Tools

- Cable stripping knife
- Wire stripper
- Phillips screw driver
- Small screw driver

Warning
Danger of injury from lines that are under pressure. The compressed air glands in the housing may only be opened by a service technician authorized by WTW.

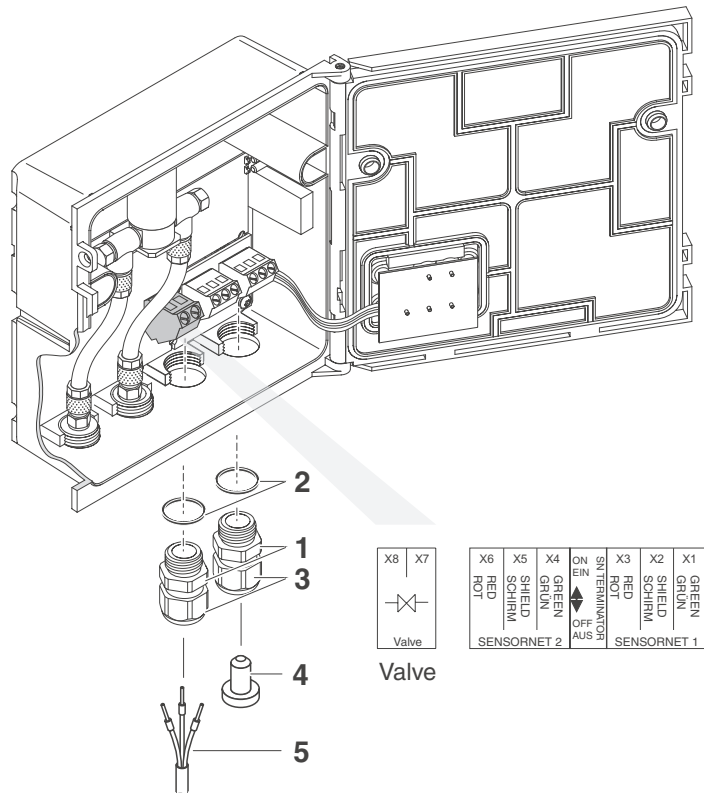|		
Connecting the control line to the terminal strip	1	Open the module.

Fig. 3-1   Clamping termination for the valve control line

2	Screw the cable gland (pos. 1 in Fig. 3-1) with the sealing ring (pos. 2) into the left connection opening.
3	Loosen the coupling ring (pos. 3 in Fig. 3-1).
4	Feed the valve control line through the left cable gland into the module housing.
5	Connect the wires of the valve control line (pos. 5 in Fig. 3-1) to the clamping termination for the valve control line. While doing so, pay attention to the specifications on the label located under the terminal strip.
6	Tighten the coupling ring (pos. 3 in Fig. 3-1).

Caution
No free wires must be allowed to project into the enclosure. Always cut off any wires that are not in use as closely as possible to the cable gland.

3 - 4

7	Close the module.
8	Screw a cable gland with sealing ring into the free opening and close it with the enclosed blind plug (pos. 4 in Fig. 3-1).
9	Tighten the coupling ring (pos. 3 in Fig. 3-1).

3.4   Connecting the compressed air hoses

General instructions

Pay attention to the following instructions when connecting the compressed air hoses (they can be connected either way round):

● Follow the specification of the compressed air according to chapter 7 TECHNICAL DATA.

● Only use hoses that match the compressed air connections.

● Secure all hose connections with hose clips.

Open the compressed air line

Pay attention to the following instructions if you want to open the compressed air line (e.g. during a modification):

Warning
Danger of injury from lines that are under pressure. Before opening the compressed air line, ensure that the section of line concerned is free of pressure. The compressed air glands in the housing may only be opened by a service technician authorized by WTW.

3.5   Function check

General instructions   This check is also suitable for the troubleshooting of malfunctions.

If the valve is <u>not</u> controlled via the IQ SENSOR NET system, the valve control line must be connected.

To check that the valve triggers correctly, proceed as follows:

Warning
Danger of injury from lines that are under pressure. The compressed air glands in the housing may only be opened by a service technician authorized by WTW.

1	<u>MIQ/CHV PLUS + IQ SENSOR NET</u>: Put the IQ SENSOR NET system into operation. <u>MIQ/CHV PLUS + measuring transmitter</u>: Supply the power supply module with voltage and put the measuring transmitter converter into operation.
2	Adjust the cleaning intervals on the measuring system so that the valve opens. or Open the valve in the *Valve function* menu with the *Manual control* function (see section 4.4.3).
3	Check whether there is a compressed air stream on the MIQ/CHV PLUS.

4   Settings

The MIQ/CHV PLUS module has a valve output.
The MIQ/CHV PLUS valve module registers on the IQ SENSOR NET system as a valve output (V) and appears in the list of outputs.

On the terminal, you can:

● assign a name for the valve output (see section 4.1).

● link the valve output to a sensor (see section 4.2)

● erase the link of the valve output with a sensor (see section 4.3)

● set the valve output (see section 4.4)

● check the state of the valve output (see section 4.5)

Note
The general operating principles are given in the system operating manual or in the component operating manual of the terminal components.

Functions for the valve output (see section 4.4)

You can set the following functions for the valve output:

● *Cleaning*
(Setting of the cleaning procedure in the menu, *Settings of outputs and links*)

● *Sensor-controlled*
(Setting of the cleaning procedure in the menu, *Settings of sensors and diff. sensors* of the relevant sensor)

● *Manual control*

4.1   Entering / editing the name of an output

For easier identification of the outputs, an individual name can be given
to each output in the *Edit list of outputs* overview.

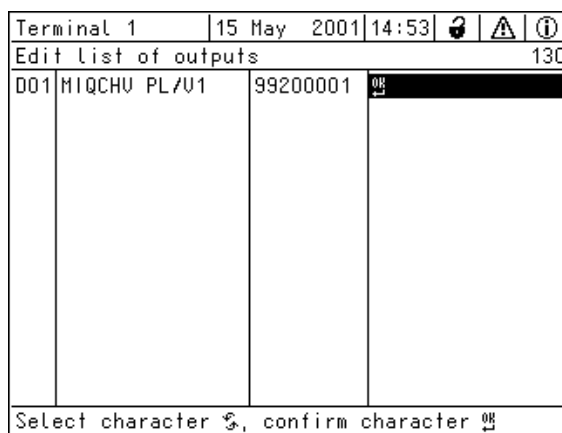| 1	Open the *Einstellungen/Settings* menu with Ⓢ.
2	Using ↻ and ⓄⓀ, select and confirm the menu item, *System settings -> Edit list of outputs*. The *Edit list of outputs* display opens.
3	Using ↻, highlight a name in the *Name* column and confirm with ⓄⓀ.

Fig. 4-1   Edit list of outputs

4	Select a letter, a numeral or a special character with ↻ and confirm with ⓄⓀ.
5	Complete the name of the output and confirm with ⓄⓀ.

4.2   Linking the output with a sensor

1	Open the *Einstellungen/Settings* menu with Ⓢ.
2	Using ⟳ and ⓄⓀ, select and confirm the menu item, *System settings -> Settings of outputs and links*. The *Settings of outputs and links* display opens.
3	Using ⟳, highlight the *&* column and confirm with ⓄⓀ.
4	Highlight an output with ⟳ and confirm with ⓄⓀ. The *Link with...* display opens. The display shows a list of the sensors to which a link is possible.

```
Terminal 1      │01 Jan  2001│00 00│ 🔒│ ⚠ │ ⓘ
Link with...
  │No.│Sensor name  │      Measuring range
  │S01│01341000    │O2   0.0 ... 60.0 mg/L
  │S03│99160001    │pH   0..14




Select sensor ⟳, confirm ⌸
```

Fig. 4-2   Settings of outputs and links: Link with...

5	Select a sensor with ⟳ and confirm with ⓄⓀ. The output is linked with the selected sensor.

Note
Outputs that are linked with sensors can be identified in the *Ser. no.* field of the *Settings of outputs and links* overview by the specification of the linked sensor.

4.3   Deleting a link with an output

If a link of a valve output with a sensor is no longer required, the link
can be deleted.

1	Open the *Einstellungen/Settings* menu with Ⓢ.
2	Using Ⓒ and ⓄⓀ, select and confirm the menu item, *System settings -> Settings of outputs and links*. The *Settings of outputs and links* display opens.
3	Using Ⓒ, highlight the *&* column and confirm with ⓄⓀ.
4	Highlight a linked output with Ⓒ and confirm with ⓄⓀ.

```
Terminal 1        01 Jan  2001 00 00  🔒 ⚠ ①
Settings of outputs and links              150
 &  No. Name          Chan. Feature
     001                 R1   No function
 S01
        No further link possible!
 S01

        Erase link
        Cancel

Linked sensor
     S01 01341000       02    0.0 ... 60.0 mg/L
Select 🕹, edit link ⓄⓀ
```

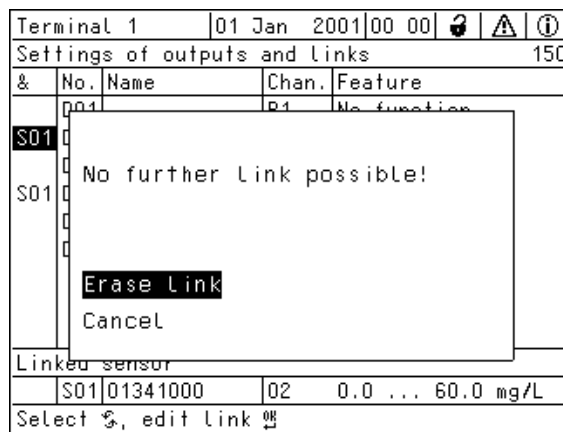*Fig. 4-3   Settings of outputs and links: Erase link*

5	Select *Erase link* with Ⓒ and confirm with ⓄⓀ. A security prompt appears.
6	Select *Erase link* with Ⓒ and confirm with ⓄⓀ. The link is deleted.

4.4   Setting the valve output

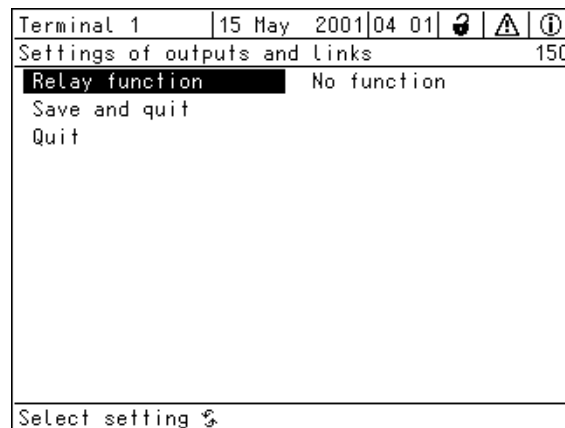| 1	Call up the measured value display with Ⓜ.
2	Open the *Einstellungen/Settings* menu with Ⓢ.
3	Using ↻, highlight the *Settings of outputs and links* menu item and confirm with ⓄK. The *Settings of outputs and links* display appears.
4	Highlight the *Feature* column with ↻ and confirm with ⓄK.
5	Highlight a line for the valve output (Cx) in the *Feature* column with ↻ and confirm with ⓄK. The *Settings of outputs and links* display opens.
6	Using ↻, highlight the *Valve function* menu item and confirm with ⓄK.

```
Terminal 1      |15 May  2001|04 01| 🔒 | ⚠ | ⓘ
Settings of outputs and links                150
 Relay function       No function
 Save and quit
 Quit




Select setting ⚙
```

Fig. 4-4   Settings of outputs and links

7	Select one of the functions in the following list with ↻ and confirm with ⓄK.

Function	Description
No function	The valve output is not used.
Cleaning	see section 4.4.1
Sensor-controlled	see section 4.4.2
Manual control	see section 4.4.3

8	Carry out the settings for the relay outputs with ⟳ and ⟨OK⟩.
9	Using ⟳ and ⟨OK⟩, highlight and confirm *Save and quit*. The new settings are stored.

4.4.1 *Cleaning*

Function

The *Cleaning* function enables to start the sensor cleaning function automatically and time-controlled. The valve switches on or off the compressed air for the CH sensor cleaning head.

In order to set up the *Cleaning* function for a valve output, the valve output must be linked with a sensor (see section 4.2).

The cleaning cycle consists of *Cleaning duration* and *Adjustment time*.

During the cleaning cycle the *Clean* display for the sensor that is being cleaned flashes. The outputs linked with this sensor are frozen. The maintenance condition is active.

After the *Cleaning duration*, the relay is opened. During the following *Adjustment time* the outputs remain blocked.
The outputs linked with this sensor are only released when the cleaning cycle is completed. The *Clean* display disappears. The maintenance condition is finished.

Testing the operativeness

You can test the operativeness of the cleaning system as follows: manually open or close the valve with the *Manual control* function (see section 4.4.3) and, while doing so, check the behavior of the cleaning system.

Alternatively, you can test the operativeness of the cleaning system by checking the performance of the function at the start time set up (reference time ± interval). To perform a test immediately, you can set the reference time so that the next cleaning cycle will start in a few minutes (settings: see following table).

Settings

Setting	Selection/Values	Explanation
Reference time (h)	*0 ... 23 h*	Time at which a cleaning cycle is started. Further cleaning cycles will be performed at the times specified by the cleaning interval.
Reference time (min)	*0 ... 60 min*	
Interval unit	*1 .. 7 d* *1 .. 24 h* *5 .. 60 min*	Selection of range and unit for the *Cleaning interval*.
Cleaning interval	*1/2/3/4/5/6/7 d* *or:* *1/2/3/4/6/8/12/24 h* *or:* *5/10/15/20/30/60 min*	Repeat interval for the cleaning function: Time between the start time of a cleaning cycle and the start time of the next cleaning cycle*.
Cleaning duration	*0 ... 300 s*	Duration of the cleaning
Adjustment time	*0 ... 900 s*	Time extension to allow the sensor to adjust to the test sample after cleaning.

* With short *cleaning intervals*, the adjustable values for the *Cleaning duration* and *Adjustment time* are limited. The following values apply:

Cleaning interval	*Cleaning duration*	*Adjustment time*
≤ 10 min	max. 60 s	max. 120 s
≤ 20 min	max. 180 s	max. 300 s

Note
With this, the cleaning times are fixed. They only change when the *reference time* is changed.

Note
The reference time and all further cleaning times relate to the date and time of the system clock. How to set the system clock is described in the system operating manual.

Example

Setting		Result
Reference time (h):	12	Reference time: 12:00 hours
Reference time (min):	0	This specifies the following start times:
Interval unit:	Hours (h)	04:00, 12:00 and 20:00 hours
Cleaning interval:	8 h	
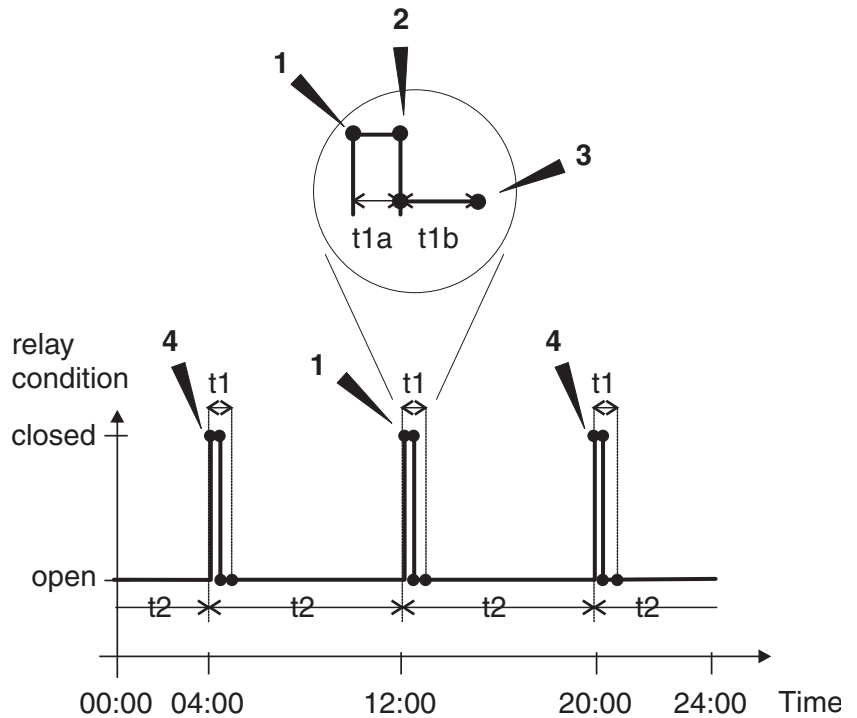
Fig. 4-5   Cleaning cycle

1	Reference time Start of a cleaning cycle (**t1**) Start of the specified *Cleaning duration* (**t1a**)
2	End of the specified *Cleaning duration* (**t1a**) Start of the specified *Adjustment time* (**t1b**)
3	End of the specified *Adjustment time* (**t1b**) End of the cleaning cycle (**t1**)
4	Reference time ± *Cleaning interval* (**t2**) Start of a cleaning cycle
t1	Cleaning cycle = *Cleaning duration* (**t1a**) *Adjustment time* (**t1b**) Linked outputs are frozen.
t2	*Cleaning interval*

Canceling the cleaning   A running cleaning cycle is canceled:

● Automatically

    – If the sensor switches to the inactive condition during the cleaning
      cycle

● Manually

    – By pressing Ⓒ

    – By switching on the maintenance condition

Each time the cleaning cycle is canceled, the valve closes immediately.

If the cleaning cycle is canceled automatically, the outputs linked to the
sensor are released immediately.
If the cleaning cycle is canceled manually, the sensor is in the
maintenance condition. The linked outputs are only released after the
maintenance condition was terminated manually.

The next cleaning cycle will be performed at the time set up.

Note
The valve closes in the case of power failure. The cleaning cycle is
canceled. As soon as power is available again the next cleaning cycle
takes place at the specified time.

4.4.2   Sensor-controlled cleaning

With the *Sensor-controlled* function, the valve is controlled by a linked
sensor.

Requirements   ● Controller version 2.80 or higher

● Sensor or module sending the signals to trigger a cleaning cycle,
e.g. the connection module MIQ/VIS for UV/VIS sensors

Note
Set the cleaning procedure in the menu, *Settings of sensors and diff.
sensors* of the relevant sensor.

4.4.3 *Manual control*

Function   With the *Manual control* function you can check the operability of the valve. To do so, close or open the valve manually and, while doing so, check the behavior of the connected cleaning head.

Setting	Selection/Values	Explanation
Valve function	*Manual control*	The selected valve action is carried out with *Save and quit*.
Action	*Open* *Close*	

Note
The settings for other functions in the *Valve function* menu are retained while the *Manual control* function is carried out.

4.5 Checking the status of the outputs

This function offers a simple overview of the states of all outputs.

The *open* or *closed* state is displayed for each valve.

The *Status der Ausgangskanäle* function is available in the *Einstellungen/Settings*/*Service*/*List of all components* menu.

1	Call up the measured value display with (M).
2	Open the *Einstellungen/Settings* menu with (S).
3	Using (↻), highlight the *Service* menu item and confirm with (OK). The *Service* dialog box opens.
4	Using (↻), highlight the *List of all components* menu item and confirm with (OK). The *List of all components* dialog box opens.
5	Select the required component (column *Model*, entry *MIQCHV PL*) with (↻) and confirm with (OK). The *Status der Ausgangskanäle* window opens.

```
Terminal PC      |15 May  2001|14 53| 🔒 | ⚠ | ⓘ
Status of output channels                      394
No.|Name        |Chan.|Status
DO1|            |V1   |closed




Return ESC
```

Fig. 4-6   Status of output channels

6	Using (M) or (ESC), exit the *Status der Ausgangskanäle* window.

5 Maintenance and cleaning

5.1 Maintenance

The MIQ/CHV PLUS requires no special maintenance.

5.2 Cleaning

MIQ modules   Clean modules mounted in the open of gross contamination as necessary. We recommend to clean the worst of the dirt on the module and the area around it each time before opening in order to prevent gross contamination from entering the open enclosure.

To clean the module, wipe the enclosure surfaces with a damp, lint-free cloth. If compressed air is available on site, blow off the worst of the dirt beforehand. Keep the enclosure closed while doing so.

6   What to do if ...

No compressed air at the output

| Cause	Remedy
– Compressed air supply interrupted or too weak	– Check the compressed air supply
– Supply voltage not present or too low	IQ SENSOR NET: – See the chapter, WHAT TO DO IF... in the system manual

– Error in triggering	– Perform the function check according to section 3.5.
	– If the valve does not switch, check the control
	    – loose clamping connection
	    – broken control line
	    – defective relay output
	    – valve output was not linked with a sensor (see section 4.2)
	    – incorrect setting of the linked valve output (see chapter 4)

7   Technical data

Dimensions

Front view:

Lateral view:

Rear view:

Stack mounting:
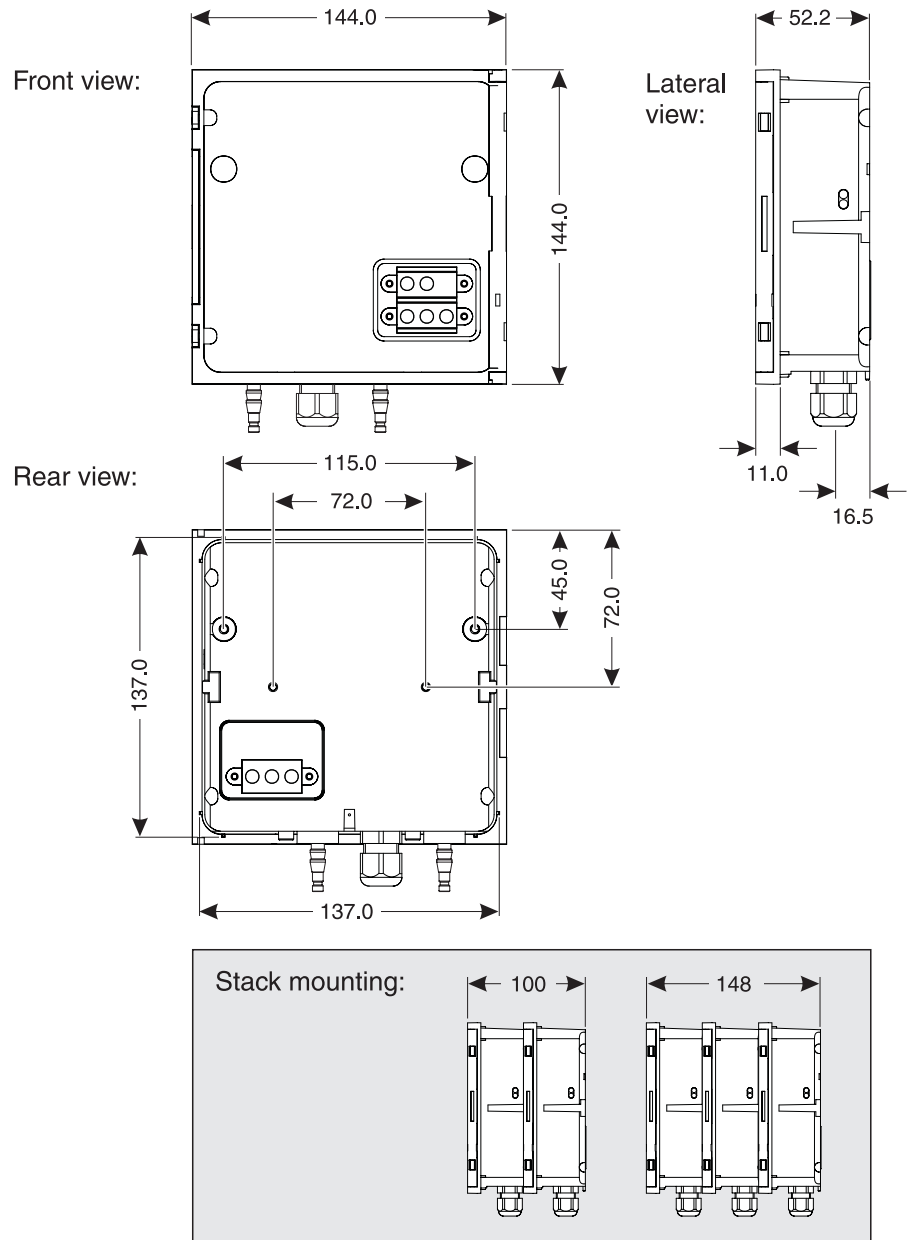
Fig. 7-1   Dimension drawing of the MIQ/CHV PLUS (dimensions in mm)

Mechanical construction	Maximum number of modules in a module stack	3 (plus a terminal component in the IQ SENSOR NET)
	Materials	– Housing: Polycarbonate with 20 % glass fiber – Pressure hose sleeves: POM
	Weight	Approx. 0.5 kg
	Type of protection	– IP 66 – In accordance with NEMA 4X MIQ modules are not suitable for conduit connection – NEMA 3S

Ambient conditions

Temperature

Operation	- 20 °C ... + 55 °C
Storage	- 25 °C ... + 65 °C

Relative humidity

Yearly average	$\leq$ 90 %
Dew formation	Possible

Electrical data	Nominal voltage	Max. 24 VDC via a separate power supply module. IQ SENSOR NET For details, see chapter TECHNICAL DATA of the IQ SENSOR NET system operating manual Suitable power supply modules: – MIQ/PS – MIQ/24V
	Power consumption	Approx. 2 W
	Protective class	III

Instrument safety	Applicable norms	– EN 61010-1

EMC product and system characteristics	EN 61326	EMC requirements for electrical resources for control technology and laboratory use – Interference immunity according to EN 61326/A1 table A.1 – Resources for industrial areas, intended for indispensable operation – Interference emission limits for resources of class B
	System lightning protection	Noticeably extended qualitative and quantitative protective characteristics as opposed to EN 61326/A1 table A.1
	FCC, class A	

Terminal connections	IQ SENSOR NET connections	2 Additional connectable SENSORNET terminator (terminating resistor) Note: If the valve is controlled via an external switch, only one SENSORNET connection can be used due to the limited number of cable glands. SENSORNET connection 1 or 2 can be selected.

7 - 4

Valve switching contact	1
Terminal type	Screw-type terminal strip, accessible by opening the lid
Terminal ranges	Solid wires: 0.2 ... 4.0 mm^2 AWG 24 ... 12 Flexible wires: 0.2 ... 2.5 mm^2
Cable feeds	Cable glands M16 x 1.5 on the underside of the module

Valve circuits

Switching voltage	Approx. 12 V
Max. switching current	Approx. 70 mA

Warning
The valve circuit must not supply any unauthorized voltages or currents. It has to be made sure that the circuit at any time meets all requirements of a *Limited circuit* or *Limited Power* as well as of *SELV Safety Extra Low Voltage*. These include the following limiting value specifications:

● **AC voltage: max. 30 V effective / 42.4 V peak**

● **DC voltage: max. 60 V**

● **Current limit: max. 8 A**

● **Power output limitation: max. 150 VA**

Compressed air

Required air quality	Dry, dust-free and oil-free
Operating pressure	Max. 7x10^5 Pa (7 bar) absolute
Connections	6 mm hose nozzles

8   Lists

## 8.1   Explanation of the messages

In this chapter you will find a list with all the message codes and corresponding message texts that may occur in the log book of the IQ SENSOR NET system for the MIQ/CHV PLUS output module.
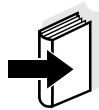
Note
Information about

- Contents and structure of the log book and

- Structure of the message code

can be found in the LOG BOOK chapter of the IQ SENSOR NET system operating manual.
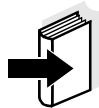
Note
All message codes of the MIQ/CHV PLUSoutput module end with the number, "432".

8.1.1   Error messages

Message code	Message text
EI2432	*Operational voltage too low, no operation possible* ** Check installation and cable lengths,* *Follow installation instructions* ** Power unit(s) overloaded, add power unit(s)* ** Defective components, replace components* ** Defective components, replace components*

8.1.2   Informative messages

The MIQ/CHV PLUS output module does not send any informative messages.

9   Accessories and options

Description	Model	Order no.
Cleaning head for online sensors with 40 mm diameter	CH	900 107
Tubing set, comprising: – 15 m compressed-air hose – 1 quick disconnect coupler, complete – 2 hose clips – Teflon tape	CH/Epack	900 111
Long-range power supply for 100-240 VAC nominal input voltage	MIQ/PS	480 004
Power supply for 24 V AC/DC nominal input voltage	MIQ/24V	480 006
Combined output module with three current outputs and three relay outputs	MIQ/CR3	480 014
IQ SENSOR NET cable - please specify required length in m when ordering	SNCIQ SNCIQ/UG	480 046 480 047
Sun shield for a unit of up to three stacked MIQ modules	SSH/IQ	109 295
Sun shield for a unit of up to two stacked MIQ modules	SD/K 170	109 284
Mounting kit for fixing the SD/K 170 sun shield on horizontal or vertical pipes	MR/SD 170	109 286
Kit for wall mounting of a MIQ module	WMS/IQ	480 052
Set for panel mounting of MIQ modules; Panel aperture 138 x 138 mm according to DIN 43700 or IEC 473	PMS/IQ	480 048
Set for mounting of MIQ modules on a 35 mm top hat rail according to EN 50022	THS/IQ	480 050