



FG
Industrial Air

Translation of the original instructions
Filter controller MFS-05 Δp

Material No. of Instruction Manual
70303409



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2 General safety instructions

2.1 Safety instructions for installation and operating personnel

This Instruction Manual contains important safety instructions which must be heeded at all times during installation, operation and maintenance. Non-observance can result in risks to persons and the environment as well as in damage to the machine or system, e.g.:

- ⇒ Failure of critical functions of the system or its component parts.
- ⇒ Danger to persons from electrical or mechanical effects as well as from chemical reactions.
- ⇒ Danger to the environment owing to the leakage of hazardous substances.

Before installation/start-up:

- Read the Instruction Manual carefully.
- Make sure that installation and operating personnel are adequately trained.
- Make sure that the contents of the Instruction Manual are fully understood by the responsible persons.
- Define areas of responsibility and competence.

During operation of the system:

- Keep the Instruction Manual handy at the place where the system is used.
- Heed the safety instructions.
- Always operate the system/machine in accordance with its ratings.

If in doubt:

- Consult the manufacturer.

2.2 Warning structure

Where possible, warnings are structured according to the following system:

Signal word	
Possibly with symbol	Nature and source of the danger ⇒ Potential consequences of non-observance. • Action to avert the danger.

2.3 Warning symbols used

 DANGER!
Immediate danger! ⇒ Non-observance will result in serious or fatal injury.
 WARNING!
Potentially dangerous situation! ⇒ Non-observance can result in serious or fatal injury.
 CAUTION!
Potentially dangerous situation! ⇒ Non-observance can result in minor or moderate injuries.
CAUTION!
Potentially dangerous situation! ⇒ Non-observance can result in property damage.

2.4 Other symbols used:

	Danger from high voltage
	Danger information about explosion protection
	Information about environmental protection
	Wear protective clothing!
	Wear goggles!
	Hand symbol: Indicates general information and recommendations
	Bullet: Indicates the order in which actions are to be carried out
	Arrow: Indicates responses to actions

3 Glossary

Pulsing:

Pressure cleaning of the filter elements with air or gas.

“Switching threshold” pulsing:

Pulsing is activated when a switching threshold is exceeded.

“Time-controlled” pulsing:

Pulsing is activated at fixed time intervals.

Switching threshold:

Preset differential pressure that must not be exceeded or at which a defined action, such as activation of a valve, must take place.

Temperature hysteresis:

Response inertia to a change in temperature.

Temperature drift:

Temperature sensitivity of the transistor characteristics.

4 General information

4.1 Manufacturer

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Schleifbachweg 45
D-74613 Öhringen
Phone +49 7941 6466-0
Fax +49 7941 6466-429
fm.de.sales@filtrationgroup.com
www.filtrationgroup.com

4.2 Information about the Instruction Manual

FG Mat. No.:70303409

Date:16.01.18

Version:03

4.3 ATEX type key



II	3	D	T60°C	IP65
1.	2.	3.	4.	5.
1.	II	Valid for use above ground		
2.	Category	2		
	Use in	Zone 22		
3.	Atmo- sphere	D		
	G = Gas D = Dust			
4.	Maximum surface temperature 60°C			
5.	Degree of protection IP65			

5 Intended application

⚠ DANGER!

EX

The MFS-05 Δp filter controller must not be operated in potentially explosive atmosphere (Zones 0, 1 and 2).

⚠ DANGER!

This filter controller is only allowed to be used in accordance with the operating conditions specified in the contract documentation and in the Instruction Manual. All forms of use which deviate from or exceed the limits of use described above are considered to be contrary to the intended purpose. The manufacturer shall not be liable for any damage resulting from such use.

The MFS-05 Δp filter controller with integrated differential pressure transmitter is used for demand based control of cleaning systems of the kind encountered in industrial dust removing applications. Up to 24 automatically actuated diaphragm valves pulse the dust elements.

Numerous control and monitoring functions are implemented in the controller.

The MFS-05 Δp filter controller normally operates according to the "interval time control" principle. The variable interval time between valve actuations is calculated from a characteristic curve according to the differential pressure. Alternatively, the controller can be operated in "switching threshold" or "time-controlled" mode.

Valve monitoring:

All valves are monitored for overcurrent (short-circuits) and interruptions. The controller has three relays for operating/fault signals, cleaning signals and "alarm threshold exceeded".

6 Main components

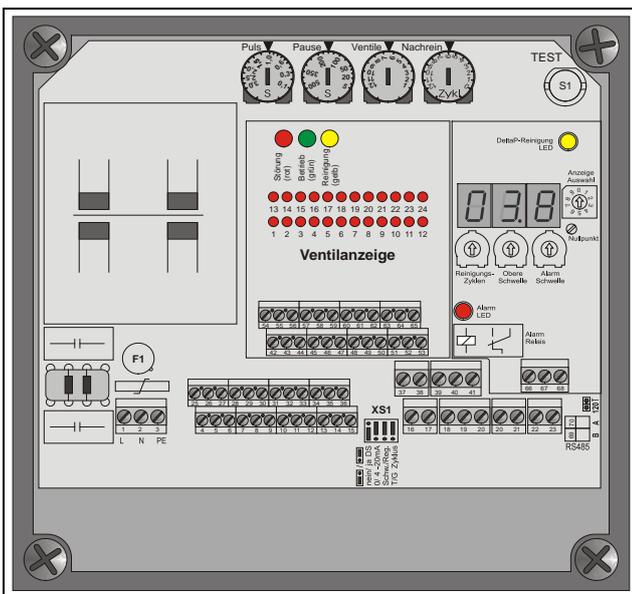


Fig. 1: Controls, LEDs and displays

6.1 Overview of types

	The order numbers in parentheses apply to units that are packed and ready for shipping.
--	---

MFS-05 Δp AC 230 V	76341440 (76341838)
MFS-05 Δp DC 24 V	76341457 (76341846)

Accessories:

Valve extension 13 to 24 valves	79742982 (76109664)
Replacement fuses (pack of 5)	76186597 (76186605)
Set of instrument lines with protective filter	78341984 (79759846)

6.2 Controls, LEDs and displays

LC display:

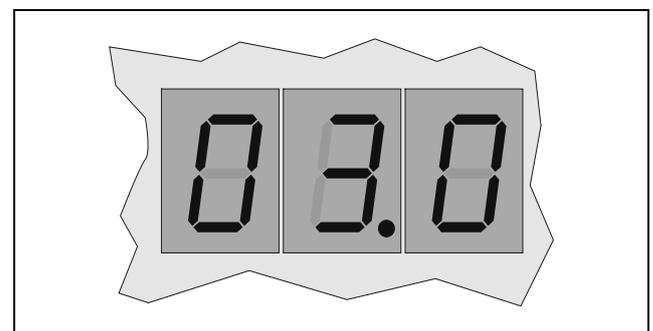


Fig. 2: LC display

3-digit, 7-segment display showing the current differential pressure or the switching threshold.

Display selection:

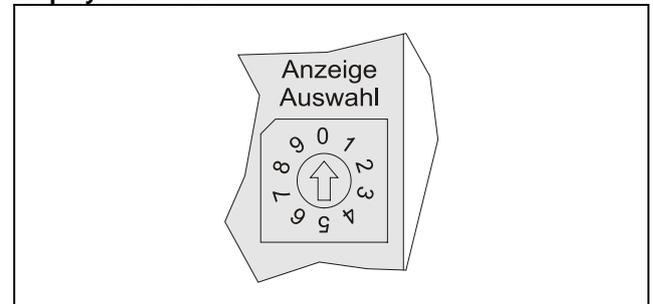


Fig. 3: Display selection

Position	Display
0	Current differential pressure [mbar]
1	Cleaning cycles
2	High threshold
3	Alarm threshold
4	Not assigned
5	Current valve or faulty valve (in this case, the first digit is a blinking line): Down = interruption Up = overcurrent
6	Post-cleaning cycles
7	No. of valves
8	Interval time
9	Pulse time

Potentiometers:

The time settings have a logarithmic scale with a control range of 240°.

On the motherboard:

Pulse time	0.1 s ... 3.0 s
Interval time	5 s ... 500 s
No. of valves	1 ... 12 valves 13 ... 24 valves if a valve extension board is installed If the number of valves is set to an intermediate value, two adjacent valve LEDs blink
Post-cleaning cycles	0 ... 12 If the number of cycles is set to an intermediate value, the complete LED row blinks

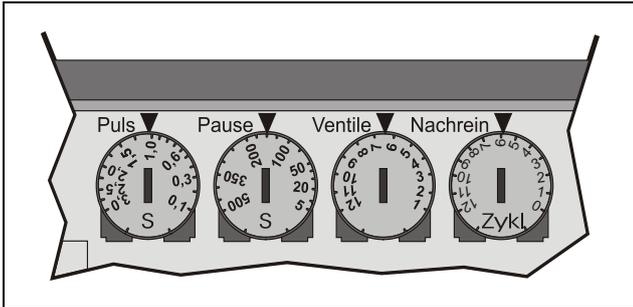


Fig. 4: Controls on the motherboard:

On the ΔP module:

Cleaning cycles	1 ... 10
High threshold	0 ... 40 mbar
Alarm threshold	0 ... 40 mbar

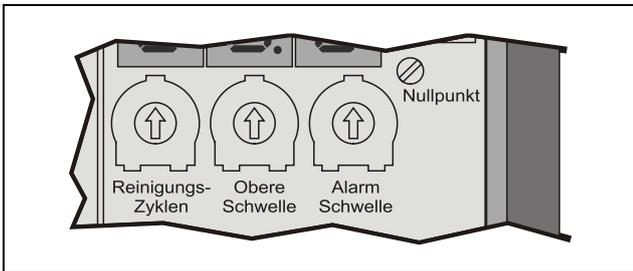


Fig. 5: Controls on the Δp module

Zero:

The Δp zero adjusting screw is located to the right of the LC display.

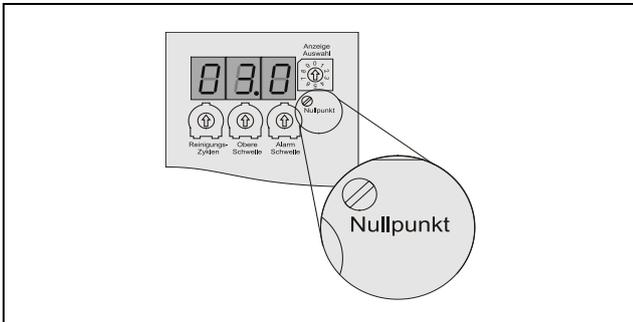


Fig. 6: Zero adjustment

Jumper XS1:

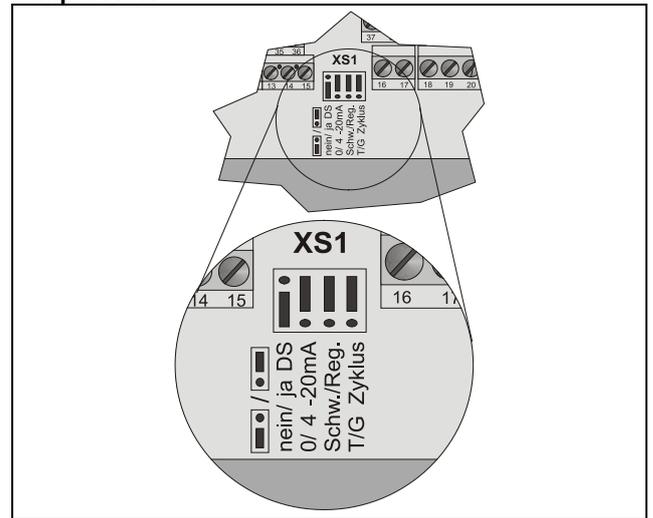


Fig. 7: Factory setting for interval time control

	Pressure switch*	Analogue input	Cleaning mode	Cleaning cycle
Designation	Nein/ja DS (press-ure switch yes/no)	0/4 - 20 mA	Schw./Reg (threshold/control)	T/G Cycle (partial/full cycle)
	Yes	4 – 20 mA	Interval time control	Full cycle
	No	0 – 20 mA	High threshold	Partial cycle

* Function not supported

TEST button S1:

Press this button to start cleaning the next valve for the duration of the set pulse time.

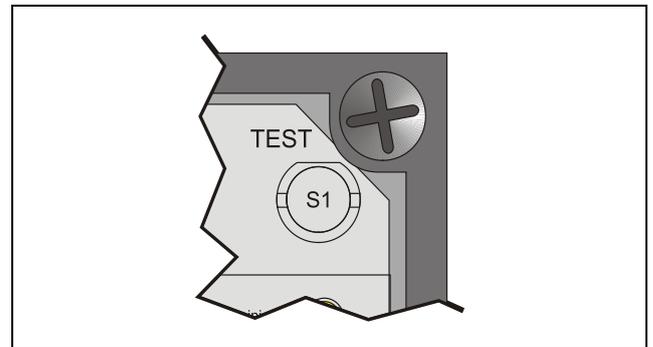


Fig. 8: TEST button S1

LEDs:

- ⇒ Fault (red)
- ⇒ Operation (green)
- ⇒ Cleaning (2 x yellow)
- ⇒ Pulsing (red, 1x per valve)
- ⇒ Alarm threshold on ΔP module (red)

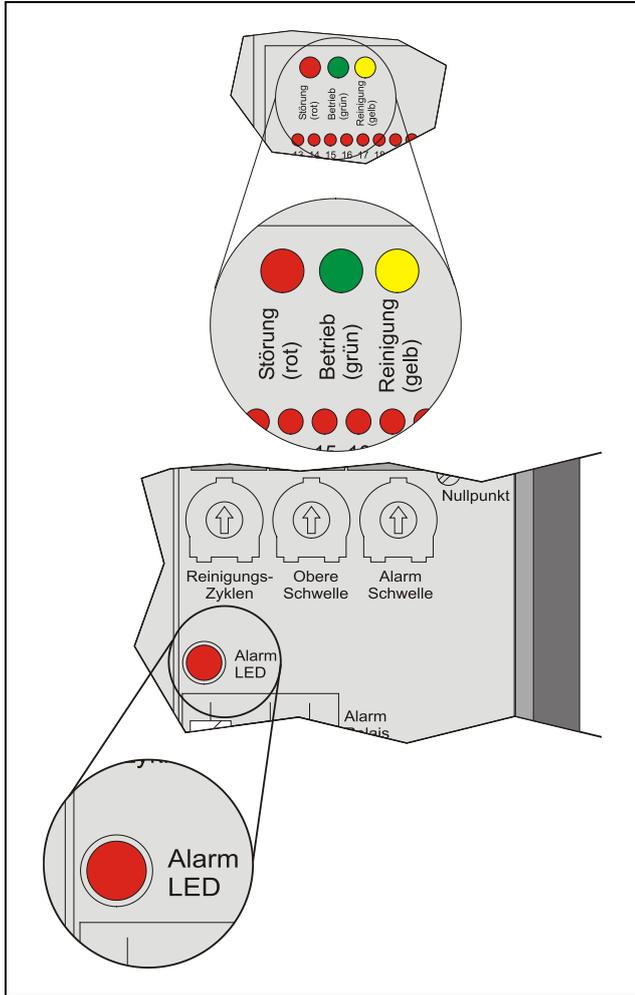


Fig. 9: LEDs

Valve alarm LED:

- ⇒ Valve LED blinks.
- ⇒ Cause: Overcurrent or interruption

7 Technical data

	<p>The inputs are not isolated!</p> <ul style="list-style-type: none"> • Provide external isolation if necessary.
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Filtration Group GmbH
Schleifbachweg 45
DE 74613 Öhringen
Tel.: +49 7941 6466-0

MFS-05 Magnetventilsteuerung
619700 / 79742966

Netz power	100...240 VAC
Ventile valves	12
S.-Nr. serial no.	00394120

Hersteller:
 HESCH Schröder GmbH
 Boschstraße 11 | DE 31535 Neustadt
 Tel.: +49 5032 9535-0 | www.hesch.de

II3D Ex to IIIC
T135°C Dc IP65
CE

Fig. 10: Nameplate

Analogue inputs (not isolated)	<ul style="list-style-type: none"> • Start or Δp input not assigned (time control: 16-17 jumpered)
Digital inputs	<ul style="list-style-type: none"> • Enable (contact closed, terminal 18-19) / stop (contact open) • Post-cleaning • Rapid cleaning • Fault acknowledgement (momentary contact signal)
Pressure measuring lines	<ul style="list-style-type: none"> • P1 = pressure on dirty side = [+] (upstream of filter element) • P1 = pressure on clean side = [-] (downstream of filter element) • Measuring hose diameter: 4 mm
Valve outputs	12, extendable to 24
Valve voltage	24 V DC ± 10%
Valve current	1 A for pulse time ≤ 1 s, otherwise 0.5 A
Relay outputs	<ul style="list-style-type: none"> • Contact load 250 V AC / 5 A • 1 changeover contact for operating/fault signals (FAIL-SAFE circuit) • 1 NO contact for cleaning signal • 1 changeover contact for Δp alarm
Analogue output	0 (4) ... 20 mA
Δp sensor	<ul style="list-style-type: none"> • Measuring range: 0 ... 40 mbar • Max. static pressure: 1 bar • Linearity: ± 1% • Temperature hysteresis: ± 0.5% • Temperature drift / zero: ± 0.025% / K • Temperature drift / upper range value: ± 0.01% / K
Time settings	<ul style="list-style-type: none"> • Pulse time: 0.1 ... 3.0 s • Interval time: 5 ... 500 s • Post-cleaning: 0 ... 12 cycles
LEDs	<ul style="list-style-type: none"> • Operation: Green • Cleaning: Yellow • Fault: Red

	<ul style="list-style-type: none"> Valve alarm: Red Alarm threshold: Red
Electrical connection	<ul style="list-style-type: none"> Screw-type terminal strips 2.5 mm² Valve connections 1.0 mm²
Ambient temperature	0 ... 50°C
Climatic category	KWF acc. to DIN 40040 (≤ 75% relative humidity, no condensation allowed)
Design	<ul style="list-style-type: none"> Dust-tight Makrolon casing (Ex II 3D T60°C IP65) 175 x 175 x 100 mm (W x H x D)

Mains power supply	230 V AC, 50-60 Hz	24 V DC
Tolerance	± 10%	± 10%
Mains fuse	0.315 A time-lag	3.15 A time-lag
Power consumption	30 W	42 W

8 Transport and storage

Transport

- Always transport in the original packaging
- Avoid vibrations

Storage

- Always store in the original packaging
- The unit must be stored in a dry room at 0 ... 70°C
- Avoid vibrations
- Avoid direct UV radiation (sunlight)



9 Functions

9.1 Operating modes

The controller can operate in three different modes. The mode is selected by altering the assignment of terminal 16-18 and the setting of the "XS1" jumper.

9.1.1 Interval time control

If "interval time control" mode is selected, the controller is permanently active. The interval time varies as a function of Δp .

Factory settings:

- Terminal 16-17 not assigned
- Terminal 18-19 jumpered
- XS1 jumper Schw./Reg. switch up
- XS1 jumper T/G Cycle switch up

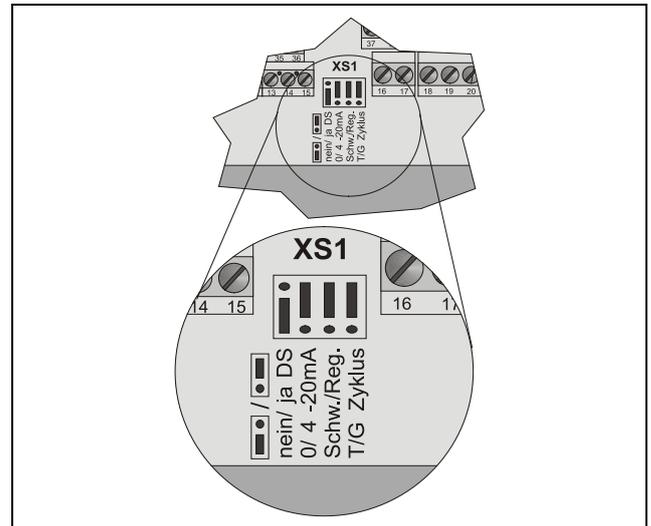


Fig. 11: Jumper settings for interval time control

- ⇒ Valve activation is controlled by a Δp -dependent interval time.
- ⇒ The interval duration is determined by Δp and the selected controller characteristic.

Possible controller characteristics:

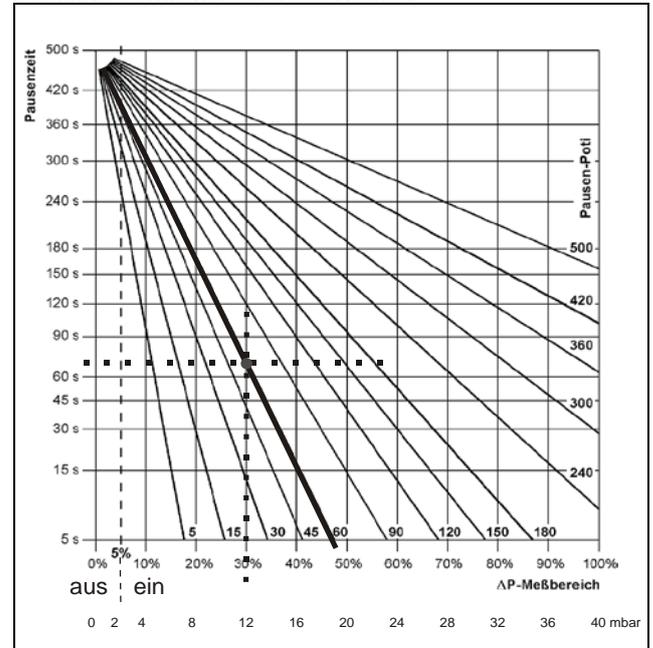


Fig. 12: Controller characteristics

Example:

The filter must be cleaned at a differential pressure equivalent to 30% of the differential pressure measuring range (= 12 mbar) with an interval time of approximately 70 s.

To select the characteristic:

- Find and plot the 30% line.
- Find and plot the 70 s line.
- ⇒ The point of intersection is located on characteristic 60.
- Set the "interval" potentiometer to 60 s.

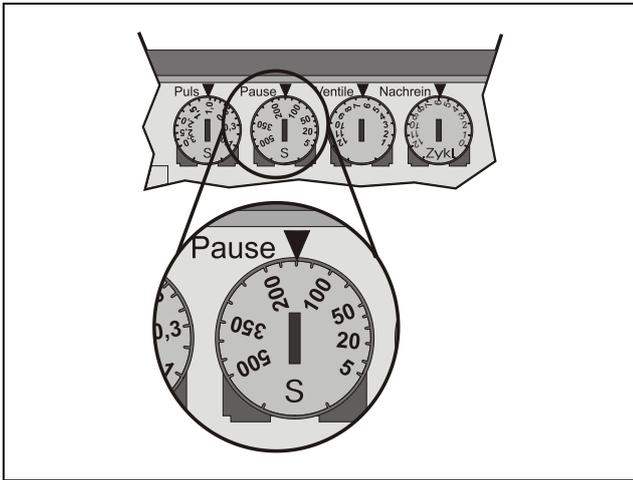


Fig. 13: "Interval" potentiometer

- ⇒ The controller determines the required interval time from the current differential pressure and the selected characteristic.
- ⇒ The interval time is shorter if the differential pressure increases and longer if it is reduced.

	<p>The change in the interval time is non-linear. The cleaning process ends if the differential pressure falls below approximately 5% of the measuring range.</p>
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9.1.2 Switching threshold

If "switching threshold" mode is selected, the controller is activated when the set threshold is exceeded.

Factory settings:

- Terminal 16-17 not assigned
- Terminal 18-19 jumpered
- Jumper 3 down

Full cycle (optional)

- XS1 jumper T/G Cycle switch up
- ⇒ A full cycle is executed if the switching threshold is exceeded.

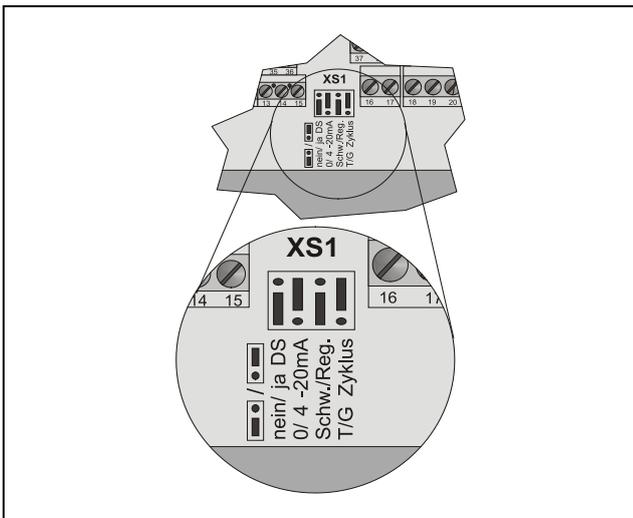


Fig. 14: Jumper settings for full cycle

Partial cycle (optional):

- XS1 jumper T/G Cycle switch down
- ⇒ A cleaning process is executed if the switching threshold is exceeded.
- ⇒ The cleaning process ends if the differential pressure falls below the switching threshold.
- ⇒ The next valve is activated when the controller is activated again.

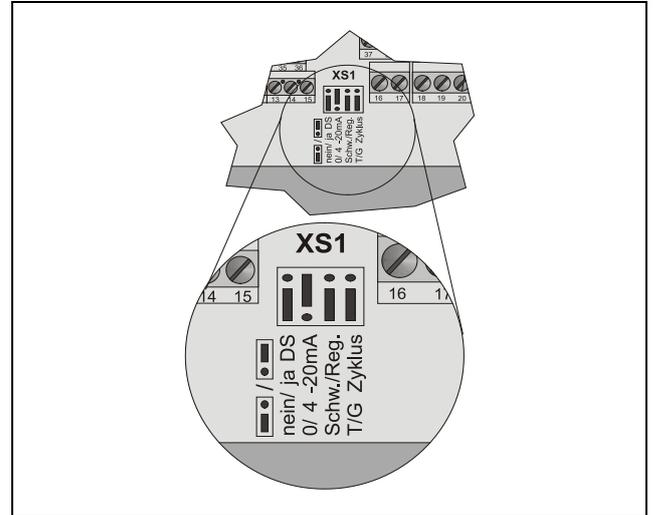


Fig. 15: Jumper settings for partial cycle

9.1.3 Time control

Factory settings:

- Terminals 16-17 and 18-19 jumpered
- Both pressure measuring lines disconnected
- XS1 jumper Schw./Reg. switch down

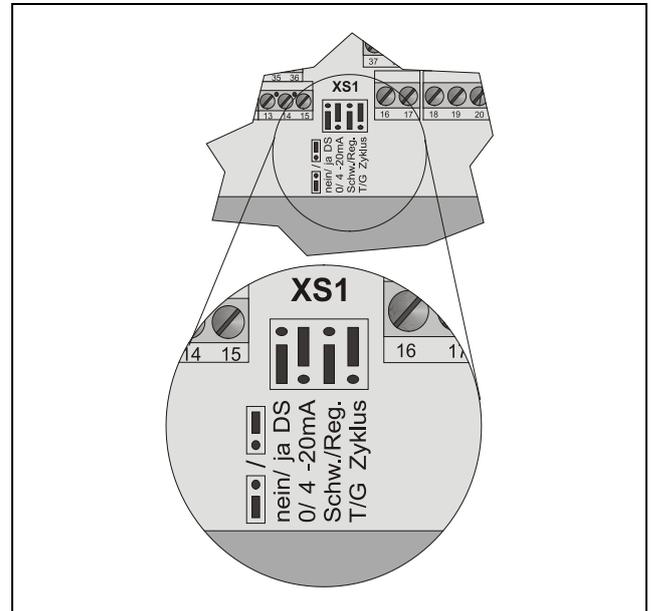


Fig. 16: Jumper settings for time control

A time-controlled cleaning process starts if contacts 16-17 and 18-19 are closed.

9.2 Secondary functions

9.2.1 Enable/stop (post-cleaning)

The input (terminal 19) enables valve activation (terminals 18 + 19 are jumpered).

- Set the number of post-cleaning cycles with the post-cleaning potentiometer.
- ⇒ The closed contact opens.
- ⇒ An automatic post-cleaning process starts with an interval time of 30 s.

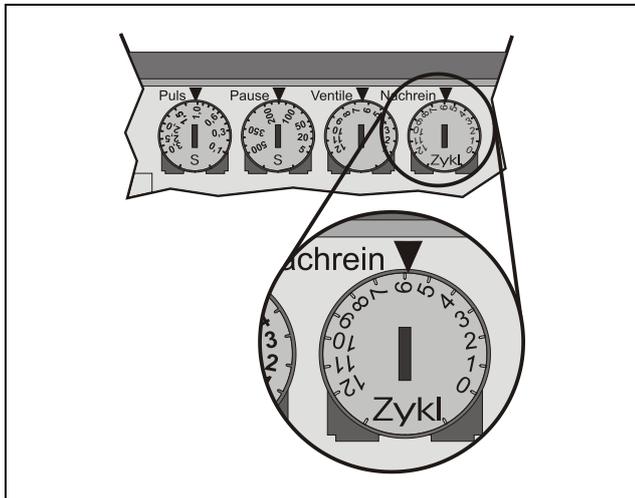


Fig. 17: Post-cleaning potentiometer

9.2.2 Rapid cleaning

- Close the switching contact (terminals 18 and 20).
- ⇒ A cleaning process starts with an interval time of 8 s.

9.2.3 Fault acknowledgement

- ⇒ If a fault occurs, the red fault LED lights up.
- Find the fault.
- Rectify the fault.
- Acknowledge the fault by applying a momentary contact signal at terminals 18 and 21.
- ⇒ The fault signal is reset.

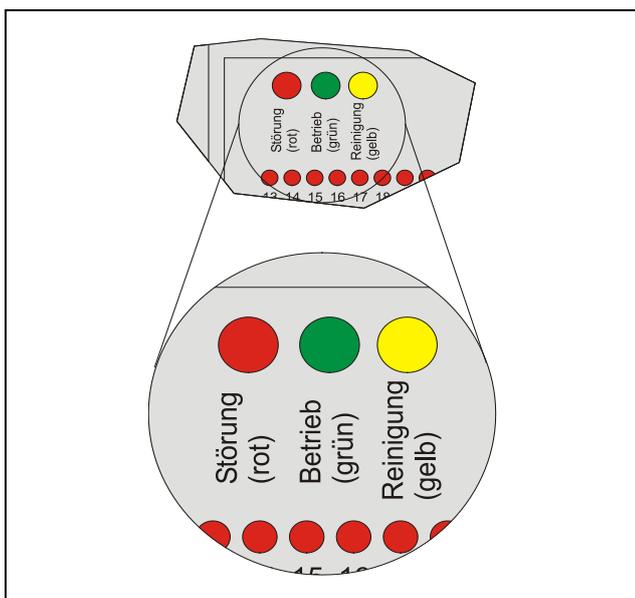


Fig. 18: Fault

9.2.4 Pressure switch



The pressure switch settings are not supported. The pressure switch jumper on the XS1 switch should always be down.

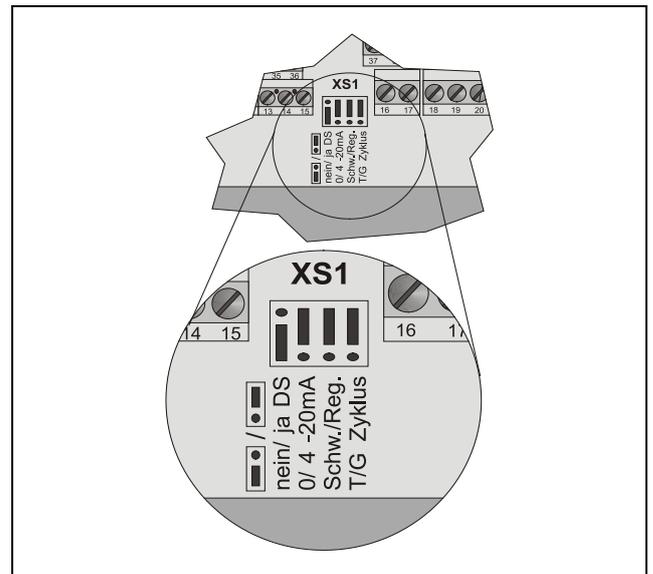


Fig. 19: Jumper settings for pressure switch

9.2.5 Cleaning signal

- ⇒ The yellow cleaning LED lights up during a cleaning process.
- ⇒ The yellow cleaning LED lights up if the test button S1 is pressed.
- ⇒ The yellow cleaning LED goes out again at the end of the cleaning process.

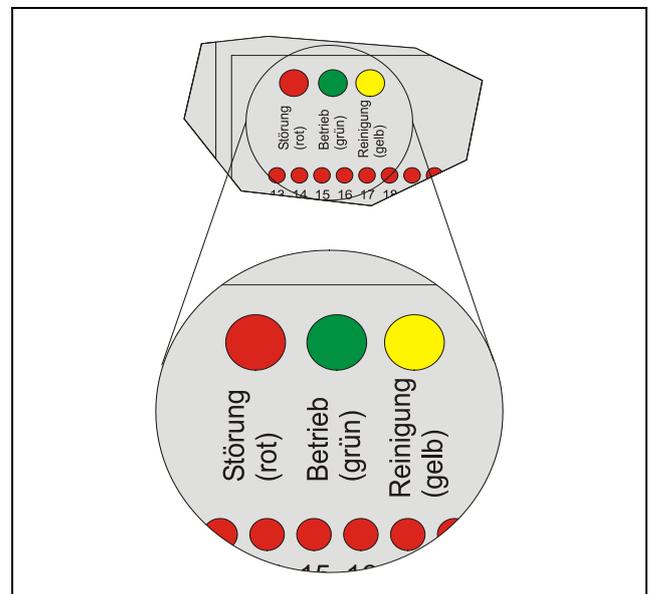


Fig. 20: Cleaning

9.2.6 Alarm threshold

- Set the alarm threshold with the alarm potentiometer.
- ⇒ The red alarm LED lights up if the alarm threshold is exceeded.
- ⇒ The alarm relay is switched.

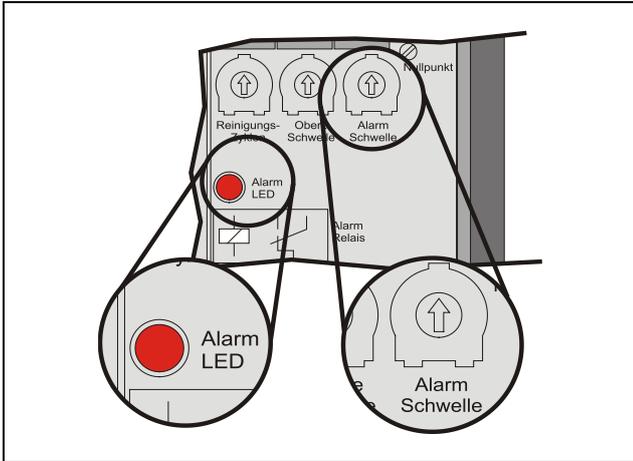


Fig. 21: Alarm threshold and alarm LED

10 Installation

⚠ DANGER!	
	The system is only allowed to be installed, accepted and tested by a suitably qualified person (99/98/EC).
⚠ WARNING!	
All installation work must be carried out by suitably qualified personnel!	

10.1 Unpacking

⚠ WARNING!	
Risk of damage to the unit!	
⇒ Safe operation can be impaired.	
<ul style="list-style-type: none"> • Inspect the MFS-05 ΔP for damage. Return to FG for maintenance if necessary. 	

- Remove the MFS-05 Δp filter controller from the packaging.
- Check the separately enclosed accessories (Instruction Manual, fastening elements) for completeness.

10.2 Installation procedure

The controller must be installed in a dry, low-dust room.

The ambient temperature at the place of installation must not exceed the maximum value specified in the data sheet for the nominal range of use.

- Ensure adequate heat dissipation (especially if several units are installed together with a high packing density).
- Provide the necessary sealing components (e.g. seals) for the specified degree of protection.

10.3 Electrical connection

	We recommend using twisted and screened instrument lines to prevent interference from interference fields.
--	--

- The electrical connection should correspond to the connection/terminal diagrams for the unit concerned.
- All electrical wiring should be laid in accordance with the relevant EMC specifications as well as any nationally valid regulations (VDE 0100 in Germany).
- Instrument lines should be laid separately from signal and power leads.
- The protective conductor terminal (inside the instrument rack) must be connected to a protective earth conductor.
- Install a suitable main switch.

10.4 Start-up

Check the following points before switching on the unit:

- The supply voltage must be identical the voltage indicated on the nameplate.
- The contact protection covers must be fitted.
- The unit is only allowed to be operated when installed.

Class I units:

- The protective conductor terminal inside the instrument rack must be conductively connected to the protective earth conductor.

If the unit is interconnected with other units and/or equipment, the possible consequences should be considered before it is switched on and appropriate precautions taken.

11 Shut-down

- Switch off the auxiliary power.
- Protect the unit against inadvertent operation.

If the unit is interconnected with other units and/or equipment, the possible consequences should be considered before it is switched on and appropriate precautions taken.

- Either switch off the system with the motor circuit-breaker or shut it down on the machine controller.

	<ul style="list-style-type: none"> • All parts must be disposed of in a manner which does not pollute the environment.
--	---

Emergency shut-down

- Switch OFF the main switch.
- ⇒ The power supply is interrupted.

12 Normal operation

- ⇒ The green 'operation' LED lights up when the unit is switched on.
- ⇒ The unit is now ready.

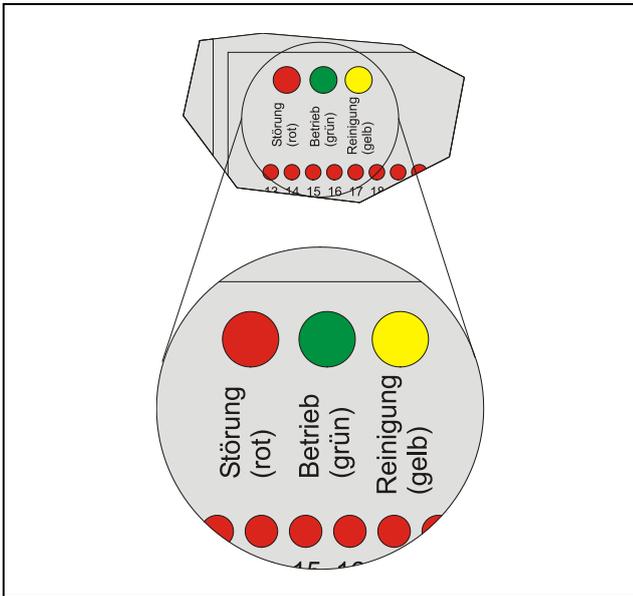


Fig. 22: Operation LED

- The yellow LED lights up if the differential pressure is > 5% (> approx. 2 mbar) and the valves are activated.
- ⇒ The controller is active.

13 Troubleshooting

13.1 Test

- Press the S1 test button in the top right-hand corner of the controller to switch the valves.
- A settable differential pressure must be supplied for the duration of the test.

Alternatively:

- Test the controller in "time control" mode (terminals 16-17 and 18-19 jumpered).

13.2 Troubleshooting table

Fault	Possible cause	Remedy
Green 'operation' LED not lit	Power supply faulty	Test the voltage
	Fuse F1 defective	Replace the fuse
Yellow LED not lit	No start signal	Check the differential pressure
	No signal enable	18-19 jumpered
	Jumper XS1 set incorrectly	Check the jumper settings
Both red valve LEDs blink	Valve potentiometer inadvertently altered	Set the potentiometer correctly
One red LED blinks	Valve not switched	Test the valve cable
	Potentiometer set incorrectly	Potentiometer setting = no. of valves
Red LED lit	Valve not activated	Test the valve connection Acknowledge the fault Terminal 18 + 21
Red LED row blinks	Post-cleaning potentiometer inadvertently altered	Set the post-cleaning potentiometer correctly

14 Maintenance, repair and retrofitting

⚠ CAUTION!
<p>Danger if work is carried out on the system by unauthorised persons!</p> <p>⇒ Risk of injury.</p> <ul style="list-style-type: none"> • All maintenance work must be carried out by SUITABLY QUALIFIED PERSONNEL.

The filter controller does not require any special maintenance.

CAUTION!	
	<p>Electrostatic discharge</p> <p>⇒ Components which are sensitive to electrostatic discharge (ESD) may be exposed when the units are opened.</p> <ul style="list-style-type: none"> • In this case, all subsequent work is only allowed to be carried out at workplaces that are protected against electrostatic discharge.

During retrofitting:

	<p>If the unit is tampered with during the warranty period, all warranty claims are rendered invalid.</p>
---	--

- Switch off the filter controller.
- Take steps to prevent the system from being switched on again by unauthorised persons.

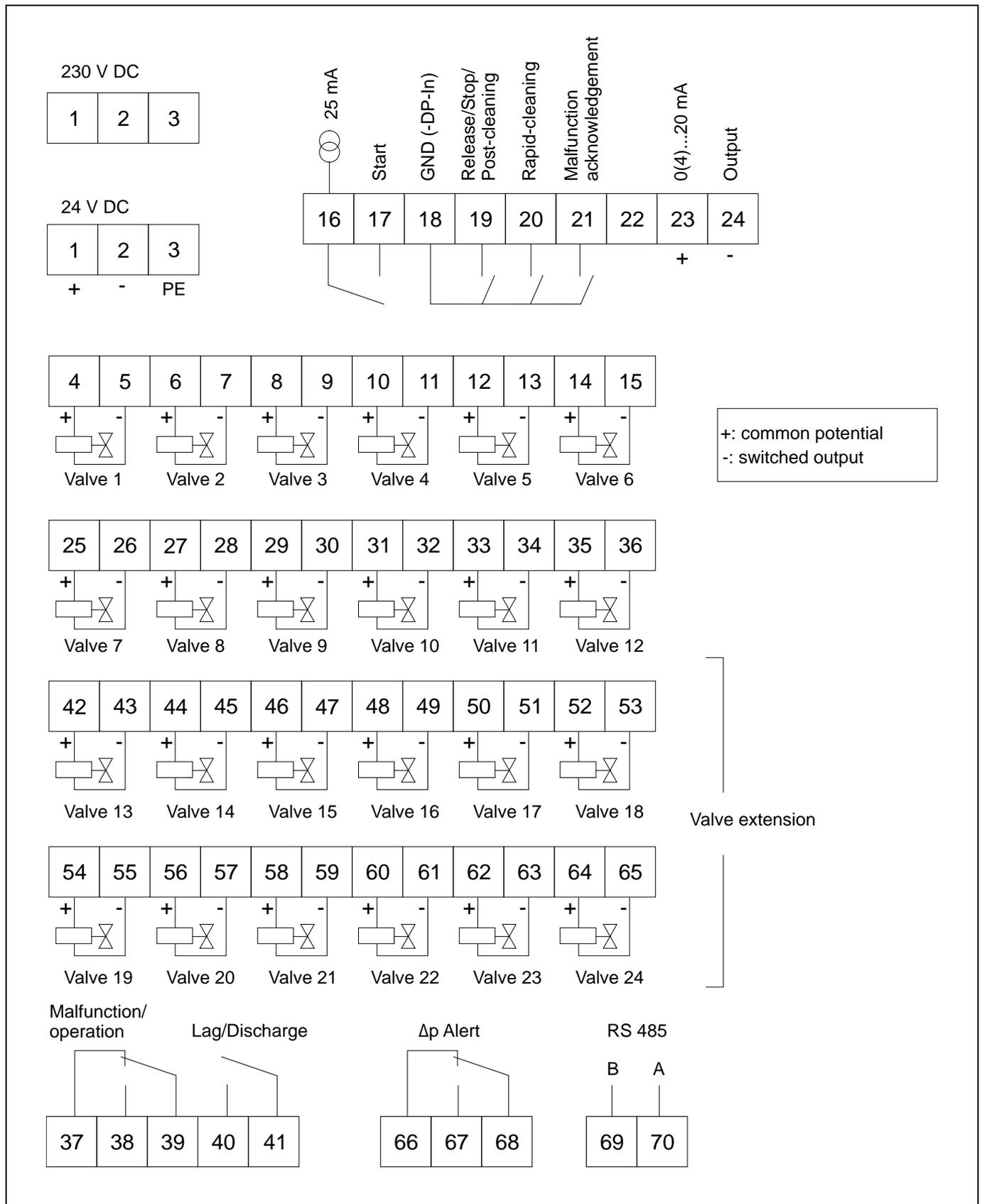


- Take any necessary safety precautions
- Carry out the maintenance work.
- Start up the filter controller again.
- Observe the filter controller.
Does it operate normally?
- Check whether any of the values indicated on the nameplate need to be altered/corrected.
- Correct this data if necessary.

If a fuse blows:

- Determine and rectify the cause.
- Install a replacement fuse with the same ratings as the original fuse.
- The use of rewired fuses is prohibited, as is short-circuiting the fuse holder.
-
-

15.2 Terminal assignment



16 Appendix: RS 485 serial port

The controller has an RS 485 serial port that can be used to query the current unit settings on a PC, for example.

- Data format:** 1 start bit, 8 data bits, no parity, 1 stop bit
Baud rate: 19200 baud
Protocol: The data is queried by sending one byte ('A', 'B', etc.) to the controller. The controller responds with one word (16 bits). This response must be converted to the appropriate measurement unit by the PC.
Connection: Terminal 69: RS 485 B
Terminal 70: RS 485 A

	Query	Response	Calculation	Unit	Comments
20 mA input	"A" 65 hex	0-1020	$x / 45$	mA	Start input
Configuration	"B" 66 hex	0-1020	Not possible, see program version		
Configuration 2	"C" 67 hex	0-1020	Not possible, see program version		
Pulse	"D" 68 hex	0-1020	$((x \text{ div } 4)^2 \text{ div } 44) * 2 + 100) / 1000$	s	
Interval (potentiometer)	"E" 69 hex	0-1020	$((x \text{ div } 4)^2 \text{ div } 64) + 10) / 2$	s	
Valves	"F" 70 hex	0-1020	$(x+46) / 92 + 0.5$		
Post-cleaning	"G" 71 hex	0-1020	$((x \text{ div } 4)^2 \text{ div } 53) / 10$	min.	<1 minute = off
Lag time	"H" 72 hex	0-1020			
Δp	"I" 73 hex	0-1020	$X/204$	V	0 ... 5 V = measuring range
Inputs	"J" 74 hex	0-31	2 ⁰ = Enable 2 ¹ = Rapid cleaning 2 ² = Fault acknowledgement 2 ³ = Pressure switch 2 ⁴ = Test button		
Program version	"K" 75 hex	16000	$(x \text{ div } 32) / 100 + 45$ 2 ⁰ = 4 mA 2 ¹ = Pressure switch 2 ² = Pressure switch version 2 ³ = Full cycle 2 ⁴ = Controller		
Current interval time	"L" 76 hex	20-2052	$x / 4$	s	
Valve alarm	"M" 77 hex	0-248	2 ⁰ -2 ⁴ = Valve 2 ⁵ = Interruption 2 ⁶ = Overcurrent 2 ⁷ = Pressure monitoring		
Alarm threshold	"N" 78 hex				
High threshold	"O" 79 hex				
Low threshold	"P" 80 hex				
Display selection	"Q" 81 hex				
Δp measuring range	"R" 82 hex				
Δp reference	"S" 83 hex				
Δp da	"T" 84 hex				
	Other characters	32000			Unknown query



div = Integer division with no remainder

17 Appendix: Set of instrument lines and protective filter (ID No. 78341984)

To measure the differential pressure:

- Connect the sensor to the measuring points upstream and downstream of the filter plate using the instrument lines.
- The instrument lines should be protected and laid without any kinks.
- No condensate must be allowed to accumulate on the instrument lines. Provide a condensate trap if necessary.
- No dust protection is necessary for the cleaned gas line.

	Leaking or dirty lines can lead to measurement errors and malfunctions.
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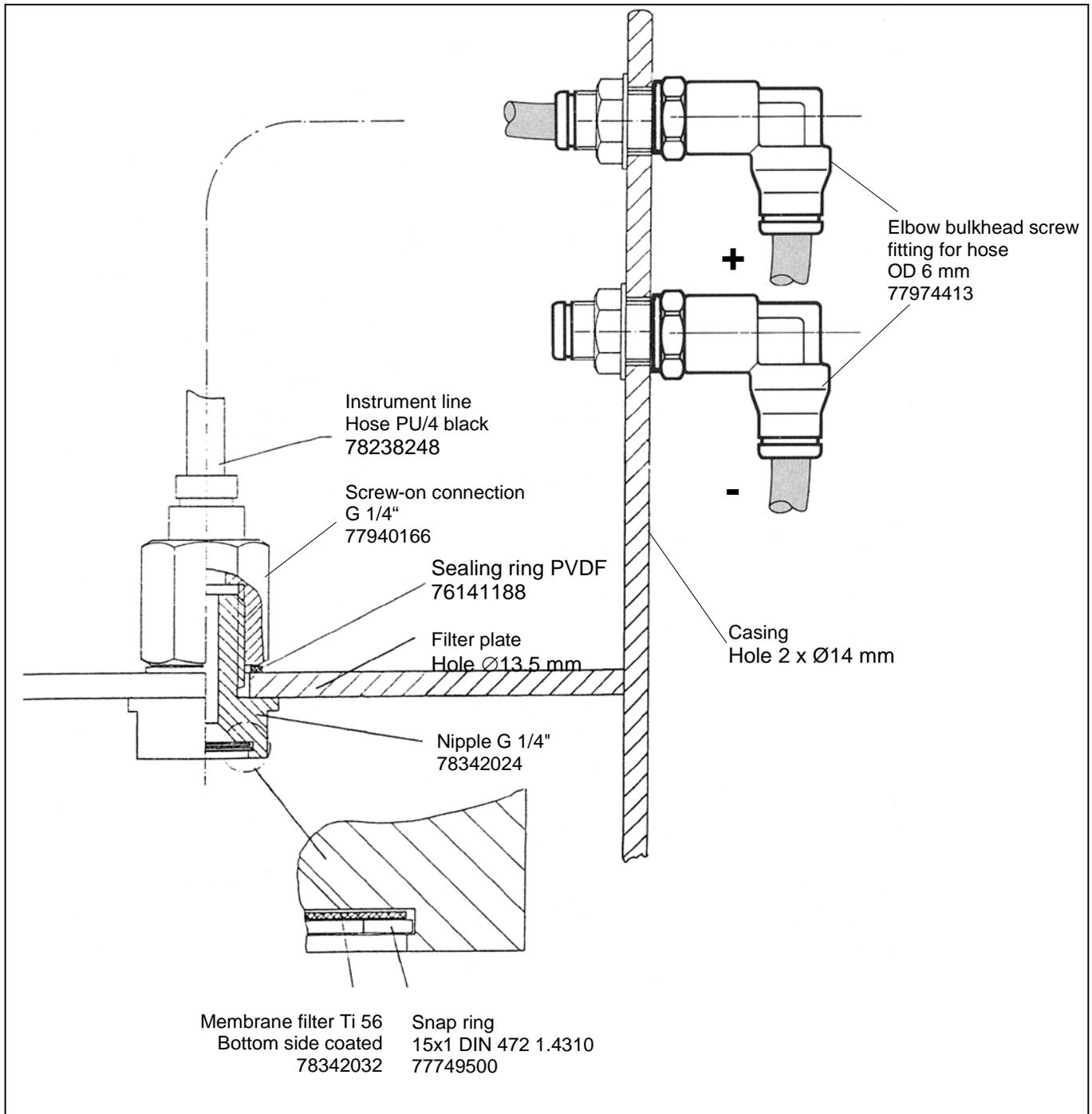


Fig. 23: Installation drawing and spare parts

19 Appendix: Default settings

19.1 Main parameters of the MFS-05 Δp in “interval time control” mode

Parameter	Comments	Factory setting	Operation
No. of valves	Refer to section 6 for information about settings	N	
Interval potentiometer	Controller characteristic, section 10.9	60	
Pulse time	Pressure cleaning Rotating wing	0.1 s 1.5 s	
Post-cleaning cycles		0	
Alarm threshold		18 mbar	
Terminal assignment	See circuit diagram	Jumper 18-19	
Jumper settings	Schw./Reg. jumper	Up	
	T/G Cycle jumper	Up	

19.2 Other operating modes

19.2.1 “Switching threshold” mode

Parameter	Comments	Factory setting	Operation
Jumper settings	Schw./Reg. jumper	Down	
	T/G Cycle jumper	Up	
High threshold		14 mbar	
Cleaning cycles		1	
Terminal assignment	See circuit diagram	Jumper 18-19	
Jumper settings	Schw./Reg. jumper	Down	
	T/G Cycle jumper	Up	

19.2.2 “Time control” mode

Parameter	Comments	Factory setting	Operation
Terminal assignment	Terminals 16-17 and 18-19 jumpered		
Interval time	600 divided by the number of valves n	xx	
Jumper settings	Schw./Reg. jumper	Down	
	T/G Cycle jumper	Up	

20 Declaration of incorporation

As defined by the EC Machinery Directive.

EU – Einbauerklärung
EU Declaration of incorporation
Déclaration relative au montage UE



Der Hersteller
The manufacturer
Le producteur

Filtration Group GmbH
Schleifbachweg 45
74613 Öhringen
Telefon 07941 6466-0
Telefax 07941 6466-429

erklärt hiermit, dass das folgende Produkt
hereby declares that the following product
déclare par la présente que le produit suivant

Typenbezeichnung:
Type designation:
Désignation du type :

MFS-05

Funktionsbeschreibung:
Machine description:
Description du fonctionnement :

Magnetventilsteuerung
Valve control unit
Électrovanne commande

den in der Anlage dargestellten grundlegenden Anforderungen der Richtlinie 2006/42/EU entspricht.
conforms to the essential requirements of the Machinery Directive 2006/42/EU pursuant to the Annex.
répond aux exigences fondamentales de la directive 2006/42/UE, décrites en annexe.

Die unvollständige Maschine darf erst dann in Betrieb genommen werden, wenn festgestellt wurde, dass die Maschine, in die die unvollständige Maschine eingebaut werden soll, den Bestimmungen der Richtlinie 2006/42/EU über Maschinen entspricht.
The partly completed machinery must not be put into service until the relevant machinery into which this partly completed machinery is to be incorporated has been declared in conformity with the Machinery Directive 2006/42/EU.
La machine incomplète ne doit être mise en service qu'après avoir déterminé que la machine, dans laquelle la machine incomplète doit être montée, correspond aux dispositions de la directive machines 2006/42/UE.

Folgende harmonisierten Normen wurden angewandt:

The following harmonised standards have been used:

DIN EN 12100:2011-03, DIN EN ISO 4414:2011-04

Les normes harmonisées ci-dessous ont été appliquées :

Der Hersteller verpflichtet sich, die speziellen Unterlagen zur unvollständigen Maschine, einzelstaatlichen Stellen auf Verlangen schriftlich zu übermitteln. Die zur Maschine gehörenden speziellen technischen Unterlagen nach Anhang VII Teil B wurden erstellt.
The manufacturer undertakes to transmit any specific documentation on the partly completed machinery to the appropriate national authorities in writing on request. All specific technical documentation belonging to the machinery has been compiled pursuant to Annex VII Section B.

Le fabricant s'engage à transmettre les documents spécifiques à la machine incomplète par écrit aux administrations nationales respectives sur leur demande. Les documents techniques spécifiques selon Annexe VII partie B faisant partie de la machine ont été établis.

Dokumentationsverantwortlicher/Abteilung:
Responsible for documentation/department:
Responsable de la documentation/Service :

Filtration Group GmbH
Schleifbachweg 45
74613 Öhringen

Unterzeichner:
Signatory:
Signataire :

Wolfram Zuck
Dipl.-Ing. (FH) Industrial Engineering
Managing Director, Plant Manager Öhringen

Öhringen,

09.08.2017

Datum/Date/Date

Unterschrift/Signature/Signature

Anlage/Annex/Annexe

3 Seiten/pages/pages

21 Declaration of conformity

EU – Konformitätserklärung
EU declaration of conformity
Déclaration de conformité UE



Der Hersteller
The manufacturer
Le producteur

Filtration Group GmbH
Schleifbachweg 45
74613 Öhringen
Telefon 07941 6466-0
Telefax 07941 6466-429

erklärt hiermit, dass das folgende Produkt
hereby declares that the following product
déclare par la présente que le produit suivant

Typenbezeichnung:
Type designation:
Désignation du type :

MFS-05
MFS-05 dp

Funktionsbeschreibung:
Machine description:

Magnetventilsteuerung
Valve control unit
Électrovanne commande

Description du fonctionnement :

Die Maschine entspricht allen Bestimmungen der Richtlinie 2014/35/EU über elektrische Betriebsmittel, Richtlinie 2014/30/EU über elektromagnetische Verträglichkeit, ATEX-Richtlinie 1994/9/EU für Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen und der RoHS 2011/65/EU.

The machinery conforms to all provisions of the Low Voltage Directive 2014/35/EU, Electromagnetic Compatibility Directive 2014/30/EU, ATEX-directive 1994/9/EU equipment and protective systems intended for use in potentially explosive atmospheres and RoHS 2011/65/EU.

La machine répond à toutes les dispositions de la directive 2014/35/UE relative au matériel électrique, directive 2014/30/UE relative à la compatibilité électromagnétique, ATEX-directive 1994/9/UE pour les appareils et les systèmes de protection destinés à être utilisés en atmosphères explosibles et RoHS 2011/65/UE.

Folgende harmonisierten Normen wurden angewandt:

The following harmonised standards have been used:
Les normes harmonisées ci-dessous ont été appliquées :

EN 61010-1, EN 61000-6-2, EN 61000-6-4,
EN 61326-1, EN 60079-0, EN 60079-31

Unterzeichner:
Signatory:
Signataire :

Wolfram Zuck
Dipl.-Ing. (FH) Industrial Engineering
Managing Director, Plant Manager Öhringen

Öhringen,

M.09.2017

Datum/Date/Date

W. Zuck

Unterschrift/Signature/Signataire

Anlage zur Einbauerklärung gemäß Richtlinie
2006/42/EU für Entstaubungsgeräte
Annex to the Declaration of Incorporation pursuant to
the Machinery Directive 2006/42/EU for dust collectors
Annexe à la déclaration de montage selon la directive
2006/42/UE pour les dépoussiéreurs
Beschreibung der grundlegenden Sicherheits- und Gesundheits-
schutzanforderungen (soweit zutreffend) gemäß 2006/42/EU, An-
hang 1, die zur Anwendung kommen und eingehalten wurden.
List of the essential health and safety requirements (where applicable)
pursuant to 2006/42/EU, Annex 1, applied and fulfilled.
Description des exigences fondamentales relatives à la sécurité et à
la protection de la santé (si applicables) selon 2006/42/UE, annexe 1,
appliquées et respectées.



Grundlegende Anforderung Essential requirements Exigence fondamentale	Erfüllt Fulfilled Remplie
Grundsätze für die Integration der Sicherheit Principles of safety integration Principes d'intégration de la sécurité	ja yes oui
Materialien und Produkte Materials and products Matériaux et produits	ja yes oui
Konstruktion der Maschine im Hinblick auf die Handhabung Design of machinery to facilitate its handling Construction de la machine au regard de sa manipulation	ja yes oui
Steuerungen und Befehlseinrichtungen Control systems Commandes et dispositifs de commande	nein no non
Risiko des Verlusts der Standsicherheit Risk of loss of stability Risque de perte de la stabilité statique	ja yes oui
Bruchrisiko beim Betrieb Risk of break-up during operation Risque de rupture en fonctionnement	ja yes oui
Risiken durch herabfallende oder herausgeschleuderte Gegenstände Risks due to falling or ejected objects Risques dus à la chute ou à l'éjection d'objets	ja yes oui
Risiken durch Oberflächen, Kanten und Ecken Risks due to surfaces, edges or angles Risques dus aux surfaces, arêtes et angles	ja yes oui
Risiken durch Änderung der Verwendungsbedingungen Risks related to variations in operating conditions Risques dus à la modification des conditions d'utilisation	ja yes oui
Risiken durch bewegliche Teile Risks related to moving parts Risques dus à des parties mobiles	ja yes oui
Wahl der Schutzeinrichtung gegen Risiken durch bewegliche Teile Choice of protection against risks arising from moving parts Choix du dispositif de protection contre les risques dus à des parties mobiles	ja yes oui
Risiko unkontrollierter Bewegungen Risks of uncontrolled movements Risque de mouvements incontrôlés	ja yes oui
Anforderungen an Schutzeinrichtungen Required characteristics of guards and protective devices Exigences relatives aux dispositifs de protection	nein no non
Elektrische Energieversorgung Electricity supply Alimentation électrique	ja yes oui
Statische Elektrizität Static electricity Electricité statique	ja yes oui

Nichtelektrische Energieversorgung Energy supply other than electricity Alimentation en énergie non-électrique	ja yes oui
Montagefehler Errors of fitting Erreurs de montage	ja yes oui
Extreme Temperaturen Extreme temperatures Températures extrêmes	ja yes oui
Brand Fire Incendie	ja yes oui
Explosion Explosion Explosion	ja yes oui
Lärm Noise Bruit	ja yes oui
Vibrationen Vibrations Vibrations	ja yes oui
Strahlung Radiation Rayonnement	ja yes oui
Strahlung von außen External radiation Rayonnement depuis l'extérieur	ja yes oui
Emission gefährlicher Werkstoffe und Substanzen Emissions of hazardous materials and substances Emission de substances et matériaux dangereux	ja yes oui
Risiko, in eine Maschine eingeschlossen zu werden Risk of being trapped in a machine Risque de se faire enfermer dans une machine	nein no non
Ausrutsch-, Stolper- und Sturzrisiko Risk of slipping, tripping or falling Risque de dérapage, de trébuchement et de chute	nein no non
Blitzschlag Lightning Foudre	nein no non
Wartung der Maschine Machinery maintenance Entretien de la machine	nein no non
Zugang zu den Bedienungsständen und den Eingriffspunkten für die Instandhaltung Access to operating positions and servicing points Accès aux postes de commande et aux points d'intervention pour la maintenance	nein no non
Trennung von den Energiequellen Isolation of energy sources Séparation des sources d'énergie	nein no non
Eingriffe des Bedienungspersonals Operator intervention Interventions des opérateurs	ja yes oui
Reinigung innen liegender Maschinenteile Cleaning of internal parts Nettoyage de parties internes de la machine	nein no non
Informationen und Warnhinweise an der Maschine Information and warnings on the machinery Informations et avertissements sur la machine	ja yes oui
Warnung vor Restrisiken Warning of residual risks Avertissement quant aux risques résiduels	ja yes oui
Kennzeichnung der Maschinen Marking of machinery Marquage des machines	nein no non

Betriebsanleitung Instructions Mode d'emploi	ja yes oui
Nahrungsmittelmaschinen und Maschinen für kosmetische oder pharmazeutische Erzeugnisse Foodstuffs machinery and machinery for cosmetics or pharmaceutical products Machines pour denrées alimentaires et machines pour produits cosmétiques ou pharmaceutiques	nein no non
Handgehaltene und/oder handgeführte tragbare Maschinen Portable hand-held and/or hand-guided machinery Machines tenues à la main et/ou portables guidées à la main	ja yes oui

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