BOLLFILTER
Protection Systems

Operating and installation instructions

Electronic controller
Type: 2200

NOTE:
Print document on both sides

Translation of the original operating instructions

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Table of Contents

1 Basic safety instructions for the electronic controller

DANGER!

Risk of accidents from improper installation

Installing the controller or the connected equipment improperly may cause the device to fail and lead to serious or even fatal personal injuries. You must therefore follow the general safety regulations for equipment in industrial electrical systems and pay particular attention to the following points:

- The controller must be installed by qualified specialist staff only (as defined by the guidelines IEC 364, DIN VDE 0105 for electrical equipment).
- The laws, guidelines, directives and regulations for the installation of electrical equipment which are valid at the location for installation must be adhered to.
- Settings on devices with protection class IP00 without covers must only be made by authorised specialist staff when the devices are switched off. The local regulations for safety and the prevention of accidents must be observed.
- The controller must only be operated within the permitted area of application.

2 Technical data of controller and control cabinet components

2.1 Power components

2.1.1 Supply

Supply L1-L2-L3 direct to 4-pole master switch – Q1 (T1-T2-T3)

2.1.2 Motor control

Motor connection U-V-W direct to motor contactor – K1 (2-4-6)

2.1.3 Power supply

Primary voltages	0 - 220 V, 380 V, 400 V, 440 V, 500 V, 550 V
Secondary voltages	
0 V AC - 230 V AC	Valve voltage 230 V AC
0 V AC - 115 V AC	Valve voltage 115 V AC
0 V DC - 24 V DC	Valve voltage 24 V DC
0 V AC - 20 V AC	Control circuit board supply voltage

2.1.4 Fuse protection

Fuses in the control cabinet	
F1 to F3	each 1 A
Fuses on the control circuit board	
Fuse F1	0.8 A T (slow-blow)
Fuse F2	2.0 A T (slow-blow)

2.2 Control circuit board inputs / outputs

2.2.1 Optocoupler inputs (E1 - E5), terminals 31 - 40

2.2.2 Live relay outputs

Outputs VE1 - VN1 to VE3 - VN3	Terminals 8 - 13

NOTE

The connections and designations depend on the type of filter and can be found in the respective circuit diagrams.

2.2.3 Potential-free relay outputs

Outputs A1 - A15	Messages 1 - 5 (change-over contact)	Terminals 16 - 30

NOTE

The connections and designations depend on the type of filter and can be found in the respective circuit diagrams.

2.3 Circuit diagrams

The circuit diagrams for the controller are contained in the appendix of these operating and installation instructions.

3 Operation

3.1 Device functions and control sequence

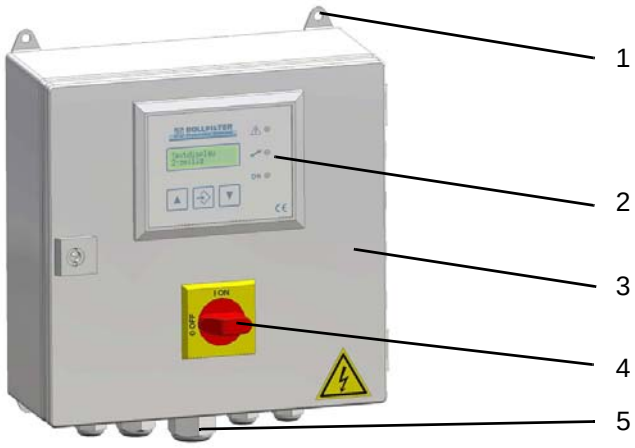

Fig. 3-1 Electronic controller type 2200

1	Fastening
2	Display and operating elements
3	Housing
4	Master switch
5	Connection

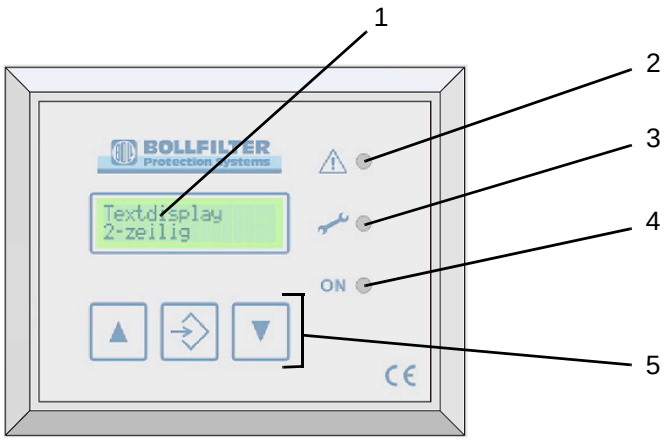

Fig. 3-2 Display and operating elements

1	Display screen for text display, 2 lines of 16 characters
2	"Alarm" LED (red)
3	"Service" LED (yellow)
4	"Operation" LED (green)
5	Keypad

NOTE

The three keys on the keypad are assigned to the key references displayed above them in the second line of the display as follows:

Key **C**: When pressed, shows the number of flushes

Key **F**: When pressed, triggers manual flushing

Key **Q**: When pressed, acknowledges the alarm messages

3.1.1 Master switch operation feedback contact

When the master switch is in the "On" position, a contact is made.

3.1.2 Control voltage monitoring

As soon as the master switch is actuated, the power supply is activated and the controller is working properly, the green "Operation" LED lights up and the "Control voltage monitoring" relay is activated. In the event of operating voltage failure or a fuse fault on the control circuit board, no LED lights up and the "Control voltage monitoring" relay is no longer activated.

3.1.3 Motor fault

If the measured motor current exceeds the set setpoint value for parameter P9, a message appears in the display and a potential-free signal is sent to the relay outputs. The motor and the backflushing function switch off immediately. Once the fault has been remedied, the user has to acknowledge the alarm message by pressing the Q key.

3.1.4 Differential pressure too high, flushing oil treatment cartridge alarm

The signal transmitter is a pressure switch contact which is connected to the "Differential pressure indicator DP too high flushing oil treatment" optocoupler input. If the message is active for a longer period than the time set in parameter P7, an alarm message appears in the display. Once the fault has been remedied, the user has to acknowledge the alarm message by pressing the Q key.

3.1.5 DP – too high, backflushing filter (100 %)

The signal transmitter is a pressure switch contact which is connected to the "Differential pressure indicator DP too high, backflushing filter" optocoupler input. If the message is active for longer than 2 seconds, an alarm message appears in the display screen and the red "Alarm" LED lights up. Once the fault has been remedied, the user has to acknowledge the alarm message by pressing the Q key.

3.1.6 Key C (number of flushes)

When key C (number of flushes) is pressed, the number of flushing cycles which have been performed is shown on the display screen for 3 seconds.

3.1.7 Multiple flushing

The number of parameterised chambers is worked off with each flushing command.

3.1.8 DP alarm (flushing frequency monitoring)

If "DP flushing" has been activated before the "Time-controlled backflushing" time elapses, the "DP alarm" message appears on the display screen and the yellow "Service" LED lights up.

3.2 Display for "Operation" mode

The green "Operation" LED lights up once the power supply has been switched on and the controller is at operation level ("Operation" mode).

3.3 Text messages

3.3.1 Text display after switching on

Boll & Kirch	Company name
xxxxxxxxxx	Programme number

After a short delay, the parameterised controller type is displayed in the second line of the display.

6.18/6.19/6.44	Controller type 0	→	**Circuit diagram Z46140**
6.23/6.24	Controller type 1	→	**Circuit diagram Z46141**
6.60/6.72	Controller type 2	→	**Circuit diagram Z46142**
6.60/6.72 Alarm DP	Controller type 3	→	**Circuit diagram Z46142**
6.60.07	Controller type 4	→	**Circuit diagram Z46143**
6.60.07 AL. DP	Controller type 5	→	**Circuit diagram Z46143**
6.61	Controller type 6	→	**Circuit diagram Z46144**
6.61 Alarm DP	Controller type 7	→	**Circuit diagram Z46144**
6.61.07	Controller type 8	→	**Circuit diagram Z46145**
6.61.07 AL. DP	Controller type 9	→	**Circuit diagram Z46145**
6.62	Controller type 10	→	**Circuit diagram Z46146**
6.62 Alarm DP	Controller type 11	→	**Circuit diagram Z46146**
6.64	Controller type 12	→	**Circuit diagram Z46147**
6.64 Alarm DP	Controller type 13	→	**Circuit diagram Z46147**
6.64.07	Controller type 14	→	**Circuit diagram Z46148**
6.64.07 AL. DP	Controller type 15	→	**Circuit diagram Z46148**
6.72	Controller type 16	→	**Circuit diagram Z46282**
6.72 Alarm DP	Controller type 17	→	**Circuit diagram Z46282**

3.3.2 Text display in "Operation" mode

forced fl. 00:01	Remaining time till forced flushing is triggered 00 h 01 min
C - F - Q	Reference to keys

When flushing has been triggered, the following messages appear in the first line (depending on the source):

Mains flushing	When flushing is triggered by "Power supply on"
Manual flushing	When flushing is triggered by the F key
forced flushing	When flushing is triggered by time-controlled backflushing
DP flushing	When flushing is triggered by backflushing filter differential pressure

When flushing has been triggered, the following messages may in the second line (depending on the source):

Flush. time 3S	Remaining flushing time
After bl. t. 3S	Remaining after-blowing time

NOTE

3S indicates that the remaining flushing/after-blowing time is 3 seconds.

If the C key is pressed, the following message appears on the display screen:

No.of flushes	
xxxxxx cycles	Number of flushing cycles

The number of flushing cycles is saved and backed up in the event of a power failure.

3.3.3 Alarm messages

NOTE

- The red "Alarm" LED lights up every time an alarm message is issued.
- All alarm messages are saved and backed up in the event of a power failure.
- The alarm message and the operation messages are shown alternately in the second line of the display, switching every 2 seconds.
- When the Q key is pressed, all alarm messages are deleted, but only if the respective cause of the alarm has been remedied. If the cause of the alarm is not remedied, the alarm message appears again.

Alarm messages in the display:

Motor fault	In the event of a "Motor fault" alarm
DP too high	In the event of "Differential pressure too high Filter 100 %"
Cartridge alarm	In the event of "Differential pressure too high flushing oil conditioning 100 %"

If the flushing frequency monitoring is switched on:

DP alarm	DP alarm backflushing triggered by differential pressure 75%

3.4 Setting and operation

3.4.1 Setting level - Viewing and selecting parameters

In order to access the setting level "Selecting and viewing parameters" press keys ↴ and ↴ together until the green "Operation" LED is extinguished (approximately 3 seconds). The first display line shows the parameter and the second line shows the parameter value. All parameters can now be displayed by repeatedly pressing the key ↴ or ↴.

3.4.2 Setting level - Changing and saving parameters

In order to access the setting level "Changing and saving parameters", press the middle key until the green "Operation" LED flashes (approximately 3 seconds). The parameter can now be changed by repeatedly pressing the key ↴ or ↴. In order to save the value and return to the setting level "Selecting and viewing parameters", press the middle key until the green "Operation" LED is extinguished (approximately 3 seconds).

3.4.3 Return to operation level

In order to access the operation level, press keys ↴ and ↴ together until the green "Operation" LED lights up (approximately 3 seconds).

3.5 List and description of parameters

3.5.1 P0 Filter type

Adjustable in steps of one	Range 0 - 17
Factory setting	Initial value 0
Text display, line 1	**P0 Filter type**
Text display, line 2	**6.18/6.19/6.44**

3.5.2 P1 Multiple flushing

NOTE
This parameter is **only** visible with filter type P0 = 6, 7, 8, 9, 10, 11, 12, 13, 14, 15.

Adjustable in steps of one	Range 1 - 99 x
Factory setting	Initial value 1
Text display, line 1	**P1 multiple fl.**
Text display, line 2	**XXX chambers**

3.5.3 P2 Time-controlled backflushing

Adjustable in steps of one hour	Range 0 - 59 h
Factory setting	Initial setting 2 h
Text display, line 1	**P2 forced flush.**
Text display, line 2	**XXX hours**

3.5.4 P3 Time-controlled backflushing

Adjustable in steps of one minute	Range 0 - 59 min
Factory setting	Initial value 0 min
Text display, line 1	**P3 forced flush.**
Text display, line 2	**XXX minutes**

3.5.5 P4 Back-flushing time

NOTE
This parameter is **not** visible with filter type P0 = 1.

Adjustable in steps of one second	Range 5 - 100 s
Factory setting	Initial value 20 s
Text display, line 1	**P4 flushing time**
Text display, line 2	**XXX seconds**

3.5.6 P5 Filling time

NOTE
This parameter is **not** visible with filter type P0 = 0 and P0 = 1.

Adjustable in steps of 10 seconds	Range 10 - 600 s
Factory setting	Initial value 180 s
Text display, line 1	**P5 Filling time**
Text display, line 2	**XXX seconds**

3.5.7 P6 After-blowing time

NOTE
This parameter is **only** visible with filter type P0 = 4, 5, 8, 9, 14, 15.

Adjustable in steps of one second	Range 5 - 100 s
Factory setting	Initial value 30 s
Text display, line 1	**P6 After blow. t.**
Text display, line 2	**XXX seconds**

3.5.8 P7 Cartridge alarm delay time

NOTE

This parameter is **only** visible with filter type P0 = 4, 5, 8, 9, 14, 15.

Adjustable in steps of 10 seconds	Range 10 - 600 s
Factory setting	Initial value 30 s
Text display, line 1	**P7 Cartridge al.**
Text display, line 2	**XXX seconds**

3.5.9 P8 DP alarm (flushing frequency monitoring)

NOTE

This parameter is **only** visible with filter type P0 = 3, 5, 7, 9, 11, 13, 15, 17.

Setting	Off / On
Factory setting	Initial setting "On"
Text display, line 1	**P8 DP alarm**
Text display, line 2	**OFF**
or	
Text display, line 2	**ON**

3.5.10 P9 Motor fault

NOTE

This parameter is **only** visible with filter type P0 = 0, 6, 7, 8, 9, 12, 13, 14, 15.

Adjustable in steps of 0.01 A	Range 0.10 to 0.99 A
Factory setting	Initial value 0.4 A
Text display, line 1	**P9 Motor fault**
Text display, line 2	**0000 mA**

3.5.11 P10 Back flushing time

NOTE

This parameter is **only** visible with filter type P0 = 1, type 6.23/6.24.
Setting: ND 32 = 1 / ND 40 = 2 / ND 50 = 3 (ND = nominal diameter)
A certain control time is selected from a table according to the nominal diameter.
The parameter is not required if the setting is P0 … 1.

Adjustable in steps of one	Range 0 to 2
Factory setting	Initial setting ND 32 = 2 s
Text display, line 1	**P10 flush. time**
Text display, line 2	**ND=XX =XX sec**

3.5.12 P11 Language

You can select from German, English, French and Spanish.

Setting	D German
	ES Spanish
	F French
	GB English
Factory setting	Initial setting D German
Text display, line 1	**P11 Language**
Text display, line 2	**GB English**

3.5.13 P12 Test code

NOTE

This parameter is **only** visible with filter type P0 = 0.

NOTE

The test code switches the controller to a test mode which is provided for authorised persons **only**.

Adjustable in steps of one	Range 0 to 250
Factory setting	Initial value 0
Text display, line 1	**P12 Testcode**
Text display, line 2	**XXX**

3.5.14 P14 Pressure compensation time

NOTE

This parameter is **only** visible with filter type P0 = 12, 13, 14, 15.

Adjustable in steps of one second	Range 0 to 99 s
Factory setting	Initial value 10 s
Text display, line 1	**P14 PET**
Text display, line 2	**XXX seconds**

4 Description and function of controller

4.1 Controller type 6.18 / 6.19 / 6.44

Inputs

Pressure switch "DP reached, backflushing filter" → 75 %

Pressure switch "DP too high, backflushing filter" → 100 %

Outputs

Motor

Flushing valve

Potential-free contacts

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Collective fault, comprising: - "Maximum differential pressure reached" alarm and - "Motor fault" alarm	Output A4, A5, A6
3)	"Motor fault" alarm	Output A7, A8, A9
4)	"Flushing active" message	Output A10, A11, A12

Functional description 6.18, 6.19 and 6.44

See the operating instructions for the filter's function.

Flushing is triggered by:

1) Key F
2) The forced flushing time elapsing
3) Pressure switch "DP reached, backflushing filter"

Special attributes

- All alarms are displayed and signalled and saved via potential-free contacts.
- If the controller is in parameterisation mode, flushing cannot be triggered manually.
- If the "Controller type" parameter is changed, the functions are re-started.

4.2 Controllers of type 6.23 / 6.24

Inputs 6.23 and 6.24

Pressure switch "DP reached, backflushing filter" → 75 %

Pressure switch "DP too high, backflushing filter" → 100 %

Outputs 6.23 and 6.24

Flushing valve

Potential-free contacts and messages 6.23 and 6.24

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	"Maximum DP reached " alarm	Output A4, A5, A6

Functional description 6.23 and 6.24

See the operating instructions for the filter's function.

Flushing is triggered by:

1) Key F
2) The forced flushing time elapsing
3) Pressure switch "DP reached, backflushing filter"

Special attributes

- All alarms are displayed and signalled and saved via potential-free contacts.
- If the controller is in parameterisation mode, flushing cannot be triggered manually.
- If the "Controller type" parameter is changed, the functions are re-started.

4.3 Controllers of type 6.60

Inputs 6.60 and 6.60 Alarm DP (flushing frequency monitoring)

"Position reached" limit switch

Pressure switch "DP reached, backflushing filter" → 75 %

Pressure switch "DP too high, backflushing filter" → 100 %

Additional inputs for 6.60.07 (flushing oil treatment)

Pressure switch "DP too high, flushing oil treatment" → 100 %

Outputs 6.60 and 6.60 Alarm DP

Flushing valve

Chamber valve

Additional outputs for 6.60.07 and 6.60.07 Alarm DP

After-blowing valve

Potential-free contacts and messages 6.60

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Group fault: "Maximum differential pressure reached " alarm	Output A4, A5, A6

Potential-free contacts and messages 6.60 Alarm DP

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Group fault: "Maximum differential pressure reached " alarm	Output A4, A5, A6
3)	"Backflushing triggered by DP" alarm	Output A7, A8, A9

Potential-free contacts and messages 6.60.07

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Collective fault, comprising: - "Maximum differential pressure reached" alarm and - "Cartridge" alarm (DP alarm flushing oil treatment)	Output A4, A5, A6

Potential-free contacts and messages 6.60.07 Alarm DP

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Collective fault, comprising: - "Maximum differential pressure reached" alarm and - "Cartridge" alarm (DP alarm flushing oil treatment)	Output A4, A5, A6
3)	"Backflushing triggered by DP" alarm	Output A7, A8, A9

Functional description 6.60

See the operating instructions for the filter's function.

Flushing is triggered by:

1) Switching on the power supply
2) Key F
3) The forced flushing time elapsing
4) Pressure switch "DP reached, backflushing filter"

Additional functions for 6.60 Alarm DP (flushing frequency monitoring)

If flushing is triggered by the "DP reached, back flushing filter" pressure switch before the forced flushing time elapses, a DP alarm is signalled (Flushing frequency alarm).

Special attributes

- All alarms are displayed and signalled and saved via potential-free contacts.
- If the controller is in parameterisation mode, flushing cannot be triggered manually.
- If the "Controller type" parameter is changed, the functions are re-started.

4.4 Controllers of type 6.61

Inputs 6.61 and 6.61 Alarm DP (flushing frequency monitoring)

"Position reached" limit switch

Pressure switch "DP reached, backflushing filter" → 75 %

Pressure switch "DP too high, backflushing filter" → 100 %

Additional inputs 6.61.07 and 6.61.07 Alarm DP (flushing oil treatment)

Pressure switch "DP too high, flushing oil treatment" → 100 %

Outputs 6.61 and 6.61 Alarm DP

Flushing valve

Motor

Additional outputs for 6.61.07 and 6.61.07 Alarm DP

After-blowing valve

Potential-free contacts and messages 6.61

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Collective fault, comprising: - "Maximum differential pressure reached" alarm and - "Motor fault" alarm	Output A4, A5, A6

Potential-free contacts and messages 6.61 Alarm DP

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Collective fault, comprising: - "Maximum differential pressure reached" alarm and - "Motor fault" alarm	Output A4, A5, A6
3)	"Backflushing triggered by DP" alarm	Output A7, A8, A9

Potential-free contacts and messages 6.61.07

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Collective fault, comprising: - "Maximum differential pressure reached " alarm - "Motor fault" alarm and - "Cartridge" alarm (DP alarm flushing oil treatment)	Output A4, A5, A6

Potential-free contacts and messages 6.61.07 Alarm DP

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Collective fault, comprising: - "Maximum differential pressure reached " alarm - "Motor fault" alarm and - "Cartridge" alarm (DP alarm flushing oil treatment)	Output A4, A5, A6
3)	"Backflushing triggered by DP" alarm	Output A7, A8, A9

Functional description 6.61

See the operating instructions for the filter's function.

Flushing is triggered by:

1) Switching on the power supply
2) Key F
3) The forced flushing time elapsing
4) Pressure switch "DP reached, backflushing filter"

Special attributes

- When flushing is triggered by switching on the power and an open limit switch, a flushing cycle starts directly with the flushing valve.
- If the controller is in parameterisation mode, flushing cannot be triggered manually.
- If the "Controller type" parameter is changed, the functions are re-started.

4.5 Controllers of type 6.62

Inputs 6.62

"Position reached" limit switch

Pressure switch "DP reached, backflushing filter" → 75 %

Pressure switch "DP too high, backflushing filter" → 100 %

Outputs 6.62

Flushing valve

Chamber valve supplied with pulse

Potential-free contacts and messages 6.62

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Group fault: "Max differential pressure reached" alarm	Output A4, A5, A6

Potential-free contacts and messages 6.62 Alarm DP (flushing frequency monitoring)

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Group fault: "Maximum differential pressure reached " alarm	Output A4, A5, A6
3)	"Backflushing triggered by DP" alarm	Output A7, A8, A9

Functional description 6.62

See the operating instructions for the filter's function.

Flushing is triggered by:

1) Switching on the power supply
2) Key F
3) The forced flushing time elapsing
4) Pressure switch "DP reached, backflushing filter"

Special attributes

- When flushing is triggered by switching on the power and an open limit switch, a flushing cycle starts directly with the flushing valve.
- If the controller is in parameterisation mode, flushing cannot be triggered manually.
- If the "Controller type" parameter is changed, the functions are re-started.

4.6 Controllers of type 6.64

Inputs 6.64 and 6.64 Alarm DP (flushing frequency monitoring)

"Position reached" limit switch

Pressure switch "DP reached, backflushing filter" → 75 %

Pressure switch "DP too high, backflushing filter" → 100 %

Additional inputs 6.64.07 and 6.64.07 Alarm DP (flushing oil treatment)

Pressure switch "DP too high, flushing oil treatment" → 100 %

Outputs 6.64 and 6.64 Alarm DP

Flushing valve

Motor

Relief valve

Additional outputs for 6.64.07 and 6.64.07 Alarm DP

After-blowing valve

Potential-free contacts and messages 6.64

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Collective fault, comprising: - "Maximum differential pressure reached" alarm and - "Motor fault" alarm	Output A4, A5, A6

Potential-free contacts and messages 6.64 Alarm DP

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Collective fault, comprising: - "Maximum differential pressure reached" alarm and - "Motor fault" alarm	Output A4, A5, A6
3)	"Backflushing triggered by DP" alarm	Output A7, A8, A9

Potential-free contacts and messages 6.64.07

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Collective fault, comprising: - "Maximum differential pressure reached " alarm - "Motor fault" alarm and - "Cartridge" alarm (DP alarm flushing oil treatment)	Output A4, A5, A6

Potential-free contacts and messages 6.64.07 Alarm DP

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Collective fault, comprising:	Output A4, A5, A6
	- "Maximum differential pressure reached " alarm	
	- "Motor fault" alarm and	
	- "Cartridge" alarm (DP alarm flushing oil treatment)	
3)	"Backflushing triggered by DP" alarm	Output A7, A8, A9

Functional description 6.64

See the operating instructions for the filter's function.

Flushing is triggered by:

1) Switching on the power supply
2) Key F
3) The forced flushing time elapsing
4) Pressure switch "DP reached, backflushing filter"

Special attributes

- When flushing is triggered by switching on the power and an open limit switch, a flushing cycle with the flushing valve starts after the pressure compensation time.
- If the controller is in parameterisation mode, flushing cannot be triggered manually.
- If the "Controller type" parameter is changed, the functions are re-started.

4.7 Controllers of type 6.72

Inputs 6.72 and 6.72 Alarm DP (flushing frequency monitoring)

"Position reached" limit switch

Pressure switch "DP reached, backflushing filter" → 75 %

Pressure switch "DP too high, backflushing filter" → 100 %

Outputs 6.72 and 6.72 Alarm DP

Flushing valve

Chamber valve

Potential-free contacts and messages 6.72

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Collective fault, comprising: - "Maximum differential pressure reached" alarm	Output A4, A5, A6

Potential-free contacts and messages 6.72 Alarm DP

1)	"Control voltage monitoring" alarm	Output A1, A2, A3
2)	Collective fault, comprising: - "Maximum differential pressure reached" alarm and	Output A4, A5, A6
3)	"Backflushing triggered by DP" alarm	Output A7, A8, A9

Functional description 6.72

See the operating instructions for the filter's function.

Flushing is triggered by:

1) Switching on the power supply
2) Key F
3) The forced flushing time elapsing
4) Pressure switch "DP reached, backflushing filter"

Additional functions for 6.72 Alarm DP (flushing frequency monitoring)

If flushing is triggered by the "DP reached, back flushing filter" pressure switch before the forced flushing time elapses, a DP alarm is signalled (Flushing frequency alarm).

Special attributes

- All alarms are displayed and signalled and saved via potential-free contacts.
- If the controller is in parameterisation mode, flushing cannot be triggered manually.
- If the "Controller type" parameter is changed, the functions are re-started.

5 Appendix

5.1 Setting values

		P0	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P14
	Terminal connection plan	Filter type	Multiple flushing	Automatic flushing	Automatic flushing	Flushing time	Refill time	After-blowing time	Delay time cartridge alarm	DP-Alarm	Engine failure	Backflushing time	Language	Test-code	Pressure compensation time
6.18/6.19/6.44	Z46140	0	/	2h	0min	20s	/	/	/	/	0.4A	/	D	/	/
6.23/6.24	Z46141	1	/	2h	0min	/	/	/	/	/	/	2	D	/	/
6.60	Z46142	2	/	2h	0min	8s	120s	/	/	/	/	/	D	/	/
6.60 Al.DP	Z46142	3	/	2h	0min	8s	120s	/	/	on	/	/	D	/	/
6.60.07	Z46143	4	/	2h	0min	8s	120s	30s	30s	/	/	/	D	/	/
6.60.07 Al.DP	Z46143	5	/	2h	0min	8s	120s	30s	30s	on	/	/	D	/	/
6.61	Z46144	6	1	2h	0min	8s	up to DN150=120s as from DN200=150s	/	/	/	0.4A	/	D	/	/
6.61 Al.DP	Z46144	7	1	2h	0min	8s	up to DN150=120s as from DN200=150s	/	/	on	0.4A	/	D	/	/
6.61.07	Z46145	8	1	2h	0min	8s	up to DN150=120s as from DN200=150s	30s	30s	/	0.4A	/	D	/	/
6.61.07 Al.DP	Z46145	9	1	2h	0min	8s	up to DN150=120s as from DN200=150s	30s	30s	on	0.4A	/	D	/	/
6.62	Z46146	10	1	2h	0min	8s	120s	/	/	/	/	/	D	/	/
6.62 Al.DP	Z46146	11	1	2h	0min	8s	120s	/	/	on	/	/	D	/	/
6.64	Z46147	12	1	2h	0min	8s	up to DN150=180s as from DN200=360s	/	/	/	0.4A	/	D	/	up to DN150=1s as from DN200=10s
6.64 Al.DP	Z46147	13	1	2h	0min	8s	up to DN150=180s as from DN200=360s	/	/	on	0.4A	/	D	/	up to DN150=1s as from DN200=10s
6.64.07	Z46148	14	1	2h	0min	8s	up to DN150=180s as from DN200=360s	30s	30s	/	0.4A	/	D	/	up to DN150=1s as from DN200=10s
6.64.07 Al.DP	Z46148	15	1	2h	0min	8s	up to DN150=180s as from DN200=360s	30s	30s	on	0.4A	/	D	/	up to DN150=1s as from DN200=10s
6.72	Z46282	16	/	2h	0min	8s	up to DN40=120s as from DN65=200s	/	/	/	/	/	D	/	/
6.72 Al.DP	Z46282	17	/	2h	0min	8s	up to DN40=120s as from DN65=200s	/	/	on	/	/	D	/	/

Set-points can be adjusted according to the particular requirements.